

# Ericsson Antenna System Catalog 2023

Together, we create high-performance,  
energy-efficient, sustainable networks  
with next-gen antennas.



# About Ericsson Antenna System

Ericsson Antenna System is shaping the blueprint for global networks of tomorrow. We're carving a path to boundless connectivity, envisioning a seamless and secure future where antennas are ubiquitous yet invisible, vital to every touchpoint in our digital world. Our ambition stretches beyond connectivity; we envision our antennas as the bedrock of modern society's infrastructure. Committed to this vision, we're engineering solutions for tomorrow, enhancing lives, transforming businesses, and championing sustainability.

Globally we employ more than 2500 professionals from more than 25 countries, thereof more than 530 R&D experts, working in our R&D centers in Rosenheim, Germany and Plano, United States. Antennas, whether passive, or active-passive, are our passion. The

antenna system is an integral part and one of the most crucial areas in a radio access network, impacting the effectiveness of the entire site. We relentlessly, and with great curiosity and perseverance, work on the future technologies antennas, antenna line devices, antenna system accessories and feeder systems to support your network deployment strategy.



General Terms & Conditions:

<https://www.ericsson.com/495932/assets/local/antenna-systems/doc/eas-gtc-eng.pdf>

## A world-leading antenna for every site

Ericsson's network technologies are an evolution 145 years in the making. As today's networks evolve into 5G and beyond, our portfolio continues to set the global benchmark for network performance.

Our world-leading antenna portfolio is central to that. With a focus on delivering consistent, energy-efficient high performance in any condition, across any network and for far longer than any other alternative, our antenna solutions are redefining a new industry standard.

Today, we provide a world-leading antenna solution for every deployment scenario across all site types and traffic scenarios, from 2G to 5G and beyond. This makes us the partner of choice for more than 400 customers, across more than 145 markets worldwide.

### Higher capacity

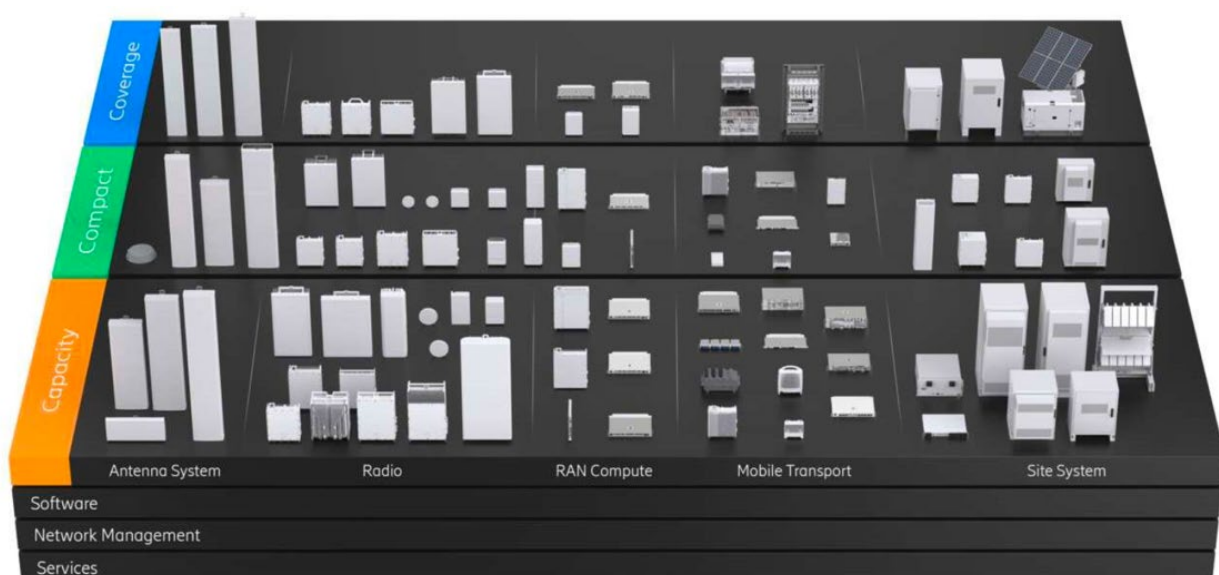
Our antennas deliver higher throughput across dense urban, suburban, and rural scenarios, supporting high-capacity use cases such as XR, high-definition streaming, and driverless vehicles.

### More compact

We deliver solutions that are robust, compact, and optimal for all rooftop, wall- and tower mounted deployments, including space- and weight constrained site sharing deployments.

### Wider coverage

Our antennas ensure higher gain across suburban and rural scenarios, delivering additional value in network planning, and giving your users a more seamless network experience.



## Save up to 15% on energy without compromise

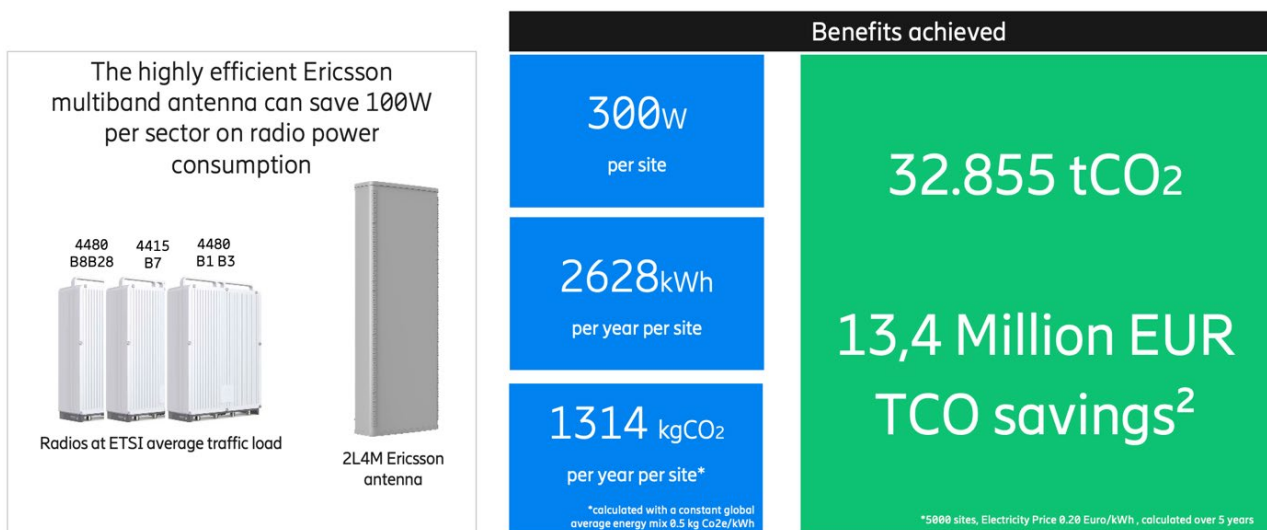
Our commitment to reduce the emissions footprint of your network means delivering world-leading energy efficiency with the same high level of performance.

Recent field tests confirm Ericsson antennas as the market leader in energy efficiency, enabling up to 15% lower radio output power without compromising coverage or user experience. This translates to a saving of 11 GWh of energy across the network over 5 years, including a CO<sub>2</sub> reduction of 1664 tonnes.

**Ericsson's highly efficient multiband antenna, which can save 100W per sector on radio power consumption, enables between 10-15% radio energy savings compared to other market alternatives at ETSI average traffic load.**

### Beam efficiency

The superior beam design and side lobe suppression of Ericsson antennas ensure optimal signal radiation exactly where your users need it. We call this 'beam efficiency' and together with market-leading technologies such as our multi-band invisible radiators, it means that our antennas deliver higher energy efficiency, lower interference, and an enhanced network experience.



## Delivering higher performance for longer

Constant exposure to vibrations, shocks, climate variations, and UV radiation can cause significant performance degradation to your antennas over time, impacting network quality and shortening your antenna lifecycle.

That's why, as part of our product development, every component in each of our antennas is put through meticulous test and control at our state-of-the-art test technology centers.

Not only does this ensure a minimal failure rate of our antennas in the field, but it also means that our antennas can maintain a higher level of performance longer than any other alternative on the market.

To deliver this benchmark, we measure operational performance in the face of hard-wearing parameters such as temperature, humidity, wind load, durability, water and dust ingress, sunlight and UV rays, salt mist, toxic gases, and other elements. We also work continuously to minimize the impact of degradation caused by transport.

### Exceeding BASTA 12 standards

Ericsson sets the standard for one of the most important parameters regarding antenna design: wind load. By subjecting our antennas to extensive wind tunnel testing from every conceivable angle, with varying strengths and directions of the wind, we ensure that our solutions adhere to and often exceed the BASTA 12 recommendations.

## The fastest and easiest 5G upgrade

Easy, agile, and compact deployments are not only decisive in scaling 5G performance, they are also crucial in delivering a low site CAPEX and OPEX.

Ericsson antenna systems deliver just that through easy 5G mid-band upgrade on existing sites with zero footprint, higher low-band gain, and up to 7x improved mobile broadband capacity than existing multiband antennas.

### Ericsson Hybrid AIR & Interleaved AIR

Ericsson's highly integrated Hybrid AIR and Interleaved AIR solutions cover all deployment scenarios as well as new frequency bands, combining both antenna-integrated radios and multiband passive antenna technology in a single solution. This makes it possible to scale 5G mid-band without requiring extra space at existing sites.

### Ultra-wide low-band radiator technology

Our ultra-wide low-band radiator makes it possible to integrate four standard bands instead of three, reducing your site footprint. It also extends bandwidth by a gamechanging 43%.

### Smarter urban solutions

Our range of smarter urban solutions are made to serve new business-critical deployment opportunities across high-density urban sites and where outdoor site permission cannot be obtained. This includes our low-visibility [street radio solutions](#), featuring the world's smallest 4T4R street antenna, as well as our compact [sub-terrain antennas](#) deployed recently in Japan's first underground 5G base stations.

## The industry's lowest TCO

Our antenna portfolio has been developed exclusively to improve your network's performance, and maintain it for a longer period, while lowering both investment- and operating costs.



It's the reason why our antenna portfolio is proven in the field to deliver the industry's lowest total cost of ownership (TCO), including a much lower cost per capacity over your antenna's technical lifetime.

We believe this is the only way to deliver superior performance and sustainable business growth in this coming decade.

High value factors that combine to deliver the industry's lowest TCO:

- **Lower tower costs** through compact, low-weight, and integrated solutions
- **Extended technical lifetime and low failure rate** through optimized wind load, optimal form factor, and low performance degradation
- **Lower energy costs** through world-leading mechanical- and beam efficiency
- **Higher bandwidth and coverage**, reducing the need for additional build out

**Ericsson's antenna solutions can deliver up to 45% lower operational expenses compared to other market alternatives, according to a recent cost comparison at a major European CSP.**

		Benefits achieved	
 <p>Ericsson Antenna Systems platform architecture</p> 	High	Effortless	<p><b>TCO savings</b></p> <p>The highly efficient Ericsson multiband antennas can contribute to reduce the site power consumption and carbon footprint</p>
	antenna efficiency	Reduced	
	Site power consumption	Saving	
	CO2 emission		

## A low embodied carbon footprint (eCO2)

We have placed sustainability at the core of our entire antenna lifecycle, from sourcing materials, design and production, and transportation, to their use and disposal. Through this circular economy approach, we are committed to reducing the embodied carbon footprint of our portfolio, as well as enabling the sustainability targets of our customers.

### Sustainable sourcing

Ericsson antennas are produced from hazardous substance free and low CO2 footprint materials. They are packaged in 99% recyclable packaging materials, including PE straps. We were also first in the industry to remove most foams and plastics from our packaging.

### Sustainable design and production

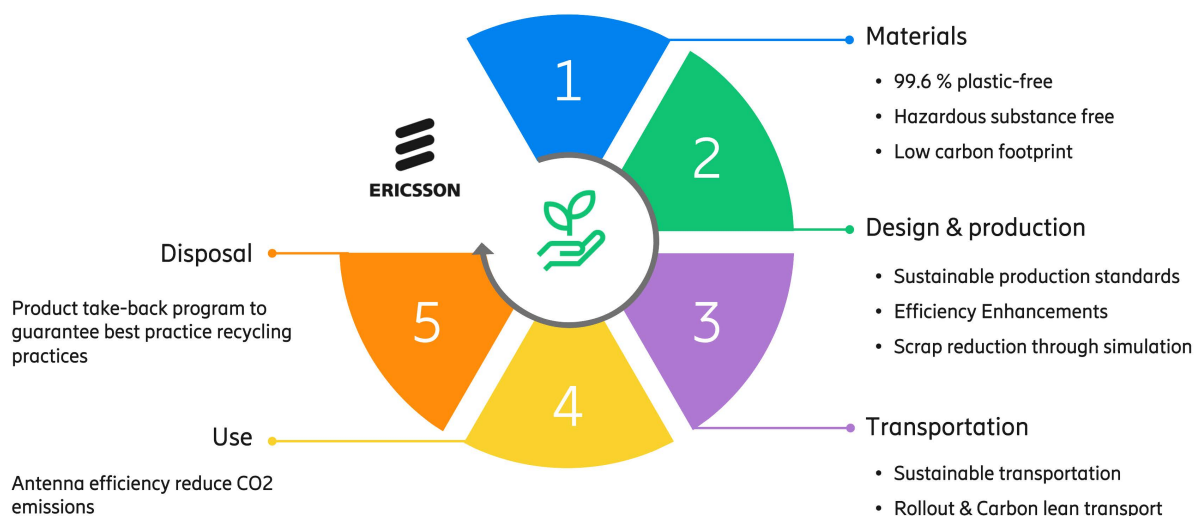
Our antennas are designed and produced based on sustainable production standards. Using low-loss radome in production enables efficiency enhancements, and scrap reduction is achieved through increasing simulation cycles and prototyping.

### Sustainable transport

For antenna transport, we use a sustainable transport network and insist on roll-out and carbon lean transport.

### Ericsson Product Take Back Program

Ericsson offers a free of charge take-back program, ensuring proper handling and recycling at the end of life for both product and packaging.





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Passive Antenna	Single-Band Configuration Multi-Band Configuration TDD Configuration Dual-Beam Configuration Special Configuration
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Passive Antenna

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Antenna Line Device	Multi-Band Combiner Tower Mounted Amplifier Spectrum Limitation Filter Hybrid Combiner RF Component
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Antenna Line Device

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Antenna System Accessories	RET Mounting Accessories
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Antenna System Accessories

# Passive Antenna

LB (Lowband)  $\leq$  960 MHz  
 MB (Midband)  $>$  960 MHz  
 HB (Highband)  $>$  6000 MHz

Catalog  
 Overview

Single-Band Configuration	nLB	1LB 2LB	nLB
	nMB	1MB 2MB 3MB 4MB	nMB
Multi-Band Configuration	1LB nMB	1LB   1MB 1LB   2MB 1LB   3MB 1LB   4MB	1LB nMB
	2LB nMB	2LB   2MB 2LB   3MB 2LB   4MB 2LB   5MB 2LB   6MB 2LB   8MB	2LB nMB
	3LB nMB	3LB   5MB 3LB   6MB	3LB nMB
TDD Configuration	nMB	4MB	TDD nMB
	1LB nMB	1LB   8MB	TDD 1LB nMB
	2LB nMB	2LB   4MB 2LB   8MB	TDD 2LB nMB
Dual-Beam Configuration	nMB	2MB 4MB	Dual-Beam
Special Configuration	Multi Port Omni		Special

## Colour Coding and Antenna Configurations





According to AISG, the frequencies shall be marked like shown in the following table. The upper edge of the frequency range is used to select the colour code.

Frequency Range / MHz Defined by AISG	Frequency Range / MHz Examples	Colour	Colour Code Abbreviation
380–1000	617–1000	Red	R
1001–1700	1001–1700	Green	G
1701–2300	1701–2300	Blue	B
2301–3000	2301–3000	Yellow	Y
3001–5000	3001–5000	Purple	P
5001–6000	5001–6000	Orange	O

In line with this, we have invented a system in order to better illustrate the physical design of our antennas. Based on the AISG colour coding, every antenna system is displayed corresponding to its frequency range. Each system is additionally marked by its colour code abbreviation as well as an identification number (e.g. "R1" for the first lowband system) called "Array ID". For multi-array antennas, also the position marking is indicated as stipulated by AISG ("left" / "right" / "center").

The respective symbols are displayed on each type index of panel antennas in the catalog.

In case an ultra-broadband dipole array is used for two or three independent system, internal filters can be used in order to divide the bands. Those filters are illustrated by the following symbols:

Filter: Lowband e.g. 698–862 / 880–960 MHz or 698–803 / 824–960 MHz		Filter: Midband e.g. 1695–1880 / 1920–2170 MHz	
Filter: Midband e.g. 1710–2170 / 2490–2690 MHz		Filter: L-Band e.g. 1427–1518 / 1695–2180 MHz	

## Colour Coding and Antenna Configurations

Some examples shall demonstrate the symbolic antenna illustration:

1 Lowband Array

e.g. 698–960 or 790–960 MHz



1 Lowband / 1 Midband Array interleaved

e.g. 698–960 / 1710–2690 or  
790–960 / 1710–2690 MHz



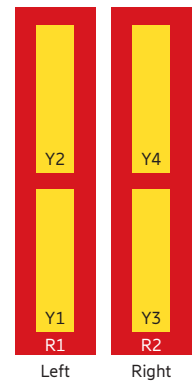
2 Midband Arrays side-by-side  
("multi-array")

e.g. 2x 1695–2690 or  
2x 1710–2690 MHz



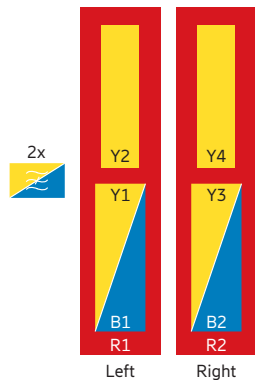
2 Lowband Arrays interleaved  
with 2 Midband Arrays stacked

e.g. 2x 698–960 /  
4x 1695–2690 or  
2x 698–894 /  
4x 1695–2360 MHz



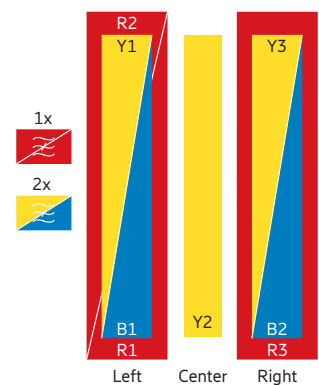
2 Lowband Arrays  
interleaved with 4 Midband  
Arrays stacked, 2 filtered

e.g. 2x 698–960 /  
2x 1695–2690 /  
2x 1427–2180 /  
2x 2490–2690 MHz



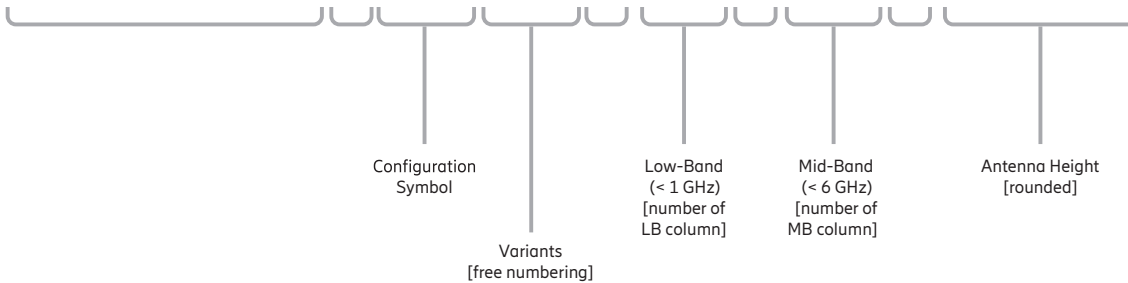
2 Lowband Arrays,  
1 filtered,  
3 Midband Arrays,  
2 interleaved filtered

e.g. 1x 698–862 /  
1x 880–960 /  
1x 698–960 /  
2x 1427–2170 /  
2x 2500–2690 /  
1x 1710–2690 MHz



## Product Naming Passive Antenna

# Antenna 4202 2L 4M 2.0m



# Antenna XXyy nL nM 2.0m








## Passive Antenna Configurations:

Single-Band one column	10 <sub>yy</sub>	11 <sub>yy</sub>	12 <sub>yy</sub>	13 <sub>yy</sub>	14 <sub>yy</sub>
Single-Band more columns	20 <sub>yy</sub>	21 <sub>yy</sub>	22 <sub>yy</sub>	23 <sub>yy</sub>	24 <sub>yy</sub>
Multi-Band 1LB columns nMB	30 <sub>yy</sub>	31 <sub>yy</sub>	32 <sub>yy</sub>	33 <sub>yy</sub>	34 <sub>yy</sub>
Multi-Band 2LB columns nMB	40 <sub>yy</sub>	41 <sub>yy</sub>	42 <sub>yy</sub>	43 <sub>yy</sub>	44 <sub>yy</sub>
Multi-Band 2LB columns nMB	50 <sub>yy</sub>	51 <sub>yy</sub>	52 <sub>yy</sub>	53 <sub>yy</sub>	54 <sub>yy</sub>
Multi-Band with TDD	60 <sub>yy</sub>	61 <sub>yy</sub>	62 <sub>yy</sub>	63 <sub>yy</sub>	64 <sub>yy</sub>
Multi-Band with TDD	70 <sub>yy</sub>	71 <sub>yy</sub>	72 <sub>yy</sub>	73 <sub>yy</sub>	74 <sub>yy</sub>
N.N.	80 <sub>yy</sub>				
Special Configurations	LogPer, Omni, ..... 90 <sub>yy</sub>				

Antennas with filtered columns

# Product Naming Passive Antenna

## Passive Antenna Configurations:

					Single-Band one column
25yy 	26yy 				Single-Band more columns
35yy 	36yy 	37yy 	38yy 	39yy 	Multi-Band 1LB columns nMB
45yy 	46yy 	47yy 	48yy 	49yy 	Multi-Band 2LB columns nMB
55yy 	56yy 	57yy 			Multi-Band 2LB columns nMB
65yy 	66yy  or 	67yy  or 	68yy 	69yy 	Multi-Band with TDD
75yy 	76yy 	77yy 	78yy  or 		Multi-Band with TDD
					N.N.
					Special Configurations

 Antennas with filtered columns

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<a href="#">Antenna 1000 1L 0M 2.3m</a>	<a href="#">22</a>
<a href="#">Antenna 1001 1L 0M 2.3m</a>	<a href="#">25</a>
<a href="#">Antenna 1002 1L 0M 2.4m</a>	<a href="#">28</a>



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<b>Configuration Type 24xx</b>	<b>8 Port</b>
<a href="#">Antenna 2401 0L 4M 1.2m</a>	<a href="#">78</a>
<b>Configuration Type 26xx</b>	
<a href="#">Antenna 2600 0L 4M 1.5m</a>	<a href="#">417</a>



<b>Configuration Type 12xx</b>	<b>2 Port</b>
<a href="#">Antenna 1200 0L 1M 0.3m</a>	<a href="#">56</a>



<b>Configuration Type 24xx</b>	<b>8 Port</b>
<a href="#">Antenna 2480 0L 4M 1.8m</a>	<a href="#">466</a>
<a href="#">Antenna 2480 0L 4M 2.0m</a>	<a href="#">471</a>



<b>Configuration Type 20xx</b>	<b>4 Port</b>
<a href="#">Antenna 2000 2L 0M 1.4m</a>	<a href="#">31</a>
<a href="#">Antenna 2000 2L 0M 2.0m</a>	<a href="#">34</a>
<a href="#">Antenna 2001 2L 0M 2.0m</a>	<a href="#">37</a>
<a href="#">Antenna 2003 2L 0M 2.0m</a>	<a href="#">41</a>
<a href="#">Antenna 2000 2L 0M 2.4m</a>	<a href="#">45</a>
<a href="#">Antenna 2002 2L 0M 2.5m</a>	<a href="#">49</a>
<a href="#">Antenna 2002 2L 0M 2.5m</a>	<a href="#">52</a>



<b>Configuration Type 25xx</b>	<b>4 Port</b>
<a href="#">Antenna 2500 0L 2M 1.0m</a>	<a href="#">62</a>



<b>Configuration Type 22xx</b>	<b>4 Port</b>
<a href="#">Antenna 2200 0L 2M 0.9m</a>	<a href="#">59</a>
<a href="#">Antenna 2282 0L 2M 1.1m</a>	<a href="#">463</a>
<a href="#">Antenna 2200 0L 2M 1.3m</a>	<a href="#">66</a>
<a href="#">Antenna 2200 0L 2M 1.5m</a>	<a href="#">69</a>



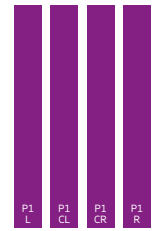
<b>Configuration Type 26xx</b>	<b>8 Port</b>
<a href="#">Antenna 2602 0L 4M 0.9m</a>	<a href="#">405</a>





<b>Configuration Type 24xx</b>	<b>6 Port</b>
<a href="#">Antenna 2403 0L 3M 0.5m</a>	<a href="#">73</a>





<b>Configuration Type 26xx</b>	<b>2 Port (MQ4/MQ5)</b>
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<b>Configuration Type 30xx</b>		
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<a href="#">Antenna 4004 2L 2M 1.8m</a>	<a href="#">170</a>	
<a href="#">Antenna 4000 2L 2M 2.0m</a>	<a href="#">175</a>	
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<a href="#">Antenna 4003 2L 2M 2.4m</a>	<a href="#">190</a>	
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# Antenna Configuration Types

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## Configuration Type 40xx

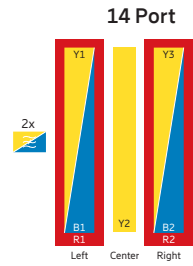
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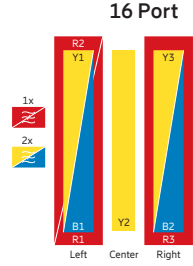
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## 12 Port



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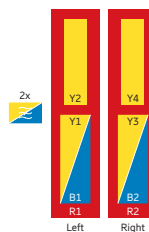
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## Configuration Type 43xx

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## 16 Port



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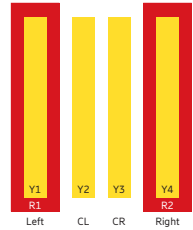
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## 12 Port



## Configuration Type 44xx

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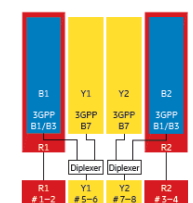
## 10 Port



## Configuration Type 48xx

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## 8 Port



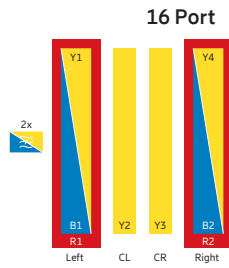
# Antenna Configuration Types

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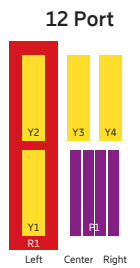
## Configuration Type 49xx

[Antenna 4900 2L 6M 1.5m](#) [344](#)



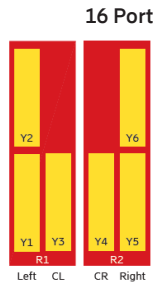
## Configuration Type 60xx

[Antenna 6001 1L 8M 1.4m](#) [423](#)



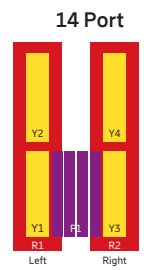
## Configuration Type 54xx

[Antenna 5470 2L 6M 2.6m](#) [376](#)



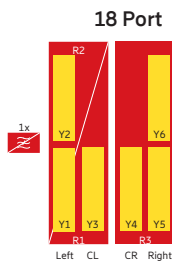
## Configuration Type 66xx

[Antenna 6600 2L 8M 2.0m](#) [441](#)  
[Antenna 6600 2L 8M 2.6m](#) [448](#)



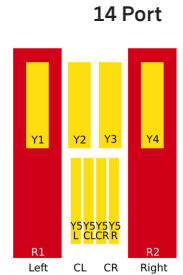
## Configuration Type 55xx

[Antenna 5570 3L 6M 2.6m](#) [397](#)



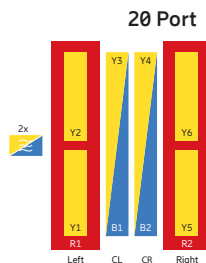
## Configuration Type 70xx

[Antenna 7003 2L 8M 2.6m](#) [455](#)



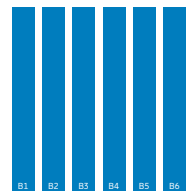
## Configuration Type 55xx

[Antenna 5500 2L 8M 2.0m](#) [383](#)



## Configuration Type 90xx Multi Port

[Antenna 9009 0L 6M 0.4m](#) [498](#)



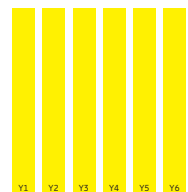
## Configuration Type 56xx

[Antenna 5600 1L 8M 2.0m](#) [428](#)



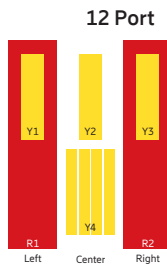
## Configuration Type 90xx Multi Port

[Antenna 9010 0L 6M 0.4m](#) [504](#)



## Configuration Type 57xx

[Antenna 5700 2L 4M 2.0m](#) [435](#)



## Configuration Type 90xx Multi Port

- [Antenna 9003 1LM 0.43m](#) [510](#)
- [Antenna 9005 0L 4M](#) [514](#)
- [Antenna 9012 1LM](#) [512](#)
- [Antenna 9014 2L 4M 0.5m](#) [516](#)
- [Antenna 9000 1LM](#) [492](#)
- [Antenna 9011 1LM](#) [495](#)

## Configuration Type 90xx Omni

[Antenna 9002 1LM 0.2m](#) [522](#)

## Antenna Designs: Antenna Families / RET-system Distinguishing Features

<b>Design</b>	Compact size and elegant design are the distinguishing features of the Ericsson antenna families.
<b>Radome</b>	The radomes covers the internal antenna components. The fiberglass material guarantees optimum performance regarding stability, strength, UV resistance, painting, and weather protection. The radome colour of the outdoor panel antennas is similar to RAL 7035.
<b>Environmental influences</b>	Ericsson antenna designs are based on fundamental engineering knowledge and also on our decades of practical experience, during which the various constructions and materials used have proved their outstanding reliability.
<b>Environmental conditions</b>	Our cellular antennas are designed to operate under the environmental conditions as described in ETS 300 019-1-4 class 4.1 E. The antennas exceed this standard regarding the following items: – Low temperature: $-55^{\circ}\text{C}$ – High temperature (dry): $+60^{\circ}\text{C}$ For antennas equipped with FlexRET: The electrical downtilt adjusting is designed to operate under the environmental conditions as described in the valid data sheet of the FlexRET. Ice protection: Due to the very sturdy antenna construction and the protection of the radiating system by the radome, the antenna remains operational even under icy conditions.
<b>Environmental tests</b>	Ericsson antennas are designed according to the specifications as defined in ETS 300 019-2-4. Extensive tests have been performed on typical samples and modules. The vibration test has been adapted relating to frequency and acceleration to the conditions of mast mounted antennas.
<b>Impedance</b>	Standard Impedance for all products is $50\ \Omega$ unless otherwise stated.
<b>Low intermodulation products (typ. <math>&lt;-153\ \text{dBc}</math>)</b>	With many years of experience in the construction of antennas and intensive research into the effects of intermodulation, we offer optimized material and technology used for antennas (the given value refers to 3rd order products measured with 2 carriers of 20 W each).
<b>Excellent tracking</b>	Tracking states the symmetry between the $+45^{\circ}$ and $-45^{\circ}$ polarized horizontal pattern. Bad tracking values lead to interferences in the network and reduced diversity performance. The special Tracking compensation reduces the average value measured at $\pm 60^{\circ}$ to $< 2-3\ \text{dB}$ .

## Antenna Designs: Antenna Families / RET-system Distinguishing Features

<b>Multi-array design</b>	Besides standard single array antennas, Ericsson designs antennas providing multiple antenna arrays in one radome. These multi-array antennas do not only supply a future-proof multiplicity of diverse frequency bands for various technologies but are also well-prepared for different MIMO and beamforming applications. Our portfolio contains a high variety of design solutions like interleaved and side-by-side antenna types or combinations of both as well as filter realizations.
<b>Multi-functional installation hardware</b>	Depending on the type, the antennas are equipped with up to 2 attachment points. For mast-mounting, brackets, mechanical down tilt kits and various other mounting material are available.
<b>MTBF Statement</b>	Traditionally, passive components like antennas cannot be well calculated due to the lack of a sufficient number of components in the MTBF library. Unfortunately, this constraint results in a very inaccurate calculation. Thus, such results are technically questionable and unrealistic. In essence, antennas are made from mechanical parts that do not show any failure rates. Only available failure rates can be calculated into an MTBF value. Consequently, such components cannot be listed in any MTBF library.
<b>Remote Electrical Tilt System AISG Compliancy</b>	Ericsson Antenna System hereby states that RET devices, as far as the functionality and features are described within the AISG / 3GPP standard, are compliant with the standard.
<b>NGMN-P-BASTA</b>	All antennas which are measured according to the specifications given in NGMN-P-BASTA White Paper Version 9.6/10.0/11.1 and 12 are clearly marked in the data sheet. The latest data sheets can be found on our website.
<b>RET RFID Functionality</b>	Ericsson Antenna System latest RET units are equipped with an internal RFID reader. Most of our antennas are equipped with RFID tags. With this, all relevant antenna data can automatically be read out by the RET.
<b>4.3-10 Connectors</b>	<p>Partly, latest products are equipped with 4.3-10 connectors. The advantages of this connector are:</p> <ul style="list-style-type: none"> <li>• Reduced dimensions on the bottom plate for more installation space</li> <li>• Improved PIM stability and performance</li> <li>• Easier installation, lower tightening torque</li> </ul> <p>The universal 4.3-10 jack can be used with 3 different connector types (screw type, push-pull type and hand screw type).</p>

# Single-Band Configuration

## nLB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
<b>1x Lowband</b>						
Antenna 1000 1L 0M 2.3m 80010305V02	1x 790–960	65	17.5	0–8	7-16	<a href="#">22</a>
Antenna 1001 1L 0M 2.3m 80010456V02	1x 790–960	30	20.5	0.5–10	7-16	<a href="#">25</a>
Antenna 1002 1L 0M 2.4m KRE 101 2411/1	1x 690–960	65	16.0	0–10	4.3-10	<a href="#">28</a>
<b>2x Lowband</b>						
Antenna 2000 2L 0M 1.4m KRE 101 2493/1	2x 698–960	65	14.0	2–16	4.3-10	<a href="#">31</a>
Antenna 2000 2L 0M 2.0m KRE 101 2451/1	2x 698–960	65	15.5	0–10	4.3-10	<a href="#">34</a>
Antenna 2001 2L 0M 2.0m 80010901	2x 698–960	65	15.5	2–12	4.3-10	<a href="#">37</a>
<a href="#">Antenna 2003 2L 0M 2.0m</a> KRE 101 2627/1	2x 880–960	65	16.0	2–12	4.3-10	<a href="#">41</a>
Antenna 2000 2L 0M 2.4m 80010902	2x 698–960	65	16.5	1–10	4.3-10	<a href="#">45</a>
Antenna 2002 2L 0M 2.5m KRE 101 2412/1	2x 698–960	65	16.5	0–10	4.3-10	<a href="#">49</a>
Antenna 2001 2L 0M 2.6m 80010817	2x 790–960	90	16.0	0–8	7-16	<a href="#">52</a>

[New product](#)



# Antenna 1000 1L 0M 2.3m

80010305V02

Capacity

Compact

Coverage

65° | 790–960 MHz | 17.5 dBi

Electrical downtilt set by hand or by optional RCU (Remote Control Unit)



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Lowband		R1		
Frequency range	MHz	790 – 862	824 – 894	880 – 960
Polarization	°	+45, –45	+45, –45	+45, –45
Average gain	dBi	16.8 ... 17.0 ... 16.7	16.9 ... 17.1 ... 16.9	17.2 ... 17.4 ... 17.0
Tilt	°	0 ... 4 ... 8	0 ... 4 ... 8	0 ... 4 ... 8
<b>Horizontal Pattern:</b>				
Half-power beam width	°	69	67	65
Front-to-back ratio, copolar	dB	> 25	> 25	> 25
Cross polar ratio Maindirection Sector	0° ±60°	Typically: 25 Typically: > 10	Typically: 25 Typically: > 10	Typically: 25 Typically: > 10
Tracking, Avg.	dB	0.5		
Squint	°	±2.5		
<b>Vertical Pattern:</b>				
Half-power beam width	°	9.1	8.8	8.5
Electrical tilt	°	0 – 8, continuously adjustable		
Sidelobe suppression for first sidelobe above main beam	°T dB	0 ... 2 ... 4 ... 8 18 ... 18 ... 18 ... 16	0 ... 2 ... 4 ... 8 18 ... 18 ... 18 ... 16	0 ... 2 ... 4 ... 8 20 ... 18 ... 17 ... 15
Impedance	Ω	50		
VSWR		< 1.5		
Isolation, between ports	dB	> 30		
Intermodulation IM3	dBc	< –150 (2 x 43 dBm carrier)		
Max. effective power per port Max. effective power for the antenna	W	400 (at 50 °C ambient temperature) 800 (at 50 °C ambient temperature)		

## Mechanical specifications

Input	2 x 7-16 female	
Connector position	Rearside	
Adjustment mechanism	1x, Position bottom continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 770   173 Maximal: 845   190
Max. wind velocity	km/h mph	200 124
Height/width/depth	mm inches	2254 / 259 / 99 88.7 / 10.2 / 3.9
Category of mounting hardware	M (Medium)	
Weight	kg lb	11.5 / 13.5 (clamps incl.) 25.4 / 29.8 (clamps incl.)
Packing size	mm inches	2536 x 272 x 147 99.8 x 10.7 x 3.9
Scope of supply	Panel and 2 units of clamps for 42 – 115 mm   1.7–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
731651	1 clamp	Mast diameter: 28–60   1.1–2.4	2
85010002	1 clamp	Mast diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
737978	1 downtilt kit	Downtilt angle: 0°–9°	1

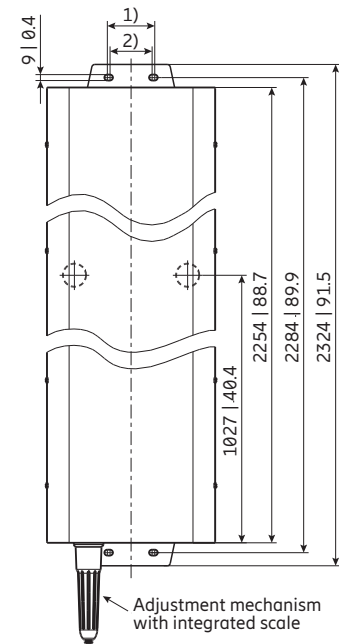
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Mast diameter: 42–15   1.7–4.5	2

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

**Material:** **Reflector screen:** Weather-proof aluminum.  
**Fiberglass radome:** The grey fiberglass radomes of these antennas are very stable and extraordinarily stiff. They are resistant to ultraviolet radiation and can also be painted to match their surroundings.  
**All screws and nuts:** Stainless steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



1) 72 | 2.8  
2) 64 | 2.5

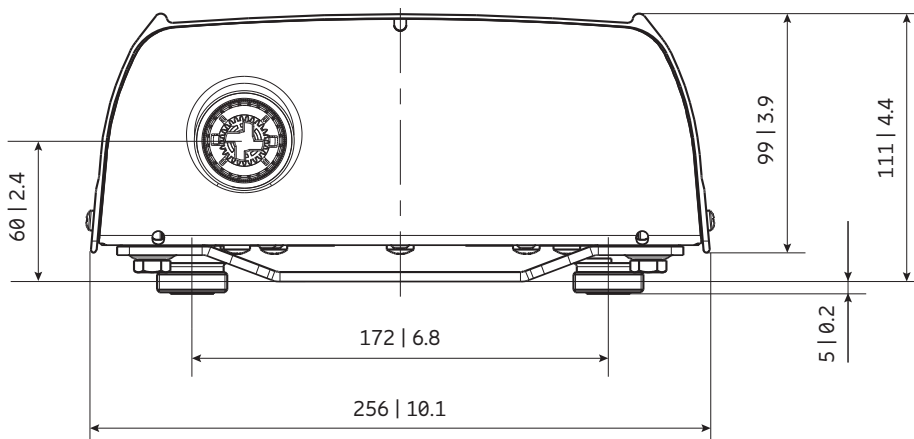
All imensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
790–960 MHz	R1	1–2

R1

## Layout of interface



Bottom view  
All dimensions in mm | inches





# Antenna 1001 1L 0M 2.3m

80010456V02

Capacity

Compact

Coverage

30° | 790–960 MHz | 20.5 dBi

Electrical downtilt set by hand or by optional RCU (Remote Control Unit)



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Lowband		R1		
Frequency range	MHz	790 – 862	824 – 894	880 – 960
Polarization	°	+45, -45	+45, -45	+45, -45
Gain at 0° T	dBi	2 x 20.0	2 x 20.2	2 x 20.5
<b>Horizontal Pattern:</b>				
Half-power beam width	°	33	32	30
Front-to-back ratio, copolar	dB	> 28	> 29	> 30
Cross polar ratio Maindirection	θ° dB	Typically: 25	Typically: 23	Typically: 20
Tracking, Avg.	dB	2.5		
Squint	°	±2.0		
<b>Vertical Pattern:</b>				
Half-power beam width	°	9.1	8.8	8.5
Electrical tilt	°	0.5 – 10, continuously adjustable		
Sidelobe suppression for first sidelobe above main beam	°T dB	0.5 ... 5 ... 10 > 16 ... 13 ... 13	0.5 ... 5 ... 10 > 18 ... 18 ... 17	0.5 ... 5 ... 10 > 18 ... 16 ... 15
Impedance	Ω	50		
VSWR		< 1.5		
Isolation, between ports	dB	> 30		
Intermodulation IM3	dBc	< -150 (2 x 43 dBm carrier)		
Max. power per input	W	500 (at 50 °C ambient temperature)		

## Mechanical specifications

Input	2x 7-16 female	
Connector position	Rearside	
Adjustment mechanism	1x, Position bottom continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1415   318 Maximal: 1555   350
Max. wind velocity	km/h mph	200 124
Height/width/depth	mm inches	2254 / 576 / 99 88.7 / 22.7 / 3.9
Category of mounting hardware	H (Heavy)	
Weight	kg lb	22 / 24 (clamps incl.) 48.5 / 52.9 (clamps incl.)
Packing size	mm inches	2500 x 600 x 150 98.4 x 23.6 x 5.9
Scope of supply	Panel and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–10°	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Mast diameter: 42–115   1.7–4.5	2

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

### Material:

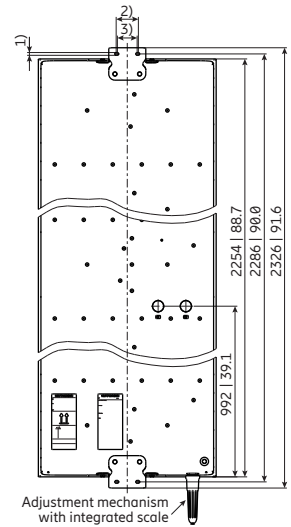
**Reflector screen:** Weather-proof aluminum.

**Fiberglass radome:** The grey fiberglass radomes of these antennas are very stable and extraordinarily stiff. They are resistant to ultraviolet radiation and can also be painted to match their surroundings.

**All screws and nuts:** Stainless steel.

### Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

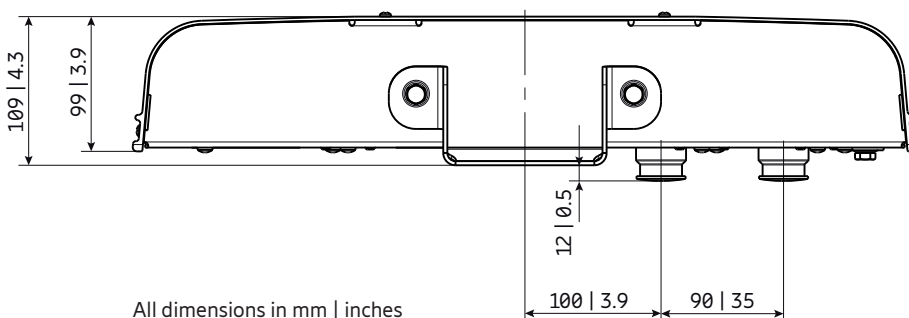


- 1) 9 | 0.4
- 2) 72 | 2.8
- 3) 64 | 2.5

All dimensions in mm | inches



## Layout of interface





# Antenna 1002 1L 0M 2.4m

KRE 101 2411/1

Capacity

Compact

Coverage

65° | 690–960 MHz | 16.0 dBi  
Electrical downtilt set by integrated RET



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Lowband		R1, connector 1–2			
Frequency Range	MHz	690 – 807	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.9	16.1	16.3	16.6
Gain over all Tilts	dBi	15.9 ± 0.3	16.1 ± 0.2	16.2 ± 0.3	16.4 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	72 ± 1.0	71 ± 1.0	70 ± 1.6	67 ± 1.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 25	> 25	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.4 ± 0.6	8.6 ± 0.5	8.3 ± 0.5	7.8 ± 0.4
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 0.3	< 0.7	< 0.7	< 0.8
First Upper Side Lobe Suppression	dB	> 19	> 19	> 19	> 19
Cross Polar Isolation	dB	> 30			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

### Electrical specifications, all ports

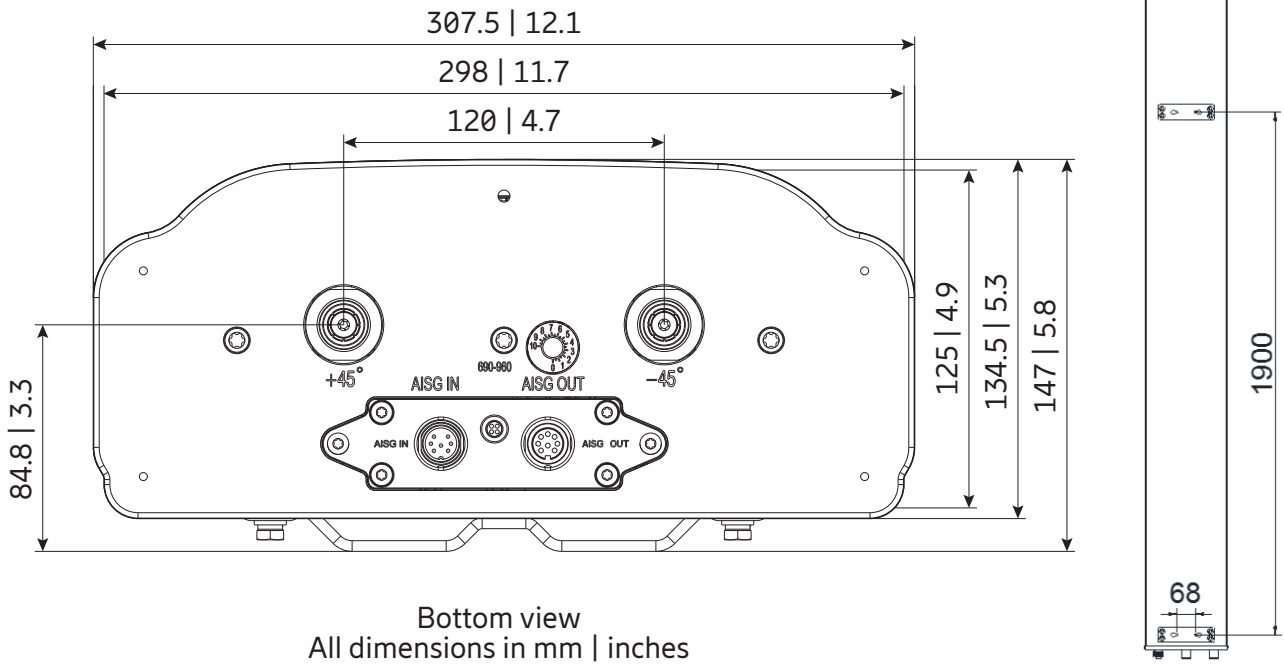
Impedance	Ω	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 30
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	-45, +45
Max. Effective Power for the Antenna	W	600 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

### Mechanical specifications

Input	2 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 795   179 Maximal: 875   197
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	2400 / 298 / 125 94.5 / 11.7 / 4.9
Weight	kg lb	17.0 / 22.9 (clamps incl.) 37.5 / 50.5 (clamps incl.)
Packing Size	mm inches	2745 / 370 / 185 108.1 / 14.6 / 7.3
Scope of Supply	Antenna, mounting kit incl. mech. Tilt-kit 0° to 8° tilt SXA 120 129/1; integrated RET - KRY 121 78/1	

### Layout of interface



### Correlation Table

Frequency range	Array	Connector / Ports
690–960 MHz	R1	1–2





# Antenna 2000 2L 0M 1.4m

KRE 101 2493/1

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 14.0 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	13.3	13.6	13.8
Gain over all Tilts	dBi	13.3 ± 0.3	13.6 ± 0.3	13.7 ± 0.5
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	66 ± 3.3	65 ± 4.2	63 ± 4.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 23
Cross Polar Discrimination at Boresight	dB	> 28	> 24	> 24
Azimuth Beam Squint	°	-11 ± 6.0	-6 ± 5.3	-3 ± 5.4
Azimuth Beam Port-to-Port Tracking	dB	2.0	2.5	2.5
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	16.1 ± 1.4	14.7 ± 1.0	13.6 ± 0.8
Electrical Downtilt continuously adjustable	°	2.0 – 16.0		
Tilt Accuracy	°	< 0.5	< 0.9	< 0.6
First Upper Sidelobe Suppression	dB	> 16	> 16	> 20
Intra-Cluster Isolation	dB	> 25		
Inter-Cluster Isolation	dB	> 25 (R1 // R2)		
Max. Effective Power per Port	W	200		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	13.3	13.7	13.7
Gain over all Tilts	dBi	13.3 ± 0.2	13.6 ± 0.3	13.6 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	66 ± 3.4	63 ± 4.7	62 ± 4.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 23	> 22
Cross Polar Discrimination at Boresight	dB	> 26	> 26	> 23
Azimuth Beam Squint	°	12 ± 5.6	7 ± 5.7	3 ± 5.2
Azimuth Beam Port-to-Port Tracking	dB	2.0	2.5	2.5
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	16.1 ± 1.3	14.6 ± 1.1	13.5 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 16.0		
Tilt Accuracy	°	< 0.6	< 0.9	< 0.8
First Upper Sidelobe Suppression	dB	> 15	> 15	> 19
Intra-Cluster Isolation	dB	> 25		
Inter-Cluster Isolation	dB	> 25 (R2 // R1)		
Max. Effective Power per Port	W	200		

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	600 (at 25° C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

**Material:**

**Reflector screen and dipoles:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

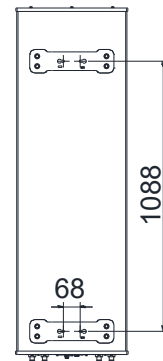
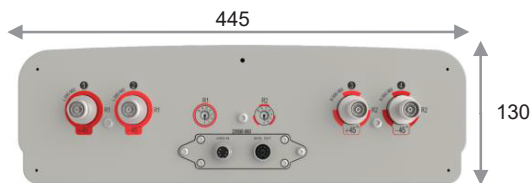
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 725   163 Maximal: 725   163
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1400 / 445 / 130 55.1 / 17.5 / 5.1
Weight	kg lb	19.0 / 24.4 (clamps incl.) 41.9 / 53.8 (clamps incl.)
Packing Size	mm inches	1675 / 550 / 205 65.9 / 21.7 / 8.1
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit (0°–16°) SXA 120 129/2, integr. RET KRY 121 78/4	

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4





# Antenna 2000 2L 0M 2.0m

KRE 101 2451/1

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 15.5 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.5	15.7
Gain over all Tilts	dBi	14.9 ± 0.5	15.4 ± 0.3	15.6 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	67 ± 3.5	63 ± 3.4	61 ± 3.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 22	> 22
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.2 ± 0.9	10.1 ± 0.6	9.2 ± 0.6
Electrical Downtilt continuously adjustable	°	0.0 – 10.0		
Tilt Accuracy	°	< 0.5	< 0.7	< 0.8
First Upper Side Lobe Suppression	dB	> 19	> 18	> 16
Cross Polar Isolation	dB	> 28		
Port to Port Isolation	dB	> 26 (R1 // R2)		
Max. Effective Power per Port	W	350 (at 40 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, lowband		R2, connector 3–4		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	14.9	15.3	15.6
Gain over all Tilts	dBi	14.8 ± 0.5	15.3 ± 0.3	15.6 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	69 ± 3.0	65 ± 3.1	63 ± 2.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 22	> 21
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.2 ± 0.9	10.1 ± 0.6	9.2 ± 0.6
Electrical Downtilt continuously adjustable	°	0.0 – 10.0		
Tilt Accuracy	°	< 0.7	< 0.8	< 0.8
First Upper Side Lobe Suppression	dB	> 20	> 19	> 18
Cross Polar Isolation	dB	> 28		
Port to Port Isolation	dB	> 26 (R2 // R1)		
Max. Effective Power per Port	W	350 (at 40 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 26
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	700 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1065   239 Maximal: 1065   239
Max. Wind Velocity	km/h mph	225 140
Height / Width / Depth	mm inches	2000 / 445 / 130 78.7 / 17.5 / 5.1
Weight	kg lb	24.5 / 31.2 (clamps incl.) 54.0 / 68.8 (clamps incl.)
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit (0°–12°) SXA 120 128/2, integr. RET KRY 121 78/1	

## Material:

**Reflector screen and dipoles:** Aluminum.

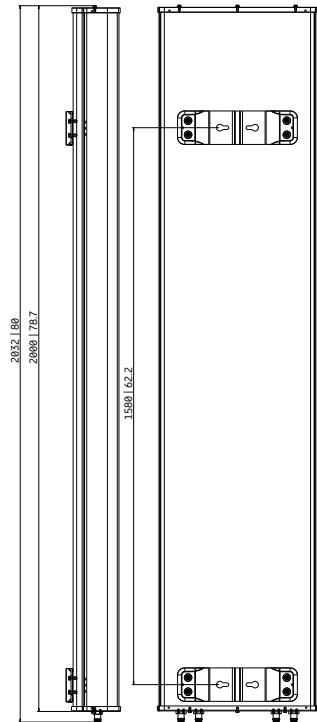
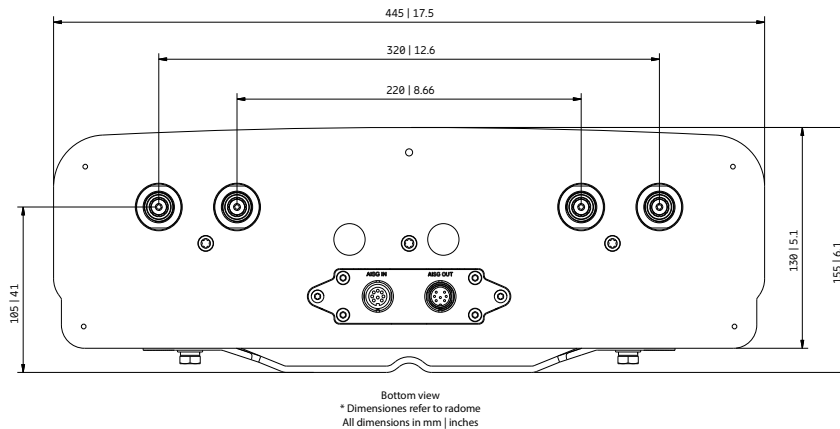
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4





# Antenna 2001 2L 0M 2.0m

80010901

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 15.5 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.8	15.4	15.6	15.9
Gain over all Tilts	dBi	14.8 ± 0.6	15.4 ± 0.4	15.6 ± 0.2	15.8 ± 0.2
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 3.9	61 ± 3.2	60 ± 2.7	60 ± 2.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 25	> 27	> 25
Cross Polar Discrimination over Sector	dB	> 8.5	> 10.5	> 11.5	> 11.0
Azimuth Beam Port-to-Port Tracking	dB	< 1.5	< 1.0	< 1.0	< 1.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.9 ± 0.8	11.0 ± 0.8	10.5 ± 0.4	10.2 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.7	< 0.7	< 0.7	< 0.7
First Upper Side Lobe Suppression	dB	> 14	> 14	> 15	> 14
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R1 // R2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Ports R1	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.8	15.3	15.5	15.8
Gain over all Tilts	dBi	14.8 ± 0.6	15.3 ± 0.3	15.5 ± 0.3	15.7 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 3.6	62 ± 1.8	62 ± 2.1	60 ± 3.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 24	> 26	> 27
Cross Polar Discrimination over Sector	dB	> 8.0	> 12.5	> 13.0	> 13.0
Azimuth Beam Port-to-Port Tracking	dB	< 1.5	< 1.5	< 1.0	< 2.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.6 ± 0.7	11.0 ± 0.6	10.7 ± 0.4	10.2 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.7	< 0.6	< 0.6	< 0.5
First Upper Side Lobe Suppression	dB	> 14	> 16	> 16	> 16
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R2 // R1)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Ports R2	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1130   254 Maximal: 1140   256
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1999 / 508 / 175 78.7 / 20.0 / 6.9
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	38.3 / 42.8 (clamps incl.) 84.4 / 94.4 (clamps incl.)
Packing Size	mm inches	2200 / 542 / 268 86.6 / 21.3 / 10.6
Scope of Supply	Panel, FlexRET and clamps for 55 – 115 mm   2.2 – 4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–13°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010153V01	FlexRET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

## Material:

**Reflector screen:** Aluminum.

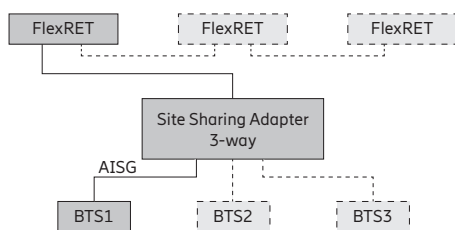
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

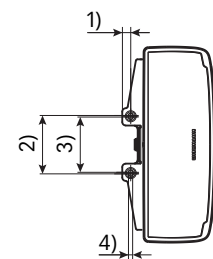
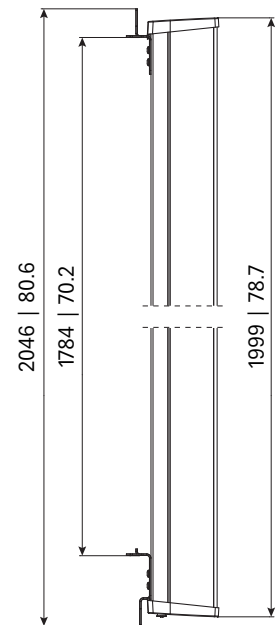
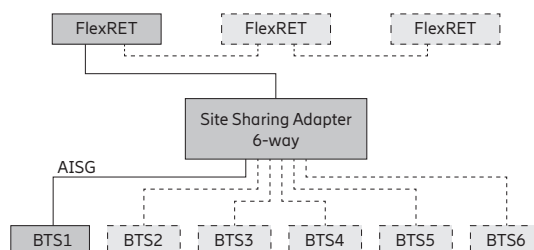
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

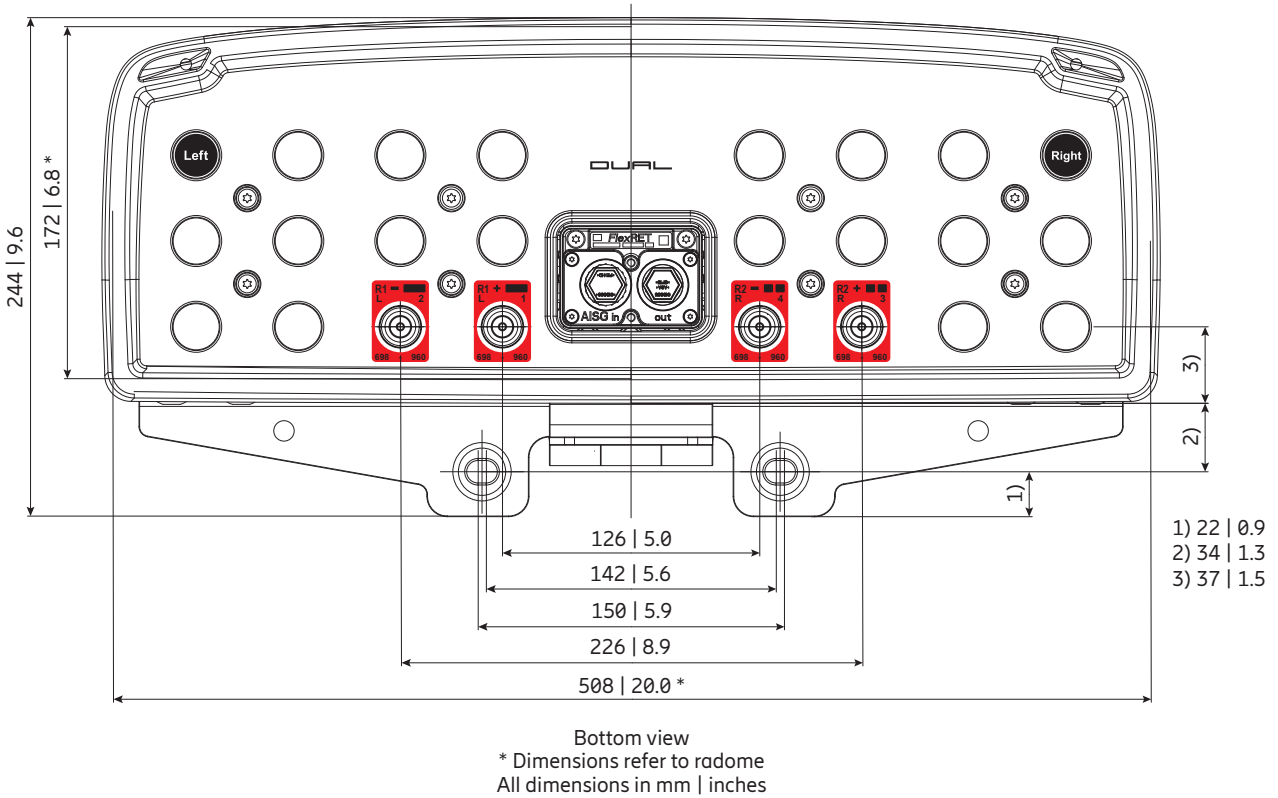


- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

### Layout of interface



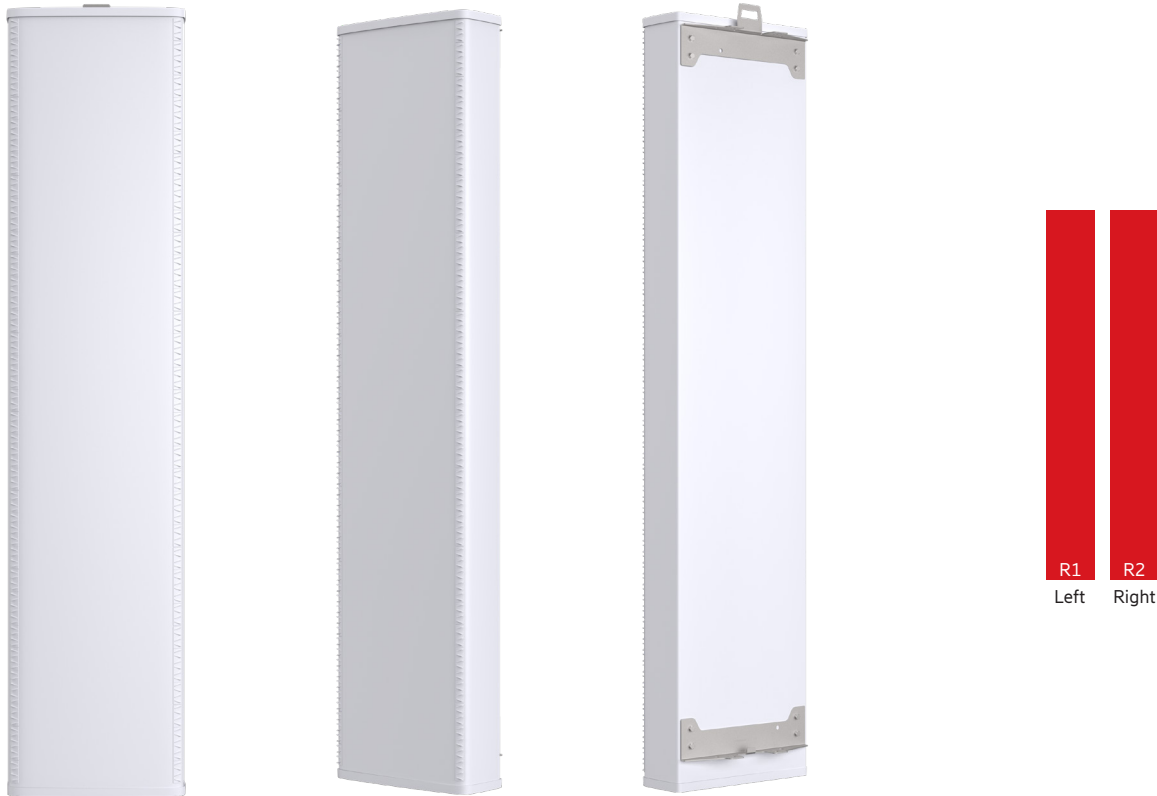
### Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4





New product



# Antenna 2003 2L 0M 2.0m

KRE 101 2627/1

Capacity

Compact

Coverage

65° | 2x 880–960 MHz | 16.0 dBi  
4x 4.3-10  
FlexRET



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Left side, lowband		R1, connector 1–2
Frequency Range	MHz	880 – 960
Gain at mid Tilt	dBi	16
Gain over all Tilts	dBi	16 ± 0.4
<b>Horizontal Pattern:</b>		
Azimuth Beamwidth	°	66.0 ± 2.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23.6
Cross Polar Discrimination at Mechanical Boresight	dB	> 23.7
Cross Polar Discrimination over Sector	dB	> 9.8
Azimuth Beam Squint	°	-3.8 ± 3.9
Azimuth Beam Port-to-Port Tracking	dB	< 1.5
<b>Vertical Pattern:</b>		
Elevation Beamwidth	°	9.8 ± 0.7
Electrical Downtilt continuously adjustable	°	2.0 – 12.0
Tilt Accuracy	°	< 0.6
First Upper Sidelobe Suppression	dB	> 20.0
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 17.6
Intra-Cluster Isolation	dB	> 25
Inter-Cluster Isolation	dB	> 25 (R1 // R2)
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4
Frequency Range	MHz	880 – 960
Gain at mid Tilt	dBi	16.1
Gain over all Tilts	dBi	16.1 ± 0.4
<b>Horizontal Pattern:</b>		
Azimuth Beamwidth	°	65.6 ± 3.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23.5
Cross Polar Discrimination at Mechanical Boresight	dB	> 24.5
Cross Polar Discrimination over Sector	dB	> 9.5
Azimuth Beam Squint	°	3 ± 4
Azimuth Beam Port-to-Port Tracking	dB	< 1.7
<b>Vertical Pattern:</b>		
Elevation Beamwidth	°	9.9 ± 0.7
Electrical Downtilt continuously adjustable	°	2.0 – 12.0
Tilt Accuracy	°	< 0.6
First Upper Sidelobe Suppression	dB	> 21.2
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 18.6
Intra-Cluster Isolation	dB	> 25
Inter-Cluster Isolation	dB	> 25 (R2 // R1)
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	800 (at 50 °C ambient temperature)

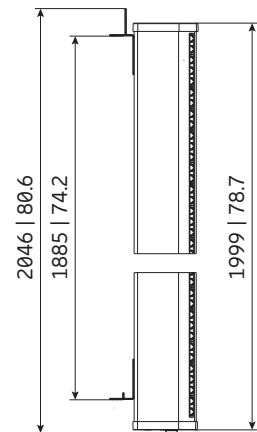
Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 710   160 Maximal: 947   213
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1999 / 448 / 164 78.7 / 17.6 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	28.0 / 32.5 (clamps incl.) 61.7 / 71.7 (clamps incl.)
Packing Size	mm inches	2150 / 510 / 293 84.6 / 20.1 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55 – 115 mm   2.2 – 4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Pole diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–13°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	



## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Pole diameter: 55–115   2.2–4.5	1
86010167	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3*	1

\* FlexRET 86010167 does not support AISG 3 feature MALD

For downtilt mounting use the clamps for an appropriate pole diameter together with the downtilt kit.

## Material:

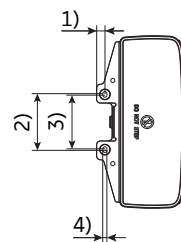
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

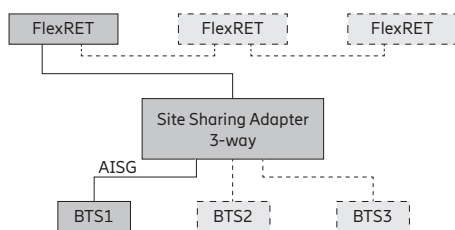
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



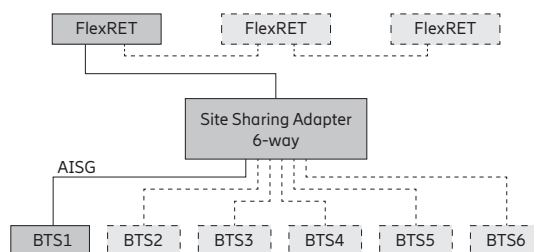
- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions in mm | inches

## Configuration example with Site Sharing Adapter 86010154

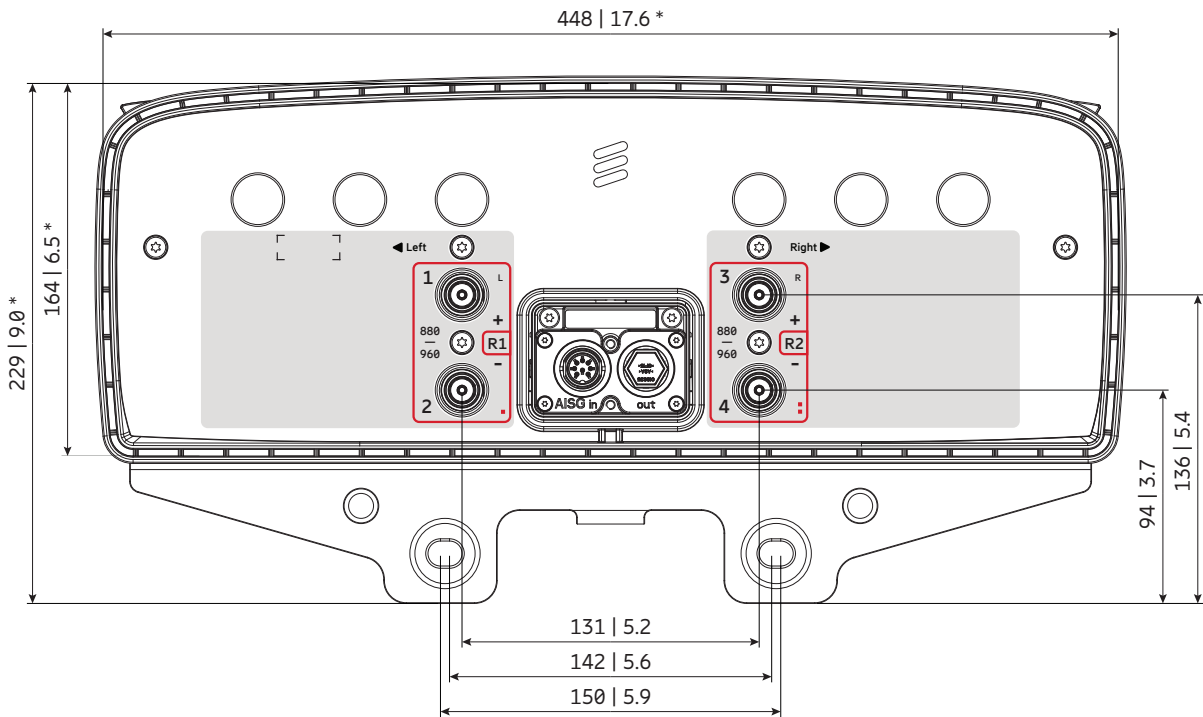


## Configuration example with Site Sharing Adapter 86010155



For more information please refer to the respective data sheets.

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
880–960 MHz	R1	1–2
880–960 MHz	R2	3–4





# Antenna 2000 2L 0M 2.4m

80010902

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 16.5 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.7	16.1	16.4	16.5
Gain over all Tilts	dBi	15.6 ± 0.4	16.1 ± 0.3	16.3 ± 0.3	16.4 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 2.9	65 ± 2.3	65 ± 2.6	64 ± 2.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 24	> 25
Cross Polar Discrimination over Sector	dB	> 10.0	> 9.5	> 10.0	> 11.5
Azimuth Beam Port-to-Port Tracking	dB	< 1.5	< 1.0	< 1.0	< 1.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.7 ± 0.7	9.0 ± 0.5	8.8 ± 0.5	8.3 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 17	> 17	> 20
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R1 // R2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Ports R1	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.5	16.0	16.3	16.6
Gain over all Tilts	dBi	15.5 ± 0.5	16.0 ± 0.5	16.3 ± 0.4	16.5 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 3.5	65 ± 2.6	64 ± 3.0	63 ± 4.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 24	> 26
Cross Polar Discrimination over Sector	dB	> 9.5	> 10.5	> 10.0	> 11.5
Azimuth Beam Port-to-Port Tracking	dB	< 0.5	< 1.0	< 0.5	< 1.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.9 ± 0.7	9.0 ± 0.7	8.6 ± 0.4	8.1 ± 0.5
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.3
First Upper Side Lobe Suppression	dB	> 18	> 21	> 20	> 20
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R2 // R1)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Ports R2	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1400   315 Maximal: 1405   316
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2438 / 508 / 175 96.0 / 20.0 / 6.9
Category of Mounting Hardware	XH (X-Heavy)	
Weight	kg lb	47.0 / 52.0 (clamps incl.) 103.6 / 114.6 (clamps incl.)
Packing Size	mm inches	2635 / 542 / 268 103.7 / 21.3 / 10.6
Scope of Supply	Panel, FlexRET and 1 unit of clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010099	1 downtilt kit	Downtilt angle: 0°–11°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

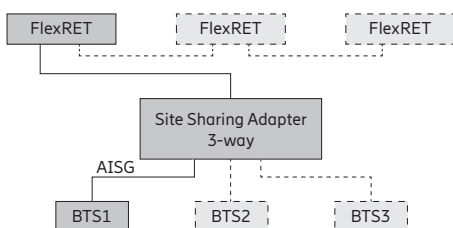
Product No.	Description	Remarks mm   inches	Units per antenna
85010096	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010153V01	FlexRET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

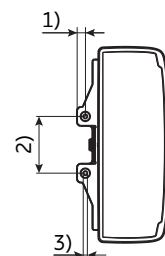
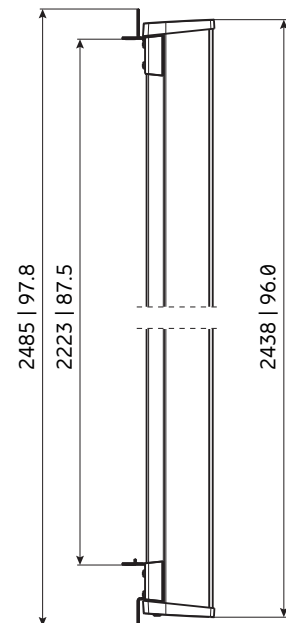
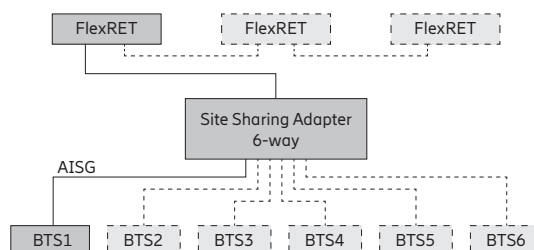
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

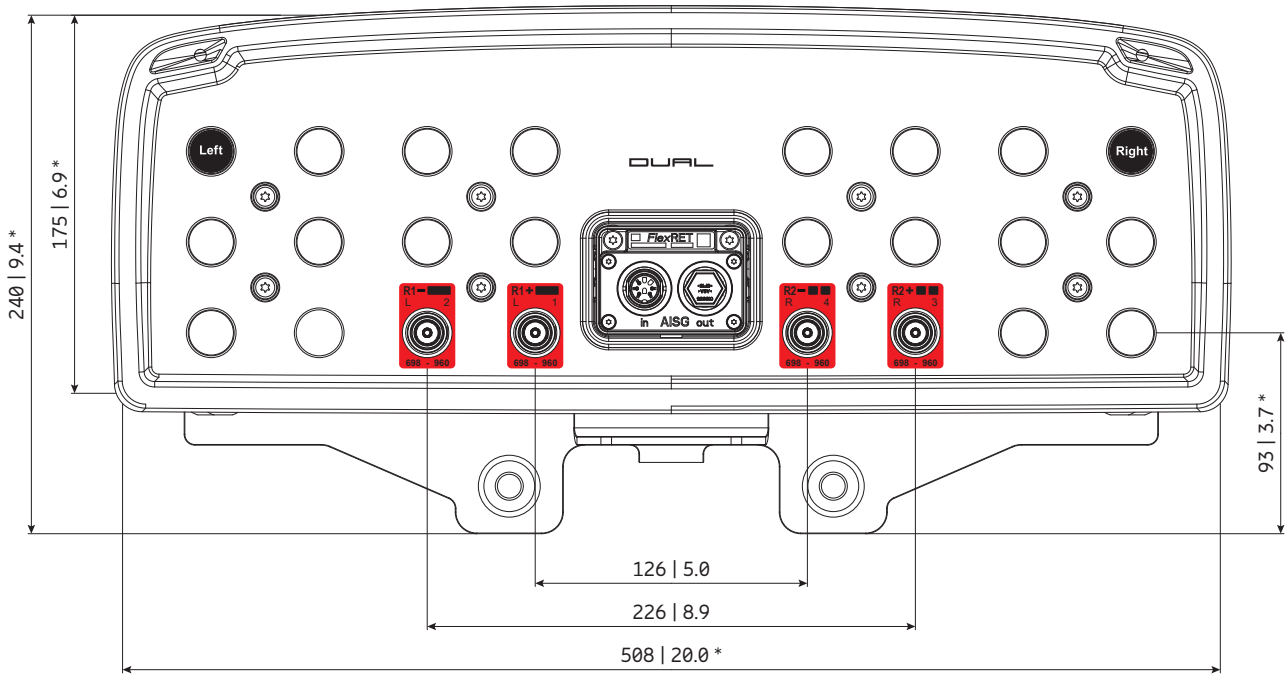


1) 22 | 0.9  
2) 150 | 5.9  
3)  $\varnothing$  11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4







# Antenna 2002 2L 0M 2.5m

KRE 101 2412/1

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 16.5 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 807	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.9	16.5	16.6	17.1
Gain over all Tilts	dBi	15.9 ± 0.8	16.5 ± 0.5	16.6 ± 0.5	17.0 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 3.3	63 ± 3.0	62 ± 4.1	60 ± 3.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 23	> 24
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.2 ± 0.8	8.3 ± 0.4	8.0 ± 0.3	7.5 ± 0.5
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 1.2	< 1.3	< 1.2	< 1.3
First Upper Side Lobe Suppression	dB	> 15	> 16	> 16	> 16
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	>27 (R1 // R2)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 807	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	16.0	16.5	16.6	17.0
Gain over all Tilts	dBi	15.9 ± 0.8	16.5 ± 0.5	16.6 ± 0.5	17.0 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 4.0	63 ± 3.1	62 ± 4.4	60 ± 4.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 24	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.1 ± 0.8	8.2 ± 0.4	8.0 ± 0.3	7.5 ± 0.5
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 1.1	< 1.2	< 1.2	< 1.3
First Upper Side Lobe Suppression	dB	> 15	> 15	> 15	> 15
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	>27 (R2 // R1)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

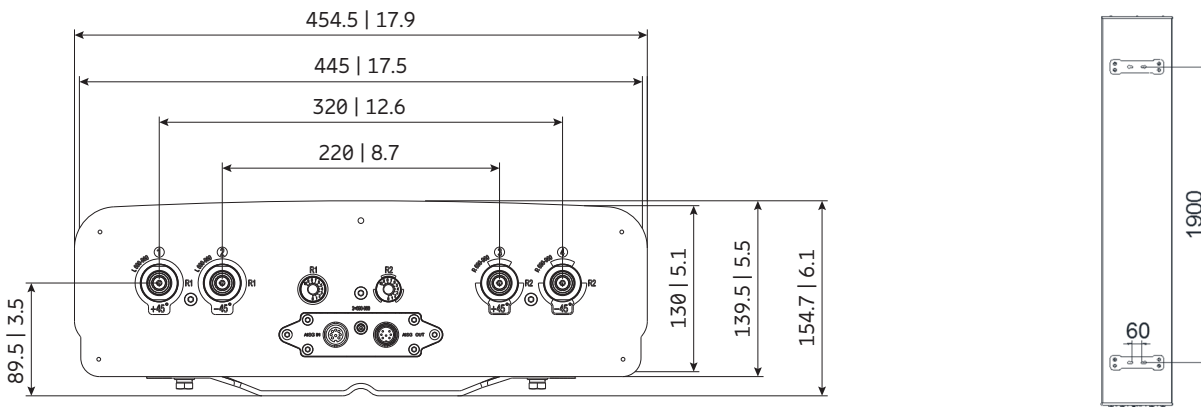
Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	800 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1450   326 Maximal: 1590   357
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	2500 / 445 / 130 98.4 / 17.5 / 5.1
Weight	kg lb	28.2 / 36.2 (clamps incl.) 62.2 / 79.8 (clamps incl.)
Packing Size	mm inches	2845 / 550 / 205 112.0 / 21.7 / 8.1
Scope of Supply	Antenna, mounting kit incl. mech. Tilt-kit 0° to 10° tilt SXA 120 130/1; integrated RET - KRY 121 78/1	

## Layout of interface



Bottom view  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4



R1 R2  
Left Right



# Antenna 2001 2L 0M 2.6m

80010817

Capacity

Compact

Coverage

90° | 2x 790–960 MHz | 16.0 dBi

Electrical downtilt set by hand or by optional RCU (Remote Control Unit)

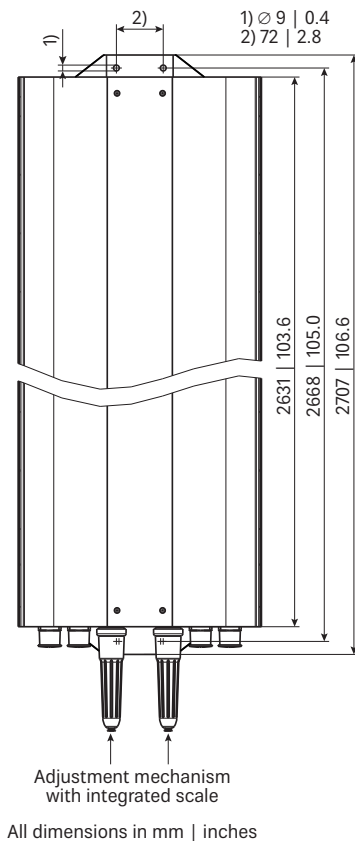


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Lowbands		R1; R2		
Frequency range	MHz	790 – 862	824 – 894	880 – 960
Polarization	°	+45, –45	+45, –45	+45, –45
Average gain (dBi)	dBi	15.4 ... 15.4 ... 15.0	15.7 ... 15.7 ... 15.4	16.0 ... 16.1 ... 15.9
Tilt	°	0 ... 4 ... 8	0 ... 4 ... 8	0 ... 4 ... 8
<b>Horizontal Pattern:</b>				
Half-power beam width	°	93	90	87
Front-to-back ratio (180°±0°)	dB	> 24	> 24	> 25
Front-to-back ratio (180°±30°)	dB	> 20	> 21	> 22
Cross polar ratio	°	Typically: 20	Typically: 20	Typically: 18
Sector	±60°	> 10	> 10	> 10
<b>Vertical Pattern:</b>				
Half-power beam width	°	7.4	7.2	6.9
Electrical tilt	°	0–8, continuously adjustable		
Sidelobe suppression for first sidelobe above main beam	°T dB	0 ... 4 ... 8 ≥ 17 ... 17 ... 15	0 ... 4 ... 8 ≥ 17 ... 17 ... 15	0 ... 4 ... 8 ≥ 17 ... 17 ... 15
Impedance	Ω	50		
VSWR		< 1.5		
Isolation, between ports	dB	Intrasystem: > 27, Intersystem: > 27		
Intermodulation IM3	dBc	< –150 (2 x 43 dBm carrier)		
Max. effective power per port	W	400 (at 50 °C ambient temperature)		
Max. effective power for the antenna		1200 (at 50 °C ambient temperature)		



## Mechanical specifications

Input	4x 7-16 female	
Connector position	Bottom	
Adjustment mechanism	2x, Position bottom continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 840   189 Maximal: 925   208
Max. wind velocity	km/h mph	200 124
Height/width/depth	mm inches	2631 / 374 / 106 103.6 / 14.7 / 4.2
Category of mounting hardware	H (Heavy)	
Weight	kg lb	23 / 25 (clamps incl.) 50.7 / 55.1 (clamps incl.)
Packing size	mm inches	3055 x 133 x 388 120.0 x 5.2 x 15.3
Scope of supply	Panel and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–8°	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Mast diameter: 42–115   1.7–4.5	2

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

**Material:** **Reflector screen:** Weather-proof aluminum.  
**Fiberglass radome:** The grey fiberglass radomes of these antennas are very stable and extraordinarily stiff. They are resistant to ultraviolet radiation and can also be painted to match their surroundings.  
**All screws and nuts:** Stainless steel or hot-dip galvanized steel.

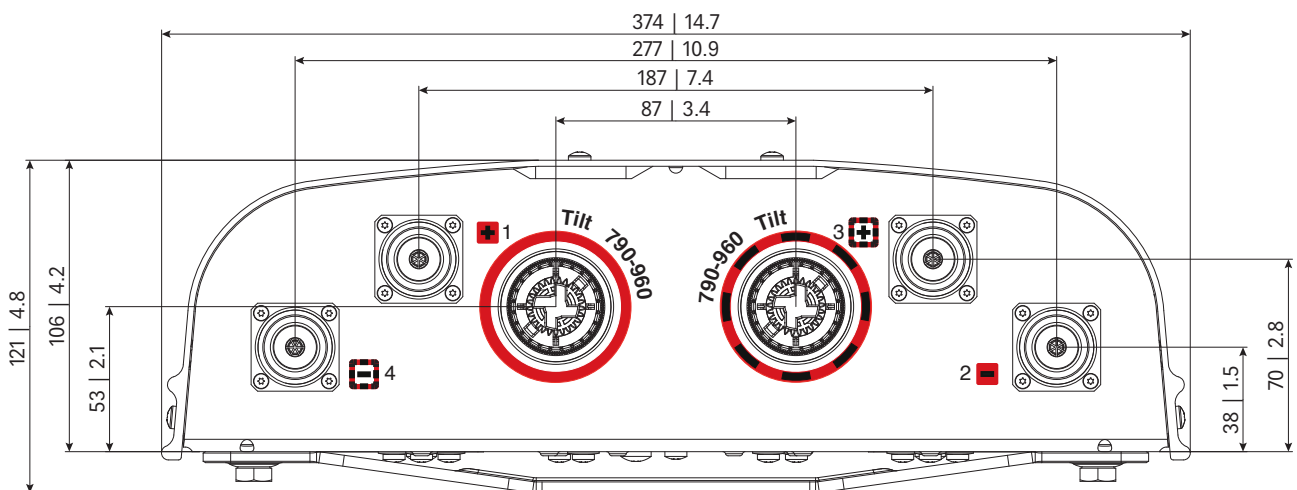
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Correlation Table

Frequency range	Array	Connector / Ports
790–960 MHz	R1	1–2
790–960 MHz	R2	3–4



## Layout of interface



Bottom view  
All dimensions in mm | inches

# Single-Band Configuration

## nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
<b>1x Midband</b>						
Antenna 1200 ØL 1M 0.3m 80010761	1x 1710–2690	65	12.0	4	7-16	<a href="#">56</a>
<b>2x Midband</b>						
Antenna 2200 ØL 2M 0.9m 80010682	2x 1710–2690	65	16.5	0–12	7-16	<a href="#">59</a>
Antenna 2500 ØL 2M 1.0m 80010922	2x 3300–3800	65	17.5	2–12	4.3-10	<a href="#">62</a>
Antenna 2200 ØL 2M 1.3m KRE 101 2452/1	2x 1695–2690	65	18.0	0–10	4.3-10	<a href="#">66</a>
Antenna 2200 ØL 2M 1.5m 80020622	2x 1695–2690	65	18.0	2–14 ESLS	4.3-10	<a href="#">69</a>
<b>3x Midband</b>						
<a href="#">Antenna 2403 ØL 3M 0.5m</a> KRE 101 2656/1	3x 1695–2690	65	13.6	2–12	4.3-10	<a href="#">73</a>
<b>4x Midband</b>						
Antenna 2401 ØL 4M 1.2m KRE 101 2406/1	4x 1695–2690	65	17.5	2–12	4.3-10	<a href="#">78</a>

[New product](#)

### Abbreviations:

ESLS Enhanced Side Lobe Suppression (above or below horizon)



# Antenna 1200 0L 1M 0.3m

80010761

Capacity

Compact

Coverage

65° | 1710–2690 MHz | 12.0 dBi  
2x 7-16



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## Midband

## Y1

Frequency range	MHz	1710 – 1990	1920 – 2200	2200 – 2490	2490 – 2690
Polarization	°	+45, –45	+45, –45	+45, –45	+45, –45
Gain	dBi	11	11.5	12.2	12.7
<b>Horizontal Pattern:</b>					
Half-power beam width	°	67	65	60	58
Front-to-back ratio, copolar	dB	> 30	> 28	> 28	> 27
Cross polar ratio Maindirection Sector	$\theta^\circ$ $\pm 60^\circ$ dB	Typically: > 20 > 8	Typically: > 20 > 8	Typically: > 20 > 8	Typically: > 20 > 8
<b>Vertical Pattern:</b>					
Half-power beam width	°	36	31	25	25
Electrical tilt	°	3, fixed	3, fixed	4, fixed	4, fixed
Impedance	$\Omega$	50			
VSWR		< 1.5			
Isolation, between ports	dB	> 28			
Intermodulation IM3	dBc	< –150 (2 x 43 dBm carrier)			
Max. power per input	W	150 (at 50 °C ambient temperature)			



## Mechanical specifications

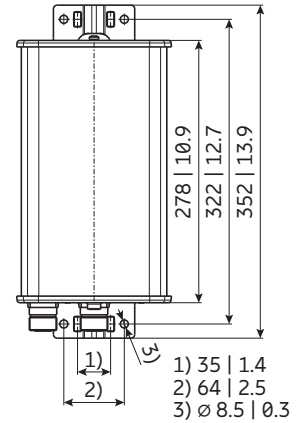
Input	2x 7-16 female		
Connector position	Bottom		
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal:	55   12
		Maximal:	55   12
Max. wind velocity	km/h mph	200 124	
Height/width/depth	mm inches	278 / 154 / 69 10.9 / 6.1 / 2.7	
Category of mounting hardware	L (Light)		
Weight	kg lb	1.8 (hose clamps incl.) 4.0 (hose clamps incl.)	
Packing size	mm inches	375 x 172 x 92 14.8 x 6.8 x 39.1	
Scope of supply	Panel and 2 hose clamps for 40–150 mm   1.6–5.9 inches diameter		

## Correlation Table

Frequency range	Array	Connector
1710–2690 MHz	Y1	1–2

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Pole diameter: 42–115   1.7–4.5	2
731651	1 clamp	Pole diameter: 28–60   1.1–2.4	2
85010002	1 clamp	Pole diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Pole diameter: 210–380   8.3–15.0	2
732327	1 downtilt kit	Downtilt angle: 0°–36°	1



All dimensions  
in mm | inches

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
SET 133 069/1	1 hose clamp	Pole diameter: 40–150   1.6–5.9	2

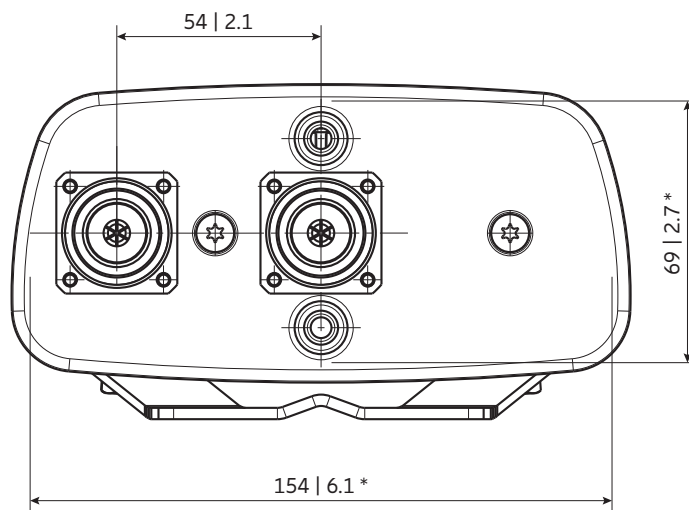
For downtilt mounting use the clamps for an appropriate pole diameter together with the downtilt kit.

**Please note:** Using a downtilt kit is only possible in combination with clamps 731651, 738546 or 85010002 or 85010003.

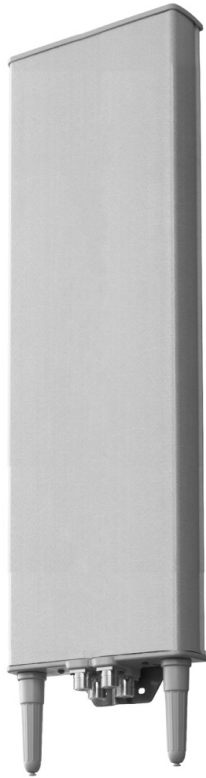
**Material:** Reflector screen: Aluminum. Radiator: Tin-plated zinc.  
Flat fiberglass radome: The max. radome depth is only 69 mm. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is grey.  
All nuts and bolts: Stainless steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches



nMB

# Antenna 2200 0L 2M 0.9m

80010682

Capacity

**Compact**

Coverage

65° | 2x 1710–2690 MHz | 16.5 dBi

Electrical downtilt set by hand or by optional RCU (Remote Control Unit)



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Midband		Y1; Y2			
Frequency range	MHz	1710 – 1990	1920 – 2200	2200 – 2490	2490 – 2690
Polarization	°	+45, –45	+45, –45	+45, –45	+45, –45
Gain at 0° tilt	dBi	15.8	16.2	16.6	16.7
<b>Horizontal Pattern:</b>					
Half-power beam width	°	65	64	60	61
Front-to-back ratio, copolar	dB	> 30	> 30	> 30	> 28
Cross polar ratio Sector	0° ±60° dB	Typically: 25 > 8	Typically: 25 > 8	Typically: 25 > 10	Typically: 25 > 10
<b>Vertical Pattern:</b>					
Half-power beam width	°	11	10	9	8.7
Electrical tilt	°	0–12, continuously adjustable			
Sidelobe supression for first sidelobe above main beam	°T dB	0 ... 6 ... 12 ≥ 12 ... 13 ... 15	0 ... 6 ... 12 ≥ 13 ... 14 ... 16	0 ... 6 ... 12 ≥ 13 ... 15 ... 16	0 ... 6 ... 12 ≥ 15 ... 15 ... 17
Impedance	Ω	50			
VSWR		< 1.5			
Isolation, between ports	dB	> 30			
Intermodulation IM3	dBc	< –150 (2 x 43 dBm carrier)			
Max. eff. power per port Max. eff. power for the antenna	W	200 (at 50 °C ambient temperature) 600 (at 50 °C ambient temperature)			

## Mechanical specifications

Input	4x 7-16 female	
Connector position	Bottom	
Adjustment mechanism	2x, Position bottom continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 345   78 Maximal: 380   85
Max. wind velocity	km/h mph	200 124
Height / width / depth	mm inches	855 / 315 / 71 33.7 / 12.4 / 2.8
Category of mounting hardware	M (Medium)	
Weight	kg lb	11 / 13.2 (clamps incl.) 24.3 / 29.1 (clamps incl.)
Packing size	mm inches	1146 x 337 x 112 45.1 x 13.3 x 4.4
Scope of supply	Panel and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks	Units per antenna
		mm   inches	
731651	1 clamp	Mast diameter: 28 – 60   1.1 – 2.4	2
85010002	1 clamp	Mast diameter: 110 – 220   4.3 – 8.7	2
85010003	1 clamp	Mast diameter: 210 – 380   8.3 – 15.0	2
737978	1 downtilt kit	Downtilt angle: 0°–24°	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks	Units per antenna
		mm   inches	
738546	1 clamp	Mast diameter: 42 – 115   1.7 – 4.5	2

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

### Material:

**Reflector screen:** Aluminum.

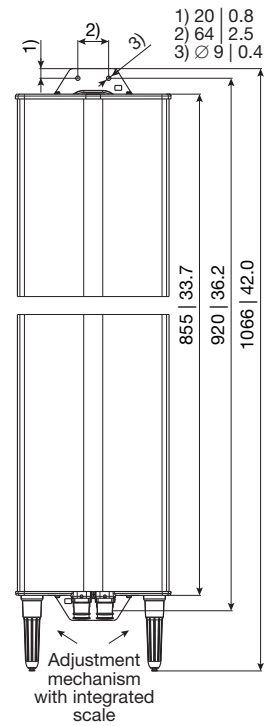
**Radiator:** Tin-plated zinc.

**Flat fiberglass radome:** The max. radome depth is only 71 mm. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is grey.

**All screws and nuts:** Stainless steel or hot-dip galvanized steel.

### Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



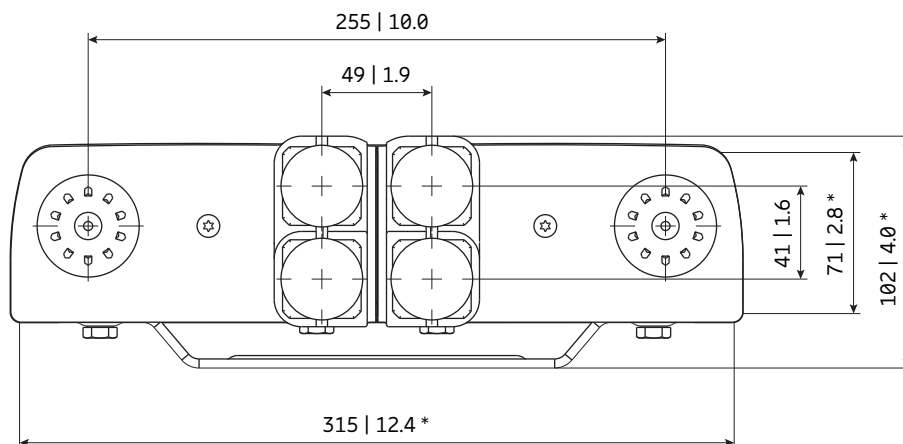
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
1710–2690 MHz	Y1	1–2
1710–2690 MHz	Y2	3–4



## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches



nMB

# Antenna 2500 0L 2M 1.0m

80010922

Capacity

Compact

Coverage

65° | 2x 3300–3800 MHz | 17.5 dBi

Electrical downtilt set by hand or by optional RCU (Remote Control Unit)



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Left side, midband		P1, connector 1 – 2	
Frequency Range	MHz	3300 – 3590	3600 – 3800
Gain at mid Tilt	dBi	17.5	17.6
Gain over all Tilts	dBi	17.3 ± 0.4	17.4 ± 0.5
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	66 ± 4.6	63 ± 4.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 21
Cross Polar Discrimination over Sector	dB	> 12.0	> 9.0
Azimuth Beam Port-to-Port Tracking	dB	< 1.0	< 1.5
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	6.0 ± 0.3	5.6 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0 (P1 + P2 simultaneously)	
Tilt Accuracy	°	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 24	> 23
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 17	> 18
Cross Polar Isolation	dB	> 25, typ. > 28	
Port to Port Isolation	dB	> 27, typ. > 30 (P1 // P2)	
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)	
Max. Effective Power Ports P1	W	300 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, midband		P2, connector 3 – 4	
Frequency Range	MHz	3300 – 3590	3600 – 3800
Gain at mid Tilt	dBi	17.5	17.8
Gain over all Tilts	dBi	17.3 ± 0.5	17.6 ± 0.4
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	67 ± 3.8	63 ± 4.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 25
Cross Polar Discrimination over Sector	dB	> 12.0	> 9.0
Azimuth Beam Port-to-Port Tracking	dB	< 1.5	< 1.5
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	5.9 ± 0.4	5.6 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0 (P1 + P2 simultaneously)	
Tilt Accuracy	°	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 22	> 22
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 17	> 17
Cross Polar Isolation	dB	> 25, typ. > 28	
Port to Port Isolation	dB	> 27, typ. > 30 (P2 // P1)	
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)	
Max. Effective Power Ports P2	W	300 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 28
Passive Intermodulation	dBc	< -150 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	400 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	1x, Position bottom continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 235   53 Maximal: 255   57
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	970 / 179 / 76 38.2 / 7.0 / 3.0
Category of Mounting Hardware	M (Medium)	
Weight	kg lb	5.4 / 7.6 (clamps incl.) 11.9 / 16.7 (clamps incl.)
Packing Size	mm inches	1320 / 190 / 95 52.0 / 7.5 / 3.7
Scope of Supply	Panel and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
731651	1 clamp	Mast diameter: 28 – 60   1.1 – 2.4	2
85010002	1 clamp	Mast diameter: 110 – 220   4.3 – 8.7	2
85010003	1 clamp	Mast diameter: 210 – 380   8.3 – 15.0	2
737978	1 downtilt kit	Downtilt angle: 0°–13°	1

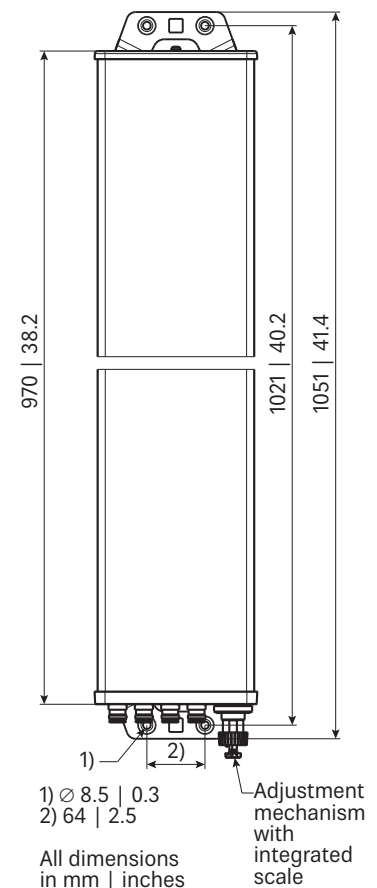
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Mast diameter: 42 – 115   1.7 – 4.5	2

Wall mounting: No additional mounting kit needed.

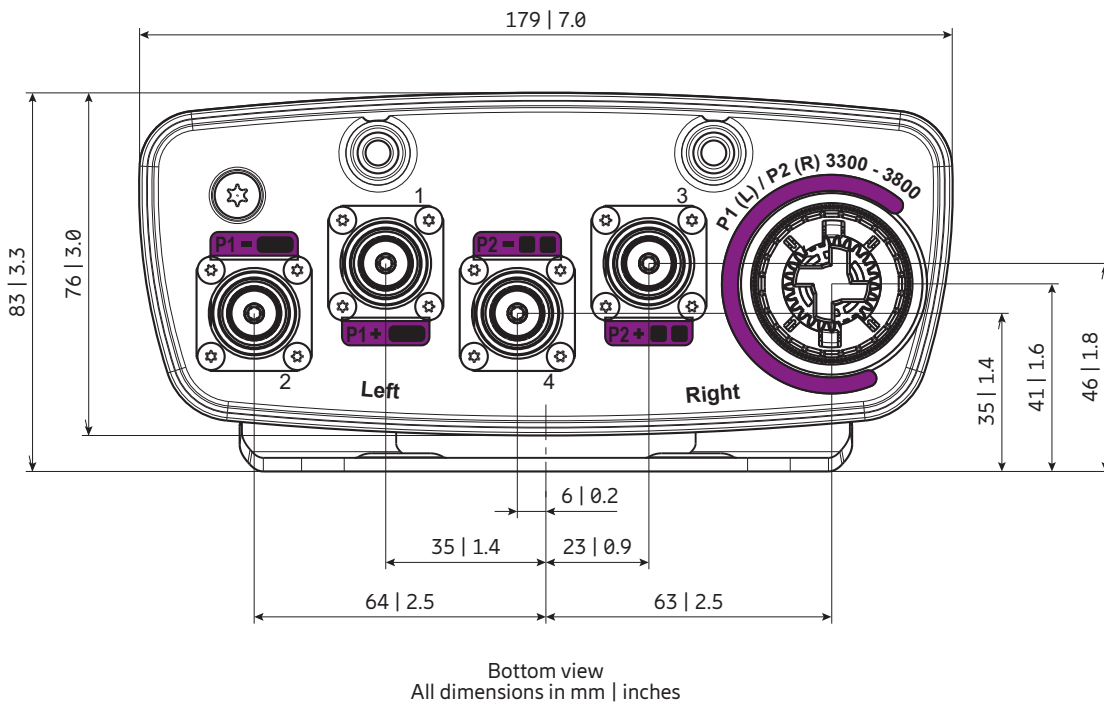
**Material:** **Reflector screen:** Aluminum. **Fiberglass radome:** Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is grey.  
**All screws and nuts:** Stainless steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.





## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
3300–3800 MHz	P1	1–2
3300–3800 MHz	P2	3–4





# Antenna 2200 0L 2M 1.3m

KRE 101 2452/1

Capacity

Compact

Coverage

65° | 2x 1695–2690 MHz | 18.0 dBi  
Electrical downtilt set by integrated RET



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Left side, midband		Y1, connector 1–2				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.4	17.6	17.8	17.8	17.9
Gain over all Tilts	dBi	17.4 ± 0.5	17.6 ± 0.5	17.7 ± 0.6	17.8 ± 0.8	17.8 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	67 ± 2.5	65 ± 1.3	65 ± 1.1	64 ± 2.6	61 ± 3.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 25	> 25	> 25
Cross Polar Discrimination at Boresight	dB	> 30	> 29	> 29	> 24	> 22
Cross Polar Discrimination over Sector	dB	> 18.0	> 17.5	> 14.5	> 8.0	> 5.5
Azimuth Beam Port-to-Port Tracking	dB	< 1.5	< 1.5	< 1.5	< 2.0	< 3.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.5 ± 0.5	7.0 ± 0.2	6.7 ± 0.5	5.9 ± 0.2	5.4 ± 0.3
Electrical Downtilt continuously adjustable	°	0.0 – 10.0				
Tilt Accuracy	°	< 0.5	< 0.5	< 0.6	< 0.5	< 0.6
First Upper Sidelobe Suppression	dB	> 15	> 16	> 17	> 18	> 15
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 14	> 15	> 16	> 16	> 14
Intra-Cluster Isolation	dB	≥ 28				
Port to Port Isolation	dB	≥ 28 (Y1 // Y2)				
Max. Effective Power per Port	W	200				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, midband		Y2, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.3	17.5	17.7	17.7	17.9
Gain over all Tilts	dBi	17.3 ± 0.7	17.5 ± 0.7	17.7 ± 0.7	17.6 ± 0.9	17.8 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	67 ± 2.5	64 ± 1.5	64 ± 1.1	62 ± 2.9	60 ± 3.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 24	> 23	> 23	> 24
Cross Polar Discrimination at Boresight	dB	> 33	> 30	> 30	> 22	> 22
Cross Polar Discrimination over Sector	dB	> 16.0	> 15.5	> 14.0	> 8.5	> 6.5
Azimuth Beam Port-to-Port Tracking	dB	< 1.5	< 1.5	< 2.0	< 2.0	< 3.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.5 ± 0.5	7.0 ± 0.3	6.7 ± 0.4	5.8 ± 0.2	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	0.0 – 10.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 17	> 16	> 18	> 17	> 16
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 15	> 15	> 17	> 15	> 15
Intra-Cluster Isolation	dB	≥ 28				
Port to Port Isolation	dB	≥ 28 (Y2 // Y1)				
Max. Effective Power per Port	W	200				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	600

Values based on NGMN-P-BASTA (version 11.1) requirements.

**Material:**

**Reflector screen and dipoles:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

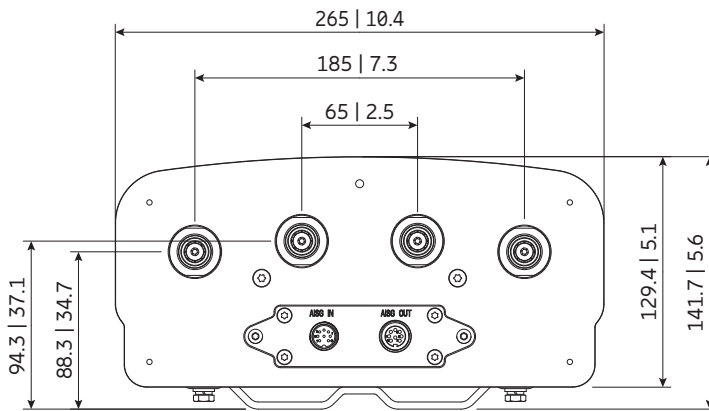
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

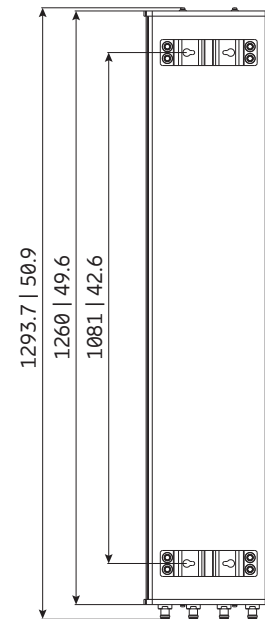
Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 345   78 Maximal: 345   78
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	1260 / 265 / 120 49.6 / 10.4 / 4.7
Weight	kg lb	10.8 / 13.6 (clamps incl.) 23.8 / 30 (clamps incl.)
Packing Size	mm inches	1535 / 315 / 185 60.4 / 12.4 / 7.3
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit (0°–16°) SXA 120 131/1, integr. RET KRY 121 78/1	

## Layout of interface



Bottom view

\* Dimensiones refer to radome  
All dimensions in mm | inches



## Correlation Table

Frequency range	Array	Connector / Ports
1695–2690 MHz	Y1	1–2
1695–2690 MHz	Y2	3–4



Y1 Y2  
Left Right



# Antenna 2200 0L 2M 1.5m

80020622

Capacity

Compact

Coverage

65° | 2x 1695–2690 MHz | 18.0 dBi

Electrical downtilt set by hand or by optional RCU (Remote Control Unit)



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Left side, midband		Y1, connector 1–2			
Frequency Range	MHz	1695 – 1880	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.4	18.0	18.6	18.8
Gain over all Tilts	dBi	17.3 ± 0.4	17.9 ± 0.4	18.3 ± 0.4	18.6 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 3.2	63 ± 2.6	60 ± 3.5	56 ± 2.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 24	> 26	> 23
Cross Polar Discrimination at Boresight	dB	> 22	> 22	> 22	> 18
Cross Polar Discrimination over Sector	dB	> 12.5	> 10.0	> 9.5	> 13.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.8 ± 0.5	6.1 ± 0.5	5.2 ± 0.3	4.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 14.0			
Tilt Accuracy	°	< 0.3	< 0.3	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 20	> 20	> 20	> 20
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 17	> 17	> 16	> 16
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 30 (Y1 // Y2)			
Max. Effective Power per Port	W	250 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y1	W	500 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, midband		Y2, connector 3–4			
Frequency Range	MHz	1695 – 1880	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.2	17.9	18.6	18.9
Gain over all Tilts	dBi	17.1 ± 0.4	17.8 ± 0.5	18.4 ± 0.4	18.7 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 3.8	64 ± 4.1	59 ± 2.6	55 ± 2.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 26	> 25	> 23
Cross Polar Discrimination at Boresight	dB	> 22	> 22	> 22	> 19
Cross Polar Discrimination over Sector	dB	> 13.5	> 11.0	> 9.5	> 12.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.8 ± 0.4	6.0 ± 0.5	5.2 ± 0.3	4.8 ± 0.2
Electrical Downtilt continuously adjustable	°	2.0 – 14.0			
Tilt Accuracy	°	< 0.3	< 0.3	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 19	> 19	> 20	> 20
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 18	> 17	> 17	> 15
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 30 (Y2 // Y1)			
Max. Effective Power per Port	W	250 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y2	W	500 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 30
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	-45, +45
Max. Effective Power for the Antenna	W	700 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	2x, Position bottom continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 565   127 Maximal: 620   139
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	1471 / 275 / 86 57.9 / 10.8 / 3.4
Category of Mounting Hardware	M (Medium)	
Weight	kg lb	13.0 / 15.2 (clamps incl.) 28.7 / 33.5 (clamps incl.)
Packing Size	mm inches	1791 / 298 / 119 70.5 / 11.7 / 4.7
Scope of Supply	Panel and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
731651	1 clamp	Mast diameter: 28 – 60   1.1 – 2.4	2
85010002	1 clamp	Mast diameter: 110 – 220   4.3 – 8.7	2
85010003	1 clamp	Mast diameter: 210 – 380   8.3 – 15.0	2
737978	1 downtilt kit	Downtilt angle: 0°–15°	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Mast diameter: 42 – 115   1.7 – 4.5	2

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

Wall mounting: No additional mounting kit needed.

**Material:**

**Reflector screen:** Aluminum.

**Radiator:** Tin-plated zinc.

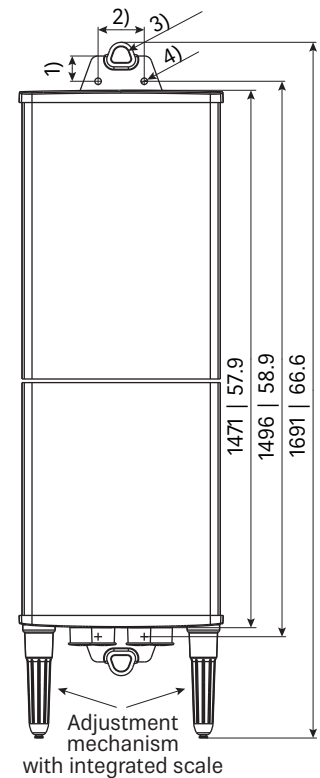
**Flat fiberglass radome:** The max. radome depth is only 86 mm | 3.4 inches. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting.

The color of the radome is grey.

**All screws and nuts:** Stainless steel.

**Grounding:**

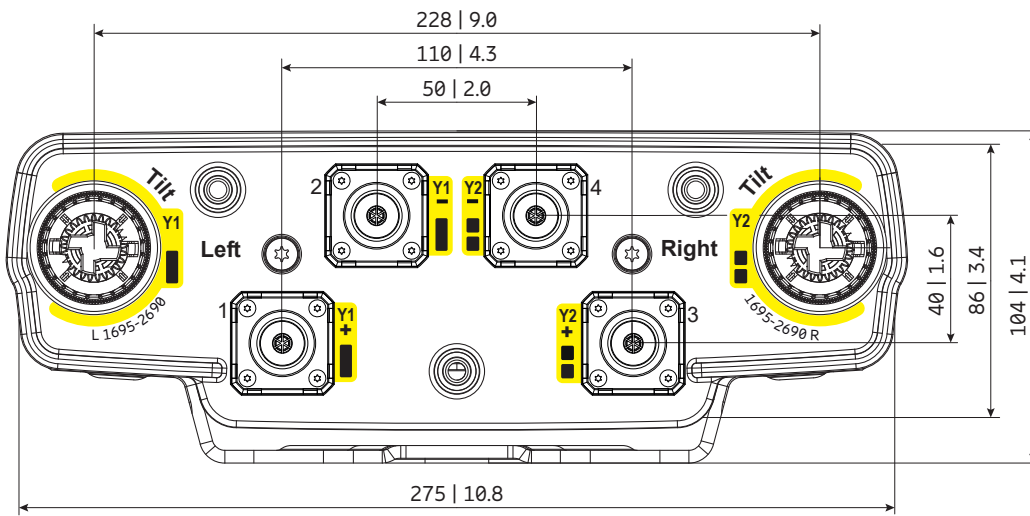
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 35 | 1.4      3)  $\varnothing$  22 | 0.9  
2) 64 | 2.5      4)  $\varnothing$  9 | 0.4

All dimensions in mm | inches

## Layout of interface



Bottom view  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
1695–2690 MHz	Y1	1–2
1695–2690 MHz	Y2	3–4





New product



nMB

# Antenna 2403 0L 3M 0.5m

KRE 101 2656/1

Capacity

Compact

Coverage

65° | 3x 1695–2690 MHz | 13.6 dBi  
Electrical downtilt set by integrated RET



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Left side, midband		Y1, connector 1–2				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	13.4	13.4	13.2	13.7	13.5
Gain over all Tilts	dBi	13.4 ± 0.2	13.4 ± 0.3	13.2 ± 0.3	13.6 ± 0.3	13.5 ± 0.3
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69 ± 6.3	67 ± 7.5	69 ± 5.2	66 ± 5.3	63 ± 5.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 20	> 19	> 20	> 18
Cross Polar Discrimination at Boresight	dB	> 21	> 21	> 19	> 19	> 17
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	19.8 ± 1.3	18.7 ± 0.9	17.5 ± 1.8	14.9 ± 0.4	13.5 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.8	< 0.9	< 1.2	< 0.9	< 0.9
First Upper Sidelobe Suppression	dB	> 16	> 16	> 13	> 13	> 13
Intra-Cluster Isolation	dB	> 23				
Inter-Cluster Isolation	dB	> 23 (Y1 // Y2, Y3)				
Max. Effective Power per Port	W	100 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center, midband		Y2, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	13.5	13.6	13.4	13.5	13.6
Gain over all Tilts	dBi	13.5 ± 0.3	13.6 ± 0.4	13.3 ± 0.4	13.5 ± 0.3	13.6 ± 0.4
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 5.9	60 ± 6.6	65 ± 9.3	64 ± 5.2	61 ± 5.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 21	> 21	> 22	> 21
Cross Polar Discrimination at Boresight	dB	> 22	> 22	> 17	> 18	> 18
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	19.9 ± 1.2	18.6 ± 1.2	17.3 ± 1.4	15.1 ± 0.7	13.2 ± 0.8
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 1.6	< 1.5	< 1.6	< 0.6	< 0.7
First Upper Sidelobe Suppression	dB	> 15	> 14	> 13	> 11	> 11
Intra-Cluster Isolation	dB	> 23				
Inter-Cluster Isolation	dB	> 23 (Y2 // Y1, Y3)				
Max. Effective Power per Port	W	100 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband

## Y3, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	13.3	13.4	13.3	13.8	13.6
Gain over all Tilts	dBi	13.3 ± 0.2	13.4 ± 0.4	13.2 ± 0.5	13.7 ± 0.2	13.6 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	71 ± 4.0	69 ± 8.3	69 ± 9.2	63 ± 3.2	62 ± 7.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 19	> 19	> 20	> 18
Cross Polar Discrimination at Boresight	dB	> 21	> 21	> 16	> 19	> 18
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	19.9 ± 1.1	18.5 ± 1.1	17.3 ± 1.5	14.7 ± 0.6	13.3 ± 0.7
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.9	< 1.1	< 1.4	< 0.9	< 0.7
First Upper Sidelobe Suppression	dB	> 14	> 13	> 12	> 12	> 14
Intra-Cluster Isolation	dB	> 23				
Inter-Cluster Isolation	dB	> 23 (Y3 // Y1, Y2)				
Max. Effective Power per Port	W	100 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 23
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	300 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Material:

**Reflector screen and dipoles:**  
Aluminum.

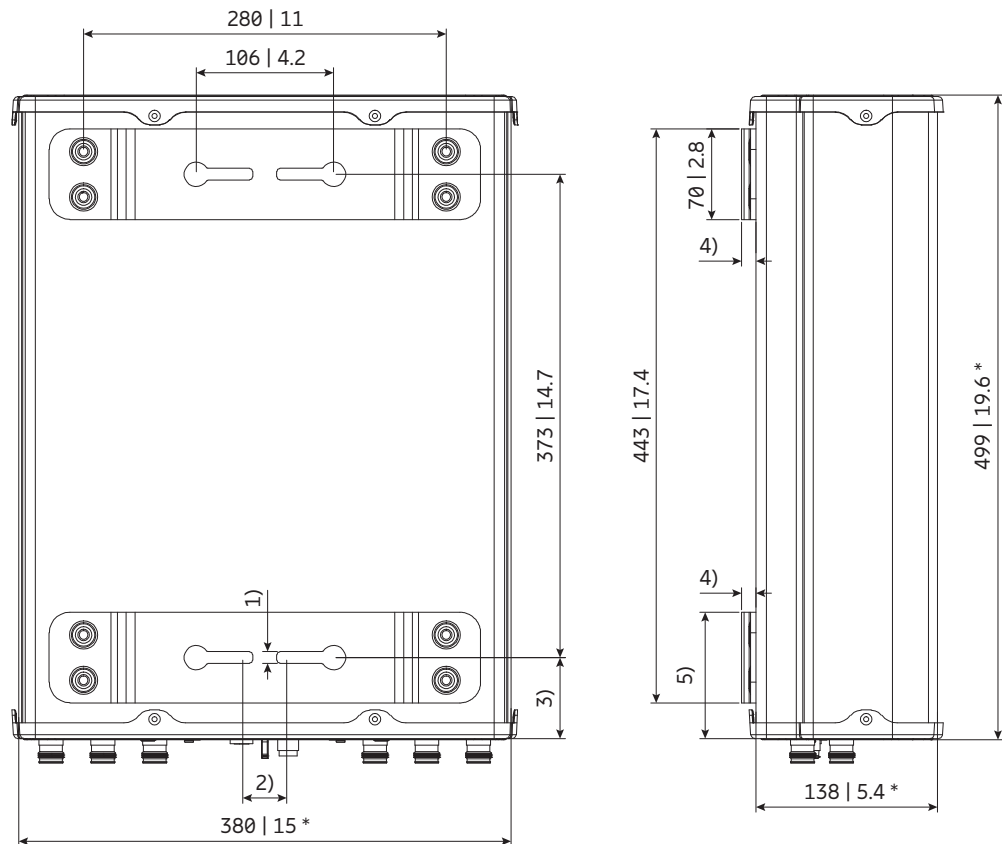
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

Input	6x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 200   45 Maximal: 200   45
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	499 / 380 / 138 19.6 / 15.0 / 5.4
Weight	kg lb	9.4 / 12.2 (clamps incl.) 20.6 / 26.9 (clamps incl.)
Packing Size	mm inches	730 / 410 / 185 28.7 / 16.1 / 7.3
Scope of Supply	Antenna, mounting kit (42–100 mm) incl. mech. Tilt-kit (3°–15°) SXA 216 4266/1, integr. RET KRY 121 79/3	

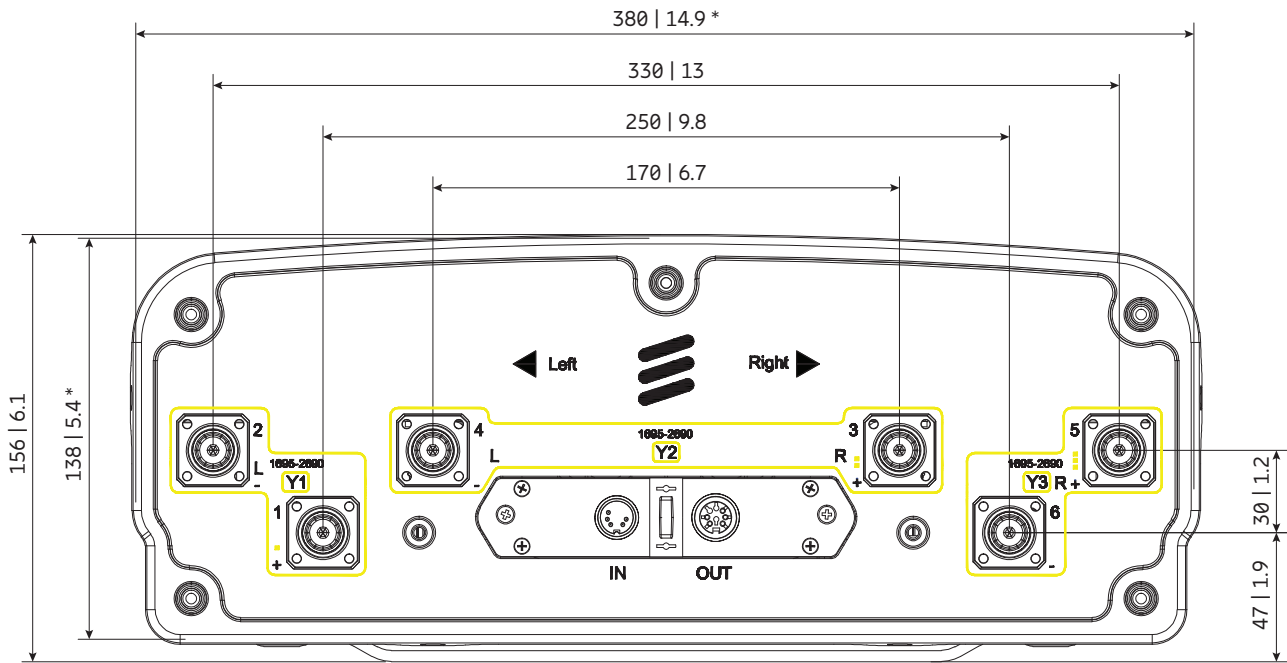


- 1) 9.2 | 0.4  
2) 34 | 1.3  
3) 62.5 | 2.5  
4) 11 | 0.4  
5) 97.5 | 3.8

All dimensions in mm | inches

\* Dimensions refer to radome

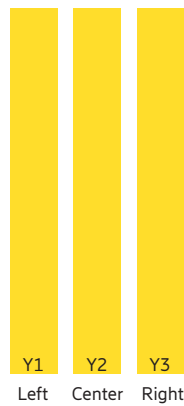
### Layout of interface



Bottom view  
 \* Dimensiones refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
1695–2690 MHz	Y1	1–2
1695–2690 MHz	Y2	3–4
1695–2690 MHz	Y3	5–6





# Antenna 2401 0L 4M 1.2m

KRE 101 2406/1

Capacity **Compact** Coverage

65° | 4x 1695–2690 MHz | 17.5 dBi  
Electrical downtilt set by integrated RET



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Left side, midband		Y1, connector 1–2				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.2	16.7	17.1	17.5	18.1
Gain over all Tilts	dBi	16.2 ± 0.3	16.6 ± 0.6	17.0 ± 0.7	17.5 ± 0.7	18.1 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 3.8	60 ± 4.2	58 ± 3.8	58 ± 2.5	52 ± 4.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 29	> 29	> 25	> 25
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.5 ± 0.6	8.2 ± 0.4	7.6 ± 0.5	6.8 ± 0.4	6.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.8	< 0.7	< 0.6	< 0.7
First Upper Sidelobe Suppression	dB	> 15	> 18	> 18	> 23	> 21
Inter-Cluster Isolation	dB	> 28				
Intra-Cluster Isolation	dB	28 (Y1 // Y2, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y1	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband, center		Y2, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.2	16.8	17.1	17.3	17.9
Gain over all Tilts	dBi	16.2 ± 0.6	16.8 ± 0.5	17.0 ± 0.6	17.4 ± 0.6	17.9 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 6.2	56 ± 3.0	56 ± 2.6	59 ± 2.9	53 ± 3.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 29	> 30	> 31
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.4 ± 0.4	8.0 ± 0.4	7.5 ± 0.5	6.8 ± 0.3	6.6 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.6	< 0.5
First Upper Sidelobe Suppression	dB	> 18	> 20	> 21	> 17	> 17
Inter-Cluster Isolation	dB	> 28				
Intra-Cluster Isolation	dB	28 (Y2 // Y1, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y2	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband, center

## Y3, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.2	16.8	17.1	17.4	18.1
Gain over all Tilts	dBi	16.2 ± 0.5	16.7 ± 0.6	17.0 ± 0.6	17.5 ± 0.7	18.0 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 5.2	57 ± 3.3	56 ± 2.1	59 ± 2.7	52 ± 3.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 28	> 29	> 30	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.4 ± 0.4	8.0 ± 0.4	7.5 ± 0.5	6.8 ± 0.2	6.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.6	< 0.6
First Upper Sidelobe Suppression	dB	> 18	> 22	> 22	> 21	> 20
Inter-Cluster Isolation	dB	> 28				
Intra-Cluster Isolation	dB	28 (Y3 // Y2, Y1, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y3	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband

## Y4, connector 7–8

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.1	16.6	17.0	17.5	17.9
Gain over all Tilts	dBi	16.1 ± 0.5	16.5 ± 0.5	16.9 ± 0.7	17.5 ± 0.7	17.9 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 4.6	60 ± 4.4	59 ± 4.5	58 ± 1.9	53 ± 3.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 28	> 28	> 27	> 24
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.7 ± 0.5	8.3 ± 0.5	7.7 ± 0.7	6.9 ± 0.2	6.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.8	< 0.7	< 0.5	< 0.4	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 17	> 17	> 22	> 21
Inter-Cluster Isolation	dB	> 28				
Intra-Cluster Isolation	dB	28 (Y4 // Y2, Y3, Y1)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y4	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	800 (at 40 $^{\circ}$ C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

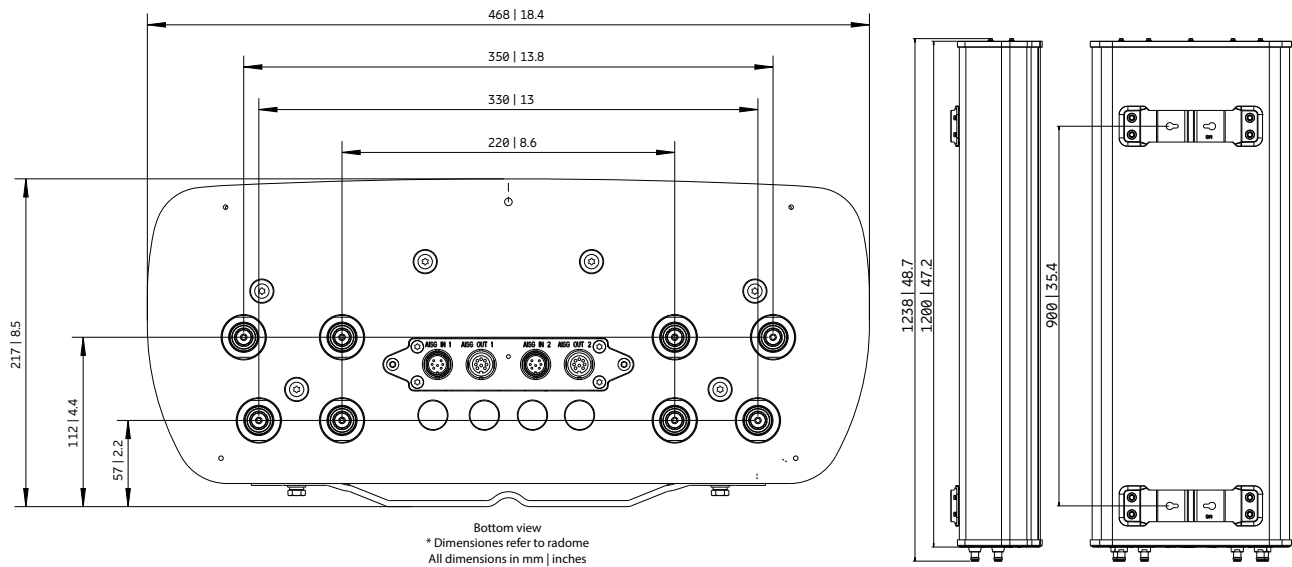
**Material:** **Reflector screen and dipoles:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

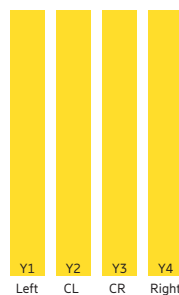
Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 630   141 Maximal: 630   141
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1200 / 468 / 192 47.2 / 18.7 / 7.9
Weight	kg lb	23.8 / 29.2 (clamps incl.) 52.5 / 64.4 (clamps incl.)
Packing Size	mm inches	1450 / 550 / 265 57.1 / 21.7 / 10.4
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit (0 $^{\circ}$ –20 $^{\circ}$ ) SXA 216 011/1, integr. RET KRY 121 78/2	

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
1695–2690 MHz	Y1	1–2
1695–2690 MHz	Y2	3–4
1695–2690 MHz	Y3	5–6
1695–2690 MHz	Y4	7–8



# Multi-Band Configuration

## 1LB nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
1x Lowband   1x Midband						
Antenna 3001 1L 1M 0.3m 80010753	1x 790–960	C 65	8.0	0	7-16	<a href="#">84</a>
	1x 1710–2690	65	9.0	0		
Antenna 3000 1L 1M 0.6m 80010715	1x 698–960	65	10.5	2.5	4.3-10	<a href="#">87</a>
	1x 1695–2690	65	13.5	2.5		
1x Lowband   2x Midband						
Antenna 3402 1L 2M 1.4m KRE 101 2559/1	1x 698–960	65	13.5	2–16	4.3-10	<a href="#">91</a>
	2x 1695–2690	65	17.5	2–12		
Antenna 3402 1L 2M 1.5m KRE 101 2413/1	1x 698–960	65	14.5	2–16	4.3-10	<a href="#">96</a>
	2x 1427–2690	65	17.0	2–12		
Antenna 3402 1L 2M 1.9m KRE 101 2560/1	1x 698–960	65	15.0	2–12	4.3-10	<a href="#">100</a>
	2x 1695–2690	65	17.5	2–12		
Antenna 3400 1L 2M 2.4m 80010866	1x 698–960	65	17.0	1–10	7-16	<a href="#">105</a>
	2x 1695–2690	65	18.0	2.5–12		
Antenna 3402 1L 2M 2.7m KRE 101 2561/1	1x 698–960	65	16.5	1–10	4.3-10	<a href="#">110</a>
	2x 1695–2690	65	18.0	2–12		

# Multi-Band Configuration

## 1LB nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
<b>1x Lowband   3x Midband</b>						
<b>Antenna 3601 1L 3M 1.5m</b> KRE 101 2581/1	1x 698–960 3x 1695–2690	65 65	14.8 17.5	2–16 2–12	4.3-10	<a href="#">115</a>
<b>Antenna 3601 1L 3M 2.7m</b> KRE 101 2562/1	1x 698–960 3x 1695–2690	65 65	16.5 17.0	1–10 2–12	4.3-10	<a href="#">120</a>
<b>1x Lowband   4x Midband</b>						
<b>Antenna 3806 1L 4M 0.7m</b> KRE 101 2631/2	1x 698–960 4x 1695–2690	65 65	12.0 13.0	2 fix 2 fix	4.3-10	<a href="#">125</a>
<b>Antenna 3802 1L 4M 2.0m</b> KRE 101 2563/1	1x 698–960 4x 1695–2690	65 65	15.3 16.0	2–12 2–12	4.3-10	<a href="#">130</a>
<b>Antenna 3807 1L 4M 2.6m</b> KRE 101 2663/1	1x 698–960 4x 1695–2690	65 65	16.6 17.1	1–10 2–12	4.3-10	<a href="#">136</a>
<b>Antenna 3803 1L 4M 2.7m</b> KRE 101 2564/1	1x 698–960 4x 1695–2690	65 65	16.5 17.0	1–10 2–12	4.3-10	<a href="#">141</a>

[New product](#)



1LB nMB

# Antenna 3001 1L 1M 0.3m

80010753

Capacity

Compact

Coverage

65° | 790–960 MHz | 8.0 dBi  
65° | 1710–2690 MHz | 9.0 dBi  
2x 7-16

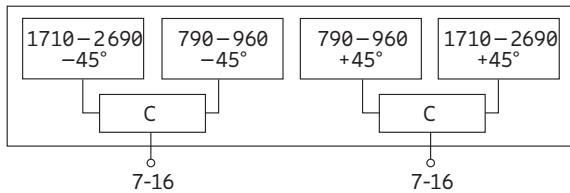


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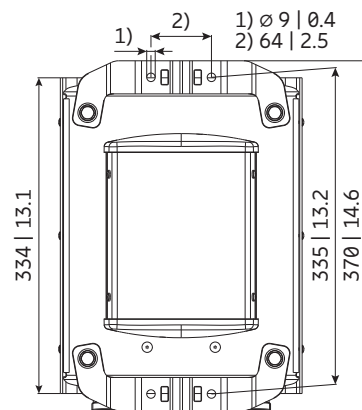
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		R1			Y1			
Frequency range	MHz	790 – 862	824 – 894	880 – 960	1710 – 1990	1920 – 2200	2200 – 2490	2490 – 2690
Polarization	°	+45, –45	+45, –45	+45, –45	+45, –45	+45, –45	+45, –45	+45, –45
Average gain (dBi)	dBi	2 x 7.8	2 x 8.0	2 x 8.5	2 x 7.8	2 x 8.9	2 x 8.7	2 x 8.2
<b>Horizontal Pattern:</b>								
Half-power beam width	°	67			65	55	60	62
Front-to-back ratio	dB	Copolar: > 25	Copolar: > 25	Copolar: > 25	Copolar: > 25	Copolar: > 25	Copolar: > 25	Copolar: > 25
Cross polar ratio Maindirection Sector	0° ±60°	Typically: 15 > 8	Typically: 18 > 8	Typically: 20 > 8	Typically: 25 > 10	Typically: 25 > 10	Typically: 25 > 10	Typically: 25 > 10
<b>Vertical Pattern:</b>								
Half-power beam width	°	65			75	60	60	65
<b>Impedance</b>	Ω	50						
VSWR		< 1.5						
Isolation: Intrasystem	dB	> 30			> 30	> 27	> 25	
Intermodulation IM3	dBc	< –150 dBc (2 x 43 dBm carrier)						
Max. effective power per port	W	200 (at 50 °C ambient temperature)			100 (at 50 °C ambient temperature)			
Max. effective power for the antenna	W	300 (at 50 °C ambient temperature)						



## Mechanical specifications

Input	2x 7-16 female	
Connector position	Bottom	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 100   22 Maximal: 110   25
Max. wind velocity	km/h mph	200 124
Height / width / depth	mm inches	334 / 260 / 136 13.1 / 10.2 / 5.4
Category of mounting hardware	L (Light)	
Weight	kg lb	2.8 (hose clamp incl.) 6.2 (hose clamp incl.)
Packing size	mm inches	495 x 272 x 157 19.5 x 10.7 x 6.2
Scope of Supply	Panel and 1 unit of tension bands for 45 – 125 mm   1.8 – 4.9 inches diameter	



All dimensions in mm | inches

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Pole diameter: 42–115   1.7–4.5	2
731651	1 clamp	Pole diameter: 28–60   1.1–2.4	2
85010002	1 clamp	Pole diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Pole diameter: 210–380   8.3–15.0	2
732327	1 downtilt kit	Downtilt angle: 0°–44°	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
SET 133 069/1	Hose Clamp	Pole diameter: 40–150   1.6–5.9	2

For downtilt mounting use the clamps for an appropriate pole diameter together with the downtilt kit.  
Please note: Using a downtilt kit is only possible in combination with clamps 731651, 738546, 85010002 or 85010003

### Material:

**Reflector screen:** Weather-proof aluminum.

**Fiberglass housing:** The grey fiberglass radomes of these antennas are very stable and extraordinarily stiff. They are resistant to ultraviolet radiation and can also be painted to match their surroundings.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

### Grounding:

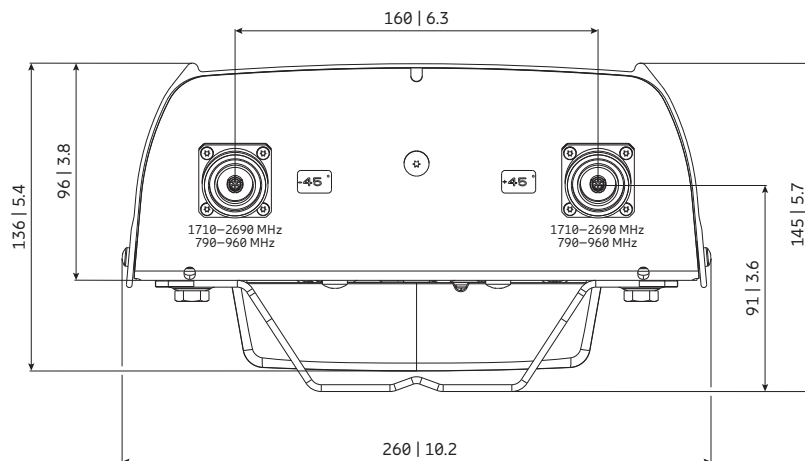
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Correlation Table

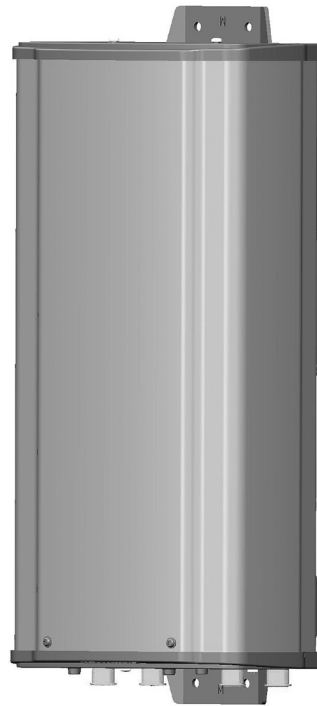
Frequency range	Array	Connector / Ports
790–960 MHz	R1	1–2
1710–2690 MHz	Y1	1–2



## Layout of interface



All dimensions in mm | inches



1LB nMB

# Antenna 3000 1L 1M 0.6m

80010715

Capacity

**Compact**

Coverage

65° | 698–960 MHz | 10.5 dBi

65° | 1695–2690 MHz | 13.5 dBi



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Lowband		R1, connector 1–2		
Frequency range	MHz	698 – 824 MHz	824 – 894 MHz	880 – 960 MHz
Polarization	°	+45, -45	+45, -45	+45, -45
Average gain	dBi	10.1	10.6	10.7
<b>Horizontal Pattern:</b>				
Half-power beam width	°	70	69	69
Front-to-back ratio Total power, ± 30°	dB	> 23	> 25	> 25
Cross polar ratio Maindirection Sector	0° ±60° dB	Typically: 25 > 8	Typically: 28 > 10	Typically: 28 > 10
<b>Vertical Pattern:</b>				
Half-power beam width	°	40	36	35
Electrical tilt	°	2.5, fixed		
Impedance	Ω	50		
VSWR		< 1.5		
Isolation: Intrasystem	dB	> 27, typ. > 30	> 30	> 28, typ. > 30
Isolation: Intersystem	dB	> 26, typ. > 30 (R1 // Y1)		
Intermodulation IM3	dBc	< -153 (2 x 43 dBm carrier)		
Max. effective power per port Max. effective power for the antenna	W	250 (at 50 °C ambient temperature) 400 (at 50 °C ambient temperature)		

Midband		Y1, connector 3–4				
Frequency range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2200 – 2490	2490 – 2690
Polarization	°	+45, -45	+45, -45	+45, -45	+45, -45	+45, -45
Average gain	dBi	13.1	13.7	13.7	13.8	13.6
<b>Horizontal Pattern:</b>						
Half-power beam width	°	62	55	55	55	68
Front-to-back ratio Total power, ± 30°	dB	> 26	> 27	> 27	> 27	> 25
Cross polar ratio Maindirection Sector	0° ±60° dB	Typically: 25 > 10	> 28 > 10	> 28 > 10	> 25 > 10	> 28 > 10
<b>Vertical Pattern:</b>						
Half-power beam width	°	17.6	16.7	15.9	14.5	12.4
Electrical tilt	°	2.5, fixed				
Impedance	Ω	50				
VSWR		< 1.5				
Isolation: Intrasystem	dB	> 26, typ. > 31			> 30, typ. > 31	
Isolation: Intersystem	dB	> 30 (Y1 // R1)				
Intermodulation IM3	dBc	< -153 (2 x 43 dBm carrier)				
Max. effective power per port Max. effective power for the antenna	W	200 (at 50 °C ambient temperature) 400 (at 50 °C ambient temperature)				
Total power for the antenna	W	800 (at 50 °C ambient temperature)				





## Mechanical specifications

Input	4 x 4.3-10 female	
Connector position	Bottom	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 110   25 Maximal: 170   38
Max. wind velocity	km/h mph	241 150
Height/width/depth	mm inches	603 / 300 / 152 23.7 / 11.8 / 6.0
Category of mounting hardware	M (Medium)	
Weight	kg lb	8.5 / 10.7 (clamps incl.) 18.7 / 23.6 (clamps incl.)
Packing size	mm inches	845 x 325 x 193 33.3 x 12.8 x 7.6
Scope of supply	Panel and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110 – 220   4.3 – 8.7	2
85010003	1 clamp	Mast diameter: 210 – 380   8.3 – 15.0	2
737978	1 downtilt kit	Downtilt angle: 0°–15°	1

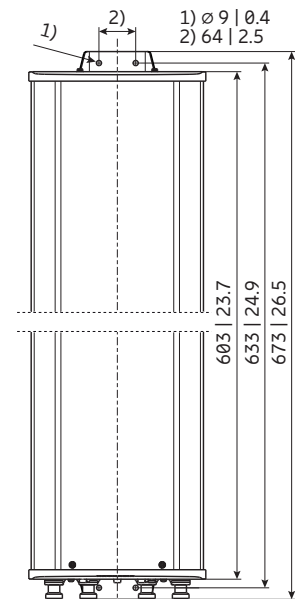
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Mast diameter: 42 – 115   1.7 – 4.5	2

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

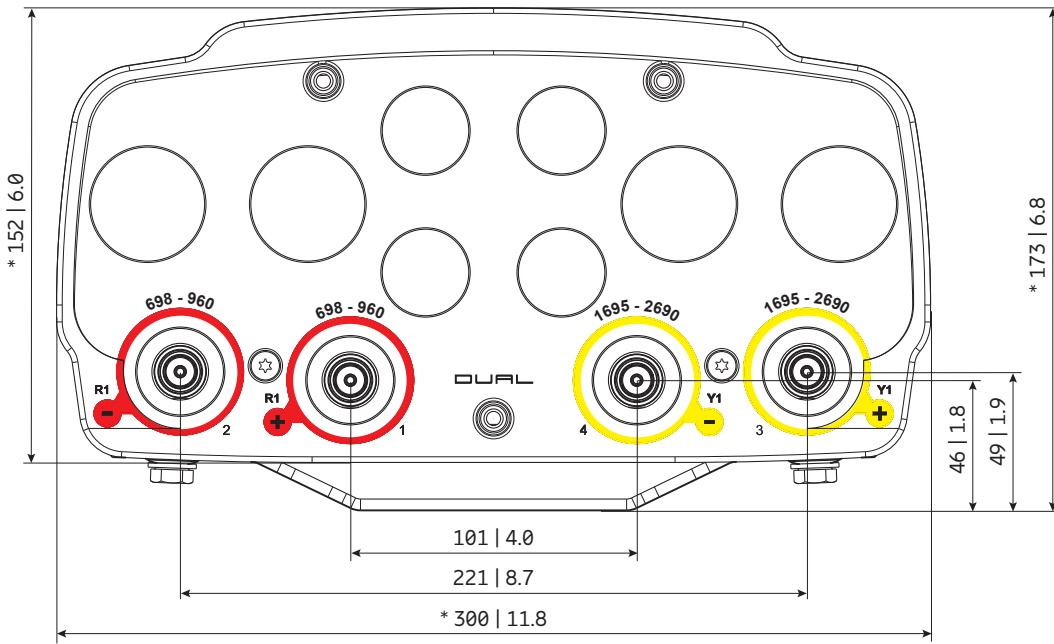
**Material:**  
**Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



All dimensions  
in mm | inches

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches



1LB nMB

# Antenna 3402 1L 2M 1.4m

KRE 101 2559/1

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 13.5 dBi  
65° | 2x 1695–2690 MHz | 17.5 dBi  
Electrical downtilt set by integrated RET



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Center, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.5	13.6	13.6	13.7
Gain over all Tilts	dBi	13.5 ± 0.2	13.6 ± 0.2	13.6 ± 0.2	13.6 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	73 ± 1.5	73 ± 2.3	72 ± 2.7	70 ± 4.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 23	> 21	> 22
Cross Polar Discrimination at Boresight	dB	> 19	> 16	> 17	> 16
Azimuth Beam Squint	°	1 ± 2.7	1 ± 2.1	0 ± 2.0	-1 ± 1.8
Azimuth Beam Port-to-Port Tracking	dB	1.5	1.0	1.0	1.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	17.2 ± 1.3	15.8 ± 0.8	15.2 ± 1.0	14.0 ± 0.9
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.6	< 0.6	< 0.6	< 0.7
First Upper Sidelobe Suppression	dB	> 13	> 13	> 13	> 14
Intra-Cluster Isolation	dB	> 28			
Inter-Cluster Isolation	dB	> 28 (R1 // Y1, Y2)			
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.1	17.4	17.4	17.3	17.4
Gain over all Tilts	dBi	17.1 ± 0.6	17.3 ± 0.4	17.3 ± 0.6	17.3 ± 0.7	17.3 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 5.4	59 ± 3.1	59 ± 3.0	63 ± 4.9	62 ± 4.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 22	> 22	> 25	> 20
Cross Polar Discrimination at Boresight	dB	> 25	> 27	> 18	> 17	> 16
Azimuth Beam Squint	°	4 ± 2.1	6 ± 2.0	7 ± 2.9	8 ± 2.9	6 ± 2.5
Azimuth Beam Port-to-Port Tracking	dB	2.0	2.5	3.0	3.0	4.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.1 ± 0.5	7.6 ± 0.4	7.2 ± 0.6	6.4 ± 0.3	5.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.6	< 0.6	< 0.7	< 0.6
First Upper Sidelobe Suppression	dB	> 22	> 22	> 23	> 22	> 19
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y1 // R1, Y2)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband

## Y2, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.2	17.5	17.5	17.4	17.7
Gain over all Tilts	dBi	17.2 ± 0.7	17.4 ± 0.5	17.4 ± 0.7	17.4 ± 0.6	17.7 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 6.8	59 ± 3.1	60 ± 3.4	63 ± 4.5	62 ± 3.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 22	> 23	> 24	> 21
Cross Polar Discrimination at Boresight	dB	> 25	> 28	> 18	> 18	> 18
Azimuth Beam Squint	°	-4 ± 2.2	-6 ± 2.1	-7 ± 2.7	-9 ± 2.3	-7 ± 2.5
Azimuth Beam Port-to-Port Tracking	dB	2.0	3.0	3.0	2.0	3.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.1 ± 0.4	7.6 ± 0.4	7.2 ± 0.6	6.3 ± 0.3	5.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.6	< 0.5
First Upper Sidelobe Suppression	dB	> 22	> 22	> 22	> 20	> 19
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y2 // R1, Y1)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	600 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	6x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 595   134 Maximal: 595   134
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1412 / 353 / 164 55.6 / 13.9 / 6.5
Category of Mounting Hardware	H (Heavy)	
Weight	kg lb	22.0 / 24.2 (clamps incl.) 48.5 / 53.4 (clamps incl.)
Packing Size	mm inches	1625 / 377 / 210 63.9 / 14.8 / 8.3
Scope of Supply	Panel, integrated RET and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

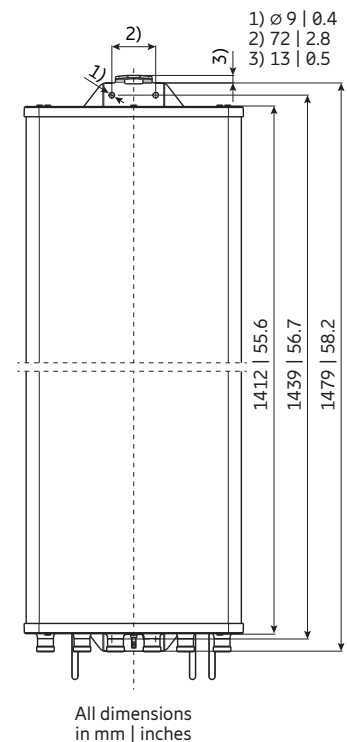
## Accessories (order separately if required)

Type No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–15°	1

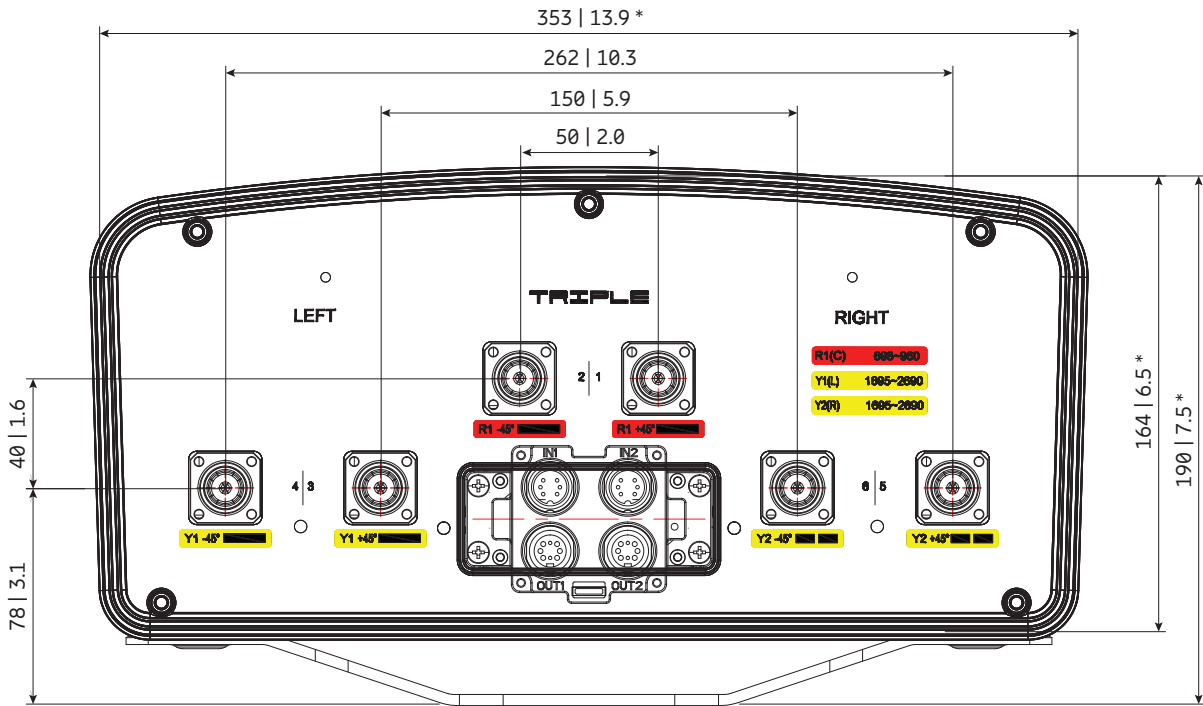
For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:**  
**Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



## Layout of interface



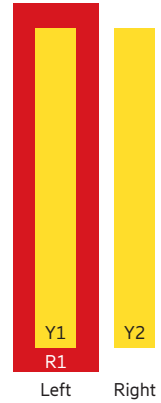
Bottom view

\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698-960 MHz	R1	1-2
1695-2690 MHz	Y1	3-4
1695-2690 MHz	Y2	5-6





1LB nMB

# Antenna 3402 1L 2M 1.5m

KRE 101 2413/1

Capacity

**Compact**

Coverage

65° | 1x 698–960 MHz | 14.5 dBi  
65° | 2x 1427–2690 MHz | 17.0 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 807	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.8	14.3	14.5	14.6
Gain over all Tilts	dBi	13.8 ± 0.4	14.2 ± 0.4	14.4 ± 0.4	14.5 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 3.1	59 ± 2.9	58 ± 2.3	60 ± 1.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 25	> 25	> 26
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	16.9 ± 1.2	15.4 ± 0.9	14.8 ± 1.0	13.9 ± 0.7
Electrical Downtilt continuously adjustable	°	2.0 – 16.0			
Tilt Accuracy	°	< 0.7	< 0.8	< 0.9	< 1.0
First Upper Side Lobe Suppression	dB	> 21	> 21	> 19	> 17
Cross Polar Isolation	dB	> 26			
Port to Port Isolation	dB	>30 (R1 // Y1, Y2)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 3–4					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.0	16.8	16.8	17.0	17.4	17.5
Gain over all Tilts	dBi	16.0 ± 0.2	16.7 ± 0.6	16.7 ± 0.6	17.0 ± 0.8	17.3 ± 0.6	17.5 ± 0.5
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	69 ± 2.4	66 ± 3.9	65 ± 3.7	61 ± 6.1	56 ± 4.4	54 ± 2.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 29	> 30	> 27	> 26	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.9 ± 0.4	7.1 ± 0.4	6.6 ± 0.4	6.2 ± 0.5	5.5 ± 0.3	5.2 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.5	< 0.5	< 0.6	< 0.6	< 0.5	< 0.7
First Upper Side Lobe Suppression	dB	> 17	> 18	> 22	> 19	> 21	> 20
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>30 (Y1 // R1, Y2)					
Max. Effective Power per Port	W	250 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, midband

## Y2, connector 5–6

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.1	16.5	16.6	16.6	17.2	17.6
Gain over all Tilts	dBi	16.1 ± 0.5	16.5 ± 0.6	16.6 ± 0.7	16.6 ± 0.7	17.1 ± 0.8	17.6 ± 0.9
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	65 ± 3.7	67 ± 2.6	65 ± 2.5	65 ± 2.8	60 ± 2.7	52 ± 3.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 24	> 25	> 27	> 27	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.9 ± 0.5	7.2 ± 0.5	6.8 ± 0.3	6.5 ± 0.4	5.8 ± 0.3	5.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.8	< 0.6	< 0.6	< 0.6	< 0.7	< 0.8
First Upper Side Lobe Suppression	dB	> 12	> 17	> 18	> 20	> 24	> 17
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>30 (Y2 // R1, Y1)					
Max. Effective Power per Port	W	250 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all systems

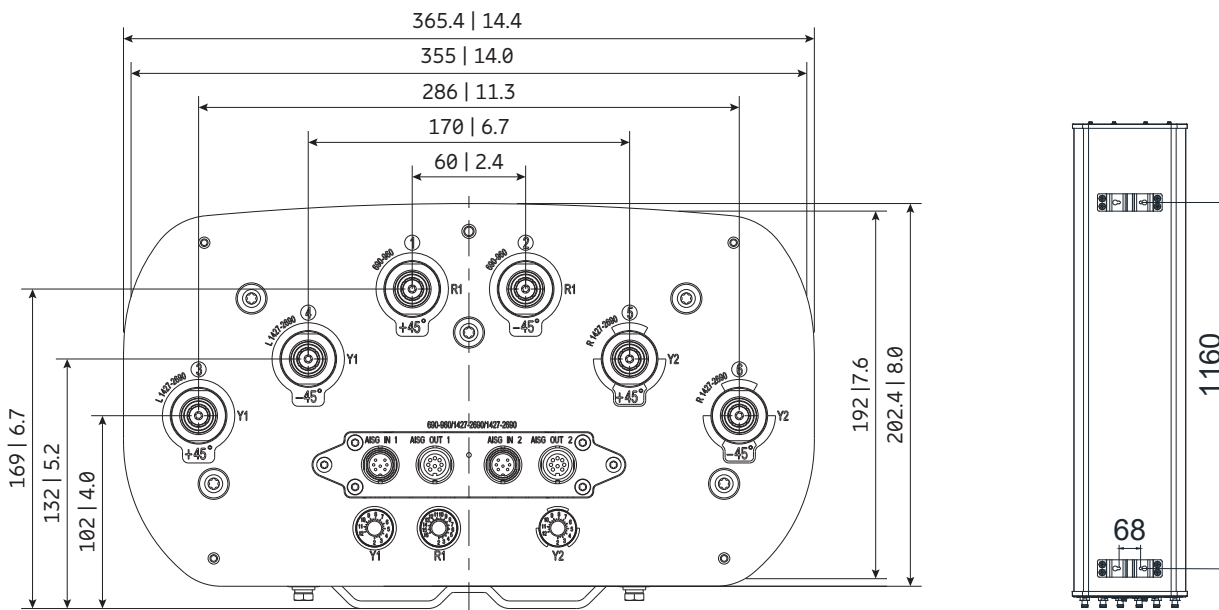
Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 30
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	700 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	6x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 470   106 Maximal: 520   117
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	1500 / 355 / 192 59.1 / 14.0 / 7.6
Weight	kg lb	23.0 / 28.9 (clamps incl.) 50.7 / 63.7 (clamps incl.)
Packing Size	mm inches	1750 / 440 / 310 68.9 / 17.3 / 12.2
Scope of Supply	Antenna, mounting kit incl. mech. Tilt-kit 0° to 16° tilt, SXA 120 129/2; integrated RET - KRY 121 78/2	

## Layout of interface



Bottom view  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1427–2690 MHz	Y1	3–4
1427–2690 MHz	Y2	5–6





1LB nMB

# Antenna 3402 1L 2M 1.9m

KRE 101 2560/1

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 15.0 dBi  
65° | 2x 1695–2690 MHz | 17.5 dBi  
Electrical downtilt set by integrated RET



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Center, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.3	15.4	15.8
Gain over all Tilts	dBi	15.0 ± 0.2	15.3 ± 0.1	15.4 ± 0.3	15.8 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	72 ± 1.6	71 ± 1.4	70 ± 2.1	67 ± 3.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 24	> 25	> 25
Cross Polar Discrimination at Boresight	dB	> 21	> 18	> 18	> 18
Azimuth Beam Squint	°	-1 ± 2.1	0 ± 1.4	0 ± 1.2	1 ± 1.0
Azimuth Beam Port-to-Port Tracking	dB	1.5	0.5	1.0	1.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	12.1 ± 0.7	11.2 ± 0.4	10.8 ± 0.5	10.1 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 16	> 17	> 17	> 17
Intra-Cluster Isolation	dB	> 30			
Inter-Cluster Isolation	dB	30 (R1 // Y1, Y2)			
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.2	17.5	17.6	17.5	17.7
Gain over all Tilts	dBi	17.2 ± 0.7	17.4 ± 0.5	17.5 ± 0.6	17.5 ± 0.7	17.6 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 5.5	62 ± 4.1	60 ± 3.7	62 ± 5.4	61 ± 3.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 23	> 22	> 24	> 20
Cross Polar Discrimination at Boresight	dB	> 25	> 25	> 19	> 17	> 18
Azimuth Beam Squint	°	4 ± 1.1	6 ± 2.7	7 ± 2.5	7 ± 3.4	6 ± 2.2
Azimuth Beam Port-to-Port Tracking	dB	2.5	2.5	2.5	3.5	3.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.4	7.5 ± 0.4	7.0 ± 0.6	6.2 ± 0.2	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 25	> 24	> 23	> 22	> 20
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	28 (Y1 // R1) 30 (Y1 // Y2)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband

## Y2, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.1	17.3	17.5	17.5	17.8
Gain over all Tilts	dBi	17.1 ± 0.7	17.3 ± 0.6	17.4 ± 0.6	17.6 ± 0.7	17.8 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 6.3	62 ± 3.3	61 ± 4.2	62 ± 3.6	62 ± 4.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 20	> 20	> 24	> 22
Cross Polar Discrimination at Boresight	dB	> 27	> 30	> 20	> 18	> 18
Azimuth Beam Squint	°	-4 ± 1.8	-6 ± 2.1	-7 ± 2.1	-7 ± 2.3	-5 ± 2.1
Azimuth Beam Port-to-Port Tracking	dB	3.0	2.5	2.5	2.5	3.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.4	7.5 ± 0.4	7.0 ± 0.5	6.2 ± 0.3	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 23	> 23	> 22	> 20	> 20
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	28 (Y2 // R1, Y1)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 30
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	700 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	6x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 815   183 Maximal: 815   183
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1885 / 353 / 164 74.2 / 13.9 / 6.5
Category of Mounting Hardware	H (Heavy)	
Weight	kg lb	26.5 / 29.4 (clamps incl.) 58.4 / 64.8 (clamps incl.)
Packing Size	mm inches	2100 / 377 / 210 82.7 / 14.8 / 8.3
Scope of Supply	Panel, integrated RET and 2 units of clamps for 55–115 mm   2.2–4.5 inches diameter	

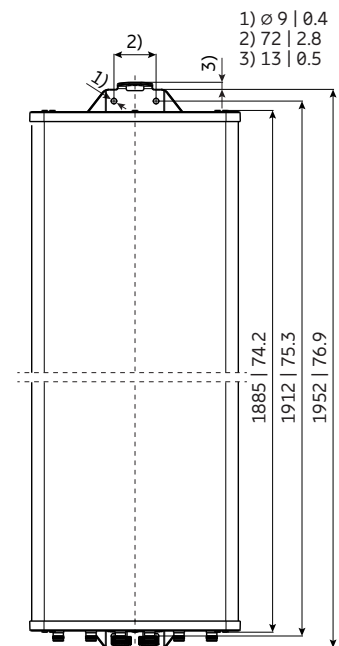
## Accessories (order separately if required)

Type No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–11°	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

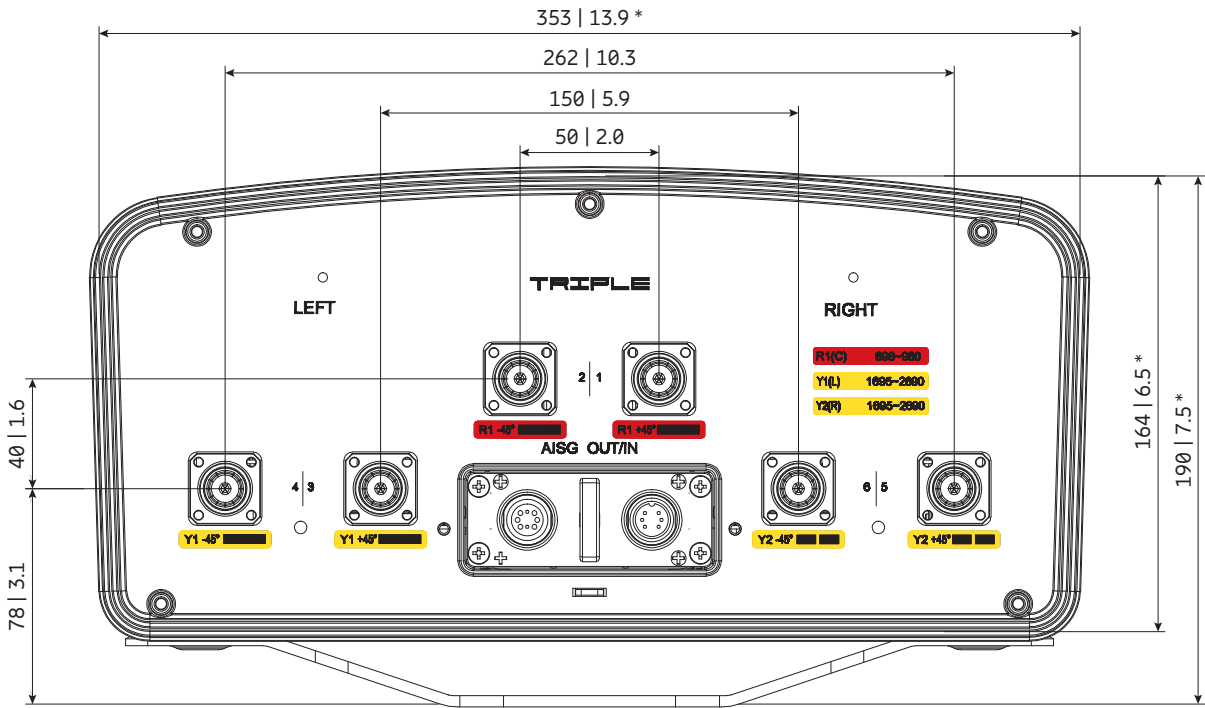
**Material:**  
**Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



All dimensions  
in mm | inches

## Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698-960 MHz	R1	1-2
1695-2690 MHz	Y1	3-4
1695-2690 MHz	Y2	5-6







1LB nMB

# Antenna 3400 1L 2M 2.4m

80010866

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 17.0 dBi  
65° | 2x 1695–2690 MHz | 18.0 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 820	790 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	16.3	16.8	17.0	17.3
Gain over all Tilts	dBi	16.2 ± 0.5	16.8 ± 0.4	17.0 ± 0.3	17.3 ± 0.2
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 2.4	65 ± 1.4	65 ± 0.9	64 ± 1.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 24	> 26	> 27
Cross Polar Discrimination at Boresight	dB	> 24	> 25	> 25	> 26
Cross Polar Discrimination over Sector	dB	> 6.5	> 7.0	> 9.0	> 10.0
Azimuth Beam Port-to-Port Tracking	dB	< 2.0	< 2.5	< 2.0	< 2.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	8.7 ± 0.7	7.9 ± 0.5	7.6 ± 0.4	7.2 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.3	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 17	> 17	> 17	> 18
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 16	> 15	> 15	> 16
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 30 (R1 // Y1,Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Left side, midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.4	17.9	17.9	17.3	18.1
Gain over all Tilts	dBi	17.3 ± 0.5	17.8 ± 0.3	17.8 ± 0.3	17.2 ± 0.2	17.9 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65 ± 4.5	62 ± 3.0	62 ± 2.6	69 ± 4.9	63 ± 6.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 25	> 24	> 23
Cross Polar Discrimination at Boresight	dB	> 16	> 22	> 24	> 19	> 16
Cross Polar Discrimination over Sector	dB	> 8.5	> 10.5	> 11.0	> 8.5	> 7.5
Azimuth Beam Port-to-Port Tracking	dB	< 1.5	< 2.5	< 2.0	< 1.5	< 2.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.3 ± 0.4	5.9 ± 0.2	5.6 ± 0.4	4.9 ± 0.1	4.5 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 19	> 18	> 17	> 16	> 18
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 13	> 14	> 13	> 14	> 15
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	> 30 (Y1 // R1, Y2)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, midband		Y2, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.4	17.7	18.0	18.4	18.6
Gain over all Tilts	dBi	17.4 ± 0.3	17.6 ± 0.3	17.9 ± 0.5	18.3 ± 0.3	18.4 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 2.3	62 ± 2.0	61 ± 1.9	60 ± 1.7	58 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 25	> 25	> 25	> 23
Cross Polar Discrimination at Boresight	dB	> 22	> 23	> 21	> 16	> 16
Cross Polar Discrimination over Sector	dB	> 16.0	> 16.0	> 13.0	> 8.0	> 7.5
Azimuth Beam Port-to-Port Tracking	dB	< 1.5	< 1.0	< 1.0	< 1.5	< 2.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.1 ± 0.4	6.6 ± 0.3	6.3 ± 0.4	5.6 ± 0.4	5.0 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.2	< 0.3	< 0.3	< 0.4	< 0.2
First Upper Side Lobe Suppression	dB	> 21	> 24	> 23	> 19	> 23
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 14	> 15	> 15	> 15	> 17
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	> 30 (Y2 // R1, Y1)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Electrical specifications, all systems

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 30
Passive Intermodulation	dBc	< -150 (2 x 43 dBm carrier)
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	900 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input	6x 7-16 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 830   187 Maximal: 960   216
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	2441 / 377 / 169 96.1 / 14.8 / 6.7
Category of Mounting Hardware	H (Heavy)	
Weight	kg lb	35.0 / 37.2 (clamps incl.) 77.1 / 81.9 (clamps incl.)
Packing Size	mm inches	2641 / 397 / 212 104.0 / 15.6 / 8.3
Scope of Supply	Panel, FlexRET and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–14°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Mast diameter: 42–115   1.7–4.5	2
86010153V01	FlexRET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

## Material:

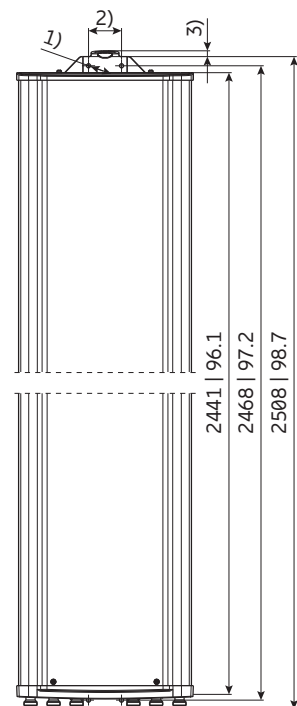
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

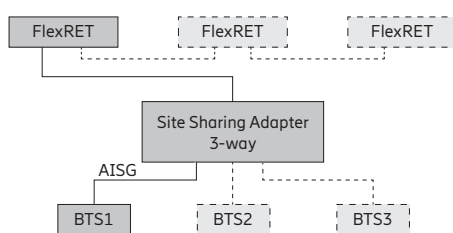
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



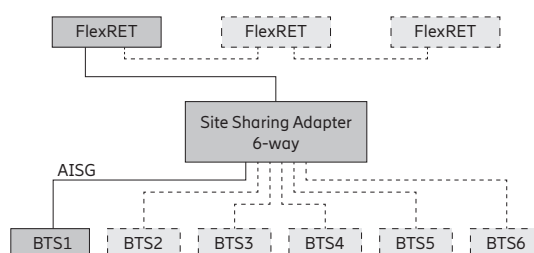
- 1)  $\varnothing$  9 | 0.4  
2) 72 | 2.8  
3) 13 | 0.5

All dimensions in mm | inches

## Configuration example with Site Sharing Adapter 86010154

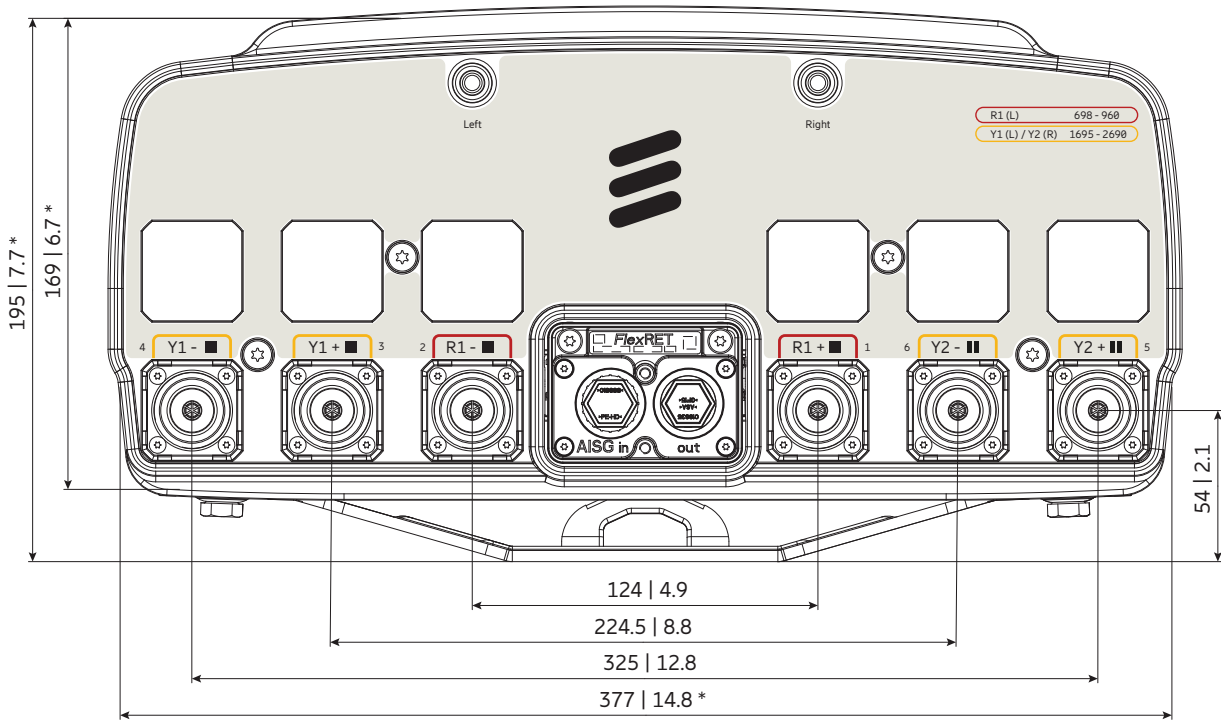


## Configuration example with Site Sharing Adapter 86010155



For more information please refer to the respective data sheets.

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4
1695–2690 MHz	Y2	5–6





1LB nMB

# Antenna 3402 1L 2M 2.7m

KRE 101 2561/1

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 16.5 dBi  
65° | 2x 1695–2690 MHz | 18.0 dBi  
Electrical downtilt set by integrated RET



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Center, lowband		R1, connector 1–2				
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960	
Gain at mid Tilt	dBi	16.0	16.2	16.4	16.9	
Gain over all Tilts	dBi	16.0 ± 0.4	16.2 ± 0.4	16.3 ± 0.6	16.9 ± 0.6	
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	71 ± 1.5	71 ± 2.8	69 ± 3.7	65 ± 2.8	
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 26	> 27	
Cross Polar Discrimination at Boresight	dB	> 25	> 20	> 20	> 21	
Azimuth Beam Port-to-Port Tracking	dB	1.5	1.5	2.0	1.5	
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.0 ± 0.6	8.3 ± 0.4	8.1 ± 0.5	7.5 ± 0.4	
Electrical Downtilt continuously adjustable	°	1.0 – 10.0				
Tilt Accuracy	°	< 0.6	< 0.5	< 0.5	< 0.4	
First Upper Sidelobe Suppression	dB	> 18	> 18	> 17	> 17	
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (R1 // Y1, Y2)				
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)				
Max. Effective Power Ports R1	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	17.0	17.3	17.4	17.5	17.7
Gain over all Tilts	dBi	17.0 ± 0.8	17.3 ± 0.6	17.3 ± 0.7	17.4 ± 0.7	17.7 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 4.7	60 ± 3.6	61 ± 3.4	61 ± 3.4	62 ± 4.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 24	> 23	> 25	> 22
Cross Polar Discrimination at Boresight	dB	> 25	> 26	> 22	> 17	> 19
Azimuth Beam Port-to-Port Tracking	dB	2.0	2.0	2.5	2.5	5.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.1 ± 0.6	7.5 ± 0.4	7.1 ± 0.5	6.3 ± 0.3	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.5	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 24	> 22	> 22	> 21	> 19
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y1 // R1, Y2)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y1	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, midband		Y2, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	17.0	17.2	17.1	17.2	17.4
Gain over all Tilts	dBi	16.9 ± 0.7	17.1 ± 0.5	17.0 ± 0.6	17.2 ± 0.7	17.4 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 6.2	60 ± 4.2	61 ± 3.7	61 ± 2.1	62 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 22	> 21	> 24	> 22
Cross Polar Discrimination at Boresight	dB	> 26	> 28	> 21	> 18	> 19
Azimuth Beam Port-to-Port Tracking	dB	2.5	2.5	3.0	3.0	5.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.1 ± 0.5	7.5 ± 0.4	7.1 ± 0.5	6.3 ± 0.3	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.6	< 0.4	< 0.5
First Upper Sidelobe Suppression	dB	> 23	> 21	> 21	> 20	> 19
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28dB(Y2//R1,Y1)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y2	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	700 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	6x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1355   305 Lateral: 1490   335
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2697 / 353 / 164 106.2 / 13.9 / 6.5
Category of Mounting Hardware	H (Heavy)	
Weight	kg lb	32.0 / 34.9 (clamps incl.) 70.5 / 76.9 (clamps incl.)
Packing Size	mm inches	2910 / 377 / 210 114.6 / 14.8 / 8.3
Scope of Supply	Panel, integrated RET and 2 units of clamps for 55–115 mm   2.2–4.5 inches diameter	

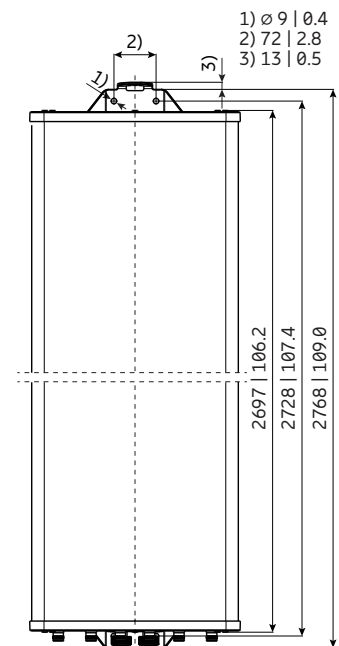
## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110 – 220   4.3 – 8.7	2
85010003	1 clamp	Mast diameter: 210 – 380   8.3 – 15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–8°	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

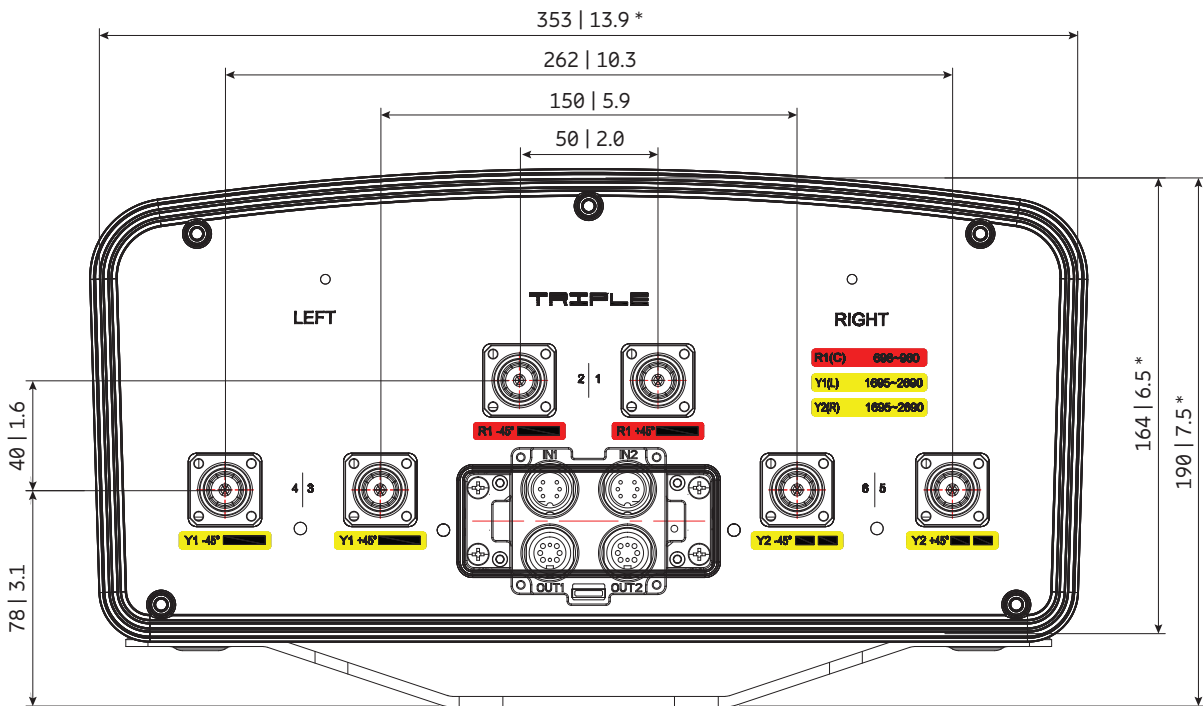
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



All dimensions  
in mm | inches

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4
1695–2690 MHz	Y2	5–6





# Antenna 3601 1L 3M 1.5m

KRE 101 2581/1

**Capacity**   Compact   Coverage

65° | 1x 698–960 MHz | 14.8 dBi  
65° | 3x 1695–2690 MHz | 17.5 dBi  
Electrical downtilt set by integrated RET



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1LB nMB

Center, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain over all Tilts	dBi	14.1 ± 0.4	14.5 ± 0.4	14.8 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	69 ± 2.6	67 ± 1.7	66 ± 2.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 26	> 26
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	15.6 ± 1.1	14.3 ± 0.9	13.1 ± 0.8
Electrical Downtilt continuously adjustable	°	2.0 – 16.0		
Tilt Accuracy	°	< 1	< 1	< 1
First Upper Side Lobe Suppression	dB	> 16	> 18	> 19
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 19	> 19	> 19
Cross Polar Isolation	dB	> 26		
Port to Port Isolation	dB	> 27 (R1 // Y1, Y2, Y3)		
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)		
Max. Effective Power Ports R1	W	300 (at 40 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain over all Tilts	dBi	16.8 ± 0.6	17.1 ± 0.5	17.0 ± 0.7	17.4 ± 0.7	17.8 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68 ± 6.4	66 ± 4.8	68 ± 4.8	64 ± 2.4	58 ± 3.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 24	> 25	> 25	> 24
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.5 ± 0.7	6.9 ± 0.3	6.6 ± 0.4	5.9 ± 0.2	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.5	< 0.5	< 0.7	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 17	> 17	> 18	> 16
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 16	> 17	> 16	> 16	> 16
Cross Polar Isolation	dB	> 26				
Port to Port Isolation	dB	> 26 (Y1 // R1, Y2, Y3)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y1	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, midband		Y2, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain over all Tilts	dBi	16.2 ± 0.5	16.4 ± 0.4	16.5 ± 0.5	16.9 ± 0.9	17.2 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	73 ± 4.5	74 ± 2.4	72 ± 5.7	60 ± 3.5	61 ± 5.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 27	> 26	> 28	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.4 ± 0.5	6.9 ± 0.3	6.6 ± 0.4	5.9 ± 0.4	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.6	< 0.5	< 0.7	< 0.5
First Upper Side Lobe Suppression	dB	> 20	> 19	> 18	> 16	> 17
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 16	> 16	> 15	> 14	> 16
Cross Polar Isolation	dB	> 26				
Port to Port Isolation	dB	> 26 (Y2 // R1, Y1, Y3)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y2	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y3, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain over all Tilts	dBi	16.7 ± 0.7	17.0 ± 0.7	17.0 ± 0.6	17.4 ± 0.7	17.8 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68 ± 4.3	64 ± 4.6	70 ± 4.9	65 ± 2.7	58 ± 3.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 26	> 26	> 26	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.5 ± 0.8	6.9 ± 0.4	6.6 ± 0.5	5.8 ± 0.3	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 18	> 21	> 18	> 18
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 16	> 16	> 15	> 13	> 14
Cross Polar Isolation	dB	> 26				
Port to Port Isolation	dB	> 26 (Y3 // R1, Y1, Y2)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y3	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 26
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	600 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 635   143 Maximal: 635   143
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1500 / 353 / 164 59.1 / 13.9 / 6.5
Category of Mounting Hardware	H (Heavy)	
Weight	kg lb	22 / 26.1 (clamps incl.) 48.5 / 57.5 (clamps incl.)
Packing Size	mm inches	1720 / 377 / 210 67.7 / 14.8 / 8.3
Scope of Supply	Panel, integrated RET and 2 units of clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

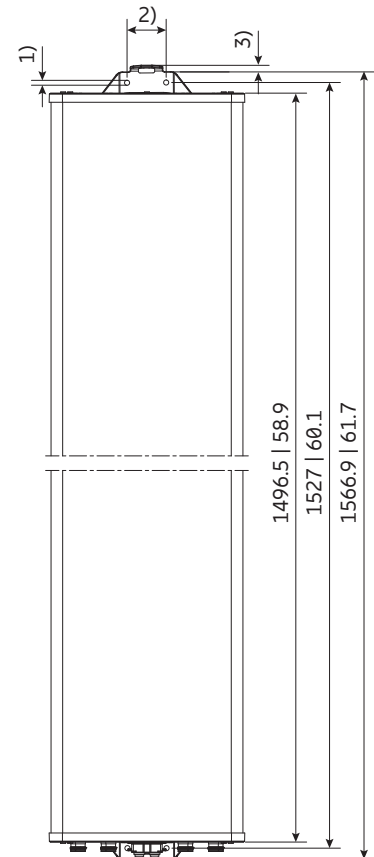
Product No.	Description	Remarks	Units per antenna
		mm   inches	
85010002	1 clamp	Mast diameter: 110 – 220   4.3 – 8.7	2
85010003	1 clamp	Mast diameter: 210 – 380   8.3 – 15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–11°	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

Wall mounting: No additional mounting kit needed.

**Material:**  
**Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

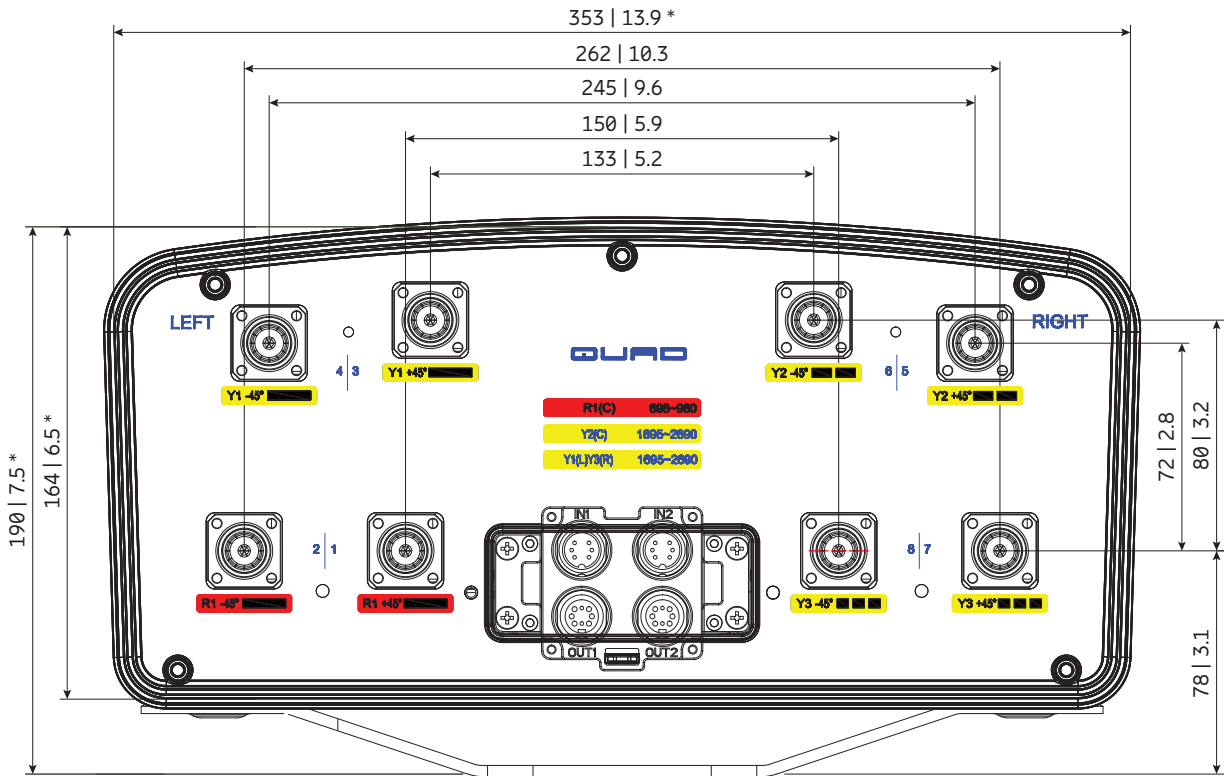
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



1)  $\varnothing$  9 | 0.4  
 2) 72 | 2.8  
 3) 13 | 0.5

All dimensions  
in mm | inches

### Layout of interface

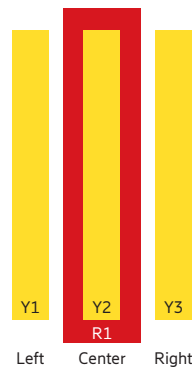


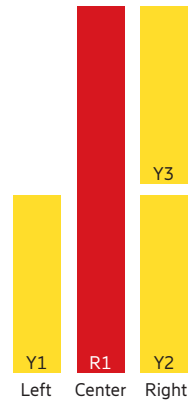
Bottom view

\* Dimensions refer to radome  
All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4
1695–2690 MHz	Y2	5–6
1695–2690 MHz	Y3	7–8





1LB nMB

# Antenna 3601 1L 3M 2.7m

KRE 101 2562/1

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 16.5 dBi  
65° | 3x 1695–2690 MHz | 17.0 dBi  
Electrical downtilt set by integrated RET



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Center, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 806	824 – 894	880 – 960
Gain at mid Tilt	dBi	16.0	16.1	16.7
Gain over all Tilts	dBi	16.0 ± 0.3	16.1 ± 0.4	16.7 ± 0.7
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	72 ± 2.1	71 ± 2.7	66 ± 3.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 25	> 25
Cross Polar Discrimination at Boresight	dB	> 23	> 21	> 20
Azimuth Beam Squint	°	-1 ± 2.9	0 ± 2.2	0 ± 1.4
Azimuth Beam Port-to-Port Tracking	dB	1.5	1.0	1.0
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	9.1 ± 0.6	8.1 ± 0.5	7.6 ± 0.5
Electrical Downtilt continuously adjustable	°	1.0 – 10.0		
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 19	> 17	> 18
Intra-Cluster Isolation	dB	> 28		
Inter-Cluster Isolation	dB	> 28 (R1 // Y1, Y2, Y3)		
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.0	17.4	17.5	17.5	17.8
Gain over all Tilts	dBi	16.9 ± 0.7	17.4 ± 0.8	17.4 ± 0.7	17.5 ± 0.7	17.7 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 5.3	61 ± 4.1	60 ± 3.2	61 ± 4.5	62 ± 4.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 22	> 24	> 22
Cross Polar Discrimination at Boresight	dB	> 25	> 27	> 19	> 17	> 19
Azimuth Beam Squint	°	3 ± 1.1	5 ± 2.0	6 ± 2.2	7 ± 1.6	5 ± 2.6
Azimuth Beam Port-to-Port Tracking	dB	2.0	2.0	2.5	2.5	4.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.5	7.5 ± 0.4	7.1 ± 0.6	6.3 ± 0.3	5.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 22	> 21	> 21	> 20	> 18
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y1 // R1, Y2, Y3)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, lower midband

## Y2, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.0	17.5	17.5	17.6	17.8
Gain over all Tilts	dBi	17.0 ± 0.7	17.5 ± 0.5	17.4 ± 0.7	17.5 ± 0.7	17.8 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 6.9	60 ± 4.2	60 ± 3.6	61 ± 3.1	62 ± 4.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 23	> 21	> 24	> 23
Cross Polar Discrimination at Boresight	dB	> 25	> 29	> 20	> 17	> 19
Azimuth Beam Squint	°	-3 ± 1.6	-5 ± 1.3	-6 ± 2.6	-7 ± 2.3	-5 ± 2.5
Azimuth Beam Port-to-Port Tracking	dB	2.5	2.0	3.0	2.5	4.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.5	7.5 ± 0.4	7.1 ± 0.6	6.2 ± 0.4	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 24	> 23	> 21	> 21	> 19
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y2 // R1, Y1, Y3)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y3, connector 7–8

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.7	17.0	17.1	17.1	17.5
Gain over all Tilts	dBi	16.7 ± 0.5	17.0 ± 0.6	17.1 ± 0.6	17.1 ± 0.8	17.5 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 6.5	62 ± 4.7	59 ± 4.9	61 ± 2.9	64 ± 2.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 22	> 21	> 21	> 23
Cross Polar Discrimination at Boresight	dB	> 22	> 25	> 18	> 16	> 19
Azimuth Beam Squint	°	-3 ± 1.3	-4 ± 1.8	-6 ± 2.2	-8 ± 1.3	-6 ± 2.3
Azimuth Beam Port-to-Port Tracking	dB	2.5	3.0	4.0	2.0	6.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.1 ± 0.4	7.6 ± 0.4	7.2 ± 0.6	6.4 ± 0.3	5.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.7	< 0.7	< 0.6	< 0.6
First Upper Sidelobe Suppression	dB	> 21	> 21	> 21	> 21	> 18
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y3 // R1, Y1, Y2)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	800 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1230   276 Maximal: 1230   276
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	2697 / 353 / 164 106.2 / 13.9 / 6.5
Category of Mounting Hardware	H (Heavy)	
Weight	kg lb	33.7 / 36.6 (clamps incl.) 74.3 / 80.7 (clamps incl.)
Packing Size	mm inches	2910 / 377 / 210 114.6 / 14.8 / 8.3
Scope of Supply	Panel, integrated RET and 2 units of clamps for 55–115 mm   2.2–4.5 inches diameter	

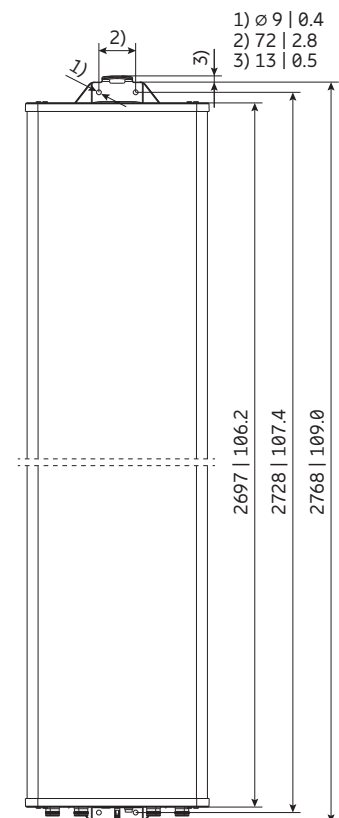
## Accessories (order separately if required)

Type No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–8°	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

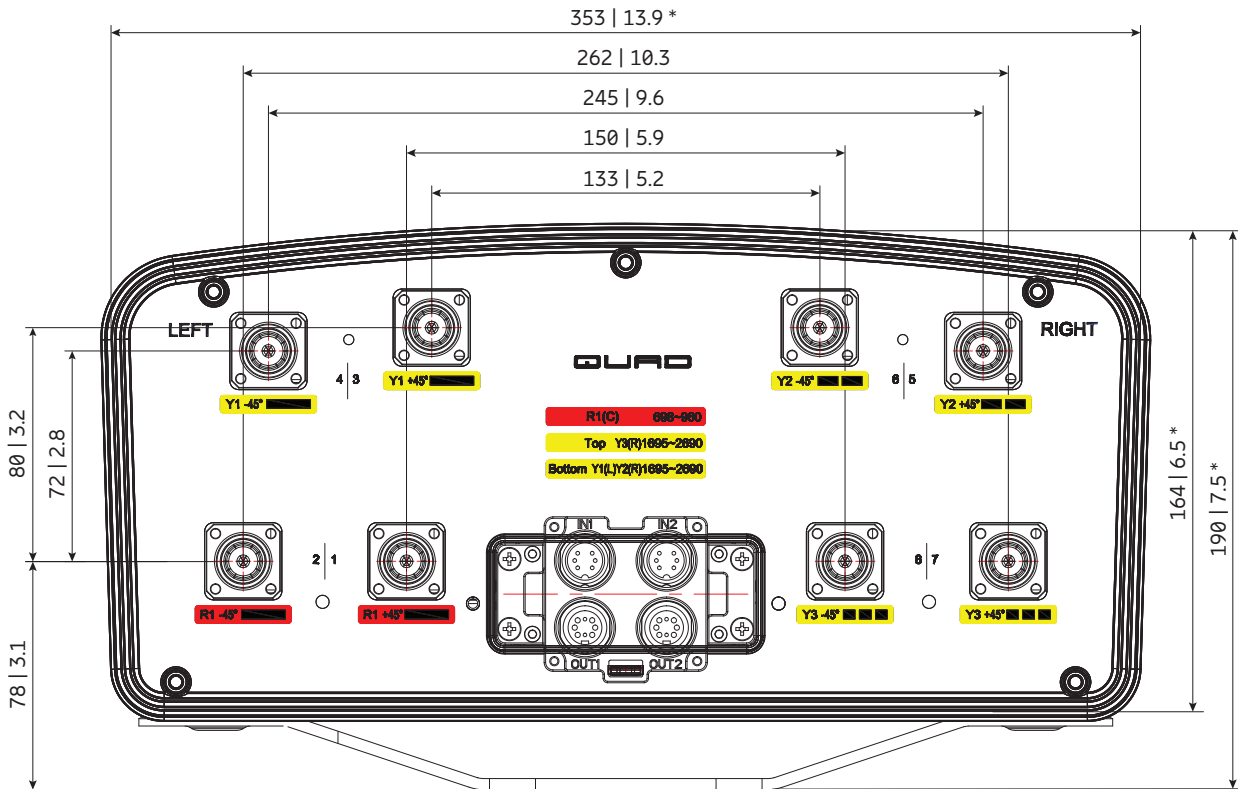
**Material:**  
**Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



All dimensions  
in mm | inches

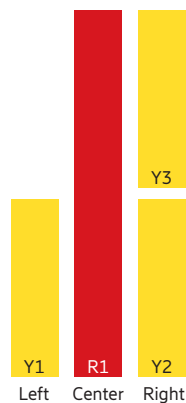
## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4
1695–2690 MHz	Y2	5–6
1695–2690 MHz	Y3	7–8



New product



1LB nMB

# Antenna 3806 1L 4M 0.7m

KRE 101 2631/2

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 12.0 dBi  
65° | 4x 1695–2690 MHz | 13.0 dBi  
Fixed electrical downtilt 2 degree



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Lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	11.7	12.1	12.3	12.4
Gain over all Tilts	dBi	11.7 ± -0.1	12.1 ± 0.1	12.3 ± 0.2	12.4 ± 0.0
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	72 ± 2.7	71 ± 4.7	69 ± 4.1	72 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 23	> 24	> 22
Cross Polar Discrimination at Boresight	dB	> 22	> 22	> 21	> 20
Azimuth Beam Port-to-Port Tracking	dB	1.0	1.0	2.0	1.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	29.4 ± 1.4	26.3 ± 1.6	25.2 ± 1.3	24.1 ± 1.1
Electrical Downtilt	°	2.0, fixed			
First Upper Sidelobe Suppression	dB	> 18	> 18	> 16	> 20
Intra-Cluster Isolation	dB	> 23			
Port to Port Isolation	dB	> 25 (R1 // Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	300 (at 25° C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, lower midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	12.4	12.9	13.0	13.2	13.7
Gain over all Tilts	dBi	12.4 ± 0.2	12.9 ± -0.1	13.0 ± 0.0	13.2 ± 0.1	13.7 ± 0.3
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	59 ± 4.2	59 ± 3.1	60 ± 2.4	65 ± 3.3	61 ± 5.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 27	> 27	> 25	> 23
Cross Polar Discrimination at Boresight	dB	> 25	> 25	> 23	> 17	> 23
Azimuth Beam Port-to-Port Tracking	dB	1.5	2.0	2.5	2.0	3.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	26.3 ± 1.5	25.2 ± 1.1	23.8 ± 2.1	18.9 ± 1.8	18.4 ± 1.0
Electrical Downtilt	°	2.0, fixed				
First Upper Sidelobe Suppression	dB	> 18	> 19	> 17	> 22	> 18
Intra-Cluster Isolation	dB	> 23				
Port to Port Isolation	dB	> 23 (Y1 // R1, Y2, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 25° C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, upper midband		Y2, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	12.2	12.3	12.6	12.8	13.6
Gain over all Tilts	dBi	12.2 ± 0.1	12.3 ± -0.3	12.6 ± 0.1	12.8 ± 0.1	13.6 ± 0.3
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 4.2	65 ± 2.9	64 ± 2.2	65 ± 2.1	61 ± 4.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 26	> 22	> 24
Cross Polar Discrimination at Boresight	dB	> 21	> 22	> 24	> 22	> 23
Azimuth Beam Port-to-Port Tracking	dB	1.0	1.5	1.5	1.5	4.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	25.3 ± 3.0	25.9 ± 1.1	24.3 ± 2.2	19.8 ± 1.0	18.2 ± 0.7
Electrical Downtilt	°	2.0, fixed				
First Upper Sidelobe Suppression	dB	> 14	> 13	> 13	> 14	> 15
Intra-Cluster Isolation	dB	> 23				
Port to Port Isolation	dB	> 23 (Y2 // R1, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 25° C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lower midband		Y3, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	12.4	12.7	12.7	12.8	13.7
Gain over all Tilts	dBi	12.4 ± 0.2	12.7 ± -0.2	12.7 ± -0.1	12.8 ± -0.1	13.7 ± 0.3
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 3.2	60 ± 2.1	61 ± 3.0	67 ± 2.9	60 ± 5.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 25	> 25	> 21	> 24
Cross Polar Discrimination at Boresight	dB	> 26	> 28	> 27	> 21	> 19
Azimuth Beam Port-to-Port Tracking	dB	1.5	2.0	2.0	2.5	2.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	26.3 ± 1.2	25.7 ± 1.5	24.1 ± 2.3	19.6 ± 1.7	18.3 ± 1.0
Electrical Downtilt	°	2.0, fixed				
First Upper Sidelobe Suppression	dB	> 18	> 20	> 18	> 21	> 19
Intra-Cluster Isolation	dB	> 23				
Port to Port Isolation	dB	> 23 (Y3 // R1, Y1, Y2, Y4)				
Max. Effective Power per Port	W	200 (at 25° C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y4, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	12.2	12.5	12.7	12.6	13.6
Gain over all Tilts	dBi	12.2 ± 0.2	12.5 ± -0.3	12.7 ± -0.2	12.6 ± 0.0	13.6 ± 0.2
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	60 ± 3.9	63 ± 3.3	63 ± 2.2	65 ± 3.4	59 ± 4.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 26	> 25	> 21	> 25
Cross Polar Discrimination at Boresight	dB	> 20	> 24	> 20	> 15	> 15
Azimuth Beam Port-to-Port Tracking	dB	1.5	1.5	1.5	2.5	6.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	25.5 ± 2.4	25.5 ± 1.2	23.8 ± 2.7	20.0 ± 0.8	17.7 ± 0.5
Electrical Downtilt	°	2.0, fixed				
First Upper Sidelobe Suppression	dB	> 13	> 13	> 13	> 13	> 14
Intra-Cluster Isolation	dB	> 23				
Port to Port Isolation	dB	> 23 (Y4 // R1, Y1, Y2, Y3)				
Max. Effective Power per Port	W	200 (at 25° C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 23
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	600 (at 25° C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

**Material:**

**Reflector screen and dipoles:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

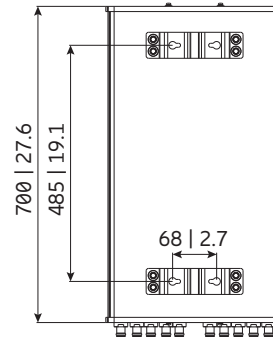
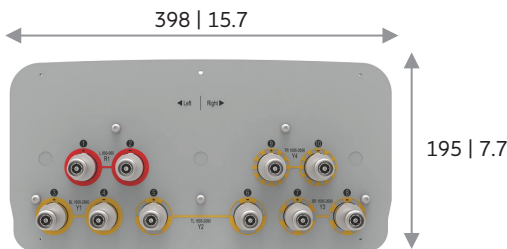
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

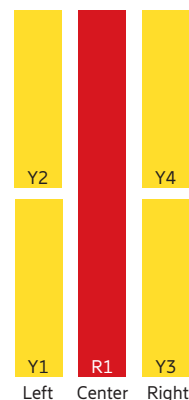
Input	10x 4.3-10 female	
Connector Position	bottom	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 305   69 Maximal: 305   69
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	700 / 398 / 195 27.6 / 15.7 / 7.7
Weight	kg lb	13.2 / 16.9 (clamps incl.) 29.1 / 37.3 (clamps incl.)
Packing Size	mm inches	945 / 490 / 265 37.2 / 19.3 / 10.4
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit (0°–30°) SXA 216 3863/1	

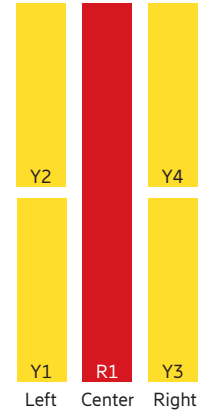
## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
690–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4
1695–2690 MHz	Y2	5–6
1695–2690 MHz	Y3	7–8
1695–2690 MHz	Y4	9–10





1LB nMB

# Antenna 3802 1L 4M 2.0m

KRE 101 2563/1

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 15.3 dBi  
65° | 4x 1695–2690 MHz | 16.0 dBi  
Electrical downtilt set by integrated RET



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Center, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 806	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.1	15.6	15.7
Gain over all Tilts	dBi	15.1 ± 0.5	15.6 ± 0.3	15.7 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	72 ± 3.2	69 ± 1.8	68 ± 2.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 26	> 25
Cross Polar Discrimination at Boresight	dB	> 19	> 18	> 16
Azimuth Beam Squint	°	-1 ± 3.0	0 ± 2.2	0 ± 1.4
Azimuth Beam Port-to-Port Tracking	dB	1.5	1.5	1.0
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.7 ± 1.0	10.5 ± 0.6	9.8 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.8	< 0.8	< 0.9
First Upper Sidelobe Suppression	dB	> 16	> 16	> 17
Intra-Cluster Isolation	dB	> 27		
Inter-Cluster Isolation	dB	> 27 (R1 // Y1, Y2, Y3, Y4)		
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, lower midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.3	16.8	16.9	17.1	17.1
Gain over all Tilts	dBi	16.3 ± 0.6	16.7 ± 0.6	16.9 ± 0.7	17.0 ± 0.7	17.1 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65 ± 7.5	61 ± 3.7	60 ± 3.3	63 ± 5.0	64 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 24	> 23	> 24	> 21
Cross Polar Discrimination at Boresight	dB	> 26	> 33	> 23	> 17	> 19
Azimuth Beam Squint	°	4 ± 1.4	6 ± 2.0	7 ± 2.1	6 ± 1.8	5 ± 2.5
Azimuth Beam Port-to-Port Tracking	dB	2.5	2.0	2.5	2.0	4.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.9 ± 0.6	9.2 ± 0.4	8.6 ± 0.6	7.5 ± 0.4	7.0 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.5	< 0.5	< 0.5	< 0.7
First Upper Sidelobe Suppression	dB	> 20	> 20	> 19	> 16	> 17
Intra-Cluster Isolation	dB	> 27				
Inter-Cluster Isolation	dB	> 27 (Y1 // R1, Y2, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, upper midband		Y2, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.7	16.1	16.2	16.3	16.4
Gain over all Tilts	dBi	15.7 ± 0.4	16.0 ± 0.4	16.1 ± 0.5	16.2 ± 0.6	16.4 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65 ± 7.0	61 ± 2.4	61 ± 3.5	64 ± 2.8	64 ± 4.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 23	> 22	> 21	> 20
Cross Polar Discrimination at Boresight	dB	> 26	> 30	> 23	> 18	> 18
Azimuth Beam Squint	°	4 ± 1.1	5 ± 1.4	5 ± 1.9	6 ± 1.5	5 ± 2.2
Azimuth Beam Port-to-Port Tracking	dB	2.0	2.0	2.5	2.0	3.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.0 ± 0.6	9.3 ± 0.4	8.8 ± 0.7	7.6 ± 0.4	7.0 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.4
First Upper Sidelobe Suppression	dB	> 19	> 19	> 18	> 16	> 15
Intra-Cluster Isolation	dB	> 27				
Inter-Cluster Isolation	dB	> 27 (Y2 // R1, Y1, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, upper midband		Y3, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.2	16.6	16.8	17.1	17.0
Gain over all Tilts	dBi	16.2 ± 0.6	16.6 ± 0.7	16.8 ± 0.7	17.0 ± 0.8	17.0 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65 ± 6.5	62 ± 4.1	60 ± 3.7	64 ± 3.6	65 ± 3.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 24	> 23	> 23	> 23
Cross Polar Discrimination at Boresight	dB	> 25	> 28	> 21	> 17	> 18
Azimuth Beam Squint	°	-5 ± 1.6	-6 ± 1.2	-7 ± 2.2	-8 ± 1.7	-6 ± 1.9
Azimuth Beam Port-to-Port Tracking	dB	3.0	2.0	3.0	2.0	3.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.9 ± 0.6	9.2 ± 0.4	8.6 ± 0.6	7.5 ± 0.5	7.0 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.9	< 0.9	< 0.9	< 0.8	< 1.0
First Upper Sidelobe Suppression	dB	> 21	> 22	> 20	> 18	> 18
Intra-Cluster Isolation	dB	> 27				
Inter-Cluster Isolation	dB	> 27 (Y3 // R1, Y1, Y2, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y4, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.7	16.0	16.2	16.3	16.4
Gain over all Tilts	dBi	15.7 ± 0.4	16.0 ± 0.5	16.1 ± 0.6	16.3 ± 0.6	16.4 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 7.1	61 ± 3.0	60 ± 3.3	64 ± 3.2	63 ± 4.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 21	> 22	> 22
Cross Polar Discrimination at Boresight	dB	> 26	> 30	> 22	> 18	> 19
Azimuth Beam Squint	°	-5 ± 1.4	-6 ± 1.5	-7 ± 2.3	-7 ± 1.5	-6 ± 2.2
Azimuth Beam Port-to-Port Tracking	dB	2.0	2.5	3.0	1.5	4.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.0 ± 0.6	9.3 ± 0.4	8.8 ± 0.6	7.7 ± 0.4	7.0 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.6	< 0.6	< 0.7	< 0.7
First Upper Sidelobe Suppression	dB	> 18	> 18	> 17	> 16	> 15
Intra-Cluster Isolation	dB	> 27				
Inter-Cluster Isolation	dB	> 27 (Y4 // R1, Y1, Y2, Y3)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	700 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	10x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 870   196 Maximal: 870   196
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1995 / 353 / 164 78.5 / 13.9 / 6.5
Category of Mounting Hardware	H (Heavy)	
Weight	kg lb	29.0 / 31.9 (clamps incl.) 63.9 / 70.3 (clamps incl.)
Packing Size	mm inches	2210 / 377 / 210 87.0 / 14.8 / 8.3
Scope of Supply	Panel, integrated RET and 2 units of clamps for 55–115 mm   2.2–4.5 inches diameter	

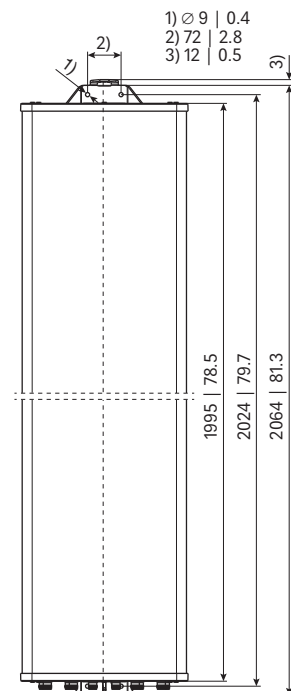
## Accessories (order separately if required)

Type No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8. –15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–11°	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

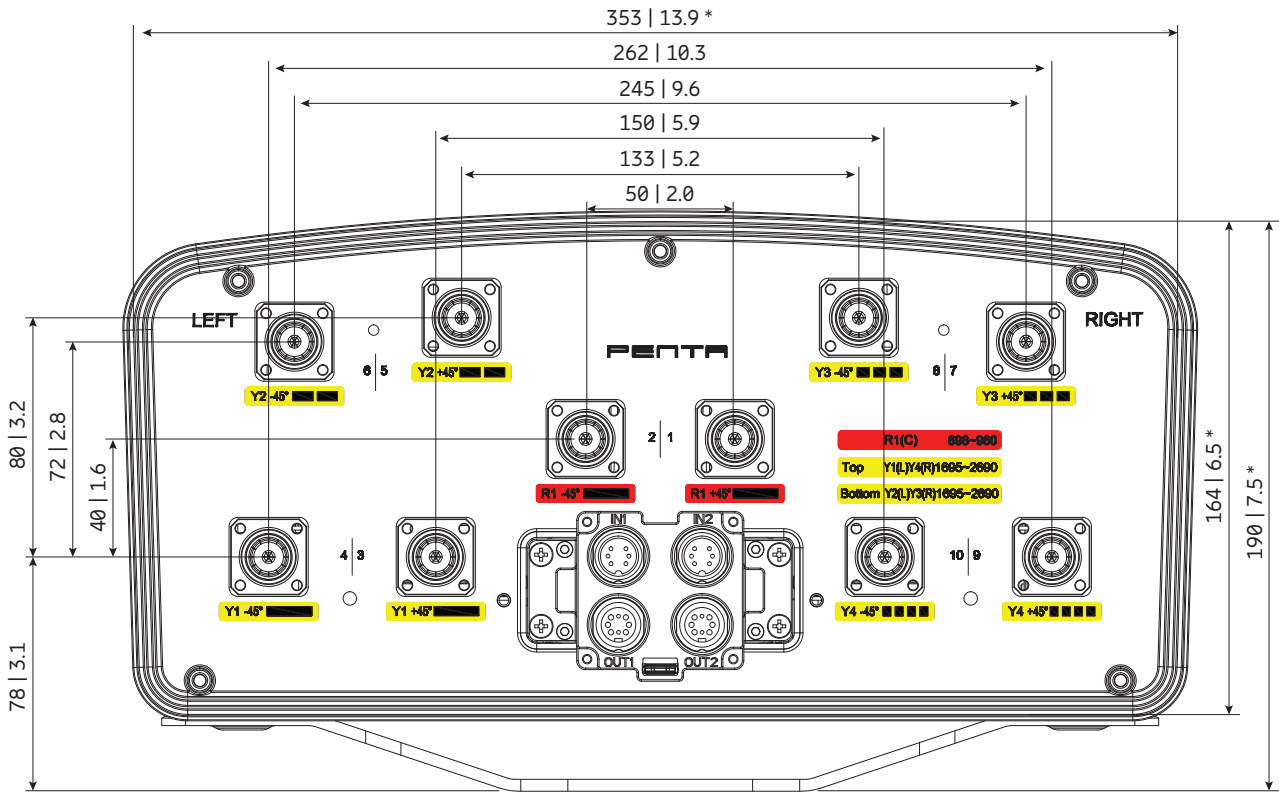
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



All dimensions  
in mm | inches

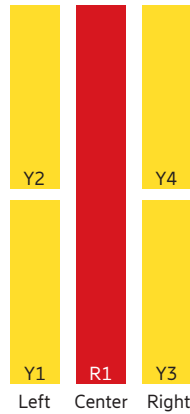
### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4
1695–2690 MHz	Y2	5–6
1695–2690 MHz	Y3	7–8
1695–2690 MHz	Y4	9–10



New product



# Antenna 3807 1L 4M 2.6m

KRE 101 2663/1

Capacity    Compact    Coverage

65° | 1x 698–960 MHz | 16.6 dBi  
65° | 4x 1695–2690 MHz | 17.1 dBi  
10x 4.3-10  
Electrical downtilt set by integrated RET



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Center, lowband		R1, connector 1–2				
Frequency Range	MHz	698 – 803	791 – 862	814 – 894	880 – 960	
Gain at mid Tilt	dBi	15.9	16.3	16.4	16.6	
Gain over all Tilts	dBi	15.9 ± 0.5	16.3 ± 0.2	16.3 ± 0.2	16.6 ± 0.5	
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	71.5 ± 2.0	69.5 ± 1.5	68.5 ± 1.8	64.9 ± 2.9	
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23.8	> 24.1	> 25.5	> 25.4	
Cross Polar Discrimination at Mechanical Boresight	dB	> 22.0	> 19.2	> 19.3	> 19.5	
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.8 ± 0.4	8.2 ± 0.3	8.0 ± 0.4	7.6 ± 0.3	
Electrical Downtilt continuously adjustable	°	1.0 – 10.0				
Elevation Downtilt Deviation	°	< 0.6	< 0.6	< 0.5	< 0.6	
First Upper Sidelobe Suppression	dB	> 13.0	> 14.2	> 14.1	> 15.0	
Upper Sidelobe Suppression, Peak to 20°	dB	> 13.0	> 13.7	> 13.8	> 14.6	
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (R1 // Y1, Y2, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Left side, lower midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.7	16.9	17.1	17.1	16.9
Gain over all Tilts	dBi	16.7 ± 0.6	16.8 ± 0.7	17.1 ± 0.8	17.1 ± 0.8	16.9 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69.1 ± 4.2	61.3 ± 7.7	57.6 ± 4.1	64.3 ± 5.0	64.2 ± 3.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24.9	> 26.1	> 25.5	> 25.4	> 24.5
Cross Polar Discrimination at Mechanical Boresight	dB	> 16.9	> 14.9	> 15.4	> 18.3	> 14.6
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.7 ± 0.5	7.1 ± 0.6	6.8 ± 0.5	6.1 ± 0.3	5.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Elevation Downtilt Deviation	°	< 0.5	< 0.5	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 15.2	> 14.7	> 15.1	> 15.8	> 14.2
Upper Sidelobe Suppression, Peak to 20°	dB	> 14.4	> 14.4	> 14.7	> 15.7	> 13.7
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y1 // R1, Y2, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Left side, upper midband		Y2, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.1	16.3	16.6	16.9	16.8
Gain over all Tilts	dBi	16.1 ± 0.5	16.2 ± 0.6	16.5 ± 0.8	16.9 ± 0.7	16.7 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	70.1 ± 4.0	63.0 ± 8.4	57.5 ± 4.8	63.2 ± 6.2	63.0 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26.3	> 25.7	> 25.5	> 26.3	> 25.7
Cross Polar Discrimination at Mechanical Boresight	dB	> 16.6	> 14.9	> 15.8	> 18.6	> 14.7
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.7 ± 0.5	7.3 ± 0.4	6.9 ± 0.5	6.2 ± 0.3	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Elevation Downtilt Deviation	°	< 0.3	< 0.2	< 0.2	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 14.4	> 14.4	> 14.4	> 14.8	> 14.0
Upper Sidelobe Suppression, Peak to 20°	dB	> 14.3	> 14.3	> 14.3	> 14.8	> 13.7
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y2 // R1, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Right side, lower midband		Y3, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.6	16.8	17.0	17.0	16.6
Gain over all Tilts	dBi	16.6 ± 0.5	16.8 ± 0.7	17.0 ± 0.8	17.0 ± 0.8	16.5 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68.9 ± 4.0	61.1 ± 6.9	57.9 ± 4.1	64.8 ± 5.4	64.5 ± 3.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25.7	> 24.8	> 24.2	> 23.3	> 23.7
Cross Polar Discrimination at Mechanical Boresight	dB	> 15.6	> 13.6	> 14.4	> 16.8	> 14.2
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.8 ± 0.4	7.2 ± 0.5	6.8 ± 0.5	6.2 ± 0.3	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Elevation Downtilt Deviation	°	< 0.6	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15.0	> 15.2	> 15.2	> 16.3	> 14.8
Upper Sidelobe Suppression, Peak to 20°	dB	> 14.4	> 14.5	> 14.7	> 16.3	> 13.9
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y3 // R1, Y1, Y2, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Right side, upper midband

## Y4, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.0	16.1	16.3	16.5	16.3
Gain over all Tilts	dBi	16.0 ± 0.4	16.0 ± 0.6	16.3 ± 0.7	16.4 ± 0.7	16.2 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69.7 ± 5.4	63.1 ± 7.7	57.9 ± 4.6	64.0 ± 6.2	63.8 ± 3.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24.8	> 26.2	> 25.0	> 23.4	> 23.5
Cross Polar Discrimination at Mechanical Boresight	dB	> 15.9	> 14.3	> 15.1	> 16.6	> 14.3
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.8 ± 0.4	7.4 ± 0.4	7.0 ± 0.5	6.2 ± 0.3	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Elevation Downtilt Deviation	°	< 0.4	< 0.3	< 0.3	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 15.2	> 14.7	> 15.3	> 16.5	> 14.8
Upper Sidelobe Suppression, Peak to 20°	dB	> 14.8	> 14.5	> 14.7	> 16.5	> 13.7
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y4 // R1, Y1, Y2, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14.0
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Mechanical specifications

Input	10x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1069   240
		Maximal:* 1069   240
		Lateral: 374   84
		Maximum360: 1124   253
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h	241
	mph	150
Height / Width / Depth	mm	2600 / 353 / 164
	inches	102.4 / 13.9 / 6.5
Category of Mounting Hardware	H (Heavy)	
Weight	kg	32.7 / 35.6 (clamps incl.)
	lb	72.0 / 78.5 (clamps incl.)
Packing Size	mm	2810 / 377 / 210
	inches	110.6 / 14.8 / 8.3
Scope of Supply	Panel, FlexRET and clamps for 42–115 mm   1.7–4.5 inches diameter	

Values based on NGMN-P-BASTA (version 12.0) requirements.

\* More information on „Maximal“ values (highest wind load in  $\pm 45^{\circ}$  sector) in the „Wind load tests – Technology Paper“

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Pole diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Pole diameter: 210–380   8.3–15.0	2
85010009	1 downtilt kit	Downtilt angle: $0^{\circ}$ – $8^{\circ}$	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Pole diameter: 42–115   1.7–4.5	2
KRY 121 79/2	RET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

## Material:

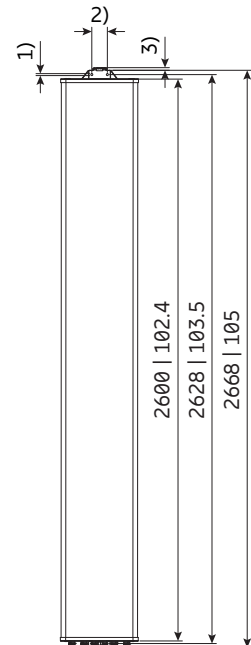
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

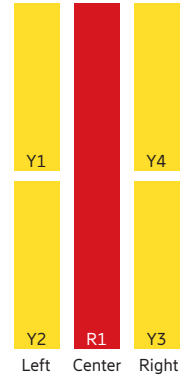
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



1)  $\varnothing$  9 | 0.4  
2) 72 | 2.8  
3) 13 | 0.5

All dimensions  
in mm | inches



1LB nMB

# Antenna 3803 1L 4M 2.7m

KRE 101 2564/1

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 16.5 dBi  
65° | 4x 1695–2690 MHz | 17.0 dBi  
Electrical downtilt set by integrated RET



[ericsson.com/antenna-system](https://ericsson.com/antenna-system)



Scan or [click](#)

Center, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	790 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.8	16.1	16.2	16.6
Gain over all Tilts	dBi	15.8 ± 0.5	16.1 ± 0.3	16.2 ± 0.4	16.6 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	73 ± 1.3	72 ± 2.3	71 ± 2.6	68 ± 2.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 25	> 24
Cross Polar Discrimination at Boresight	dB	> 22	> 20	> 20	> 20
Azimuth Beam Port-to-Port Tracking	dB	1.0	1.0	1.0	1.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.1 ± 0.6	8.4 ± 0.4	8.2 ± 0.4	7.6 ± 0.5
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 19	> 19	> 19	> 18
Intra-Cluster Isolation	dB	> 28			
Inter-Cluster Isolation	dB	> 28 (R1 // Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)			
Max. Effective Power Ports R1	W	400 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, upper midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.5	16.7	16.8	16.9	17.1
Gain over all Tilts	dBi	16.5 ± 0.6	16.7 ± 0.3	16.7 ± 0.6	16.8 ± 0.6	17.1 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 4.9	62 ± 3.2	62 ± 3.6	61 ± 3.4	61 ± 3.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 21	> 20	> 22	> 23
Cross Polar Discrimination at Boresight	dB	> 24	> 25	> 19	> 16	> 17
Azimuth Beam Port-to-Port Tracking	dB	1.5	2.0	2.5	2.0	4.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.5	7.6 ± 0.4	7.1 ± 0.5	6.3 ± 0.2	5.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 26	> 25	> 23	> 23	> 22
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y1 // R1, Y2, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y1	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Left side, lower midband

## Y2, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.0	17.3	17.3	17.4	17.4
Gain over all Tilts	dBi	16.9 ± 0.7	17.2 ± 0.4	17.2 ± 0.6	17.3 ± 0.6	17.4 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 6.0	60 ± 3.2	60 ± 3.4	62 ± 3.5	62 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 21	> 20	> 24	> 22
Cross Polar Discrimination at Boresight	dB	> 26	> 25	> 19	> 17	> 18
Azimuth Beam Port-to-Port Tracking	dB	2.0	2.5	3.5	2.0	5.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.6	7.4 ± 0.4	7.0 ± 0.7	6.2 ± 0.4	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.6	< 0.6	< 0.6
First Upper Sidelobe Suppression	dB	> 25	> 23	> 22	> 22	> 20
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y2 // R1, Y1, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y2	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, lower midband

## Y3, connector 7–8

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.0	17.4	17.4	17.4	17.5
Gain over all Tilts	dBi	17.0 ± 0.7	17.3 ± 0.6	17.3 ± 0.7	17.3 ± 0.7	17.5 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 6.0	60 ± 4.5	60 ± 4.5	63 ± 2.8	63 ± 3.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 23	> 21	> 22	> 21
Cross Polar Discrimination at Boresight	dB	> 27	> 24	> 19	> 18	> 18
Azimuth Beam Port-to-Port Tracking	dB	2.5	2.5	3.5	2.0	4.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.5	7.4 ± 0.4	7.0 ± 0.6	6.2 ± 0.3	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.7	< 0.7	< 0.7	< 0.8
First Upper Sidelobe Suppression	dB	> 24	> 22	> 21	> 19	> 19
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y3 // R1, Y1, Y2, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y3	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y4, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.7	16.9	16.9	17.0	17.2
Gain over all Tilts	dBi	16.6 ± 0.7	16.8 ± 0.6	16.8 ± 0.6	17.0 ± 0.7	17.2 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 5.8	61 ± 3.8	62 ± 3.3	61 ± 2.9	62 ± 3.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 22	> 21	> 22
Cross Polar Discrimination at Boresight	dB	> 25	> 26	> 18	> 17	> 17
Azimuth Beam Port-to-Port Tracking	dB	2.5	2.0	3.0	2.0	4.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.5	7.5 ± 0.4	7.1 ± 0.5	6.3 ± 0.3	5.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.7	< 0.7	< 0.7	< 0.8
First Upper Sidelobe Suppression	dB	> 25	> 26	> 24	> 22	> 20
Intra-Cluster Isolation	dB	> 28				
Inter-Cluster Isolation	dB	> 28 (Y4 // R1, Y1, Y2, Y3)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y4	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	700 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	10x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1106   249 Lateral: 1139   256
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2697 / 353 / 164 106.2 / 13.9 / 6.5
Category of Mounting Hardware	H (Heavy)	
Weight	kg lb	38.3 / 41.3 (clamps incl.) 84.4 / 91 (clamps incl.)
Packing Size	mm inches	2910 / 377 / 210 114.6 / 14.8 / 8.3
Scope of Supply	Panel, integrated RET and 2 units of clamps for 55–115 mm   2.2–4.5 inches diameter	

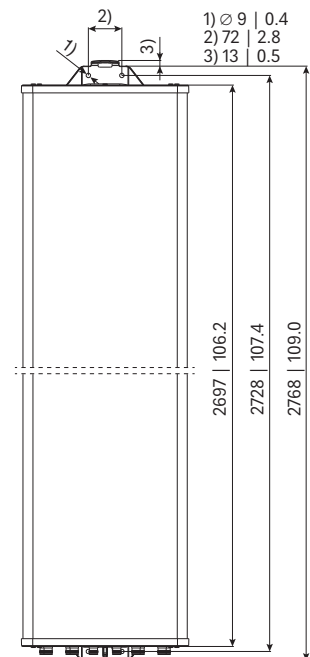
## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110 – 220   4.3 – 8.7	2
85010003	1 clamp	Mast diameter: 210 – 380   8.3 – 15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–8°	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

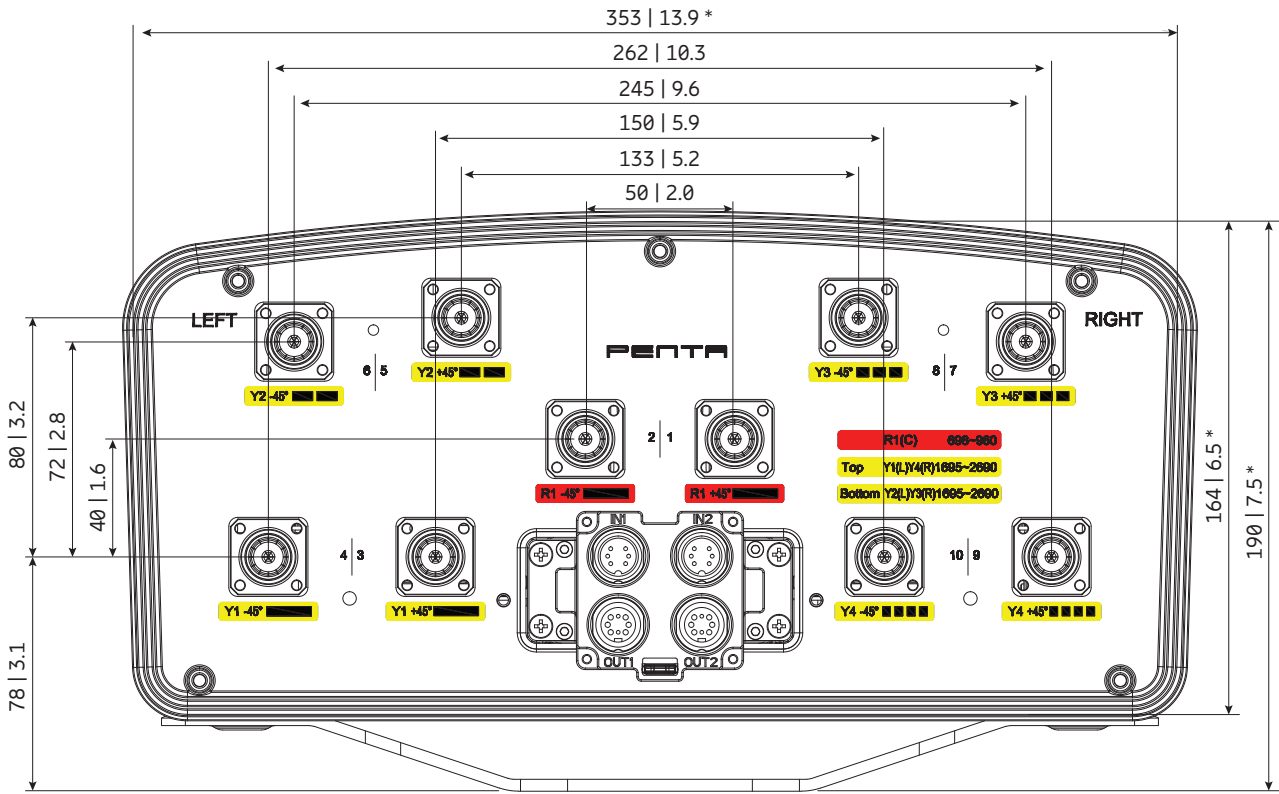
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



All dimensions  
in mm | inches

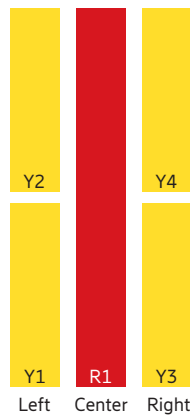
## Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4
1695–2690 MHz	Y2	5–6
1695–2690 MHz	Y3	7–8
1695–2690 MHz	Y4	9–10



## Multi-Band Configuration 2LB nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
<b>2x Lowband   2x Midband</b>						
Antenna 4000 2L 2M 1.5m 80010964	2x 698–960 2x 1695–2690	65 65	14.0 17.5	2–16 2.5–12	4.3-10	<a href="#">150</a>
Antenna 4004 2L 2M 1.5m KRE 101 2540/1	2x 698–894 2x 1695–2360	65 65	14.0 19.0	2–15 0–12	4.3-10	<a href="#">155</a>
Antenna 4006 2L 2M 1.5m KRE 101 2574/1	2x 698–960 2x 1695–2690	65 65	14.6 16.8	2–16 2–12	4.3-10	<a href="#">160</a>
Antenna 4000 2L 2M 1.8m 840480965	2x 698–894 2x 1695–2360	65 65	15.0 19.0	2.5–10 1–10	4.3-10	<a href="#">165</a>
Antenna 4004 2L 2M 1.8m KRE 101 2473/1	2x 617–894 2x 1695–2690	65 65	15.5 18.0	4–13 1–11	4.3-10	<a href="#">170</a>
Antenna 4000 2L 2M 2.0m 80010965	2x 698–960 2x 1695–2690	65 65	15.5 18.0	2–12 2.5–12	4.3-10	<a href="#">175</a>
Antenna 4002 2L 2M 2.0m 800372965	2x 698–960 2x 1427–2690	65 65	15.4 17.9	2.5–11.5 2–12	4.3-10	<a href="#">180</a>
Antenna 4006 2L 2M 2.0m KRE 101 2565/1	2x 698–960 2x 1695–2690	65 65	15.0 17.0	2–12 2–12	4.3-10	<a href="#">185</a>
Antenna 4000 2L 2M 2.4m 80010966	2x 698–960 2x 1695–2690	65 65	16.5 18.0	1–10 2.5–12	4.3-10	<a href="#">190</a>
Antenna 4001 2L 2M 2.4m 840370966	2x 698–894 2x 1695–2360	65 65	15.5 18.0	1–10 2.5–12	4.3-10	<a href="#">195</a>
Antenna 4002 2L 2M 2.4m 840480966	2x 698–894 2x 1695–2360	65 65	16.5 19.0	2.5–10 2.5–12	4.3-10	<a href="#">200</a>
Antenna 4003 2L 2M 2.4m 840590966	2x 617–894 2x 1695–2690	65 65	16.0 18.0	2–10 1–11	4.3-10	<a href="#">205</a>
Antenna 4008 2L 2M 2.4m KRE 101 2586/1	2x 698–894 2x 1695–2360	65 65	16.0 19.0	0–11 0–11	4.3-10	<a href="#">210</a>
Antenna 4002 2L 2M 2.6m 800372966	2x 698–960 2x 1427–2690	65 65	16.4 17.9	2.5–10 2–12	4.3-10	<a href="#">215</a>
Antenna 4004 2L 2M 2.6m KRE 101 2566/1	2x 698–960 2x 1695–2690	65 65	16.0 17.5	1–10 2–12	4.3-10	<a href="#">220</a>
<b>2x Lowband   3x Midband</b>						
Antenna 4400 2L 3M 1.5m 800442004	2x 698–960 2x 1427–2690 1x 1695–2690	65 65 65	14.6 17.6 17.7	2–14 2–12 2–12	4.3-10	<a href="#">225</a>
Antenna 4401 2L 3M 2.0m KRE 101 2476/1	2x 698–960 2x 1427–2690 1x 1695–2690	65 65 65	15.9 17.6 17.6	2.5–11.5 2–12 2–12	4.3-10	<a href="#">231</a>

[New product](#)

# Multi-Band Configuration

## 2LB nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
2x Lowband   4x Midband						
Antenna 4800 2L 4M 1.5m 800482001	2x 698–960	65	14.6	2–12	4.3-10	<a href="#">237</a>
	2x 1427–2690	65	17.8	2–12		
	2x 1695–2690	65	17.2	2–12		
Antenna 4801 2L 4M 1.5m KRE 101 2524/1	2x 698–960	65	13.9	2–12	4.3-10	<a href="#">243</a>
	2x 1427–2690	65	17.9	3–12		
	2x 1695–2690	65	18.4	2–12		
Antenna 4802 2L 4M 1.5m KRE 101 2527/1	2x 698–894	65	14.0	2.5–10	4.3-10	<a href="#">249</a>
	4x 1695–2360	65	19.0	0–12		
Antenna 4805 2L 4M 1.5m KRE 101 2575/1	2x 698–960	65	14.0	2–16	4.3-10	<a href="#">255</a>
	4x 1695–2690	65	17.0	2–12		
Antenna 4800 2L 4M 1.8m KRE 101 2526/1	2x 698–894	65	15.0	2.5–12	4.3-10	<a href="#">261</a>
	4x 1695–2360	65	19.0	0–10		
Antenna 4202 2L 4M 2.0m 800372991	2x 698–960	65	15.0	2.5–11.5	4.3-10	<a href="#">267</a>
	2x 1695–2690	65	16.0	2–12		
	2x 1427–2690	65	16.0	2–12		
Antenna 4207 2L 4M 2.0m KRE 101 2567/1	2x 698–960	65	15.0	2–12	4.3-10	<a href="#">273</a>
	4x 1695–2690	65	16.0	2–12		
Antenna 4800 2L 4M 2.0m 800482002	2x 698–960	65	15.8	2.5–11.5	4.3-10	<a href="#">279</a>
	2x 1427–2690	65	17.8	2–12		
	2x 1695–2690	65	17.5	2–12		
Antenna 4801 2L 4M 2.0m KRE 101 2525/1	2x 698–960	65	14.7	2.2–11.5	4.3-10	<a href="#">285</a>
	2x 1427–2690	65	18.0	2–12		
	2x 1695–2690	65	17.7	2–12		
Antenna 4870 2L 4M 2.0m KRE 101 2583/1	2x 698–894	65	16.0	2.5–10	4.3-10	<a href="#">291</a>
	4x 1695–2360	65	19.0	0–10		
Antenna 4200 2L 4M 2.4m 840370799	2x 698–894	65	15.5	1–10	4.3-10	<a href="#">297</a>
	4x 1695–2360	65	17.0	2.5–12		
Antenna 4800 2L 4M 2.4m 840590003	2x 617–894	65	16.0	2–10	4.3-10	<a href="#">303</a>
	4x 1695–2690	65	18.5	1.5–11		
Antenna 4801 2L 4M 2.4m KRE 101 2487/1	2x 698–894	65	16.0	2.5–10	4.3-10	<a href="#">309</a>
	4x 1695–2360	65	19.0	0–10		
Antenna 4202 2L 4M 2.6m 800372992	2x 698–960	65	16.4	2.5–10	4.3-10	<a href="#">315</a>
	2x 1427–2690	65	17.6	2–12		
	2x 1695–2690	65	16.8	2–12		
Antenna 4207 2L 4M 2.6m KRE 101 2568/1	2x 698–960	65	16.5	1–10	4.3-10	<a href="#">321</a>
	4x 1695–2690	65	17.0	2–12		
Antenna 4800 2L 4M 2.6m KRE 101 2520/1	2x 698–960	65	16.8	2.5–10	4.3-10	<a href="#">327</a>
	2x 1427–2690	65	17.7	2–12		
	2x 1695–2690	65	17.9	2–12		
Antenna 4801 2L 4M 2.6m KRE 101 2584/1	2x 698–960	65	16.8	2.5–10	4.3-10	<a href="#">333</a>
	2x 2500–2690	65	17.6	2–12		
	2x 1695–2170	65	17.5	2–12		

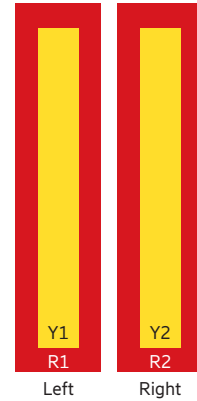
New product

# Multi-Band Configuration

## 2LB nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
<b>2x Lowband   5x Midband</b>						
Antenna 4500 2L 5M 2.0m 800442025	2x 698–960	65	15.9	2.5–11.5	4.3-10	<a href="#">338</a>
	2x 1427–2180	65	17.0	2–12		
	2x 2490–2690	65	17.0	2–12		
	1x 1695–2690	65	17.6	2–12		
<b>2x Lowband   6x Midband</b>						
Antenna 4900 2L 6M 1.5m 800482021	2x 698–960	65	14.7	2–12	4.3-10	<a href="#">344</a>
	2x 1427–2180	65	16.8	2–12		
	2x 2490–2690	65	17.0	2–12		
	2x 1695–2690	65	17.3	2–12		
Antenna 4600 2L 6M 2.0m 800442008	2x 698–960	65	15.7	2.5–11.5	4.3-10	<a href="#">351</a>
	2x 1427–2690	65	16.2	2–12		
	2x 1695–2690	65	15.9	2–12		
	1x 1695–2690	65	16.6	2–12		
	1x 1695–2690	65	16.3	2–12		
Antenna 4300 2L 6M 2.6m 800372995	2x 698–960	65	16.5	2.5–10	4.3-10	<a href="#">357</a>
	2x 1695–2690	65	16.8	2–12		
	2x 1427–2180	65	16.5	2–12		
	2x 2490–2690	65	16.6	2–12		
Antenna 4600 2L 6M 2.6m 800442009	2x 698–960	65	16.7	2.5–10	4.3-10	<a href="#">363</a>
	2x 1427–2690	65	17.3	2–12		
	2x 1695–2690	65	16.7	2–12		
	2x 1695–2690	65	17.2	2–12		
Antenna 4603 2L 6M 2.6m KRE 101 2634/1	2x 698–960	65	16.0	1–10	4.3-10	<a href="#">369</a>
	6x 1695–2690	65	18.0	2–12		
Antenna 5470 2L 6M 2.6m KRE 101 2545/1	2x 698–960	65	16.5	2.5–10	4.3-10	<a href="#">376</a>
	4x 1695–2690	65	16.8	2–12		
	2x 1427–2180	65	16.5	2–12		
<b>2x Lowband   8x Midband</b>						
Antenna 5500 2L 8M 2.0m 800482028	2x 698–960	65	15.9	2.5–11.5	4.3-10, bottom	<a href="#">383</a>
	2x 1695–2690	65	16.0	2–12		
	2x 1427–2690	65	16.0	2–12		
	2x 1695–2180	65	16.2	2–12		
	2x 2490–2690	65	16.5	2–12		

[New product](#)



# Antenna 4000 2L 2M 1.5m

80010964

**Capacity**   Compact   Coverage

65° | 2x 698–960 MHz | 14.0 dBi  
65° | 2x 1695–2690 MHz | 17.5 dBi  
FlexRET



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2LB nMB

Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.6	14.2	14.3	14.6
Gain over all Tilts	dBi	13.6 ± 0.6	14.2 ± 0.3	14.3 ± 0.3	14.5 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	65 ± 4.2	63 ± 2.4	62 ± 2.4	59 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 25	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	17.8 ± 1.8	16.2 ± 1.0	15.8 ± 0.8	14.7 ± 1.1
Electrical Downtilt continuously adjustable	°	2.0 – 16.0			
Tilt Accuracy	°	< 0.7	< 0.7	< 0.8	< 0.8
First Upper Side Lobe Suppression	dB	> 17	> 16	> 15	> 15
Cross Polar Isolation	dB	> 28			
Port to Port Isolation	dB	> 26, typically 30 (R1 // R2) > 30 (R1 // Y1, Y2)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			
Max. Effective Power Ports R1	W	600 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.4	14.1	14.3	14.3
Gain over all Tilts	dBi	13.4 ± 0.5	14.0 ± 0.5	14.2 ± 0.3	14.3 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 5.6	62 ± 2.9	62 ± 2.9	60 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 24	> 26	> 26
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	17.6 ± 1.5	16.1 ± 1.3	15.5 ± 0.7	14.6 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 16.0			
Tilt Accuracy	°	< 1.1	< 0.8	< 0.8	< 1.1
First Upper Side Lobe Suppression	dB	> 18	> 15	> 15	> 16
Cross Polar Isolation	dB	> 28			
Port to Port Isolation	dB	> 26, typically 30 (R2 // R1) > 30 (R2 // Y1) > 27, typically 30 (R2 // Y2)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			
Max. Effective Power Ports R2	W	600 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Left side, midband

## Y1, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.9	17.3	17.5	17.7	17.2
Gain over all Tilts	dBi	16.9 ± 0.3	17.3 ± 0.4	17.4 ± 0.4	17.7 ± 0.8	17.1 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 4.0	63 ± 4.9	60 ± 4.5	54 ± 4.5	56 ± 8.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 25	> 25	> 27	> 23
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.8 ± 0.3	6.4 ± 0.2	6.0 ± 0.5	5.2 ± 0.3	4.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.3	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 17	> 16	> 15	> 14
Cross Polar Isolation	dB	> 26, typically 30				
Port to Port Isolation	dB	> 30 (Y1 // R1, R2, Y2)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				
Max. Effective Power Ports Y1	W	400 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Right side, midband

## Y2, connector 7–8

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.8	17.2	17.3	17.6	17.0
Gain over all Tilts	dBi	16.8 ± 0.4	17.2 ± 0.5	17.2 ± 0.6	17.6 ± 0.9	17.0 ± 1.0
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	67 ± 4.7	64 ± 6.7	61 ± 6.8	55 ± 6.0	54 ± 9.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 25	> 25	> 26	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.8 ± 0.3	6.4 ± 0.3	6.0 ± 0.5	5.3 ± 0.3	4.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 16	> 16	> 15	> 16	> 14
Cross Polar Isolation	dB	> 26, typically 30				
Port to Port Isolation	dB	> 30 (Y2 // R1, R2, Y1)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				
Max. Effective Power Ports Y2	W	400 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 26
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input		8x 4.3-10 female
Connector Position		bottom
Adjustment Mechanism		FlexRET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 835   188 Maximal: 840   189
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1499 / 508 / 175 59.0 / 20.0 / 6.9
Category of Mounting Hardware		XM (X-Medium)
Weight	kg lb	34.2 / 38.7 (clamps incl.) 75.4 / 85.3 (clamps incl.)
Packing Size	mm inches	1700 / 542 / 268 66.9 / 21.3 / 10.6
Scope of Supply		Panel, FlexRET and clamps for 55 – 115 mm   2.2 – 4.5 inches diameter

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–18°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

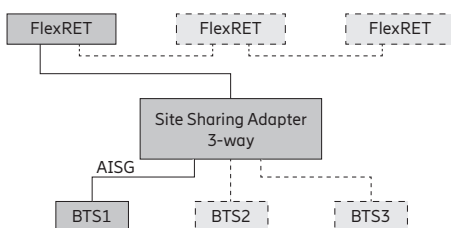
Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010153V01	FlexRET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

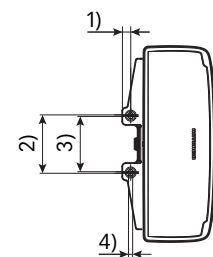
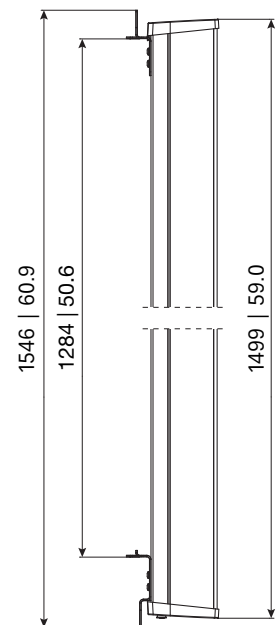
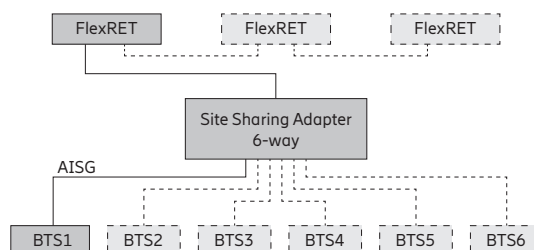
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

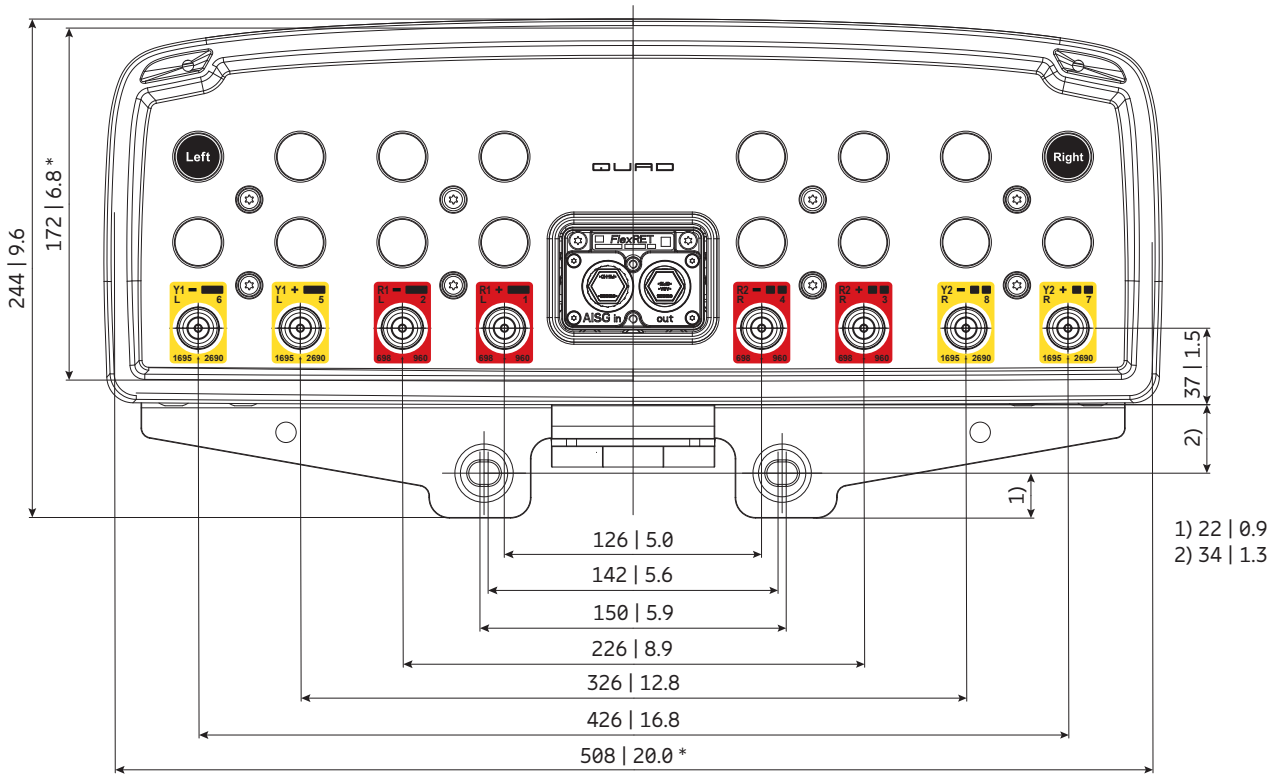


- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8





# Antenna 4004 2L 2M 1.5m

KRE 101 2540/1

Capacity    Compact    Coverage

65° | 2x 698–894 MHz | 14.0 dBi  
65° | 2x 1695–2360 MHz | 19.0 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	12.8	13.8
Gain over all Tilts	dBi	12.8 ± 0.3	13.7 ± 0.3
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	68 ± 8.1	58 ± 5.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	16.0 ± 0.9	14.6 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 15.0	
Tilt Accuracy	°	< 1.0	< 1.0
First Upper Sidelobe Suppression	dB	> 13	> 15
Intra-Cluster Isolation	dB	> 25	
Inter-Cluster Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)	
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	12.7	13.8
Gain over all Tilts	dBi	12.8 ± 0.3	13.7 ± 0.3
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	66 ± 8.4	57 ± 7.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 25
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	15.9 ± 0.9	14.7 ± 0.7
Electrical Downtilt continuously adjustable	°	2.0 – 15.0	
Tilt Accuracy	°	< 1.0	< 1.0
First Upper Sidelobe Suppression	dB	> 13	> 15
Intra-Cluster Isolation	dB	> 25	
Inter-Cluster Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)	
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband		Y1, connector 5–6			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	16.7	17.1	17.8	18.8
Gain over all Tilts	dBi	16.7 ± 0.7	17.2 ± 0.6	17.8 ± 1.0	18.8 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	74 ± 7.0	67 ± 5.1	60 ± 7.7	52 ± 5.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 29	> 30	> 32
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.0 ± 0.5	6.5 ± 0.4	6.1 ± 0.5	5.5 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 12.0			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, midband		Y2, connector 7–8			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	16.6	17.0	17.7	18.6
Gain over all Tilts	dBi	16.6 ± 0.7	17.0 ± 0.6	17.6 ± 1.0	18.6 ± 1.1
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	75 ± 4.6	68 ± 5.1	623 ± 7.7	52 ± 8.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 30	> 30	> 32	> 33
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.8 ± 0.6	6.3 ± 0.5	5.9 ± 0.7	5.4 ± 0.3
Electrical Downtilt continuously adjustable	°	0.0 – 12.0			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 670   150 Maximal: 760   170 Lateral: 265   59
EPA	m <sup>2</sup>   ft <sup>2</sup>	Frontal: 0.614   6.61 Maximal: 0.697   7.49 Lateral: 0.241   2.59
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1499 / 488 / 164 59.0 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	29.7 / 34.2 (clamps incl.) 65.5 / 75.4 (clamps incl.)
Packing Size	mm inches	1650 / 550 / 293 65.0 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

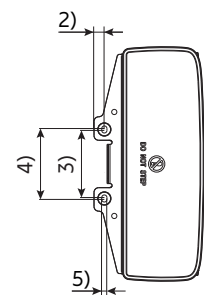
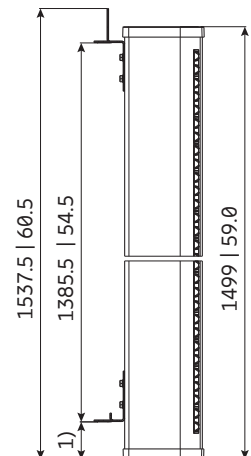
Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010167	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3*	1

\* FlexRET 86010167 does not support AISG 3 feature MALD

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

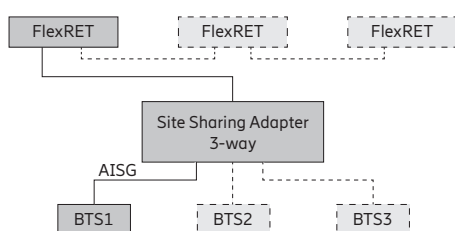
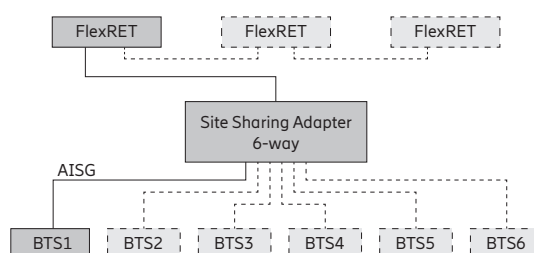
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



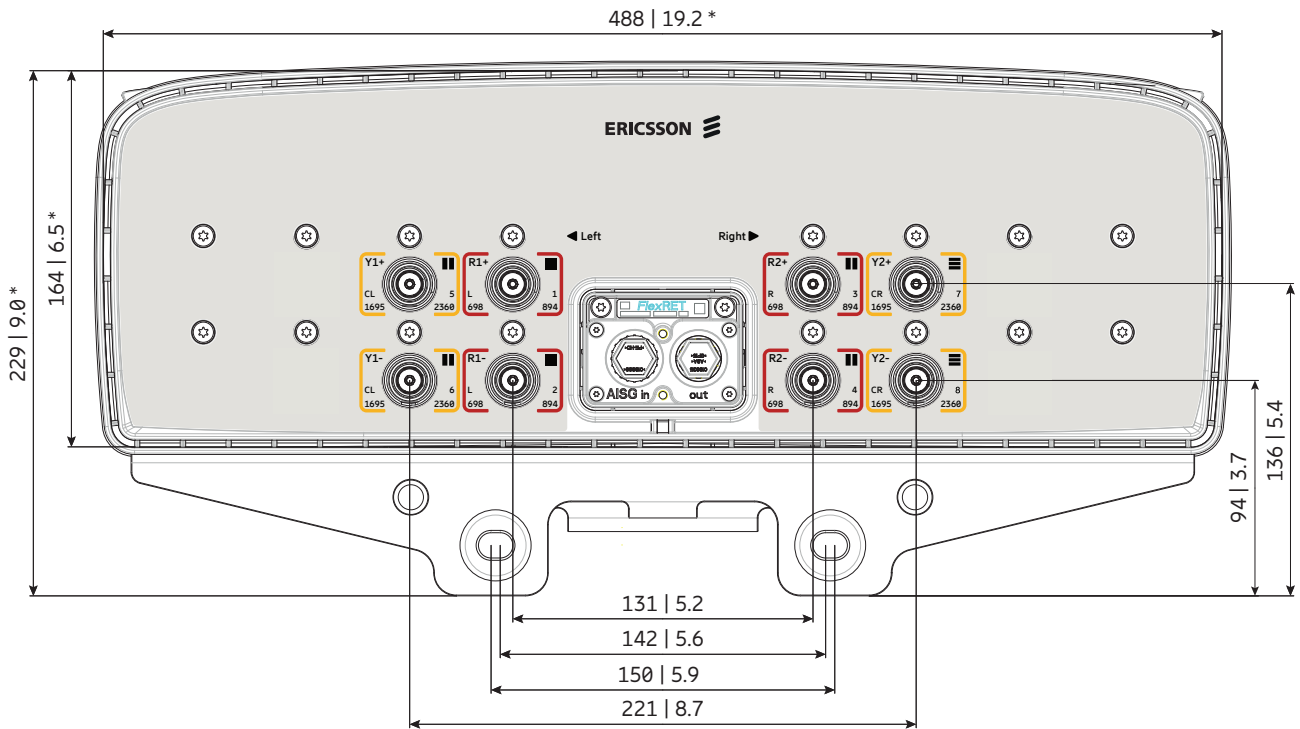
- 1) 79 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5) 11 | 0.4

All dimensions  
in mm | inches

Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

For more information please refer to the respective data sheets.

## Layout of interface

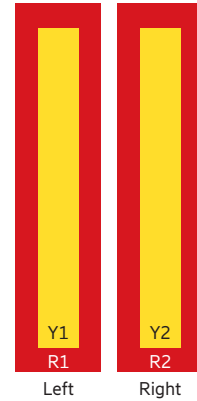


Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–894 MHz	R1	1–2
698–894 MHz	R2	3–4
1695–2360 MHz	Y1	5–6
1695–2360 MHz	Y2	7–8





# Antenna 4006 2L 2M 1.5m

KRE 101 2574/1

**Capacity**   Compact   Coverage

65° | 2x 698–960 MHz | 14.6 dBi  
65° | 2x 1695–2690 MHz | 16.8 dBi  
Electrical downtilt set by integrated RET



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2LB nMB



Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.8	14.2	14.5	14.8
Gain over all Tilts	dBi	13.8 ± 0.4	14.3 ± 0.3	14.5 ± 0.3	14.8 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 3.8	65 ± 4.2	64 ± 3.6	61 ± 2.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 18	> 22	> 22	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	15.1 ± 1.0	14.1 ± 0.8	13.7 ± 0.6	12.9 ± 0.7
Electrical Downtilt continuously adjustable	°	2.0 – 16.0			
Tilt Accuracy	°	< 0.7	< 0.6	< 0.6	< 0.6
First Upper Sidelobe Suppression	dB	> 16	> 16	> 16	> 16
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	> 27 (R1 // R2, Y1, Y2)			
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.7	14.1	14.3	14.7
Gain over all Tilts	dBi	13.6 ± 0.4	14.1 ± 0.3	14.3 ± 0.3	14.6 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	69 ± 4.6	66 ± 4.3	65 ± 3.3	62 ± 2.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 22	> 21	> 20
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	15.4 ± 1.1	14.3 ± 0.6	13.9 ± 0.6	13.1 ± 0.7
Electrical Downtilt continuously adjustable	°	2.0 – 16.0			
Tilt Accuracy	°	< 0.8	< 0.6	< 0.7	< 0.6
First Upper Sidelobe Suppression	dB	> 17	> 17	> 17	> 17
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	> 27 (R2 // R1, Y1, Y2)			
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.6	16.7	16.7	16.5	16.9
Gain over all Tilts	dBi	16.5 ± 0.5	16.7 ± 0.6	16.7 ± 0.6	16.5 ± 0.8	16.8 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69 ± 3.4	68 ± 3.9	67 ± 4.4	61 ± 5.3	59 ± 4.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 22	> 20	> 20	> 19
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.5 ± 0.5	7.0 ± 0.4	6.7 ± 0.5	5.9 ± 0.3	5.5 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.9	< 0.9	< 0.9	< 0.8
First Upper Sidelobe Suppression	dB	> 23	> 24	> 23	> 20	> 17
Cross Polar Isolation	dB	> 26				
Port to Port Isolation	dB	> 27 (Y1 // R1, R2, Y2)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.5	16.7	16.7	16.6	17.0
Gain over all Tilts	dBi	16.4 ± 0.5	16.7 ± 0.7	16.7 ± 0.7	16.6 ± 0.7	17.0 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	71 ± 4.0	70 ± 3.9	69 ± 4.5	62 ± 6.7	58 ± 5.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 21	> 21	> 20	> 20
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.5 ± 0.5	7.0 ± 0.4	6.6 ± 0.5	5.8 ± 0.3	5.5 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.7	< 0.6	< 0.6
First Upper Sidelobe Suppression	dB	> 22	> 23	> 23	> 20	> 17
Cross Polar Isolation	dB	> 26				
Port to Port Isolation	dB	> 27 (Y2 // R1, R2, Y1)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	800 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 850   191 Maximal: 935   210
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1500 / 448 / 164 59.1 / 17.6 / 6.5
Category of Mounting Hardware	XH (X-Heavy)	
Weight	kg lb	30.7 / 35.7 (clamps incl.) 67.7 / 78.7 (clamps incl.)
Packing Size	mm inches	1720 / 473 / 250 67.7 / 18.6 / 9.8
Scope of Supply	Panel, integrated RET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010099	1 downtilt kit	Downtilt angle: 0°–18°	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010096	2 clamps	Mast diameter: 55–115   2.2–4.5	1
KRY 121 79/2	RET unit	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:**

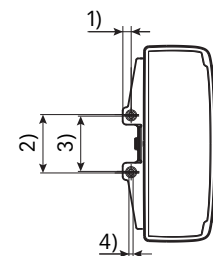
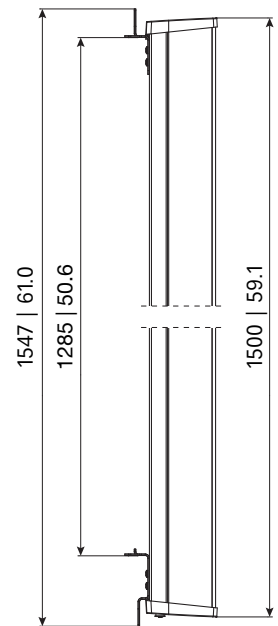
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:**

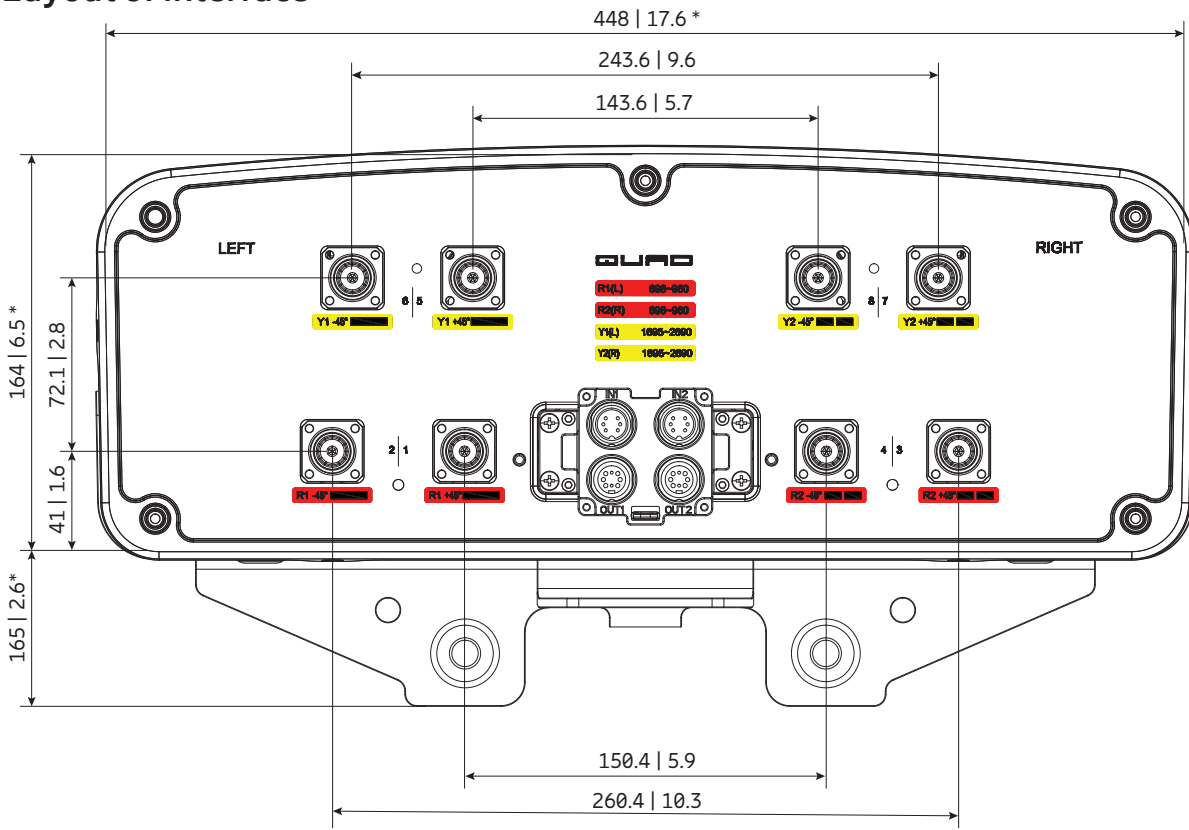
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



1)	22		0.9
2)	150		5.9
3)	142		5.6
4)	11		0.4

All dimensions  
in mm | inches

### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698-960 MHz	R1	1-2
698-960 MHz	R2	3-4
1695-2690 MHz	Y1	5-6
1695-2690 MHz	Y2	7-8





2LB nMB

# Antenna 4000 2L 2M 1.8m

840480965

- Capacity
- Compact
- Coverage

65° | 2x 698–894 MHz | 15.0 dBi  
65° | 2x 1695–2360 MHz | 19.0 dBi  
FlexRET



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Left side, Lowband		R1, connector 1–2	
Frequency Range	MHz	698 – 824	824 – 894
Gain at mid Tilt	dBi	14.4	15.3
Gain over all Tilts	dBi	14.4 ± 0.5	15.3 ± 0.2
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	64 ± 5.8	57 ± 3.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 26
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	13.0 ± 0.8	11.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 10.0	
Tilt Accuracy	°	< 0.6	< 0.6
First Upper Side Lobe Suppression	dB	> 15	> 16
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 15	> 16
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (R1 // R2) > 27 (R1 // Y1, Y2)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4	
Frequency Range	MHz	698 – 824	824 – 894
Gain at mid Tilt	dBi	14.4	15.2
Gain over all Tilts	dBi	14.4 ± 0.5	15.2 ± 0.4
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	64 ± 5.0	57 ± 5.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 27
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	13.0 ± 0.9	11.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 10.0	
Tilt Accuracy	°	< 0.8	< 0.6
First Upper Side Lobe Suppression	dB	> 14	> 15
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 14	> 15
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (R2 // R1) > 27 (R2 // Y1, Y2)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 5–6			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	18.5	18.7	18.8	18.8
Gain over all Tilts	dBi	18.4 ± 0.5	18.6 ± 0.6	18.7 ± 0.5	18.7 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 4.3	66 ± 3.1	67 ± 5.1	65 ± 3.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 30	> 31	> 32
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.6 ± 0.3	5.1 ± 0.2	4.8 ± 0.3	4.4 ± 0.2
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.2	< 0.2	< 0.3	< 0.2
First Upper Side Lobe Suppression	dB	> 18	> 18	> 18	> 19
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 16	> 18	> 17	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 27 (Y1 // R1, R2, Y2)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y2, connector 7–8			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	18.5	18.7	18.8	18.6
Gain over all Tilts	dBi	18.4 ± 0.7	18.6 ± 0.6	18.7 ± 0.6	18.5 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 4.5	67 ± 3.1	67 ± 5.9	68 ± 4.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 29	> 31	> 31
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.5 ± 0.4	5.0 ± 0.3	4.8 ± 0.3	4.4 ± 0.2
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 16	> 16	> 16	> 17
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 16	> 16	> 16	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 27 (Y2 // R1, R2, Y1)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	8 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 825   186 Maximal: 935   210 Lateral: 325   73
EPA	m <sup>2</sup>   ft <sup>2</sup>	Frontal: 0.759   8.17 Maximal: 0.859   9.25 Lateral: 0.298   3.21
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1828 / 488 / 164 72.0 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	39.5 / 44.0 (clamps incl.) 87.1 / 97.0 (clamps incl.)
Packing Size	mm inches	1975 / 550 / 293 77.8 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–14°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

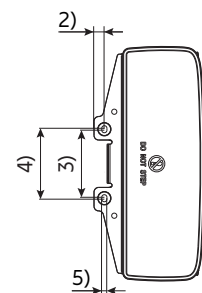
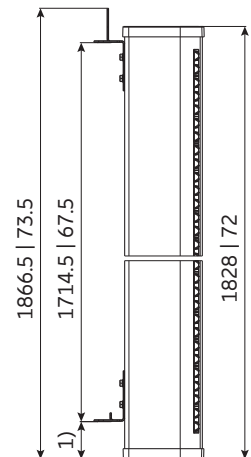
## Material:

**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

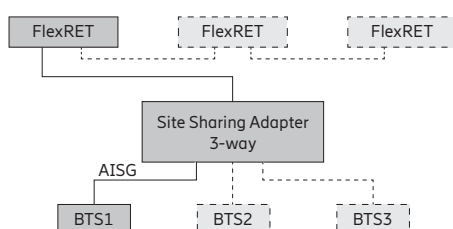
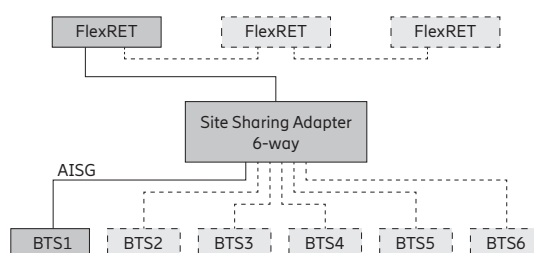
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 79 | 3.1
- 2) 22 | 0.9
- 3) 142 | 5.6
- 4) 150 | 5.9
- 5)  $\varnothing$  11 | 0.4

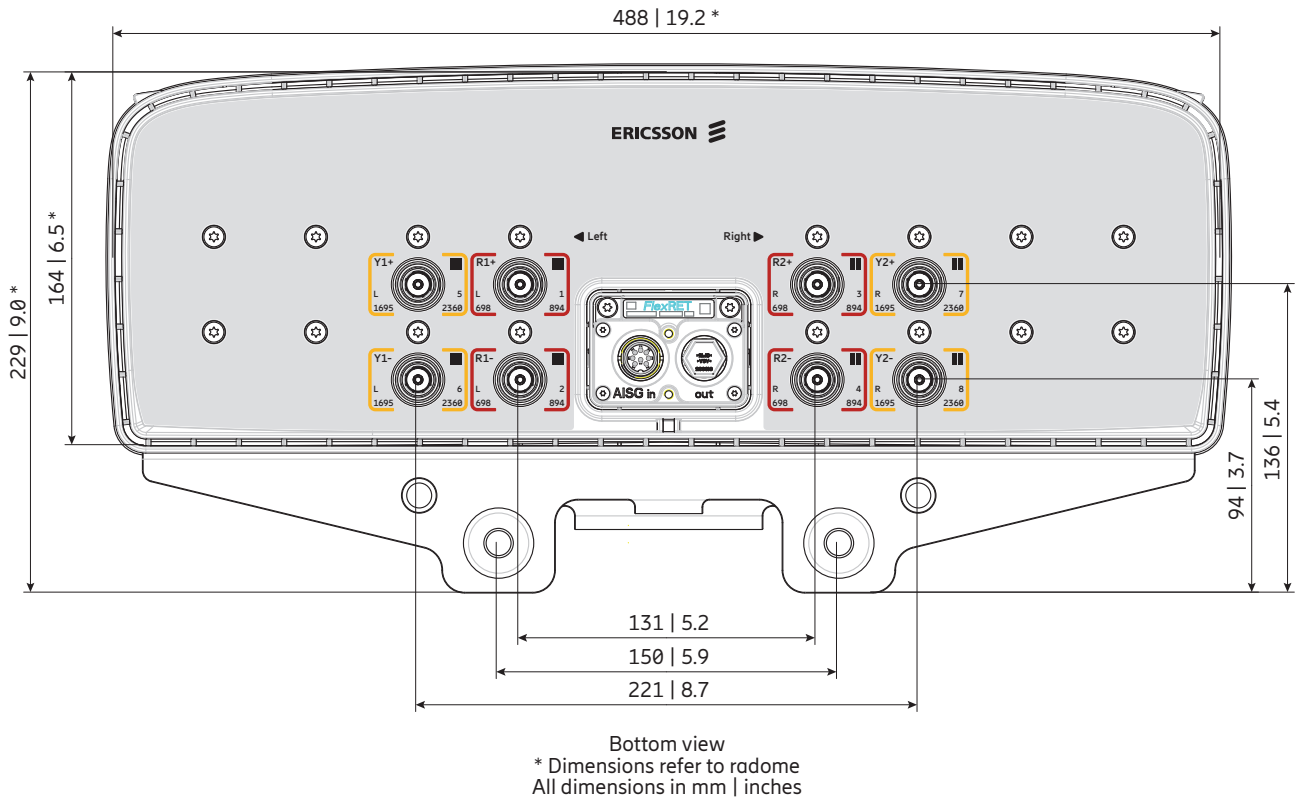
All dimensions  
in mm | inches

Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

For more information please refer to the respective data sheets.



## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–894 MHz	R1	1–2
698–894 MHz	R2	3–4
1695–2360 MHz	Y1	5–6
1695–2360 MHz	Y2	7–8





# Antenna 4004 2L 2M 1.8m

KRE 101 2473/1

Capacity    Compact    Coverage

65° | 2x 617–894 MHz | 15.5 dBi  
65° | 2x 1695–2690 MHz | 18.0 dBi  
FlexRET



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2LB nMB

Left side, lowband		R1, connector 1–2		
Frequency Range	MHz	617 – 698	698 – 806	824 – 894
Gain at mid Tilt	dBi	14.3	14.9	15.5
Gain over all Tilts	dBi	14.3 ± 0.4	14.9 ± 0.4	15.5 ± 0.3
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	66 ± 5.0	67 ± 2.4	66 ± 2.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 17	> 21	> 25
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	13.9 ± 0.7	12.6 ± 0.7	11.5 ± 0.4
Electrical Downtilt continuously adjustable	°	4.0 – 13.0		
Tilt Accuracy	°	< 0.7	< 0.6	< 0.5
First Upper Sidelobe Suppression	dB	> 14	> 18	> 16
Intra-Cluster Isolation	dB	> 25		
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2)		
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4		
Frequency Range	MHz	617 – 698	698 – 806	824 – 894
Gain at mid Tilt	dBi	14.3	14.9	15.5
Gain over all Tilts	dBi	14.3 ± 0.5	14.9 ± 0.4	15.5 ± 0.3
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	67 ± 5.3	67 ± 2.8	66 ± 2.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 16	> 21	> 25
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	13.8 ± 0.8	12.7 ± 0.7	11.5 ± 0.4
Electrical Downtilt continuously adjustable	°	4.0 – 13.0		
Tilt Accuracy	°	< 0.7	< 0.6	< 0.5
First Upper Sidelobe Suppression	dB	> 14	> 17	> 15
Intra-Cluster Isolation	dB	> 25		
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2)		
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.6	17.8	17.6	17.6	17.6
Gain over all Tilts	dBi	17.6 ± 0.6	17.7 ± 0.5	17.5 ± 0.8	17.5 ± 0.7	17.5 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 4.2	64 ± 4.1	68 ± 5.5	68 ± 3.6	58 ± 9.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 30	> 30	> 29	> 29	> 28
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	5.7 ± 0.3	5.4 ± 0.3	5.1 ± 0.4	4.6 ± 0.2	4.2 ± 0.3
Electrical Downtilt continuously adjustable	°	1.0 – 11.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 18	> 18	> 17	> 18	> 18
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.6	17.8	17.7	17.8	17.7
Gain over all Tilts	dBi	17.5 ± 0.7	17.7 ± 0.6	17.5 ± 0.8	17.7 ± 0.7	17.5 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 4.3	65 ± 5.2	68 ± 5.2	67 ± 2.6	57 ± 8.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 30	> 28	> 29	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	5.7 ± 0.4	5.3 ± 0.4	5.0 ± 0.5	4.6 ± 0.3	4.2 ± 0.3
Electrical Downtilt continuously adjustable	°	1.0 – 11.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 16	> 17	> 16	> 17	> 17
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	+45, -45°
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 975   219 Maximal: 1130   255
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1827 / 596 / 180 71.9 / 23.5 / 7.1
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	40.0 / 45.0 (clamps incl.) 88.2 / 99.2 (clamps incl.)
Packing Size	mm inches	1975 / 670 / 300 77.7 / 26.3 / 11.8
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010167	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3*	1

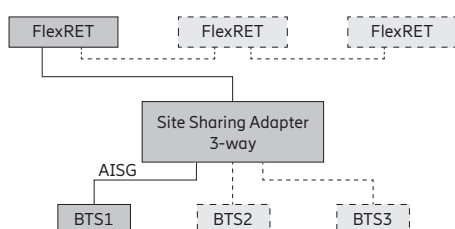
\* FlexRET 86010167 does not support AISG 3 feature MALD

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

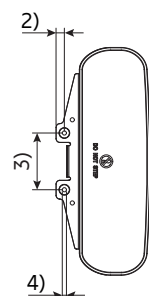
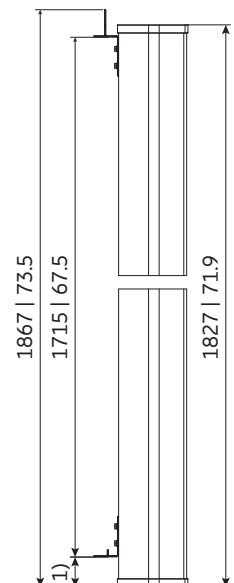
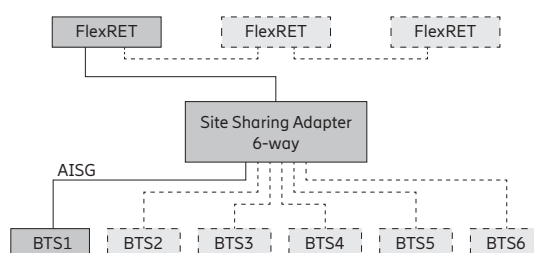
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

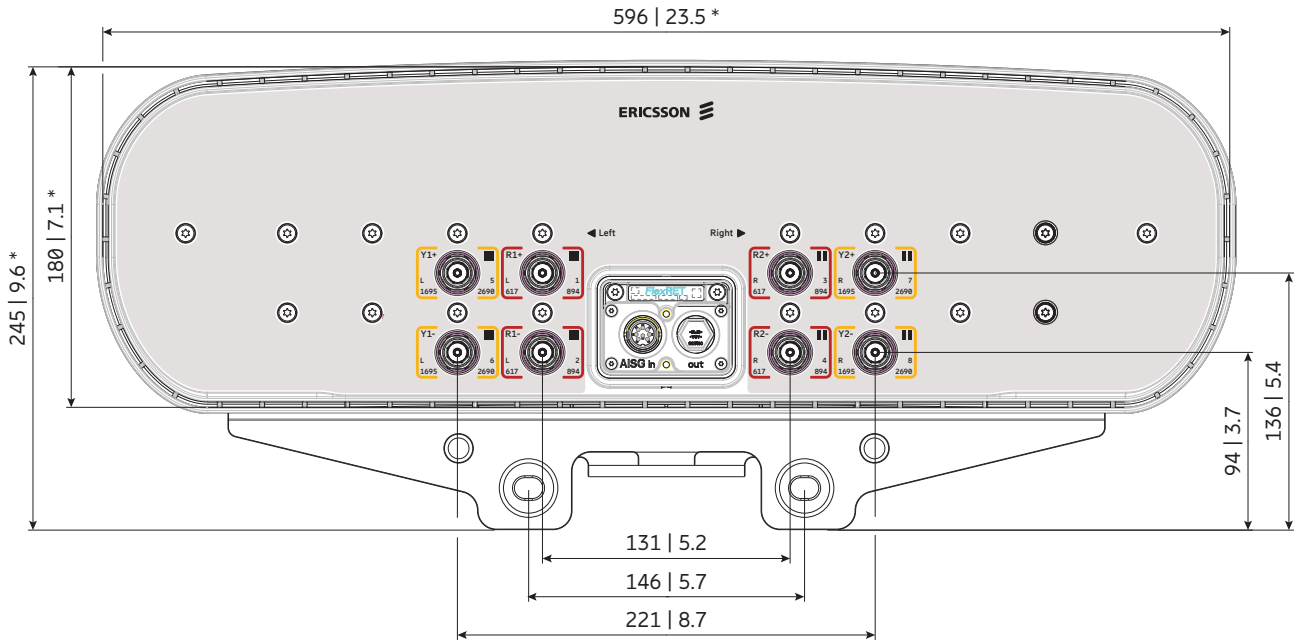


1) 79 | 3.1  
2) 22 | 0.9  
3) 146 | 5.7  
4) ø 11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

## Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

2LB nMB

## Correlation Table

Frequency range	Array	Connector / Ports	RET
617–894 MHz	R1	1–2	R1
617–894 MHz	R2	3–4	
1695–2690 MHz	Y1	5–6	Y1
1695–2690 MHz	Y2	7–8	





# Antenna 4000 2L 2M 2.0m

80010965

**Capacity** Compact Coverage

65° | 2x 698–960 MHz | 15.5 dBi  
65° | 2x 1695–2690 MHz | 18.0 dBi  
FlexRET



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2LB nMB

Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	790 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.8	15.4	15.6	15.9
Gain over all Tilts	dBi	14.8 ± 0.6	15.4 ± 0.4	15.6 ± 0.2	15.8 ± 0.2
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 3.9	61 ± 3.2	60 ± 2.7	60 ± 2.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 25	> 27	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.9 ± 0.8	11.0 ± 0.8	10.5 ± 0.4	10.2 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.7	< 0.7	< 0.7	< 0.7
First Upper Side Lobe Suppression	dB	> 14	> 14	> 15	> 14
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R1 // R2) > 30 (R1 // Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Ports R1	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	790 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.8	15.3	15.5	15.8
Gain over all Tilts	dBi	14.8 ± 0.6	15.3 ± 0.3	15.5 ± 0.3	15.7 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 3.6	62 ± 1.8	62 ± 2.1	60 ± 3.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 24	> 26	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.6 ± 0.7	11.0 ± 0.6	10.7 ± 0.4	10.2 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.7	< 0.6	< 0.6	< 0.5
First Upper Side Lobe Suppression	dB	> 14	> 16	> 16	> 16
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R2 // R1) > 30 (R2 // Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Ports R2	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.



Left side, midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.6	17.9	18.3	18.1	18.1
Gain over all Tilts	dBi	17.5 ± 0.4	17.8 ± 0.4	18.1 ± 0.5	18.0 ± 0.6	18.0 ± 0.4
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 5.1	65 ± 4.1	62 ± 7.2	56 ± 4.1	57 ± 5.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 25	> 25	> 25	> 25
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.4 ± 0.5	5.9 ± 0.3	5.5 ± 0.4	4.8 ± 0.3	4.4 ± 0.2
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.2	< 0.1	< 0.2	< 0.3	< 0.2
First Upper Side Lobe Suppression	dB	> 19	> 18	> 16	> 18	> 16
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	> 30 (Y1 // R1, R2, Y2)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				
Max. Effective Power Ports Y1	W	400 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.5	18.0	18.3	18.2	17.9
Gain over all Tilts	dBi	17.4 ± 0.4	17.8 ± 0.4	18.1 ± 0.6	18.0 ± 0.7	17.8 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65 ± 4.7	66 ± 4.7	62 ± 7.8	57 ± 3.8	59 ± 7.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 26	> 26	> 25	> 24
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.4 ± 0.4	5.9 ± 0.3	5.5 ± 0.5	4.8 ± 0.3	4.4 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.3	< 0.2
First Upper Side Lobe Suppression	dB	> 18	> 18	> 15	> 17	> 16
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	> 30 (Y2 // R1, R2, Y1)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				
Max. Effective Power Ports Y2	W	400 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1130   254 Maximal: 1140   256
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1999 / 508 / 175 78.7 / 20.0 / 6.9
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	41.6 / 46.1 (clamps incl.) 91.7 / 101.6 (clamps incl.)
Packing Size	mm inches	2200 / 542 / 268 86.6 / 21.3 / 10.6
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–13°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010153V01	FlexRET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

## Material:

**Reflector screen:** Aluminum.

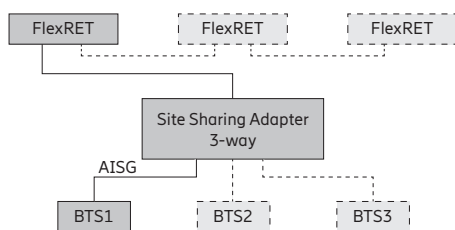
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

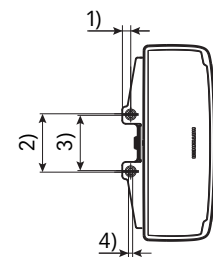
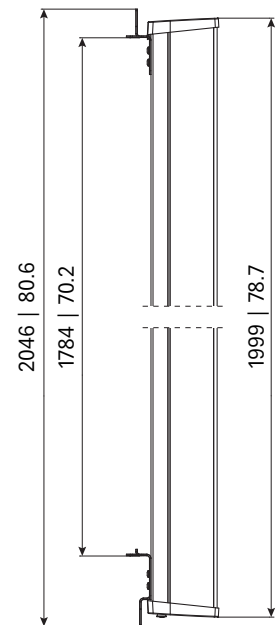
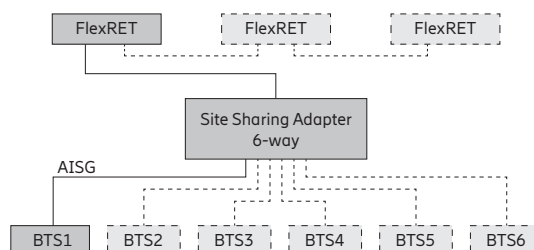
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

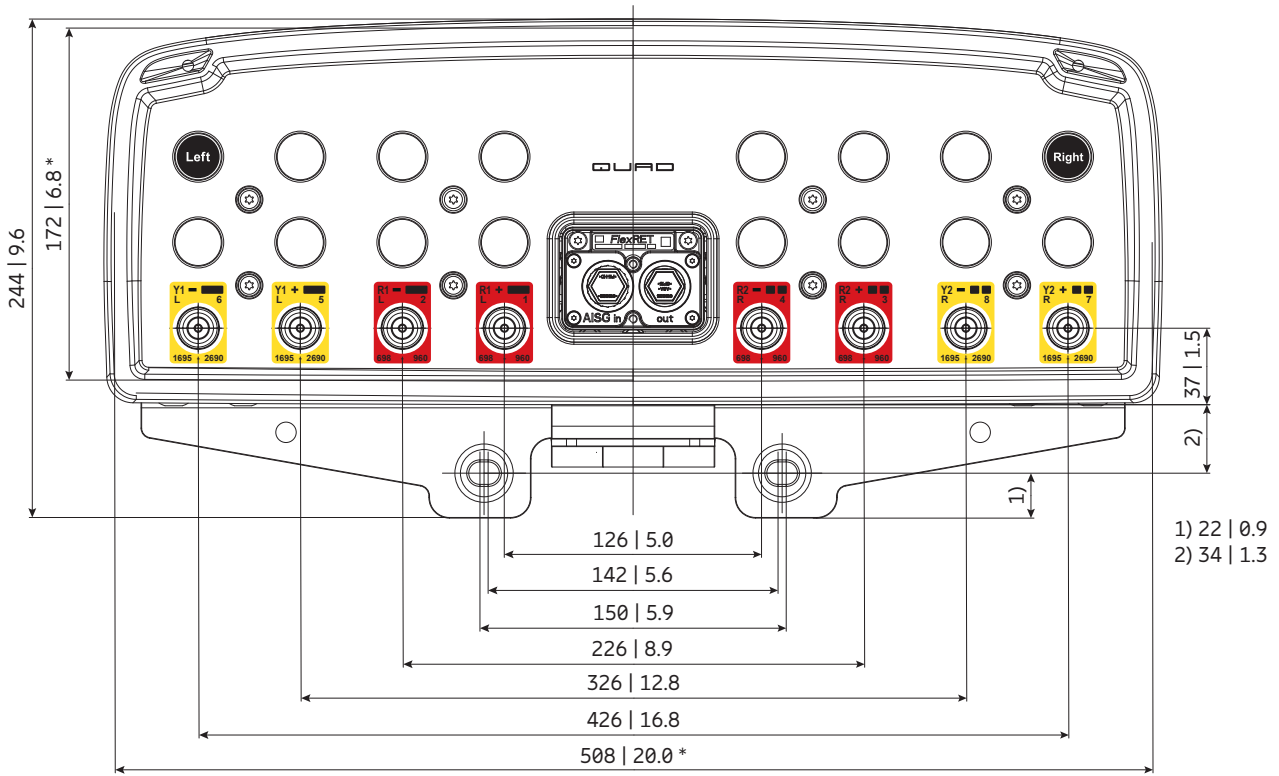


- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

## Layout of interface

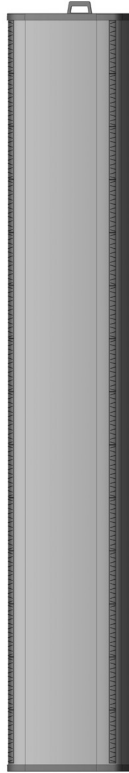


Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8





2LB nMB

# Antenna 4002 2L 2M 2.0m

800372965

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 15.4 dBi  
65° | 2x 1427–2690 MHz | 17.9 dBi  
FlexRET



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Left side, lowband		R1, connector 1 – 2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.0	14.7	15.0	15.4
Gain over all Tilts	dBi	14.0 ± 0.4	14.7 ± 0.4	15.0 ± 0.4	15.4 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 5.7	58 ± 3.7	57 ± 3.3	53 ± 5.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 18	> 20	> 22	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.8 ± 1.3	10.9 ± 0.6	10.7 ± 0.5	10.1 ± 0.7
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.5	< 0.4	< 0.5	< 0.5
First Upper Side Lobe Suppression	dB	> 16	> 17	> 19	> 21
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 dB (R1 // R2, Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3 – 4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.0	14.7	15.0	15.5
Gain over all Tilts	dBi	14.0 ± 0.4	14.7 ± 0.4	15.0 ± 0.5	15.5 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 4.8	59 ± 4.0	57 ± 3.3	53 ± 4.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 20	> 21	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.8 ± 0.9	11.0 ± 0.6	10.8 ± 0.6	10.2 ± 0.9
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Side Lobe Suppression	dB	> 16	> 17	> 19	> 21
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 dB (R2 // R1, Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 5–6					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.9	17.6	17.9	17.9	17.6	17.7
Gain over all Tilts	dBi	16.9 ± 0.7	17.5 ± 0.6	17.7 ± 0.8	17.9 ± 0.8	17.5 ± 0.7	17.7 ± 0.7
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	63 ± 4.9	68 ± 3.8	68 ± 6.3	67 ± 4.9	67 ± 6.3	60 ± 5.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 28	> 26	> 27	> 27	> 29
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.0 ± 0.4	6.9 ± 0.4	6.4 ± 0.3	6.2 ± 0.4	5.7 ± 0.3	5.4 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.4	< 0.2	< 0.2	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 20	> 21	> 19	> 19	> 19
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 dB (Y1 // R1, R2, Y2)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y2, connector 7–8					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.9	17.5	17.8	17.9	17.5	17.7
Gain over all Tilts	dBi	16.9 ± 0.6	17.5 ± 0.5	17.7 ± 0.8	17.9 ± 0.8	17.5 ± 0.6	17.6 ± 0.7
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	63 ± 4.0	68 ± 4.1	68 ± 3.9	66 ± 6.2	66 ± 6.4	60 ± 5.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 27	> 26	> 27	> 26	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	7.9 ± 0.4	6.8 ± 0.4	6.4 ± 0.3	6.1 ± 0.4	5.6 ± 0.3	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 18	> 19	> 18	> 18	> 17
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 dB (Y2 // R1, R2, Y1)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	8 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 465   105 Maximal: 815   183
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1978 / 378 / 164 77.9 / 14.9 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	35.9 / 40.4 (clamps incl.) 79.1 / 89.1 (clamps incl.)
Packing Size	mm inches	2125 / 440 / 293 83.7 / 17.3 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

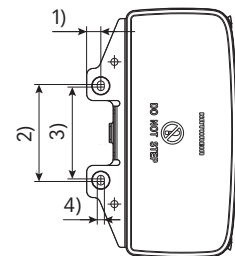
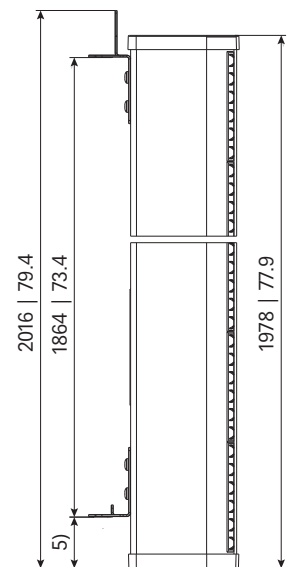
## Material:

**Reflector screen:** Aluminum.

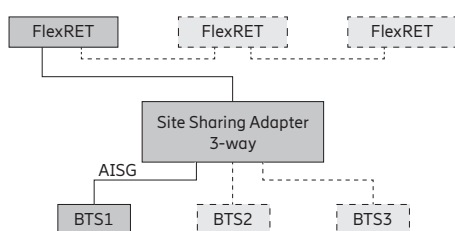
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

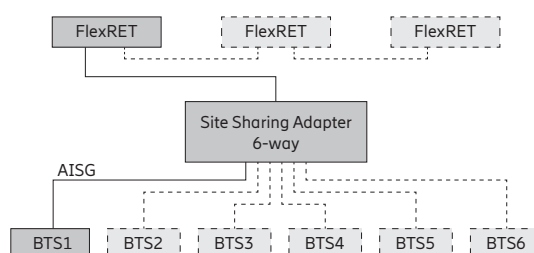
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



## Configuration example with Site Sharing Adapter 86010154



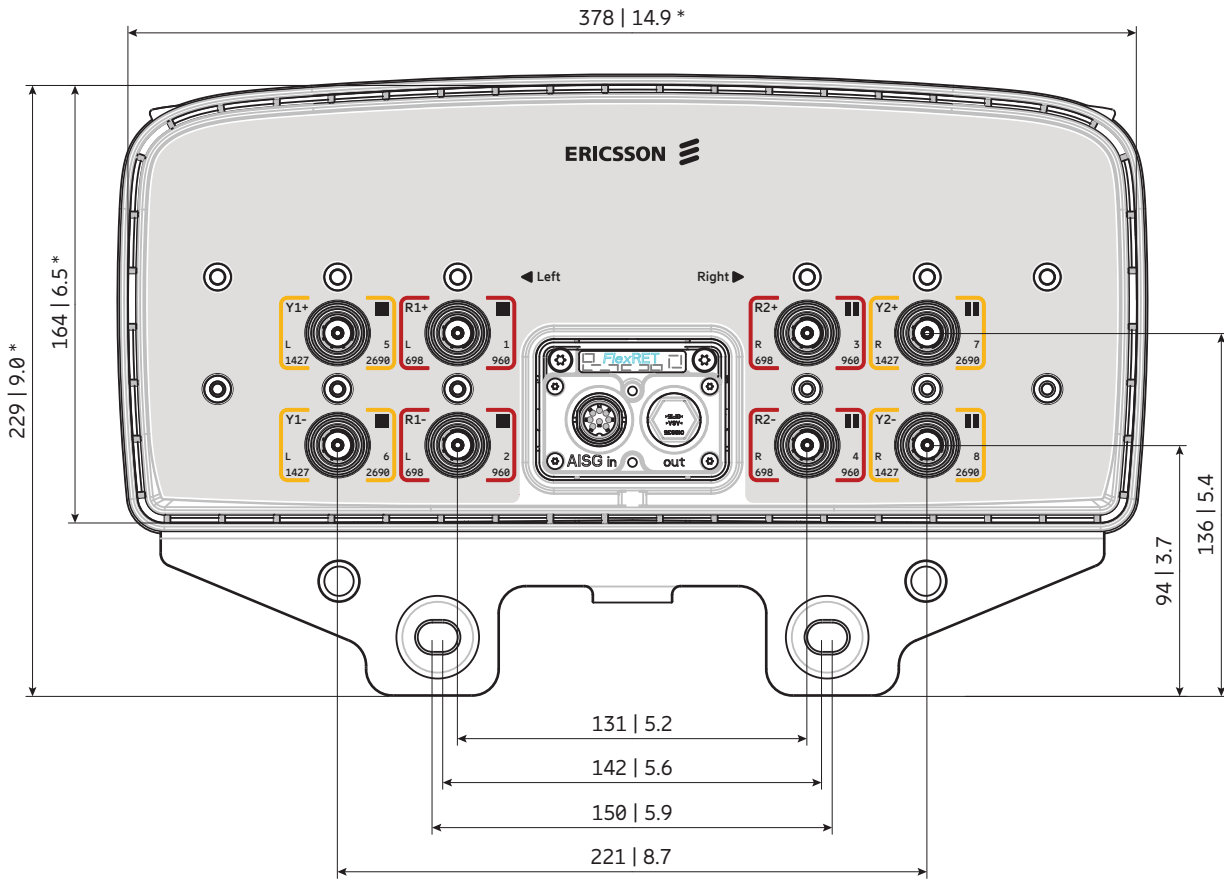
## Configuration example with Site Sharing Adapter 86010155



- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4
- 5) 79 | 3.1

For more information please refer to the respective data sheets.

## Layout of interface



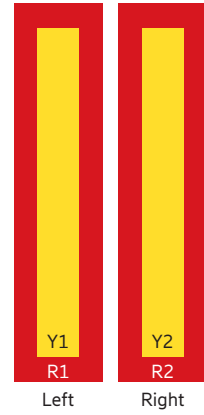
Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2690 MHz	Y1	5–6
1427–2690 MHz	Y2	7–8







# Antenna 4006 2L 2M 2.0m

KRE 101 2565/1

Capacity Compact Coverage

65° | 2x 698–960 MHz | 15.0 dBi  
65° | 2x 1695–2690 MHz | 17.0 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	790 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.0	14.5	14.7	15.0
Gain over all Tilts	dBi	14.0 ± 0.5	14.6 ± 0.5	14.7 ± 0.3	15.0 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	72 ± 8.7	68 ± 8.1	66 ± 3.9	62 ± 4.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 23	> 24
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.8 ± 1.1	10.8 ± 0.6	10.5 ± 0.7	9.8 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.9	< 1.1	< 1.1	< 1.2
First Upper Side Lobe Suppression	dB	> 16	> 17	> 17	> 17
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	> 27 (R1 // R2, Y1, Y2)			
Max. Effective Power per Port	W	150 (at 40 °C ambient temperature)			
Max. Effective Power Ports R1	W	300 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	790 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.9	14.5	14.7	15.1
Gain over all Tilts	dBi	13.9 ± 0.4	14.5 ± 0.5	14.7 ± 0.4	15.0 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	73 ± 7.0	69 ± 4.4	67 ± 5.3	63 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 23	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.8 ± 1.0	10.8 ± 0.7	10.5 ± 0.8	9.9 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.9	< 1.0	< 1.2	< 1.4
First Upper Side Lobe Suppression	dB	> 16	> 17	> 16	> 18
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	> 27 (R2 // R1, Y1, Y2)			
Max. Effective Power per Port	W	150 (at 40 °C ambient temperature)			
Max. Effective Power Ports R2	W	300 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.8	17.1	17.0	17.1	17.5
Gain over all Tilts	dBi	16.9 ± 0.7	17.1 ± 0.6	16.9 ± 0.8	17.0 ± 0.9	17.4 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 3.2	67 ± 3.0	65 ± 4.6	61 ± 6.2	60 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 25	> 24	> 25
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.7 ± 0.5	6.2 ± 0.3	5.9 ± 0.3	5.1 ± 0.2	4.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.3	< 0.2	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 16	> 16	> 19	> 16
Cross Polar Isolation	dB	> 27				
Port to Port Isolation	dB	> 27 (Y1 // R1, R2, Y2)				
Max. Effective Power per Port	W	125 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y1	W	200 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.7	16.9	16.8	16.7	17.4
Gain over all Tilts	dBi	16.7 ± 0.7	16.9 ± 0.7	16.8 ± 0.8	16.7 ± 0.9	17.2 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 3.3	67 ± 3.9	66 ± 4.8	61 ± 6.3	59 ± 3.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 23	> 23	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.8 ± 0.5	6.2 ± 0.3	5.9 ± 0.3	5.2 ± 0.3	4.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 17	> 17	> 16	> 17	> 18
Cross Polar Isolation	dB	> 27				
Port to Port Isolation	dB	> 27 (Y2 // R1, R2, Y1)				
Max. Effective Power per Port	W	125 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y2	W	200 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	800 (at 40 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	8 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1155   260 Maximal: 1270   286
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1986 / 448 / 164 78.2 / 17.6 / 6.5
Category of Mounting Hardware	XH (X-Heavy)	
Weight	kg lb	36.0 / 41.0 (clamps incl.) 79.4 / 90.4 (clamps incl.)
Packing Size	mm inches	2193 / 468 / 205 86.3 / 18.4 / 8.1
Scope of Supply	Panel, integrated RET and clamps for 55–115 mm   2.2–4.5 inches diameter	

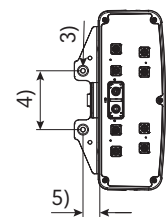
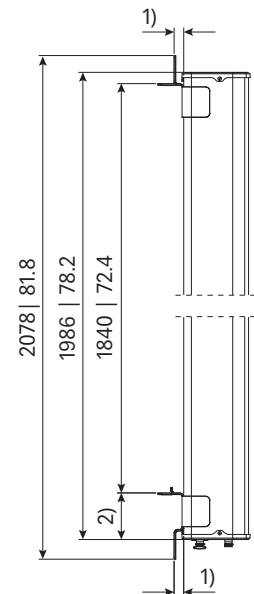
## Accessories (order separately if required)

Product No	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010099	1 downtilt kit	Downtilt angle: 0°–12°	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

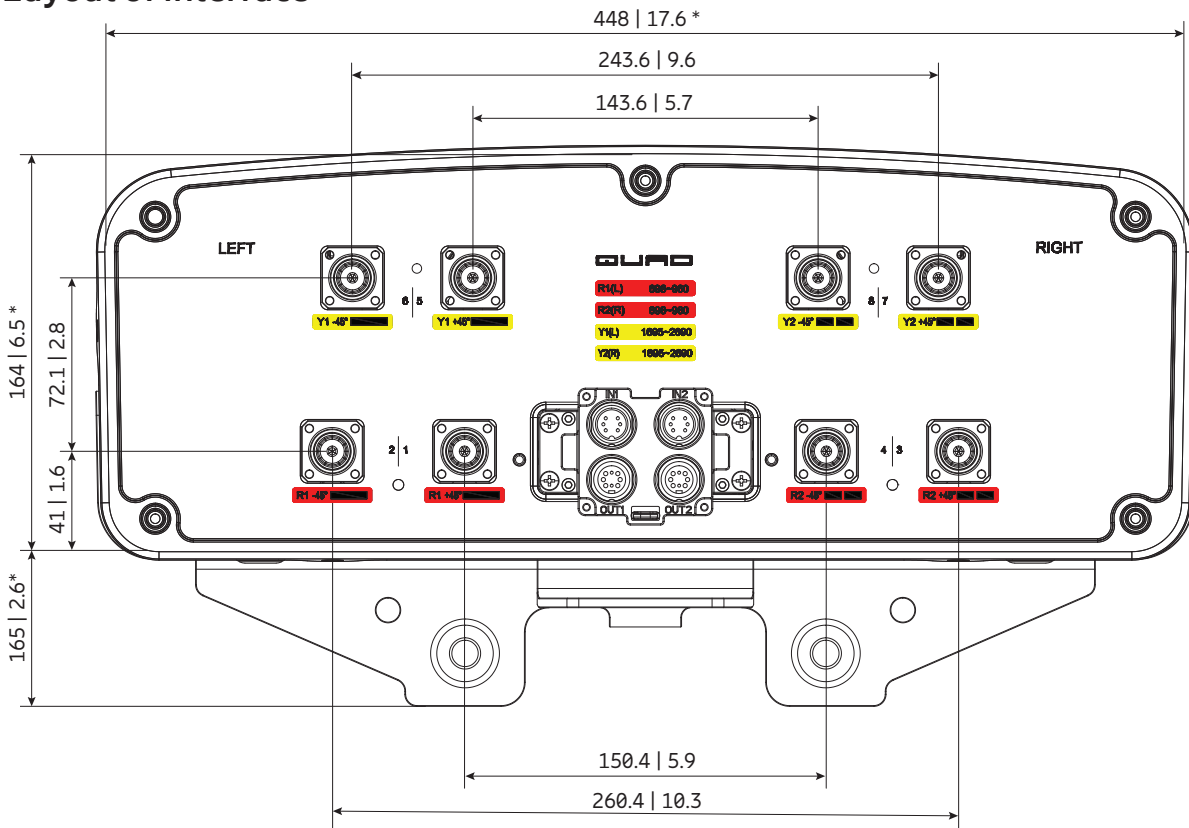
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 24 | 1.0  
2) 117.5 | 4.6  
3)  $\varnothing$  11 | 0.4  
4) 150 | 5.9  
5) 43 | 1.7

All dimensions  
in mm | inches

### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698-960 MHz	R1	1-2
698-960 MHz	R2	3-4
1695-2690 MHz	Y1	5-6
1695-2690 MHz	Y2	7-8





2LB nMB

# Antenna 4000 2L 2M 2.4m

80010966

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 16.5 dBi  
65° | 2x 1695–2690 MHz | 18.0 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.7	16.1	16.4	16.5
Gain over all Tilts	dBi	15.6 ± 0.4	16.1 ± 0.3	16.3 ± 0.3	16.4 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 2.9	65 ± 2.3	65 ± 2.6	64 ± 2.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 24	> 25
Cross Polar Discrimination over Sector	dB	> 10.0	> 9.5	> 10.0	> 11.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.7 ± 0.7	9.0 ± 0.5	8.7 ± 0.5	8.3 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 18	> 18	> 20
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R1 // R2) > 30 (R1 // Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Ports R1	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.5	16.0	16.3	16.6
Gain over all Tilts	dBi	15.5 ± 0.6	16.0 ± 0.5	16.3 ± 0.4	16.5 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 3.5	65 ± 2.6	64 ± 3.0	63 ± 4.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 24	> 26
Cross Polar Discrimination over Sector	dB	> 9.5	> 10.5	> 10.0	> 11.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.8 ± 0.6	9.0 ± 0.7	8.6 ± 0.4	8.1 ± 0.5
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.3
First Upper Side Lobe Suppression	dB	> 18	> 21	> 20	> 20
Cross Polar Isolation	dB	> 30			
Port to Port Isolation	dB	> 27 (R2 // R1) > 30 (R2 // Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			
Max. Effective Power Ports R2	W	800 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Left side, midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	17.6	18.0	18.3	18.1	17.9
Gain over all Tilts	dBi	17.5 ± 0.4	17.9 ± 0.4	18.1 ± 0.5	18.0 ± 0.6	17.8 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 4.9	64 ± 5.0	62 ± 5.4	57 ± 5.7	61 ± 7.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 26	> 26	> 25	> 24
Cross Polar Discrimination over Sector	dB	> 8.5	> 11.5	> 10.0	> 7.5	> 9.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.4 ± 0.5	5.9 ± 0.3	5.5 ± 0.4	4.8 ± 0.3	4.4 ± 0.2
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 19	> 19	> 17	> 19	> 17
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	> 30 (Y1 // R1, R2, Y2)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				
Max. Effective Power Ports Y1	W	400 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	17.5	17.9	18.2	18.3	18.1
Gain over all Tilts	dBi	17.4 ± 0.5	17.8 ± 0.4	18.0 ± 0.6	18.2 ± 0.6	17.9 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 3.0	66 ± 5.5	63 ± 6.9	56 ± 7.1	57 ± 7.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 24	> 25	> 27	> 25
Cross Polar Discrimination over Sector	dB	> 9.5	> 11.0	> 10.0	> 9.5	> 10.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.4 ± 0.5	5.9 ± 0.3	5.6 ± 0.4	4.9 ± 0.4	4.4 ± 0.2
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.2	< 0.1
First Upper Side Lobe Suppression	dB	> 19	> 18	> 18	> 19	> 18
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	> 30 (Y2 // R1, R2, Y1)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				
Max. Effective Power Ports Y2	W	400 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1400   315 Maximal: 1405   316
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2438 / 508 / 175 96.0 / 20.0 / 6.9
Category of Mounting Hardware	XH (X-Heavy)	
Weight	kg lb	47.1 / 52.1 (clamps incl.) 103.8 / 114.9 (clamps incl.)
Packing Size	mm inches	2635 / 542 / 268 103.7 / 21.3 / 10.6
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010099	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010096	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010153V01	FlexRET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

**Material:**

**Reflector screen:** Aluminum.

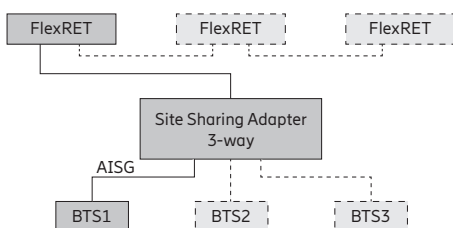
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

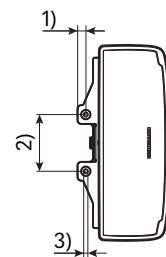
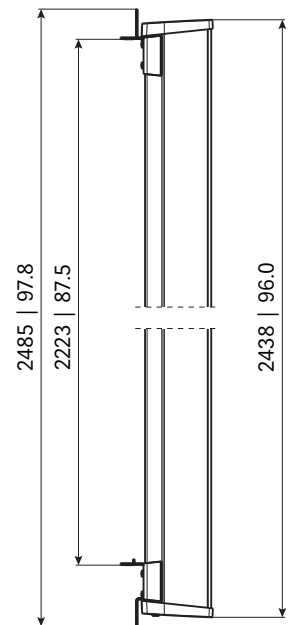
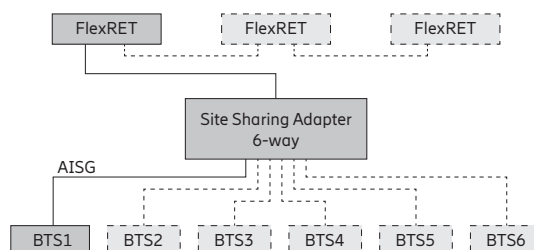
**Grounding:**

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

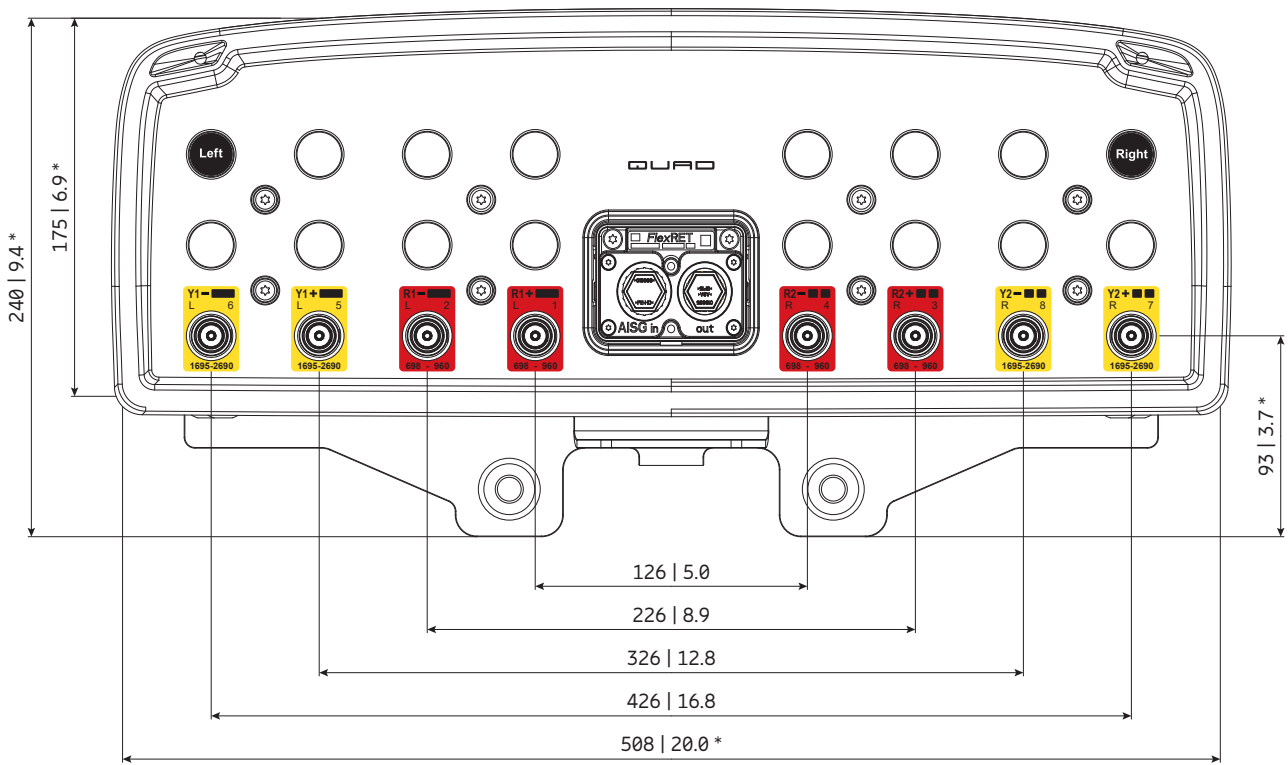


- 1) 22 | 0.9  
2) 150 | 5.9  
3)  $\varnothing$  11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

## Layout of interface

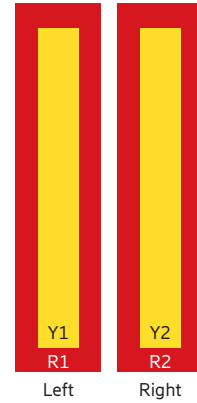
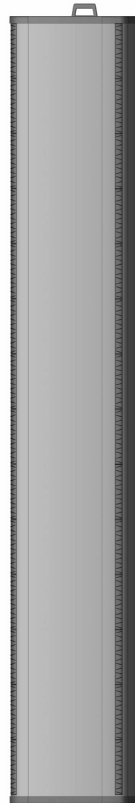


Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8





2LB nMB

# Antenna 4001 2L 2M 2.4m

840370966

Capacity

Compact

Coverage

65° | 2x 698–894 MHz | 15.5 dBi  
65° | 2x 1695–2360 MHz | 18.0 dBi  
FlexRET  
Ultra compact width



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Left side, lowband		R1, connector 1 – 2	
Frequency Range	MHz	698 – 824	824 – 894
Gain at mid Tilt	dBi	14.8	15.9
Gain over all Tilts	dBi	14.8 ± 0.5	15.9 ± 0.4
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	60 ± 4.4	56 ± 4.2
Front-to-Back Ratio, ± 30°	dB	> 25	> 25
Cross Polar Discrimination at Boresight	dB	> 16	> 22
Cross Polar Discrimination over Sector	dB	> 7.5	> 9.5
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.8 ± 0.6	8.8 ± 0.3
Electrical Downtilt continuously adjustable	°	1.0 – 10.0	
Tilt Accuracy	°	< 0.8	< 0.6
First Upper Side Lobe Suppression	dB	> 16	> 17
Cross Polar Isolation	dB	> 25 typically	
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2) typically	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	
Max. Effective Power Ports R1	W	800 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, lowband		R2, connector 3 – 4	
Frequency Range	MHz	698 – 824	824 – 894
Gain at mid Tilt	dBi	14.8	15.8
Gain over all Tilts	dBi	14.8 ± 0.5	15.8 ± 0.4
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	60 ± 4.5	57 ± 4.8
Front-to-Back Ratio, ± 30°	dB	> 25	> 25
Cross Polar Discrimination at Boresight	dB	> 16	> 21
Cross Polar Discrimination over Sector	dB	> 8.0	> 11.0
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.8 ± 0.6	8.8 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0	
Tilt Accuracy	°	< 0.8	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 19
Cross Polar Isolation	dB	> 25 typically	
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2) typically	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	
Max. Effective Power Ports R2	W	800 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 9.6) requirements.

Left side, midband		Y1, connector 5–6			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2305 – 2360
Gain at mid Tilt	dBi	17.8	18.1	18.3	18.3
Gain over all Tilts	dBi	17.7 ± 0.3	17.9 ± 0.4	18.2 ± 0.6	18.2 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 4.0	66 ± 4.2	63 ± 5.6	64 ± 4.0
Front-to-Back Ratio, ± 30°	dB	> 26	> 28	> 29	> 30
Cross Polar Discrimination at Boresight	dB	> 17	> 23	> 23	> 19
Cross Polar Discrimination over Sector	dB	> 11.5	> 12.5	> 9.5	> 8.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.0 ± 0.3	5.5 ± 0.3	5.2 ± 0.4	4.6 ± 0.2
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			
Tilt Accuracy	°	< 0.3	< 0.4	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 18	> 21	> 19	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y1	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, midband		Y2, connector 7–8			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2305 – 2360
Gain at mid Tilt	dBi	17.7	18.2	18.3	18.4
Gain over all Tilts	dBi	17.7 ± 0.3	18.0 ± 0.4	18.2 ± 0.6	18.3 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 4.1	66 ± 4.0	63 ± 5.5	63 ± 4.3
Front-to-Back Ratio, ± 30°	dB	> 25	> 27	> 28	> 32
Cross Polar Discrimination at Boresight	dB	> 17	> 23	> 24	> 20
Cross Polar Discrimination over Sector	dB	> 12.0	> 12.5	> 8.5	> 9.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.0 ± 0.3	5.5 ± 0.3	5.2 ± 0.4	4.6 ± 0.2
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 18	> 21	> 19	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y2	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

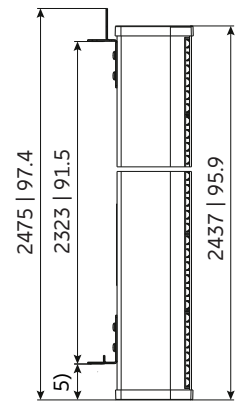
Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input		8x 4.3-10 female
Connector Position		bottom
Adjustment Mechanism		FlexRET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 590   132 Lateral: 485   109 Maximal: 1035   233
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2437 / 378 / 164 96.0 / 14.9 / 6.5
Category of Mounting Hardware		XM (X-Medium)
Weight	kg lb	39.3 / 43.8 (clamps incl.) 86.6 / 96.9 (clamps incl.)
Packing Size	mm inches	2585 / 440 / 293 101.8 / 17.3 / 11.5
Scope of Supply		Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1



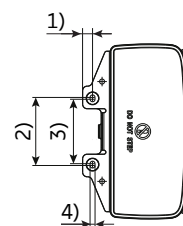
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010153V01	FlexRET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

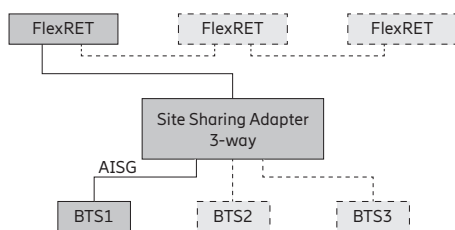
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



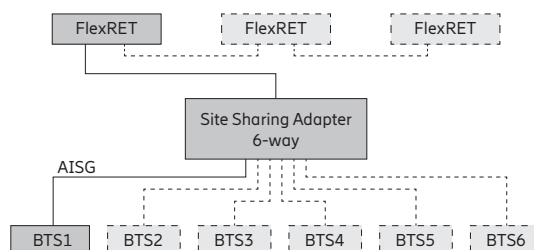
- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4
- 5) 79 | 3.1

All dimensions in mm | inches

## Configuration example with Site Sharing Adapter 86010154

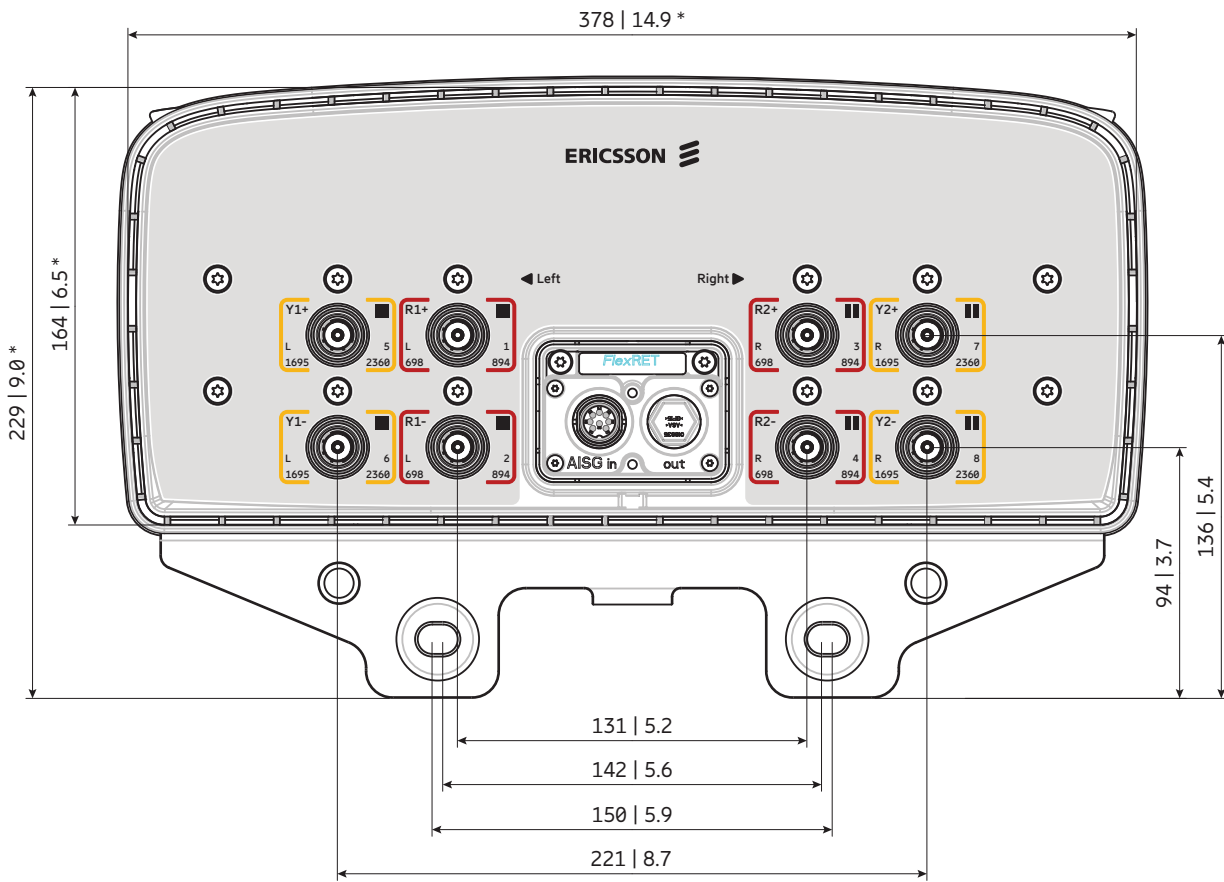


## Configuration example with Site Sharing Adapter 86010155



For more information please refer to the respective data sheets.

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–894 MHz	R1	1–2
698–894 MHz	R2	3–4
1695–2360 MHz	Y1	5–6
1695–2360 MHz	Y2	7–8





# Antenna 4002 2L 2M 2.4m

840480966

Capacity    Compact    Coverage

65° | 2x 698–894 MHz | 16.5 dBi  
65° | 2x 1695–2360 MHz | 19.0 dBi  
FlexRET



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2LB nMB



Left side, Lowband		R1 , connector 1–2	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.7	16.4
Gain over all Tilts	dBi	15.7 ± 0.7	16.4 ± 0.5
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	63 ± 5.1	56 ± 3.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 25
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.7 ± 0.5	9.0 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 10.0	
Tilt Accuracy	°	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 19
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 15	> 17
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (R1 // R2) > 30 (R1 // Y1, Y2)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.6	16.4
Gain over all Tilts	dBi	15.6 ± 0.6	16.4 ± 0.4
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	63 ± 5.6	57 ± 3.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 25
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.7 ± 0.5	8.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 10.0	
Tilt Accuracy	°	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 15	> 18
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 15	> 17
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (R2 // R1) > 30 (R2 // Y1, Y2)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 5–6			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	18.2	18.6	18.8	18.8
Gain over all Tilts	dBi	18.1 ± 0.7	18.5 ± 0.6	18.7 ± 0.8	18.8 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 4.3	65 ± 2.8	62 ± 6.1	57 ± 5.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 28	> 30	> 31
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.6 ± 0.4	5.2 ± 0.4	5.0 ± 0.4	4.5 ± 0.2
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 15	> 15	> 16	> 17
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 14	> 15	> 16	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 30 (Y1 // R1, R2, Y2)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y2, connector 7–8			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	18.2	18.6	18.9	18.8
Gain over all Tilts	dBi	18.1 ± 0.7	18.5 ± 0.6	18.8 ± 0.9	18.8 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 3.6	65 ± 2.1	62 ± 6.1	57 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 28	> 29	> 30
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.5 ± 0.4	5.1 ± 0.3	4.9 ± 0.4	4.4 ± 0.2
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			
Tilt Accuracy	°	< 0.2	< 0.2	< 0.1	< 0.1
First Upper Side Lobe Suppression	dB	> 15	> 15	> 16	> 18
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 14	> 15	> 16	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	30 (Y2 // R1, R2, Y1)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	8 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1120   252 Maximal: 1270   286 Lateral: 440   99
EPA	m <sup>2</sup>   ft <sup>2</sup>	Frontal: 1.029   11.08 Maximal: 1.166   12.55 Lateral: 0.404   4.35
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2437 / 488 / 164 95.9 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	47.0 / 51.5 (clamps incl.) 103.6 / 113.5 (clamps incl.)
Packing Size	mm inches	2858 / 550 / 293 112.5 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010167	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3*	1

\* FlexRET 86010167 does not support AISG 3 feature MALD

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

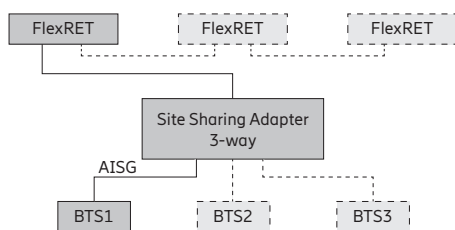
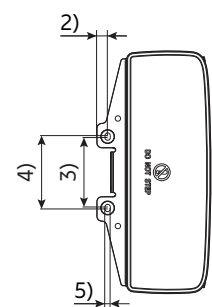
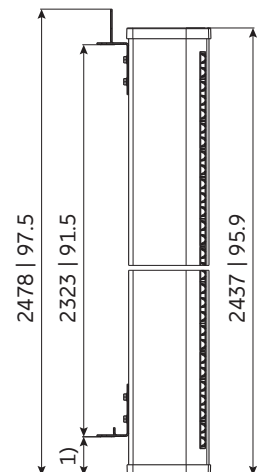
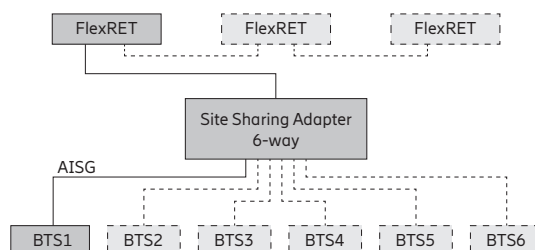
## Material:

**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

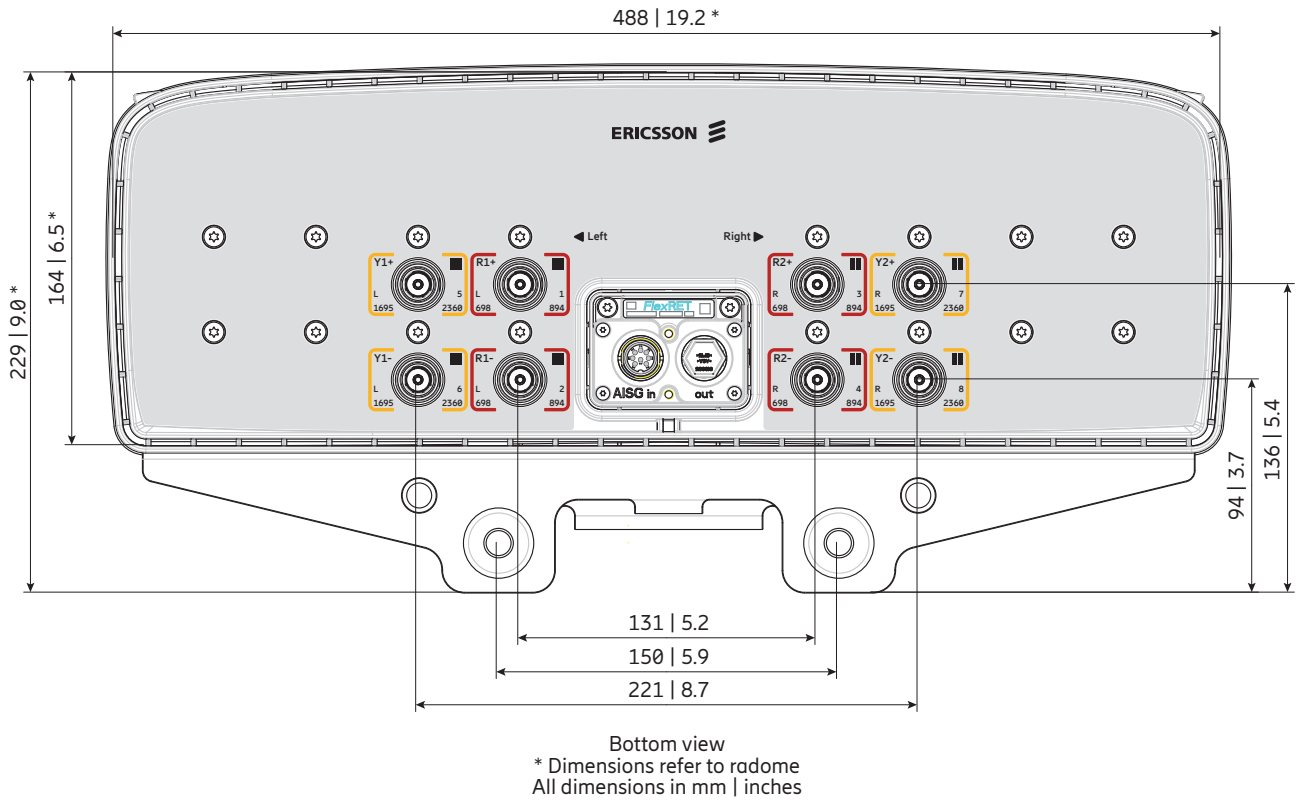
Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

- 1) 79 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5)  $\varnothing$  11 | 0.4

All dimensions  
in mm | inches

For more information please refer to the respective data sheets.

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–894 MHz	R1	1–2
698–894 MHz	R2	3–4
1695–2360 MHz	Y1	5–6
1695–2360 MHz	Y2	7–8





# Antenna 4003 2L 2M 2.4m

840590966

Capacity Compact Coverage

65° | 2x 617–894 | 16.0 dBi  
65° | 2x 1695–2690 | 18.0 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2		
Frequency Range	MHz	617 – 698	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.1	15.8	16.0
Gain over all Tilts	dBi	15.1 ± 0.6	15.8 ± 0.5	16.0 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	69 ± 3.2	66 ± 2.8	67 ± 2.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 17	> 21	> 23
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.1 ± 0.7	10.2 ± 0.7	9.2 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 10.0		
Tilt Accuracy	°	< 0.4	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 17	> 21	> 18
Cross Polar Isolation	dB	> 24, typically > 25		
Port to Port Isolation	dB	> 22, typically > 25 (R1 // R2) > 25 (R1 // Y1, Y2)		
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4		
Frequency Range	MHz	617 – 698	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.1	15.8	16.0
Gain over all Tilts	dBi	15.1 ± 0.5	15.8 ± 0.6	16.0 ± 0.5
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	69 ± 3.8	66 ± 3.0	65 ± 3.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 18	> 21	> 22
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.1 ± 0.6	10.0 ± 0.6	9.2 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 10.0		
Tilt Accuracy	°	< 0.4	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 21	> 18
Cross Polar Isolation	dB	> 24, typically > 25		
Port to Port Isolation	dB	> 22, typically > 25 (R2 // R1) > 25 (R2 // Y1, Y2)		
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.7	17.9	17.8	18.1	17.6
Gain over all Tilts	dBi	17.6 ± 0.6	17.7 ± 0.6	17.6 ± 0.9	17.9 ± 0.8	17.6 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 3.2	72 ± 4.0	72 ± 4.9	66 ± 4.2	57 ± 7.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 28	> 27	> 28	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	5.8 ± 0.3	5.4 ± 0.3	5.1 ± 0.3	4.6 ± 0.2	4.2 ± 0.2
Electrical Downtilt continuously adjustable	°	1.0 – 11.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 18	> 18	> 16	> 15	> 16
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.6	17.8	17.8	18.1	17.7
Gain over all Tilts	dBi	17.5 ± 0.6	17.6 ± 0.5	17.6 ± 0.9	17.9 ± 0.8	17.6 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 5.5	73 ± 4.5	74 ± 4.5	67 ± 4.6	57 ± 8.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 26	> 27	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	5.7 ± 0.3	5.3 ± 0.3	5.0 ± 0.4	4.5 ± 0.2	4.2 ± 0.2
Electrical Downtilt continuously adjustable	°	1.0 – 11.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 17	> 17	> 16	> 15	> 16
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	Ω	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	typically > 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	+45, -45°
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	8 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1320   297 Maximal: 1530   344
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2437 / 596 / 180 95.9 / 23.5 / 7.1
Category of Mounting Hardware	XH (X-Heavy)	
Weight (approx.)	kg lb	46.0 / 51.0 (clamps incl.) 101.4 / 112.4 (clamps incl.)
Packing Size	mm inches	2585 / 665 / 300 101.8 / 26.2 / 11.8
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010099	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010096	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

## Material:

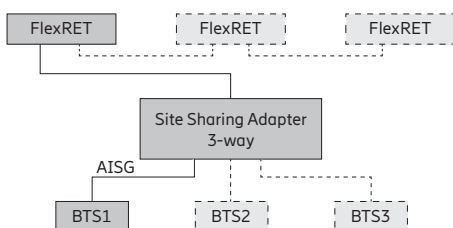
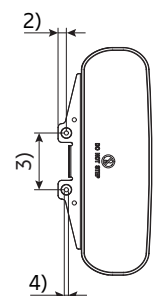
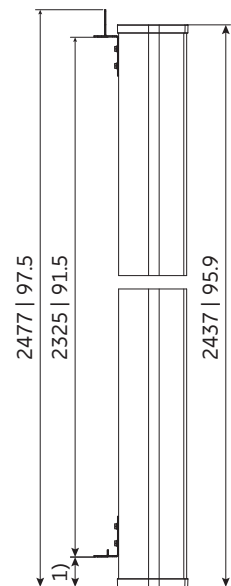
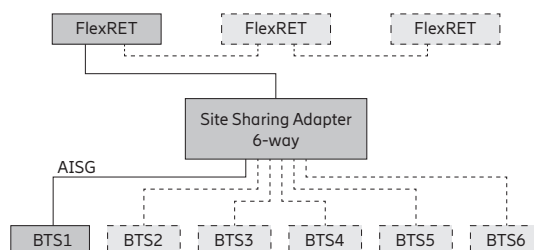
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

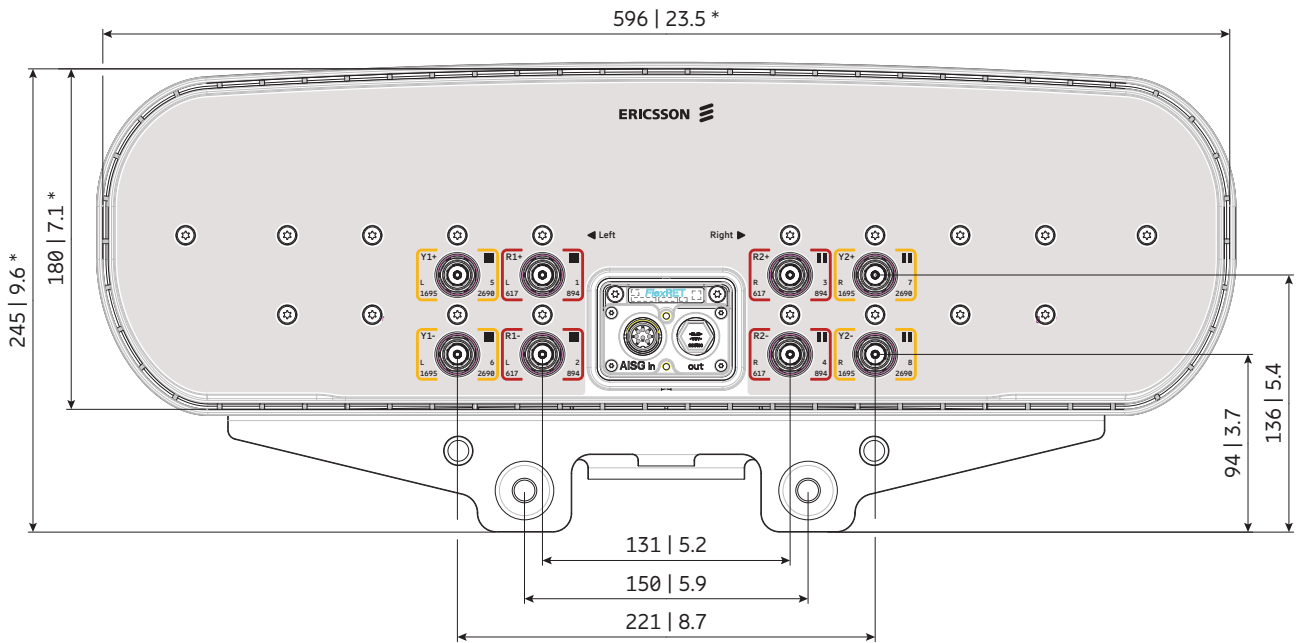
- 1) 79 | 3.1  
2) 22 | 0.9  
3) 150 | 5.9  
4) ∅ 11 | 0.4

All dimensions  
in mm | inches

For more information please refer to the respective data sheets.



## Layout of interface



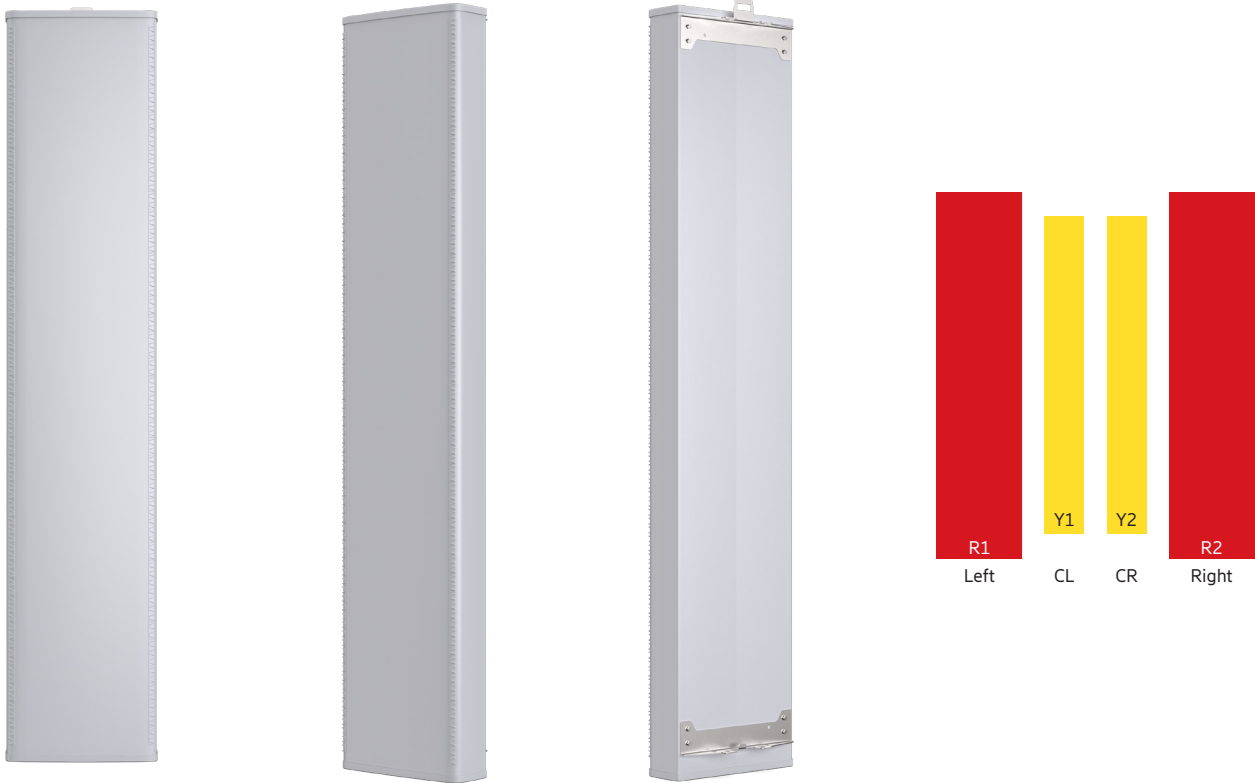
Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports	RET
617–894 MHz	R1	1–2	R1
617–894 MHz	R2	3–4	
1695–2690 MHz	Y1	5–6	Y1
1695–2690 MHz	Y2	7–8	



New Product  
Preliminary Issue



2LB nMB

# Antenna 4008 2L 2M 2.4m

KRE 101 2586/1

Capacity    Compact    Coverage

65° | 2x 698–894 MHz | 16.0 dBi  
65° | 2x 1695–2360 MHz | 19.0 dBi  
FlexRET



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Preliminary Issue

Left side, lowband		R1, connector 1–2	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.0	15.9
Gain over all Tilts	dBi	15.1 ± 0.6	15.9 ± 0.6
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	63 ± 6.0	53 ± 7.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 22
Cross Polar Discrimination at Boresight	dB	> 20	> 20
Azimuth Beam Port-to-Port Tracking	dB	3.0	3.0
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.7 ± 0.6	8.9 ± 0.4
Electrical Downtilt continuously adjustable	°	0.0 – 11.0	
Tilt Accuracy	°	< 0.7	< 0.7
First Upper Sidelobe Suppression	dB	> 16	> 17
Intra-Cluster Isolation	dB	> 25	
Inter-Cluster Isolation	dB	> 25 (R1 // R2, Y1, Y2)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	
Max. Effective Power Ports R1	W	800 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.0	15.9
Gain over all Tilts	dBi	15.1 ± 0.6	15.9 ± 0.6
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	63 ± 6.0	53 ± 7.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 22
Cross Polar Discrimination at Boresight	dB	> 20	> 20
Azimuth Beam Port-to-Port Tracking	dB	3.0	3.0
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.7 ± 0.6	8.9 ± 0.4
Electrical Downtilt continuously adjustable	°	0.0 – 11.0	
Tilt Accuracy	°	< 0.7	< 0.7
First Upper Side Lobe Suppression	dB	> 16	> 17
Intra-Cluster Isolation	dB	> 25	
Inter-Cluster Isolation	dB	> 25 (R2 // R1, Y1, Y2)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	
Max. Effective Power Ports R2	W	800 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Preliminary Issue

Left side, midband		Y1, connector 5–6			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	18.2	18.8	19.0	19.1
Gain over all Tilts	dBi	18.1 ± 0.9	18.7 ± 0.7	18.9 ± 0.7	19.1 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 4.0	62 ± 3.0	62 ± 3.5	66 ± 4.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 30	> 30	> 31	> 32
Cross Polar Discrimination at Boresight	dB	> 20	> 20	> 20	> 20
Azimuth Beam Port-to-Port Tracking	dB	2.5	3.5	3.5	3.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.7 ± 0.3	5.3 ± 0.3	5.0 ± 0.3	4.5 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 11.0			
Tilt Accuracy	°	< 0.7	< 0.7	< 0.7	< 0.7
First Upper Sidelobe Suppression	dB	> 18	> 18	> 18	> 17
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y1 // R1, R2, Y2)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y1	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, center midband		Y2, connector 7–8			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	18.2	18.8	19.0	19.1
Gain over all Tilts	dBi	18.1 ± 0.9	18.7 ± 0.7	18.9 ± 0.7	19.1 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 4.0	62 ± 3.0	62 ± 3.5	66 ± 4.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 30	> 30	> 31	> 32
Cross Polar Discrimination at Boresight	dB	> 20	> 20	> 20	> 20
Azimuth Beam Port-to-Port Tracking	dB	2.5	3.5	3.5	3.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.7 ± 0.3	5.3 ± 0.3	5.0 ± 0.3	4.5 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 11.0			
Tilt Accuracy	°	< 0.7	< 0.7	< 0.7	< 0.7
First Upper Sidelobe Suppression	dB	> 18	> 18	> 18	> 17
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y2 // R1, R2, Y1)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y2	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1120   252 Maximal: 1270   286 Lateral: 440   99
EPA	m <sup>2</sup>   ft <sup>2</sup>	Frontal: 1.029   11.08 Maximal: 1.166   12.55 Lateral: 0.404   4.35
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2437 / 488 / 164 95.9 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	38.6 / 43.1 (clamps incl.) 85 / 95 (clamps incl.)
Packing Size	mm inches	2570 / 556 / 310 101.2 / 21.9 / 12.2
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010167	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3*	1

\* FlexRET 86010167 does not support AISG 3 feature MALD

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

## Material:

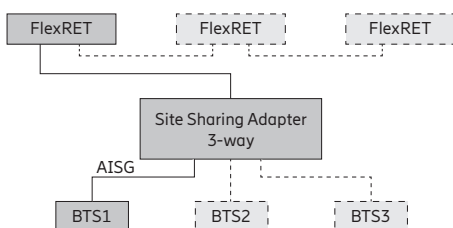
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

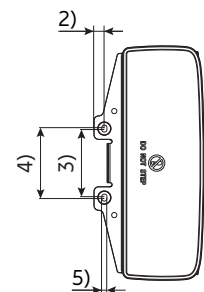
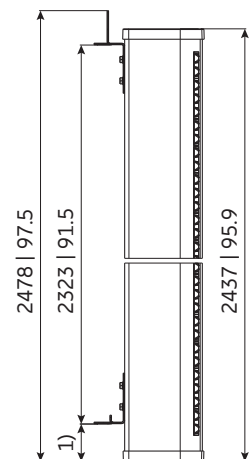
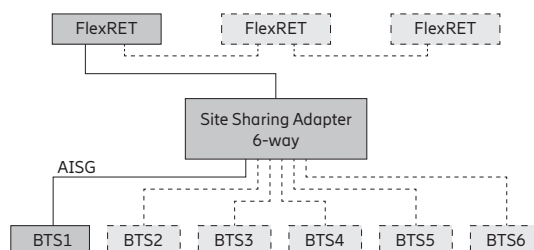
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

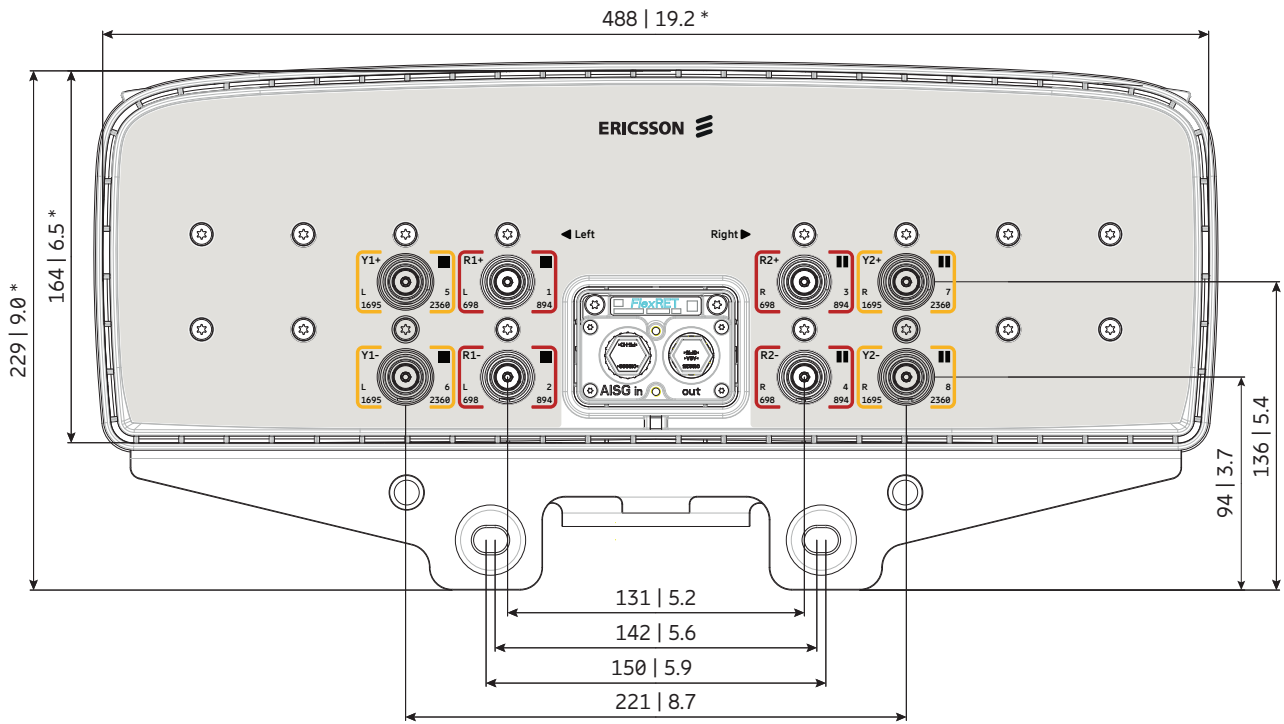


- 1) 79 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5)  $\varnothing$  11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

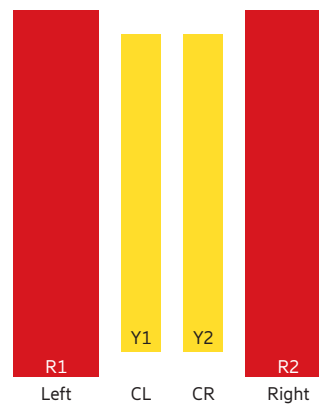
## Layout of interface

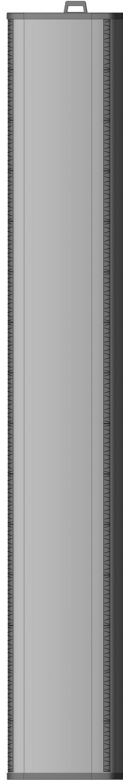


Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–894 MHz	R1	1–2
698–894 MHz	R2	3–4
1695–2360 MHz	Y1	5–6
1695–2360 MHz	Y2	7–8





# Antenna 4002 2L 2M 2.6m

800372966

Capacity    Compact    Coverage

65° | 2x 698–960 MHz | 16.4 dBi  
65° | 2x 1427–2690 MHz | 17.9 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.7	16.0	16.4
Gain over all Tilts	dBi	15.0 ± 0.6	15.7 ± 0.6	16.0 ± 0.5	16.4 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 4.5	60 ± 2.9	58 ± 3.7	55 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 24	> 24
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.1 ± 0.7	8.6 ± 0.4	8.4 ± 0.5	7.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.4	< 0.5	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 17	> 17	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.7	16.0	16.4
Gain over all Tilts	dBi	15.0 ± 0.7	15.7 ± 0.6	16.0 ± 0.6	16.4 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 4.8	61 ± 3.6	59 ± 4.5	55 ± 4.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 24	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.0 ± 0.7	8.6 ± 0.4	8.3 ± 0.5	7.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.4	< 0.5	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 18	> 18	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.



Left side, midband		Y1, connector 5–6					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.9	17.6	17.9	17.9	17.6	17.7
Gain over all Tilts	dBi	16.9 ± 0.7	17.5 ± 0.6	17.7 ± 0.8	17.9 ± 0.8	17.5 ± 0.7	17.7 ± 0.7
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	63 ± 4.9	68 ± 3.8	68 ± 6.3	67 ± 4.9	67 ± 6.3	60 ± 5.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 28	> 26	> 27	> 27	> 29
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.0 ± 0.4	6.9 ± 0.4	6.4 ± 0.3	6.2 ± 0.4	5.7 ± 0.3	5.4 ± 0.3
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.4	< 0.2	< 0.2	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 20	> 21	> 19	> 19	> 19
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 (Y1 // R1, R2, Y2)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y2, connector 7–8					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.9	17.5	17.8	17.9	17.5	17.7
Gain over all Tilts	dBi	16.9 ± 0.6	17.5 ± 0.5	17.7 ± 0.8	17.9 ± 0.8	17.5 ± 0.6	17.6 ± 0.7
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	63 ± 4.0	68 ± 4.1	68 ± 3.9	66 ± 6.2	66 ± 6.4	60 ± 5.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 27	> 26	> 27	> 26	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	7.9 ± 0.4	6.8 ± 0.4	6.4 ± 0.3	6.1 ± 0.4	5.6 ± 0.3	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 18	> 19	> 18	> 18	> 17
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 (Y2 // R1, R2, Y1)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 630   142 Maximal: 1110   249
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2591 / 378 / 164 102 / 14.9 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	43.6 / 48.1 (clamps incl.) 96.1 / 106.0 (clamps incl.)
Packing Size	mm inches	2745 / 440 / 293 108.1 / 17.3 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–9°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

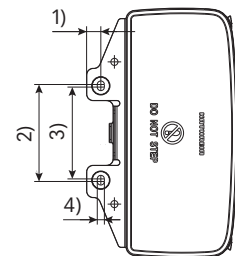
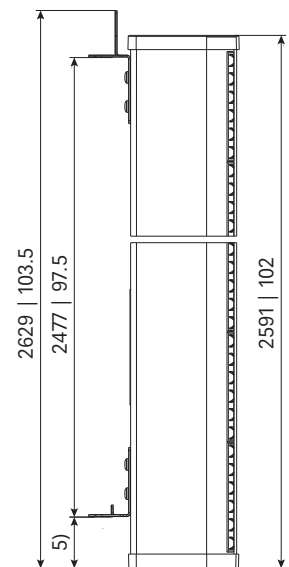
## Material:

**Reflector screen:** Aluminum.

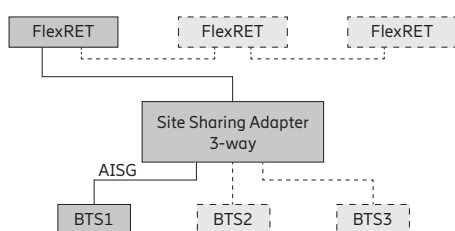
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

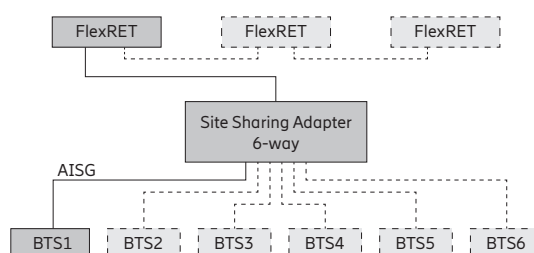
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



## Configuration example with Site Sharing Adapter 86010154



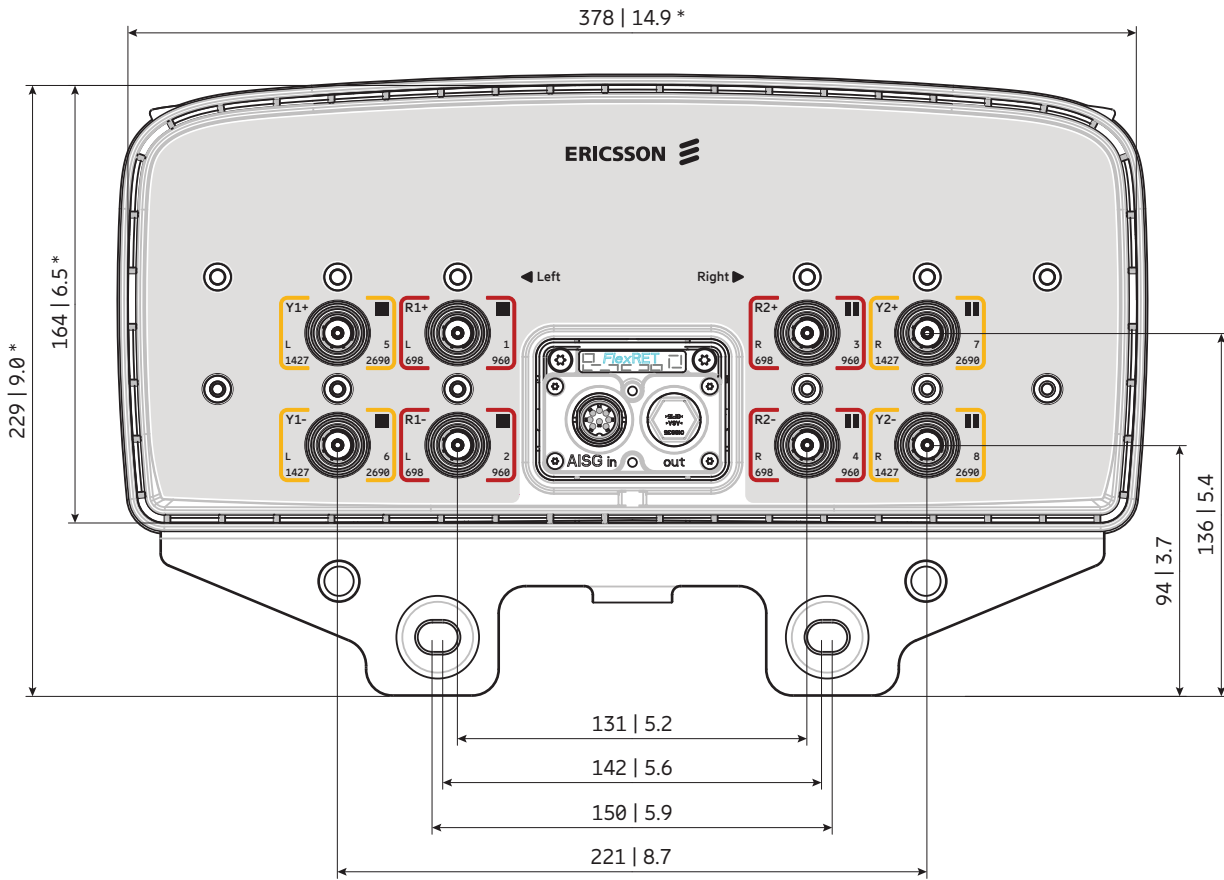
## Configuration example with Site Sharing Adapter 86010155



- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4
- 5) 79 | 3.1

For more information please refer to the respective data sheets.

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2690 MHz	Y1	5–6
1427–2690 MHz	Y2	7–8





# Antenna 4004 2L 2M 2.6m

KRE 101 2566/1

Capacity    Compact    Coverage

65° | 2x 698–960 MHz | 16.0 dBi  
65° | 2x 1695–2690 MHz | 17.5 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.4	15.9	16.1	16.3
Gain over all Tilts	dBi	15.4 ± 0.5	15.8 ± 0.4	16.0 ± 0.3	16.3 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	69 ± 5.2	66 ± 3.3	66 ± 3.3	63 ± 2.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 24	> 24	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.5 ± 0.6	8.7 ± 0.3	8.4 ± 0.3	8.0 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.6	< 0.5	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 23	> 25	> 25	> 27
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	27 (R1 // R2, Y1, Y2)			
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)			
Max. Effective Power Ports R1	W	300 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.3	15.8	16.0	16.2
Gain over all Tilts	dBi	15.3 ± 0.5	15.8 ± 0.4	16.0 ± 0.3	16.2 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	71 ± 5.9	68 ± 3.3	67 ± 3.0	64 ± 2.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 23	> 24	> 24
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.5 ± 0.6	8.7 ± 0.3	8.5 ± 0.4	8.0 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.2
First Upper Side Lobe Suppression	dB	> 22	> 24	> 25	> 26
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	27 (R2 // R1, Y1, Y2)			
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)			
Max. Effective Power Ports R2	W	300 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	17.1	17.2	17.0	17.1	17.4
Gain over all Tilts	dBi	17.0 ± 0.6	17.1 ± 0.5	16.9 ± 0.8	17.1 ± 0.8	17.4 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 4.8	67 ± 2.9	69 ± 5.9	60 ± 6.0	58 ± 5.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 22	> 21	> 21	> 20
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.3 ± 0.5	6.7 ± 0.3	6.4 ± 0.3	5.7 ± 0.4	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.4	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 24	> 21	> 19	> 20	> 19
Cross Polar Isolation	dB	> 27				
Port to Port Isolation	dB	27 (Y1 // R2, R1, Y2)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y1	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	17.1	17.3	17.0	17.1	17.4
Gain over all Tilts	dBi	17.0 ± 0.6	17.2 ± 0.5	17.0 ± 0.8	17.1 ± 0.8	17.4 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 5.0	66 ± 4.3	69 ± 7.9	62 ± 5.7	57 ± 6.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 22	> 21	> 21	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.3 ± 0.4	6.7 ± 0.3	6.4 ± 0.5	5.7 ± 0.4	5.2 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4	< 0.3
First Upper Side Lobe Suppression	dB	> 24	> 23	> 21	> 21	> 20
Cross Polar Isolation	dB	> 27				
Port to Port Isolation	dB	27 (Y2 // R2, R1, Y1)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y2	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 40 $^{\circ}$ C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	8 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1520   341 Maximal: 1675   376
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	2550 / 448 / 164 100.4 / 17.6 / 6.5
Category of Mounting Hardware	XH (X-Heavy)	
Weight (approx.)	kg lb	44.9 / 49.9 (clamps incl.) 99.0 / 110.0 (clamps incl.)
Packing Size	mm inches	2770 / 473 / 250 109.1 / 18.6 / 9.8
Scope of Supply	Panel, integrated RET and clamps for 55–115 mm   2.2–4.5 inches diameter	

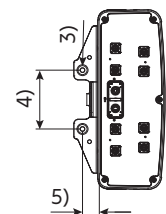
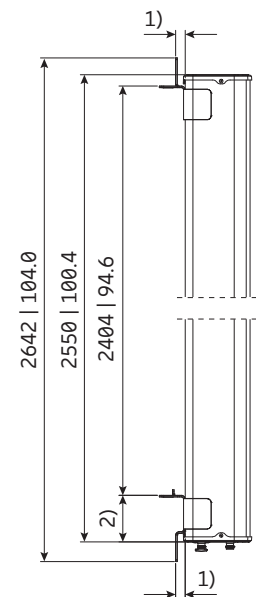
## Accessories (order separately if required)

Product No	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010099	1 downtilt kit	Downtilt angle: 0 $^{\circ}$ –9 $^{\circ}$	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

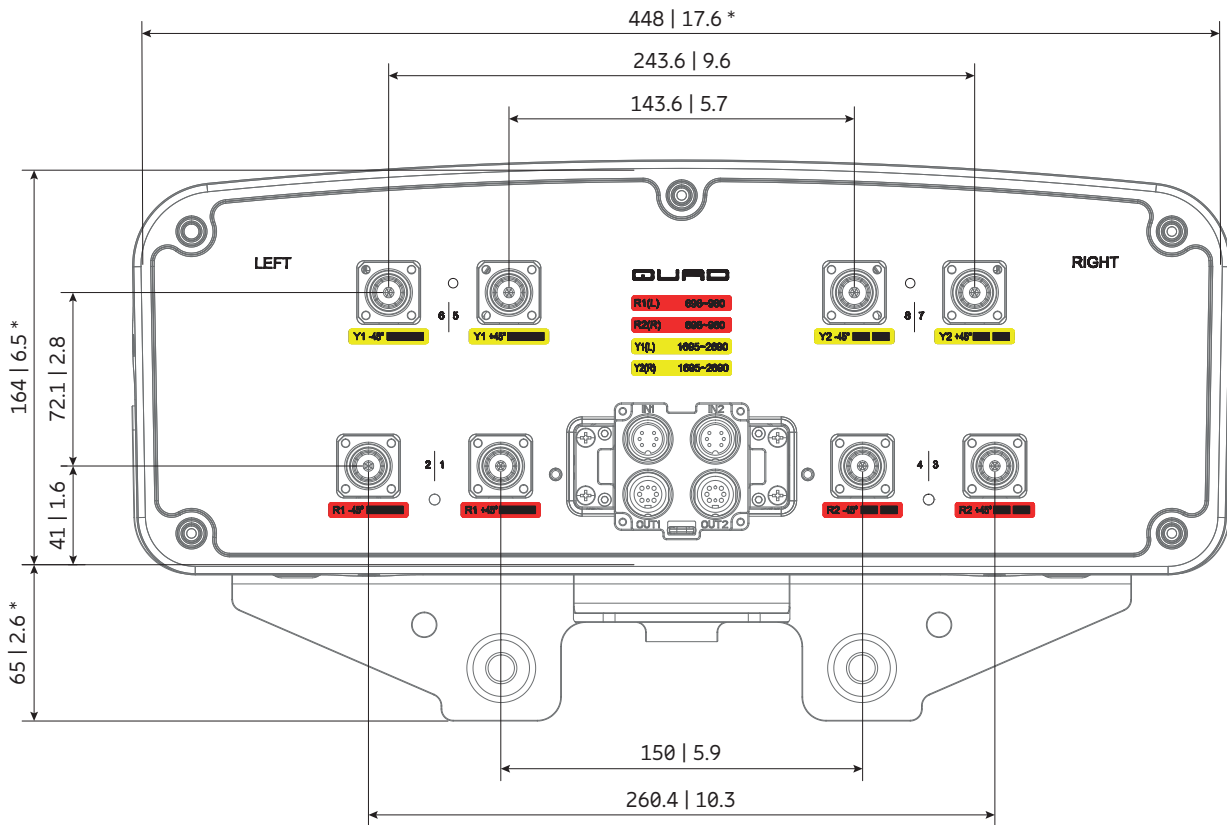
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 24 | 1.0  
2) 117.5 | 4.6  
3)  $\varnothing$  11 | 0.4  
4) 150 | 5.9  
5) 43 | 1.7

All dimensions  
in mm | inches

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8







# Antenna 4400 2L 3M 1.5m

800442004

Capacity **Compact** Coverage

65° | 2x 698–960 MHz | 14.6 dBi  
65° | 2x 1427–2690 MHz | 17.6 dBi  
65° | 1x 1695–2690 MHz | 17.7 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.5	14.2	14.4	14.7
Gain over all Tilts	dBi	13.4 ± 0.5	14.2 ± 0.3	14.4 ± 0.3	14.6 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 7	58 ± 5	55 ± 5	52 ± 6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 23	> 25	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	15.8 ± 1.6	14.7 ± 0.9	14.4 ± 0.9	13.6 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 14.0			
Tilt Accuracy	°	< 0.9	< 0.7	< 0.6	< 0.7
First Upper Side Lobe Suppression	dB	> 16	> 16	> 17	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	typ > 25 (R1 // R2) > 28 (R1 // Y1, Y2, Y3)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.5	14.1	14.3	14.6
Gain over all Tilts	dBi	13.4 ± 0.5	14.1 ± 0.4	14.3 ± 0.4	14.5 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 6	58 ± 6	56 ± 4	52 ± 6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 24	> 25	> 24
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	15.8 ± 1.4	14.8 ± 0.8	14.5 ± 0.9	13.8 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 14.0			
Tilt Accuracy	°	< 0.9	< 0.7	< 0.6	< 0.5
First Upper Side Lobe Suppression	dB	> 16	> 16	> 17	> 15
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 28 (R2 // Y1, Y2, Y3)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 5–6					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.3	17.4	17.6	17.7	17.8	17.6
Gain over all Tilts	dBi	16.2 ± 0.4	17.3 ± 0.6	17.2 ± 0.8	17.4 ± 0.8	17.5 ± 0.8	17.5 ± 0.7
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	71 ± 3	66 ± 4	67 ± 6	65 ± 4	61 ± 4	60 ± 4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 28	> 25	> 26	> 30	> 29
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.2 ± 0.4	7.0 ± 0.3	6.6 ± 0.3	6.3 ± 0.4	5.6 ± 0.1	5.2 ± 0.2
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.7	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1
First Upper Side Lobe Suppression	dB	> 16	> 18	> 19	> 19	> 21	> 23
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 (Y1 // R1, R2, Y2, Y3)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.9	17.3	17.5	17.7	17.6
Gain over all Tilts	dBi	16.8 ± 0.5	17.2 ± 0.6	17.4 ± 0.7	17.5 ± 0.4	17.4 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	56 ± 3	57 ± 4	58 ± 3	62 ± 3	65 ± 2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 30	> 27	> 28	> 31	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.9 ± 0.7	8.2 ± 0.4	7.8 ± 0.6	7.0 ± 0.4	6.5 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.5	< 0.3
First Upper Side Lobe Suppression	dB	> 17	> 17	> 18	> 18	> 21
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 28 (Y2 // R1, R2, Y1, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y3, connector 9 – 10					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.2	17.3	17.3	17.5	17.4	17.6
Gain over all Tilts	dBi	16.2 ± 0.4	17.2 ± 0.6	17.2 ± 0.7	17.4 ± 0.8	17.4 ± 0.7	17.5 ± 0.6
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	72 ± 4	67 ± 3	67 ± 4	65 ± 5	63 ± 5	59 ± 4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 27	> 25	> 25	> 28	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.2 ± 0.4	7.0 ± 0.4	6.6 ± 0.3	6.2 ± 0.4	5.6 ± 0.2	5.2 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.4	< 0.2	< 0.2	< 0.2	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 16	> 19	> 20	> 19	> 21	> 24
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 (Y3 // R1, R2, Y1, Y2)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	10 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 525   118 Maximal: 700   157
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1499 / 448 / 164 59.0 / 17.6 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	32.9 / 37.1 (clamps incl.) 72.9 / 81.6 (clamps incl.)
Packing Size	mm inches	1635 / 495 / 250 64.4 / 19.5 / 9.8
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

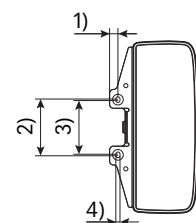
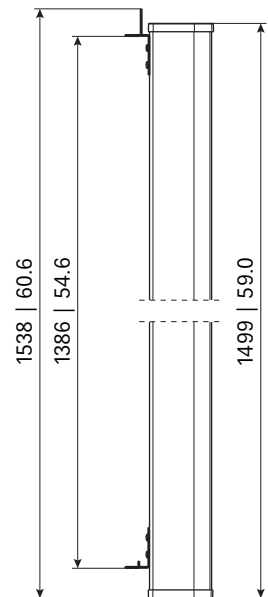
## Material:

**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

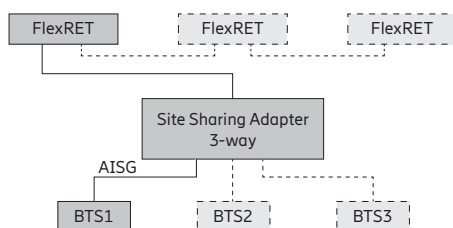
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



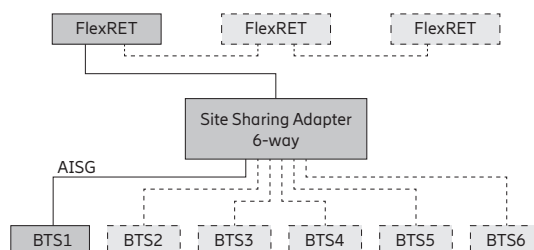
- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions in mm | inches

## Configuration example with Site Sharing Adapter 86010154

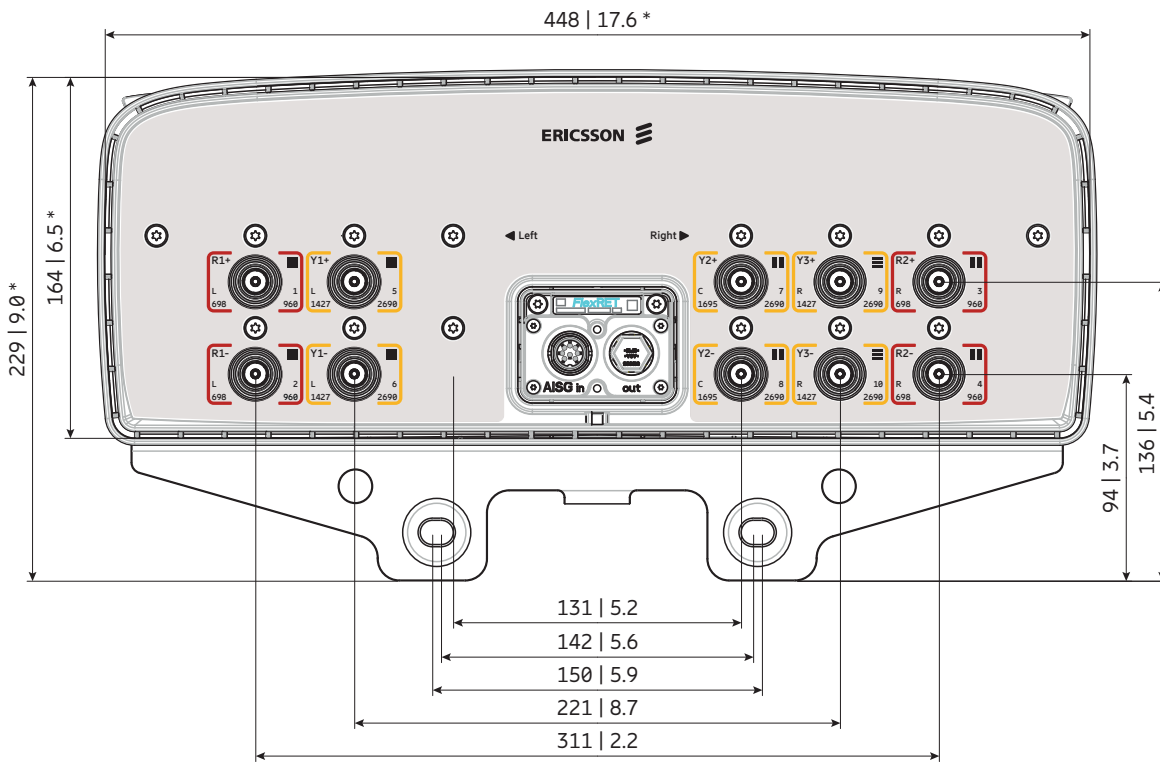


## Configuration example with Site Sharing Adapter 86010155



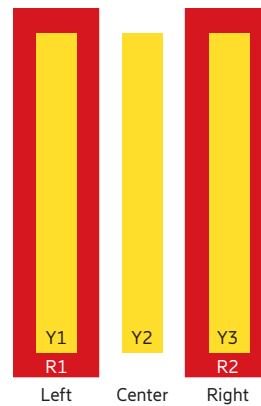
For more information please refer to the respective data sheets.

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1427–2690 MHz	Y3	9–10





2LB nMB

# Antenna 4401 2L 3M 2.0m

KRE 101 2476/1

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 15.9 dBi  
65° | 2x 1427–2690 MHz | 17.6 dBi  
65° | 1x 1695–2690 MHz | 17.6 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.5	15.2	15.4	15.9
Gain over all Tilts	dBi	14.5 ± 0.6	15.2 ± 0.4	15.4 ± 0.4	15.9 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 7	58 ± 3	57 ± 4	51 ± 5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 22	> 24	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.5 ± 0.9	10.9 ± 0.6	10.6 ± 0.5	10.0 ± 0.7
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 17	> 19	> 21
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 15	> 17	> 19	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.5	15.1	15.4	15.8
Gain over all Tilts	dBi	14.5 ± 0.6	15.1 ± 0.5	15.4 ± 0.3	15.8 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 7	59 ± 3	57 ± 4	52 ± 6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 22	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.5 ± 0.9	10.9 ± 0.6	10.7 ± 0.6	10.1 ± 0.7
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.6	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 17	> 19	> 20
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 15	> 17	> 19	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.



Left side, midband		Y1, connector 5–6					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.2	17.4	17.5	17.7	17.5	17.5
Gain over all Tilts	dBi	16.2 ± 0.2	17.4 ± 0.6	17.4 ± 0.7	17.6 ± 0.8	17.5 ± 0.8	17.5 ± 0.7
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	73 ± 3	66 ± 4	67 ± 4	64 ± 7	63 ± 3	58 ± 4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 29	> 28	> 27	> 28	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.2 ± 0.4	7.0 ± 0.4	6.5 ± 0.3	6.2 ± 0.3	5.7 ± 0.3	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 15	> 19	> 19	> 18	> 20	> 20
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 15	> 19	> 18	> 17	> 17	> 16
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.8	17.1	17.4	17.7	17.7
Gain over all Tilts	dBi	16.8 ± 0.6	17.1 ± 0.6	17.3 ± 0.7	17.6 ± 0.5	17.6 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	57 ± 4	60 ± 6	60 ± 6	60 ± 6	63 ± 3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 29	> 30	> 31
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.9 ± 0.6	8.2 ± 0.4	7.7 ± 0.5	7.2 ± 0.3	6.5 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 20	> 19	> 20	> 21	> 23
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 20	> 18	> 18	> 19	> 20
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y3, connector 9–10					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.1	17.3	17.4	17.6	17.5	17.6
Gain over all Tilts	dBi	16.1 ± 0.3	17.3 ± 0.5	17.3 ± 0.7	17.6 ± 0.8	17.5 ± 0.8	17.6 ± 0.9
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	72 ± 3	67 ± 4	68 ± 5	65 ± 8	63 ± 3	57 ± 4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 27	> 26	> 26	> 26	> 25
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.2 ± 0.4	7.0 ± 0.4	6.5 ± 0.3	6.2 ± 0.4	5.6 ± 0.3	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 15	> 19	> 19	> 18	> 19	> 21
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 15	> 19	> 18	> 17	> 16	> 15
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45°
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	10 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 725   163 Maximal: 950   214
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1999 / 448 / 164 78.7 / 17.6 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight (approx.)	kg lb	40.5 / 45.0 (clamps incl.) 89.3 / 99.2 (clamps incl.)
Packing Size	mm inches	2150 / 510 / 293 84.6 / 20.1 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	To be used in combination with the FlexRET module	1
KRE 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

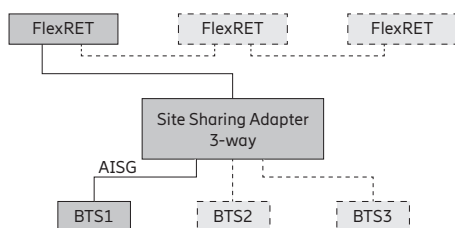
For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:** Reflector screen: Aluminum.

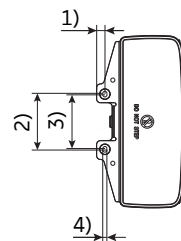
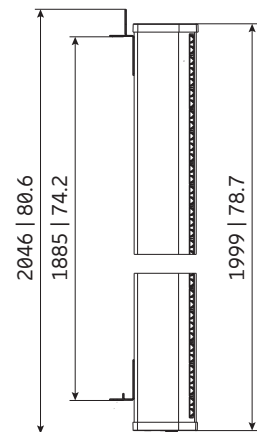
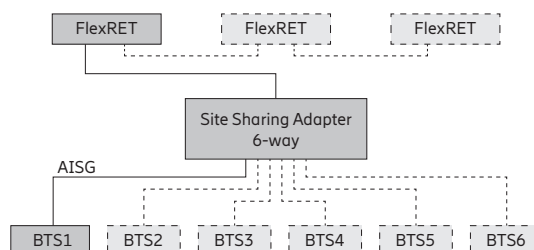
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

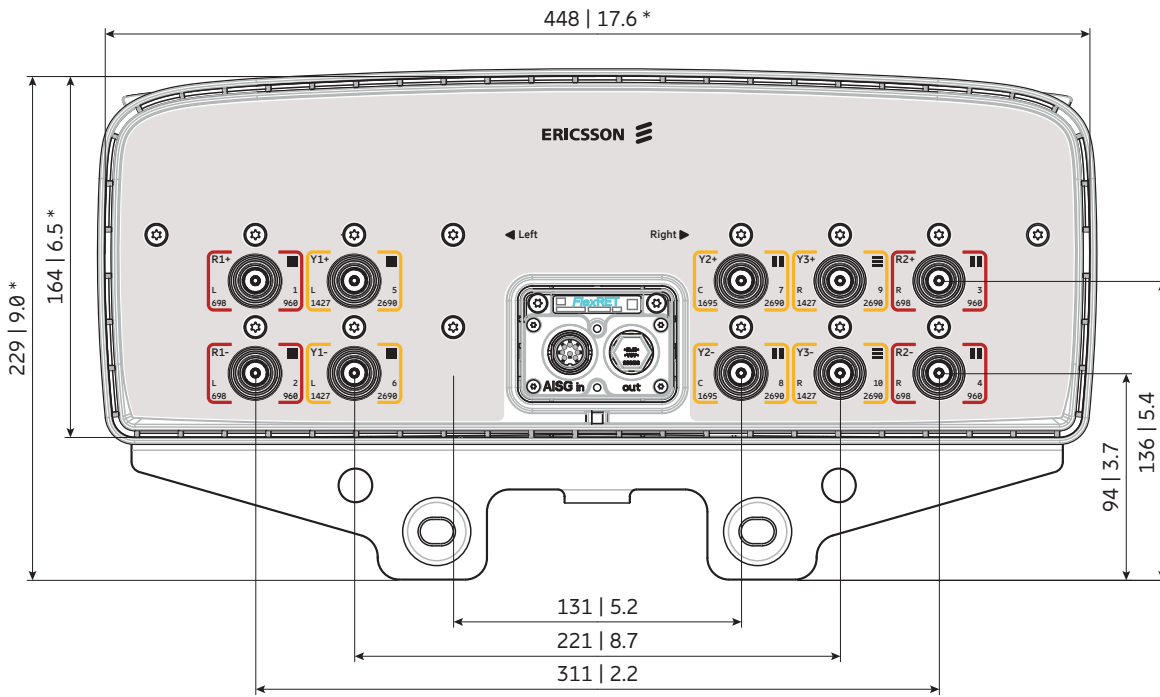


- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

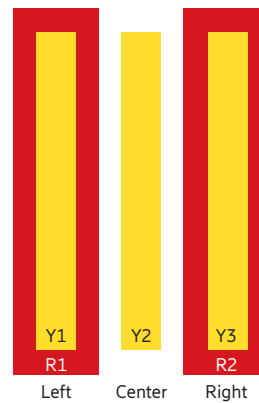
## Layout of interface

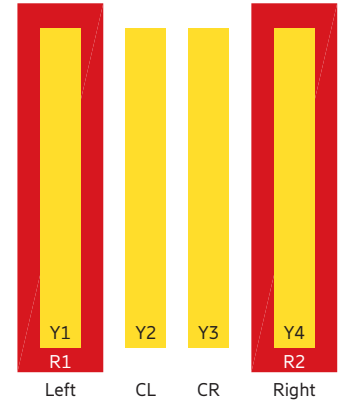


Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1427–2690 MHz	Y3	9–10





2LB nMB

# Antenna 4800 2L 4M 1.5m

800482001

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 14.6 dBi  
65° | 2x 1427–2690 MHz | 17.8 dBi  
65° | 2x 1695–2690 MHz | 17.2 dBi  
FlexRET



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Left side, lowband		R1, connector 1 – 2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.8	14.2	14.4	14.6
Gain over all Tilts	dBi	13.8 ± 0.4	14.1 ± 0.3	14.4 ± 0.4	14.6 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	59 ± 6.3	56 ± 3.1	53 ± 5.5	50 ± 4.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 19	> 20	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	16.1 ± 1.1	15.1 ± 0.9	14.6 ± 0.7	13.6 ± 1.2
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.6	< 0.9
First Upper Side Lobe Suppression	dB	> 15	> 16	> 17	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3 – 4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.8	14.1	14.4	14.8
Gain over all Tilts	dBi	13.8 ± 0.3	14.1 ± 0.3	14.3 ± 0.3	14.7 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	60 ± 5.7	56 ± 4.1	54 ± 5.8	50 ± 6.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 20	> 20	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	16.1 ± 0.8	15.1 ± 0.8	14.6 ± 0.6	13.6 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.6	< 0.6	< 0.6	< 0.7
First Upper Side Lobe Suppression	dB	> 16	> 17	> 17	> 17
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband		Y1, connector 5–6					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.9	17.0	17.2	17.4	17.5	17.8
Gain over all Tilts	dBi	15.9 ± 0.6	17.0 ± 0.6	17.2 ± 0.6	17.3 ± 0.7	17.5 ± 0.8	17.8 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	73 ± 3.9	67 ± 4.1	63 ± 4.8	61 ± 4.8	60 ± 4.0	55 ± 3.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 30	> 29	> 28	> 29	> 29	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.4 ± 0.5	7.0 ± 0.5	6.5 ± 0.4	6.2 ± 0.4	5.6 ± 0.3	5.2 ± 0.2
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 17	> 19	> 17	> 16	> 17	> 19
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, center midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.0	17.0	17.1	17.2	17.4
Gain over all Tilts	dBi	16.9 ± 0.7	17.0 ± 0.7	17.0 ± 0.8	17.2 ± 0.7	17.4 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 7.9	60 ± 6.5	63 ± 6.7	65 ± 4.6	60 ± 4.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 27	> 28	> 30	> 29
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.2 ± 0.6	6.7 ± 0.3	6.4 ± 0.4	5.9 ± 0.2	5.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.2	< 0.3
First Upper Side Lobe Suppression	dB	> 16	> 17	> 19	> 19	> 20
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, center midband

## Y3, connector 9 – 10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.9	17.1	17.0	17.2	17.2
Gain over all Tilts	dBi	16.9 ± 0.8	17.0 ± 0.7	17.0 ± 0.7	17.1 ± 0.6	17.2 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 9.2	60 ± 8.4	64 ± 8.9	64 ± 4.1	62 ± 4.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 28	> 28	> 29
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.4 ± 0.5	6.8 ± 0.3	6.5 ± 0.4	6.0 ± 0.3	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.2	< 0.3
First Upper Side Lobe Suppression	dB	> 14	> 17	> 18	> 19	> 20
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, midband

## Y4, connector 11 – 12

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.9	17.0	17.2	17.4	17.5	17.8
Gain over all Tilts	dBi	15.9 ± 0.5	17.0 ± 0.6	17.2 ± 0.6	17.4 ± 0.7	17.4 ± 0.7	17.8 ± 0.9
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	74 ± 6.1	69 ± 3.5	66 ± 4.6	63 ± 5.8	63 ± 4.9	56 ± 4.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 29	> 29	> 28	> 29	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.3 ± 0.5	6.9 ± 0.5	6.5 ± 0.3	6.2 ± 0.5	5.6 ± 0.3	5.2 ± 0.2
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.3	< 0.3	< 0.4	< 0.3	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 16	> 17	> 17	> 16	> 17	> 19
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

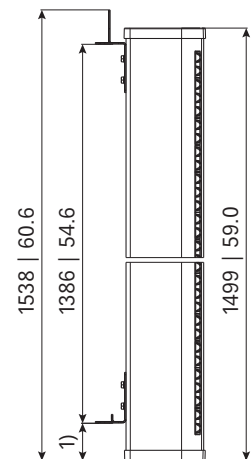
\* not applicable for L-band

## Mechanical specifications

Input		12x 4.3-10 female
Connector Position		bottom
Adjustment Mechanism		FlexRET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 670   151 Maximal: 760   171
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1499 / 488 / 164 59.0 / 19.2 / 6.5
Category of Mounting Hardware		XM (X-Medium)
Weight	kg lb	39.0 / 43.5 (clamps incl.) 86.0 / 95.9 (clamps incl.)
Packing Size	mm inches	1650 / 550 / 293 65.0 / 21.7 / 11.5
Scope of Supply		Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1



## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

## Material:

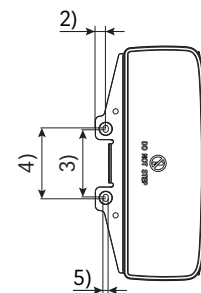
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

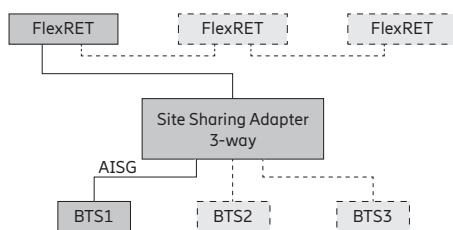
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

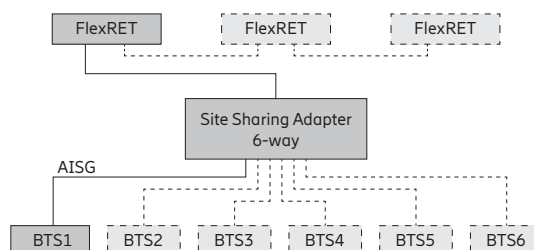
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

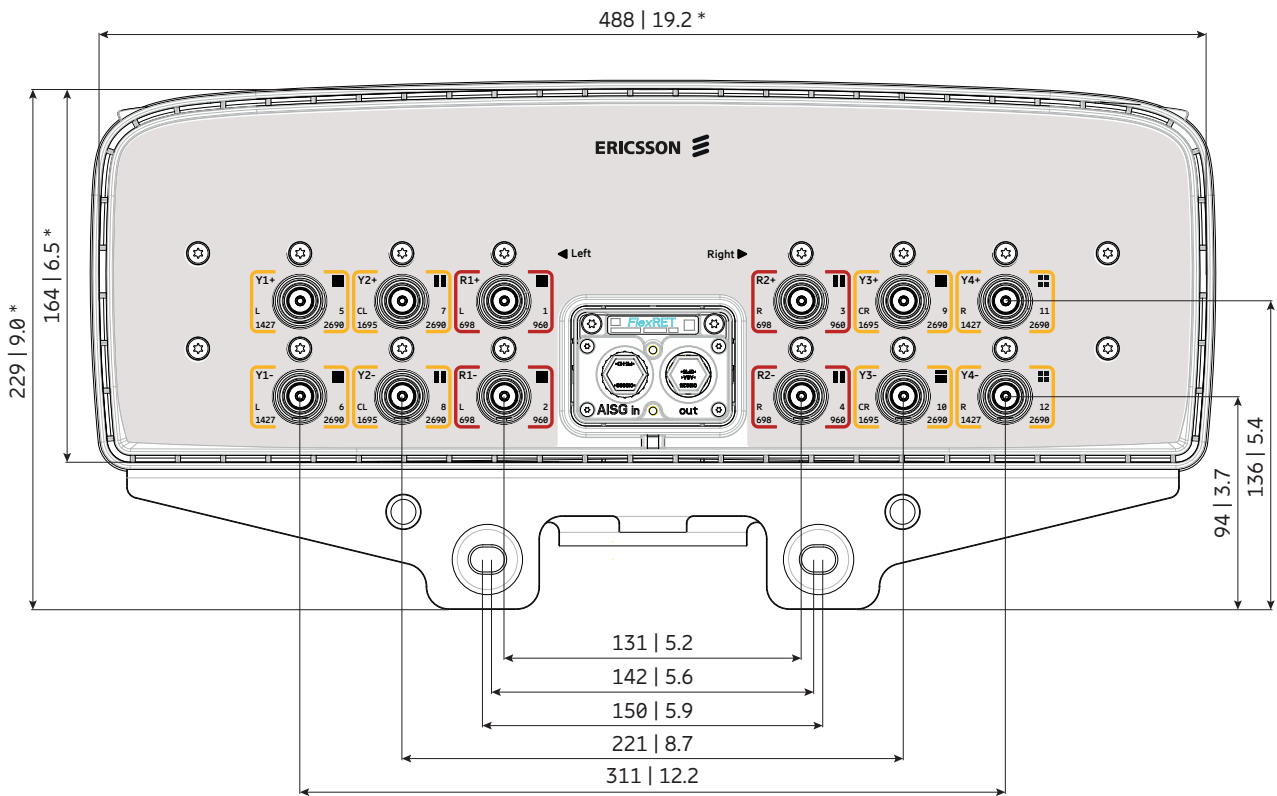


- 1) 79 | 3.1
- 2) 22 | 0.9
- 3) 142 | 5.6
- 4) 150 | 5.9
- 5)  $\varnothing$  11 | 0.4

All dimensions in mm | inches

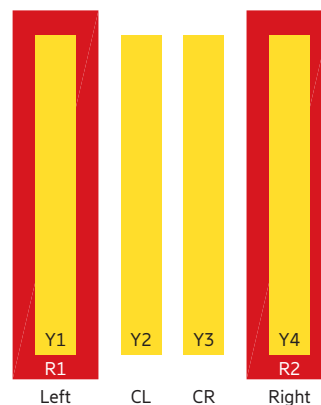
For more information please refer to the respective data sheets.

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1427–2690 MHz	Y4	11–12



New product



# Antenna 4801 2L 4M 1.5m

KRE 101 2524/1

**Capacity** Compact Coverage

65° | 2x 698–960 MHz | 13.9 dBi  
65° | 2x 1427–2690 MHz | 17.9 dBi  
65° | 2x 1695–2690 MHz | 18.4 dBi  
12x 4.3-10  
FlexRET



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2LB nMB

Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 803	791 – 862	814 – 894	880 – 960
Gain at mid Tilt	dBi	13.0	13.5	13.6	13.6
Gain over all Tilts	dBi	13.0 ± 0.4	13.5 ± 0.2	13.6 ± 0.2	13.6 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 5	66 ± 8	62 ± 7	63 ± 6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 23	> 23
Cross Polar Discrimination at Mechanical Boresight	dB	> 24	> 28	> 26	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	16.3 ± 0.7	15.7 ± 0.4	15.5 ± 0.5	14.7 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Elevation Downtilt Deviation	°	< 0.8	< 0.6	< 0.7	< 1.1
First Upper Sidelobe Suppression	dB	> 17	> 19	> 20	> 19
Upper Sidelobe Suppression, Peak to 20°	dB	> 18	> 21	> 22	> 21
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 12.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 803	791 – 862	814 – 894	880 – 960
Gain at mid Tilt	dBi	13.0	13.5	13.6	13.9
Gain over all Tilts	dBi	13.0 ± 0.6	13.5 ± 0.2	13.6 ± 0.5	13.8 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 5	65 ± 5	63 ± 5	60 ± 4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 22	> 21	> 22
Cross Polar Discrimination at Mechanical Boresight	dB	> 25	> 25	> 25	> 29
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	16.4 ± 0.7	15.7 ± 0.9	15.5 ± 0.8	14.9 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Elevation Downtilt Deviation	°	< 1.0	< 0.9	< 1.0	< 1.1
First Upper Sidelobe Suppression	dB	> 21	> 21	> 20	> 20
Upper Sidelobe Suppression, Peak to 20°	dB	> 23	> 21	> 22	> 21
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Left side, midband

## Y1, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.8	17.1	17.4	17.9	18.4
Gain over all Tilts	dBi	16.7 ± 0.5	17.1 ± 0.5	17.4 ± 0.7	17.8 ± 0.8	18.3 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	75 ± 3	70 ± 6	65 ± 7	61 ± 3	54 ± 5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 26	> 26	> 27	> 24
Cross Polar Discrimination at Mechanical Boresight	dB	> 24	> 25	> 22	> 23	> 23
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.4 ± 0.4	6.9 ± 0.4	6.6 ± 0.5	5.9 ± 0.3	5.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Elevation Downtilt Deviation	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 19	> 19	> 17	> 19	> 21
Upper Sidelobe Suppression, Peak to 20°	dB	> 19	> 18	> 16	> 17	> 17
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Left side, center midband

## Y2, connector 7–8

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.5	16.6	16.9	17.3	17.6	17.8
Gain over all Tilts	dBi	14.4 ± 0.4	16.6 ± 0.6	16.9 ± 0.6	17.3 ± 0.8	17.6 ± 0.8	17.7 ± 1.0
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	79 ± 8	71 ± 6	66 ± 5	62 ± 6	61 ± 4	54 ± 7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 30	> 30	> 29	> 28	> 26
Cross Polar Discrimination at Mechanical Boresight	dB	> 21	> 28	> 27	> 26	> 22	> 21
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	9.0 ± 0.5	7.5 ± 0.4	7.0 ± 0.4	6.6 ± 0.5	6.0 ± 0.3	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	3.0 – 12.0					
Elevation Downtilt Deviation	°	< 0.6	< 0.6	< 0.5	< 0.4	< 0.4	< 0.5
First Upper Sidelobe Suppression	dB	> 16	> 21	> 17	> 16	> 16	> 16
Upper Sidelobe Suppression, Peak to 20°	dB	> 14	> 16	> 15	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 25					
Inter-Cluster Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Right side, center midband

## Y3, connector 9–10

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.2	16.6	16.9	17.4	17.6	17.9
Gain over all Tilts	dBi	14.2 ± 0.5	16.6 ± 0.7	16.9 ± 0.6	17.4 ± 0.8	17.6 ± 0.7	17.8 ± 1.0
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	79 ± 7	71 ± 6	66 ± 6	61 ± 8	61 ± 4	54 ± 6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 29	> 30	> 28	> 27	> 26
Cross Polar Discrimination at Mechanical Boresight	dB	> 21	> 28	> 29	> 24	> 21	> 23
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.9 ± 0.6	7.5 ± 0.5	7.0 ± 0.4	6.6 ± 0.5	6.0 ± 0.3	5.7 ± 0.3
Electrical Downtilt continuously adjustable	°	3.0 – 12.0					
Elevation Downtilt Deviation	°	< 0.5	< 0.5	< 0.5	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 15	> 24	> 18	> 18	> 18	> 19
Upper Sidelobe Suppression, Peak to 20°	dB	> 13	> 17	> 16	> 16	> 16	> 17
Intra-Cluster Isolation	dB	> 25					
Inter-Cluster Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Right side, midband

## Y4, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.8	17.1	17.5	17.7	18.2
Gain over all Tilts	dBi	16.7 ± 0.5	17.0 ± 0.4	17.4 ± 0.8	17.7 ± 0.8	18.1 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	74 ± 4	71 ± 6	65 ± 7	61 ± 4	57 ± 4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 25	> 26	> 23
Cross Polar Discrimination at Mechanical Boresight	dB	> 23	> 23	> 24	> 19	> 21
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.4 ± 0.4	6.9 ± 0.3	6.6 ± 0.5	6.0 ± 0.4	5.6 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Elevation Downtilt Deviation	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 17	> 19	> 17	> 19	> 21
Upper Sidelobe Suppression, Peak to 20°	dB	> 17	> 17	> 16	> 18	> 17
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45,
Max. Effective Power Whole Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 12.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind Load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 657   148 Maximal:* 780   175 Lateral: 193   43 Maximum360: 892   201
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1539 / 488 / 164 60.6 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	26.4 / 30.9 (clamps incl.) 58.2 / 68.1 (clamps incl.)
Packing Size	mm inches	1690 / 550 / 293 66.5 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

Values based on NGMN-P-BASTA (version 12.0) requirements.  
\* More information on „Maximal“ values (highest wind load in  $\pm 45^\circ$  sector) in the „Wind load tests – Technology Paper“

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Pole diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: $0^\circ$ – $17^\circ$	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Pole diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate pole diameter together with the downtilt kit.

## Material:

**Reflector screen:** Aluminum.

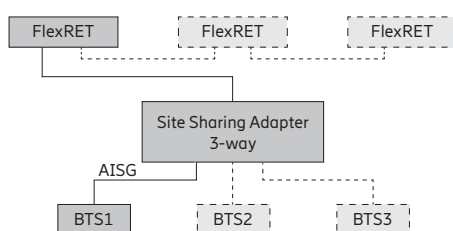
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

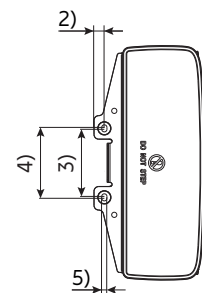
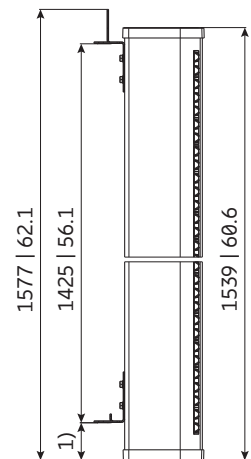
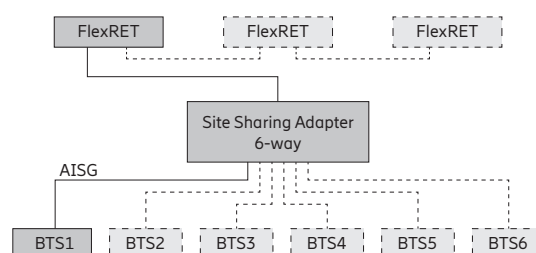
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

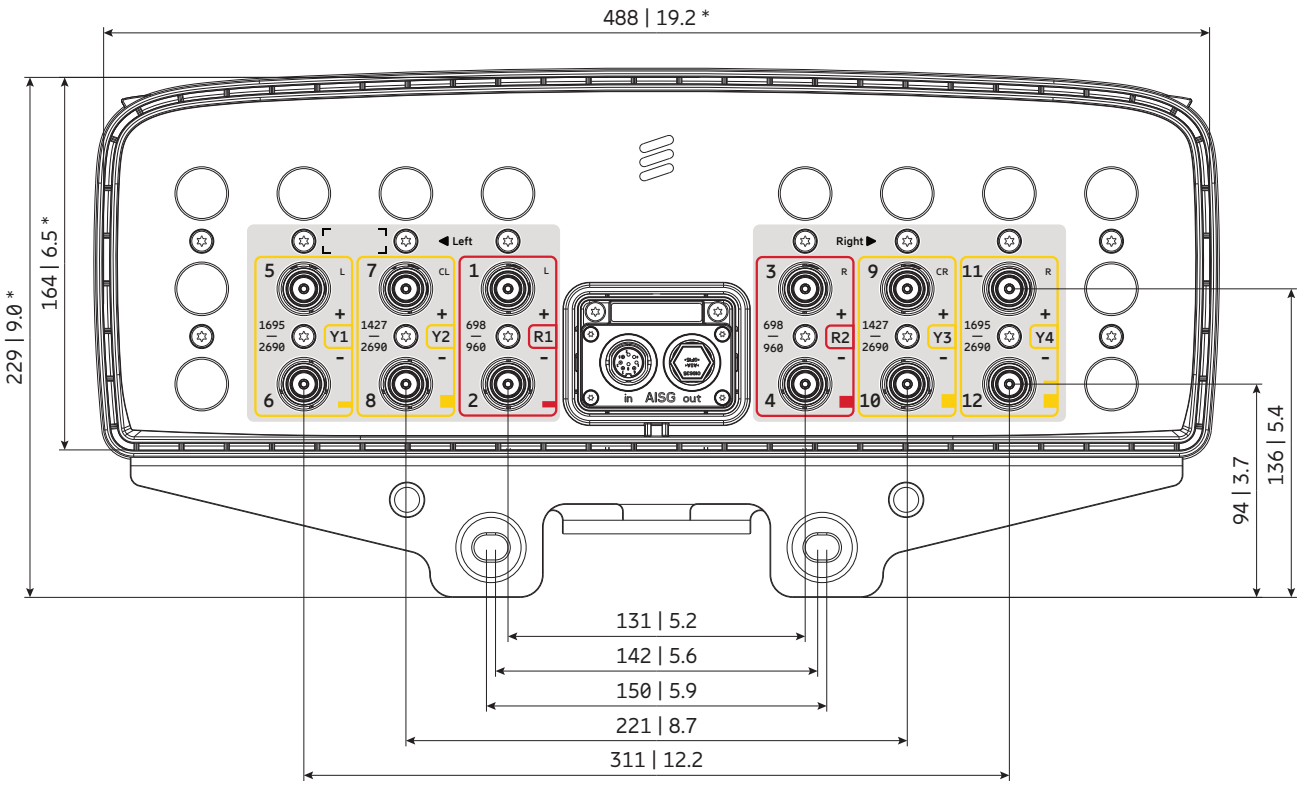


- 1) 80 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5)  $\varnothing$  11 | 0.4

All dimensions  
in mm | inches

For more information please refer to the respective data sheets.

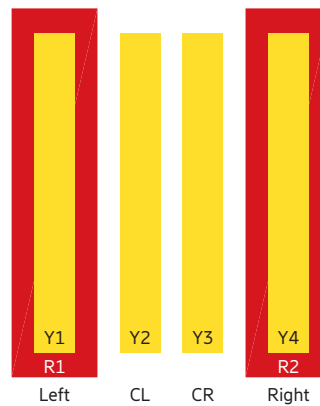
### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1427–2690 MHz	Y2	7–8
1427–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12







# Antenna 4802 2L 4M 1.5m

KRE 101 2527/1

Capacity    Compact    Coverage

65° | 2x 698–894 MHz | 14.0 dBi  
65° | 4x 1695–2360 MHz | 19.0 dBi  
FlexRET



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2LB nMB

Left side, lowband		R1, connector 1–2	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	12.8	13.8
Gain over all Tilts	dBi	12.8 ± 0.3	13.8 ± 0.2
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	68 ± 8.1	58 ± 5.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	16.0 ± 0.9	14.6 ± 0.6
Electrical Downtilt continuously adjustable	°	2.5 – 10.0	
Tilt Accuracy	°	< 1.0	< 1.0
First Upper Sidelobe Suppression	dB	> 14	> 15
Intra-Cluster Isolation	dB	> 25	
Inter-Cluster Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)	
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	12.7	13.8
Gain over all Tilts	dBi	12.8 ± 0.3	13.7 ± 0.3
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	66 ± 8.4	57 ± 7.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 25
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	15.9 ± 0.9	14.7 ± 0.7
Electrical Downtilt continuously adjustable	°	2.5 – 10.0	
Tilt Accuracy	°	< 1.0	< 1.0
First Upper Sidelobe Suppression	dB	> 13	> 14
Intra-Cluster Isolation	dB	> 25	
Inter-Cluster Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)	
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband		Y1, connector 5–6			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	16.9	17.4	17.9	18.7
Gain over all Tilts	dBi	16.9 ± 0.8	17.4 ± 0.8	18.0 ± 1.0	18.7 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	70 ± 5.9	64 ± 7.3	59 ± 7.8	54 ± 4.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 26	> 27	> 29
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.0 ± 0.5	6.4 ± 0.3	6.0 ± 0.5	5.5 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 12.0			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, center midband		Y2, connector 7–8			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	16.7	17.1	17.8	18.8
Gain over all Tilts	dBi	16.7 ± 0.7	17.2 ± 0.6	17.8 ± 1.0	18.8 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	74 ± 7.0	67 ± 5.1	60 ± 7.7	52 ± 5.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 29	> 30	> 32
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.0 ± 0.5	6.5 ± 0.4	6.1 ± 0.5	5.5 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 12.0			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, center midband

## Y3, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	16.6	17.0	17.7	18.6
Gain over all Tilts	dBi	16.6 ± 0.7	17.0 ± 0.6	17.6 ± 1.0	18.6 ± 1.1
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	75 ± 4.6	68 ± 5.1	62 ± 7.7	52 ± 8.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 30	> 30	> 32	> 33
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.8 ± 0.6	6.3 ± 0.5	5.9 ± 0.7	5.4 ± 0.3
Electrical Downtilt continuously adjustable	°	0.0 – 12.0			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband

## Y4, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	16.0	16.6	17.3	18.2
Gain over all Tilts	dBi	16.1 ± 1.0	16.6 ± 0.9	17.2 ± 1.1	18.2 ± 1.0
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	76 ± 4.6	69 ± 4.4	64 ± 5.1	59 ± 5.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 26	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.0 ± 0.6	6.4 ± 0.4	6.1 ± 0.5	5.5 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 12.0			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 670   150 Maximal: 760   170 Lateral: 265   59
EPA	m <sup>2</sup>   ft <sup>2</sup>	Frontal: 0.614   6.61 Maximal: 0.697   7.49 Lateral: 0.241   2.59
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1499 / 488 / 164 59.0 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	33.5 / 38.0 (clamps incl.) 73.9 / 83.8 (clamps incl.)
Packing Size	mm inches	1650 / 550 / 293 65.0 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

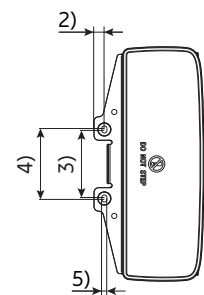
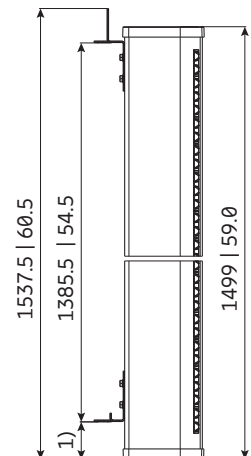
Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010167	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3*	1

\* FlexRET 86010167 does not support AISG 3 feature MALD

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:** Reflector screen: Aluminum.  
Fiberglass housing: It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

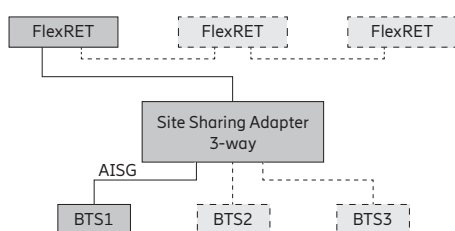
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



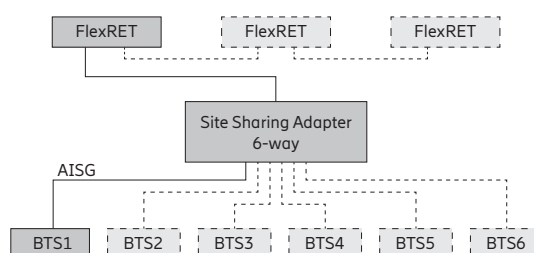
- 1) 79 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5) 11 | 0.4

All dimensions in mm | inches

## Configuration example with Site Sharing Adapter 86010154

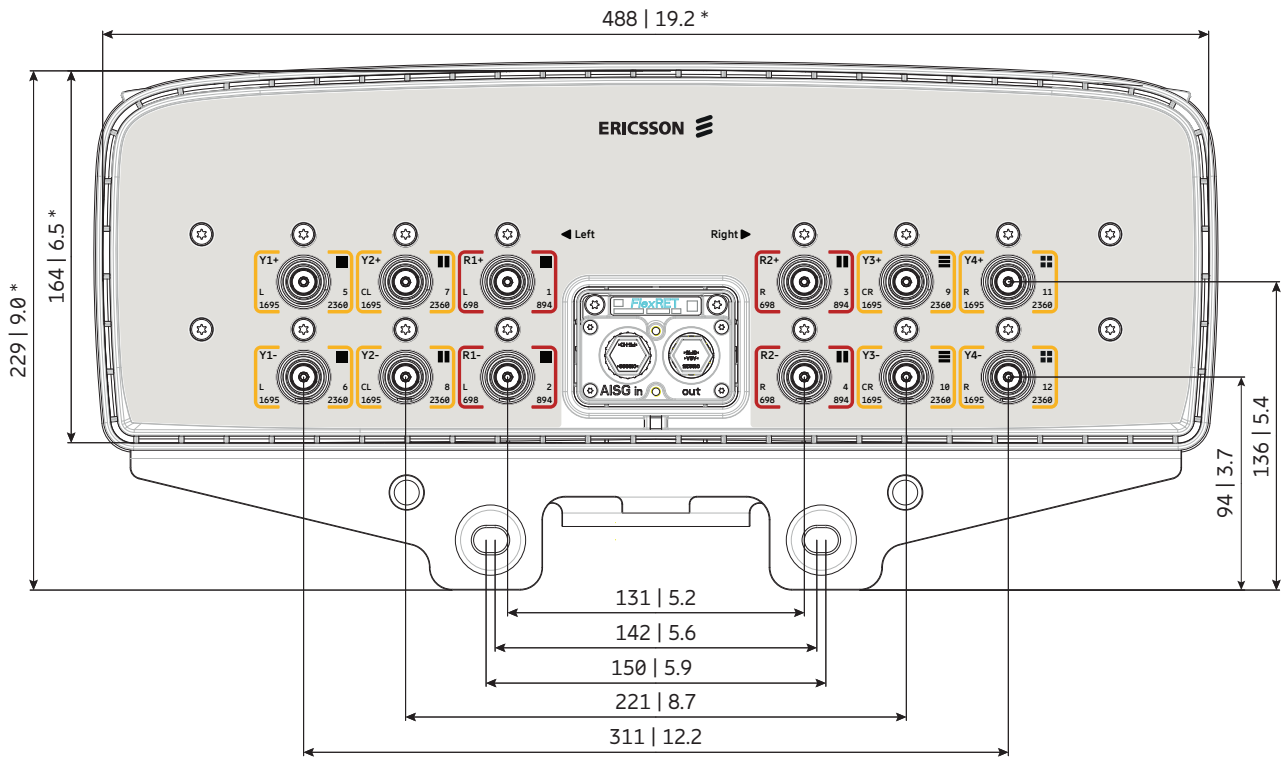


## Configuration example with Site Sharing Adapter 86010155



For more information please refer to the respective data sheets.

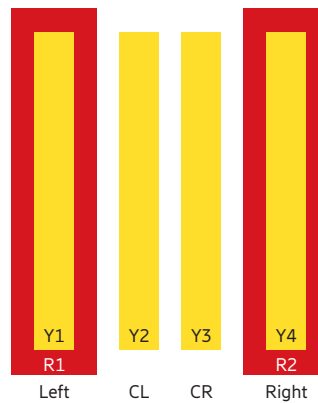
### Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698–894 MHz	R1	1–2
698–894 MHz	R2	3–4
1695–2360 MHz	Y1	5–6
1695–2360 MHz	Y2	7–8
1695–2360 MHz	Y3	9–10
1695–2360 MHz	Y4	11–12





# Antenna 4805 2L 4M 1.5m

KRE 101 2575/1

**Capacity**   Compact   Coverage

65° | 2x 698–960 MHz | 14.0 dBi  
65° | 4x 1695–2690 MHz | 17.0 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.4	13.8	13.8	13.9
Gain over all Tilts	dBi	13.4 ± 0.5	13.9 ± 0.1	13.9 ± 0.2	13.9 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 4.0	68 ± 3.4	70 ± 4.2	69 ± 5.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 23	> 23	> 23
Cross Polar Discrimination at Boresight	dB	> 23	> 22	> 21	> 20
Azimuth Beam Squint	°	-3 ± 4.7	0 ± 4.1	1 ± 4.5	2 ± 5.7
Azimuth Beam Port-to-Port Tracking	dB	2.5	2.0	2.0	4.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	15.7 ± 1.5	14.5 ± 0.7	14.2 ± 0.7	13.2 ± 0.8
Electrical Downtilt continuously adjustable	°	2.0 – 16.0			
Tilt Accuracy	°	< 1.4	< 1.1	< 1.2	< 1.0
First Upper Sidelobe Suppression	dB	> 15	> 15	> 16	> 16
Intra-Cluster Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.1	13.6	13.8	13.8
Gain over all Tilts	dBi	13.1 ± 0.3	13.6 ± 0.3	13.8 ± 0.0	13.8 ± 0.1
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 4.7	67 ± 4.9	66 ± 4.1	65 ± 3.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 21	> 21	> 22
Cross Polar Discrimination at Boresight	dB	> 22	> 27	> 26	> 24
Azimuth Beam Squint	°	1 ± 4.2	-1 ± 2.4	-1 ± 2.0	-3 ± 2.4
Azimuth Beam Port-to-Port Tracking	dB	2.0	1.5	1.0	2.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	15.6 ± 1.2	14.5 ± 0.8	14.1 ± 0.7	13.2 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 16.0			
Tilt Accuracy	°	< 0.7	< 0.6	< 0.6	< 0.4
First Upper Sidelobe Suppression	dB	> 20	> 21	> 21	> 20
Intra-Cluster Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.



Left side, midband, bottom		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.5	16.7	16.9	17.3	17.6
Gain over all Tilts	dBi	16.5 ± 0.7	16.7 ± 0.7	16.9 ± 0.8	17.2 ± 1.0	17.6 ± 1.1
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 8.8	66 ± 7.7	62 ± 9.6	53 ± 5.1	51 ± 5.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 21	> 22	> 22	> 21
Cross Polar Discrimination at Boresight	dB	> 20	> 23	> 24	> 24	> 20
Azimuth Beam Squint	°	-4 ± 7.0	-2 ± 2.8	-3 ± 2.9	-4 ± 1.4	-4 ± 1.9
Azimuth Beam Port-to-Port Tracking	dB	5.5	3.0	3.0	6.0	5.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.3 ± 0.4	6.9 ± 0.3	6.6 ± 0.5	5.9 ± 0.4	5.4 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.7	< 0.6	< 0.6	< 0.6
First Upper Sidelobe Suppression	dB	> 22	> 22	> 20	> 18	> 21
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband, top		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.7	15.9	15.8	16.1	16.3
Gain over all Tilts	dBi	15.7 ± 0.6	15.8 ± 0.8	15.7 ± 0.7	16.2 ± 0.5	16.3 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 12.5	62 ± 12.6	68 ± 11.9	71 ± 4.7	63 ± 7.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 21	> 21	> 23	> 21
Cross Polar Discrimination at Boresight	dB	> 19	> 19	> 19	> 21	> 18
Azimuth Beam Squint	°	7 ± 6.0	6 ± 5.7	6 ± 4.8	6 ± 2.9	9 ± 2.6
Azimuth Beam Port-to-Port Tracking	dB	3.5	4.0	4.0	2.0	3.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.4 ± 0.5	6.8 ± 0.3	6.5 ± 0.4	5.7 ± 0.2	5.5 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.4	< 0.6
First Upper Sidelobe Suppression	dB	> 18	> 19	> 19	> 20	> 15
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband, bottom

## Y3, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.1	16.0	16.2	16.4	16.5
Gain over all Tilts	dBi	16.1 ± 0.7	16.0 ± 0.9	16.1 ± 0.9	16.4 ± 0.6	16.5 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 13.7	67 ± 14.1	70 ± 12.2	73 ± 6.8	67 ± 6.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 21	> 21	> 25	> 22
Cross Polar Discrimination at Boresight	dB	> 22	> 19	> 18	> 20	> 17
Azimuth Beam Squint	°	-7 ± 8.2	-6 ± 6.5	-6 ± 5.0	-6 ± 2.8	-8 ± 2.5
Azimuth Beam Port-to-Port Tracking	dB	4.5	5.5	5.0	1.5	2.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.4 ± 0.4	7.2 ± 0.3	6.7 ± 0.6	6.0 ± 0.3	5.5 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.3	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 19	> 19	> 19	> 20	> 16
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband, top

## Y4, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.3	16.5	16.8	17.4	17.7
Gain over all Tilts	dBi	16.3 ± 0.6	16.5 ± 0.6	16.8 ± 0.8	17.3 ± 1.0	17.8 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	72 ± 5.8	69 ± 8.6	63 ± 8.9	54 ± 4.2	51 ± 5.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 21	> 22	> 21	> 21
Cross Polar Discrimination at Boresight	dB	> 21	> 22	> 22	> 24	> 20
Azimuth Beam Squint	°	1 ± 5.9	0 ± 3.4	1 ± 2.8	2 ± 1.3	2 ± 1.9
Azimuth Beam Port-to-Port Tracking	dB	4.0	3.0	3.5	3.5	5.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.5 ± 0.4	7.1 ± 0.3	6.8 ± 0.5	5.9 ± 0.2	5.4 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.5	< 0.4	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 23	> 23	> 22	> 19	> 20
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

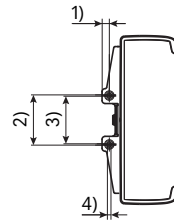
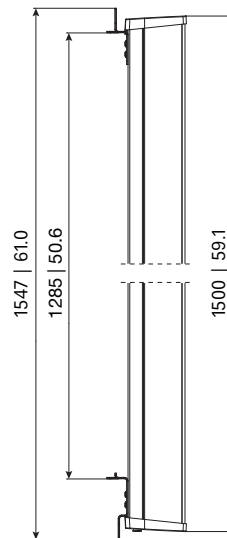
Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	900 (at 40° C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1155   260 Maximal: 1270   286
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1500 / 488 / 175 59.1 / 19.2 / 6.9
Category of Mounting Hardware	XH (X-Heavy)	
Weight	kg lb	37.3 / 42.8 (clamps incl.) 82.2 / 94.3 (clamps incl.)
Packing Size	mm inches	1762 / 520 / 265 69.4 / 20.5 / 10.4
Scope of Supply	Panel, RET KRY 121 79/2 and clamps for 55–115 mm   2.2–4.5 inches diameter	

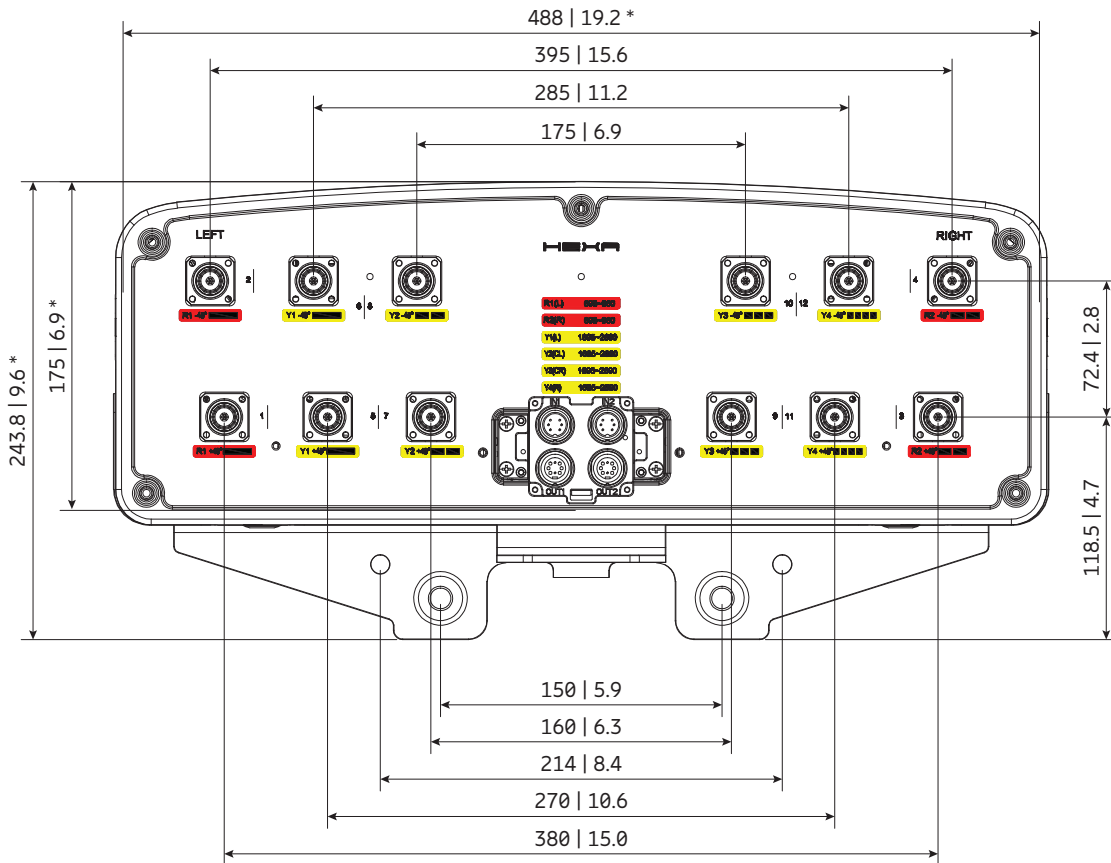
- Material:** **Reflector screen and dipoles:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.
- Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 22 | 0.9  
2) 150 | 5.9  
3) 142 | 5.6  
4) 11 | 0.4

All dimensions  
in mm | inches

## Layout of interface

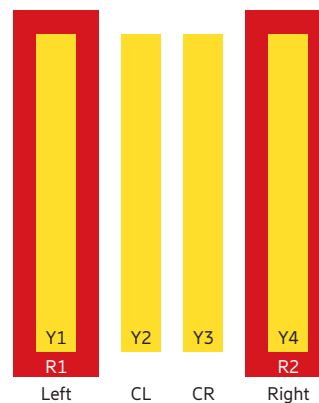


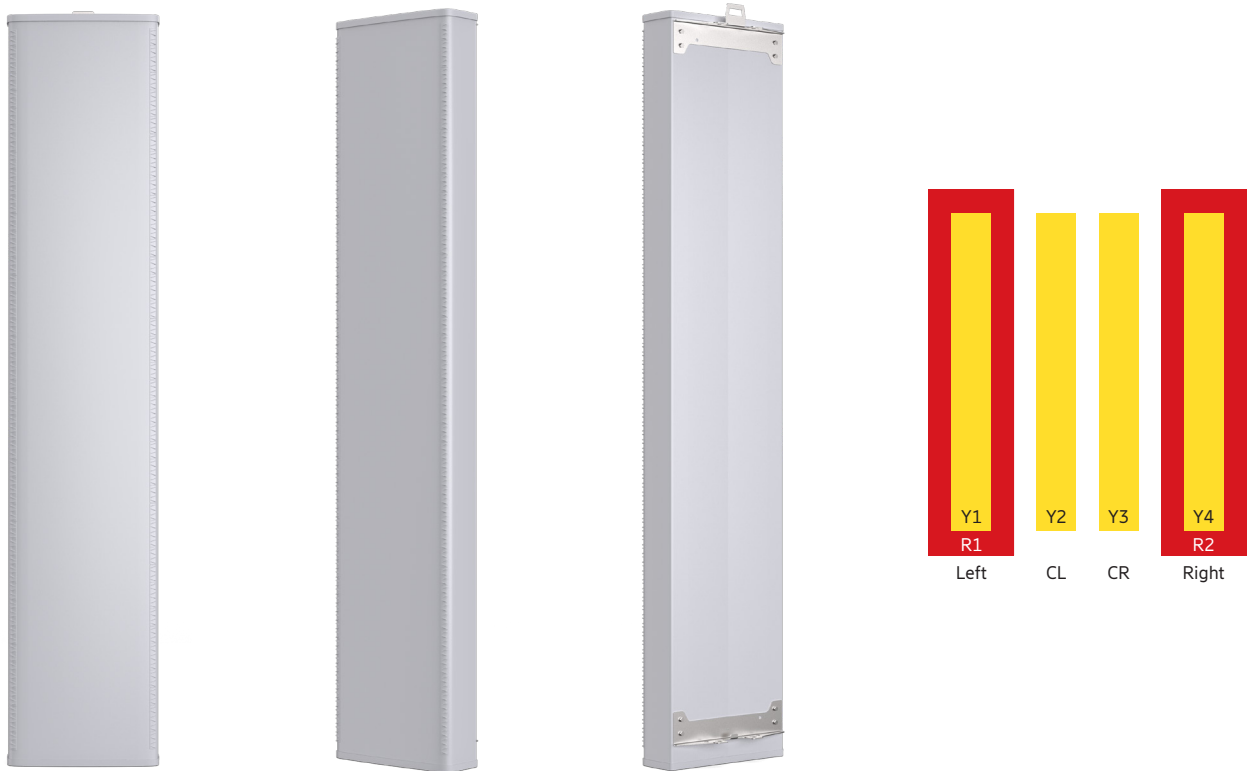
Bottom view

\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12





2LB nMB

# Antenna 4800 2L 4M 1.8m

KRE 101 2526/1

Capacity    Compact    Coverage

65° | 2x 698–894 MHz | 15.0 dBi  
65° | 4x 1695–2360 MHz | 19.0 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	13.9	15.0
Gain over all Tilts	dBi	13.9 ± 0.5	15.0 ± 0.5
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	70.0 ± 8.4	58.7 ± 5.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22.7	> 24.3
Cross Polar Discrimination at Boresight	dB	> 18.5	> 17.3
Cross Polar Discrimination over Sector	dB	10.2	8.5
Azimuth Beam Squint	°	1.4 ± 4.6	-1.2 ± 3.3
Azimuth Beam Port-to-Port Tracking	dB	2.4	3.2
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	12.6 ± 0.6	11.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 12.0	
Tilt Accuracy	°	< 0.8	< 0.5
First Upper Sidelobe Suppression	dB	> 13.4	> 19.5
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 13.5	> 19.3
Intra-Cluster Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	13.9	15.0
Gain over all Tilts	dBi	13.9 ± 0.5	15.0 ± 0.5
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	70.7 ± 7.0	59.5 ± 6.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22.8	> 24.9
Cross Polar Discrimination at Boresight	dB	> 19.6	> 21.2
Cross Polar Discrimination over Sector	dB	8.2	8.8
Azimuth Beam Squint	°	-3.2 ± 4.5	-1.5 ± 3.8
Azimuth Beam Port-to-Port Tracking	dB	2.4	3.2
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	12.6 ± 0.6	11.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 12.0	
Tilt Accuracy	°	< 0.8	< 0.4
First Upper Sidelobe Suppression	dB	> 14.4	> 18.8
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 14.4	> 18.8
Intra-Cluster Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband		Y1, connector 5–6			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	17.1	17.6	18.2	19.0
Gain over all Tilts	dBi	17.0 ± 0.7	17.5 ± 0.7	18.1 ± 1.0	18.9 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	71.4 ± 6.7	66.5 ± 4.9	63.0 ± 5.4	56.4 ± 2.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22.0	> 27.7	> 30.0	> 29.7
Cross Polar Discrimination at Boresight	dB	> 16.7	> 16.0	> 17.8	> 19.7
Cross Polar Discrimination over Sector	dB	6.3	9.7	7.6	4.0
Azimuth Beam Squint	°	-6.2 ± 2.4	-4.2 ± 3.0	-1.8 ± 5.0	4.8 ± 2.3
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.5 ± 0.4	6.0 ± 0.4	5.6 ± 0.6	5.0 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 18.9	> 19.3	> 18.9	> 19.0
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 15.0	> 14.1	> 15.0	> 18.2
Intra-Cluster Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, center midband		Y2, connector 7–8			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	17.2	17.7	18.3	19.1
Gain over all Tilts	dBi	17.3 ± 0.8	17.8 ± 0.7	18.4 ± 1.1	19.1 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67.8 ± 7.0	63.8 ± 4.9	59.0 ± 6.6	53.7 ± 5.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26.6	> 30.1	> 31.2	> 31.8
Cross Polar Discrimination at Boresight	dB	> 16.2	> 18.4	> 19.1	> 20.6
Cross Polar Discrimination over Sector	dB	8.8	8.5	7.5	6.7
Azimuth Beam Squint	°	5.2 ± 3.4	3.5 ± 3.2	2.9 ± 3.6	1.3 ± 2.4
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.4 ± 0.5	5.9 ± 0.4	5.6 ± 0.5	5.1 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.2
First Upper Sidelobe Suppression	dB	> 18.3	> 18.4	> 17.8	> 19.9
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 13.9	> 13.9	> 14.9	> 18.2
Intra-Cluster Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, center midband

## Y3, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	17.2	17.6	18.2	19.1
Gain over all Tilts	dBi	17.1 ± 0.7	17.5 ± 0.6	18.2 ± 1.0	19.1 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	69.9 ± 4.5	67.2 ± 3.9	61.1 ± 7.1	52.0 ± 9.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28.2	> 30.8	> 32.6	> 33.7
Cross Polar Discrimination at Boresight	dB	> 16.2	> 17.5	> 19.1	> 20.9
Cross Polar Discrimination over Sector	dB	6.3	9.1	8.9	6.7
Azimuth Beam Squint	°	-6.3 ± 3.0	-4.2 ± 2.9	-3.0 ± 3.8	-1.5 ± 2.2
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.6 ± 0.5	6.1 ± 0.4	5.7 ± 0.5	5.2 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 19.2	> 19.3	> 19.3	> 21.0
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 16.2	> 14.4	> 15.5	> 18.6
Intra-Cluster Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband

## Y4, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	17.2	17.8	18.3	19.1
Gain over all Tilts	dBi	17.2 ± 0.8	17.9 ± 0.8	18.4 ± 1.0	19.2 ± 1.0
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68.8 ± 6.2	61.5 ± 8.2	57.5 ± 6.0	51.0 ± 5.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25.3	> 27.3	> 29.4	> 28.1
Cross Polar Discrimination at Boresight	dB	> 16.8	> 17.3	> 17.8	> 20.2
Cross Polar Discrimination over Sector	dB	9.8	8.7	7.6	6.2
Azimuth Beam Squint	°	5.9 ± 4.0	4.2 ± 3.7	2.3 ± 5.3	-3.1 ± 2.3
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.5 ± 0.5	6.0 ± 0.3	5.7 ± 0.5	5.1 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 18.1	> 17.9	> 18.5	> 19.7
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 16.2	> 15.7	> 16.3	> 18.8
Intra-Cluster Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 825   186 Maximal: 935   210 Lateral: 325   73
EPA	m <sup>2</sup>   ft <sup>2</sup>	Frontal: 0.759   8.17 Maximal: 0.859   9.25 Lateral: 0.298   3.21
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1828 / 488 / 164 72.0 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	42.0 / 46.5 (clamps incl.) 92.6 / 102.5 (clamps incl.)
Packing Size	mm inches	1975 / 550 / 293 77.8 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

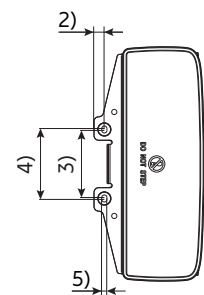
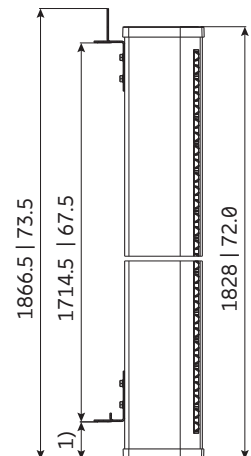
Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010167	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3*	1

\* FlexRET 86010167 does not support AISG 3 feature MALD

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

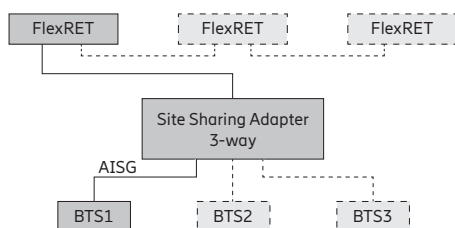
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



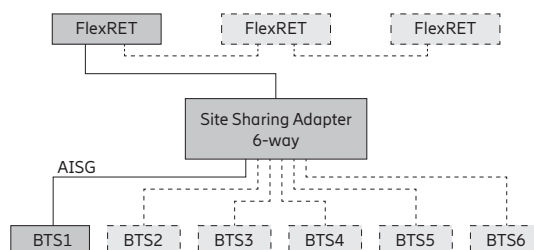
- 1) 79 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5)  $\varnothing$  11 | 0.4

All dimensions in mm | inches

## Configuration example with Site Sharing Adapter 86010154

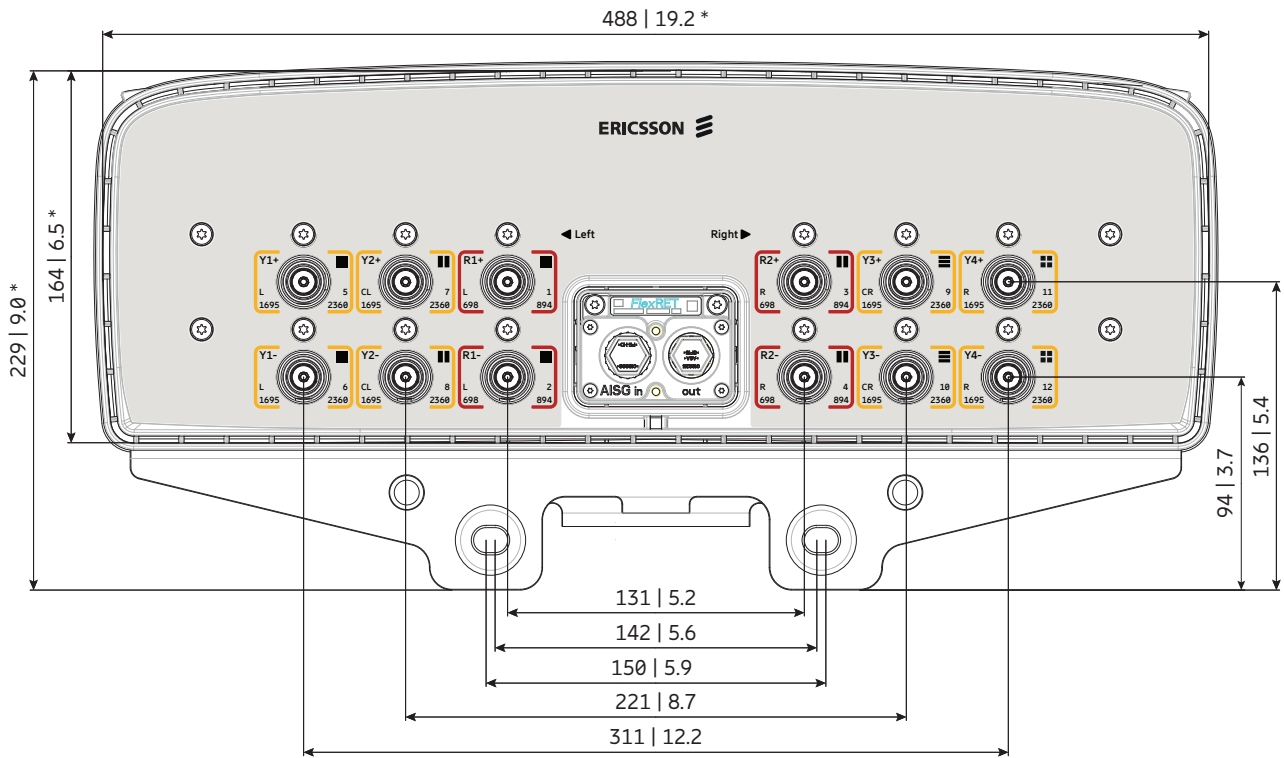


## Configuration example with Site Sharing Adapter 86010155



For more information please refer to the respective data sheets.

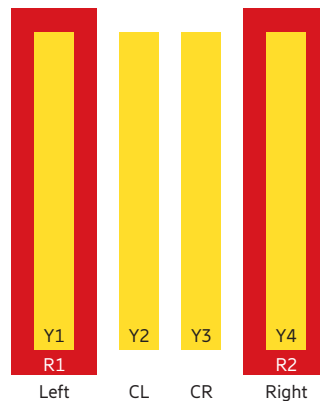
## Layout of interface

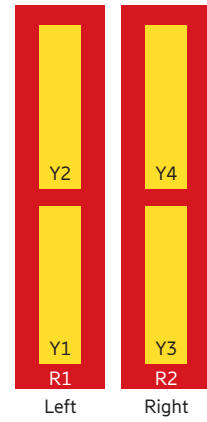


Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–894 MHz	R1	1–2
698–894 MHz	R2	3–4
1695–2360 MHz	Y1	5–6
1695–2360 MHz	Y2	7–8
1695–2360 MHz	Y3	9–10
1695–2360 MHz	Y4	11–12





# Antenna 4202 2L 4M 2.0m

800372991

Capacity **Compact** Coverage

65° | 2x 698–960 MHz | 15.0 dBi  
65° | 2x 1695–2690 MHz | 16.0 dBi  
65° | 2x 1427–2690 MHz | 16.0 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.0	14.7	15.0	15.4
Gain over all Tilts	dBi	14.0 ± 0.5	14.7 ± 0.4	15.0 ± 0.4	15.4 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 6.6	59 ± 4.5	57 ± 3.9	55 ± 5.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 23	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.8 ± 1.1	10.9 ± 0.7	10.7 ± 0.6	10.1 ± 0.8
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.5	< 0.4	< 0.5	< 0.5
First Upper Side Lobe Suppression	dB	> 17	> 20	> 19	> 18
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.0	14.8	15.0	15.5
Gain over all Tilts	dBi	14.0 ± 0.5	14.7 ± 0.4	15.0 ± 0.4	15.4 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 6.8	59 ± 4.3	57 ± 3.9	55 ± 5.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 23	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.9 ± 1.4	10.9 ± 0.6	10.7 ± 0.6	10.1 ± 0.7
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Side Lobe Suppression	dB	> 19	> 21	> 20	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, lower midband		Y1, connector 5–6					
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690	
Gain at mid Tilt	dBi	15.5	15.7	15.9	15.6	15.8	
Gain over all Tilts	dBi	15.5 ± 0.4	15.7 ± 0.6	15.9 ± 0.6	15.6 ± 0.5	15.8 ± 0.5	
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	65 ± 3.5	65 ± 4.5	65 ± 5.0	63 ± 5.1	57 ± 5.3	
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 26	> 26	> 26	> 28	
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	10.7 ± 0.6	10.2 ± 0.6	9.8 ± 0.5	8.9 ± 0.4	8.2 ± 0.5	
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.4	< 0.5	< 0.5	< 0.4	< 0.4	
First Upper Side Lobe Suppression	dB	> 16	> 16	> 17	> 22	> 18	
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 (Y1 // R1, R2, Y2, Y3, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, upper midband		Y2, connector 7–8					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.1	15.8	16.1	16.3	16.1	15.9
Gain over all Tilts	dBi	15.0 ± 0.4	15.7 ± 0.5	16.0 ± 0.6	16.3 ± 0.6	16.0 ± 0.9	15.8 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	63 ± 3.3	65 ± 4.1	66 ± 4.6	67 ± 4.4	67 ± 5.0	61 ± 6.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 27	> 25	> 28	> 26	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	11.6 ± 0.9	9.7 ± 0.6	9.1 ± 0.4	8.6 ± 0.6	7.8 ± 0.4	7.4 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.3	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 19	> 18	> 18	> 18	> 19
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 (Y2 // R1, R2, Y1, Y3, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lower midband		Y3, connector 9–10					
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690	
Gain at mid Tilt	dBi	15.5	15.9	15.9	15.6	15.8	
Gain over all Tilts	dBi	15.5 ± 0.4	15.7 ± 0.6	15.9 ± 0.5	15.6 ± 0.5	15.8 ± 0.6	
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	67 ± 4.5	65 ± 5.2	64 ± 4.9	64 ± 8.4	58 ± 5.4	
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 24	> 25	> 24	> 26	
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	10.8 ± 0.7	10.2 ± 0.7	9.7 ± 0.7	8.8 ± 0.5	8.2 ± 0.5	
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.5	< 0.4	
First Upper Side Lobe Suppression	dB	> 17	> 18	> 18	> 20	> 18	
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 (Y3 // R1, R2, Y1, Y2, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, upper midband		Y4, connector 11–12					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.0	15.8	16.1	16.4	16.0	15.9
Gain over all Tilts	dBi	15.0 ± 0.4	15.7 ± 0.5	16.0 ± 0.6	16.3 ± 0.6	16.0 ± 0.9	15.8 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	63 ± 3.3	67 ± 4.4	65 ± 3.3	66 ± 3.5	68 ± 6.2	61 ± 5.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 26	> 25	> 26	> 26	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	11.8 ± 0.7	9.8 ± 0.6	9.1 ± 0.4	8.6 ± 0.6	7.8 ± 0.4	7.4 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 18	> 18	> 17	> 16	> 18
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 28 (Y4 // R1, R2, Y1, Y2, Y3)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	-45, +45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	12 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 465   105 Maximal: 815   183
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1978 / 378 / 164 77.9 / 14.9 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	37.0 / 41.5 (clamps incl.) 81.6 / 91.5 (clamps incl.)
Packing Size	mm inches	2125 / 440 / 293 83.7 / 17.3 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

## Material:

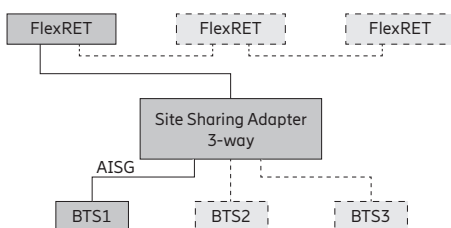
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

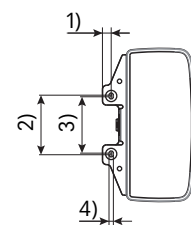
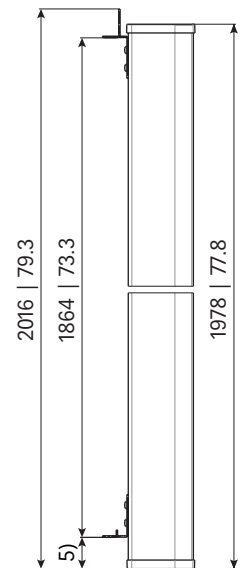
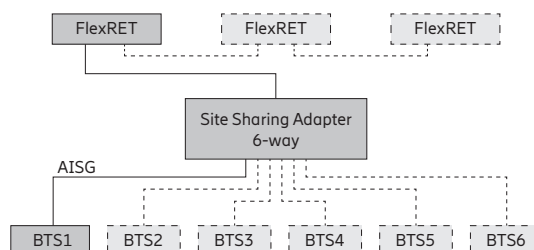
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

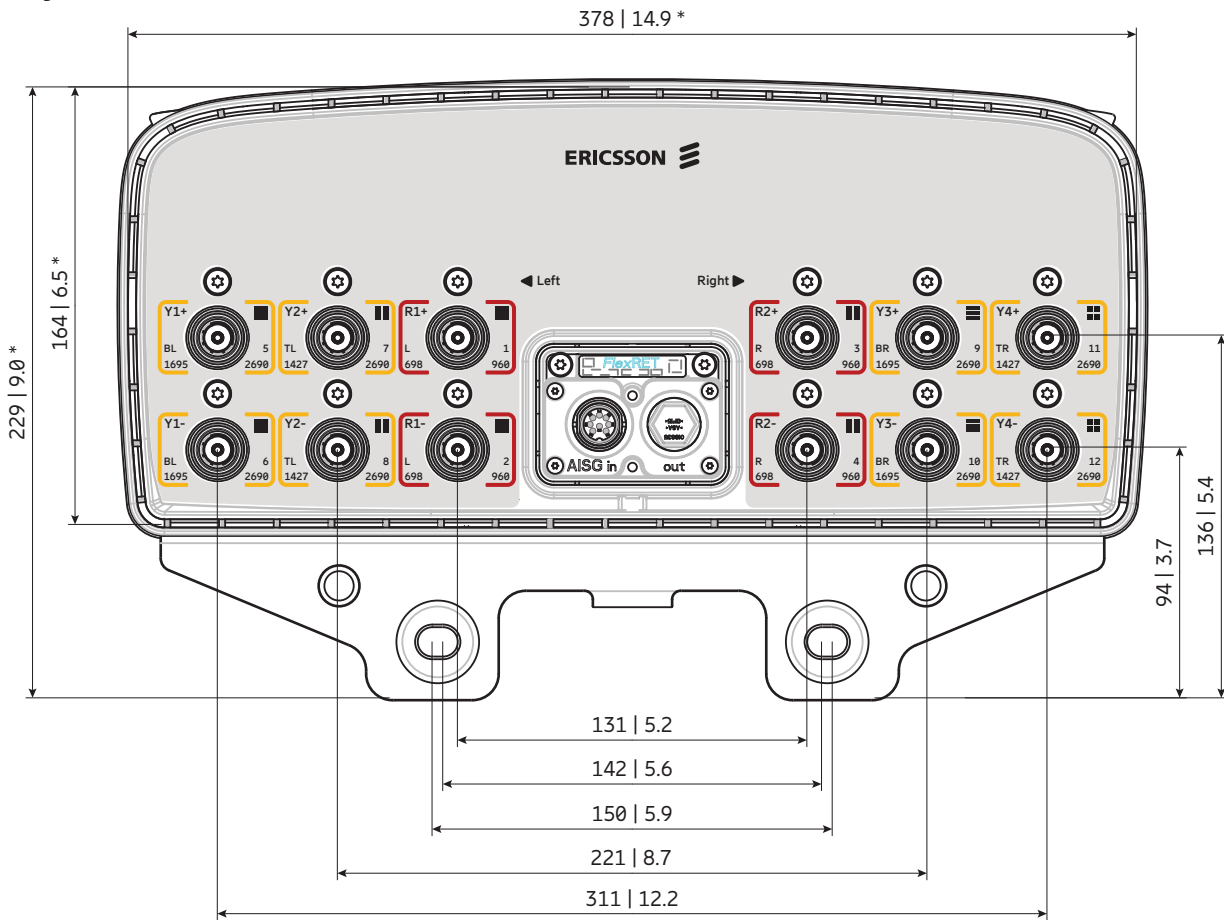


- 1) 22 | 0.9  
2) 150 | 5.9  
3) 142 | 5.6  
4) 11 | 0.4  
5) 79 | 3.1

All dimensions in mm | inches

For more information please refer to the respective data sheets.

## Layout of interface



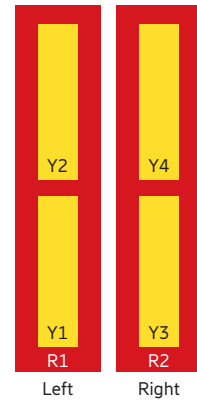
Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1427–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1427–2690 MHz	Y4	11–12







2LB nMB

# Antenna 4207 2L 4M 2.0m

KRE 101 2567/1

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 15.0 dBi  
65° | 4x 1695–2690 MHz | 16.0 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.4	14.8	15.0	15.1
Gain over all Tilts	dBi	14.3 ± 0.4	14.8 ± 0.4	15.0 ± 0.3	15.1 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 4.5	64 ± 2.8	62 ± 3.3	58 ± 3.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 23	> 21	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	12.1 ± 0.9	11.2 ± 0.6	10.8 ± 0.6	10.1 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 1.1	< 1.1	< 1.0	< 1.0
First Upper Side Lobe Suppression	dB	> 16	> 16	> 16	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 27 (R1 // R2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.4	14.8	14.9	15.1
Gain over all Tilts	dBi	14.3 ± 0.4	14.8 ± 0.3	14.9 ± 0.3	15.1 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 5.1	64 ± 3.0	62 ± 2.3	59 ± 4.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 21	> 20	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	12.1 ± 0.9	11.2 ± 0.6	10.7 ± 0.5	10.0 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 1.2	< 1.1	< 1.1	< 1.0
First Upper Side Lobe Suppression	dB	> 15	> 15	> 15	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 27 (R2 // R1, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Left side, midband, bottom

## Y1, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.6	15.8	15.9	15.9	16.0
Gain over all Tilts	dBi	15.5 ± 0.6	15.8 ± 0.6	15.9 ± 0.6	15.9 ± 0.6	15.9 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68 ± 3.1	67 ± 4.5	68 ± 7.2	62 ± 4.6	62 ± 6.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 22	> 23	> 22	> 21
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.6 ± 0.6	9.1 ± 0.4	8.5 ± 0.7	7.4 ± 0.4	7.0 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.6	< 0.6	< 0.4	< 0.7
First Upper Side Lobe Suppression	dB	> 15	> 14	> 14	> 13	> 14
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 27 (Y1 // R1, R2, Y2, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Left side, midband, top

## Y2, connector 7–8

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.1	15.4	15.5	15.4	15.7
Gain over all Tilts	dBi	15.1 ± 0.4	15.4 ± 0.6	15.5 ± 0.6	15.4 ± 0.5	15.7 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69 ± 5.2	68 ± 4.9	68 ± 4.2	64 ± 4.5	62 ± 6.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 23	> 21	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.0 ± 0.6	9.4 ± 0.5	8.8 ± 0.7	7.5 ± 0.3	6.8 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.9	< 0.8	< 0.8	< 0.5	< 0.7
First Upper Side Lobe Suppression	dB	> 13	> 12	> 12	> 12	> 12
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 27 (Y2 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, midband, bottom

## Y3, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.5	15.7	15.8	15.9	16.1
Gain over all Tilts	dBi	15.5 ± 0.6	15.7 ± 0.6	15.8 ± 0.6	15.9 ± 0.5	16.0 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	70 ± 3.8	68 ± 3.9	68 ± 4.8	62 ± 5.8	61 ± 6.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 22	> 23	> 22	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.6 ± 0.6	9.0 ± 0.4	8.5 ± 0.7	7.5 ± 0.3	7.0 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.5	< 0.5	< 0.4	< 0.6
First Upper Side Lobe Suppression	dB	> 14	> 14	> 14	> 13	> 14
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 27 (Y3 // R1, R2, Y1, Y2, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, midband, top

## Y4, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.1	15.4	15.5	15.6	15.8
Gain over all Tilts	dBi	15.1 ± 0.4	15.4 ± 0.6	15.5 ± 0.6	15.5 ± 0.5	15.7 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	70 ± 4.1	69 ± 4.8	68 ± 4.6	63 ± 5.6	61 ± 7.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 22	> 23	> 21	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.0 ± 0.6	9.4 ± 0.5	8.8 ± 0.8	7.6 ± 0.3	6.9 ± 0.7
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.6	< 0.6	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 13	> 12	> 12	> 11	> 12
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 27 (Y4 // R1, R2, Y1, Y2, Y3)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

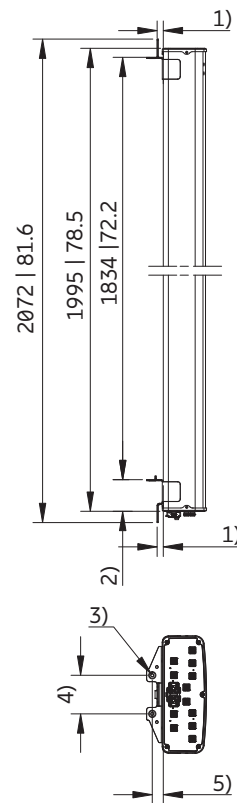
Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 40° C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

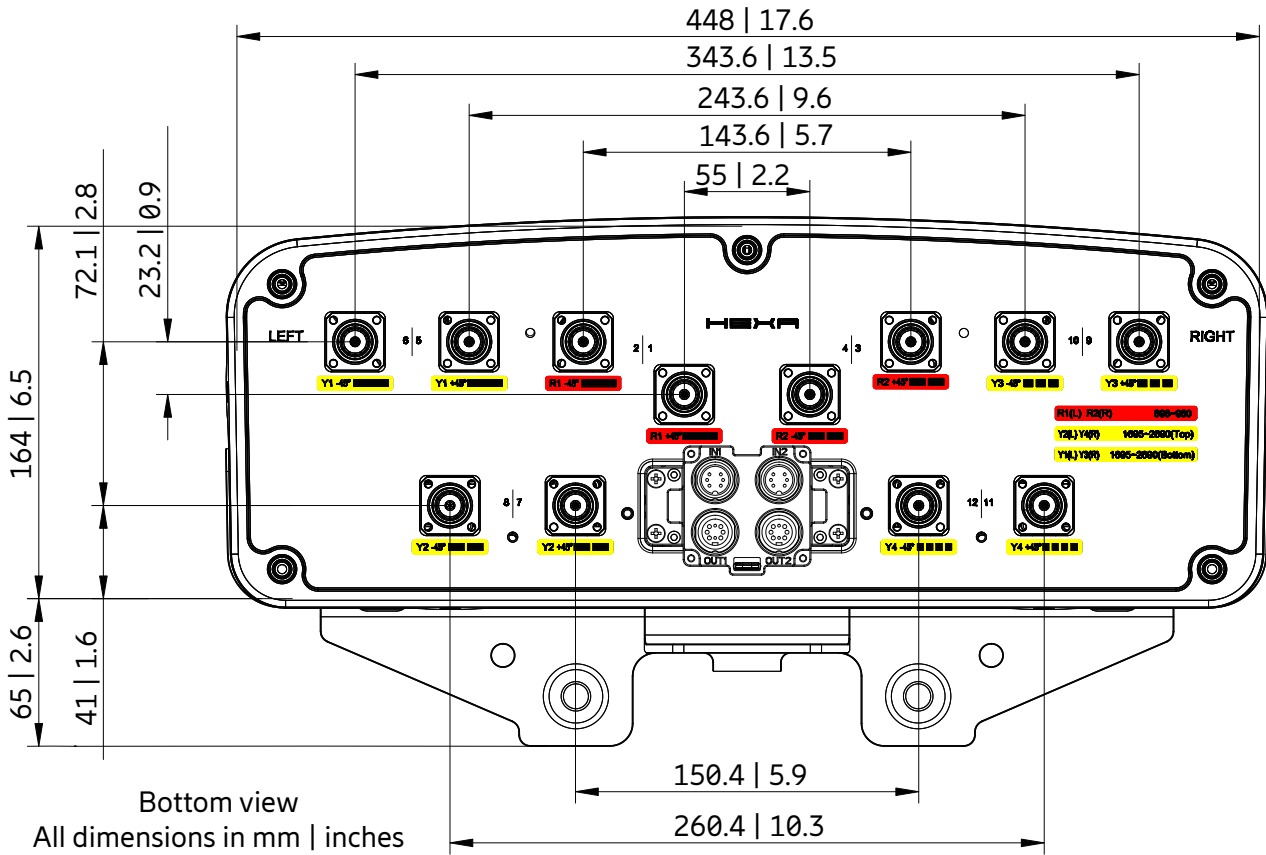
Input	12 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1155   260 Maximal: 1270   286
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1995 / 448 / 171 78.5 / 17.6 / 6.7
Category of Mounting Hardware	XH (X-Heavy)	
Weight (approx.)	kg lb	39.3 / 44.3 (clamps incl.) 86.6 / 97.6 (clamps incl.)
Packing Size	mm inches	2220 / 467 / 255 87.4 / 18.4 / 10.0
Scope of Supply	Panel, integrated RET and clamps for 55–115 mm   2.2–4.5 inches diameter	

- Material:** **Reflector screen and dipoles:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.
- Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 24 | 1.0  
2) 123 | 4.8  
3)  $\varnothing$ 11 | 0.4  
4) 150 | 5.9  
5) 43 | 1.7  
All dimensions  
in mm | inches

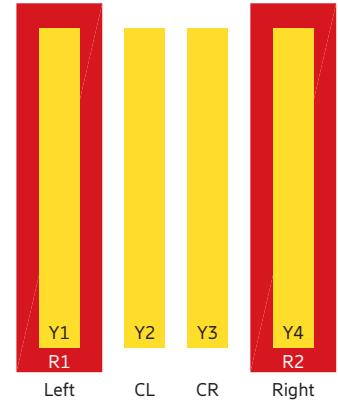
## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12





2LB nMB

# Antenna 4800 2L 4M 2.0m

800482002

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 15.8 dBi  
65° | 2x 1427–2690 MHz | 17.8 dBi  
65° | 2x 1695–2690 MHz | 17.5 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.5	15.7	15.9
Gain over all Tilts	dBi	15.0 ± 0.3	15.5 ± 0.5	15.7 ± 0.3	15.8 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	58 ± 5	55 ± 4	53 ± 4	51 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 19	> 19	> 22	> 24
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.8 ± 0.8	10.9 ± 0.6	10.8 ± 0.7	10.0 ± 0.7
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.7	< 0.5	< 0.5	< 0.7
First Upper Side Lobe Suppression	dB	> 16	> 17	> 17	> 17
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.4	15.6	15.8
Gain over all Tilts	dBi	15.0 ± 0.5	15.5 ± 0.6	15.6 ± 0.6	15.8 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	58 ± 5	56 ± 5	54 ± 6	50 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 18	> 20	> 22	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.8 ± 0.8	10.8 ± 0.6	10.7 ± 0.7	10.0 ± 0.6
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.7	< 0.6	< 0.6	< 0.6
First Upper Side Lobe Suppression	dB	> 16	> 16	> 16	> 17
Cross Polar Isolation	dB	>25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.



Left side, midband		Y1, connector 5–6					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.7	17.1	17.5	17.7	17.6	17.9
Gain over all Tilts	dBi	16.6 ± 0.7	17.1 ± 0.6	17.4 ± 0.7	17.6 ± 0.7	17.6 ± 0.8	17.9 ± 0.9
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	65 ± 5	69 ± 3	67 ± 4	64 ± 6	60 ± 6	56 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 25	> 27	> 27	> 30	> 26	> 26
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	7.8 ± 0.4	7.0 ± 0.4	6.5 ± 0.3	6.2 ± 0.5	5.5 ± 0.4	5.3 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 16	> 19	> 19	> 20	> 20	> 19
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, center midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.4	16.7	16.7	17.0	17.6
Gain over all Tilts	dBi	16.4 ± 0.7	16.7 ± 0.5	16.6 ± 0.7	16.9 ± 0.8	17.5 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 13	64 ± 10	64 ± 8	66 ± 5	63 ± 9
Front-to-Back Ratio, Total Power, ±30°	dB	> 24	> 24	> 24	> 25	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.3 ± 0.5	6.7 ± 0.5	6.5 ± 0.4	5.9 ± 0.4	5.6 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 18	> 17	> 17	> 17	> 18
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, center midband

## Y3, connector 9 – 10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.5	16.7	16.8	17.4	17.5
Gain over all Tilts	dBi	16.5 ± 0.5	16.6 ± 0.8	16.7 ± 0.9	17.2 ± 0.7	17.5 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	67 ± 13	69 ± 9	70 ± 9	62 ± 7	60 ± 8
Front-to-Back Ratio, Total Power, ±30°	dB	> 23	> 24	> 25	> 27	> 29
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.3 ± 0.6	6.8 ± 0.4	6.5 ± 0.6	5.9 ± 0.4	5.5 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.5	< 0.5	< 0.5
First Upper Side Lobe Suppression	dB	> 17	> 17	> 18	> 19	> 21
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, midband

## Y4, connector 11 – 12

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.6	17.1	17.3	17.4	17.6	17.8
Gain over all Tilts	dBi	16.6 ± 0.6	17.0 ± 0.6	17.2 ± 0.7	17.3 ± 0.7	17.6 ± 0.8	17.7 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	65 ± 5	70 ± 3	70 ± 3	67 ± 6	61 ± 4	58 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 26	> 26	> 28	> 28	> 28	> 26
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	7.9 ± 0.4	7.0 ± 0.4	6.5 ± 0.3	6.2 ± 0.4	5.6 ± 0.4	5.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 19	> 19	> 19	> 19	> 19
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 900   202 Maximal: 1015   228
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1978 / 488 / 164 77.9 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	47 / 51.5 (clamps incl.) 103.6 / 112.4 (clamps incl.)
Packing Size	mm inches	2125 / 550 / 293 83.7 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

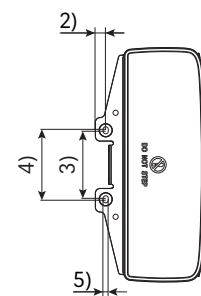
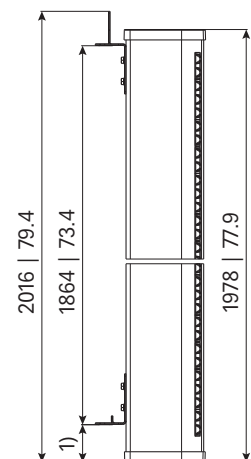
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0– AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

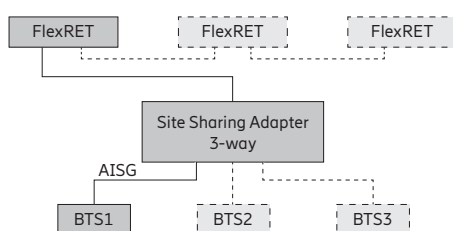
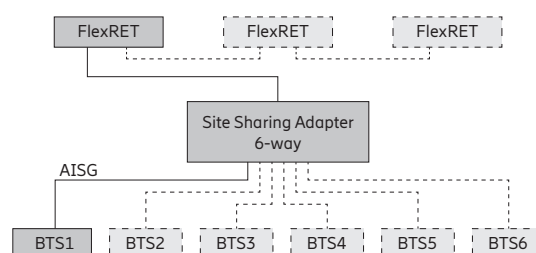
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



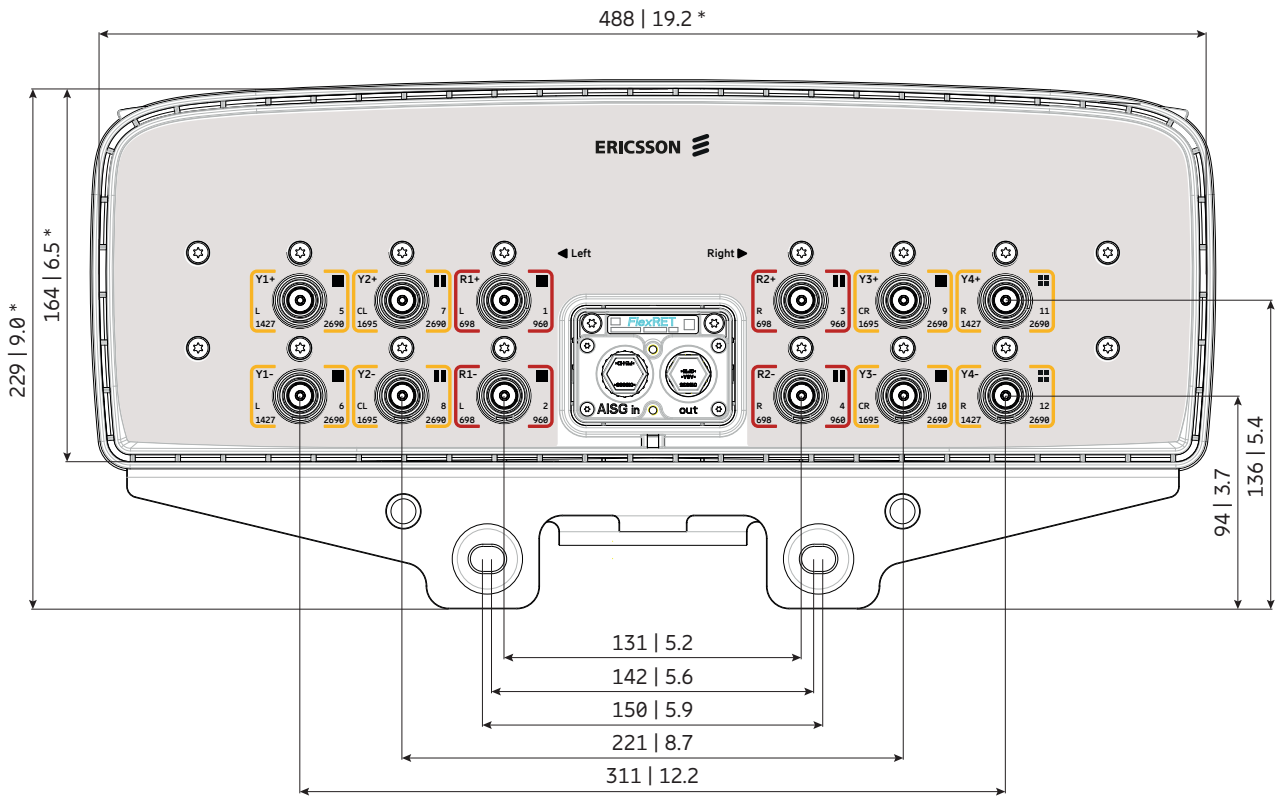
1) 79 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5)  $\varnothing$  11 | 0.4

All dimensions  
in mm | inches

Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

For more information please refer to the respective data sheets.

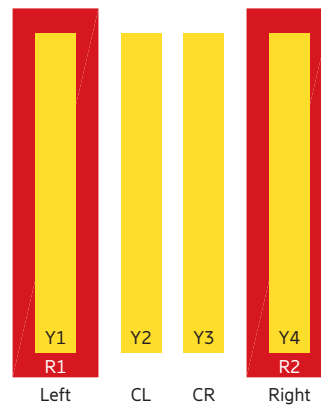
### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1427–2690 MHz	Y4	11–12



New product



# Antenna 4801 2L 4M 2.0m

KRE 101 2525/1

Capacity Compact Coverage

65° | 2x 698–960 MHz | 14.7 dBi  
65° | 2x 1427–2690 MHz | 18.0 dBi  
65° | 2x 1695–2690 MHz | 17.7 dBi  
FlexRET



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2LB nMB

Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 803	791 – 862	814 – 894	880 – 960
Gain at mid Tilt	dBi	14.2	14.5	14.4	14.6
Gain over all Tilts	dBi	14.1 ± 0.5	14.5 ± 0.5	14.3 ± 0.6	14.5 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 7	56 ± 6	55 ± 9	58 ± 8
Front-to-Back Ratio, Total Power, ±30°	dB	> 22	> 23	> 23	> 23
Cross Polar Discrimination at Mechanical Boresight	dB	> 27	> 27	> 23	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	12.5 ± 0.9	11.9 ± 0.6	11.9 ± 0.8	11.6 ± 0.7
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Elevation Downtilt Deviation	°	< 0.6	< 0.7	< 0.8	< 0.7
First Upper Sidelobe Suppression	dB	> 20	> 21	> 18	> 17
Upper Sidelobe Suppression, Peak to 20°	dB	> 20	> 20	> 18	> 16
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (R1 // R2) > 27 (R1 // Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 12.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 803	791 – 862	814 – 894	880 – 960
Gain at mid Tilt	dBi	14.2	14.6	14.6	14.7
Gain over all Tilts	dBi	14.2 ± 0.5	14.6 ± 0.6	14.5 ± 0.7	14.7 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	65 ± 6	56 ± 8	55 ± 5	56 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 20	> 22	> 21	> 21
Cross Polar Discrimination at Mechanical Boresight	dB	> 23	> 23	> 22	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	12.7 ± 0.8	11.9 ± 1.1	11.6 ± 0.7	11.4 ± 0.9
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Elevation Downtilt Deviation	°	< 0.7	< 0.6	< 0.8	< 1.0
First Upper Sidelobe Suppression	dB	> 17	> 19	> 19	> 18
Upper Sidelobe Suppression, Peak to 20°	dB	> 17	> 19	> 18	> 17
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (R2 // R1) > 27 (R2 // Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Left side, midband

## Y1, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.8	17.1	17.3	17.8	17.9
Gain over all Tilts	dBi	16.7 ± 0.5	17.0 ± 0.6	17.3 ± 0.8	17.7 ± 0.7	17.7 ± 1.0
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	74 ± 3	68 ± 8	64 ± 7	62 ± 3	51 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 25	> 26	> 25	> 26	> 22
Cross Polar Discrimination at Mechanical Boresight	dB	> 25	> 27	> 22	> 22	> 23
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.1 ± 0.4	6.7 ± 0.4	6.3 ± 0.5	5.7 ± 0.2	5.5 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Elevation Downtilt Deviation	°	< 0.3	< 0.3	< 0.3	< 0.2	< 0.3
First Upper Sidelobe Suppression	dB	> 19	> 19	> 18	> 21	> 21
Upper Sidelobe Suppression, Peak to 20°	dB	> 17	> 16	> 16	> 17	> 16
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 27 (Y1 // R1, R2, Y2, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Left side, center midband

## Y2, connector 7–8

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.6	17.0	17.3	17.6	17.8	18.1
Gain over all Tilts	dBi	14.6 ± 0.5	16.9 ± 0.7	17.3 ± 0.7	17.6 ± 0.8	17.7 ± 0.7	17.9 ± 1.0
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	79 ± 6	70 ± 6	64 ± 6	62 ± 6	64 ± 2	55 ± 3
Front-to-Back Ratio, Total Power, ±30°	dB	> 28	> 27	> 29	> 29	> 25	> 28
Cross Polar Discrimination at Mechanical Boresight	dB	> 21	> 27	> 27	> 25	> 19	> 22
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.4 ± 0.6	7.1 ± 0.5	6.6 ± 0.5	6.2 ± 0.5	5.8 ± 0.3	5.6 ± 0.3
Electrical Downtilt continuously adjustable	°	3.0 – 12.0					
Elevation Downtilt Deviation	°	< 0.7	< 0.3	< 0.4	< 0.4	< 0.4	< 0.5
First Upper Sidelobe Suppression	dB	> 17	> 17	> 16	> 17	> 21	> 17
Upper Sidelobe Suppression, Peak to 20°	dB	> 14	> 15	> 15	> 16	> 16	> 16
Intra-Cluster Isolation	dB	> 25					
Inter-Cluster Isolation	dB	> 27 (Y2 // R1, R2, Y1, Y3, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Right side, center midband

## Y3, connector 9–10

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.7	17.1	17.4	17.7	17.9	18.0
Gain over all Tilts	dBi	14.8 ± 0.5	17.0 ± 0.7	17.4 ± 0.7	17.6 ± 0.8	17.8 ± 0.8	17.8 ± 1.1
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	77 ± 5	70 ± 5	64 ± 6	61 ± 6	63 ± 3	54 ± 3
Front-to-Back Ratio, Total Power, ±30°	dB	> 29	> 28	> 28	> 29	> 25	> 28
Cross Polar Discrimination at Mechanical Boresight	dB	> 20	> 26	> 27	> 26	> 21	> 22
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.4 ± 0.5	6.9 ± 0.4	6.5 ± 0.4	6.2 ± 0.5	5.8 ± 0.3	5.5 ± 0.3
Electrical Downtilt continuously adjustable	°	3.0 – 12.0					
Elevation Downtilt Deviation	°	< 0.6	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 14	> 15	> 16	> 18	> 21	> 17
Upper Sidelobe Suppression, Peak to 20°	dB	> 13	> 15	> 16	> 17	> 16	> 15
Intra-Cluster Isolation	dB	> 25					
Inter-Cluster Isolation	dB	> 27 (Y3 // R1, R2, Y1, Y2, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Right side, midband

## Y4, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.8	17.0	17.3	17.7	17.7
Gain over all Tilts	dBi	16.7 ± 0.5	17.0 ± 0.5	17.2 ± 0.8	17.6 ± 0.7	17.5 ± 1.0
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	74 ± 3	70 ± 5	66 ± 6	63 ± 2	55 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 25	> 25	> 25	> 25	> 22
Cross Polar Discrimination at Mechanical Boresight	dB	> 25	> 26	> 24	> 19	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.1 ± 0.3	6.7 ± 0.4	6.4 ± 0.6	5.7 ± 0.2	5.5 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Elevation Downtilt Deviation	°	< 0.3	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Sidelobe Suppression	dB	> 20	> 20	> 21	> 20	> 19
Upper Sidelobe Suppression, Peak to 20°	dB	> 16	> 16	> 17	> 16	> 15
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 27 (Y4 // R1, R2, Y1, Y2, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45
Max. Effective Power Whole Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 12.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind Load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 853   192 Maximal:* 1030   232 Lateral: 251   56 Maximum360: 1159   261
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1999 / 488 / 164 78.7 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	31.7 / 36.2 (clamps incl.) 69.9 / 79.8 (clamps incl.)
Packing Size	mm inches	2150 / 550 / 293 84.6 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

Values based on NGMN-P-BASTA (version 12.0) requirements.  
\* More information on „Maximal“ values (highest wind load in  $\pm 45^\circ$  sector) in the „Wind load tests – Technology Paper“

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Pole diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: $0^\circ$ – $10^\circ$	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Pole diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0– AISG 3	1

For downtilt mounting use the clamps for an appropriate pole diameter together with the downtilt kit.

## Material:

**Reflector screen:** Aluminum.

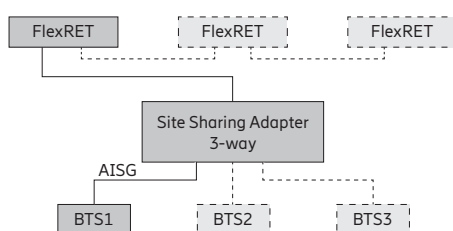
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

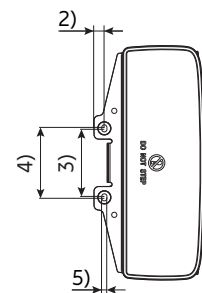
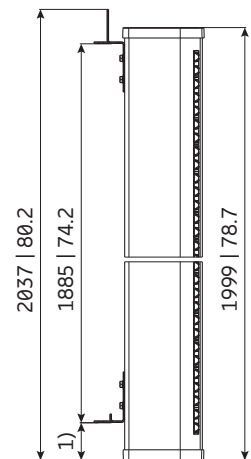
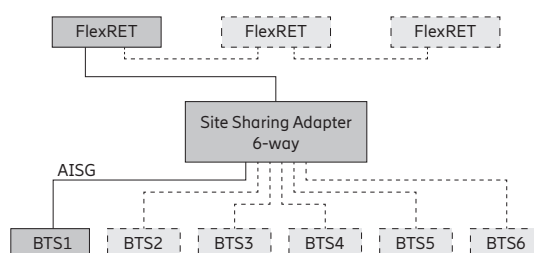
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

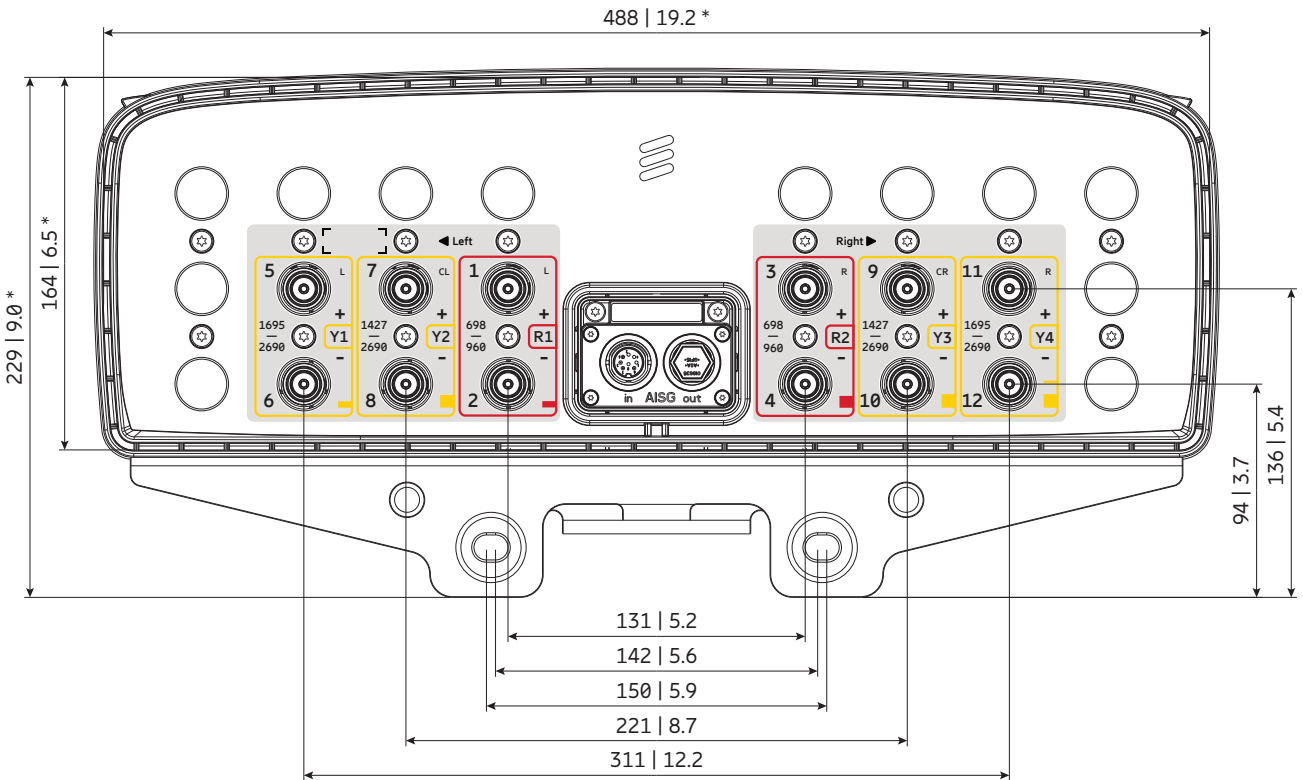


- 1) 79 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5)  $\varnothing$  11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

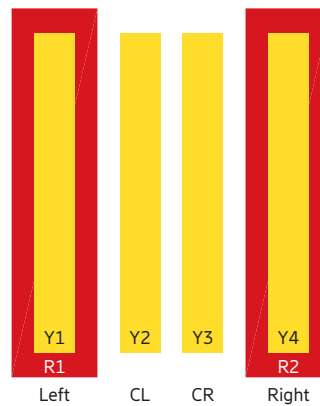
### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1427–2690 MHz	Y2	7–8
1427–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12



New product



# Antenna 4870 2L 4M 2.0m

KRE 101 2583/1

**Capacity**    Compact    Coverage

65° | 2x 617–960 MHz | 15.1 dBi  
 65° | 4x 1695–2690 MHz | 17.2 dBi  
 12x 4.3-10  
 FlexRET



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2LB nMB

Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	617 – 698	718 – 806	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.5	14.6	14.8	15.1
Gain over all Tilts	dBi	13.5 ± 0.7	14.6 ± 0.3	14.8 ± 0.6	15.1 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 6	59 ± 4	58 ± 6	56 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 20	> 22	> 20	> 20
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	12.8 ± 0.9	11.3 ± 0.7	10.3 ± 0.6	9.8 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12			
Tilt Accuracy	°	< 1.0	< 0.9	< 0.8	< 0.7
First Upper Sidelobe Suppression	dB	> 15	> 18	> 18	> 19
Intra-Cluster Isolation	dB	>25			
Inter-Cluster Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 12.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	617 – 698	718 – 806	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.3	14.5	14.8	15.1
Gain over all Tilts	dBi	13.3 ± 0.5	14.5 ± 0.4	14.8 ± 0.6	15.0 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 9	57 ± 6	56 ± 7	55 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 20	> 22	> 22	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	12.9 ± 1.0	11.4 ± 0.9	10.3 ± 0.6	9.9 ± 0.6
Electrical Downtilt continuously adjustable	°	2 – 12			
Tilt Accuracy	°	< 1.6	< 1.0	< 0.9	< 0.7
First Upper Sidelobe Suppression	dB	> 14	> 18	> 20	> 21
Intra-Cluster Isolation	dB	>25			
Inter-Cluster Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 12.0) requirements.

Left side, midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.5	16.8	16.9	16.8	16.9
Gain over all Tilts	dBi	16.4 ± 0.7	16.8 ± 0.7	16.9 ± 0.6	16.8 ± 0.6	16.9 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 9	61 ± 4	62 ± 4	62 ± 4	55 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 23	> 25	> 24	> 22	> 21
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.5	7.6 ± 0.4	7.2 ± 0.5	6.7 ± 0.4	6.5 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.4	< 0.6	< 0.6
First Upper Sidelobe Suppression	dB	> 18	> 17	> 17	> 16	> 17
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Left side, center midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.8	16.1	16.5	16.6	16.3
Gain over all Tilts	dBi	15.8 ± 0.6	16.1 ± 0.7	16.5 ± 0.5	16.6 ± 0.7	16.3 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69 ± 6	63 ± 5	59 ± 6	55 ± 8	56 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 31	> 31	> 32	> 32	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.7	7.5 ± 0.5	7.3 ± 0.4	7.0 ± 0.5	6.7 ± 0.7
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.6	< 0.7	< 0.7	< 0.8	< 1.2
First Upper Sidelobe Suppression	dB	> 16	> 16	> 17	> 20	> 20
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Right side, center midband		Y3, connector 9–10				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.9	16.3	16.6	16.8	16.6
Gain over all Tilts	dBi	15.9 ± 0.5	16.3 ± 0.6	16.6 ± 0.6	16.7 ± 0.7	16.6 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	70 ± 7	63 ± 5	60 ± 7	54 ± 8	55 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 31	> 33	> 32	> 31	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.6	7.5 ± 0.4	7.2 ± 0.4	6.8 ± 0.4	6.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.6	< 0.6	< 0.6	< 0.7	< 1.1
First Upper Sidelobe Suppression	dB	> 16	> 17	> 18	> 22	> 23
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Right side, midband		Y4, connector 11–12				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.3	16.5	16.5	16.9	17.3
Gain over all Tilts	dBi	16.3 ± 0.7	16.5 ± 0.5	16.6 ± 0.4	16.9 ± 0.7	17.2 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	67 ± 7	63 ± 4	64 ± 4	59 ± 7	53 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 22	> 25	> 24	> 21	> 20
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.5	7.6 ± 0.5	7.2 ± 0.5	6.8 ± 0.4	6.6 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.6	< 0.8
First Upper Sidelobe Suppression	dB	> 17	> 15	> 15	> 16	> 15
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind Load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 720   162 Lateral: 377   85 Maximum360: 884   199
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1997 / 499 / 225 78.6 / 19.6 / 8.9
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	34.5 / 39.0 (clamps incl.) 76.1 / 86.0 (clamps incl.)
Packing Size	mm inches	2094 / 534 / 360 82.4 / 21.0 / 14.2
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

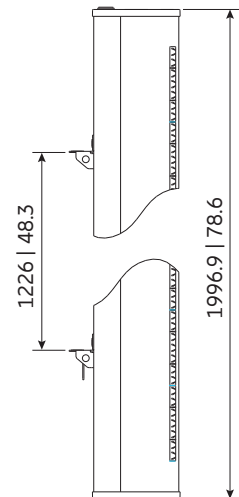
Values based on NGMN-P-BASTA (version 12.0) requirements.

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Pole diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–12°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

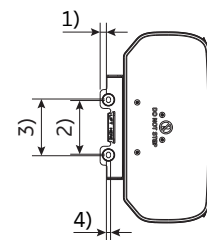
Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Pole diameter: 55–115   2.2–4.5	1
KRY 121 117/2	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1



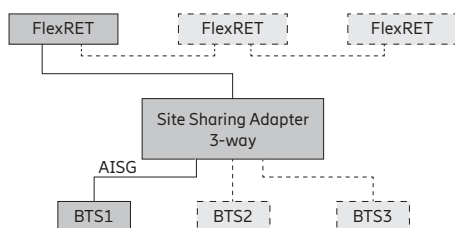
For downtilt mounting use the clamps for an appropriate pole diameter together with the downtilt kit.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

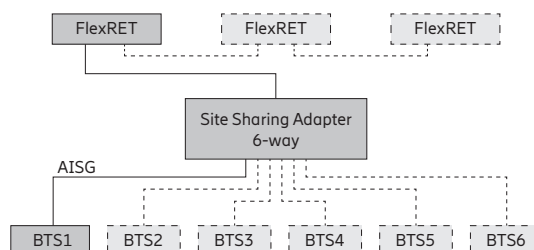
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

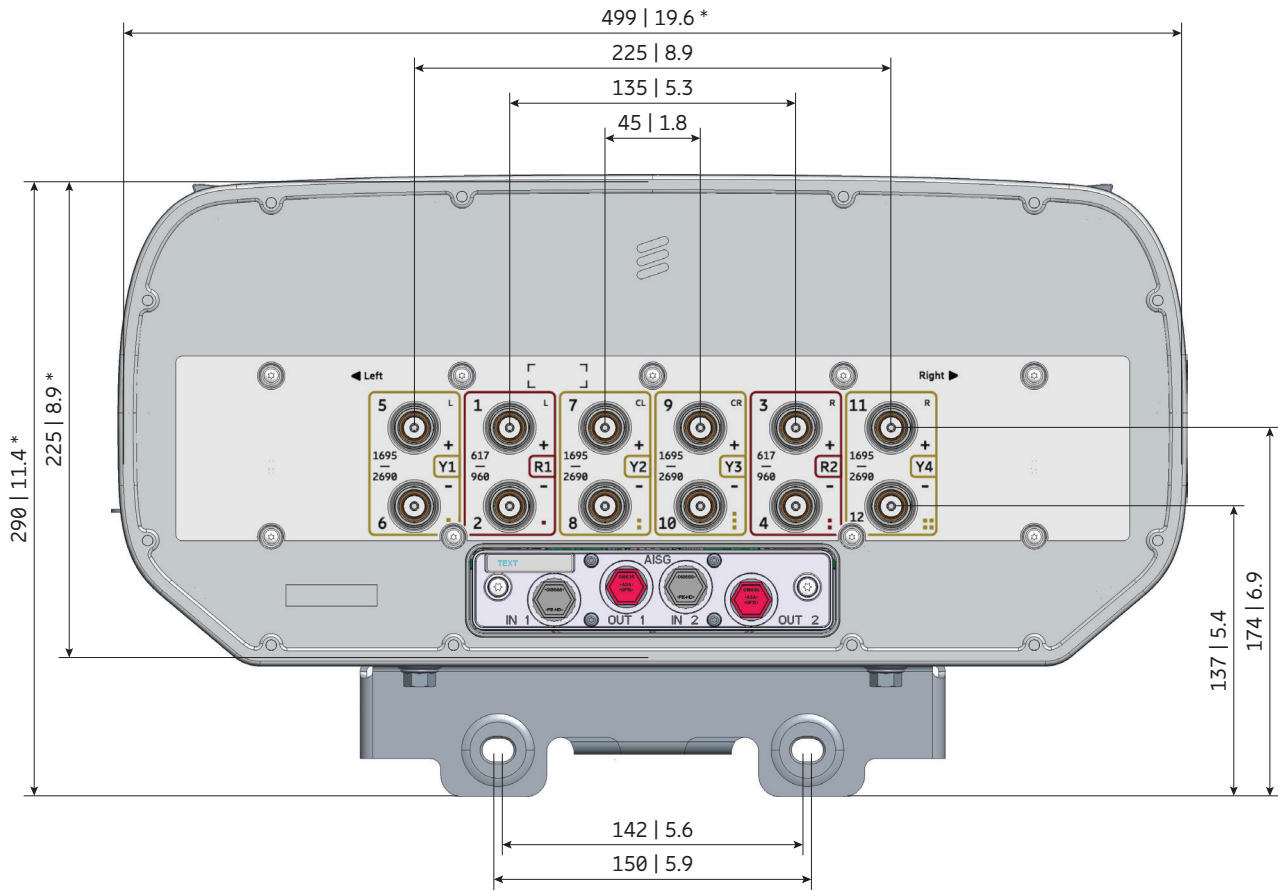


- 1) 16.5 | 0.6
- 2) 142 | 5.6
- 3) 150 | 5.9
- 4) 11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

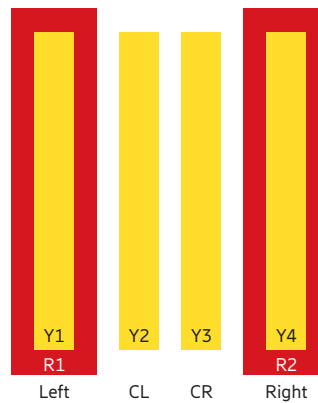
### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

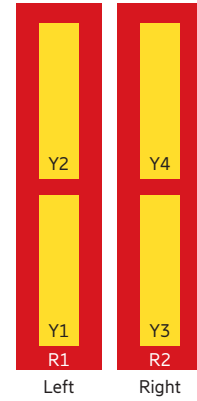
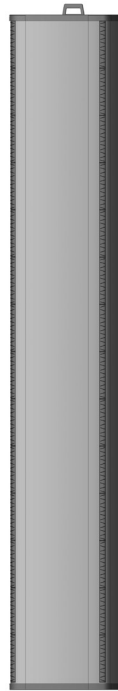
### Correlation Table

Frequency range	Array	Connector / Ports
617–960 MHz	R1	1–2
617–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12



2LB nMB





# Antenna 4200 2L 4M 2.4m

840370799

Capacity **Compact** Coverage

65° | 2x 698–894 MHz | 15.5 dBi  
65° | 4x 1695–2360 MHz | 17.0 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2	
Frequency Range	MHz	698 – 824	824 – 894
Gain at mid Tilt	dBi	14.8	15.9
Gain over all Tilts	dBi	14.8 ± 0.5	15.9 ± 0.4
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	60 ± 4.4	56 ± 4.2
Front-to-Back Ratio, ± 30°	dB	> 25	> 25
Cross Polar Discrimination at Boresight	dB	> 16	> 22
Cross Polar Discrimination over Sector	dB	> 7.5	> 9.5
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.8 ± 0.6	8.8 ± 0.3
Electrical Downtilt continuously adjustable	°	1.0 – 10.0	
Tilt Accuracy	°	< 0.8	< 0.6
First Upper Side Lobe Suppression	dB	> 16	> 17
Cross Polar Isolation	dB	> 25 typically	
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4) typically	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	
Max. Effective Power Ports R1	W	800 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, lowband		R2, connector 3–4	
Frequency Range	MHz	698 – 824	824 – 894
Gain at mid Tilt	dBi	14.8	15.8
Gain over all Tilts	dBi	14.8 ± 0.5	15.8 ± 0.4
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	60 ± 4.5	57 ± 4.8
Front-to-Back Ratio, ± 30°	dB	> 25	> 25
Cross Polar Discrimination at Boresight	dB	> 16	> 21
Cross Polar Discrimination over Sector	dB	> 8.0	> 11.0
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.8 ± 0.6	8.8 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0	
Tilt Accuracy	°	< 0.8	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 19
Cross Polar Isolation	dB	> 25 typically	
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4) typically	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	
Max. Effective Power Ports R2	W	800 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 9.6) requirements.

Left side, lower midband		Y1, connector 5–6			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2305 – 2360
Gain at mid Tilt	dBi	16.4	16.9	17.4	16.9
Gain over all Tilts	dBi	16.3 ± 0.5	16.8 ± 0.4	17.2 ± 0.5	17.0 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 5.2	66 ± 2.7	63 ± 4.7	65 ± 8.1
Front-to-Back Ratio, ± 30°	dB	> 23	> 28	> 29	> 29
Cross Polar Discrimination at Boresight		> 14	> 17	> 20	> 16
Cross Polar Discrimination over Sector	dB	> 10.0	> 10.5	> 11.0	> 8.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.7 ± 0.6	7.2 ± 0.4	6.8 ± 0.7	5.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			
Tilt Accuracy	°	< 0.8	< 0.7	< 0.7	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 17	> 15	> 14
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y1	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Left side, upper midband		Y2, connector 7–8			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2305 – 2360
Gain at mid Tilt	dBi	16.1	16.6	17.0	16.7
Gain over all Tilts	dBi	16.0 ± 0.5	16.6 ± 0.4	16.9 ± 0.4	16.6 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 4.8	65 ± 3.1	63 ± 3.8	65 ± 6.3
Front-to-Back Ratio, ± 30°	dB	> 25	> 27	> 28	> 28
Cross Polar Discrimination at Boresight	dB	> 15	> 18	> 21	> 16
Cross Polar Discrimination over Sector	dB	> 10.5	> 11.0	> 11.0	> 7.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.8 ± 0.6	7.3 ± 0.4	6.9 ± 0.7	6.2 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 16	> 15	> 15
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y2	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, lower midband		Y3, connector 9 – 10			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2305 – 2360
Gain at mid Tilt	dBi	16.5	17.0	17.4	16.9
Gain over all Tilts	dBi	16.5 ± 0.4	16.9 ± 0.4	17.3 ± 0.5	17.1 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	65 ± 6.1	66 ± 3.3	63 ± 4.3	64 ± 6.4
Front-to-Back Ratio, ± 30°	dB	> 23	> 26	> 28	> 27
Cross Polar Discrimination at Boresight	dB	> 14	> 18	> 21	> 21
Cross Polar Discrimination over Sector	dB	> 10.5	> 10.5	> 10.5	> 8.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.7 ± 0.5	7.2 ± 0.4	6.8 ± 0.7	6.0 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			
Tilt Accuracy	°	< 0.6	< 0.4	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 16	> 17	> 16	> 14
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y3	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, upper midband		Y4, connector 11 – 12			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2305 – 2360
Gain at mid Tilt	dBi	16.3	16.7	17.0	16.7
Gain over all Tilts	dBi	16.2 ± 0.5	16.6 ± 0.5	16.9 ± 0.5	16.8 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 6.6	64 ± 4.6	63 ± 3.8	64 ± 5.0
Front-to-Back Ratio, ± 30°	dB	> 24	> 25	> 28	> 27
Cross Polar Discrimination at Boresight	dB	> 15	> 19	> 21	> 20
Cross Polar Discrimination over Sector	dB	> 10.5	> 11.5	> 12.0	> 9.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.7 ± 0.6	7.2 ± 0.4	6.8 ± 0.7	6.0 ± 0.2
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 15	> 14	> 14
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y4	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

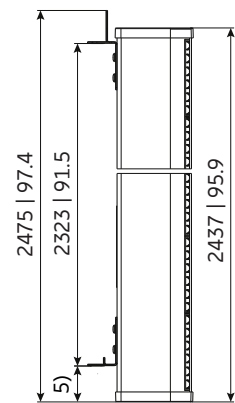
Values based on NGMN-P-BASTA (version 9.6) requirements.

## Mechanical specifications

Input		12x 4.3-10 female
Connector Position		bottom
Adjustment Mechanism		FlexRET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 590   132 Lateral: 485   109 Maximal: 1035   233
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2437 / 378 / 164 96.0 / 14.9 / 6.5
Category of Mounting Hardware		XM (X-Medium)
Weight	kg lb	43.5 / 48 (clamps incl.) 95.9 / 105.9 (clamps incl.)
Packing Size	mm inches	2585 / 440 / 293 101.8 / 17.3 / 11.5
Scope of Supply		Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1



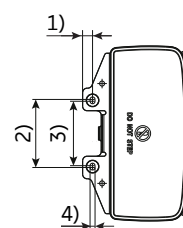
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010153V01	FlexRET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

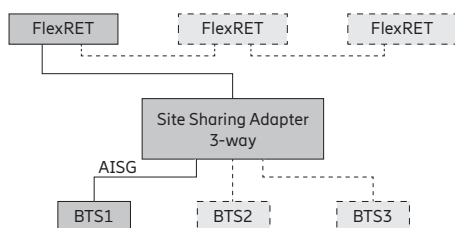
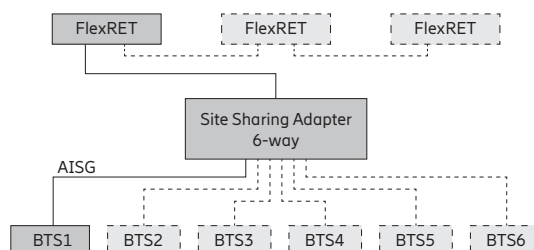
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



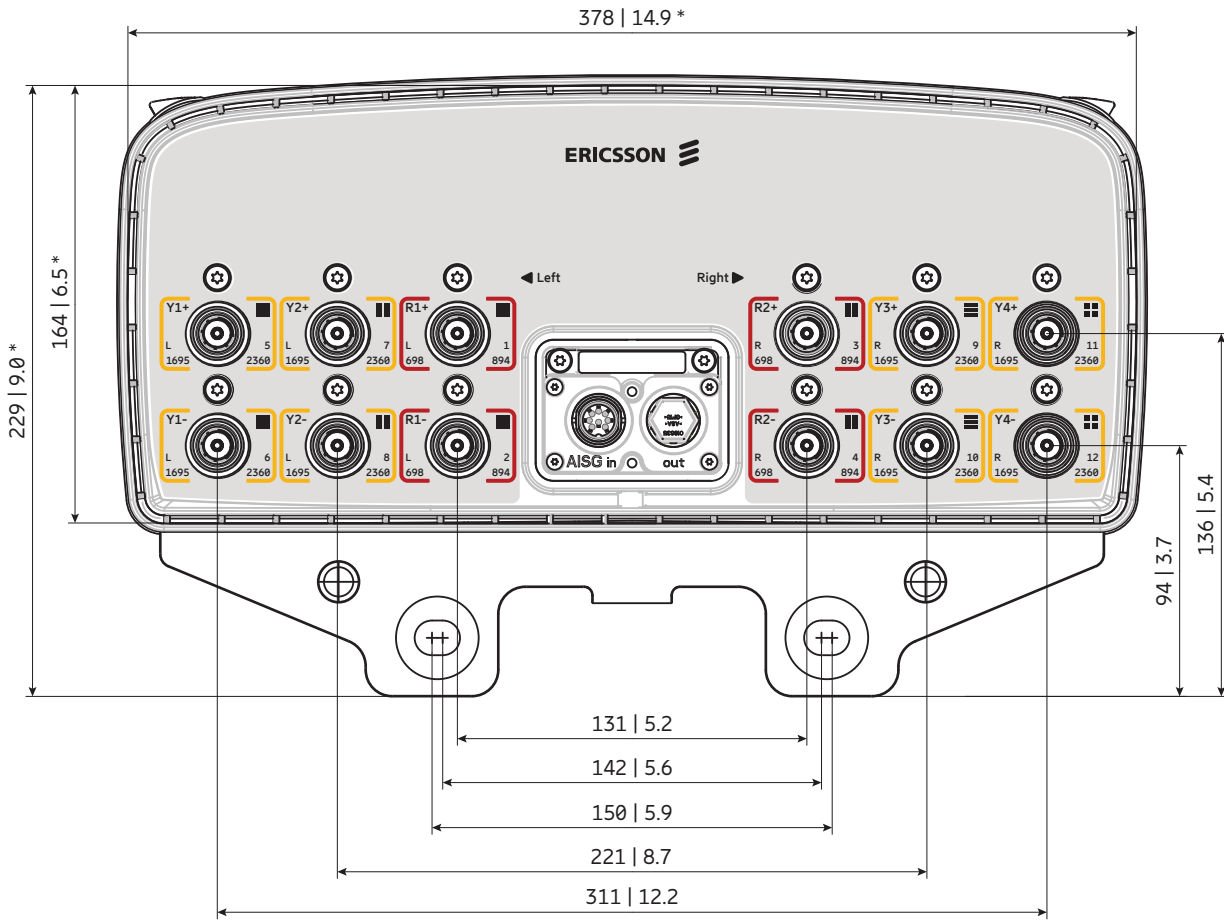
- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4
- 5) 79 | 3.1

All dimensions  
in mm | inches

Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

For more information please refer to the respective data sheets.

## Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–894 MHz	R1	1–2
698–894 MHz	R2	3–4
1695–2360 MHz	Y1	5–6
1695–2360 MHz	Y2	7–8
1695–2360 MHz	Y3	9–10
1695–2360 MHz	Y4	11–12





# Antenna 4800 2L 4M 2.4m

840590003

Capacity   Compact   Coverage

65° | 2x 617–894 MHz | 16.0 dBi  
65° | 4x 1695–2690 MHz | 18.5 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2		
Frequency Range	MHz	617 – 698	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.2	15.8	16.0
Gain over all Tilts	dBi	15.2 ± 0.6	15.8 ± 0.4	16.0 ± 0.5
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	68 ± 3.5	66 ± 2.6	66 ± 2.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 18	> 21	> 22
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.2 ± 0.6	10.1 ± 0.6	9.2 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 10.0		
Tilt Accuracy	°	< 0.4	< 0.5	< 0.6
First Upper Side Lobe Suppression	dB	> 16	> 19	> 16
Cross Polar Isolation	dB	> 25		
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)		
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4		
Frequency Range	MHz	617 – 698	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.1	15.7	16.1
Gain over all Tilts	dBi	15.1 ± 0.6	15.7 ± 0.5	16.1 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	69 ± 3.9	66 ± 2.9	66 ± 2.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 21	> 21
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.1 ± 0.6	10.0 ± 0.6	9.1 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 10.0		
Tilt Accuracy	°	< 0.4	< 0.5	< 0.6
First Upper Side Lobe Suppression	dB	> 16	> 20	> 16
Cross Polar Isolation	dB	> 25		
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)		
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.



Left side, midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.7	17.8	17.8	18.0	17.7
Gain over all Tilts	dBi	17.6 ± 0.7	17.7 ± 0.6	17.7 ± 0.8	17.8 ± 0.9	17.6 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68 ± 5.3	70 ± 4.7	69 ± 5.2	62 ± 4.9	59 ± 6.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 26	> 27	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	5.5 ± 0.4	5.2 ± 0.3	5.0 ± 0.4	4.5 ± 0.2	4.2 ± 0.2
Electrical Downtilt continuously adjustable	°	1.5 – 11.0				
Tilt Accuracy	°	< 0.3	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 17	> 17	> 16	> 15	> 16
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, center midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.9	18.0	18.2	18.6	18.1
Gain over all Tilts	dBi	17.8 ± 0.7	17.9 ± 0.6	18.1 ± 0.9	18.5 ± 0.8	18.0 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	67 ± 7.0	69 ± 3.4	68 ± 4.2	60 ± 4.7	58 ± 6.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 27	> 28	> 30	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	5.6 ± 0.5	5.2 ± 0.4	5.1 ± 0.3	4.6 ± 0.2	4.3 ± 0.4
Electrical Downtilt continuously adjustable	°	1.5 – 11.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 16	> 16	> 17	> 17
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, center midband

## Y3, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.8	18.0	18.3	18.6	18.0
Gain over all Tilts	dBi	17.7 ± 0.7	17.9 ± 0.7	18.1 ± 0.8	18.5 ± 0.7	17.9 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 6.5	69 ± 4.0	68 ± 4.1	62 ± 4.2	58 ± 6.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 28	> 30	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	5.6 ± 0.3	5.3 ± 0.3	5.1 ± 0.3	4.6 ± 0.2	4.3 ± 0.3
Electrical Downtilt continuously adjustable	°	1.5 – 11.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.3	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 16	> 17	> 17	> 16
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, midband

## Y4, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.6	17.8	17.8	18.0	17.7
Gain over all Tilts	dBi	17.6 ± 0.7	17.7 ± 0.6	17.7 ± 0.8	17.9 ± 0.8	17.6 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69 ± 4.9	71 ± 5.1	70 ± 5.6	63 ± 4.6	58 ± 7.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 28	> 26	> 27	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	5.5 ± 0.4	5.1 ± 0.3	5.0 ± 0.4	4.5 ± 0.2	4.2 ± 0.2
Electrical Downtilt continuously adjustable	°	1.5 – 11.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 17	> 17	> 16	> 16	> 17
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45 $^{\circ}$
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	12 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1320   297 Maximal: 1530   344
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2437 / 596 / 180 95.9 / 23.5 / 7.1
Category of Mounting Hardware	XH (X-Heavy)	
Weight (approx.)	kg lb	51.0 / 56.0 (clamps incl.) 112.4 / 123.4 (clamps incl.)
Packing Size	mm inches	2585 / 665 / 300 101.8 / 26.2 / 11.8
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010099	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010096	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

## Material:

**Reflector screen:** Aluminum.

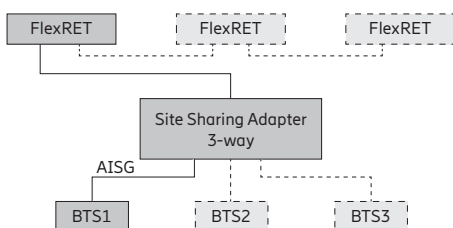
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

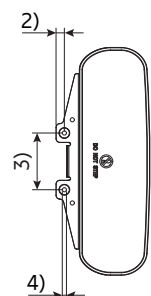
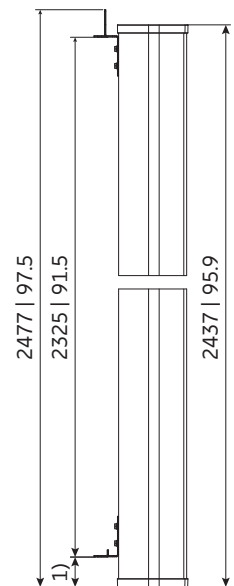
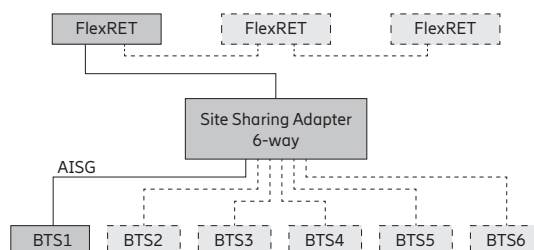
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

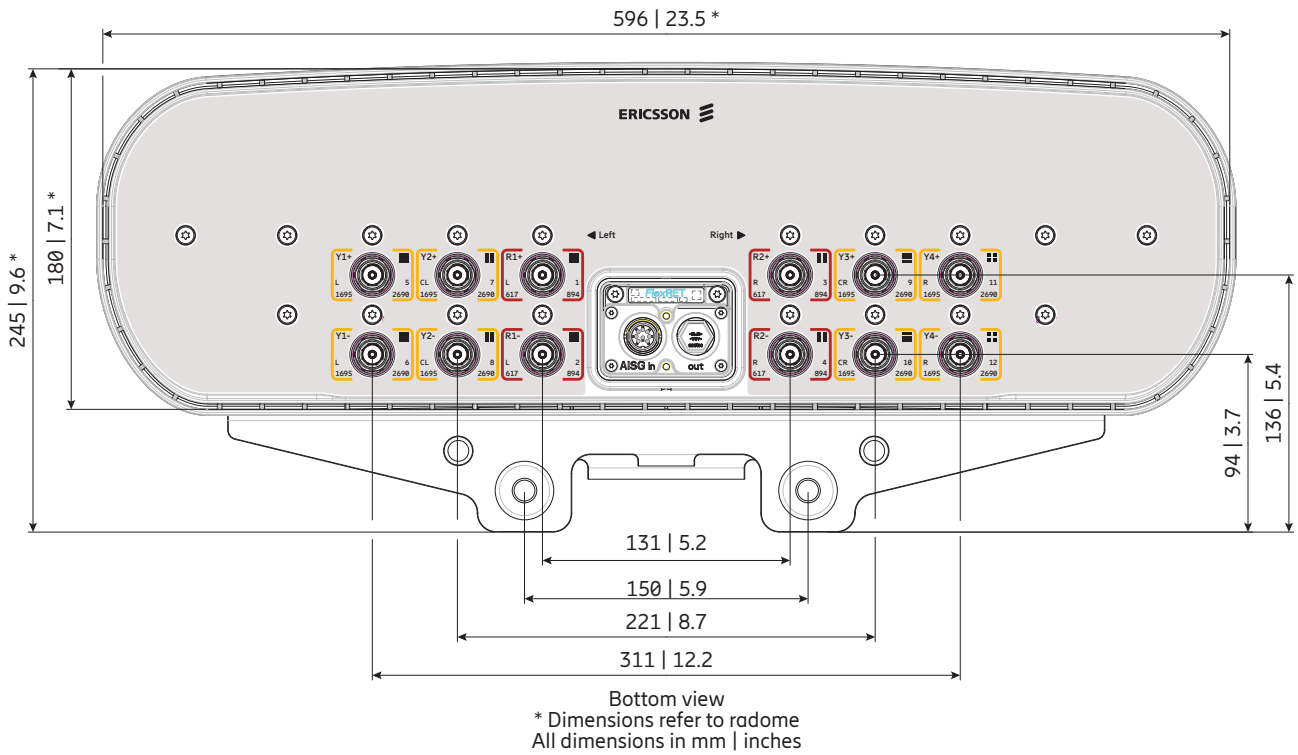


1) 79 | 3.1  
2) 22 | 0.9  
3) 150 | 5.9  
4)  $\varnothing$  11 | 0.4

All dimensions in mm | inches

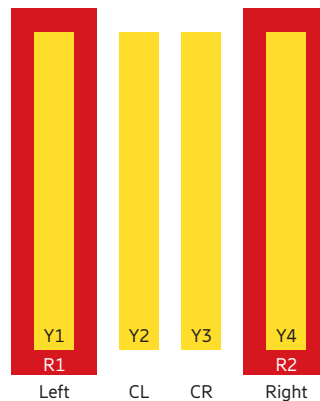
For more information please refer to the respective data sheets.

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
617–894 MHz	R1	1–2
617–894 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12





2LB nMB

# Antenna 4801 2L 4M 2.4m

KRE 101 2487/1

Capacity

Compact

Coverage

65° | 2x 698–894 MHz | 16.0 dBi  
65° | 4x 1695–2360 MHz | 19.0 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.0	15.9
Gain over all Tilts	dBi	15.0 ± 0.7	15.9 ± 0.5
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	68 ± 7.2	57 ± 5.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 27
Cross Polar Discrimination at Boresight	dB	> 20	> 19
Azimuth Beam Port-to-Port Tracking	dB	1.0	2.0
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.5 ± 0.7	8.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 10.0	
Tilt Accuracy	°	< 0.4	< 0.3
First Upper Sidelobe Suppression	dB	> 16	> 24
Intra-Cluster Isolation	dB	> 25	
Inter-Cluster Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	
Max. Effective Power Ports R1	W	800 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4	
Frequency Range	MHz	698 – 806	824 – 894
Gain at mid Tilt	dBi	15.0	15.9
Gain over all Tilts	dBi	15.0 ± 0.7	15.9 ± 0.4
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	68 ± 9.8	57 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 27
Cross Polar Discrimination at Boresight	dB	> 20	> 20
Azimuth Beam Port-to-Port Tracking	dB	2.5	3.0
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	9.4 ± 0.7	8.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 10.0	
Tilt Accuracy	°	< 0.3	< 0.2
First Upper Side Lobe Suppression	dB	> 16	> 24
Intra-Cluster Isolation	dB	> 25	
Inter-Cluster Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)	
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)	
Max. Effective Power Ports R2	W	800 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, midband		Y1, connector 5–6			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	17.7	18.0	18.5	19.1
Gain over all Tilts	dBi	17.5 ± 0.8	17.9 ± 0.6	18.4 ± 1.1	19.1 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	73 ± 6.1	70 ± 2.9	66 ± 5.8	63 ± 2.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 26	> 30
Cross Polar Discrimination at Boresight	dB	> 18	> 19	> 21	> 21
Azimuth Beam Port-to-Port Tracking	dB	1.5	3.5	3.5	2.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.6 ± 0.3	5.2 ± 0.3	5.0 ± 0.4	4.5 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.2
First Upper Sidelobe Suppression	dB	> 18	> 18	> 18	> 17
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y1	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, center midband		Y2, connector 7–8			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	17.8	18.0	18.6	18.9
Gain over all Tilts	dBi	17.7 ± 0.8	18.0 ± 0.8	18.5 ± 1.1	18.9 ± 0.9
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 6.1	68 ± 5.2	65 ± 7.2	63 ± 5.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 31	> 32	> 32
Cross Polar Discrimination at Boresight	dB	> 19	> 20	> 22	> 19
Azimuth Beam Port-to-Port Tracking	dB	2.5	4.5	3.5	5.5
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.6 ± 0.4	5.2 ± 0.3	5.0 ± 0.4	4.5 ± 0.3
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 0.2	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 18	> 18	> 18	> 16
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y2	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, center midband		Y3, connector 9–10			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	17.9	18.1	18.6	19.1
Gain over all Tilts	dBi	17.8 ± 0.9	18.0 ± 0.8	18.6 ± 1.2	19.1 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 6.9	69 ± 5.8	65 ± 8.5	61 ± 4.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 30	> 29	> 30	> 31
Cross Polar Discrimination at Boresight	dB	> 19	> 19	> 22	> 22
Azimuth Beam Port-to-Port Tracking	dB	2.0	3.5	4.5	4.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.5 ± 0.5	5.1 ± 0.4	4.9 ± 0.4	4.4 ± 0.3
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 17	> 16	> 16	> 16
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y3	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, midband		Y4, connector 11–12			
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2360
Gain at mid Tilt	dBi	17.7	18.1	18.6	19.3
Gain over all Tilts	dBi	17.6 ± 0.8	18.0 ± 0.8	18.4 ± 1.0	19.2 ± 0.9
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	74 ± 5.8	72 ± 5.0	67 ± 6.4	63 ± 2.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 26	> 28	> 29
Cross Polar Discrimination at Boresight	dB	> 18	> 19	> 22	> 19
Azimuth Beam Port-to-Port Tracking	dB	2.0	3.5	3.0	3.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	5.3 ± 0.4	5.0 ± 0.3	4.7 ± 0.4	4.2 ± 0.2
Electrical Downtilt continuously adjustable	°	0.0 – 10.0			
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.2
First Upper Sidelobe Suppression	dB	> 16	> 16	> 16	> 15
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			
Max. Effective Power Ports Y4	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1120   252 Maximal: 1270   286 Lateral: 440   99
EPA	m <sup>2</sup>   ft <sup>2</sup>	Frontal: 1.029   11.08 Maximal: 1.166   12.55 Lateral: 0.404   4.35
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2437 / 488 / 164 95.9 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	47.0 / 51.5 (clamps incl.) 103.6 / 113.5 (clamps incl.)
Packing Size	mm inches	2570 / 556 / 310 101.2 / 21.9 / 12.2
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010167	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3*	1

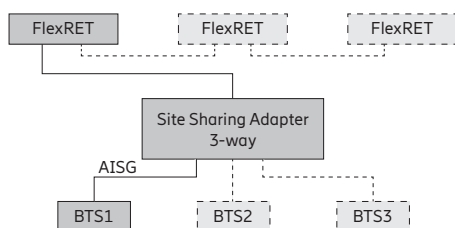
\* FlexRET 86010167 does not support AISG 3 feature MALD

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

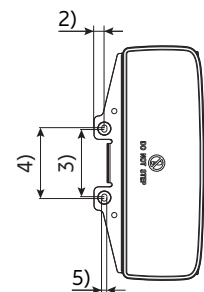
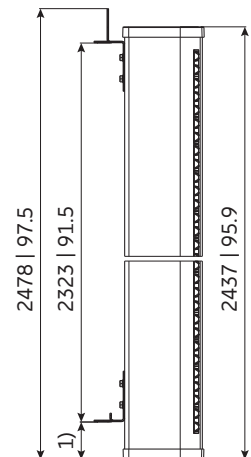
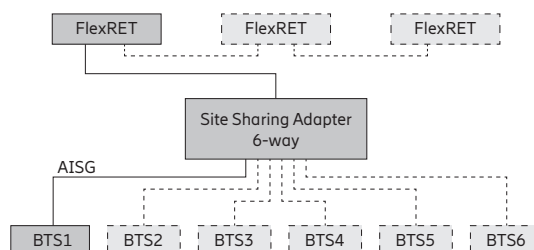
**Material:** Reflector screen: Aluminum.  
Fiberglass housing: It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

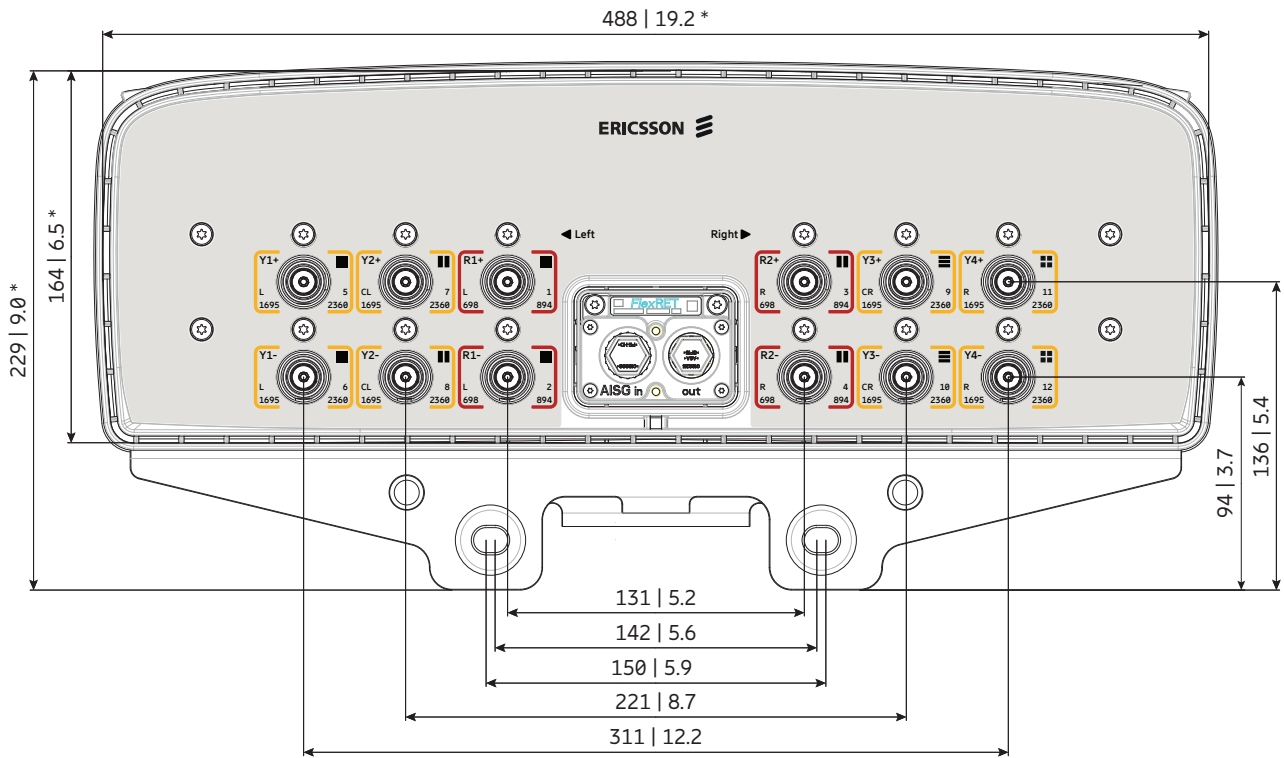


- 1) 79 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5)  $\varnothing$  11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

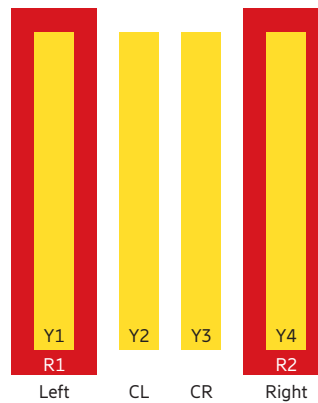
## Layout of interface

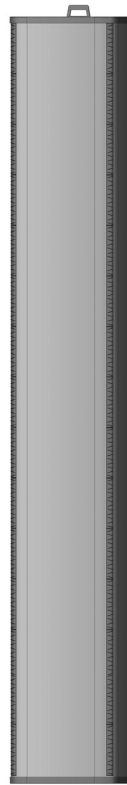


Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–894 MHz	R1	1–2
698–894 MHz	R2	3–4
1695–2360 MHz	Y1	5–6
1695–2360 MHz	Y2	7–8
1695–2360 MHz	Y3	9–10
1695–2360 MHz	Y4	11–12





# Antenna 4202 2L 4M 2.6m

800372992

Capacity **Compact** Coverage

65° | 2x 698–960 MHz | 16.4 dBi  
65° | 2x 1427–2690 MHz | 17.6 dBi  
65° | 2x 1695–2690 MHz | 16.8 dBi  
FlexRET



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2LB nMB

Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.7	16.0	16.4
Gain over all Tilts	dBi	15.0 ± 0.6	15.7 ± 0.6	16.0 ± 0.5	16.4 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 4.5	60 ± 2.9	58 ± 3.7	55 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 24	> 24
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.1 ± 0.7	8.6 ± 0.4	8.4 ± 0.5	7.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.4	< 0.5	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 17	> 17	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.7	16.0	16.4
Gain over all Tilts	dBi	15.0 ± 0.7	15.7 ± 0.6	16.0 ± 0.6	16.4 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 4.8	61 ± 3.6	59 ± 4.5	55 ± 4.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 24	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.0 ± 0.7	8.6 ± 0.4	8.3 ± 0.5	7.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.4	< 0.5	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 18	> 18	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, lower midband		Y1, connector 5–6					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.3	17.1	17.5	17.6	17.2	17.2
Gain over all Tilts	dBi	16.2 ± 0.6	17.0 ± 0.5	17.4 ± 0.7	17.6 ± 0.8	17.1 ± 0.8	17.1 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	61 ± 5.1	64 ± 4.4	65 ± 4.1	63 ± 4.3	66 ± 4.9	59 ± 4.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 25	> 25	> 27	> 26	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.9 ± 0.5	7.6 ± 0.5	7.1 ± 0.4	6.8 ± 0.5	6.3 ± 0.4	5.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.4	< 0.3
First Upper Side Lobe Suppression	dB	> 14	> 17	> 16	> 17	> 17	> 18
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, upper midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.4	16.8	16.8	16.6	16.6
Gain over all Tilts	dBi	16.4 ± 0.5	16.7 ± 0.6	16.8 ± 0.6	16.5 ± 0.6	16.5 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 4.5	64 ± 3.6	62 ± 4.4	64 ± 5.7	60 ± 5.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 28	> 27	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.8 ± 0.6	7.2 ± 0.3	6.9 ± 0.5	6.3 ± 0.4	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 16	> 15	> 16	> 19	> 20
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lower midband		Y3, connector 9 – 10					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.2	17.1	17.5	17.6	17.3	17.2
Gain over all Tilts	dBi	16.0 ± 0.6	17.0 ± 0.4	17.4 ± 0.7	17.6 ± 0.8	17.1 ± 0.7	17.1 ± 0.7
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	61 ± 6.1	65 ± 4.6	65 ± 4.4	63 ± 4.6	66 ± 4.8	59 ± 4.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 24	> 25	> 25	> 26	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	9.0 ± 0.4	7.7 ± 0.4	7.1 ± 0.4	6.8 ± 0.4	6.3 ± 0.4	5.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.4	< 0.3
First Upper Side Lobe Suppression	dB	> 14	> 17	> 17.0	> 18	> 17	> 18
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, upper midband		Y4, connector 11 – 12				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.4	16.8	16.9	16.6	16.6
Gain over all Tilts	dBi	16.4 ± 0.4	16.7 ± 0.6	16.8 ± 0.7	16.5 ± 0.6	16.5 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 5.1	64 ± 4.5	61 ± 4.2	64 ± 5.4	60 ± 5.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 27	> 27	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.7 ± 0.6	7.2 ± 0.4	6.9 ± 0.5	6.3 ± 0.4	5.7 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.2	< 0.3
First Upper Side Lobe Suppression	dB	> 16	> 16	> 16	> 21	> 19
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

\* not applicable for L-band

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 630   142 Maximal: 1110   249
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2591 / 378 / 164 102 / 14.9 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	47.0 / 51.5 (clamps incl.) 103.6 / 113.5 (clamps incl.)
Packing Size	mm inches	2739 / 440 / 293 107.8 / 17.3 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–9°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

## Material:

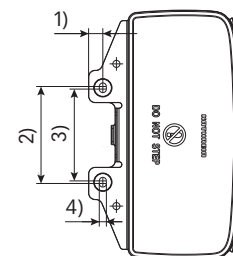
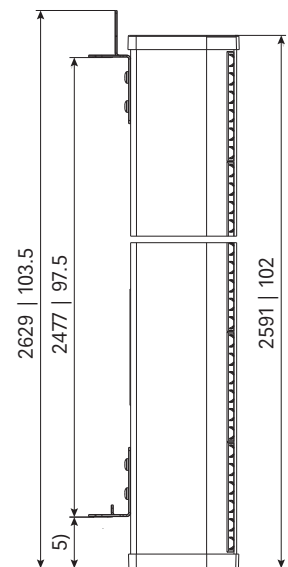
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

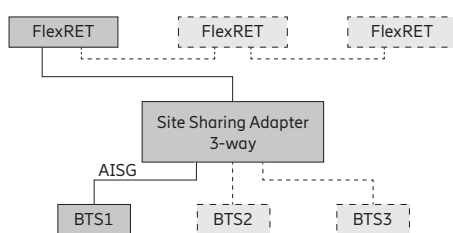
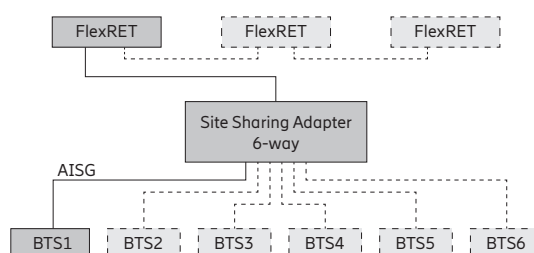
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



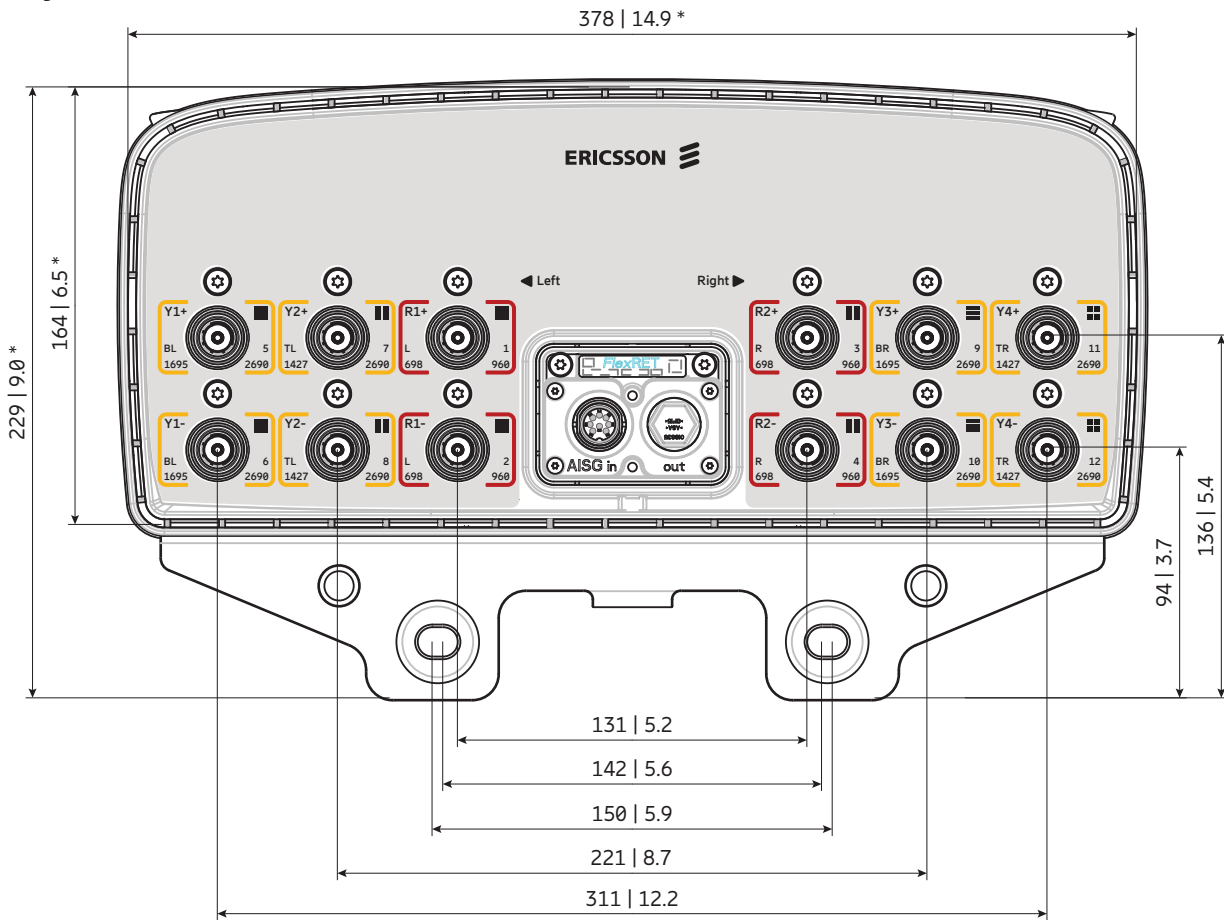
- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4
- 5) 79 | 3.1

All dimensions  
in mm | inches

Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

For more information please refer to the respective data sheets.

## Layout of interface



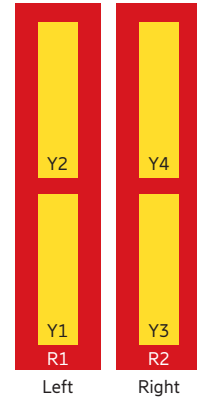
Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1427–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12







# Antenna 4207 2L 4M 2.6m

KRE 101 2568/1

Capacity    Compact    Coverage

65° | 2x 698–960 MHz | 16.5 dBi  
65° | 4x 1695–2690 MHz | 17.0 dBi  
Electrical downtilt set by integrated RET



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2LB nMB

Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.4	16.0	16.1	16.5
Gain over all Tilts	dBi	15.4 ± 0.5	16.0 ± 0.3	16.1 ± 0.4	16.5 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67.5 ± 4.4	65.4 ± 3.1	65.1 ± 3.4	62.4 ± 2.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 23	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.5 ± 0.7	8.7 ± 0.4	8.4 ± 0.4	8.0 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.6	< 0.6	< 0.6	< 0.5
First Upper Side Lobe Suppression	dB	> 24	> 23	> 23	> 25
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	27 (R1 // R2, Y1, Y2 Y3, Y4)			
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)			
Max. Effective Power Ports R1	W	400 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.3	15.9	16.1	16.4
Gain over all Tilts	dBi	15.3 ± 0.5	15.9 ± 0.4	16.0 ± 0.2	16.2 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	70.3 ± 4.9	66.5 ± 2.7	66.7 ± 2.4	63.8 ± 3.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 23	> 24	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.4 ± 0.6	8.6 ± 0.3	8.4 ± 0.3	8.0 ± 0.3
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 23	> 23	> 23	> 24
Cross Polar Isolation	dB	> 27			
Port to Port Isolation	dB	27 (R2 // R1, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	200 (at 40 °C ambient temperature)			
Max. Effective Power Ports R2	W	400 (at 40 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Left side, midband, bottom

## Y1, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.7	17.0	16.9	16.9	17.2
Gain over all Tilts	dBi	16.7 ± 0.5	17.0 ± 0.6	16.8 ± 0.7	16.8 ± 0.8	17.1 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66.3 ± 4.5	67.5 ± 4.0	68.9 ± 5.7	61.1 ± 5.8	61.1 ± 5.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 22	> 21	> 21
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.6	7.3 ± 0.4	6.9 ± 0.5	6.1 ± 0.4	5.6 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 1.0	< 0.9	< 0.9	< 0.8	< 0.9
First Upper Side Lobe Suppression	dB	> 20	> 18	> 16	> 16	> 16
Cross Polar Isolation	dB	> 27				
Port to Port Isolation	dB	27 (Y1 // R2, R1, Y2, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y1	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Left side, midband, top

## Y2, connector 7–8

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.5	16.7	16.7	16.5	16.9
Gain over all Tilts	dBi	16.5 ± 0.4	16.6 ± 0.5	16.6 ± 0.7	16.5 ± 0.8	16.8 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68.6 ± 5.1	68.3 ± 4.1	67.7 ± 3.2	63.9 ± 4.1	63.7 ± 7.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 23	> 21	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.5	7.4 ± 0.3	7.0 ± 0.5	6.0 ± 0.3	5.5 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.7	< 0.6	< 0.7
First Upper Side Lobe Suppression	dB	> 17	> 17	> 16	> 15	> 16
Cross Polar Isolation	dB	> 27				
Port to Port Isolation	dB	27 (Y2 // R2, R1, Y1, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 50 °C ambient temperature)				
Max. Effective Power Ports Y2	W	300 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband, bottom

## Y3, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.6	17.0	16.9	17.0	17.3
Gain over all Tilts	dBi	16.6 ± 0.5	16.9 ± 0.6	16.8 ± 0.8	16.9 ± 0.7	17.2 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68.4 ± 5.1	67.7 ± 3.6	68.9 ± 5.0	61.9 ± 5.3	59.6 ± 5.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 21	> 21	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.5	7.2 ± 0.5	6.8 ± 0.6	6.0 ± 0.3	5.5 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 1.0	< 1.0	< 1.0	< 0.9	< 0.9
First Upper Side Lobe Suppression	dB	> 19	> 19	> 18	> 16	> 16
Cross Polar Isolation	dB	> 27				
Port to Port Isolation	dB	27 (Y3 // R2, R1, Y1, Y2, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y3	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, midband, top

## Y4, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.4	16.6	16.6	16.6	17.0
Gain over all Tilts	dBi	16.4 ± 0.5	16.5 ± 0.7	16.6 ± 0.7	16.5 ± 0.8	16.9 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69.7 ± 5.9	68.0 ± 5.8	67.8 ± 4.5	63.3 ± 6.1	61.9 ± 6.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 24	> 21	> 23
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.5	7.4 ± 0.3	7.0 ± 0.6	6.0 ± 0.3	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.7	< 0.8	< 0.7	< 0.7
First Upper Side Lobe Suppression	dB	> 18	> 17	> 16	> 15	> 17
Cross Polar Isolation	dB	> 27				
Port to Port Isolation	dB	27 (Y4 // R2, R1, Y1, Y2, Y3)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y4	W	300 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

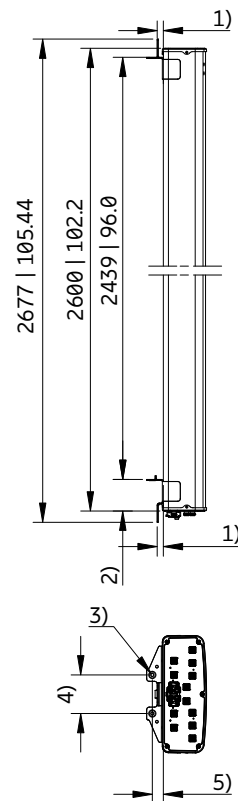
Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 40° C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

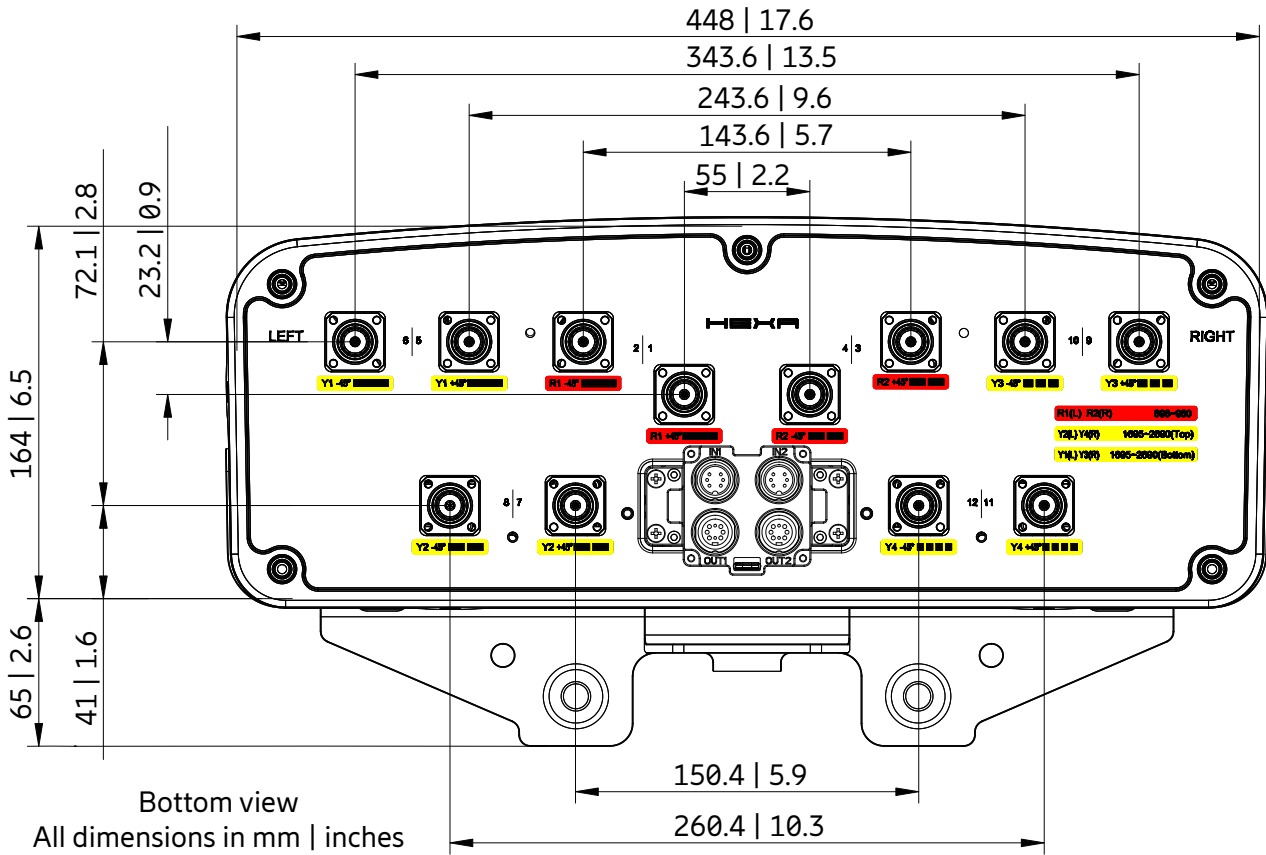
Input	12 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1555   349 Maximal: 1710   384
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2600 / 448 / 164 102.4 / 17.6 / 6.5
Category of Mounting Hardware	XH (X-Heavy)	
Weight (approx.)	kg lb	49.9 / 54.9 (clamps incl.) 110.0 / 121.0 (clamps incl.)
Packing Size	mm inches	2820 / 473 / 250 111.0 / 18.6 / 9.8
Scope of Supply	Panel, integrated RET and clamps for 55–115 mm   2.2–4.5 inches diameter	

- Material:** **Reflector screen and dipoles:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.
- Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 24 | 1.0  
2) 123 | 4.8  
3)  $\varnothing$ 11 | 0.4  
4) 150 | 5.9  
5) 43 | 1.7  
All dimensions  
in mm | inches

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12





# Antenna 4800 2L 4M 2.6m

KRE 101 2520/1

Capacity    Compact    Coverage

65° | 2x 698–960 MHz | 16.8 dBi  
65° | 2x 1427–2690 MHz | 17.7 dBi  
65° | 2x 1695–2690 MHz | 17.9 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.9	16.2	16.5	16.8
Gain over all Tilts	dBi	15.9 ± 0.5	16.3 ± 0.6	16.5 ± 0.5	16.7 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	60 ± 4	58 ± 4	56 ± 3	54 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 19	> 20	> 22	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.2 ± 0.7	8.7 ± 0.5	8.4 ± 0.5	7.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.6	< 0.5	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 19	> 19	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.9	16.3	16.6	16.7
Gain over all Tilts	dBi	15.9 ± 0.6	16.3 ± 0.6	16.6 ± 0.5	16.6 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	59 ± 5	59 ± 5	56 ± 4	54 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 20	> 20	> 25	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.1 ± 0.6	8.6 ± 0.4	8.4 ± 0.5	7.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 18	> 18	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.



Left side, midband		Y1, connector 5–6						
Frequency Range	MHz	1427 – 1496	1492 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.2	16.5	17.2	17.5	17.7	17.7	17.6
Gain over all Tilts	dBi	16.2 ± 0.6	16.5 ± 0.5	17.1 ± 0.6	17.4 ± 0.7	17.6 ± 0.7	17.7 ± 0.7	17.6 ± 0.8
<b>Horizontal Pattern:</b>								
Azimuth Beamwidth	°	69 ± 5	69 ± 3	69 ± 4	68 ± 5	66 ± 6	60 ± 4	56 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 26	> 27	> 25	> 28	> 30	> 29	> 24
<b>Vertical Pattern:</b>								
Elevation Beamwidth	°	8.1 ± 0.5	7.9 ± 0.5	7.0 ± 0.5	6.5 ± 0.4	6.2 ± 0.4	5.5 ± 0.3	5.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0						
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.3	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 17	> 18	> 19	> 20	> 20	> 19	> 20
Cross Polar Isolation	dB	> 25						
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4)						
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)						

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, center midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	17.1	17.2	17.2	17.2	18.0
Gain over all Tilts	dBi	17.0 ± 0.7	17.2 ± 0.6	17.1 ± 0.7	17.1 ± 0.9	17.9 ± 1.0
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 11	67 ± 11	68 ± 8	71 ± 7	65 ± 13
Front-to-Back Ratio, Total Power, ±30°	dB	22	> 24	> 24	> 24	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.9 ± 0.5	6.4 ± 0.4	6.0 ± 0.4	5.6 ± 0.3	5.2 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.3	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 16	> 16	> 16	> 17
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, center midband		Y3, connector 9–10				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.8	17.0	17.0	17.1	17.7
Gain over all Tilts	dBi	16.8 ± 0.7	16.9 ± 0.7	16.9 ± 0.9	17.0 ± 0.8	17.6 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69 ± 14	72 ± 7	71 ± 13	68 ± 7	65 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 23	> 24	> 24	> 27	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	6.9 ± 0.6	6.4 ± 0.4	6.1 ± 0.5	5.4 ± 0.4	5.1 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.4	< 0.5	< 0.5
First Upper Side Lobe Suppression	dB	> 16	> 18	> 18	> 19	> 18
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y4, connector 11–12						
Frequency Range	MHz	1427 – 1496	1492 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.2	16.5	17.1	17.4	17.5	17.7	17.6
Gain over all Tilts	dBi	16.2 ± 0.7	16.5 ± 0.4	17.1 ± 0.6	17.3 ± 0.6	17.5 ± 0.7	17.7 ± 0.8	17.5 ± 0.8
<b>Horizontal Pattern:</b>								
Azimuth Beamwidth	°	68 ± 4	69 ± 4	70 ± 3	69 ± 6	67 ± 6	60 ± 6	56 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 27	> 27	> 25	> 28	> 29	> 28	> 26
<b>Vertical Pattern:</b>								
Elevation Beamwidth	°	8.2 ± 0.4	7.9 ± 0.4	7.0 ± 0.4	6.5 ± 0.3	6.2 ± 0.4	5.6 ± 0.3	5.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0						
Tilt Accuracy	°	< 0.5	< 0.4	< 0.6	< 0.4	< 0.5	< 0.5	< 0.6
First Upper Side Lobe Suppression	dB	> 17	> 17	> 19	> 20	> 19	> 20	> 20
Cross Polar Isolation	dB	> 25						
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3)						
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)						

Values based on NGMN-P-BASTA (version 10.0) requirements.

Electrical specifications, all ports

Impedance	Ω	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* not applicable for L-band

Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1200   270 Maximal: 1360   306
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2591 / 488 / 164 102.0 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight (approx.)	kg lb	56 / 60.5 (clamps incl.) 121.3 / 131.2 (clamps incl.)
Packing Size	mm inches	2745 / 550 / 293 108.0 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–9°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	To be used in combination with the FlexRET module	1
KRY 121 108/1	Port Extender		1

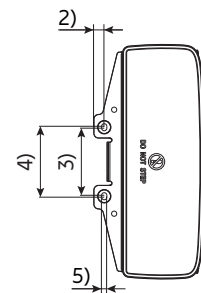
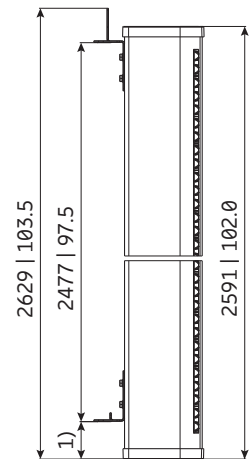
Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

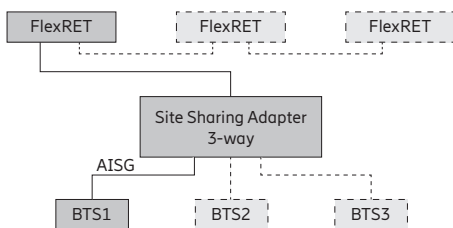
For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

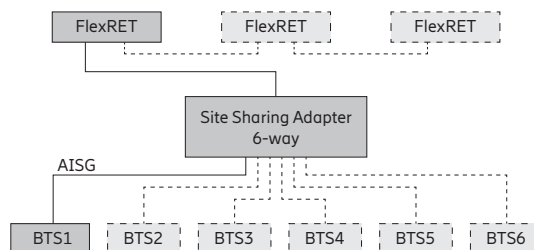
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



Configuration example with Site Sharing Adapter 86010154



Configuration example with Site Sharing Adapter 86010155

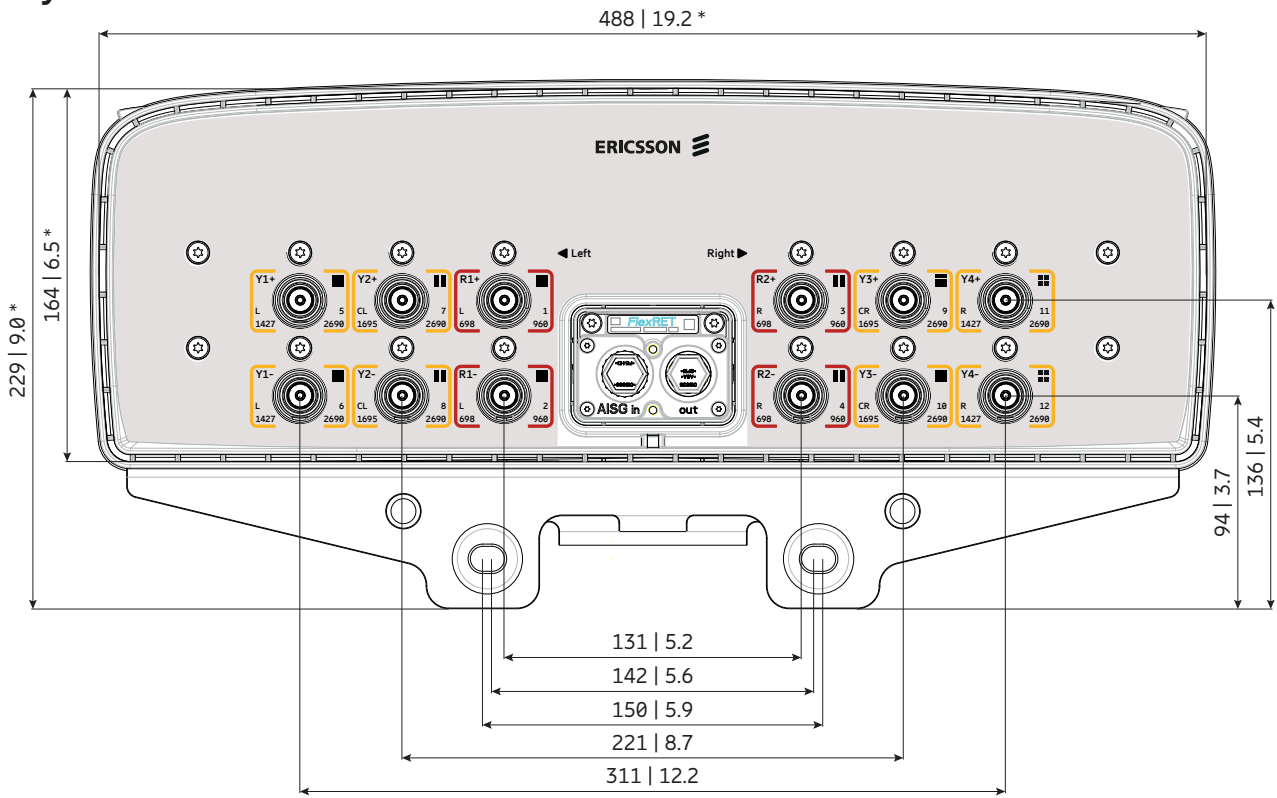


- 1) 79 | 3.1
- 2) 22 | 0.9
- 3) 142 | 5.6
- 4) 150 | 5.9
- 5) ø 11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

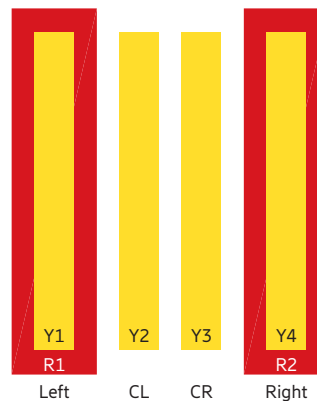
## Layout of interface



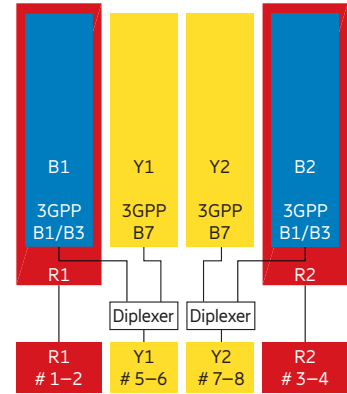
Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1427–2690 MHz	Y4	11–12



New product



2LB nMB

# Antenna 4801 2L 4M 2.6m

KRE 101 2584/1

- Capacity
- Compact
- Coverage

65° | 2x 698–960 MHz | 16.8 dBi  
 65° | 2x 2500–2690 MHz | 17.6 dBi  
 65° | 2x 1695–2170 MHz | 17.5 dBi  
 FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.9	16.2	16.5	16.8
Gain over all Tilts	dBi	15.9 ± 0.5	16.3 ± 0.6	16.5 ± 0.5	16.7 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	59.7 ± 3.9	58.3 ± 4.0	56.2 ± 3.1	54.1 ± 4.2
Front-to-Back Ratio, Total Power, ±30°	dB	> 19	> 20	> 22	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.2 ± 0.7	8.7 ± 0.5	8.4 ± 0.5	7.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.6	< 0.5	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 19	> 19	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, B1, B2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.9	16.3	16.6	16.7
Gain over all Tilts	dBi	15.9 ± 0.6	16.3 ± 0.6	16.6 ± 0.5	16.6 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	59.1 ± 4.6	58.5 ± 4.8	55.9 ± 3.5	54.1 ± 6.0
Front-to-Back Ratio, Total Power, ±30°	dB	> 20	> 20	> 25	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.1 ± 0.6	8.6 ± 0.4	8.4 ± 0.5	7.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 18	> 18	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, B1, B2)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midbands		B1, connector 5–6			Y1, connector 5–6
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2500 – 2690
Gain at mid Tilt	dBi	17.1	17.4	17.5	17.6
Gain over all Tilts	dBi	17.1 ± 0.6	17.3 ± 0.7	17.4 ± 0.7	17.5 ± 1.0
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	69.7 ± 3.6	67.3 ± 4.4	64.9 ± 6.5	64.8 ± 15.0
Front-to-Back Ratio, Total Power, ±30°	dB	> 27	> 28	> 29	> 28
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.8 ± 0.5	6.4 ± 0.3	6.1 ± 0.5	5.2 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			2.0 – 12.0
Tilt Accuracy	°	< 0.3	< 0.2	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 19	> 19	> 19	> 16
Cross Polar Isolation	dB	> 25			> 25
Port to Port Isolation	dB	> 25 (B1 // R1, R2, Y2, B2)			> 25 (Y1 // R1, R2, Y2, B2)
Max. Effective Power per Port	W	180 (at 50 °C ambient temperature)			180 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midbands		B2, connector 7–8			Y2, connector 7–8
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2500 – 2690
Gain at mid Tilt	dBi	17.0	17.2	17.3	17.5
Gain over all Tilts	dBi	16.9 ± 0.6	17.2 ± 0.7	17.3 ± 0.7	17.2 ± 0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	70.2 ± 3.3	68.4 ± 5.1	66.4 ± 5.4	64.5 ± 8
Front-to-Back Ratio, =Total Power, ±30°	dB	> 25	> 28	> 28	> 28
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	6.9 ± 0.4	6.5 ± 0.3	6.2 ± 0.5	5.1 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			2.0 – 12.0
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.2
First Upper Side Lobe Suppression	dB	> 18	> 19	> 18	> 17
Cross Polar Isolation	dB	> 25			> 25
Port to Port Isolation	dB	> 25 (B2 // R1, R2, Y1, B1)			> 25 (Y2 // R1, R2, Y1, B1)
Max. Effective Power per Port	W	180 (at 50 °C ambient temperature)			180 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

\* not applicable for L-band

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1200   270 Maximal: 1360   306
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2591 / 488 / 164 102.0 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight (approx.)	kg lb	57 / 61.5 (clamps incl.) 125.7 / 135.6 (clamps incl.)
Packing Size	mm inches	2745 / 550 / 293 108.0 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–9°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	To be used in combination with the FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

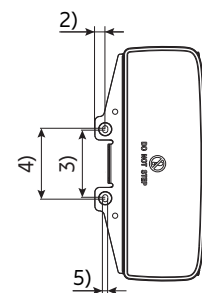
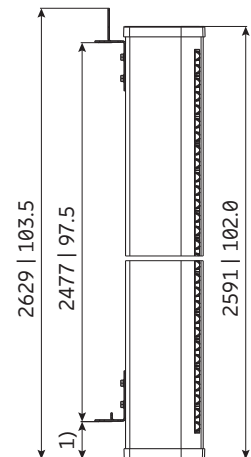
## Material:

**Reflector screen:** Aluminum.

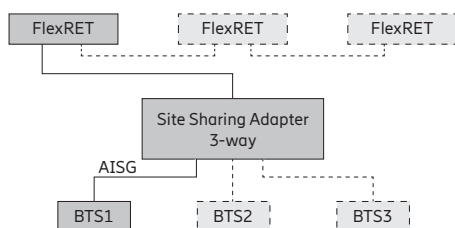
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

## Grounding:

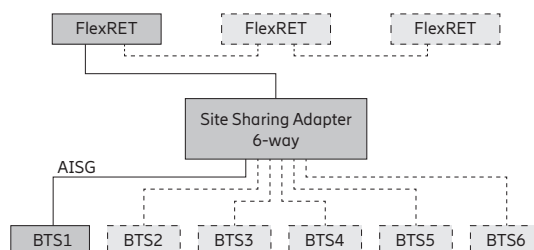
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155



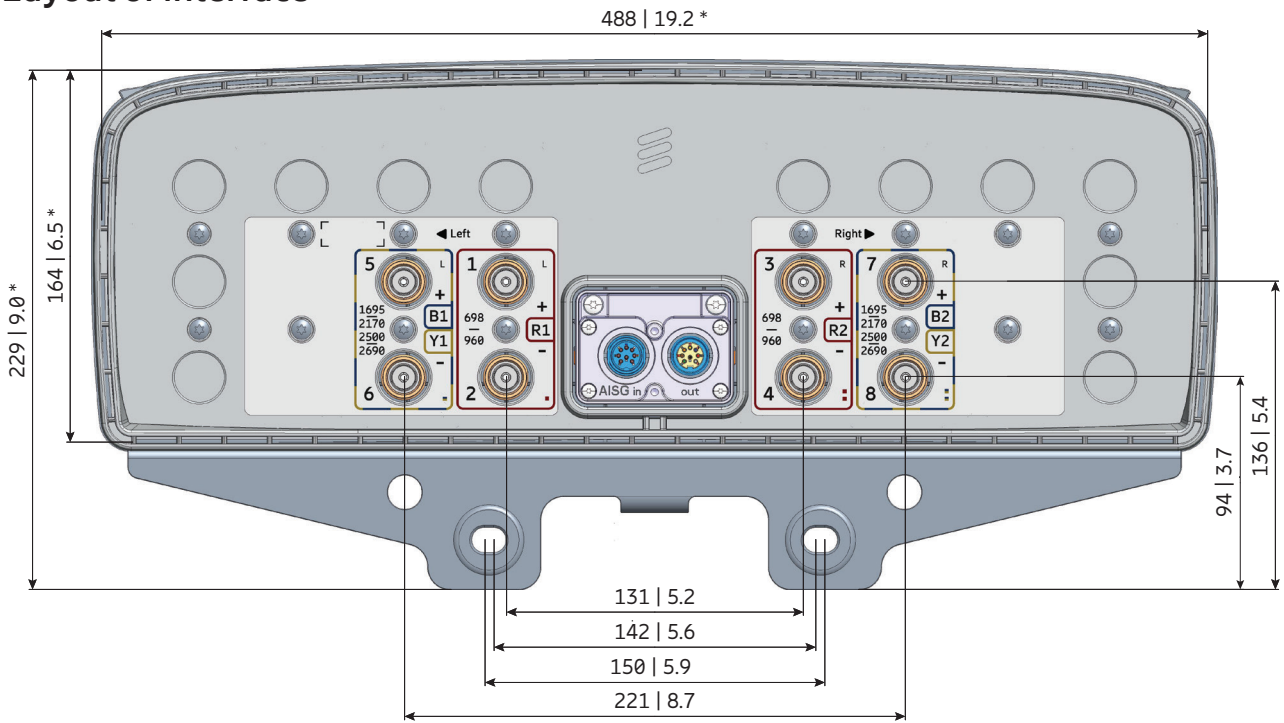
- 1) 79 | 3.1
- 2) 22 | 0.9
- 3) 142 | 5.6
- 4) 150 | 5.9
- 5) ø 11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.



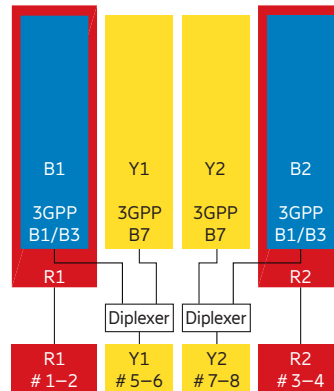
### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2170 MHz	B1	5–6
2500–2690 MHz	Y1	
1695–2170 MHz	B2	7–8
2500–2690 MHz	Y2	





2LB nMB

# Antenna 4500 2L 5M 2.0m

800442025

**Capacity**    Compact    Coverage

65° | 2x 698–960 MHz | 15.9 dBi  
 65° | 2x 1427–2180 MHz | 17.0 dBi  
 65° | 2x 2490–2690 MHz | 17.0 dBi  
 65° | 1x 1695–2690 MHz | 17.6 dBi  
 FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.5	15.1	15.4	15.9
Gain over all Tilts	dBi	14.5 ± 0.5	15.1 ± 0.5	15.4 ± 0.5	15.8 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 4.9	60 ± 6.2	56 ± 3.8	52 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 21	> 21	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.5 ± 0.7	11.0 ± 0.6	10.7 ± 0.4	10.1 ± 0.8
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 18	> 21	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, B1, B2, Y1, Y2, Y3)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.4	15.1	15.4	15.9
Gain over all Tilts	dBi	14.4 ± 0.6	15.0 ± 0.5	15.4 ± 0.4	15.8 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 6.2	60 ± 5.6	57 ± 3.5	53 ± 6.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 22	> 21	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.6 ± 0.9	10.9 ± 0.6	10.7 ± 0.4	10.2 ± 0.8
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.5	< 0.4	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 17	> 19	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, B1, B2, Y1, Y2, Y3)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midbands		B1, connector 5–6				Y1, connector 9–10
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2180	2490 – 2690
Gain at mid Tilt	dBi	15.5	16.8	16.9	17.0	17.0
Gain over all Tilts	dBi	15.4 ± 0.6	16.7 ± 0.5	16.8 ± 0.6	16.9 ± 0.7	16.9 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	73 ± 5.4	66 ± 4.1	67 ± 5.2	65 ± 6.8	56 ± 5.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 29	> 29	> 27	> 28
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.5 ± 0.6	7.9 ± 0.6	7.3 ± 0.4	7.0 ± 0.5	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				2.0 – 12.0
Tilt Accuracy	°	< 0.3	< 0.2	< 0.3	< 0.3	< 0.2
First Upper Side Lobe Suppression	dB	> 19	> 17	> 16	> 16	> 15
Cross Polar Isolation	dB	> 25				> 25
Port to Port Isolation	dB	> 25 (B1 // R1, R2, B2, Y1, Y2, Y3)				> 25 (Y1 // R1, R2, B1, B2, Y2, Y3)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)				120 (at 50 °C ambient temperature)
Max. Effective Power for Group of Ports 5+9 // 6+10	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midbands		B2, connector 7–8				Y3, connector 13–14
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2180	2490 – 2690
Gain at mid Tilt	dBi	15.2	16.7	16.9	17.1	17.0
Gain over all Tilts	dBi	15.3 ± 0.6	16.6 ± 0.5	16.7 ± 0.6	16.9 ± 0.8	16.8 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	74 ± 4.5	67 ± 3.7	66 ± 5.2	64 ± 6.3	56 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 28	> 27	> 27	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.6 ± 0.7	7.8 ± 0.5	7.3 ± 0.4	7.0 ± 0.5	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				2.0 – 12.0
Tilt Accuracy	°	< 0.4	< 0.2	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 19	> 16	> 15	> 15	> 15
Cross Polar Isolation	dB	> 25				> 25
Port to Port Isolation	dB	> 25 (B2 // R1, R2, B1, Y1, Y2, Y3)				> 25 (Y3 // R1, R2, B1, B2, Y1, Y2)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)				120 (at 50 °C ambient temperature)
Max. Effective Power for Group of Ports 7+13 // 8+14	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, midband		Y2, connector 11–12				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.7	17.1	17.3	17.6	17.4
Gain over all Tilts	dBi	16.7 ± 0.7	17.0 ± 0.5	17.2 ± 0.6	17.5 ± 0.6	17.4 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	54 ± 4.6	58 ± 6.0	59 ± 3.1	59 ± 5.3	62 ± 3.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 29	> 31	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.0 ± 0.7	8.2 ± 0.3	7.8 ± 0.5	7.1 ± 0.3	6.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 17	> 17	> 17	> 16	> 19
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, B1, B2, Y1, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	14 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 725   163 Maximal: 950   214
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1999 / 448 / 164 78.7 / 17.6 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	43.0 / 47.5 (clamps incl.) 94.8 / 104.7 (clamps incl.)
Packing Size	mm inches	2150 / 510 / 293 84.6 / 20.1 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
85010213	MIK	incl. clamps, windshield and spacer	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	To be used in combination with the FlexRET module	1
KRY 121 108/1	Port Extender		1

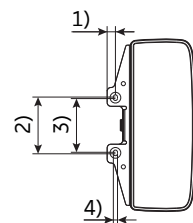
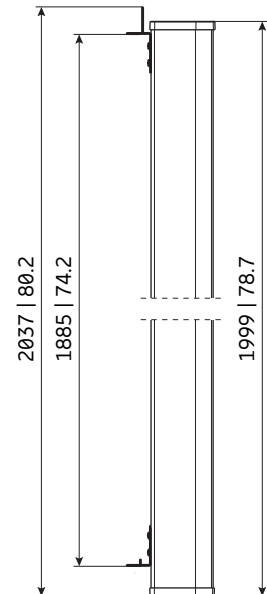
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

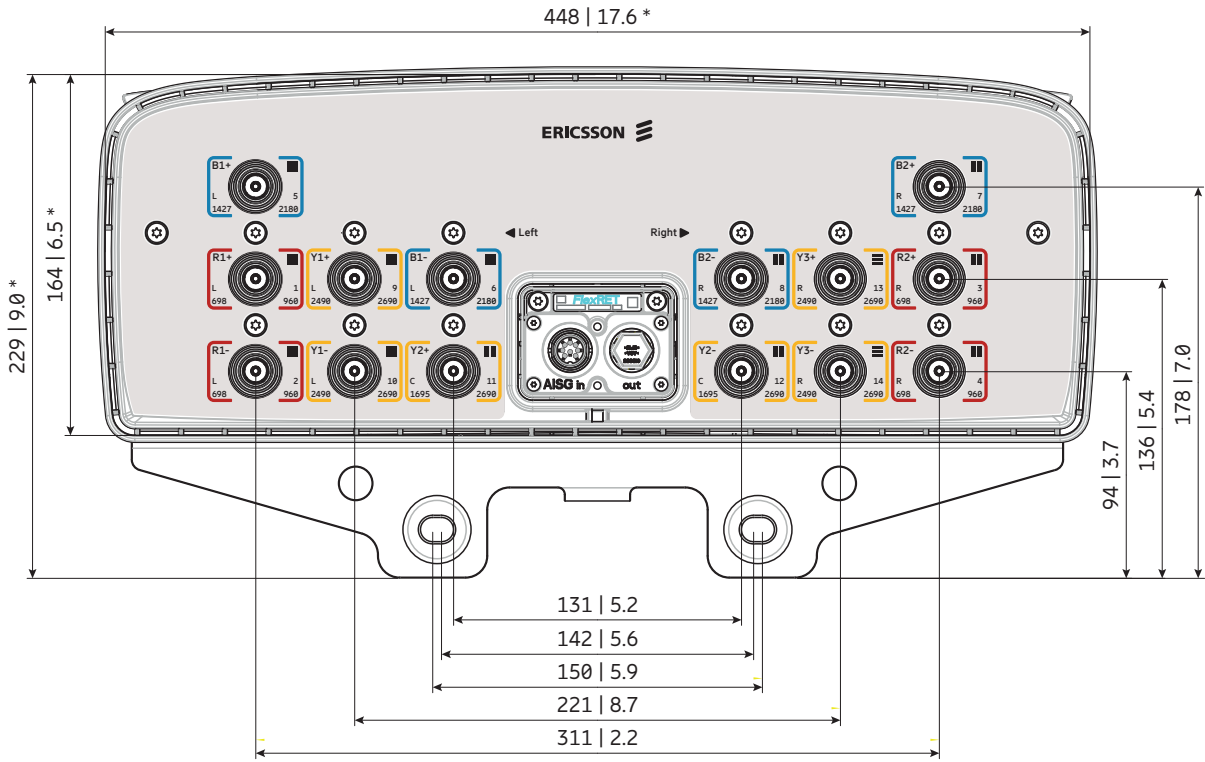
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 22 | 0.9  
2) 150 | 5.9  
3) 142 | 5.6  
4) 11 | 0.4

All dimensions  
in mm | inches

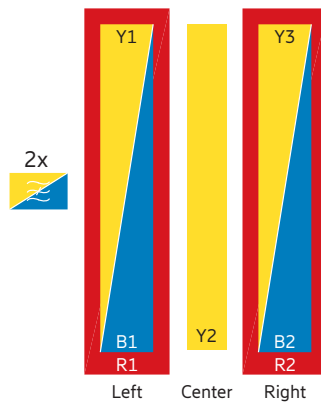
## Layout of interface

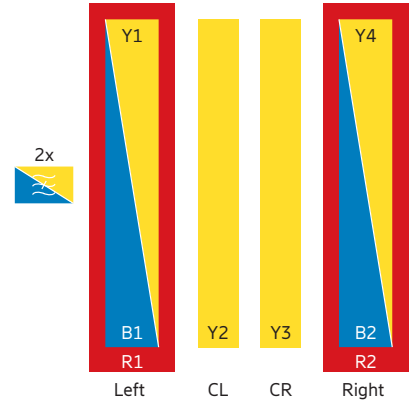


Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2180 MHz	B1	5–6
1427–2180 MHz	B2	7–8
2490–2690 MHz	Y1	9–10
1695–2690 MHz	Y2	11–12
2490–2690 MHz	Y3	13–14





2LB nMB

# Antenna 4900 2L 6M 1.5m

800482021

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 14.7 dBi  
 65° | 2x 1427–2180 MHz | 16.8 dBi  
 65° | 2x 2490–2690 MHz | 17.0 dBi  
 65° | 2x 1695–2690 MHz | 17.3 dBi  
 FlexRET



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Left side, lowband		R1, connector 1 – 2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.8	14.2	14.4	14.7
Gain over all Tilts	dBi	13.8 ± 0.3	14.1 ± 0.3	14.4 ± 0.4	14.7 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	58 ± 4.8	55 ± 3.4	54 ± 5.1	50 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 20	> 20	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	16.1 ± 1.0	15.1 ± 0.9	14.6 ± 0.7	13.5 ± 0.8
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.9	< 0.6	< 0.5	< 0.9
First Upper Side Lobe Suppression	dB	> 14	> 16	> 16	> 15
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, B1, B2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3 – 4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.8	14.2	14.4	14.8
Gain over all Tilts	dBi	13.8 ± 0.3	14.2 ± 0.4	14.4 ± 0.3	14.7 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	60 ± 5.7	56 ± 3.6	54 ± 4.9	50 ± 6.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 21	> 20	> 20
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	16.3 ± 0.9	15.1 ± 0.8	14.8 ± 0.7	13.8 ± 1.1
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 0.8	< 0.6	< 0.5	< 0.8
First Upper Side Lobe Suppression	dB	> 15	> 15	> 15	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, B1, B2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midbands		B1, connector 5–6				Y1, connector 9–10
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2180	2490 – 2690
Gain at mid Tilt	dBi	15.5	16.6	16.8	16.9	17.1
Gain over all Tilts	dBi	15.4 ± 0.4	16.5 ± 0.6	16.6 ± 0.6	16.7 ± 0.7	16.9 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	75 ± 4.2	70 ± 4.2	68 ± 4.5	66 ± 6.5	56 ± 5.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 27	> 28	> 28
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.3 ± 0.5	7.8 ± 0.6	7.2 ± 0.4	6.9 ± 0.4	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				2.0 – 12.0
Tilt Accuracy	°	< 0.4	< 0.4	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 18	> 17	> 17	> 17
Cross Polar Isolation	dB	> 25				> 25
Port to Port Isolation	dB	> 25 (B1 // R1, R2, B2, Y1, Y2, Y3, Y4)				> 25 (Y1 // R1, R2, B1, B2, Y2, Y3, Y4)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)				120 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, center midband		Y2, connector 11–12				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.9	16.9	17.0	17.3	17.3
Gain over all Tilts	dBi	16.8 ± 0.6	16.8 ± 0.7	16.9 ± 0.8	17.2 ± 0.8	17.3 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 9.8	60 ± 6.7	64 ± 6.0	64 ± 6.2	60 ± 5.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 26	> 26	> 30	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.3 ± 0.5	6.8 ± 0.4	6.5 ± 0.4	5.9 ± 0.3	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 17	> 19	> 19	> 20
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, B1, B2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, center midband		Y3, connector 13–14				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.0	17.1	17.1	17.4	17.3
Gain over all Tilts	dBi	16.9 ± 0.7	17.0 ± 0.6	17.0 ± 0.7	17.3 ± 0.6	17.3 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	60 ± 8.1	59 ± 6.7	63 ± 8.7	63 ± 5.0	62 ± 6.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 27	> 27	> 29	> 29
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.3 ± 0.5	6.8 ± 0.4	6.5 ± 0.4	5.9 ± 0.2	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 14	> 15	> 19	> 21	> 21
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, B1, B2, Y1, Y2, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midbands		B2, connector 7–8				Y4, connector 15–16
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2180	2490 – 2690
Gain at mid Tilt	dBi	15.5	16.5	16.7	16.8	17.0
Gain over all Tilts	dBi	15.4 ± 0.5	16.4 ± 0.6	16.6 ± 0.6	16.7 ± 0.7	16.8 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	76 ± 5.5	72 ± 4.5	70 ± 4.5	67 ± 7.0	57 ± 4.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 27	> 27	> 27	> 28
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.1 ± 0.7	7.7 ± 0.5	7.2 ± 0.4	6.9 ± 0.4	5.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				2.0 – 12.0
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 14	> 17	> 16	> 17	> 17
Cross Polar Isolation	dB	> 25				> 25
Port to Port Isolation	dB	> 25 (B2 // R1, R2, B1, Y1, Y2, Y3, Y4)				> 25 (Y4 // R1, R2, B1, B2, Y1, Y2, Y3)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)				120 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	-45, +45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

\* not applicable for L-band

## Mechanical specifications

Input	16 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 670   151 Maximal: 760   171
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1499 / 488 / 164 59.0 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	41.3 / 45.8 (clamps incl.) 91.0 / 100.9 (clamps incl.)
Packing Size	mm inches	1650 / 550 / 293 65.0 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	2
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 - AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

## Material:

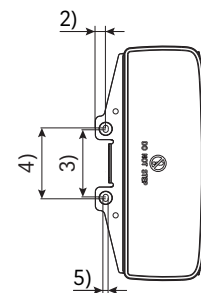
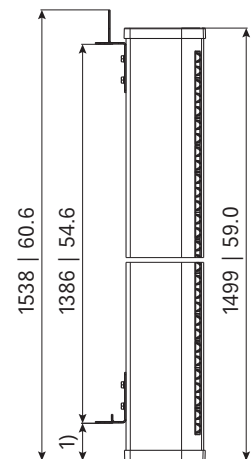
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

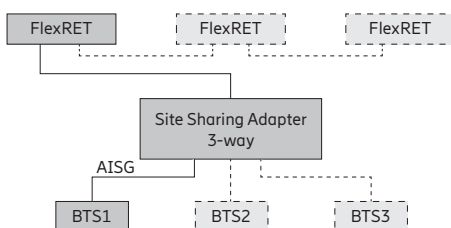
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

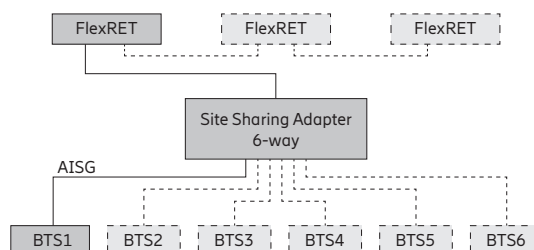
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

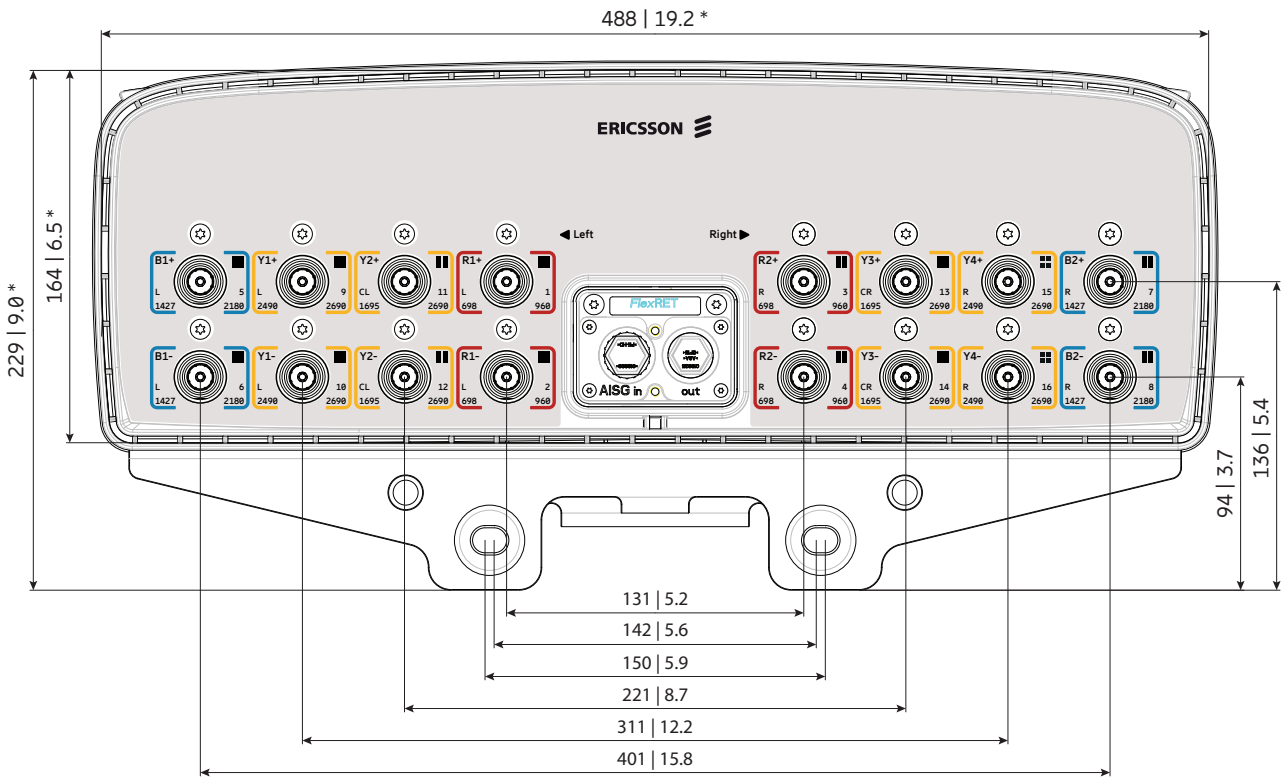


- 1) 79 | 3.1
- 2) 22 | 0.9
- 3) 142 | 5.6
- 4) 150 | 5.9
- 5)  $\varnothing$  11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

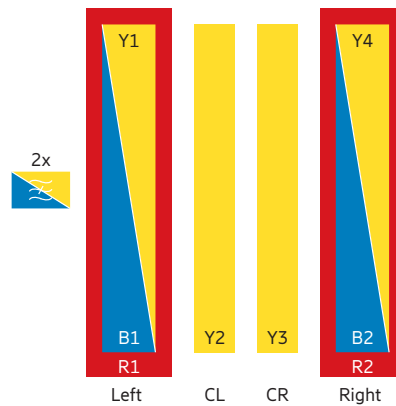
### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2180 MHz	B1	5–6
2490–2690 MHz	Y1	9–10
1695–2690 MHz	Y2	11–12
1695–2690 MHz	Y3	13–14
1427–2180 MHz	B2	7–8
2490–2690 MHz	Y4	15–16





# Antenna 4600 2L 6M 2.0m

800442008

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 15.7 dBi  
 65° | 2x 1427–2690 MHz | 16.2 dBi  
 65° | 2x 1695–2690 MHz | 15.9 dBi  
 65° | 1x 1695–2690 MHz | 16.6 dBi  
 65° | 1x 1695–2690 MHz | 16.3 dBi  
 FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.4	15.0	15.3	15.7
Gain over all Tilts	dBi	14.3 ± 0.6	15.0 ± 0.5	15.3 ± 0.5	15.7 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 9	62 ± 6	60 ± 5	53 ± 7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 23	> 23	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.9 ± 0.8	11.1 ± 0.6	10.9 ± 0.6	10.4 ± 0.8
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.7	< 0.6	< 0.5	< 0.3
First Upper Side Lobe Suppression	dB	> 16	> 17	> 19	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.3	15.0	15.3	15.7
Gain over all Tilts	dBi	14.3 ± 0.6	15.0 ± 0.5	15.3 ± 0.5	15.7 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 9	61 ± 7	59 ± 6	53 ± 7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 23	> 23	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.9 ± 0.9	11.1 ± 0.9	10.9 ± 0.6	10.4 ± 0.8
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 17	> 19	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, lower midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.4	15.7	15.9	15.7	15.7
Gain over all Tilts	dBi	15.4 ± 0.4	15.6 ± 0.4	15.8 ± 0.6	15.6 ± 0.6	15.7 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 3	65 ± 4	63 ± 6	61 ± 2	56 ± 5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 28	> 28	> 27	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	11.2 ± 0.6	10.4 ± 0.6	9.9 ± 0.6	9.0 ± 0.6	8.3 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.6	< 0.6	< 0.4
First Upper Side Lobe Suppression	dB	> 17	> 16	> 15	> 16	> 15
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, upper midband		Y2, connector 7–8					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	14.7	15.7	16.0	16.2	16.0	16.0
Gain over all Tilts	dBi	14.7 ± 0.5	15.6 ± 0.4	16.0 ± 0.6	16.2 ± 0.6	15.9 ± 0.7	15.9 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	68 ± 5	65 ± 4	62 ± 5	60 ± 4	61 ± 5	57 ± 7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 29	> 28	> 26	> 26	> 26
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	11.8 ± 0.9	10.1 ± 0.6	9.4 ± 0.4	8.9 ± 0.6	8.0 ± 0.5	7.4 ± 0.6
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.7	< 0.4	< 0.3	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 14	> 16	> 17	> 17	> 17	> 15
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4, Y5, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.



Center, lower midband		Y3, connector 9 – 10				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.4	15.6	16.0	16.6	16.0
Gain over all Tilts	dBi	15.4 ± 0.4	15.6 ± 0.3	15.9 ± 0.7	16.4 ± 0.7	16.0 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	54 ± 5	58 ± 5	58 ± 5	58 ± 7	64 ± 3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 26	> 30	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	12.9 ± 0.9	12.2 ± 0.8	11.3 ± 1.1	10.0 ± 0.6	9.4 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.7	< 0.4	< 0.5	< 0.7	< 0.5
First Upper Side Lobe Suppression	dB	> 17	> 18	> 17	> 17	> 16
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, upper midband		Y4, connector 11 – 12				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.6	15.9	16.1	16.3	15.8
Gain over all Tilts	dBi	15.6 ± 0.7	15.9 ± 0.3	16.1 ± 0.5	16.2 ± 0.4	15.8 ± 0.3
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	52 ± 7	54 ± 5	57 ± 4	59 ± 5	64 ± 2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 29	> 30	> 30	> 31
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	12.5 ± 1.0	11.8 ± 0.8	11.0 ± 1.0	9.8 ± 0.5	9.3 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.6	< 0.6
First Upper Side Lobe Suppression	dB	> 19	> 19	> 20	> 21	> 20
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, lower midband

## Y5, connector 13–14

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.4	15.7	15.9	15.6	15.9
Gain over all Tilts	dBi	15.3 ± 0.4	15.6 ± 0.4	15.8 ± 0.6	15.5 ± 0.6	15.8 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 3	65 ± 4	62 ± 4	63 ± 3	54 ± 5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 26	> 27	> 26	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	11.1 ± 0.7	10.4 ± 0.5	9.8 ± 0.7	9.0 ± 0.9	8.4 ± 0.6
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.6	< 0.5	< 0.5
First Upper Side Lobe Suppression	dB	> 17	> 16	> 16	> 17	> 15
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y5 // R1, R2, Y1, Y2, Y3, Y4, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, upper midband

## Y6, connector 15–16

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	14.6	15.6	15.9	16.2	16.0	16.0
Gain over all Tilts	dBi	14.5 ± 0.3	15.5 ± 0.5	15.9 ± 0.6	16.1 ± 0.7	15.9 ± 0.7	15.9 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	70 ± 5	66 ± 4	64 ± 5	61 ± 5	62 ± 5	57 ± 5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 29	> 28	> 25	> 25	> 26
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	12.0 ± 1.0	10.1 ± 0.6	9.4 ± 0.5	8.9 ± 0.6	8.1 ± 0.5	7.6 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.6	< 0.4	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 17	> 18	> 17	> 18	> 17
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y6 // R1, R2, Y1, Y2, Y3, Y4, Y5)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

\* not applicable for L-band

## Mechanical specifications

Input	16x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 690   155 Maximal: 925   208
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1944 / 448 / 164 76.5 / 17.6 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	43 / 47.5 (clamps incl.) 94.8 / 104.7 (clamps incl.)
Packing Size	mm inches	2095 / 510 / 293 82.5 / 20.1 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0– AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

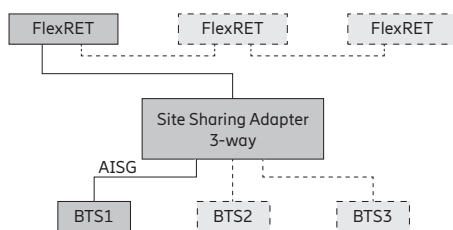
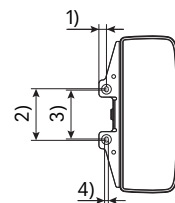
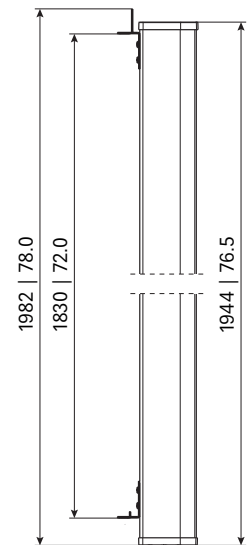
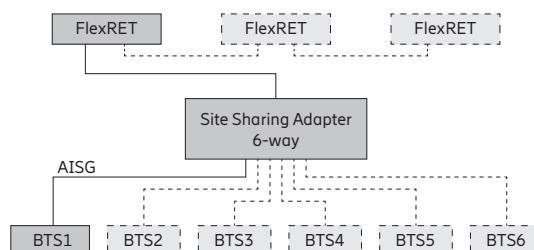
## Material:

**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

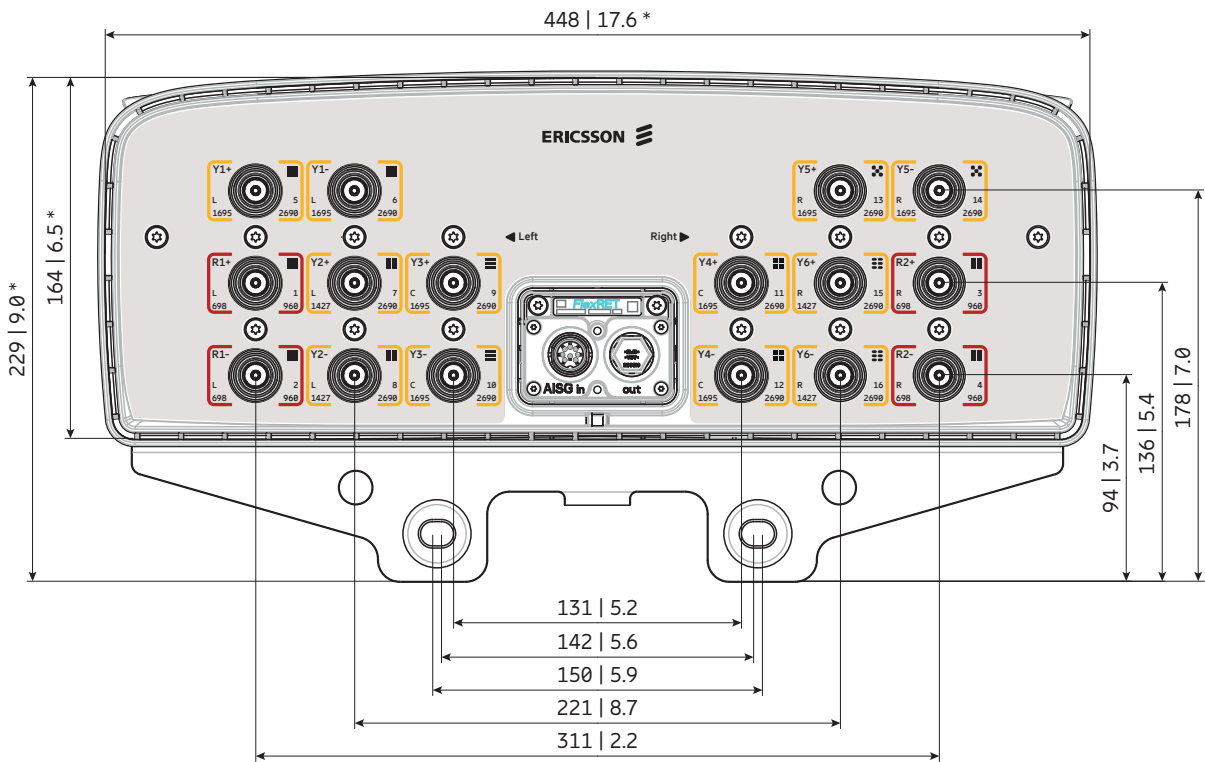
Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions  
in mm | inches

For more information please refer to the respective data sheets.

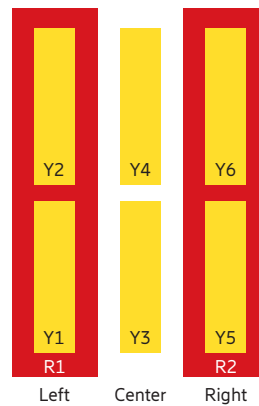
## Layout of interface

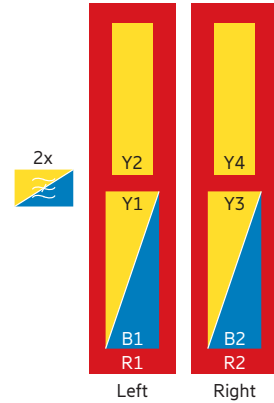
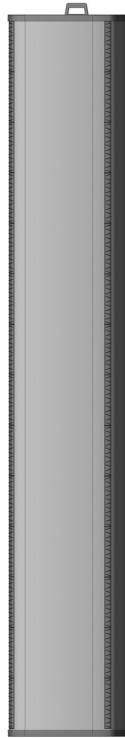


Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1427–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12
1695–2690 MHz	Y5	13–14
1427–2690 MHz	Y6	15–16





# Antenna 4300 2L 6M 2.6m

800372995

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 16.5 dBi  
65° | 2x 1695–2690 MHz | 16.8 dBi  
65° | 2x 1427–2180 MHz | 16.5 dBi  
65° | 2x 2490–2690 MHz | 16.6 dBi  
FlexRET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.9	15.7	16.0	16.5
Gain over all Tilts	dBi	14.9 ± 0.7	15.7 ± 0.6	16.0 ± 0.5	16.5 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	63 ± 4.5	60 ± 2.9	58 ± 3.7	55 ± 4.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 22	> 24	> 24
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.1 ± 0.7	8.6 ± 0.4	8.4 ± 0.5	7.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10.0			
Tilt Accuracy	°	< 0.3	< 0.3	< 0.4	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 17	> 17	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, B1, B2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.9	15.7	16.0	16.5
Gain over all Tilts	dBi	14.9 ± 0.7	15.7 ± 0.6	16.0 ± 0.6	16.5 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	64 ± 4.8	61 ± 3.6	59 ± 4.5	54 ± 4.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 18	> 22	> 24	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.0 ± 0.7	8.6 ± 0.4	8.3 ± 0.5	7.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10.0			
Tilt Accuracy	°	< 0.3	< 0.4	< 0.4	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 18	> 18	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, B1, B2, Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, lower midbands		B1, connector 5–6				Y1, connector 9–10
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2180	2490 – 2690
Gain at mid Tilt	dBi	15.7	16.5	16.4	16.6	16.7
Gain over all Tilts	dBi	15.7 ± 0.4	16.4 ± 0.5	16.3 ± 0.5	16.5 ± 0.6	16.6 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	60 ± 5.7	65 ± 4.4	66 ± 3.7	65 ± 3.9	61 ± 4.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 26	> 25	> 26	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.5 ± 0.5	7.8 ± 0.5	7.2 ± 0.3	6.9 ± 0.5	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				2.0 – 12.0
Tilt Accuracy	°	< 0.4	< 0.3	< 0.4	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 18	> 18	> 17	> 15	> 16
Cross Polar Isolation	dB	> 25				> 25
Port to Port Isolation	dB	> 25 (B1 // R1, R2, B2, Y1, Y2, Y3, Y4)				> 25 (Y1 // R1, R2, B1, B2, Y2, Y3, Y4)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)				120 (at 50 °C ambient temperature)
Max. Effective Power for Group of Ports 5+9 // 6+10	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, upper midband		Y2, connector 11–12				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.4	16.8	16.9	16.6	16.7
Gain over all Tilts	dBi	16.4 ± 0.5	16.7 ± 0.6	16.8 ± 0.6	16.6 ± 0.6	16.6 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 4.5	64 ± 3.6	62 ± 4.4	64 ± 5.7	60 ± 5.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 28	> 27	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.8 ± 0.6	7.2 ± 0.3	6.9 ± 0.5	6.3 ± 0.4	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 16	> 15	> 16	> 19	> 20
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, B1, B2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, lower midbands		B2 connector 7–8				Y3, connector 13–14
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2180	2490 – 2690
Gain at mid Tilt	dBi	15.7	16.5	16.3	16.5	16.7
Gain over all Tilts	dBi	15.7 ± 0.5	16.3 ± 0.5	16.2 ± 0.6	16.4 ± 0.7	16.6 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	60 ± 6.1	65 ± 3.9	67 ± 3.9	65 ± 5.5	62 ± 4.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 25	> 23	> 24	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.6 ± 0.6	7.8 ± 0.5	7.3 ± 0.3	6.9 ± 0.6	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				2.0 – 12.0
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 19	> 17	> 16	> 14	> 15
Cross Polar Isolation	dB	> 25				> 25
Port to Port Isolation	dB	> 25 (B2 // R1, R2, B1, Y1, Y2, Y3, Y4)				> 25 (Y3 // R1, R2, B1, B2, Y1, Y2, Y4)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)				120 (at 50 °C ambient temperature)
Max. Effective Power for Group of Ports 7+13 // 8+14	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, upper midband		Y4, connector 15–16				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.4	16.8	16.9	16.6	16.6
Gain over all Tilts	dBi	16.3 ± 0.4	16.7 ± 0.7	16.9 ± 0.7	16.5 ± 0.6	16.5 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 5.1	64 ± 4.5	61 ± 4.2	64 ± 5.4	60 ± 5.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 27	> 27	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.7 ± 0.6	7.2 ± 0.4	6.9 ± 0.5	6.3 ± 0.4	5.7 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.2	< 0.3
First Upper Side Lobe Suppression	dB	> 16	> 16	> 16	> 21	> 19
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, B1, B2, Y1, Y2, Y3)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	-45, +45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* not applicable for L-band

## Mechanical specifications

Input	16 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 630   142 Maximal: 1110   250
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2591 / 378 / 164 102.0 / 14.9 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	48.8 / 53.3 (clamps incl.) 107.6 / 117.5 (clamps incl.)
Packing Size	mm inches	2745 / 440 / 293 108.1 / 17.3 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–9°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

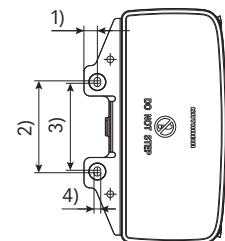
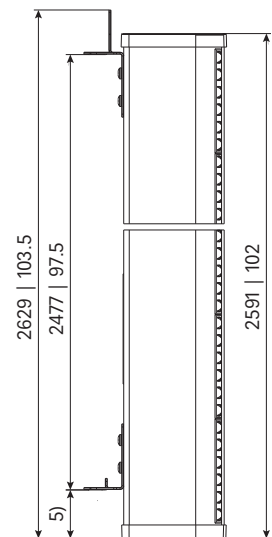
## Material:

**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

## Grounding:

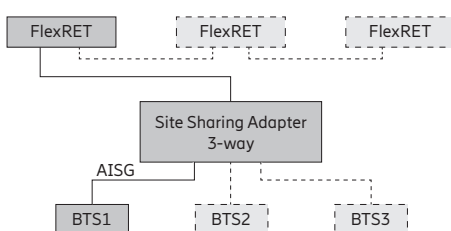
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



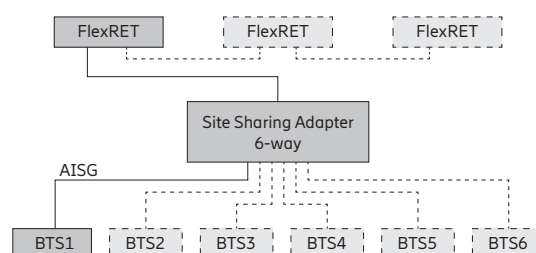
- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4
- 5) 79 | 3.1

All dimensions in mm | inches

## Configuration example with Site Sharing Adapter 86010154

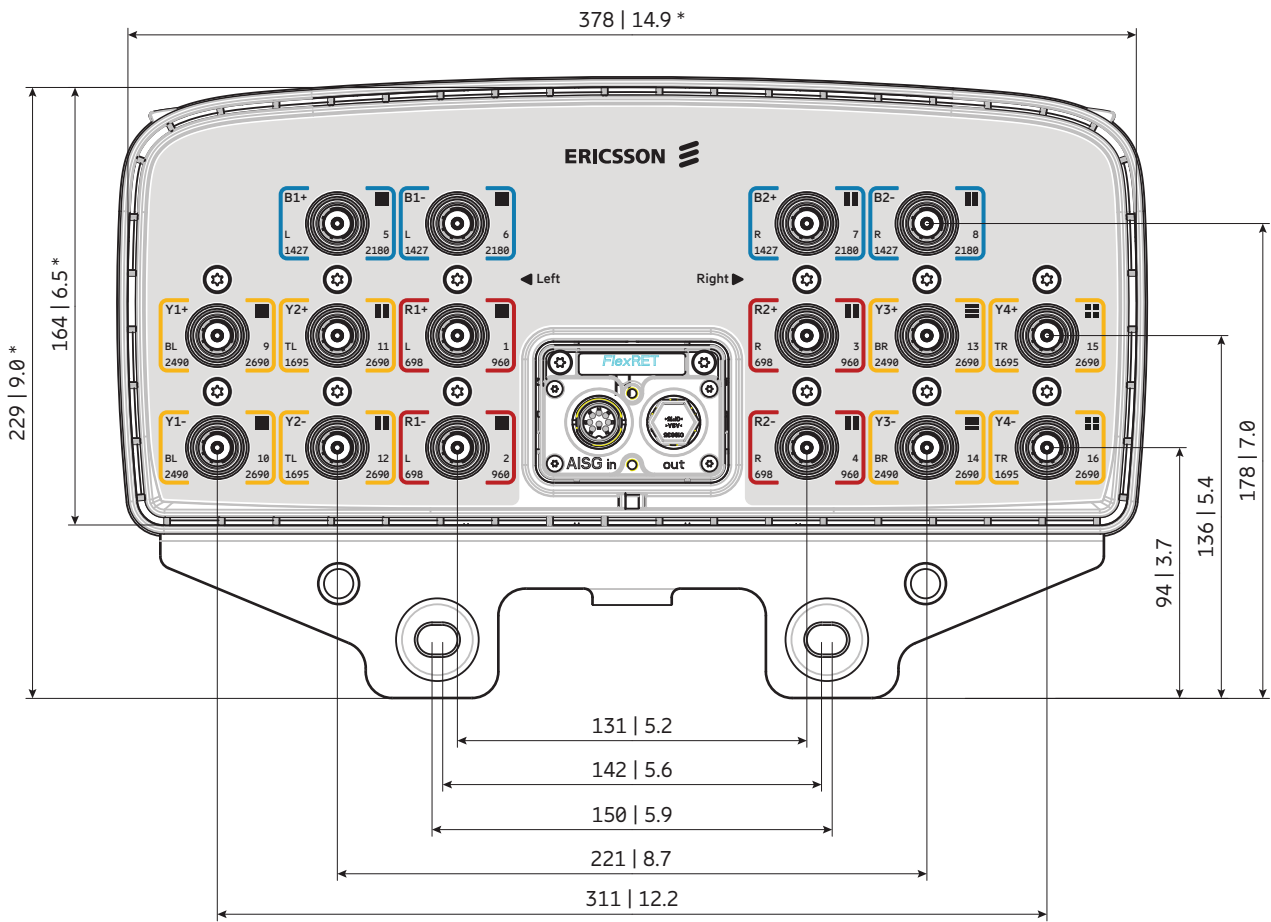


## Configuration example with Site Sharing Adapter 86010155



For more information please refer to the respective data sheets.

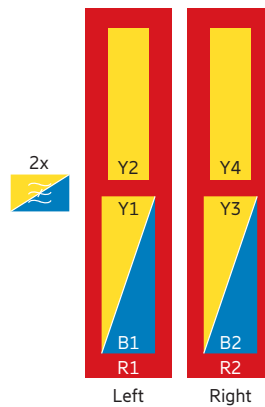
## Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2180 MHz	B1	5–6
1427–2180 MHz	B2	7–8
2490–2690 MHz	Y1	9–10
1695–2690 MHz	Y2	11–12
2490–2690 MHz	Y3	13–14
1695–2690 MHz	Y4	15–16





# Antenna 4600 2L 6M 2.6m

800442009

**Capacity**   Compact   Coverage

65° | 2x 698–960 | 16.7 dBi  
65° | 2x 1427–2690 | 17.3 dBi  
65° | 2x 1695–2690 | 16.7 dBi  
65° | 2x 1695–2690 | 17.2 dBi  
FlexRET



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2LB nMB

Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.3	15.9	16.2	16.7
Gain over all Tilts	dBi	15.3 ± 0.6	15.9 ± 0.4	16.2 ± 0.6	16.7 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	70 ± 7	65 ± 4	62 ± 5	56 ± 7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 23	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.2 ± 0.6	8.8 ± 0.5	8.5 ± 0.6	8.0 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.6	< 0.5
First Upper Side Lobe Suppression	dB	> 15	> 19	> 20	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.3	15.9	16.2	16.7
Gain over all Tilts	dBi	15.3 ± 0.6	15.9 ± 0.4	16.2 ± 0.6	16.7 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	70 ± 7	65 ± 4	62 ± 5	56 ± 7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 23	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.2 ± 0.6	8.8 ± 0.5	8.5 ± 0.6	8.0 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10			
Tilt Accuracy	°	< 0.5	< 0.5	< 0.6	< 0.5
First Upper Side Lobe Suppression	dB	> 15	> 19	> 20	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, lower midband		Y1, connector 5–6					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.7	16.9	17.1	17.3	17.2	17.3
Gain over all Tilts	dBi	15.7 ± 0.5	16.8 ± 0.6	17.0 ± 0.5	17.2 ± 0.7	17.1 ± 0.8	17.1 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	71 ± 5	68 ± 4	68 ± 5	65 ± 7	63 ± 4	56 ± 5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 28	> 28	> 28	> 27	> 26
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	9.0 ± 0.5	7.8 ± 0.5	7.1 ± 0.4	6.8 ± 0.5	6.3 ± 0.5	5.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.5	< 0.5	< 0.4	< 0.4	< 0.4	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 16	> 16	> 15	> 15	> 16
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y1 // R1, R2, Y2, Y3, Y4, Y5, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, upper midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.5	16.7	16.7	16.4	16.7
Gain over all Tilts	dBi	16.4 ± 0.6	16.6 ± 0.7	16.7 ± 0.7	16.4 ± 0.7	16.6 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65 ± 3	63 ± 4	61 ± 3	64 ± 4	58 ± 5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 26	> 26	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.8 ± 0.5	7.2 ± 0.3	7.0 ± 0.4	6.3 ± 0.3	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 15	> 15	> 16	> 18
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y2 // R1, R2, Y1, Y3, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, lower midband		Y3, connector 9–10				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.5	16.6	16.9	17.2	16.8
Gain over all Tilts	dBi	16.4 ± 0.5	16.6 ± 0.6	16.9 ± 0.7	17.1 ± 0.7	16.7 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	53 ± 7	58 ± 7	57 ± 7	61 ± 8	64 ± 4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 28	> 28	> 28
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.8 ± 0.7	9.0 ± 0.5	8.9 ± 0.7	7.9 ± 0.6	7.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.3	< 0.4	< 0.5	< 0.6	< 0.4
First Upper Side Lobe Suppression	dB	> 16	> 16	> 17	> 19	> 17
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y3 // R1, R2, Y1, Y2, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, upper midband		Y4, connector 11–12				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.4	16.7	16.8	17.3	17.0
Gain over all Tilts	dBi	16.4 ± 0.6	16.7 ± 0.5	16.8 ± 0.6	17.2 ± 0.5	17.0 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	53 ± 6	56 ± 8	58 ± 7	59 ± 5	62 ± 4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 28	> 28	> 28	> 28
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.8 ± 0.7	8.2 ± 0.5	7.8 ± 0.5	7.0 ± 0.3	6.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.5	< 0.5	< 0.4	< 0.5	< 0.6
First Upper Side Lobe Suppression	dB	> 16	> 17	> 16	> 17	> 16
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y4 // R1, R2, Y1, Y2, Y3, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, lower midband

## Y5, connector 13–14

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.7	16.9	17.1	17.3	17.2	17.3
Gain over all Tilts	dBi	15.7 ± 0.5	16.8 ± 0.6	17.0 ± 0.5	17.2 ± 0.7	17.1 ± 0.8	17.1 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	71 ± 5	68 ± 4	68 ± 5	65 ± 7	63 ± 4	56 ± 5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 28	> 28	> 28	> 27	> 26
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	9.0 ± 0.5	7.8 ± 0.5	7.1 ± 0.4	6.8 ± 0.5	6.3 ± 0.5	5.9 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.5	< 0.5	< 0.4	< 0.4	< 0.4	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 16	> 16	> 15	> 15	> 16
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	> 25 (Y5 // R1, R2, Y1, Y2, Y3, Y4, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, upper midband

## Y6, connector 15–16

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.5	16.7	16.7	16.4	16.7
Gain over all Tilts	dBi	16.4 ± 0.6	16.6 ± 0.7	16.7 ± 0.7	16.4 ± 0.7	16.6 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65 ± 3	63 ± 4	61 ± 3	64 ± 4	58 ± 5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 26	> 26	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.8 ± 0.5	7.2 ± 0.3	7.0 ± 0.4	6.3 ± 0.3	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 15	> 15	> 16	18
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 25 (Y6 // R1, R2, Y1, Y2, Y3, Y4, Y5)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

\* not applicable for L-band

## Mechanical specifications

Input		16 x 4.3-10 female
Connector Position		bottom
Adjustment Mechanism		FlexRET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 965   217 Maximal: 1270   285
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2591 / 448 / 164 102 / 17.6 / 6.5
Category of Mounting Hardware		XM (X-Medium)
Weight	kg lb	56 / 60.5 (clamps incl.) 123.4 / 133 (clamps incl.)
Packing Size	mm inches	2745 / 510 / 293 108 / 20.1 / 11.5
Scope of Supply		Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	To be used in combination with the FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

## Material:

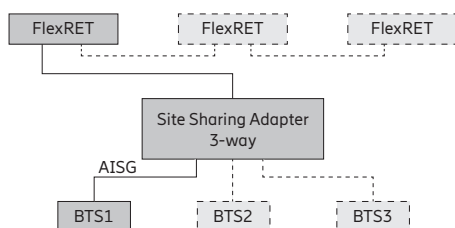
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

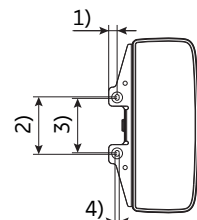
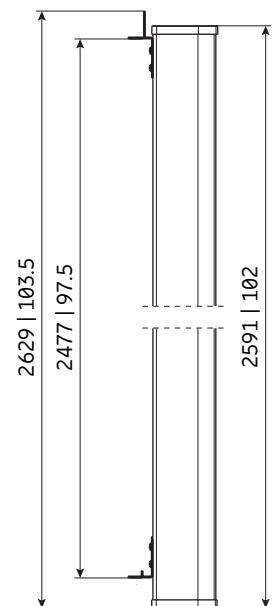
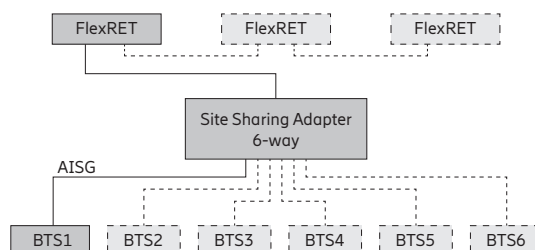
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

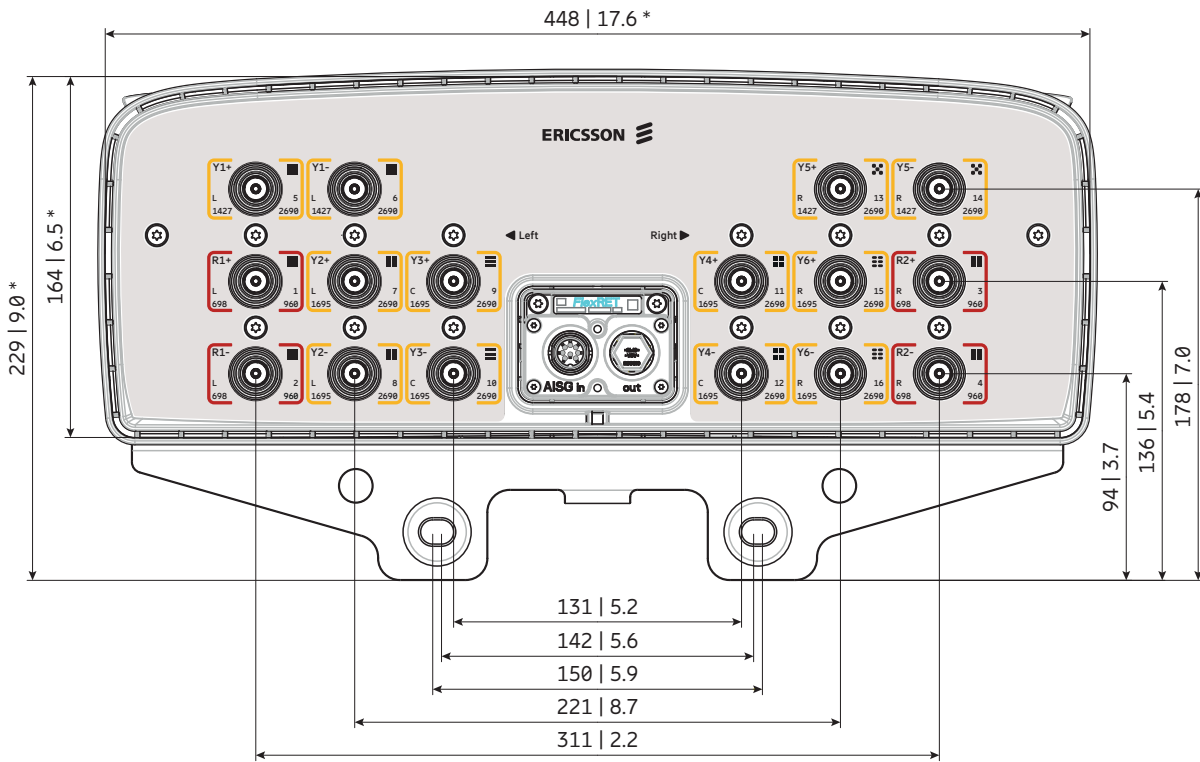


- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions in mm | inches

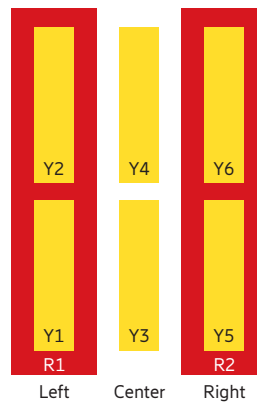
For more information please refer to the respective data sheets.

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1427–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12
1427–2690 MHz	Y5	13–14
1695–2690 MHz	Y6	15–16





New product



# Antenna 4603 2L 6M 2.6m

KRE 101 2634/1

Capacity    Compact    Coverage

65° | 2x 698–960 MHz | 16.0 dBi  
65° | 6x 1695–2690 MHz | 18.0 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.6	16.1	16.2	16.0
Gain over all Tilts	dBi	15.5 ± 0.7	16.0 ± 0.5	16.2 ± 0.4	16.0 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	73 ± 5.6	69 ± 3.4	70 ± 3.9	72 ± 5.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 17	> 22	> 22	> 21
Cross Polar Discrimination at Boresight	dB	> 24	> 27	> 25	> 24
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	8.9 ± 0.8	8.3 ± 0.4	8.0 ± 0.3	7.6 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.4	< 0.3	< 0.2	< 0.2
First Upper Sidelobe Suppression	dB	> 16	> 16	> 16	> 17
Intra-Cluster Isolation	dB	> 26			
Inter-Cluster Isolation	dB	> 26 (R1 // R2, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.5	15.9	16.1	16.1
Gain over all Tilts	dBi	15.5 ± 0.6	15.8 ± 0.5	16.1 ± 0.5	16.0 ± 0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	73 ± 4.8	73 ± 3.7	72 ± 2.8	73 ± 4.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 16	> 20	> 23	> 21
Cross Polar Discrimination at Boresight	dB	> 27	> 25	> 24	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	8.9 ± 0.5	8.2 ± 0.4	8.0 ± 0.3	7.5 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.3	< 0.2	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 15	> 15	> 16	> 16
Intra-Cluster Isolation	dB	> 26			
Inter-Cluster Isolation	dB	> 26 (R2 // R1, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, lower midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.7	16.9	17.3	17.8	17.6
Gain over all Tilts	dBi	16.7 ± 0.7	16.9 ± 0.6	17.2 ± 0.9	17.8 ± 0.8	17.5 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 4.3	63 ± 3.3	61 ± 5.1	57 ± 2.1	59 ± 4.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 22	> 21	> 21	> 20
Cross Polar Discrimination at Boresight	dB	> 15	> 16	> 17	> 27	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.5	7.4 ± 0.4	7.0 ± 0.5	6.3 ± 0.3	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.6	< 0.6	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 20	> 20	> 21	> 20	> 18
Intra-Cluster Isolation	dB	> 26				
Inter-Cluster Isolation	dB	> 26 (Y1 // R1, R2, Y2, Y3, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, upper midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.2	16.6	16.9	17.5	17.4
Gain over all Tilts	dBi	16.2 ± 0.7	16.6 ± 0.6	16.9 ± 0.8	17.5 ± 0.7	17.3 ± 0.7
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 3.7	62 ± 2.5	61 ± 3.9	58 ± 1.3	58 ± 5.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 22	> 21	> 20	> 20
Cross Polar Discrimination at Boresight	dB	> 14	> 17	> 18	> 28	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.5	7.5 ± 0.5	7.1 ± 0.6	6.3 ± 0.2	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.2	< 0.2	< 0.2	< 0.3
First Upper Sidelobe Suppression	dB	> 18	> 18	> 19	> 19	> 18
Intra-Cluster Isolation	dB	> 26				
Inter-Cluster Isolation	dB	> 26 (Y2 // R1, R2, Y1, Y3, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center, lower midband		Y3, connector 9–10				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.4	17.5	17.6	18.3	18.3
Gain over all Tilts	dBi	17.4 ± 0.5	17.5 ± 0.4	17.5 ± 0.7	18.3 ± 0.9	18.3 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	56 ± 4.2	57 ± 2.9	61 ± 4.8	56 ± 2.4	53 ± 2.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 27	> 27	> 24
Cross Polar Discrimination at Boresight	dB	> 25	> 25	> 21	> 22	> 20
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.6	7.4 ± 0.4	7.0 ± 0.6	6.3 ± 0.4	5.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 22	> 22	> 21	> 16	> 17
Intra-Cluster Isolation	dB	> 26				
Inter-Cluster Isolation	dB	> 26 (Y3 // R1, R2, Y1, Y2, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center, upper midband		Y4, connector 11–12				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.2	17.2	17.2	18.1	18.2
Gain over all Tilts	dBi	17.2 ± 0.4	17.1 ± 0.4	17.2 ± 0.6	18.1 ± 0.8	18.1 ± 0.9
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	56 ± 3.0	58 ± 2.8	60 ± 3.9	56 ± 2.0	53 ± 4.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 25	> 26	> 26	> 26
Cross Polar Discrimination at Boresight	dB	> 25	> 24	> 22	> 24	> 20
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.1 ± 0.6	7.5 ± 0.4	7.1 ± 0.5	6.3 ± 0.3	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 21	> 20	> 20	> 16	> 15
Intra-Cluster Isolation	dB	> 26				
Inter-Cluster Isolation	dB	> 26 (Y4 // R1, R2, Y1, Y2, Y3, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, lower midband

## Y5, connector 13–14

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.5	16.9	17.2	17.9	17.7
Gain over all Tilts	dBi	16.5 ± 0.7	16.9 ± 0.6	17.2 ± 1.0	17.8 ± 0.8	17.7 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65 ± 4.1	63 ± 2.9	61 ± 4.9	57 ± 2.9	58 ± 3.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 22	> 24	> 23	> 21
Cross Polar Discrimination at Boresight	dB	> 14	> 16	> 17	> 26	> 24
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.8 ± 0.5	7.3 ± 0.4	6.9 ± 0.5	6.2 ± 0.3	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.5	< 0.5	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 19	> 20	> 20	> 18	> 18
Intra-Cluster Isolation	dB	> 26				
Inter-Cluster Isolation	dB	> 26 (Y5 // R1, R2, Y1, Y2, Y3, Y4, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y6, connector 15–16

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.0	16.6	17.0	17.6	17.6
Gain over all Tilts	dBi	16.0 ± 0.6	16.5 ± 0.7	16.9 ± 0.9	17.5 ± 0.8	17.5 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65 ± 5.6	63 ± 3.8	60 ± 4.9	57 ± 2.3	56 ± 3.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 23	> 23	> 23	> 21
Cross Polar Discrimination at Boresight	dB	> 14	> 17	> 18	> 27	> 23
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.1 ± 0.5	7.5 ± 0.4	7.1 ± 0.6	6.3 ± 0.3	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.4	< 0.4	< 0.4	< 0.3
First Upper Sidelobe Suppression	dB	> 17	> 17	> 18	> 18	> 17
Intra-Cluster Isolation	dB	> 26				
Inter-Cluster Isolation	dB	> 26 (Y6 // R1, R2, Y1, Y2, Y3, Y4, Y5)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 26
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	16x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1502   338 Maximal: 1502   338
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2600 / 448 / 189 102.4 / 17.6 / 7.4
Category of Mounting Hardware	XH (X-Heavy)	
Weight	kg lb	54.0 / 59.0 (clamps incl.) 119.1 / 130.1 (clamps incl.)
Packing Size	mm inches	2820 / 473 / 275 111.0 / 18.6 / 10.8
Scope of Supply	Panel, RET KRY 121 79/2 and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010099	1 downtilt kit	Downtilt angle: 0°–9°	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010096	2 clamps	Mast diameter: 55–115   2.2–4.5	1
KRY 121 79/2	RET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

**Material:**

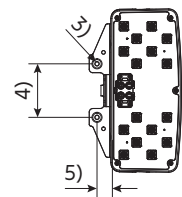
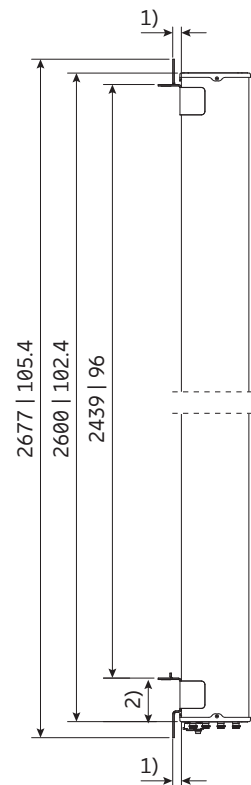
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:**

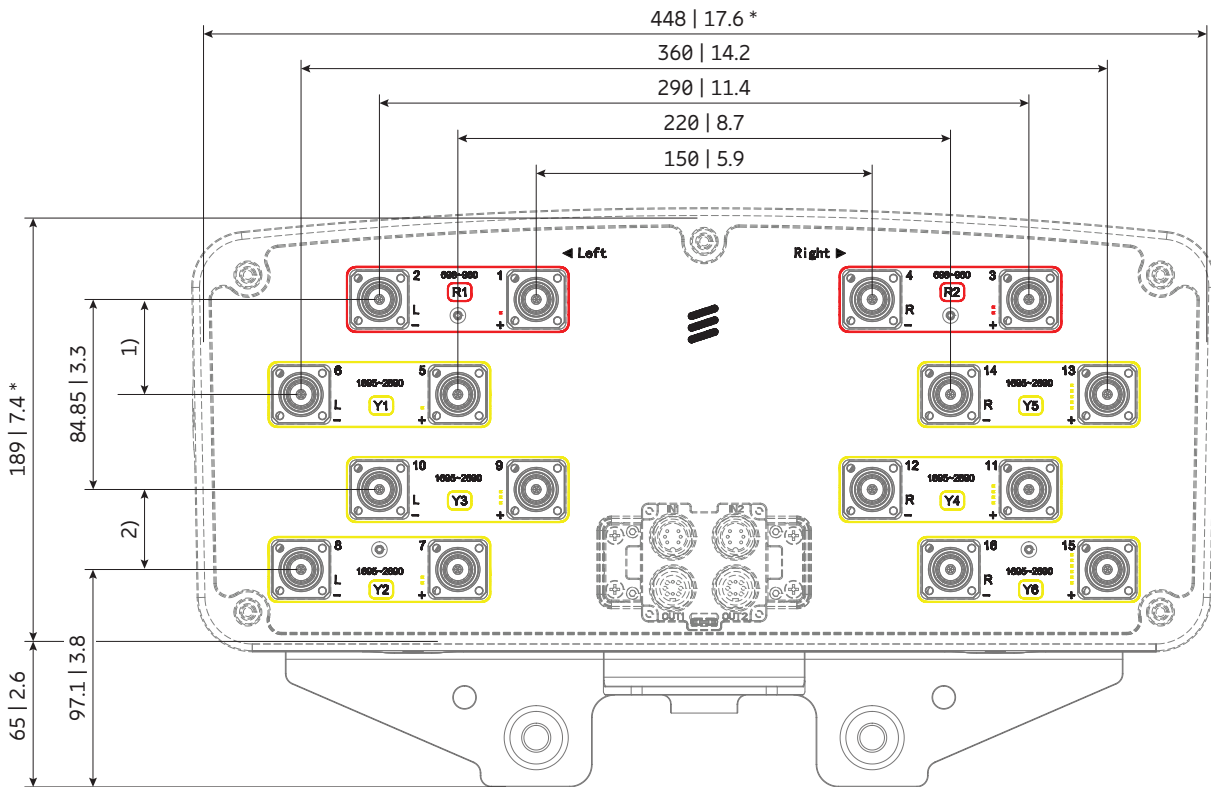
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 24 | 0.9  
2) 122 | 4.8  
3)  $\varnothing$  11 | 0.4  
4) 150 | 5.9  
5) 43 | 1.7

All dimensions  
in mm | inches

## Layout of interface

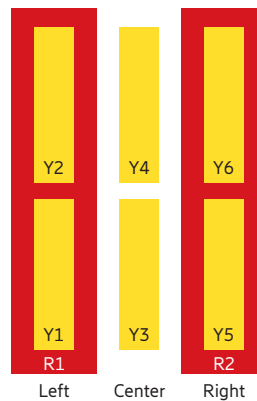


1) 42.43 | 1.7  
2) 35.71 | 1.4

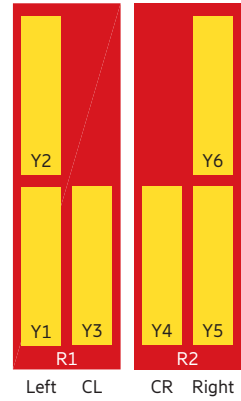
Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12
1695–2690 MHz	Y5	13–14
1695–2690 MHz	Y6	15–16



New product  
Preliminary Issue



2LB nMB

# Antenna 5470 2L 6M 2.6m

KRE 101 2545/1

Capacity    Compact    Coverage

65° | 2x 617–960 MHz | 15.6 dBi  
65° | 2x 1427–2690 MHz | 17.8 dBi  
65° | 4x 1695–2690 MHz | 17.4 dBi  
16x 4.3-10  
FlexRET



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Preliminary Issue

Left side, lowbands		R1, connector 1–2			
Frequency Range	MHz	617 – 698	718 – 806	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.7	14.9	15.1	15.6
Gain over all Tilts	dBi	14.7 ± 0.8	14.8 ± 0.4	15.1 ± 0.7	15.6 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 6	65 ± 8	68 ± 7	67 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 18	> 21	> 19	> 20
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	10.3 ± 0.6	9.3 ± 0.5	8.7 ± 0.4	8.2 ± 0.6
Electrical Downtilt continuously adjustable	°	2 – 12			
Tilt Accuracy	°	< 0.8	< 0.7	< 0.6	< 0.7
First Upper Sidelobe Suppression	dB	> 17	> 18	> 18	> 16
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 12.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	617 – 698	718 – 806	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.4	14.8	15.0	15.7
Gain over all Tilts	dBi	14.4 ± 0.7	14.8 ± 0.5	15.0 ± 0.6	15.6 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 8	64 ± 9	67 ± 7	66 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 19	> 23	> 21	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	10.2 ± 0.5	9.1 ± 0.5	8.6 ± 0.4	8.1 ± 0.7
Electrical Downtilt continuously adjustable	°	2 – 12			
Tilt Accuracy	°	< 0.5	< 0.7	< 0.8	< 0.6
First Upper Sidelobe Suppression	dB	> 18	> 20	> 19	> 18
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 12.0) requirements.

Preliminary Issue

Left side, lower midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.8	16.5	16.7	17.0	17.3
Gain over all Tilts	dBi	15.9 ± 0.7	16.5 ± 0.6	16.7 ± 0.6	17.0 ± 0.6	17.4 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68 ± 10	60 ± 5	60 ± 5	59 ± 4	51 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 23	> 24	> 24	> 22	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.4 ± 0.5	8.0 ± 0.5	7.7 ± 0.6	7.1 ± 0.4	6.7 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 19	> 18	> 19	> 21	> 20
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y1 // R1, R2, R3, Y2, Y3, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Left side, upper midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.1	15.7	15.9	16.2	16.9
Gain over all Tilts	dBi	15.1 ± 0.6	15.8 ± 0.6	15.9 ± 0.7	16.3 ± 0.7	17.0 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	71 ± 9	65 ± 5	67 ± 10	63 ± 8	52 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 21	> 24	> 25	> 23	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.6 ± 0.7	8.1 ± 0.5	7.7 ± 0.6	7.1 ± 0.3	6.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 15	> 16	> 16	> 21	> 20
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y2 // R1, R2, R3, Y1, Y3, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Preliminary Issue

Left side, center midband		Y3, connector 9–10					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.0	16.5	17.2	17.5	17.7	17.3
Gain over all Tilts	dBi	15.0 ± 0.5	16.5 ± 0.7	17.2 ± 0.8	17.5 ± 0.8	17.8 ± 0.6	17.4 ± 1.2
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	77 ± 11	64 ± 9	57 ± 6	55 ± 8	52 ± 7	48 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 28	> 30	> 30	> 31	> 30	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	9.3 ± 0.7	7.9 ± 0.5	7.6 ± 0.4	7.3 ± 0.6	6.6 ± 0.3	6.2 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.8	< 0.6	< 0.6	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 15	> 16	> 16	> 18	> 20
Intra-Cluster Isolation	dB	> 25					
Inter-Cluster Isolation	dB	> 25 (Y3 // R1, R2, R3, Y1, Y2, Y4, Y5, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 12.0) requirements.

Right side, center midband		Y4, connector 11–12					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.8	16.1	16.5	16.9	17.3	16.8
Gain over all Tilts	dBi	14.8 ± 0.7	16.0 ± 0.5	16.5 ± 0.8	16.9 ± 0.8	17.3 ± 0.5	16.9 ± 1.2
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	79 ± 9	65 ± 8	60 ± 5	57 ± 6	55 ± 6	50 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 29	> 27	> 28	> 31	> 31	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	9.2 ± 0.8	7.8 ± 0.5	7.5 ± 0.6	7.2 ± 0.6	6.6 ± 0.3	6.1 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.8	< 0.5	< 0.7	< 0.5	< 0.4	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 14	> 15	> 16	> 20	> 21
Intra-Cluster Isolation	dB	> 25					
Inter-Cluster Isolation	dB	> 25 (Y4 // R1, R2, R3, Y1, Y2, Y3, Y5, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 12.0) requirements.

Preliminary Issue

## Right side, lower midband

## Y5, connector 13–14

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2220	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.6	16.3	16.6	16.9	17.0
Gain over all Tilts	dBi	15.5 ± 0.7	16.2 ± 0.7	16.5 ± 0.7	16.9 ± 0.7	17.0 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	67 ± 9	60 ± 5	59 ± 7	56 ± 6	52 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 24	> 24	> 24	> 22	> 21
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.4 ± 0.6	8.1 ± 0.6	7.7 ± 0.7	7.1 ± 0.3	6.6 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.8	< 0.6	< 0.6	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 18	> 18	> 19	> 19	> 19
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y5 // R1, R2, R3, Y1, Y2, Y3, Y4, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Right side, upper midband

## Y6, connector 15–16

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2220	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.9	15.7	15.8	16.0	16.6
Gain over all Tilts	dBi	15.0 ± 0.7	15.7 ± 0.6	15.8 ± 0.4	16.1 ± 0.4	16.7 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	72 ± 9	65 ± 3	67 ± 6	64 ± 6	52 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 21	> 23	> 23	> 22	> 23
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.6 ± 0.8	8.0 ± 0.6	7.7 ± 0.6	7.1 ± 0.3	6.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.3	< 0.2	< 0.3
First Upper Sidelobe Suppression	dB	> 15	> 16	> 16	> 20	> 21
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y6 // R1, R2, R3, Y1, Y2, Y3, Y4, Y5)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Preliminary Issue

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 12.0) requirements.

\* not applicable for L-band

## Mechanical specifications

Input	16x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind Load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1036   233 Lateral: 457   103 Maximum360: 1237   278
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2597 / 499 / 225 102.2 / 19.6 / 8.9
Category of Mounting Hardware	XM (X-Medium)	
Weight (approx.)	kg lb	44 / 48.5 (clamps incl.) 97 / 106.9 (clamps incl.)
Packing Size	mm inches	2709 / 533 / 366 106.7 / 20.9 / 14.4
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Pole diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–9°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

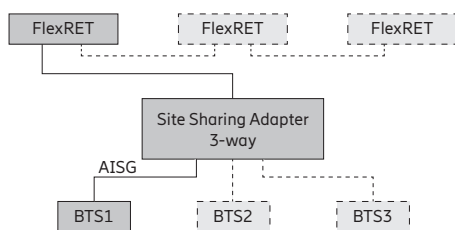
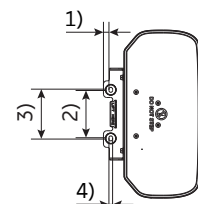
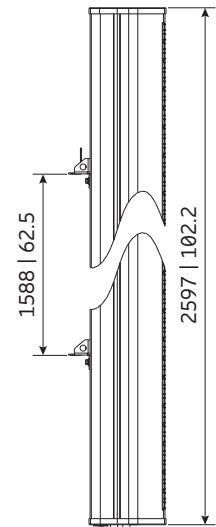
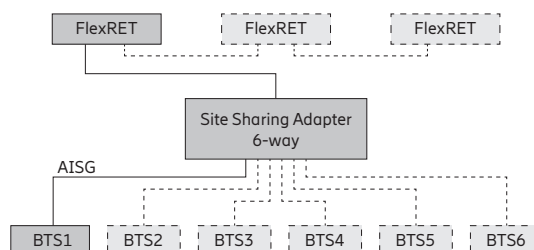
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Pole diameter: 55–115   2.2–4.5	1
KRY 121 117/2	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate pole diameter together with the downtilt kit.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

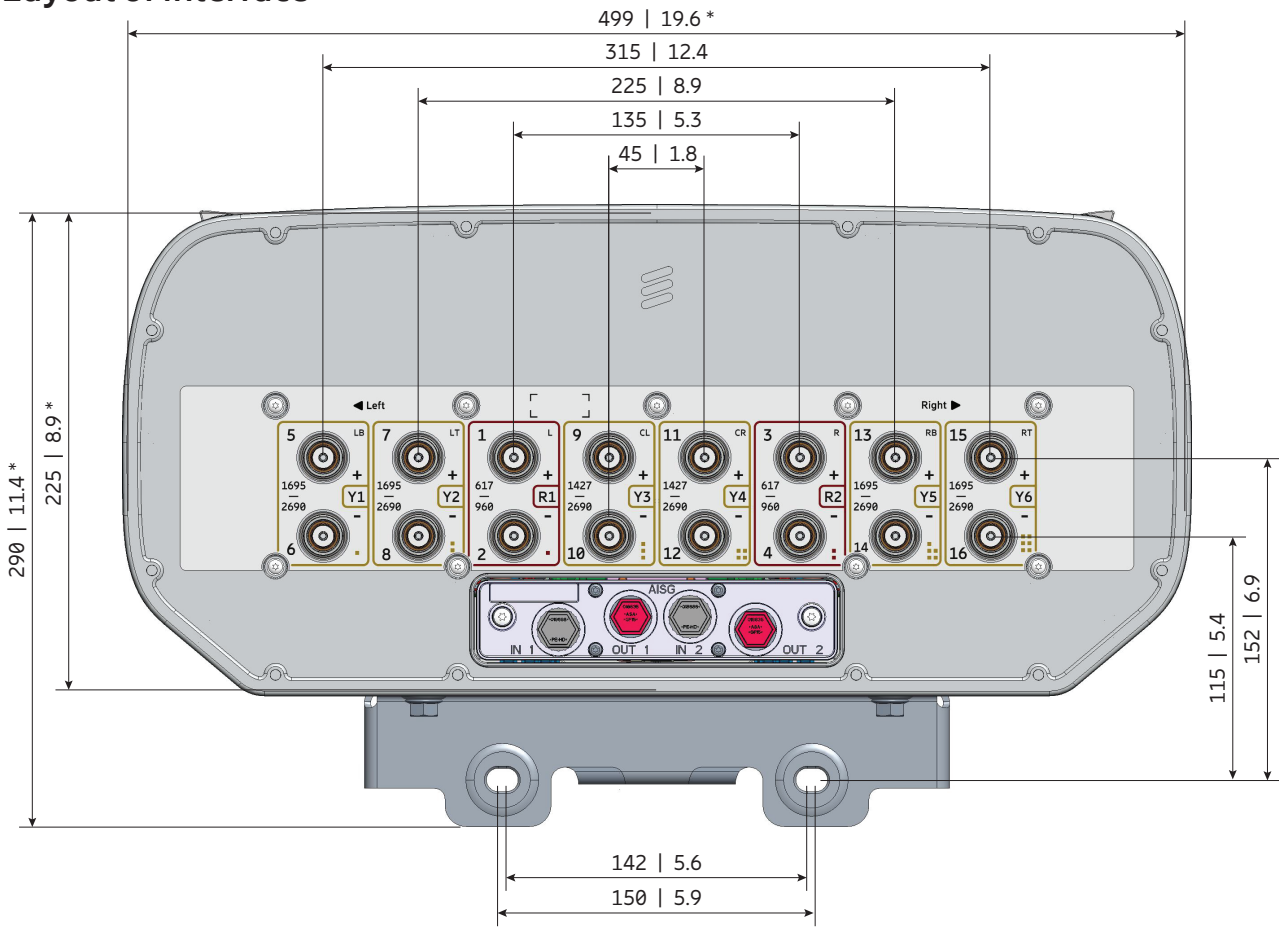
- 1) 16.5 | 0.6
- 2) 142 | 5.6
- 3) 150 | 5.9
- 4) 11 | 0.4

All dimensions  
in mm | inches

For more information please refer to the respective data sheets.

Preliminary Issue

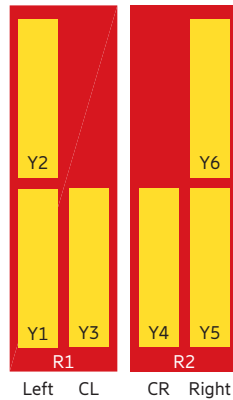
### Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
617–960 MHz	R1	1–2
617–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1427–2690 MHz	Y3	9–10
1427–2690 MHz	Y4	11–12
1695–2690 MHz	Y5	13–14
1695–2690 MHz	Y6	15–16





# Antenna 5500 2L 8M 2.0m

800482028

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 15.9 dBi  
 65° | 2x 1695–2690 MHz | 16.0 dBi  
 65° | 2x 1427–2690 MHz | 16.0 dBi  
 65° | 2x 1695–2180 MHz | 16.2 dBi  
 65° | 2x 2490–2690 MHz | 16.5 dBi  
 FlexRET

Common Tilt  
 B1 and B2: 2°–12°  
 Y3 and Y4: 2°–12°



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.4	15.6	15.9
Gain over all Tilts	dBi	15.0 ± 0.6	15.4 ± 0.5	15.6 ± 0.5	15.9 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 5.9	57 ± 5.3	55 ± 4.6	53 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 20	> 21	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.7 ± 1.0	11.0 ± 0.7	10.8 ± 0.5	10.2 ± 0.9
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 19	> 19	> 20	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	>25 (R1 // R2, B1, B2, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.9	15.4	15.7	16.0
Gain over all Tilts	dBi	14.9 ± 0.7	15.4 ± 0.5	15.7 ± 0.4	15.9 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	62 ± 6.5	57 ± 5.1	55 ± 4.8	52 ± 4.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 21	> 21	> 23
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.8 ± 1.1	11.0 ± 0.6	10.7 ± 0.5	10.2 ± 0.7
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 19	> 20	> 20	> 20
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	>25 (R2 // R1, B1, B2, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.



Left side, lower midband		Y1, connector 7–8					
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690	
Gain at mid Tilt	dBi	14.9	15.3	15.5	15.8	16.1	
Gain over all Tilts	dBi	14.9 ± 0.4	15.2 ± 0.5	15.4 ± 0.6	15.7 ± 0.5	16.1 ± 0.7	
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	70 ± 4.6	68 ± 7.4	66 ± 9.7	60 ± 5.3	54 ± 6.1	
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 27	> 27	> 29	> 28	
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	10.7 ± 1.0	9.9 ± 0.6	9.5 ± 0.8	8.6 ± 0.5	8.1 ± 0.5	
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.6	< 0.5	< 0.6	< 0.5	< 0.6	
First Upper Side Lobe Suppression	dB	> 16	> 15	> 16	> 17	> 18	
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>25 (Y1 // R1, R2, B1, B2, Y2, Y3, Y4, Y5, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, upper midband		Y2, connector 9–10					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.9	15.6	15.7	15.9	15.9	16.1
Gain over all Tilts	dBi	14.8 ± 0.4	15.5 ± 0.4	15.6 ± 0.6	15.8 ± 0.6	15.8 ± 0.6	16.1 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	66 ± 4.7	71 ± 5.0	71 ± 5.8	68 ± 6.8	62 ± 4.2	61 ± 6.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 26	> 27	> 28	> 29	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	11.3 ± 1.0	9.9 ± 0.6	9.3 ± 0.7	8.8 ± 0.7	7.9 ± 0.6	7.3 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.5	< 0.3	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 12	> 18	> 20	> 19	> 19	> 18
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>25 (Y2 // R1, R2, B1, B2, Y1, Y3, Y4, Y5, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, center midband		B1, connector 5–6			Y3, connector 11–12
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2490 – 2690
Gain at mid Tilt	dBi	16.1	16.2	16.1	16.5
Gain over all Tilts	dBi	16.0 ± 0.6	16.1 ± 0.7	16.0 ± 0.8	16.3 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	61 ± 11.7	62 ± 8.9	65 ± 10.0	63 ± 4.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 26	> 24	> 29
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.9 ± 0.7	7.2 ± 0.6	6.8 ± 0.6	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			2.0 – 12.0
Tilt Accuracy	°	< 0.3	< 0.4	< 0.4	< 0.2
First Upper Side Lobe Suppression	dB	> 19	> 16	> 15	> 17
Cross Polar Isolation	dB	> 25			> 25
Port to Port Isolation	dB	> 25 (B1 // R1, R2, B2, Y1, Y2, Y3, Y4, Y5, Y6)			> 25 (Y3 // R1, R2, B1, B2, Y1, Y2, Y4, Y5, Y6)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)			120 (at 50 °C ambient temperature)
Max. Effective Power per Group of Ports 5+11 // 6+12	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, center midband		B2, connector 17–18			Y4, connector 19–20
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2180	2490 – 2690
Gain at mid Tilt	dBi	16.2	16.3	16.2	16.5
Gain over all Tilts	dBi	16.1 ± 0.5	16.1 ± 0.7	16.0 ± 0.9	16.3 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	61 ± 9.4	61 ± 8.5	65 ± 11.1	64 ± 4.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 24	> 23	> 28
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.8 ± 0.6	7.1 ± 0.5	6.8 ± 0.5	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			2.0 – 12.0
Tilt Accuracy	°	< 0.3	< 0.3	< 0.4	< 0.2
First Upper Side Lobe Suppression	dB	> 17	> 17	> 15	> 17
Cross Polar Isolation	dB	> 25			> 25
Port to Port Isolation	dB	> 25 (B2 // R1, R2, B1, Y1, Y2, Y3, Y4, Y5, Y6)			> 25 (Y4 // R1, R2, B1, B2, Y1, Y2, Y3, Y5, Y6)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)			120 (at 50 °C ambient temperature)
Max. Effective Power per Group of Ports 17+19 // 18+20	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lower midband		Y5, connector 13–14					
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690	
Gain at mid Tilt	dBi	14.7	15.0	15.2	15.5	16.0	
Gain over all Tilts	dBi	14.7 ± 0.5	14.9 ± 0.5	15.2 ± 0.7	15.5 ± 0.4	15.9 ± 0.6	
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	71 ± 6.1	71 ± 9.1	66 ± 11.7	61 ± 4.8	54 ± 5.7	
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 26	> 27	> 26	> 27	
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	10.8 ± 1.0	10.0 ± 0.6	9.5 ± 0.8	8.6 ± 0.5	8.1 ± 0.5	
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.5	< 0.4	< 0.5	< 0.5	< 0.5	
First Upper Side Lobe Suppression	dB	> 17	> 16	> 17	> 18	> 19	
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>25 (Y5 // R1, R2, B1, B2, Y1, Y2, Y3, Y4, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, upper midband		Y6, connector 15–16					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.8	15.6	15.9	16.0	16.0	16.0
Gain over all Tilts	dBi	14.8 ± 0.4	15.6 ± 0.5	15.8 ± 0.6	15.9 ± 0.6	15.9 ± 0.7	16.0 ± 0.7
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	67 ± 4.9	71 ± 4.3	69 ± 4.5	67 ± 5.4	61 ± 4.7	62 ± 6.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 26	> 27	> 28	> 27	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	11.6 ± 1.1	10.0 ± 0.6	9.3 ± 0.5	8.9 ± 0.6	8.1 ± 0.6	7.3 ± 0.7
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.6	< 0.3	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 13	> 18	> 20	> 20	> 18	> 16
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>25 (Y6 // R1, R2, B1, B2, Y1, Y2, Y3, Y4, Y5)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	+45, -45°
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	20 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 905   203 Maximal: 1030   232
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1999 / 488 / 164 78.7 / 19.2 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight (approx.)	kg lb	49.0 / 53.5 (clamps incl.) 108 / 117.7 (clamps incl.)
Packing Size	mm inches	2180 / 550 / 293 85.8 / 21.7 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1

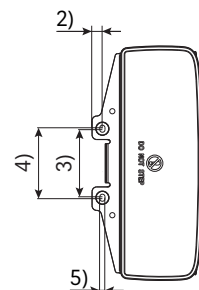
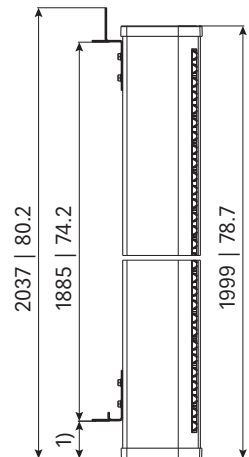
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1
KRY 121 108/1	Port Extender for FlexRET		

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

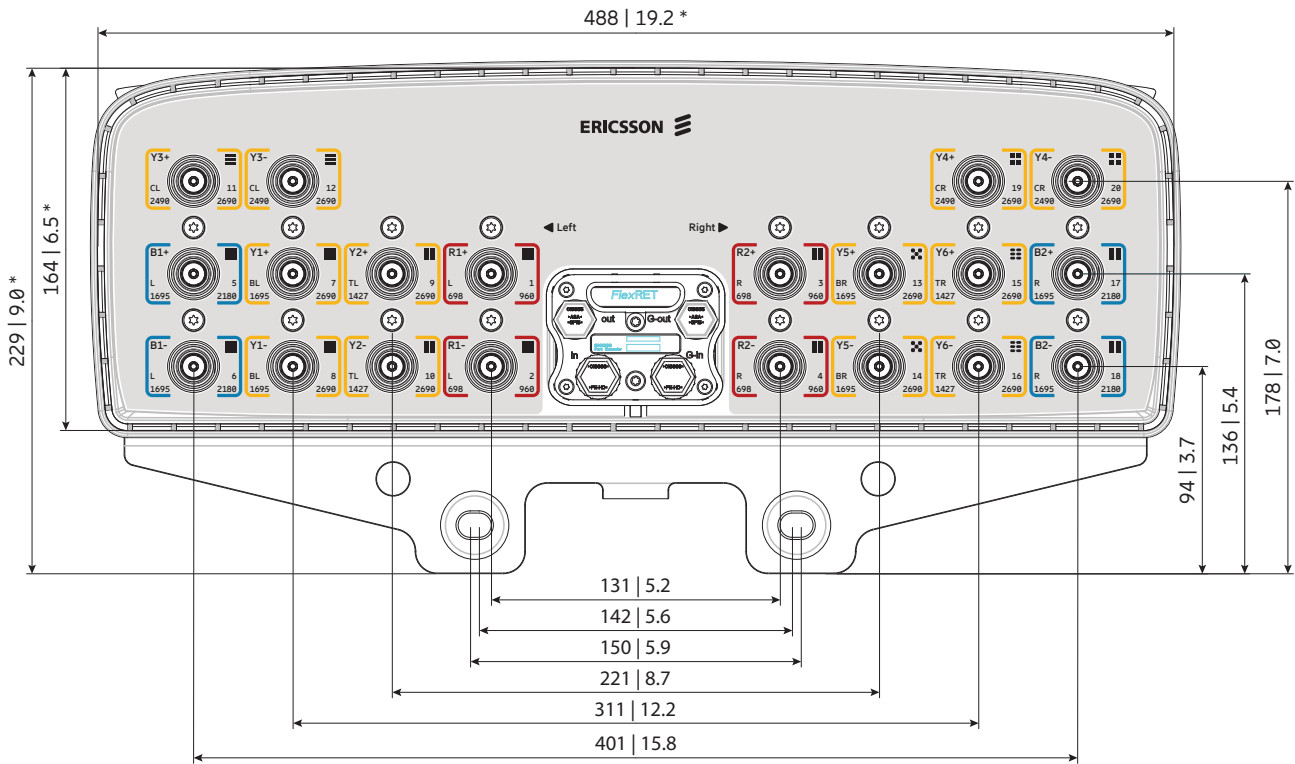
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



1) 79 | 3.1  
2) 22 | 0.9  
3) 142 | 5.6  
4) 150 | 5.9  
5)  $\varnothing$  11 | 0.4

All dimensions  
in mm | inches

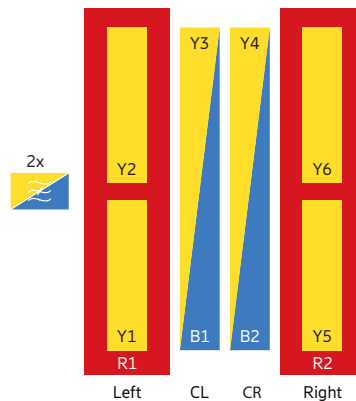
## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	7–8
1427–2690 MHz	Y2	9–10
1695–2180 MHz	B1	5–6
1695–2180 MHz	B2	17–18
2490–2690 MHz	Y3	11–12
2490–2690 MHz	Y4	19–20
1695–2690 MHz	Y5	13–14
1427–2690 MHz	Y6	15–16

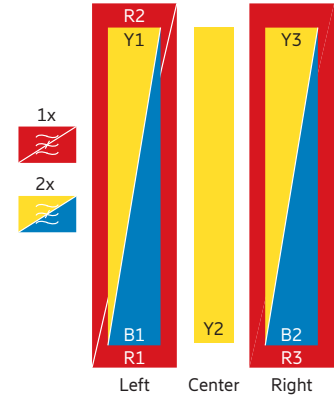


# Multi-Band Configuration

## 3LB nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
<b>3x Lowband   5x Midband</b>						
Antenna 4500 3L 5M 2.0m 800442001	1x 698–862	65	15.1	2–12	4.3-10	<a href="#">391</a>
	1x 880–960	65	15.4	2–12		
	1x 698–960	65	15.5	2–12		
	2x 1427–2170	65	17.1	2.5–12		
	2x 2500–2690	65	17.0	2.5–12		
	1x 1710–2690	65	18.8	2.5–12		
<b>3x Lowband   6x Midband</b>						
Antenna 5570 3L 6M 2.6m KRE 101 2543/1	1x 617–698	65	14.4	2–12	4.3-10	<a href="#">397</a>
	1x 718–960	65	15.3	2–12		
	1x 617–960	65	15.7	2–12		
	2x 1427–2690	65	17.7	2–12		
	4x 1695–2690	65	17.3	2–12		

[New product](#)



# Antenna 4500 3L 5M 2.0m

## 800442001

3LB nMB

Capacity

Compact

Coverage

65° | 1x 698–862 MHz | 15.1 dBi  
 65° | 1x 880–960 MHz | 15.4 dBi  
 65° | 1x 698–960 MHz | 15.5 dBi  
 65° | 2x 1427–2170 MHz | 17.1 dBi  
 65° | 2x 2500–2690 MHz | 17.0 dBi  
 65° | 1x 1710–2690 MHz | 18.8 dBi  
 FlexRET



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Left side, lowbands		R1, connector 1–2		R2, connector 3–4
Frequency Range	MHz	698 – 806	790 – 862	880 – 960
Gain at mid Tilt	dBi	14.4	15.1	15.5
Gain over all Tilts	dBi	14.4 ± 0.5	15.1 ± 0.6	15.4 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	66 ± 6.3	62 ± 4.4	62 ± 5.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 20	> 23
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.5 ± 0.9	10.8 ± 0.6	9.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		2.0 – 12.0
Tilt Accuracy	°	< 0.5	< 0.6	< 0.4
First Upper Side Lobe Suppression	dB	> 15	> 16	> 15
Cross Polar Isolation	dB	> 25		> 25
Port to Port Isolation	dB	> 25 (R1 // R2, R3) typically > 26, typically 30 (R1 // Y1, Y2, Y3, B1, B2)		> 25 (R2 // R1, R3) typically > 26, typically 30 (R2 // Y1, Y2, Y3, B1, B2)
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)		200 (at 50 °C ambient temperature)
Max. Effective Power for Group of Ports 1+3 // 2+4	W	400 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R3, connector 5–6		
Frequency Range	MHz	698 – 806	790 – 862	880 – 960
Gain at mid Tilt	dBi	14.5	15.3	15.6
Gain over all Tilts	dBi	14.5 ± 0.5	15.2 ± 0.6	15.5 ± 0.5
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	66 ± 4.5	63 ± 4.8	61 ± 4.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 20	> 20
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.4 ± 0.9	10.8 ± 0.6	9.9 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.5	< 0.6	< 0.6
First Upper Side Lobe Suppression	dB	> 17	> 18	> 17
Cross Polar Isolation	dB	> 25		
Port to Port Isolation	dB	> 25 (R3 // R1, R2) typically > 26, typically 30 (R3 // Y1, Y2, Y3, B1, B2)		
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.



Left side, midbands		B1, connector 7–8			Y1, connector 11–12
Frequency Range	MHz	1427 – 1518	1710 – 1880	1920 – 2170	2500 – 2690
Gain at mid Tilt	dBi	15.6	17.0	17.3	17.2
Gain over all Tilts	dBi	15.5 ± 0.6	16.9 ± 0.6	17.1 ± 0.7	17.0 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	69 ± 3.5	63 ± 5.1	63 ± 4.8	57 ± 2.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 26	> 25	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.7 ± 0.4	6.4 ± 0.3	5.8 ± 0.4	4.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			2.5 – 12.0
Tilt Accuracy	°	< 0.5	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 17	> 17	> 18	> 15
Cross Polar Isolation	dB	> 26			> 26
Port to Port Isolation	dB	> 26, typically 30 (B1 // R1, R2, R3, B2, Y1, Y2, Y3)			> 26, typically 30 (Y1 // R1, R2, R3, B1, B2, Y2, Y3)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)			150 (at 50 °C ambient temperature)
Max. Effective Power for Group of Ports 7+ 11 // 8+ 12	W	180 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midbands		B2, connector 9–10			Y3, connector 15–16
Frequency Range	MHz	1427 – 1518	1710 – 1880	1920 – 2170	2500 – 2690
Gain at mid Tilt	dBi	15.6	16.9	17.2	17.2
Gain over all Tilts	dBi	15.5 ± 0.7	16.8 ± 0.6	17.1 ± 0.7	17 ± 0.7
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 4.7	63 ± 5.7	63 ± 5.5	56 ± 3.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 26	> 25	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	7.8 ± 0.6	6.4 ± 0.3	5.8 ± 0.4	4.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.5 – 12.0			2.5 – 12.0
Tilt Accuracy	°	< 0.5	< 0.4	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 18	> 16	> 17	> 16
Cross Polar Isolation	dB	> 26			> 26
Port to Port Isolation	dB	> 26, typically 30 (B2 // R1, R2, R3, B1, Y1, Y2, Y3)			> 26, typically 30 (Y3 // R1, R2, R3, B1, B2, Y1, Y2)
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)			150 (at 50 °C ambient temperature)
Max. Effective Power for Group of Ports 9+ 15 // 10+ 16	W	180 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, midband		Y2, connector 13 – 14		
Frequency Range	MHz	1710 – 1880	1920 – 2170	2500 – 2690
Gain at mid Tilt	dBi	17.6	18.3	19
Gain over all Tilts	dBi	17.5 ± 0.5	18.2 ± 0.8	18.8 ± 0.8
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	58 ± 6.1	58 ± 3.2	61 ± 2.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 27	> 30
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	6.9 ± 0.4	6.4 ± 0.5	5.1 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 12.0		
Tilt Accuracy	°	< 0.6	< 0.6	< 0.5
First Upper Side Lobe Suppression	dB	> 15	> 16	> 17
Cross Polar Isolation	dB	> 26		
Port to Port Isolation	dB	> 26 (Y2 // R1, R2, R3, B1, B2, Y1, Y3)		
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

\* not applicable for L-band

## Mechanical specifications

Input	16 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 690   155 Maximal: 925   208
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1944 / 448 / 164 76.5 / 17.6 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	47 / 51.5 (clamps incl.) 108.0 / 116.9 (clamps incl.)
Packing Size	mm inches	2095 / 510 / 293 82.5 / 20.1 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	Solely to be used in combination with a compatible FlexRET module	1
KRY 121 108/1	Port Extender		1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

## Material:

**Reflector screen:** Aluminum.

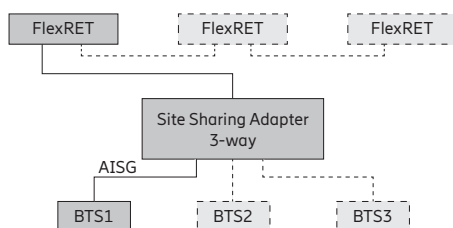
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

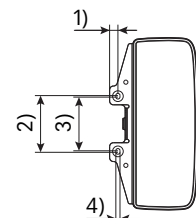
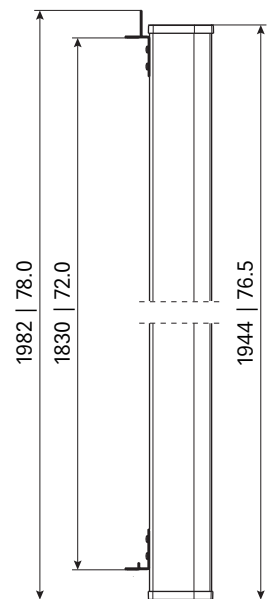
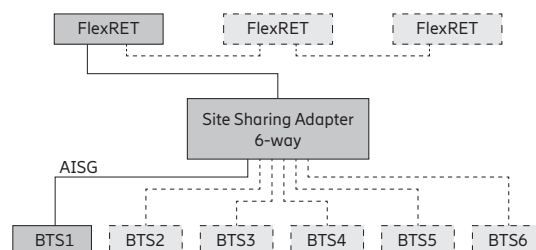
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Configuration example with Site Sharing Adapter 86010154



## Configuration example with Site Sharing Adapter 86010155

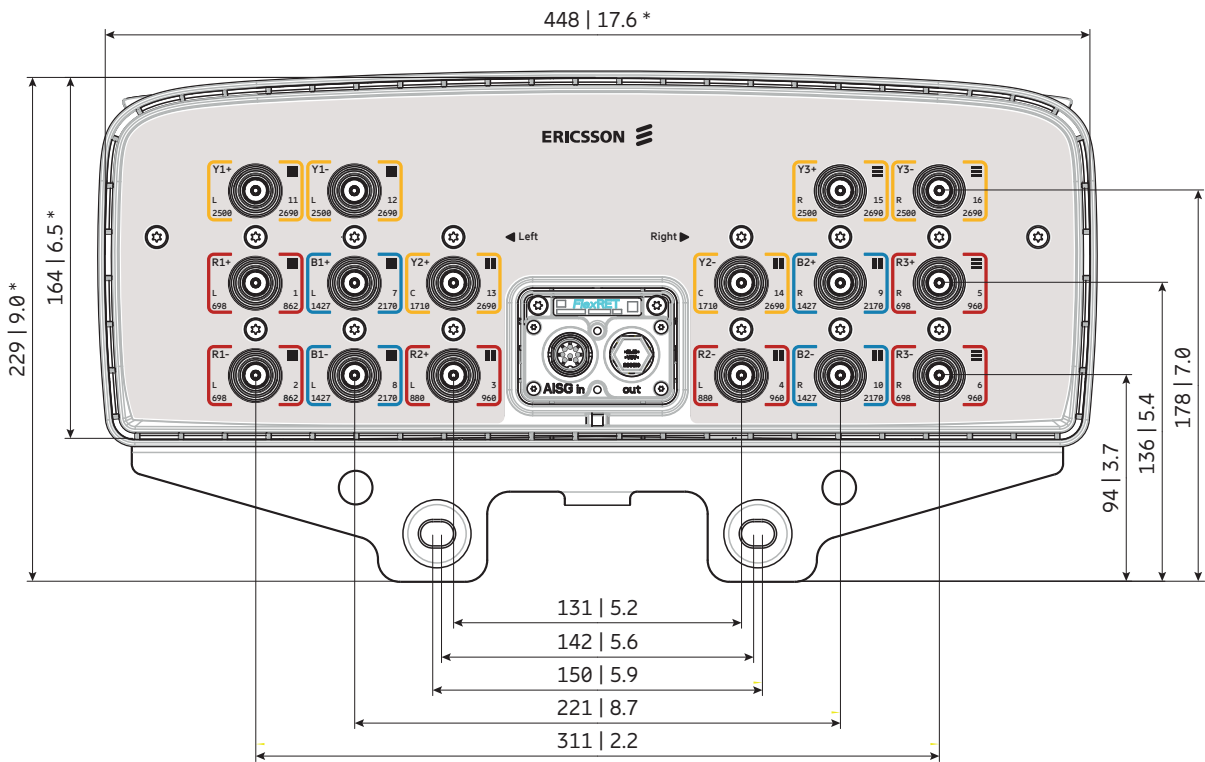


- 1) 22 | 0.9  
2) 150 | 5.9  
3) 142 | 5.6  
4) 11 | 0.4

All dimensions in mm | inches

For more information please refer to the respective data sheets.

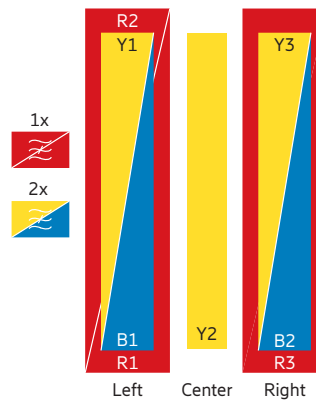
## Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–862 MHz	R1	1–2
880–960 MHz	R2	3–4
698–960 MHz	R3	5–6
1427–2170 MHz	B1	7–8
1427–2170 MHz	B2	9–10
2500–2690 MHz	Y1	11–12
1710–2690 MHz	Y2	13–14
2500–2690 MHz	Y3	15–16



New product  
Preliminary Issue

# Antenna 5570 3L 6M 2.6m

## KRE 101 2543/1

3LB nMB

Capacity

Compact

Coverage

65° | 1x 617–698 MHz | 14.4 dBi  
 65° | 1x 718–960 MHz | 15.3 dBi  
 65° | 1x 617–960 MHz | 15.7 dBi  
 65° | 2x 1427–2690 MHz | 17.7 dBi  
 65° | 4x 1695–2690 MHz | 17.3 dBi  
 18x 4.3-10  
 FlexRET

Common Tilt  
 R1 and R2: 2°–12°



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Preliminary Issue

Left side, lowbands		R1, connector 1–2	R2, connector 3–4		
Frequency Range	MHz	617 – 698	718 – 806	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.4	14.6	14.8	15.3
Gain over all Tilts	dBi	14.4 ± 0.8	14.5 ± 0.4	14.7 ± 0.7	15.3 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 6	65 ± 8	68 ± 7	67 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 18	> 21	> 19	> 20
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	10.3 ± 0.6	9.3 ± 0.5	8.7 ± 0.4	8.2 ± 0.6
Electrical Downtilt continuously adjustable	°	2 – 12			
Tilt Accuracy	°	< 0.8	< 0.7	< 0.6	< 0.7
First Upper Sidelobe Suppression	dB	> 17	> 18	> 18	> 16
Intra-Cluster Isolation	dB	> 25	> 25		
Inter-Cluster Isolation	dB	> 25 (R1 // R2, R3, Y1, Y2, Y3, Y4, Y5, Y6)	> 25 (R2 // R1, R3, Y1, Y2, Y3, Y4, Y5, Y6)		
Max. Effective Power per Port	W	150 (at 50 °C ambient temperature)	250 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 12.0) requirements.

Right side, lowband		R3, connector 5–6			
Frequency Range	MHz	617 – 698	718 – 806	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.4	14.8	15.0	15.7
Gain over all Tilts	dBi	14.4 ± 0.7	14.8 ± 0.5	15.0 ± 0.6	15.6 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 8	64 ± 9	67 ± 7	66 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 19	> 23	> 21	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	10.2 ± 0.5	9.1 ± 0.5	8.6 ± 0.4	8.1 ± 0.7
Electrical Downtilt continuously adjustable	°	2 – 12			
Tilt Accuracy	°	< 0.5	< 0.7	< 0.8	< 0.6
First Upper Sidelobe Suppression	dB	> 18	> 20	> 19	> 18
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 25 (R3 // R1, R2, Y1, Y2, Y3, Y4, Y5, Y6)			
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 12.0) requirements.

Preliminary Issue

Left side, lower midband		Y1, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.8	16.5	16.7	17.0	17.3
Gain over all Tilts	dBi	15.9 ± 0.7	16.5 ± 0.6	16.7 ± 0.6	17.0 ± 0.6	17.4 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68 ± 10	60 ± 5	60 ± 5	59 ± 4	51 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 23	> 24	> 24	> 22	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.4 ± 0.5	8.0 ± 0.5	7.7 ± 0.6	7.1 ± 0.4	6.7 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.4	< 0.3	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 19	> 18	> 19	> 21	> 20
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y1 // R1, R2, R3, Y2, Y3, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Left side, upper midband		Y2, connector 9–10				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.1	15.7	15.9	16.2	16.9
Gain over all Tilts	dBi	15.1 ± 0.6	15.8 ± 0.6	15.9 ± 0.7	16.3 ± 0.7	17.0 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	71 ± 9	65 ± 5	67 ± 10	63 ± 8	52 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 21	> 24	> 25	> 23	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.6 ± 0.7	8.1 ± 0.5	7.7 ± 0.6	7.1 ± 0.3	6.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.3	< 0.3	< 0.3
First Upper Sidelobe Suppression	dB	> 15	> 16	> 16	> 21	> 20
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y2 // R1, R2, R3, Y1, Y3, Y4, Y5, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Preliminary Issue

## Left side, center midband

## Y3, connector 11–12

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.0	16.5	17.2	17.5	17.7	17.3
Gain over all Tilts	dBi	15.0 ± 0.5	16.5 ± 0.7	17.2 ± 0.8	17.5 ± 0.8	17.8 ± 0.6	17.4 ± 1.2
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	77 ± 11	64 ± 9	57 ± 6	55 ± 8	52 ± 7	48 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 28	> 30	> 30	> 31	> 30	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	9.3 ± 0.7	7.9 ± 0.5	7.6 ± 0.4	7.3 ± 0.6	6.6 ± 0.3	6.2 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.8	< 0.6	< 0.6	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 15	> 16	> 16	> 18	> 20
Intra-Cluster Isolation	dB	> 25					
Inter-Cluster Isolation	dB	> 25 (Y3 // R1, R2, R3, Y1, Y2, Y4, Y5, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Right side, center midband

## Y4, connector 13–14

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.8	16.1	16.5	16.9	17.3	16.8
Gain over all Tilts	dBi	14.8 ± 0.7	16.0 ± 0.5	16.5 ± 0.8	16.9 ± 0.8	17.3 ± 0.5	16.9 ± 1.2
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	79 ± 9	65 ± 8	60 ± 5	57 ± 6	55 ± 6	50 ± 6
Front-to-Back Ratio, Total Power, ±30°	dB	> 29	> 27	> 28	> 31	> 31	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	9.2 ± 0.8	7.8 ± 0.5	7.5 ± 0.6	7.2 ± 0.6	6.6 ± 0.3	6.1 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12					
Tilt Accuracy	°	< 0.8	< 0.5	< 0.7	< 0.5	< 0.4	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 14	> 15	> 16	> 20	> 21
Intra-Cluster Isolation	dB	> 25					
Inter-Cluster Isolation	dB	> 25 (Y4 // R1, R2, R3, Y1, Y2, Y3, Y5, Y6)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 12.0) requirements.



Preliminary Issue

## Right side, lower midband

## Y5, connector 15–16

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2220	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.6	16.3	16.6	16.9	17.0
Gain over all Tilts	dBi	15.5 ± 0.7	16.2 ± 0.7	16.5 ± 0.7	16.9 ± 0.7	17.0 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	67 ± 9	60 ± 5	59 ± 7	56 ± 6	52 ± 5
Front-to-Back Ratio, Total Power, ±30°	dB	> 24	> 24	> 24	> 22	> 21
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.4 ± 0.6	8.1 ± 0.6	7.7 ± 0.7	7.1 ± 0.3	6.6 ± 0.5
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.8	< 0.6	< 0.6	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 18	> 18	> 19	> 19	> 19
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y5 // R1, R2, R3, Y1, Y2, Y3, Y4, Y6)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Right side, upper midband

## Y6, connector 17–18

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2220	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	14.9	15.7	15.8	16.0	16.6
Gain over all Tilts	dBi	15.0 ± 0.7	15.7 ± 0.6	15.8 ± 0.4	16.1 ± 0.4	16.7 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	72 ± 9	65 ± 3	67 ± 6	64 ± 6	52 ± 4
Front-to-Back Ratio, Total Power, ±30°	dB	> 21	> 23	> 23	> 22	> 23
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.6 ± 0.8	8.0 ± 0.6	7.7 ± 0.6	7.1 ± 0.3	6.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2 – 12				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.3	< 0.2	< 0.3
First Upper Sidelobe Suppression	dB	> 15	> 16	> 16	> 20	> 21
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y6 // R1, R2, R3, Y1, Y2, Y3, Y4, Y5)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 12.0) requirements.

Preliminary Issue

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 12.0) requirements.

\* not applicable for L-band

## Mechanical specifications

Input	18x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind Load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1036   233 Lateral: 457   103 Maximum360: 1237   278
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2597 / 499 / 225 102.2 / 19.6 / 8.9
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	46.5 / 51.0 (clamps incl.) 102.5 / 112.4 (clamps incl.)
Packing Size	mm inches	2709 / 533 / 366 106.7 / 20.9 / 14.4
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

Values based on NGMN-P-BASTA (version 12.0) requirements.

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Pole diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–9°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	

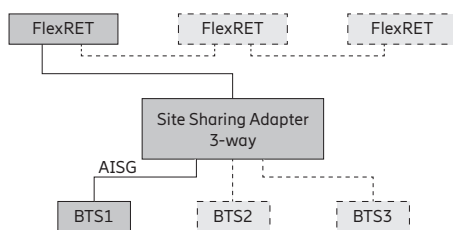
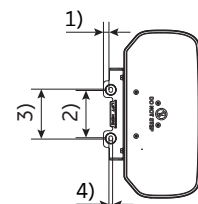
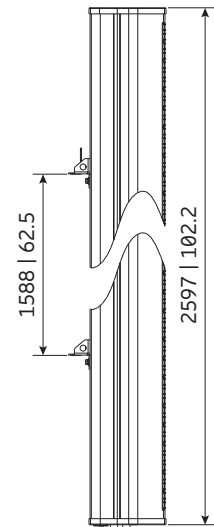
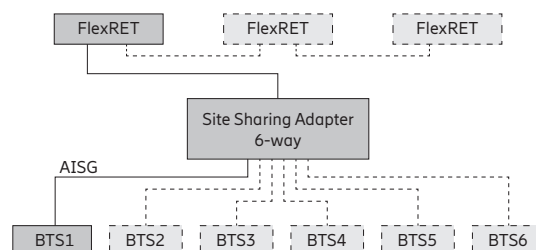
## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Pole diameter: 55–115   2.2–4.5	1
KRY 121 117/2	FlexRET	Compliant to 3GPP / AISG 2.0 – AISG 3	1

For downtilt mounting use the clamps for an appropriate pole diameter together with the downtilt kit.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

Configuration example  
with Site Sharing Adapter 86010154Configuration example  
with Site Sharing Adapter 86010155

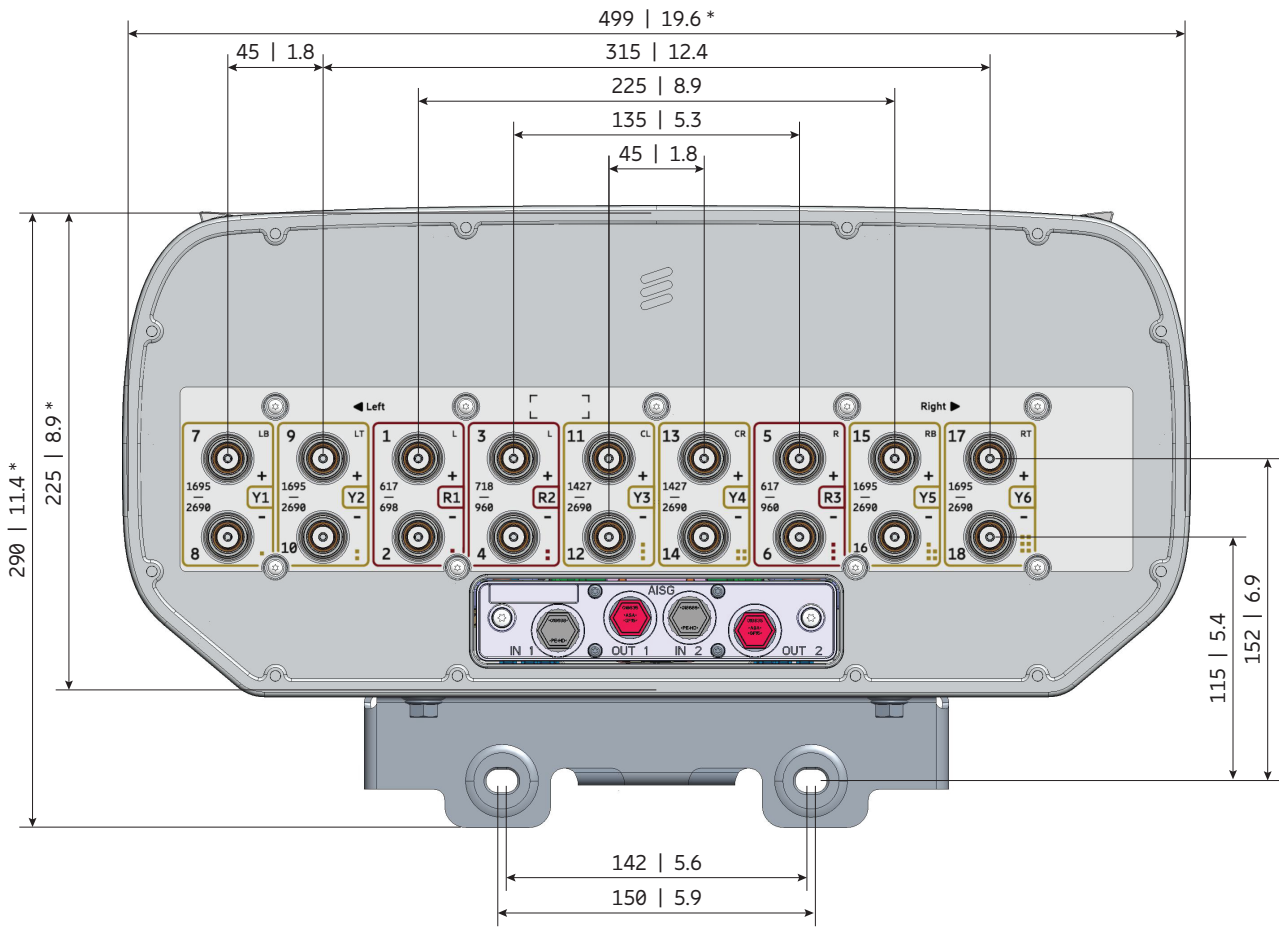
- 1) 16.5 | 0.6
- 2) 142 | 5.6
- 3) 150 | 5.9
- 4) 11 | 0.4

All dimensions  
in mm | inches

For more information please refer to the respective data sheets.

Preliminary Issue

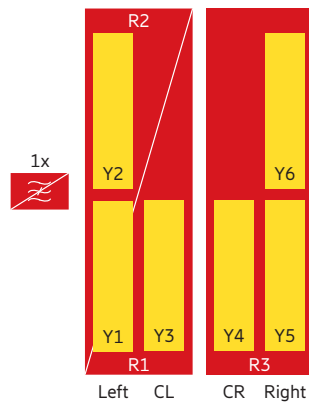
### Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
617–698 MHz	R1	1–2
718–960 MHz	R2	3–4
617–960 MHz	R3	5–6
1695–2690 MHz	Y1	7–8
1695–2690 MHz	Y2	9–10
1427–2690 MHz	Y3	11–12
1427–2690 MHz	Y4	13–14
1695–2690 MHz	Y5	15–16
1695–2690 MHz	Y6	17–18



# TDD Configuration nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
4x Midband						
Antenna 2602 0L 4M 0.9m KRE 101 2475/1	4x 3300–3800	90	15.7	2–12	4.3-10	<a href="#">405</a>
Antenna 2603 0L 4M 0.9m KRE 101 2531/1	4x 3300–3800	90	15.5	2–12	MQ4/MQ5 socket	<a href="#">411</a>
Antenna 2600 0L 4M 1.5m 845350910	4x 2300–2690	90	16.5	2–12	4.3-10	<a href="#">417</a>



# Antenna 2602 0L 4M 0.9m

KRE 101 2475/1

Capacity

Compact

Coverage

90° | 4x 3300–3800 MHz | 15.7 dBi  
Integrated RET



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TDD nMB

Left side, midband		P1, connector 1–2		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Gain at mid Tilt	dBi	15.2	15.4	15.4
Gain over all Tilts	dBi	15.1 ± 0.6	15.2 ± 0.6	15.2 ± 0.8
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	97 ± 5.0	94 ± 4.7	90 ± 9.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 17	> 17	> 16
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	6.1 ± 0.3	5.9 ± 0.4	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.3	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 13	> 13	> 11
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 13	> 12	> 11
Cross Polar Isolation	dB	> 23		
Port to Port Isolation	dB	> 28 (P1 // P2, P3, P4)		
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)		
Max. Effective Power Ports P1	W	80 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center left side, midband		P2, connector 3–4		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Gain at mid Tilt	dBi	14.9	15.3	15.6
Gain over all Tilts	dBi	14.8 ± 0.5	15.1 ± 0.6	15.4 ± 0.8
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	102 ± 4.0	95 ± 5.6	85 ± 12.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 21	> 20
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	6.1 ± 0.3	6.0 ± 0.3	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.4	< 0.5	< 0.5
First Upper Side Lobe Suppression	dB	> 13	> 13	> 12
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 13	> 12	> 12
Cross Polar Isolation	dB	> 23		
Port to Port Isolation	dB	> 28 (P2 // P1, P3, P4)		
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)		
Max. Effective Power Ports P2	W	80 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center right side, midband		P3, connector 5–6		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Gain at mid Tilt	dBi	14.9	15.3	15.5
Gain over all Tilts	dBi	14.8 ± 0.5	15.0 ± 0.6	15.2 ± 0.8
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	102 ± 4.8	95 ± 6.3	88 ± 9.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 19	> 19
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	6.2 ± 0.3	6.0 ± 0.4	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.3	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 12	> 13	> 11
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 12	> 12	> 11
Cross Polar Isolation	dB	> 23		
Port to Port Isolation	dB	> 28 (P3 // P1, P2, P4)		
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)		
Max. Effective Power Ports P3	W	80 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		P4, connector 7–8		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Gain at mid Tilt	dBi	15.2	15.3	15.3
Gain over all Tilts	dBi	15.0 ± 0.5	15.1 ± 0.6	15.0 ± 0.8
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	96 ± 3.2	94 ± 3.7	91 ± 13.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 17	> 16	> 16
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	6.1 ± 0.4	5.9 ± 0.4	5.6 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.4	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 11	> 11	> 10
Upper Side Lobe Suppression, 20° Sector above Main Beam	dB	> 11	> 11	> 10
Cross Polar Isolation	dB	> 23		
Port to Port Isolation	dB	> 28 (P4 // P1, P2, P3)		
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)		
Max. Effective Power Ports P4	W	80 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

**Broadcast Beam at mid Tilt**

Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Azimuth 3dB Beamwidth	°	65	65	65
Gain	dB	16.5	16.5	16.5
Gain roll-off at Sector Edge	dB	8	8	8
Cross Polar Ratio (0°)	dB	> 15	> 12	> 10
Front-to-back Ratio	dB	> 21	> 23	> 25

**Service Beam at mid Tilt**

0° Direct Beam Gain	dB	20.7	20.8	20.7
0° Direction Beam Horizontal 3dB Beam Width	°	25.1	23.4	21.8
0° Direction Beam Horizontal SLS	dB	> 14	> 14	> 14
0° Direction Beam Cross polar Ratio	dB	> 15	> 13	> 11
0° Direction Beam Front-to-Back Ratio	dB	> 23	> 22	> 23
±30° Direct Beam Gain	dB	20.0	20.1	19.8
±30° Direction Beam Horizontal 3dB Beam Width	°	27.0	25.8	24.8
±30° Direction Beam Horizontal SLS	dB	> 14	> 10	> 5
30° Direction Beam Cross polar Ratio	dB	> 15	> 15	> 15
±30° Direction Beam Front-to-Back Ratio	dB	> 22	> 22	> 21

**Multi Beam at mid Tilt**

Horizontal 3dB Beam Width	°	32.7	32.0	31.5
Gain	dB	19.3	19.2	18.9
0° Direction Beam Horizontal SLS	dB	9	7	5

**Calibration and electrical parameters**

Coupling factor between each antenna column and cal network	dB	-26 ± 1 (equal power on all)
Max. amplitude tolerance from calibration port to input ports	dB	± 0.5 (within ±45° or -45° Pol Ports)
Max. phase tolerance cal network	°	±10



**Electrical specifications, all ports**

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 23
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	320 (at 50 °C ambient temperature)

**Power rating at installation scenario**

Max. allowed output power per port TDD radio to antenna*	W	60
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Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* For TDD radio configured with DL ratio 66 % (DDDSUDDSUU) TDD pattern. Connection via jumper cables > 0.3 dB IL

**Mechanical specifications**

Input	8x 4.3-10 female	
CAL	1x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 345   78 Maximal: 380   85
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	921 / 275 / 103 36.3 / 10.8 / 4.1
Category of Mounting Hardware	M (Medium)	
Weight	kg lb	7.0 / 9.2 (clamps incl.) 15.4 / 20.3 (clamps incl.)
Packing Size	mm inches	1150 / 340 / 185 45.3 / 13.4 / 7.3
Scope of Supply	Panel and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

**Accessories (order separately if required)**

Product No.	Description	Remarks mm   inches	Units per antenna
731651	1 clamp	Mast diameter: 28–60   1.1–2.4	2
85010002	1 clamp	Mast diameter: 110 – 220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
737978	1 downtilt kit	Downtilt angle: 0°–20°	1

**Accessories (included in the scope of supply)**

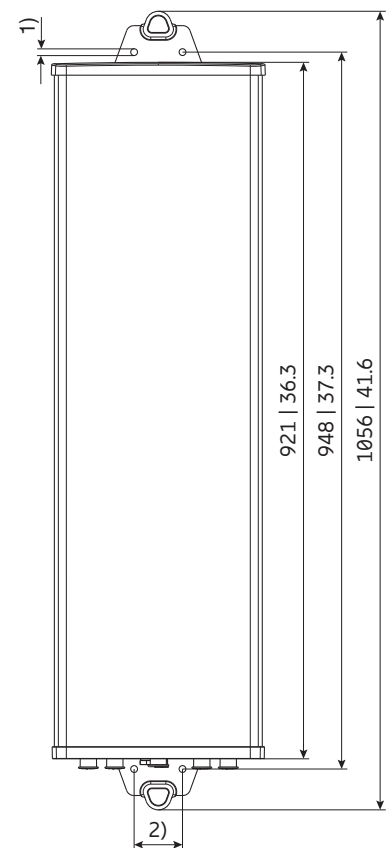
Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Mast diameter: 42–115   1.7–4.5	2
1690002182	IRCU		1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

Wall mounting: No additional mounting kit needed.

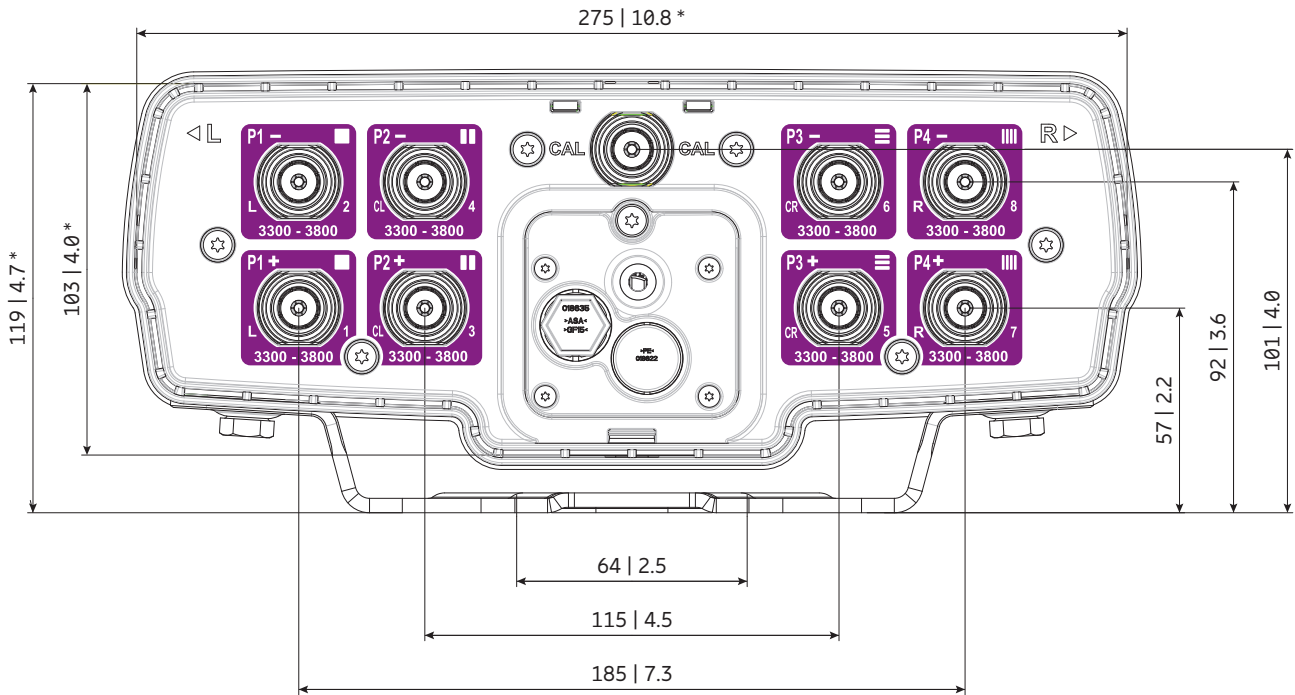
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



All dimensions in mm | inches  
1)  $\varnothing$  9 | 0.4  
2) 64 | 2.5

## Layout of interface



Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
3300–3800 MHz	P1	1–2
3300–3800 MHz	P2	3–4
3300–3800 MHz	P3	5–6
3300–3800 MHz	P4	7–8

### Attention:

Risk of damage if the RF Ports are connected incorrectly.  
 No RF power on CAL port allowed!





# Antenna 2603 0L 4M 0.9m

KRE 101 2531/1

**Capacity** Compact Coverage

90° | 4x 3300–3800 MHz | 15.5 dBi  
Integrated RET



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Left side, midband		P1 (L), connector 1.1–2.1		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Gain at mid Tilt	dBi	14.9	15.2	15.2
Gain over all Tilts	dBi	14.9 ± 0.5	15.2 ± 0.5	15.2 ± 0.6
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	95 ± 5.6	86 ± 7.5	80 ± 7.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 19	> 20
Cross Polar Discrimination at Boresight	dB	> 22	> 23	> 23
Azimuth Beam Squint	°	0 ± 3.2	2 ± 2.4	2 ± 2.4
Azimuth Beam Port-to-Port Tracking	dB	2.5	3.0	2.0
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	6.7 ± 0.3	6.4 ± 0.3	6.1 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.5	< 1.0	< 1.1
First Upper Sidelobe Suppression	dB	> 13	> 12	> 13
Intra-Cluster Isolation	dB	> 23		
Inter-Cluster Isolation	dB	> 23 (P1 (L) // P1 (CL) // P1 (CR) // P1 (R))		
Max. Effective Power per Port	W	40 (at 40 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center left side, midband		P1 (CL), connector 1.2–2.2		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Gain at mid Tilt	dBi	14.4	14.7	14.9
Gain over all Tilts	dBi	14.3 ± 0.4	14.6 ± 0.5	14.9 ± 0.6
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	109 ± 3.2	100 ± 7.1	92 ± 5.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 21	> 20
Cross Polar Discrimination at Boresight	dB	> 26	> 24	> 23
Azimuth Beam Squint	°	0 ± 1.2	0 ± 2.0	0 ± 1.0
Azimuth Beam Port-to-Port Tracking	dB	1.5	2.0	1.5
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	6.7 ± 0.4	6.5 ± 0.5	6.2 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.7	< 1.0	< 1.2
First Upper Sidelobe Suppression	dB	> 13	> 11	> 12
Intra-Cluster Isolation	dB	> 23		
Inter-Cluster Isolation	dB	> 23 (P1 (L) // P1 (CL) // P1 (CR) // P1 (R))		
Max. Effective Power per Port	W	40 (at 40 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center right side, midband		P1 (CR), connector 1.3–2.3		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Gain at mid Tilt	dBi	14.3	14.7	14.9
Gain over all Tilts	dBi	14.3 ± 0.4	14.7 ± 0.4	14.8 ± 0.5
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	109 ± 5.5	99 ± 8.2	92 ± 5.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 22	> 21
Cross Polar Discrimination at Boresight	dB	> 25	> 25	> 24
Azimuth Beam Squint	°	1 ± 2.0	0 ± 2.2	-1 ± 1.5
Azimuth Beam Port-to-Port Tracking	dB	1.5	2.5	1.5
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	6.7 ± 0.4	6.4 ± 0.3	6.1 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.4	< 0.9	< 1.1
First Upper Sidelobe Suppression	dB	> 15	> 13	> 13
Intra-Cluster Isolation	dB	> 23		
Inter-Cluster Isolation	dB	> 23 (P1 (L) // P1 (CL) // P1 (CR) // P1 (R))		
Max. Effective Power per Port	W	40 (at 40 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, midband		P1 (R), connector 1.4–2.4		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Gain at mid Tilt	dBi	15.0	15.2	15.4
Gain over all Tilts	dBi	14.9 ± 0.5	15.1 ± 0.5	15.3 ± 0.6
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	95 ± 4.1	86 ± 5.6	79 ± 8.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 19	> 20
Cross Polar Discrimination at Boresight	dB	> 23	> 23	> 23
Azimuth Beam Squint	°	1 ± 4.5	-2 ± 2.4	-3 ± 2.7
Azimuth Beam Port-to-Port Tracking	dB	2.5	3.0	3.0
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	6.6 ± 0.3	6.5 ± 0.5	6.1 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.4	< 0.7	< 0.9
First Upper Sidelobe Suppression	dB	> 12	> 11	> 11
Intra-Cluster Isolation	dB	> 23		
Inter-Cluster Isolation	dB	> 23 (P1 (L) // P1 (CL) // P1 (CR) // P1 (R))		
Max. Effective Power per Port	W	40 (at 40 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

**Broadcast Beam at mid Tilt**

Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Azimuth 3dB Beamwidth	°	65	65	65
Gain	dB	16.5	16.5	16.5
Gain roll-off at Sector Edge	dB	8	8	8
Cross Polar Ratio (0°)	dB	> 15	> 12	> 10
Front-to-back Ratio	dB	> 21	> 21	> 21

**Service Beam at mid Tilt**

0° Direct Beam Gain	dB	20.7	20.8	20.7
0° Direction Beam Horizontal 3dB Beam Width	°	25.1	23.4	21.8
0° Direction Beam Horizontal SLS	dB	> 14	> 14	> 14
0° Direction Beam Cross polar Ratio	dB	> 15	> 13	> 11
0° Direction Beam Front-to-Back Ratio	dB	> 23	> 22	> 23
±30° Direct Beam Gain	dB	20.0	20.1	19.8
±30° Direction Beam Horizontal 3dB Beam Width	°	27.0	25.8	24.8
±30° Direction Beam Horizontal SLS	dB	> 14	> 10	> 5
30° Direction Beam Cross polar Ratio	dB	> 15	> 15	> 15
±30° Direction Beam Front-to-Back Ratio	dB	> 22	> 22	> 21

**Multi Beam at mid Tilt**

Horizontal 3dB Beam Width	°	32.7	32.0	31.5
Gain	dB	19.3	19.2	18.9
0° Direction Beam Horizontal SLS	dB	9	7	5

**Calibration and electrical parameters**

Coupling factor between each antenna column and cal network	dB	-26 ± 2 (equal power on all)
Max. amplitude tolerance from calibration port to input ports	dB	± 1 (within ±45° or -45° Pol Ports)
Max. phase tolerance cal network	°	±10

## Electrical specifications, all ports

Impedance	Ω	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 23
Passive Intermodulation	dBc	< -120 (2 x 43 dBm carrier)
Polarization	°	+45, -45

## Power rating at installation scenario

Max. Effective Power for the Antenna*	W	320 (at 40 °C ambient temperature)
Max. allowed output power per port TDD radio to antenna*	W	50

Values based on NGMN-P-BASTA (version 11.1) requirements.  
\* For TDD radio configured with DL ratio 66 % (DDDSUDDSUU) TDD pattern. Connection via jumper cables > 0.3 dB IL

## Mechanical specifications

Input	MQ4 + MQ5	
CAL	-	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 220   49 Lateral: 220   49
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	916 / 275 / 100 36.1 / 10.8 / 3.9
Category of Mounting Hardware	M (Medium)	
Weight	kg lb	8.2 / 10.4 (clamps incl.) 18.1 / 22.9 (clamps incl.)
Packing Size	mm inches	1100 / 300 / 150 43.3 / 11.8 / 5.9
Scope of Supply	Panel and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
731651	1 clamp	Mast diameter: 28–60   1.1–2.4	2
85010002	1 clamp	Mast diameter: 110 – 220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
737978	1 downtilt kit	Downtilt angle: 0°–20°	1

## Accessories (included in the scope of supply)

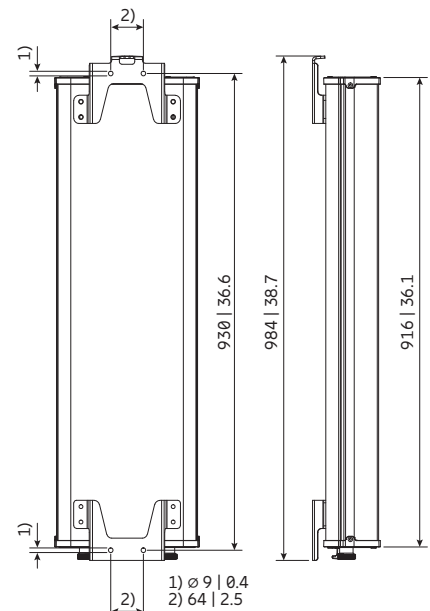
Product No.	Description	Remarks mm   inches	Units per antenna
738546	1 clamp	Mast diameter: 42–115   1.7–4.5	2
KRY 121 79/1	RET Unit		1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

Wall mounting: No additional mounting kit needed.

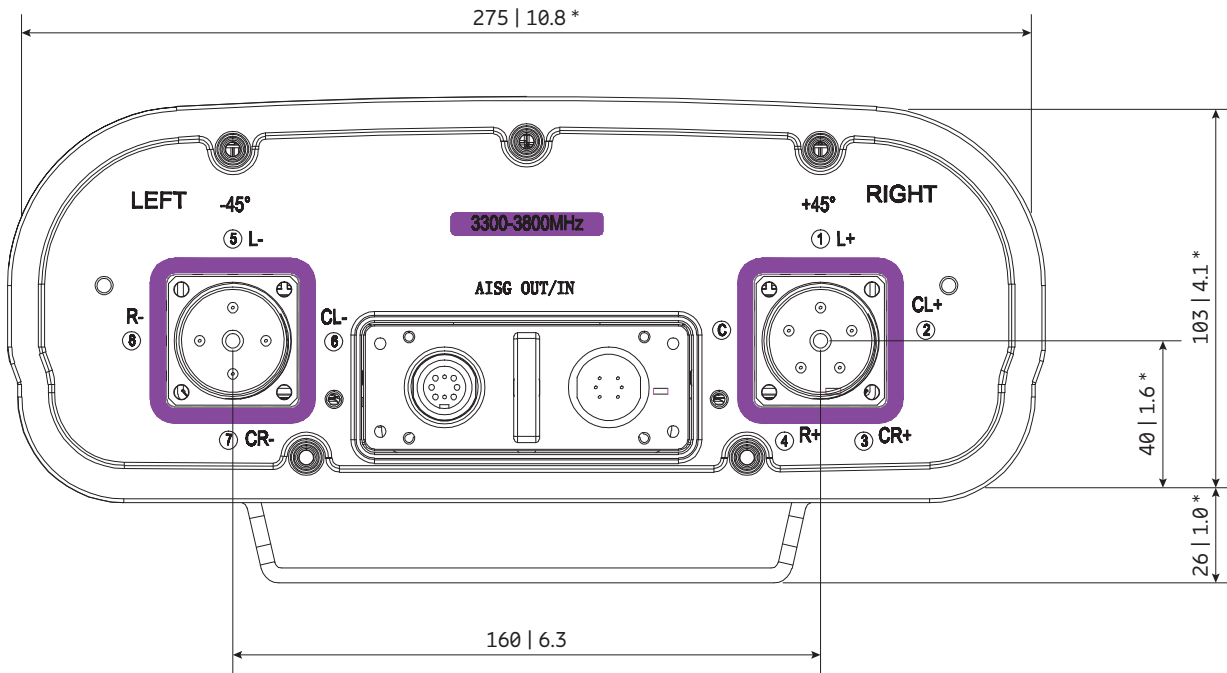
**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



All dimensions in mm | inches

### Layout of interface



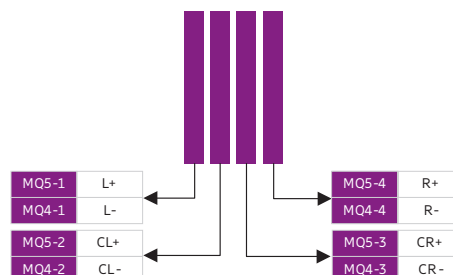
Bottom view  
 \* Dimensions refer to radome  
 All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
3300–3800 MHz	P1 (L)	1.1–2.1
3300–3800 MHz	P1 (CL)	1.2–2.2
3300–3800 MHz	P1 (CR)	1.3–2.3
3300–3800 MHz	P1 (R)	1.4–2.4

**Attention:**

Risk of damage if the RF Ports are connected incorrectly.  
 No RF power on CAL port allowed!







# Antenna 2600 0L 4M 1.5m

845350910

**Capacity** Compact Coverage

90° | 4x 2300–2690 MHz | 16.5 dBi  
Electrical downtilt set by integrated RET



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Left side, midband		Y1, connector 1–2	
Frequency Range	MHz	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	16.2	16.7
Gain over all Tilts	dBi	16.2 ± 0.6	16.7 ± 0.7
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	79 ± 5.3	75 ± 5.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 26
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	6.3 ± 0.4	5.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0	
Tilt Accuracy	°	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 20	> 20
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (Y1 // Y2, Y3, Y4)	
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center left side, midband		Y2, connector 3–4	
Frequency Range	MHz	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	16.1	16.7
Gain over all Tilts	dBi	16.1 ± 0.7	16.6 ± 0.6
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	86 ± 9.3	81 ± 4.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 28
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	6.3 ± 0.3	5.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0	
Tilt Accuracy	°	< 0.7	< 0.6
First Upper Side Lobe Suppression	dB	> 17	> 17
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (Y2 // Y1, Y3, Y4)	
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center right side, midband		Y3, connector 5–6	
Frequency Range	MHz	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	16.0	16.5
Gain over all Tilts	dBi	16.0 ± 0.7	16.5 ± 0.5
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	88 ± 8.7	83 ± 3.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 28
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	6.4 ± 0.3	5.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0	
Tilt Accuracy	°	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 18	> 18
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (Y3 // Y1, Y2, Y4)	
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband		Y4, connector 7–8	
Frequency Range	MHz	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	16.2	16.7
Gain over all Tilts	dBi	16.2 ± 0.7	16.7 ± 0.7
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	79 ± 5.5	75 ± 5.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 27
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	6.3 ± 0.4	5.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0	
Tilt Accuracy	°	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 20	> 18
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	> 25 (Y4 // Y1, Y2, Y3)	
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

Broadcast Beam at mid Tilt			
Frequency Range	MHz	2300 – 2500	2490 – 2690
Azimuth 3dB Beamwidth	°	65 ± 9	65 ± 6
Gain	dB	15.5	16.0
Gain roll-off at Sector Edge	dB	12	16
Cross Polar Ratio (0°)	dB	> 18	> 18
Front-to-back Ratio	dB	> 28	> 28
Service Beam at mid Tilt			
0° Direct Beam Gain	dB	21.5	22
0° Direction Beam Horizontal 3dB Beam Width	°	23	22
0° Direction Beam Horizontal SLS	dB	> 12	> 12
0° Direction Beam Cross polar Ratio	dB	> 22	> 22
0° Direction Beam Front-to-Back Ratio	dB	> 28	> 28
Multi Beam at mid Tilt			
Horizontal 3dB Beam Width	°	27	25
Gain	dB	21 (@ +30°, -30°)	21.4 (@ +30°, -30°)

### Calibration and electrical parameters

Coupling factor between calibration port and each antenna port	dB	-26 ± 2
Max. amplitude tolerance from calibration port to input ports	dB	± 0.8
Max. phase tolerance from calibration port to inports	°	±7

### Electrical specifications, all ports

Impedance	Ω	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 23
Passive Intermodulation	dBc	< -120 (2x 43 dBm carrier) typ. < -140
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	320 (at 50 °C ambient temperature)

### Power rating at installation scenario

Max. allowed output power per port TDD radio to antenna*	W	50
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Values based on NGMN-P-BASTA (version 10.0) requirements.  
\* For TDD radio configured with DL ratio 75,7 % (DDDSU) TDD pattern. Connection via jumper cables > 0.3 dB IL

### Mechanical specifications

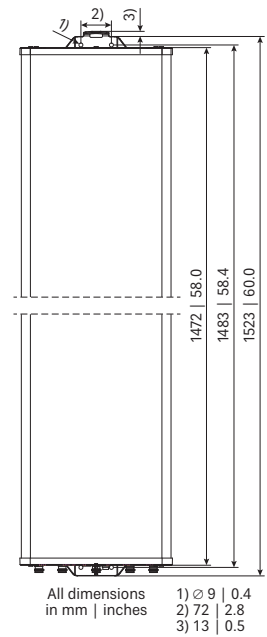
Input	8x 4.3-10 female	
CAL	1x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 625   141 Maximal: 625   141
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1472 / 353 / 164 58.0 / 13.9 / 6.5
Category of Mounting Hardware	H (Heavy)	
Weight	kg lb	21.0 / 23.2 (clamps incl.) 46.3 / 51.1 (clamps incl.)
Packing Size	mm inches	1685 / 377 / 210 66.3 / 14.8 / 8.3
Scope of Supply	Panel and 2 units of clamps for 42–115 mm   1.7–4.5 inches diameter	

Product No.	Description	Remarks mm   inches	Units per antenna
85010002	1 clamp	Mast diameter: 110–220   4.3–8.7	2
85010003	1 clamp	Mast diameter: 210–380   8.3–15.0	2
85010009	1 downtilt kit	Downtilt angle: 0°–15°	1

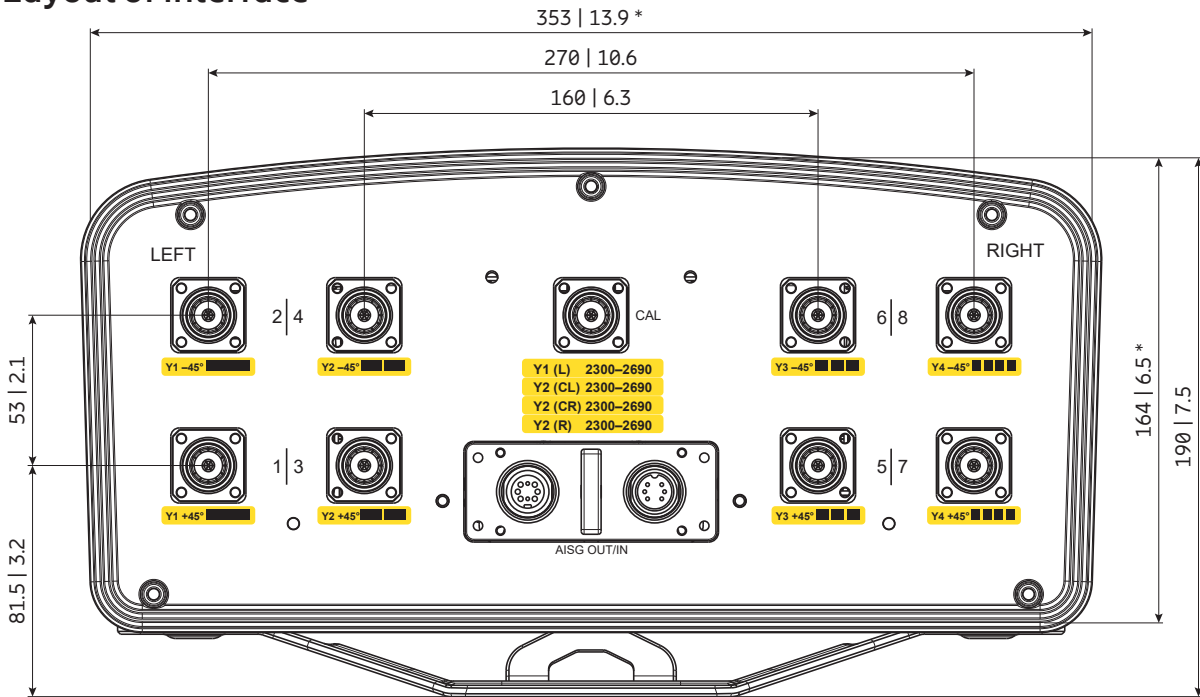
For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:** **Reflector screen:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



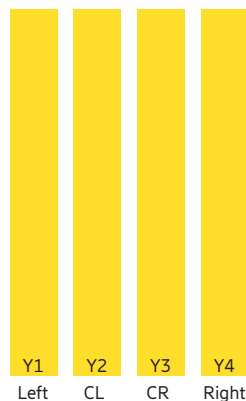
### Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

### Correlation Table

Frequency range	Array	Connector / Ports
2300–2690 MHz	Y1	1–2
2300–2690 MHz	Y2	3–4
2300–2690 MHz	Y3	5–6
2300–2690 MHz	Y4	7–8



# TDD Configuration

## 1LB nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
1x Lowband   8x Midband						
Antenna 6001 1L 8M 1.4m KRE 101 2528/1	1x 698–960	65	14.0	2–16	4.3-10	<a href="#">423</a>
	4x 1695–2690	65	14.5	2–12	MQ4/MQ5 socket	
	4x 3300–3800	80	14.0	2–12		
Antenna 5600 1L 8M 2.0m KRE 101 2409/1	1x 698–960	65	15.3	2–12	4.3-10	<a href="#">428</a>
	1x 1695–2690	65	15.7	2–12	MQ4/MQ5 socket	
	3x 1695–2690	65	15.4	2–12		
	4x 2300–2690	90	15.0	2–12		



# Antenna 6001 1L 8M 1.4m

KRE 101 2528/1

**Capacity**    Compact    Coverage

65° | 1x 698–960 MHz | 14.0 dBi  
 65° | 4x 1695–2690 MHz | 14.5 dBi  
 80° | 4x 3300–3800 MHz | 14.0 dBi  
 Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	13.4	13.8	14.1
Gain over all Tilts	dBi	13.3 ± 0.2	13.8 ± 0.5	14.0 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	67 ± 2.4	64 ± 5.9	61 ± 6.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 24
Cross Polar Discrimination at Boresight	dB	> 23	> 24	> 22
Cross Polar Discrimination over Sector	dB	> 6.5	> 7.0	> 7.0
Azimuth Beam Port-to-Port Tracking	dB	< 2.5	< 3.5	> 4.5
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	15.6 ± 1.5	14.1 ± 0.8	13.2 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 16.0		
Tilt Accuracy	°	< 0.6	< 0.8	< 0.8
First Upper Sidelobe Suppression	dB	> 17	> 16	> 16
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 20	> 17	> 28
Intra-Cluster Isolation	dB	≥ 25		
Port to Port Isolation	dB	≥ 25 (R1 // Y1, Y2, Y3, Y4)		
Max. Effective Power per Port	W	400		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, lower midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	13.6	13.8	14.1	14.5	14.9
Gain over all Tilts	dBi	13.6 ± 0.5	13.8 ± 0.4	14.0 ± 0.5	14.5 ± 0.3	14.9 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	61 ± 6.3	63 ± 3.8	60 ± 6.1	53 ± 5.0	52 ± 4.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 23	> 24	> 25	> 25
Cross Polar Discrimination at Boresight	dB	> 20	> 20	> 19	> 19	> 20
Cross Polar Discrimination over Sector	dB	> 8.0	> 7.0	> 1.0	> 1.0	> 1.0
Azimuth Beam Port-to-Port Tracking	dB	< 4.0	< 2.0	< 2.5	< 7.0	< 4.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	13.9 ± 1.2	13.1 ± 0.8	12.4 ± 1.4	11.3 ± 0.6	10.4 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 1.1	< 1.2	< 0.8	< 0.9	< 0.9
First Upper Sidelobe Suppression	dB	> 15	> 19	> 16	> 18	> 15
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 16	> 21	> 16	> 17	> 14
Intra-Cluster Isolation	dB	≥ 25				
Port to Port Isolation	dB	≥ 25 (Y1 // R1, Y2, Y3, Y4)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.



Left side, upper midband		Y2, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	13.2	13.4	13.7	14.5	14.9
Gain over all Tilts	dBi	13.2 ± 0.3	13.4 ± 0.5	13.8 ± 0.6	14.5 ± 0.5	14.9 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 6.3	63 ± 6.7	60 ± 7.6	53 ± 3.6	48 ± 2.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 27	> 27	> 26	> 26
Cross Polar Discrimination at Boresight	dB	> 19	> 20	> 21	> 23	> 23
Cross Polar Discrimination over Sector	dB	> 11.0	> 11.0	> 5.5	> 2.5	> 1.5
Azimuth Beam Port-to-Port Tracking	dB	< 3.0	< 3.0	< 4.0	< 4.0	< 4.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	15.5 ± 1.7	14.4 ± 0.8	13.7 ± 1.1	11.6 ± 0.8	10.5 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.8	< 0.8	< 1.3	< 1.1	< 1.5
First Upper Sidelobe Suppression	dB	> 20	> 21	> 20	> 22	> 20
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 23	> 26	> 22	> 21	> 18
Intra-Cluster Isolation	dB	≥ 25				
Port to Port Isolation	dB	≥ 25 (Y2 // R1, Y1, Y3, Y4)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center, upper midband		Y3, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	13.8	14.1	14.1	14.2	14.6
Gain over all Tilts	dBi	13.7 ± 0.4	14.1 ± 0.5	14.1 ± 0.5	14.2 ± 0.3	14.5 ± 0.4
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	67 ± 6.9	63 ± 5.1	60 ± 7.8	61 ± 6.0	60 ± 3.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 26	> 25	> 27	> 26
Cross Polar Discrimination at Boresight	dB	> 19	> 23	> 23	> 18	> 17
Cross Polar Discrimination over Sector	dB	> 9.5	> 9.0	> 6.0	> 5.0	> 8.0
Azimuth Beam Port-to-Port Tracking	dB	< 2.0	< 1.5	< 3.0	< 3.0	< 3.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	14.6 ± 1.2	13.7 ± 0.9	12.8 ± 1.1	11.2 ± 0.7	10.5 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 1.4	< 0.8	< 0.9	< 0.5	< 1.2
First Upper Sidelobe Suppression	dB	> 18	> 17	> 16	> 18	> 13
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 18	> 17	> 17	> 18	> 15
Intra-Cluster Isolation	dB	≥ 25				
Port to Port Isolation	dB	≥ 25 (Y3 // R1, Y1, Y2, Y4)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y4, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	13.6	13.8	13.9	14.3	14.8
Gain over all Tilts	dBi	13.5 ± 0.2	13.8 ± 0.4	13.9 ± 0.3	14.2 ± 0.4	14.8 ± 0.4
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	76 ± 6.5	74 ± 4.8	72 ± 4.8	66 ± 5.9	60 ± 3.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 24	> 24	> 25
Cross Polar Discrimination at Boresight	dB	> 17	> 18	> 18	> 18	> 17
Cross Polar Discrimination over Sector	dB	> 11.0	> 10.5	> 10.5	> 10.0	> 11.0
Azimuth Beam Port-to-Port Tracking	dB	< 1.5	< 1.5	< 1.5	< 2.5	< 3.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	14.7 ± 0.7	14.0 ± 0.6	13.2 ± 1.1	11.7 ± 0.6	10.9 ± 0.6
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 1.5	< 1.5	< 1.1	< 0.9	< 0.5
First Upper Sidelobe Suppression	dB	> 16	> 17	> 17	> 18	> 20
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 18	> 17	> 17	> 18	> 20
Intra-Cluster Isolation	dB	≥ 25				
Port to Port Isolation	dB	≥ 25 (Y4 // R1, Y1, Y2, Y3)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Center, lower midband

## P1, connector 11–12

Frequency Range	MHz	3300 – 3500	3500 – 3570	3570 – 3700	3700 – 3800
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			

## Unit Beam

Gain Over All Tilts	dBi	13.3 ± 0.9	13.8 ± 0.7	14.0 ± 0.6	14.3 ± 0.7
Gain Mid Tilt	dBi	13.2	13.7	14.0	14.2
Horizontal Beamwidth	°	80 ± 17	75 ± 15	70 ± 14	70 ± 11
Vertical Beamwidth	°	8.7 ± 1.8	8.5 ± 1.3	8.5 ± 1.0	8.2 ± 0.9
Upper Sidelobe Suppression	dB	≥ 14	≥ 14	≥ 14	≥ 15
Front-to-Back Ratio	dB	≥ 24	≥ 25	≥ 24	≥ 23
Cross-polarization @ 0°	dB	≥ 17	≥ 16	≥ 16	≥ 16

## Broadcast Beam

Gain Over All Tilts	dBi	14.4 ± 0.9	14.9 ± 0.8	15.1 ± 0.8	15.4 ± 0.8
Gain Mid Tilt	dBi	14.4	14.9	15.1	15.4
Horizontal Beamwidth	°	65 ± 10	65 ± 10	65 ± 9	60 ± 9
Vertical Beamwidth	°	8.7 ± 1.8	8.5 ± 1.5	8.5 ± 1.3	8.2 ± 1.0
Upper Sidelobe Suppression	dB	≥ 14	≥ 15	≥ 15	≥ 14
Front-to-Back Ratio	dB	≥ 24	≥ 25	≥ 25	≥ 26
Cross-polarization @ 0°	dB	≥ 19	≥ 18	≥ 18	≥ 17
Cross-polarization @ ±60°	dB	≥ 8	≥ 8	≥ 6	≥ 5

## Service Beam

Gain Over All Tilts	dBi	18.4 ± 0.9	19.4 ± 0.8	19.6 ± 0.8	19.9 ± 0.8
Gain Mid Tilt	dBi	18.4	19.4	19.7	20.0
Horizontal Beamwidth @ 0° direction	°	23 ± 2	23 ± 2	22 ± 2	22 ± 2
Horizontal Sidelobe Suppression @ 0° direction	dB	≥ 12	≥ 12	≥ 12	≥ 12
Front-to-Back Ratio @ 0° direction	dB	≥ 28	≥ 28	≥ 27	≥ 28
Cross-polarization @ 0° direction	dB	≥ 18	≥ 20	≥ 20	≥ 18

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 25
Passive Intermodulation (R1, Y1–Y4)	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	800

Values based on NGMN-P-BASTA (version 11.1) requirements.

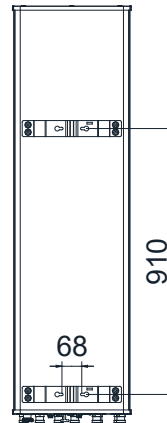
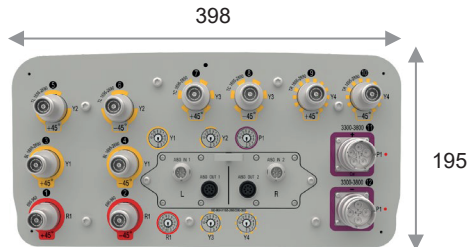
**Material:** **Reflector screen and dipoles:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

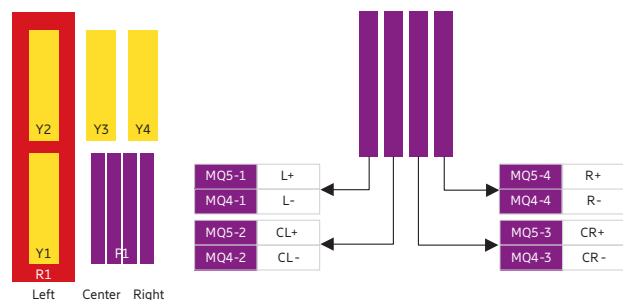
Input		10x 4.3-10 female, 1x MQ4 male, 1x MQ5 male
Connector Position		bottom
Adjustment Mechanism		Integrated RET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 630   142 Maximal: 630   142
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	1400 / 398 / 195 55.1 / 15.7 / 7.7
Weight	kg lb	29.5 / 35.9 (clamps incl.) 65.0 / 79.1 (clamps incl.)
Packing Size	mm inches	1710 / 490 / 265 67.3 / 19.3 / 10.4
Scope of Supply		Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit ( $0^{\circ}$ – $16^{\circ}$ ) SXA 216 001/2, integr. RET KRY 121 78/3

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4
1695–2690 MHz	Y2	5–6
1695–2690 MHz	Y3	7–8
1695–2690 MHz	Y4	9–10
3300–3800 MHz	P1 (L)	11.1–12.1
3300–3800 MHz	P1 (CL)	11.2–12.2
3300–3800 MHz	P1 (CR)	11.3–12.3
3300–3800 MHz	P1 (R)	11.4–12.4





# Antenna 5600 1L 8M 2.0m

KRE 101 2409/1

Capacity

Compact

Coverage

65° | 1x 698–960 | 15.3 dBi  
65° | 1x 1695–2690 | 15.7 dBi  
65° | 3x 1695–2690 | 15.4 dBi  
90° | 4x 2300–2690 | 15.0 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	14.6	15.0	15.1
Gain over all Tilts	dBi	14.6 ± 0.5	15.0 ± 0.5	15.1 ± 0.3
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	64 ± 6.2	60 ± 3.7	60 ± 3.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 24	> 24
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.8 ± 1.2	10.6 ± 1.1	9.5 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.8	< 0.8	< 0.9
First Upper Sidelobe Suppression	dB	> 16	> 16	> 15
Intra-Cluster Isolation	dB	> 25		
Port to Port Isolation	dB	> 28 (R1 // Y1, Y2, Y3, Y4)		
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, lower midband		Y1, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	15.3	15.5	15.3	15.5	15.9
Gain over all Tilts	dBi	15.2 ± 0.6	15.4 ± 0.5	15.3 ± 0.6	15.4 ± 0.5	15.9 ± 0.4
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69 ± 5.0	67 ± 3.6	68 ± 5.0	59 ± 3.6	59 ± 4.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 26	> 25	> 24	> 24
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.0 ± 0.7	9.4 ± 0.8	9.0 ± 0.9	7.9 ± 0.4	7.1 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.7	< 0.8	< 0.7	< 0.5
First Upper Sidelobe Suppression	dB	> 18	> 18	> 18	> 19	> 18
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 26 (Y1 // Y2, Y3, Y4)				
Max. Effective Power per Port	W	250 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, upper midband		Y2, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	14.8	15.0	15.2	15.4	15.5
Gain over all Tilts	dBi	14.7 ± 0.3	15.0 ± 0.7	15.2 ± 0.7	15.4 ± 0.6	15.4 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	70 ± 3.0	67 ± 3.8	63 ± 5.9	61 ± 5.0	58 ± 4.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 25	> 24	> 23	> 23
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.3 ± 0.6	9.5 ± 0.5	9.1 ± 0.8	7.7 ± 0.4	7.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 18	> 18	> 18	> 17	> 16
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 26 (Y2 // Y1, Y3, Y4)				
Max. Effective Power per Port	W	250 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center, upper midband		Y3, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	15.2	15.5	15.7	16.0	16.0
Gain over all Tilts	dBi	15.2 ± 0.4	15.5 ± 0.7	15.6 ± 0.4	15.9 ± 0.5	16.0 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	62 ± 2.6	62 ± 2.7	61 ± 3.2	56 ± 4.6	57 ± 3.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 27	> 27	> 27	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	11.5 ± 0.6	10.9 ± 0.3	10.4 ± 0.6	9.2 ± 0.6	8.4 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.5	< 0.5	< 0.7	< 0.6
First Upper Sidelobe Suppression	dB	> 22	> 21	> 19	> 18	> 15
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 26 (Y3 // Y1, Y2, Y4)				
Max. Effective Power per Port	W	250 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, upper midband		Y4, connector 9–10				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	15.2	15.5	15.7	15.9	16.5
Gain over all Tilts	dBi	15.2 ± 0.4	15.5 ± 0.1	15.6 ± 0.1	15.9 ± 0.5	16.5 ± 0.4
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	66 ± 3.4	64 ± 2.6	65 ± 3.2	59 ± 2.4	54 ± 2.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 24	> 23	> 22	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	11.5 ± 0.6	10.8 ± 0.4	10.1 ± 0.7	8.8 ± 0.4	8.0 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 17	> 17	> 17	> 17	> 16
Intra-Cluster Isolation	dB	> 25				
Port to Port Isolation	dB	> 26 (Y4 // Y1, Y2, Y3)				
Max. Effective Power per Port	W	250 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center, lower midband		Y5, connector 11–18	
Frequency Range	MHz	2300 – 2500	2490 – 2690

### Unit Beam

Gain Over All Tilts	dBi	14.8 ± 1.0	15.0 ± 0.7
Gain Mid Tilt	dBi	14.8	15.0
Horizontal Beamwidth	°	90 ± 18	84 ± 14
Vertical Beamwidth	°	7.2 ± 0.8	6.6 ± 0.8
Upper Sidelobe Suppression	dB	≥ 16	≥ 15
Front-to-Back Ratio	dB	≥ 23	≥ 22
Cross-polarization @ 0°		≥ 17	≥ 18

### Broadcast Beam

Gain Over All Tilts	dBi	15.5 ± 0.6	15.7 ± 0.5
Gain Mid Tilt	dBi	15.5	15.7
Horizontal Beamwidth	°	64 ± 5	59 ± 4
Vertical Beamwidth	°	7.1 ± 0.4	6.5 ± 0.4
Upper Sidelobe Suppression	dB	≥ 15	≥ 15
Front-to-Back Ratio	dB	≥ 26	≥ 26
Cross-polarization @ 0°	dB	≥ 26	≥ 26
Cross-polarization @ ±60°	dB	≥ 8	≥ 8

### Service Beam

Gain Over All Tilts	dBi	20.0 ± 0.5	20.7 ± 0.6
Gain Mid Tilt	dBi	20.0	20.7
Horizontal Beamwidth @ 0° direction	°	25 ± 2	23 ± 2
Horizontal Sidelobe Suppression @ 0° direction	dB	≥ 13	≥ 13
Front-to-Back Ratio @ 0° direction	dB	≥ 30	≥ 30
Cross-polarization @ 0° direction	dB	≥ 26	≥ 26

### Multi Beam

Gain	dBi	19.3 ± 0.6	19.5 ± 0.5
Horizontal Beamwidth	°	31 ± 3	29 ± 4
Vertical Beamwidth	°	7.0 ± 0.4	6.5 ± 0.5
Upper Sidelobe Suppression	dB		≥ 15
Front-to-Back Ratio	dB		≥ 25
Cross-polarization @ 0°	dB		≥ 18

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation (R1, Y1–Y4)	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Material:

**Reflector screen and dipoles:**  
Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

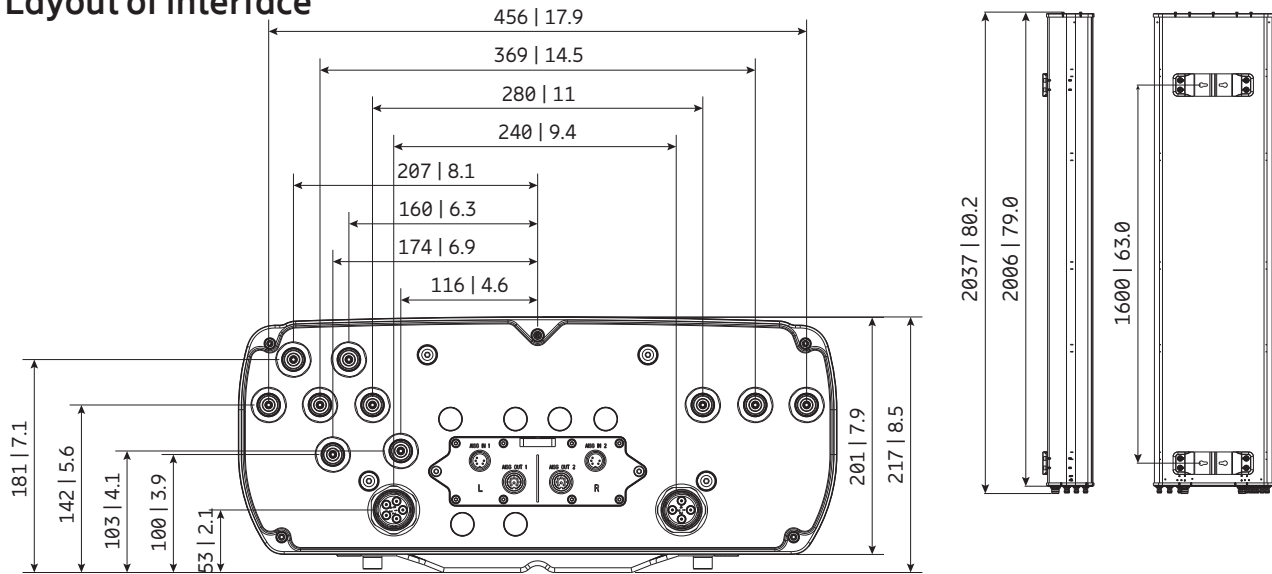
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

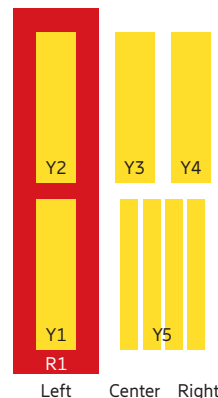
Input		10x 4.3-10 female, 1x MQ4 male, 1x MQ5 male
Connector Position		bottom
Adjustment Mechanism		Integrated RET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1215   273 Maximal: 1215   273
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	2000 / 498 / 192 78.7 / 19.6 / 7.6
Weight	kg lb	43.0 / 51.0 (clamps incl.) 94.8 / 112.4 (clamps incl.)
Packing Size	mm inches	2335 / 550 / 265 91.9 / 21.7 / 10.4
Scope of Supply		Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit ( $0^\circ$ – $12^\circ$ ) SXA 120 130/2, integr. RET KRY 121 78/3

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1695–2690 MHz	Y1	3–4
1695–2690 MHz	Y2	5–6
1695–2690 MHz	Y3	7–8
1695–2690 MHz	Y4	9–10
2300–2690 MHz	Y5	11–18



# TDD Configuration

## 2LB nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
2x Lowband   4x Midband						
<a href="#">Antenna 5700 2L 4M 2.0m</a> <a href="#">KRE 101 2408/2</a>	2x 698–960	65	15.1	2–12	4.3-10	<a href="#">435</a>
	3x 1695–2690	65	16.3	2–12	4.3-10	
	1x 2300–2690	90	15.0	2–12	MQ4/MQ5	
2x Lowband   8x Midband						
<a href="#">Antenna 6600 2L 8M 2.0m</a> <a href="#">800442802</a>	2x 698–960	65	15.2	2.5–11.5	4.3-10	<a href="#">441</a>
	2x 1427–2690	65	15.9	2–12		
	2x 2300–2690	65	15.5	2–12		
	4x 3300–3800	90	15.4	2–12	MQ4/MQ5 socket	
<a href="#">Antenna 6600 2L 8M 2.6m</a> <a href="#">800442803</a>	2x 698–960	65	16.3	2.5–10	4.3-10	<a href="#">448</a>
	2x 1427–2690	65	16.9	2–12		
	2x 2300–2690	65	16.4	2–12		
	4x 3300–3800	90	15.4	2–12	MQ4/MQ5 socket	
<a href="#">Antenna 7003 2L 8M 2.6m</a> <a href="#">KRE 101 2635/1</a>	2x 698–960	65	16.1	1–10	4.3-10	<a href="#">455</a>
	4x 1695–2690	65	17.5	2–12		
	1x 2300–2690	90	BB 15.6 / SB 21.6	2–12	MQ4/MQ5 socket	

[New product](#)

New product



# Antenna 5700 2L 4M 2.0m

KRE 101 2408/2

**Capacity**   Compact   Coverage

65° | 2x 698–960 MHz | 15.1 dBi  
 65° | 3x 1695–2690 MHz | 16.3 dBi  
 90° | 1x 2300–2690 MHz | 15.0 dBi  
 Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	14.6	15.0	15.1
Gain over all Tilts	dBi	14.6 ± 0.4	14.9 ± 0.4	15.0 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	62 ± 5.9	58 ± 5.9	56 ± 8.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 22
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.4 ± 1.1	10.2 ± 0.9	9.1 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 1.2	< 1.4	< 1.7
First Upper Sidelobe Suppression	dB	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 25		
Inter-Cluster Isolation	dB	> 25 (R1 // R2) > 28 (R1 // Y1, Y2, Y3)		
Max. Effective Power per Port	W	350 (at 25 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	14.4	14.9	15.1
Gain over all Tilts	dBi	14.4 ± 0.5	14.9 ± 0.4	15.0 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	65 ± 6.6	59 ± 5.2	55 ± 11.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 22
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	11.5 ± 1.2	10.3 ± 0.7	9.2 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.5	< 0.8	< 1.1
First Upper Sidelobe Suppression	dB	> 14	> 15	> 15
Intra-Cluster Isolation	dB	> 25		
Inter-Cluster Isolation	dB	> 25 (R2 // R1) > 28 (R2 // Y1, Y2, Y3)		
Max. Effective Power per Port	W	350 (at 25 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, upper midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	15.7	15.7	15.7	15.7	16.0
Gain over all Tilts	dBi	15.7 ± 0.6	15.6 ± 0.6	15.6 ± 0.6	15.7 ± 0.5	16.0 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63 ± 4.5	68 ± 5.2	66 ± 7.2	58 ± 4.2	54 ± 3.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 25	> 26	> 25	> 26
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.0 ± 0.6	9.3 ± 0.5	8.8 ± 0.5	7.8 ± 0.3	7.1 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.9	< 0.8	< 0.6	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 17	> 18	> 18	> 17	> 14
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 26 (Y1 // Y2, Y3)				
Max. Effective Power per Port	W	250 (at 25 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center, upper midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	15.4	15.7	16.2	16.3	16.3
Gain over all Tilts	dBi	15.4 ± 0.4	15.7 ± 0.8	16.1 ± 0.7	16.3 ± 0.6	16.3 ± 0.6
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	59 ± 3.5	58 ± 3.4	57 ± 4.7	59 ± 2.7	63 ± 3.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 25	> 26	> 28	> 29
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	11.3 ± 0.7	10.6 ± 0.4	10.1 ± 0.7	8.7 ± 0.3	7.8 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 1.0	< 0.9	< 0.8	< 0.8	< 0.8
First Upper Sidelobe Suppression	dB	> 18	> 18	> 18	> 18	> 14
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 26 (Y2 // Y1, Y3)				
Max. Effective Power per Port	W	250 (at 25 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y3, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2500	2490 – 2690
Gain at mid Tilt	dBi	15.7	15.7	15.7	15.8	16.1
Gain over all Tilts	dBi	15.6 ± 0.6	15.6 ± 0.7	15.6 ± 0.6	15.7 ± 0.5	16.0 ± 0.5
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	64 ± 4.7	68 ± 6.1	66 ± 6.5	58 ± 3.4	53 ± 4.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 25	> 24	> 24	> 25
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.1 ± 0.7	9.4 ± 0.6	8.8 ± 0.5	7.8 ± 0.3	7.1 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.8	< 0.9	< 0.7	< 0.7	< 0.7
First Upper Sidelobe Suppression	dB	> 19	> 18	> 17	> 19	> 15
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 26 (Y3 // Y1, Y2)				
Max. Effective Power per Port	W	250 (at 25 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center, lower midband		Y4, connector 11–12	
Frequency Range	MHz	2300 – 2500	2490 – 2690
Electrical Downtilt continuously adjustable	°	2.0 – 12.0	
Intra-Cluster Isolation	dB	> 25	
Inter-Cluster Isolation	dB	> 26 (Y4 // Y1, Y2, Y3)	
Max. Effective Power per Port	W	40 (at 25 °C ambient temperature)	

### Unit Beam

Gain Over All Tilts	dBi	14.4 ± 0.7	14.7 ± 0.6
Gain Mid Tilt	dBi	14.4	14.7
Horizontal Beamwidth	°	86 ± 6	89 ± 6
Vertical Beamwidth	°	7.4 ± 0.7	6.9 ± 0.8
Upper Sidelobe Suppression	dB	≥ 15	≥ 16
Front-to-Back Ratio	dB	≥ 24	≥ 25
Cross-polarization @ 0°	dB	≥ 16	≥ 18

### Broadcast Beam

Gain Over All Tilts	dBi	14.8 ± 0.5	15.3 ± 0.5
Gain Mid Tilt	dBi	14.8	15.3
Horizontal Beamwidth	°	65 ± 5	63 ± 5
Vertical Beamwidth	°	7.3 ± 0.4	6.8 ± 0.4
Upper Sidelobe Suppression	dB	≥ 15	≥ 15
Front-to-Back Ratio	dB	≥ 26	≥ 26
Cross-polarization @ 0°	dB	≥ 26	≥ 26
Cross-polarization @ ±60°	dB	≥ 8	≥ 8

### Service Beam

Gain Over All Tilts	dBi	19.3 ± 0.5	20.3 ± 0.5
Gain Mid Tilt	dBi	19.3	20.3
Horizontal Beamwidth @ 0° direction	°	25 ± 2	24 ± 2
Horizontal Sidelobe Suppression @ 0° direction	dB	≥ 12	≥ 12
Front-to-Back Ratio @ 0° direction	dB	≥ 30	≥ 30
Cross-polarization @ 0° direction	dB	≥ 26	≥ 26

### Multi Beam

Gain	dBi	19.0 ± 0.5	19.5 ± 0.6
Horizontal Beamwidth	°	31 ± 4	28 ± 4
Vertical Beamwidth	°	7.3 ± 0.4	6.8 ± 0.4
Upper Sidelobe Suppression	dB	≥ 15	
Front-to-Back Ratio	dB	≥ 25	
Cross-polarization @ 0°	dB	≥ 17	

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation (R1, R2, Y1–Y3)	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45

## Power rating at installation scenario

Max. Effective Power for the Antenna*	W	1000 (at 25 °C ambient temperature)
Max. allowed output power per port TDD radio to antenna*	W	40

Values based on NGMN-P-BASTA (version 11.1) requirements.  
\* For TDD radio configured with DL ratio 66 % (DDDSUDDSUU) TDD pattern.

**Material:**

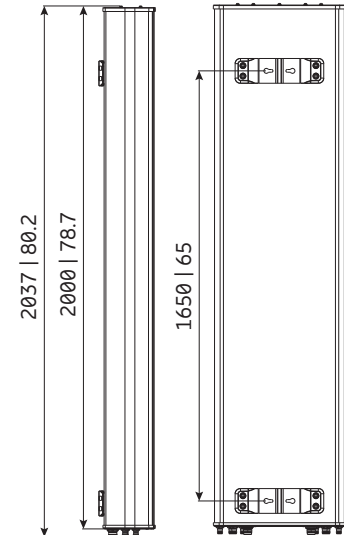
**Reflector screen and dipoles:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Layout of interface

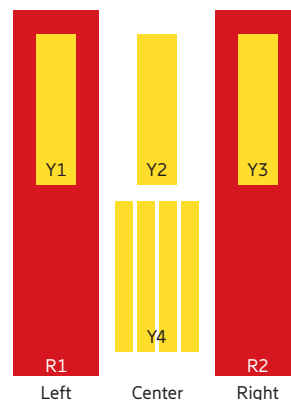


## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
2300–2690 MHz	Y4	11–12
	CAL	C

## Mechanical specifications

Input		10x 4.3-10 female, 1x MQ4 male, 1x MQ5 male
CAL		–
Connector Position		bottom
Adjustment Mechanism		Integrated RET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1215   273 Maximal: 1215   273
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	2000 / 498 / 192 78.7 / 19.6 / 7.6
Weight	kg lb	42.8 / 50.8 (clamps incl.) 94.3 / 111.9 (clamps incl.)
Packing Size	mm inches	2345 / 550 / 265 92.3 / 21.7 / 10.4
Scope of Supply		Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit ( $0^{\circ}$ – $12^{\circ}$ ) SXA 120 130/2, integr. RET KRY 121 78/5







# Antenna 6600 2L 8M 2.0m

800442802

Capacity **Compact** Coverage

65° | 2x 698–960 MHz | 15.2 dBi  
 65° | 2x 1427–2690 MHz | 15.9 dBi  
 65° | 2x 2300–2690 MHz | 15.5 dBi  
 90° | 4x 3300–3800 MHz | 15.4 dBi  
 FlexRET RAE



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.4	14.8	14.9	15.1
Gain over all Tilts	dBi	14.4 ± 0.5	14.8 ± 0.2	14.9 ± 0.3	15.1 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 7.1	60 ± 5.0	58 ± 5.4	55 ± 4.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 22	> 22	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.8 ± 0.7	11.2 ± 0.5	10.8 ± 0.7	10.3 ± 0.8
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.9	< 0.5	< 0.7	< 1.1
First Upper Side Lobe Suppression	dB	> 16	> 17	> 18	> 16
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	>25 (R1 // R2, Y1, Y2, Y3, Y4, P1)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	14.3	14.8	15.0	15.2
Gain over all Tilts	dBi	14.3 ± 0.6	14.8 ± 0.3	14.9 ± 0.4	15.1 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	66 ± 7.4	60 ± 4.6	58 ± 5.5	55 ± 6.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21	> 21	> 21	> 22
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	11.9 ± 0.8	11.2 ± 0.5	10.9 ± 0.7	10.3 ± 0.9
Electrical Downtilt continuously adjustable	°	2.5 – 11.5			
Tilt Accuracy	°	< 0.7	< 0.6	< 0.7	< 1.1
First Upper Side Lobe Suppression	dB	> 16	> 17	> 18	> 17
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	>25 (R2 // R1, Y1, Y2, Y3, Y4, P1)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, lower midband		Y1, connector 5–6	
Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.5	15.5
Gain over all Tilts	dBi	15.5 ± 0.4	15.5 ± 0.5
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	71 ± 3.9	66 ± 9.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 20
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	8.6 ± 0.5	7.8 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0	
Tilt Accuracy	°	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 17	> 21
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	>25 (Y1 // R1, R2, Y2, Y3, Y4, P1)	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version1 0.0) requirements.

Left side, upper midband		Y2, connector 7–8					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.1	15.6	15.7	15.8	15.8	15.9
Gain over all Tilts	dBi	15.1 ± 0.3	15.5 ± 0.4	15.6 ± 0.5	15.8 ± 0.6	15.7 ± 0.6	15.8 ± 0.7
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	66 ± 6.1	68 ± 4.8	70 ± 4.7	68 ± 4.5	64 ± 5.1	56 ± 4.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 28	> 28	> 28	> 28	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	11.3 ± 0.7	9.7 ± 0.5	9.2 ± 0.5	8.7 ± 0.6	8.0 ± 0.3	7.5 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.4	< 0.5	< 0.4	< 0.3	< 0.2	< 0.4
First Upper Side Lobe Suppression	dB	> 14	> 18	> 17	> 17	> 17	> 15
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>25 (Y2 // R1, R2, Y1, Y3, Y4, P1)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, lower midband

## Y3, connector 9–10

Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.4	15.5
Gain over all Tilts	dBi	15.4 ± 0.5	15.5 ± 0.6
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	72 ± 5.1	64 ± 7.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 21
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	8.8 ± 0.5	8.0 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0	
Tilt Accuracy	°	< 0.5	< 0.4
First Upper Side Lobe Suppression	dB	> 20	> 22
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	>25 (Y3 // R1, R2, Y1, Y2, Y4, P1)	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, upper midband

## Y4, connector 11–12

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.1	15.6	15.7	15.9	15.9	15.9
Gain over all Tilts	dBi	15.1 ± 0.2	15.6 ± 0.4	15.6 ± 0.6	15.8 ± 0.6	15.8 ± 0.5	15.9 ± 0.6
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	66 ± 5.6	67 ± 3.8	69 ± 5.4	67 ± 6.6	64 ± 6.1	56 ± 4.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 28	> 27	> 27	> 28	> 27
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	11.1 ± 0.8	9.7 ± 0.4	9.1 ± 0.4	8.7 ± 0.5	8.0 ± 0.4	7.5 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.5	< 0.7	< 0.6	< 0.6	< 0.5	< 0.6
First Upper Side Lobe Suppression	dB	> 13	> 18	> 18	> 18	> 18	> 14
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>25 (Y4 // R1, R2, Y1, Y2, Y3, P1)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, lower midband		P1, connector 13–14		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
<b>Unit Beam</b>				
Gain at mid Tilt	dBi	15.2	15.4	15.2
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	73	72	72
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 24	> 23
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	5.8	5.6	5.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.7	< 0.7	< 0.7
First Upper Side Lobe Suppression	dB	> 12	> 11	> 10
Cross Polar Isolation	dB	> 25		
Port to Port Isolation	dB	> 25 (P1 // R1, R2, Y1, Y2, Y3, Y4) > 22 (P1 (L) // P1 (CL) // P1 (CR) // P1 (R))		
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Broadcast Beam

Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Azimuth 3dB Beamwidth	°	69	69	66
Gain over all Tilts	dB	15.8	15.8	15.6
Gain roll-off at Sector Edge	dB	12	10	12
Cross Polar Ratio (0°)	dB	> 14	> 17	> 15
Front-to-back Ratio	dB	> 25	> 25	> 24

## Service Beam

0° Direct Beam Gain over all Tilts	dB	20.2	20.4	20.6
0° Direction Beam Horizontal 3dB Beam Width	°	25	24	22
0° Direction Beam Horizontal SLS	dB	> 14.5	> 15.2	> 16.0
0° Direction Beam Cross polar Ratio	dB	> 17	> 17	> 14
0° Direction Beam Front-to-Back Ratio	dB	> 29	> 29	> 27
±30° Direct Beam Gain over all Tilts	dB	19.0	19.2	19.4
±30° Direction Beam Horizontal 3dB Beam Width	°	27.0	28.0	23.0

## Calibration and electrical parameters

Coupling factor between one antenna port and cal port	dB	-26 ± 1
Max. amplitude tolerance from calibration port to input ports	dB	±1
Max. phase tolerance cal network	°	±10

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Passive Intermodulation (FDD bands)	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

\* not applicable for L-band

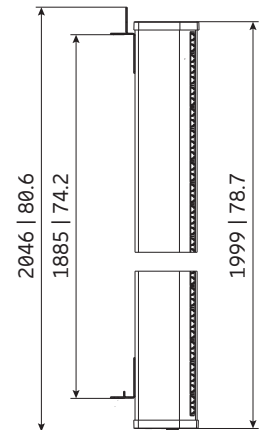
TDD ports cross PIM influence on FDD bands < -153 dBc

## Mechanical specifications

Input	12x 4.3-10 female, 1x MQ4 socket (male), 1x MQ5 socket (male)	
Connector Position	bottom	
Adjustment Mechanism	FlexRET RAE, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 725   163 Maximal: 950   214
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1999 / 448 / 164 78.7 / 17.6 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	39.0 / 43.5 (clamps incl.) 86.0 / 95.9 (clamps incl.)
Packing Size	mm inches	2150 / 510 / 293 84.6 / 20.1 / 11.5
Scope of Supply	Panel, FlexRET RAE and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–10°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	To be used in combination with the FlexRET module	1
KRY 121 108/1	Port Extender		1



## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165 RAE	FlexRET RAE	Compliant to 3GPP / AISG 2.0 – AISG 3 – AISG-ES-RAE v2.2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

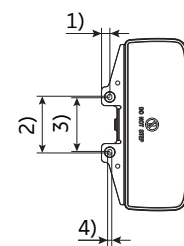
## Material:

**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

## Grounding:

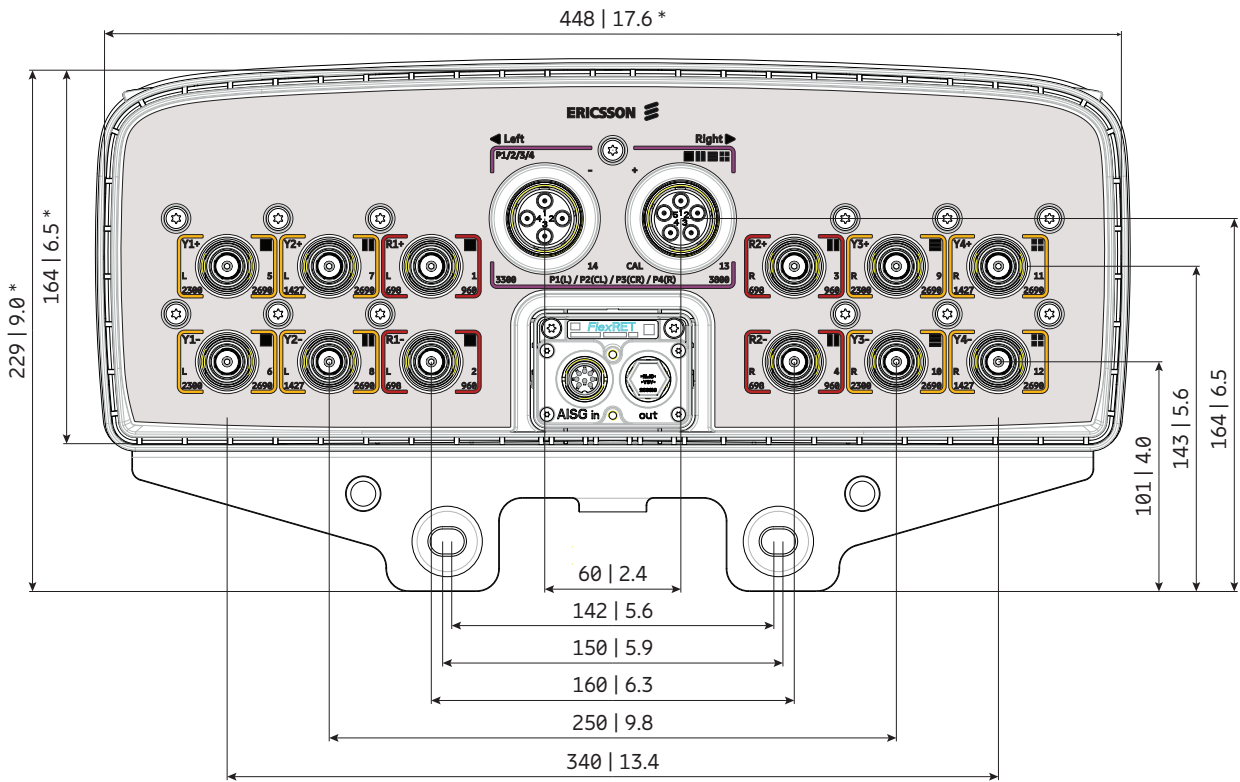
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions  
in mm | inches

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

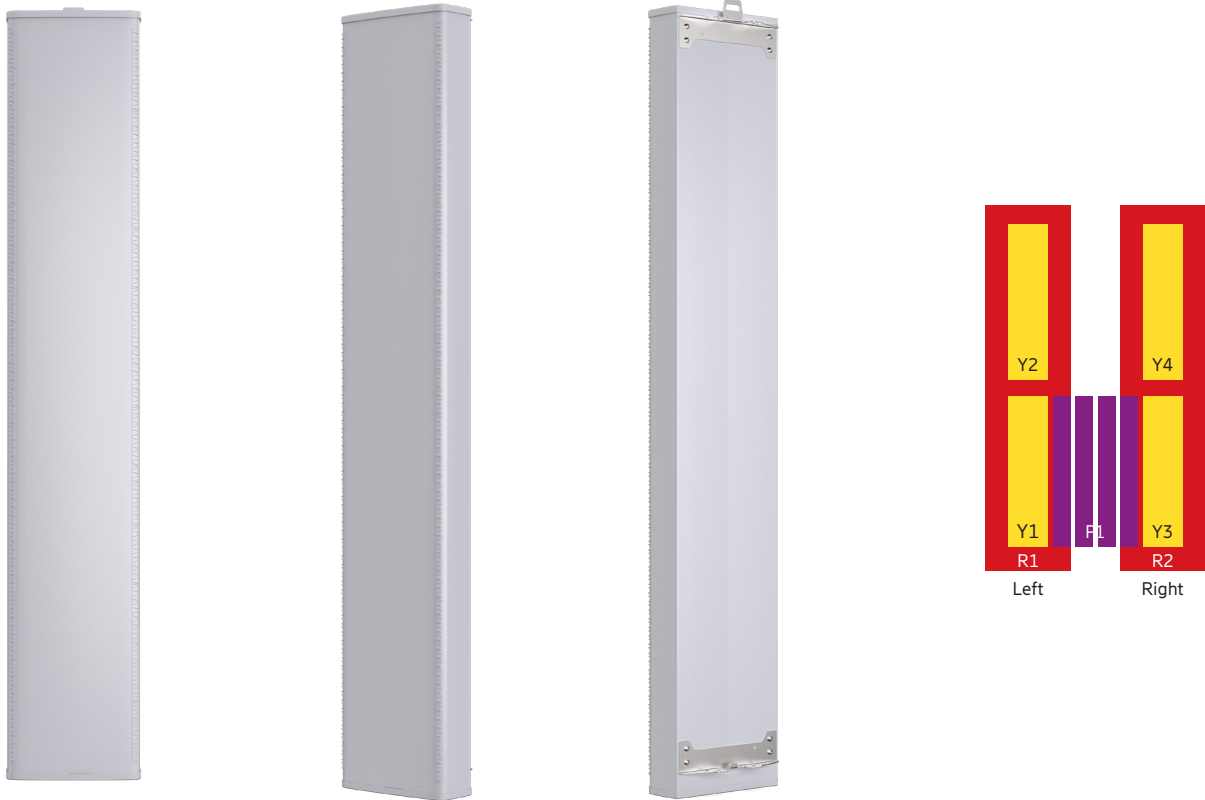
## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
2300–2690 MHz	Y1	5–6
1427–2690 MHz	Y2	7–8
2300–2690 MHz	Y3	9–10
1427–2690 MHz	Y4	11–12
3300–3800 MHz	P1 (L)	13.4–14.4
3300–3800 MHz	P1 (CL)	13.3–14.3
3300–3800 MHz	P1 (CR)	13.2–14.2
3300–3800 MHz	P1 (R)	13.1–14.1



### Attention:

Risk of damage if the RF Ports are connected incorrectly.  
No RF power on CAL port allowed!



# Antenna 6600 2L 8M 2.6m

800442803

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 16.3 dBi  
65° | 2x 1427–2690 MHz | 16.9 dBi  
65° | 2x 2300–2690 MHz | 16.4 dBi  
90° | 4x 3300–3800 MHz | 15.4 dBi  
FlexRET RAE



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.3	15.8	15.9	16.1
Gain over all Tilts	dBi	15.3 ± 0.7	15.8 ± 0.2	16.0 ± 0.4	16.1 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68 ± 6.7	63 ± 3.2	60 ± 4.6	57 ± 3.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 20	> 20	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.2 ± 0.6	8.7 ± 0.3	8.4 ± 0.5	8.0 ± 0.5
Electrical Downtilt continuously adjustable	°	2.5 – 10.0			
Tilt Accuracy	°	< 0.7	< 0.5	< 0.5	< 0.8
First Upper Side Lobe Suppression	dB	> 17	> 18	> 19	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 27 (R1 // R2, Y1, Y2, Y3, Y4, P1)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.3	15.8	16.0	16.3
Gain over all Tilts	dBi	15.2 ± 0.7	15.8 ± 0.3	15.9 ± 0.5	16.2 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 5.7	63 ± 3.5	60 ± 4.7	56 ± 4.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 19	> 20	> 21
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.2 ± 0.6	8.7 ± 0.4	8.4 ± 0.5	7.9 ± 0.6
Electrical Downtilt continuously adjustable	°	2.5 – 10.0			
Tilt Accuracy	°	< 0.7	< 0.5	< 0.6	< 0.9
First Upper Side Lobe Suppression	dB	> 17	> 18	> 19	> 19
Cross Polar Isolation	dB	> 25			
Port to Port Isolation	dB	> 27 (R2 // R1, Y1, Y2, Y3, Y4, P1)			
Max. Effective Power per Port	W	400 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, lower midband		Y1, connector 5–6	
Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.3	16.4
Gain over all Tilts	dBi	16.4 ± 0.9	16.4 ± 1.0
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	69 ± 5.1	58 ± 8.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 22
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	6.4 ± 0.4	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0	
Tilt Accuracy	°	< 0.6	< 0.3
First Upper Side Lobe Suppression	dB	> 21	> 19
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	>30 (Y1 // R1, R2, Y2, Y3, Y4) >27 (Y1 // Y2, P1)	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, upper midband		Y2, connector 7–8					
Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	15.8	16.7	16.9	16.8	16.6	16.6
Gain over all Tilts	dBi	15.8 ± 0.5	16.6 ± 0.5	16.8 ± 0.6	16.8 ± 0.7	16.7 ± 0.6	16.5 ± 0.6
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	63 ± 4.2	64 ± 3.3	65 ± 3.1	65 ± 3.4	65 ± 4.9	60 ± 4.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 27	> 28	> 28	> 29	> 28
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.6 ± 0.4	7.2 ± 0.4	6.7 ± 0.2	6.4 ± 0.4	5.8 ± 0.2	5.3 ± 0.2
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.3	< 0.2	< 0.2	< 0.3	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 14	> 17	> 18	> 18	> 18	> 16
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>30 (Y2 // R1, R2, Y3, Y4, P1) >27 (Y2 // Y1)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, lower midband

## Y3, connector 9–10

Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.3	16.4
Gain over all Tilts	dBi	16.4 ± 0.6	16.4 ± 0.9
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	69 ± 6.4	60 ± 10.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 22
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	6.4 ± 0.4	5.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0	
Tilt Accuracy	°	< 0.7	< 0.5
First Upper Side Lobe Suppression	dB	> 22	> 19
Cross Polar Isolation	dB	> 25	
Port to Port Isolation	dB	>30 (Y3 // R1, R2, Y1, Y2) >27 (Y3 // Y4, P1)	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, upper midband

## Y4, connector 11–12

Frequency Range	MHz	1427 – 1518	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.0	16.7	16.9	16.8	16.6	16.6
Gain over all Tilts	dBi	15.9 ± 0.5	16.7 ± 0.5	16.8 ± 0.6	16.8 ± 0.7	16.6 ± 0.6	16.5 ± 0.8
<b>Horizontal Pattern:</b>							
Azimuth Beamwidth	°	62 ± 4.9	65 ± 3.2	65 ± 3.2	65 ± 3.9	66 ± 6.1	59 ± 4.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 27	> 27	> 27	> 28	> 26
<b>Vertical Pattern:</b>							
Elevation Beamwidth	°	8.7 ± 0.5	7.3 ± 0.5	6.7 ± 0.2	6.4 ± 0.4	5.8 ± 0.2	5.3 ± 0.2
Electrical Downtilt continuously adjustable	°	2.0 – 12.0					
Tilt Accuracy	°	< 0.3	< 0.1	< 0.2	< 0.2	< 0.3	< 0.3
First Upper Side Lobe Suppression	dB	> 15	> 17	> 18	> 18	> 17	> 16
Cross Polar Isolation	dB	> 25					
Port to Port Isolation	dB	>30 (Y4 // R1, R2, Y1, Y2, P1) >27 (Y4 // Y3)					
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)					

Values based on NGMN-P-BASTA (version 10.0) requirements.

Center, lower midband		P1, connector 13–14		
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
<b>Unit Beam</b>				
Gain at mid Tilt	dBi	15.2	15.4	15.2
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	73	72	72
Front-to-Back Ratio, Total Power, $\pm 30^\circ$	dB	> 24	> 24	> 23
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	5.8	5.6	5.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.7	< 0.7	< 0.7
First Upper Side Lobe Suppression	dB	> 12	> 11	> 10
Cross Polar Isolation	dB	> 25		
Port to Port Isolation	dB	>28 (P1 // R1, R2, Y1, Y2, Y3, Y4) >22 (P1 (L) // P1 (CL) // P1 (CR) // P1 (R))		
Max. Effective Power per Port	W	40 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Broadcast Beam

Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800
Azimuth 3dB Beamwidth	°	69	69	66
Gain over all Tilts	dBi	15.6	15.8	15.8
Gain roll-off at Sector Edge	dB	12	11	14
Cross Polar Ratio ( $\theta^\circ$ )	dB	> 14	> 17	> 14
Front-to-back Ratio	dB	> 25	> 25	> 25

## Service Beam

$0^\circ$ Direct Beam Gain over all Tilts	dBi	20.2	20.4	20.6
$0^\circ$ Direction Beam Horizontal 3dB Beam Width	°	25	24	22
$0^\circ$ Direction Beam Horizontal SLS	dB	> 14.5	> 15.2	> 16.0
$0^\circ$ Direction Beam Cross polar Ratio	dB	> 17	> 17	> 14
$0^\circ$ Direction Beam Front-to-Back Ratio	dB	> 29	> 29	> 27
$\pm 30^\circ$ Direct Beam Gain over all Tilts	dBi	18.8	19.2	19.4
$\pm 30^\circ$ Direction Beam Horizontal 3dB Beam Width	°	29.0	28.0	23.0

## Calibration and electrical parameters

Coupling factor between one antenna port and cal port	dB	$-26 \pm 1$
Max. amplitude tolerance from calibration port to input ports	dB	$\pm 1$
Max. phase tolerance cal network	°	$\pm 10$

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 23
Passive Intermodulation (FDD)	dBc	< -153 (2 x 43 dBm carrier)*
Polarization	°	+45, -45°
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

\* not applicable for L-band

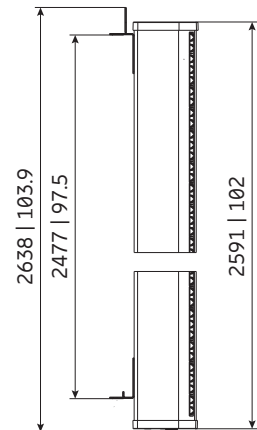
TDD ports cross PIM influence on FDD bands < -153 dBc

## Mechanical specifications

Input	12x 4.3-10 female, 1x MQ4 socket (male), 1x MQ5 socket (male)	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 965   217 Maximal: 1270   286
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2591 / 448 / 164 102.0 / 17.6 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight (approx.)	kg lb	48.5 / 53.0 (clamps incl.) 106.9 / 116.8 (clamps incl.)
Packing Size	mm inches	2745 / 510 / 293 108.1 / 20.1 / 11.5
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0°–9°	1
86010154	Site Sharing Adapter	3-way (see figure below)	
86010155	Site Sharing Adapter	6-way (see figure below)	
86010162	Gender Adapter	To be used in combination with the FlexRET module	1
KRY 121 108/1	Port Extender		1



## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1
86010165RAE	FlexRET RAE	Compliant to 3GPP / AISG 2.0 – AISG 3 – AISG-ES-RAE v2.2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

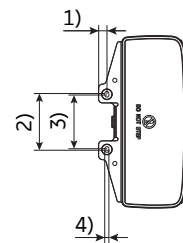
## Material:

**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

## Grounding:

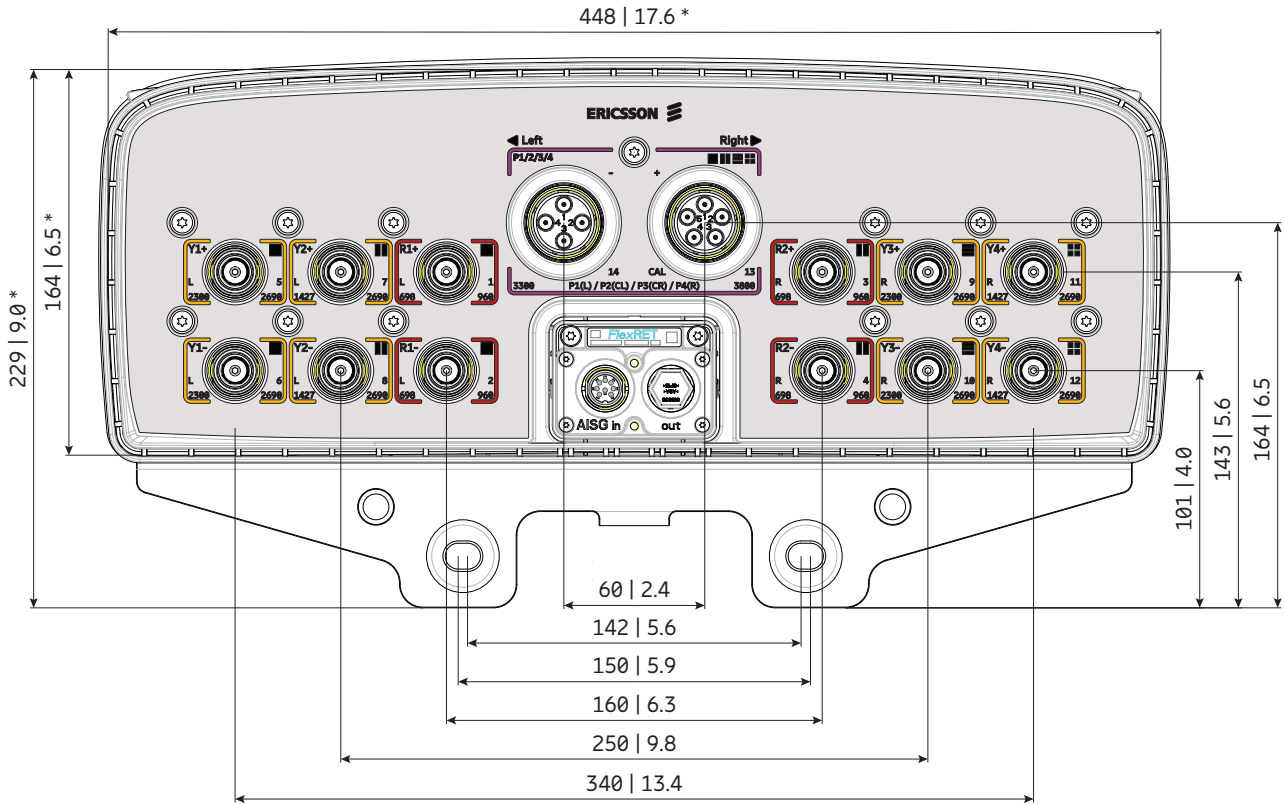
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) 142 | 5.6
- 4) 11 | 0.4

All dimensions  
in mm | inches

## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
2300–2690 MHz	Y1	5–6
1427–2690 MHz	Y2	7–8
2300–2690 MHz	Y3	9–10
1427–2690 MHz	Y4	11–12
3300–3800 MHz	P1 (L)	13.4–14.4
3300–3800 MHz	P1 (CL)	13.3–14.3
3300–3800 MHz	P1 (CR)	13.2–14.2
3300–3800 MHz	P1 (R)	13.1–14.1



### Attention:

Risk of damage if the RF Ports are connected incorrectly.  
No RF power on CAL port allowed!

New product



# Antenna 7003 2L 8M 2.6m

## KRE 101 2635/1

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 16.1 dBi  
 65° | 4x 1695–2690 MHz | 17.5 dBi  
 90° | 1x 2300–2690 MHz | BB 15.6 / SB 21.6 dBi  
 12x 4.3-10 | 1x MQ4 / 1x MQ5  
 Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.1	15.5	15.7	16.0
Gain over all Tilts	dBi	15.1 ± 0.2	15.4 ± 0.5	15.6 ± 0.4	15.9 ± 0.4
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	75 ± 3.8	73 ± 2.4	73 ± 2.2	74 ± 2.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 21	> 21	> 21
Cross Polar Discrimination at Boresight	dB	> 25	> 27	> 27	> 25
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	8.9 ± 0.6	8.3 ± 0.5	8.0 ± 0.4	7.6 ± 0.3
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.6	< 0.5	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 15	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 28			
Inter-Cluster Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4, Y5)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.2	15.5	15.8	16.1
Gain over all Tilts	dBi	15.2 ± 0.4	15.4 ± 0.5	15.7 ± 0.5	16.0 ± 0.3
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	73 ± 3.4	74 ± 2.6	74 ± 2.6	76 ± 3.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 21	> 22	> 22
Cross Polar Discrimination at Boresight	dB	> 22	> 29	> 28	> 27
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	8.9 ± 0.5	8.3 ± 0.5	8.0 ± 0.4	7.5 ± 0.4
Electrical Downtilt continuously adjustable	°	1.0 – 10.0			
Tilt Accuracy	°	< 0.6	< 0.5	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 15	> 15	> 15	> 15
Intra-Cluster Isolation	dB	> 28			
Inter-Cluster Isolation	dB	> 25 (R2 // R1, Y1, Y2, Y3, Y4, Y5)			
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.



Left side, upper midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.9	16.4	16.7	17.1	17.4
Gain over all Tilts	dBi	15.8 ± 0.8	16.4 ± 0.4	16.7 ± 0.7	17.1 ± 0.7	17.3 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	70 ± 4.6	69 ± 3.3	65 ± 6.2	62 ± 2.6	59 ± 5.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 23	> 21	> 22	> 22
Cross Polar Discrimination at Boresight	dB	> 19	> 20	> 21	> 26	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.6	7.5 ± 0.3	7.1 ± 0.5	6.3 ± 0.2	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.9	< 0.8	< 0.8	< 0.7	< 0.7
First Upper Sidelobe Suppression	dB	> 20	> 21	> 22	> 21	> 18
Intra-Cluster Isolation	dB	> 26				
Inter-Cluster Isolation	dB	> 27 (Y1 // R1, R2, Y2, Y3, Y4, Y5)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center Left, upper midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.3	16.6	16.5	17.1	17.7
Gain over all Tilts	dBi	16.3 ± 0.7	16.5 ± 0.6	16.5 ± 0.7	17.1 ± 0.7	17.6 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	70 ± 6.1	70 ± 4.4	71 ± 3.3	67 ± 4.1	57 ± 6.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 24	> 25	> 24	> 23
Cross Polar Discrimination at Boresight	dB	> 21	> 20	> 20	> 18	> 19
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.5	7.4 ± 0.4	7.0 ± 0.5	6.2 ± 0.3	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 22	> 21	> 21	> 18	> 18
Intra-Cluster Isolation	dB	> 27				
Inter-Cluster Isolation	dB	> 27 (Y2 // R1, R2, Y1, Y3, Y4, Y5)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Center right, upper midband

## Y3, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.2	16.6	16.6	17.1	17.6
Gain over all Tilts	dBi	16.2 ± 0.7	16.5 ± 0.7	16.5 ± 0.6	17.1 ± 0.7	17.6 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	69 ± 7.0	70 ± 4.5	71 ± 3.1	68 ± 3.6	58 ± 4.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 25	> 24	> 22
Cross Polar Discrimination at Boresight	dB	> 22	> 21	> 20	> 18	> 19
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.5	7.4 ± 0.4	7.1 ± 0.5	6.3 ± 0.2	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
First Upper Sidelobe Suppression	dB	> 22	> 21	> 21	> 17	> 17
Intra-Cluster Isolation	dB	> 27				
Inter-Cluster Isolation	dB	> 27 (Y3 // R1, R2, Y1, Y2, Y4, Y5)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y4, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	15.8	16.4	16.8	17.1	17.5
Gain over all Tilts	dBi	15.8 ± 0.7	16.4 ± 0.6	16.7 ± 0.7	17.1 ± 0.7	17.4 ± 0.8
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	71 ± 5.1	70 ± 2.9	65 ± 6.7	62 ± 4.2	59 ± 5.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 24	> 24	> 23	> 23
Cross Polar Discrimination at Boresight	dB	> 19	> 21	> 21	> 24	> 21
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.4	7.5 ± 0.3	7.1 ± 0.6	6.3 ± 0.2	5.8 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.5	< 0.5	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 20	> 21	> 21	> 20	> 19
Intra-Cluster Isolation	dB	> 26				
Inter-Cluster Isolation	dB	> 27 (Y4 // R1, R2, Y1, Y2, Y3, Y5)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Broadcast Beam at mid Tilt

## Y5, connector 13–14

Frequency Range	MHz	2300 – 2500	2490 – 2690
Azimuth 3dB Beamwidth	°	65 ± 9	65 ± 6
Gain over all Tilts	dB	15.1	15.6
Gain roll-off at Sector Edge	dB	12	16
Cross Polar Ratio (0°)	dB	> 18	> 18
Front-to-back Ratio	dB	> 28	> 28

## Service Beam at mid Tilt

0° Direct Beam Gain	dB	21.1	21.6
0° Direction Beam Horizontal 3dB Beam Width	°	23	22
0° Direction Beam Horizontal SLS	dB	> 12	> 12
0° Direction Beam Cross polar Ratio	dB	> 22	> 22
0° Direction Beam Front-to-Back Ratio	dB	> 28	> 28

## Multi Beam at mid Tilt

Horizontal 3dB Beam Width	°	27	25
Gain	dBi	20.6 (@ +30°, -30°)	20.8 (@ +30°, -30°)

## Calibration and electrical parameters

Coupling factor between one antenna port and cal port	dB	-26 ± 1
Max. amplitude tolerance from calibration port to input ports	dB	±1
Max. phase tolerance cal network	°	±9

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25 (LB) > 27 (MB) > 25 (TDD)
Passive Intermodulation (2 x 43 dBm carrier)	dBc	< -153 (FDD) < -120 (TDD)
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input		12x 4.3-10 female, 1x MQ4 socket, 1x MQ5 socket
Connector Position		bottom
Adjustment Mechanism		Integrated RET, continuously adjustable
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1635   368 Maximal: 1635   368
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2600 / 499 / 196 102.4 / 19.6 / 7.7
Category of Mounting Hardware		XH (X-Heavy)
Weight	kg lb	57.0 / 62.0 (clamps incl.) 125.7 / 136.7 (clamps incl.)
Packing Size	mm inches	2820 / 524 / 282 111.0 / 20.6 / 11.1
Scope of Supply		Panel, RET KRY 121 79/2 and clamps for 55–115 mm   2.2–4.5 inches diameter

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Pole diameter: 110–220   4.3–8.7	1
85010099	1 downtilt kit	Downtilt angle: 0°–9°	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010096	2 clamps	Pole diameter: 55–115   2.2–4.5	1
KRY 121 79/2	RET	Compliant to 3GPP / AISG 2.0	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.

**Material:**

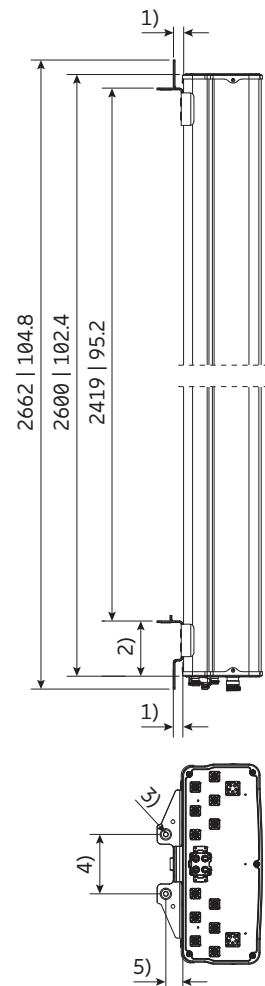
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:**

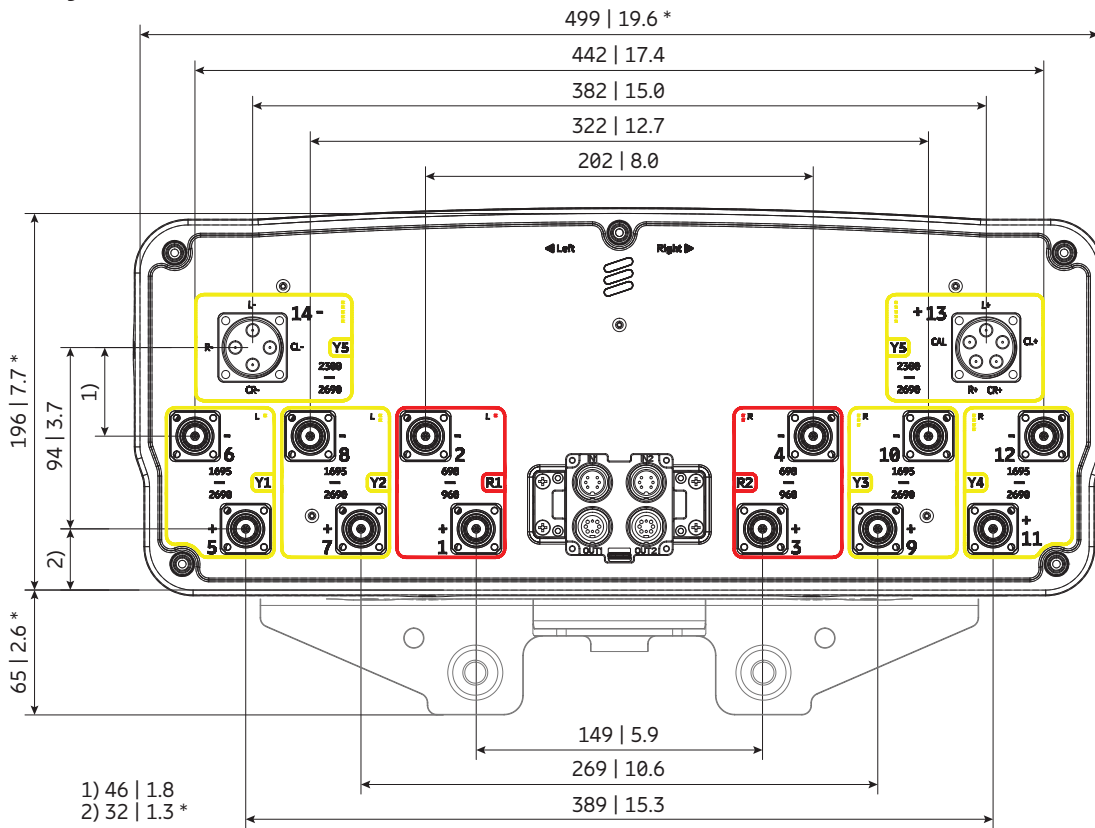
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



- 1) 24 | 0.9  
2) 140 | 5.5  
3)  $\varnothing$  11 | 0.4  
4) 150 | 5.9  
5) 43 | 1.7

All dimensions  
in mm | inches

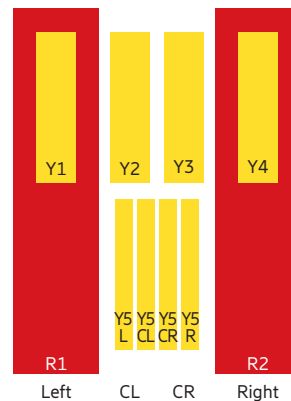
## Layout of interface



Bottom view  
\* Dimensions refer to radome  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
1695–2690 MHz	Y3	9–10
1695–2690 MHz	Y4	11–12
2300–2690 MHz	Y5 (L)	13.1–14.5
2300–2690 MHz	Y5 (CL)	13.2–14.6
2300–2690 MHz	Y5 (CR)	13.3–14.7
2300–2690 MHz	Y5 (R)	13.4–14.8
	CAL	C



# Dual-Beam Configuration nMB

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
<b>2x Midband</b>						
Antenna 2282 0L 2M 1.1m KRE 101 2557/1	2x 1695–2690	32	19.5	2–12	4.3-10	<a href="#">463</a>
<b>4x Midband</b>						
Antenna 2480 0L 4M 1.8m KRE 101 2405/1	2x 1695–2690 2x 1695–2690	32 32	18.9 18.3	2–12 2–12	4.3-10	<a href="#">466</a>
Antenna 2480 0L 4M 2.0m KRE 101 2538/1	2x 1695–2690 2x 1695–2690	33 33	19.0 18.5	2–12 2–12	4.3-10	<a href="#">471</a>
Antenna 3891 1L 4M 2.4m KRE 101 2632/2	1x 698–960 4x 1710–2690	65 32	16.0 18.5	2–12 2–12	4.3-10	<a href="#">475</a>
Antenna 3891 1L 4M 2.7m KRE 101 2544/1	1x 690–960 4x 1710–2690	65 32	16.2 20.3	2–12 2–12	4.3-10	<a href="#">480</a>
Antenna 4280 2L 4M 2.7m KRE 101 2502/1	2x 698–960 2x 1710–2690 2x 1710–2690	65 32 32	15.5 19.0 19.0	1–10 2–12 2–12	4.3-10	<a href="#">486</a>

[New product](#)



# Antenna 2282 0L 2M 1.1m

KRE 101 2557/1

Capacity

Compact

Coverage

32° | 2x 1695–2690 MHz | 19.5 dBi  
Electrical downtilt set by integrated RET



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Left side, midband		Y1, connector 1–2				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.7	18.1	18.3	18.6	19.3
Gain over all Tilts	dBi	17.7 ± 0.7	18.1 ± 0.5	18.2 ± 0.7	18.5 ± 1.0	19.2 ± 1.0
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	41 ± 2.3	40 ± 0.6	38 ± 2.5	33 ± 0.8	30 ± 1.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 25	> 25	> 25	> 26	> 27
Cross Polar Discrimination at Boresight	dB	> 21.1	> 20.7	> 20.9	> 20.4	> 19.6
Cross Polar Discrimination over Sector	dB	> 10.4	> 9.1	> 11.6	> 8.8	> 4.9
Azimuth Beam Port-to-Port Tracking	dB	< 1.2	< 1.2	< 1.1	< 1.3	< 2.4
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.7 ± 0.5	9.1 ± 0.4	8.6 ± 0.5	7.7 ± 0.3	7.1 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 1.1	< 1.0	< 1.2	< 1.1	< 1.1
First Upper Sidelobe Suppression	dB	> 15	> 16	> 18	> 18	> 19
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 15	> 16	> 17	> 17	> 15
Intra-Cluster Isolation	dB	≥ 28				
Port to Port Isolation	dB	≥ 28 (Y1 // Y2)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, midband		Y2, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.7	18.0	18.1	18.4	19.1
Gain over all Tilts	dBi	17.7 ± 0.6	18.0 ± 0.5	18.1 ± 0.7	18.3 ± 1.0	19.1 ± 1.0
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	42 ± 2.4	40 ± 0.4	39 ± 2.4	34 ± 0.8	30 ± 1.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 24	> 24	> 25	> 27
Cross Polar Discrimination at Boresight	dB	> 22.0	> 22.3	> 23.2	> 21.1	> 21.3
Cross Polar Discrimination over Sector	dB	> 9.3	> 10.0	> 12.2	> 7.7	> 6.7
Azimuth Beam Port-to-Port Tracking	dB	< 0.9	< 1.3	< 1.1	< 1.5	< 2.9
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.7 ± 0.5	9.2 ± 0.4	8.6 ± 0.6	7.7 ± 0.3	7.2 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.7	< 0.9	< 0.9	< 0.8
First Upper Sidelobe Suppression	dB	> 16	> 18	> 19	> 18	> 20
Upper Sidelobe Suppression, 20° Sector above Main Beam	dB	> 16	> 17	> 18	> 17	> 15
Intra-Cluster Isolation	dB	≥ 28				
Port to Port Isolation	dB	≥ 28 (Y2 // Y1)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	400 (at 25° C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

**Material:**

**Reflector screen and dipoles:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

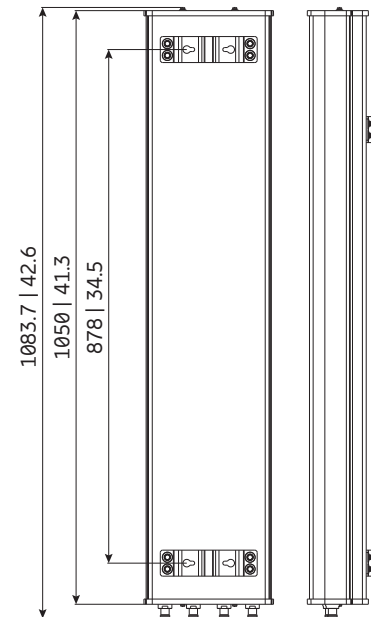
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

Input	4x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 465   105 Maximal: 465   105
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1050 / 398 / 195 59.1 / 19.2 / 6.9
Weight	kg lb	16.5 / 21.9 (clamps incl.) 36.4 / 48.3 (clamps incl.)
Packing Size	mm inches	1365 / 490 / 265 53.8 / 19.3 / 10.4
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit ( $0^{\circ}$ – $20^{\circ}$ ) SXA 120 129/1, integr. RET KRY 121 78/1	

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
1695–2690 MHz	Y1	1–2
1695–2690 MHz	Y2	3–4



Left Right



# Antenna 2480 0L 4M 1.8m

KRE 101 2405/1

- Capacity
- Compact
- Coverage

32° | 2x 1695–2690 MHz | 18.9 dBi  
32° | 2x 1695–2690 MHz | 18.3 dBi  
Electrical downtilt set by integrated RET



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Left side, midband, lower		Y1, connector 1–2				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.4	18.0	18.3	18.7	18.9
Gain over all Tilts	dBi	17.4 ± 0.9	18.0 ± 0.6	18.2 ± 0.8	18.7 ± 0.7	18.9 ± 0.8
<b>Horizontal Pattern:</b>						
Horizontal Beam Centers	°	±32	±30	±28	±24	±22
Azimuth Beamwidth	°	36 ± 1.	35 ± 1.3	33 ± 2.4	28 ± 0.9	25 ± 0.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 28	> 30	> 29	> 29
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.8 ± 0.5	10.1 ± 0.5	9.5 ± 0.6	8.3 ± 0.4	7.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.2	< 0.3	< 0.6
First Upper Side Lobe Suppression	dB	> 20	> 19	> 18	> 17	> 14
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	16 (Y1 // Y2, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y1	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Left side, midband, upper		Y2, connector 3–4				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.0	17.4	17.7	18.2	18.3
Gain over all Tilts	dBi	17.0 ± 0.8	17.4 ± 0.6	17.7 ± 0.7	18.2 ± 0.7	18.3 ± 0.7
<b>Horizontal Pattern:</b>						
Horizontal Beam Centers	°	±32	±30	±28	±24	±22
Azimuth Beamwidth	°	37 ± 0.7	36 ± 1.6	33 ± 3.0	28 ± 0.9	26 ± 0.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 29	> 29	> 29	> 27
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	11.1 ± 0.6	10.3 ± 0.4	9.7 ± 0.7	8.6 ± 0.2	7.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.5	< 0.4	< 0.7	< 0.4
First Upper Side Lobe Suppression	dB	> 20	> 26	> 26	> 22	> 18
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	16 (Y2 // Y1, Y3, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y2	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband, lower		Y3, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.3	17.9	18.2	18.6	18.7
Gain over all Tilts	dBi	17.3 ± 0.9	17.9 ± 0.7	18.1 ± 0.8	18.6 ± 0.7	18.7 ± 0.8
<b>Horizontal Pattern:</b>						
Horizontal Beam Centers	°	±32	±30	±28	±24	±22
Azimuth Beamwidth	°	36 ± 0.9	35 ± 1.7	33 ± 2.8	28 ± 0.8	25 ± 0.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 28	> 29	> 30	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.9 ± 0.6	10.1 ± 0.6	9.5 ± 0.6	8.4 ± 0.4	7.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.4	< 0.5	< 0.4	< 0.6
First Upper Side Lobe Suppression	dB	> 17	> 18	> 18	> 16	> 13
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	16 (Y3 // Y2, Y1, Y4)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y3	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

Right side, midband, upper		Y4, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	16.9	17.5	17.7	18.1	18.0
Gain over all Tilts	dBi	16.9 ± 0.7	17.5 ± 0.7	17.7 ± 0.7	18.1 ± 0.7	18.1 ± 0.8
<b>Horizontal Pattern:</b>						
Horizontal Beam Centers	°	±32	±30	±28	±24	±22
Azimuth Beamwidth	°	37 ± 1.1	35 ± 1.5	33 ± 2.5	28 ± 0.8	26 ± 0.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 29	> 30	> 28	> 29
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	11.0 ± 0.5	10.3 ± 0.5	9.7 ± 0.5	8.6 ± 0.3	7.7 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 1.0	< 0.9	< 0.9	< 1.0	< 0.8
First Upper Side Lobe Suppression	dB	> 25	> 22	> 20	> 19	> 14
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	16 (Y4 // Y2, Y3, Y1)				
Max. Effective Power per Port	W	175 (at 40 °C ambient temperature)				
Max. Effective Power Ports Y4	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 16
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	-45, +45
Max. Effective Power for the Antenna	W	900 (at 40° C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 375   85 Maximal: 655   147
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	1800 / 355 / 192 70.9 / 14.0 / 7.6
Weight	kg lb	26.8 / 35.5 (clamps incl.) 59.1 / 78.3 (clamps incl.)
Packing Size	mm inches	2095 / 440 / 265 82.5 / 17.3 / 10.4
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit (0°–14°) SXA 120 128/3, integr. RET KRY 121 78/2	

**Material:**

**Reflector screen and dipoles:** Aluminum.

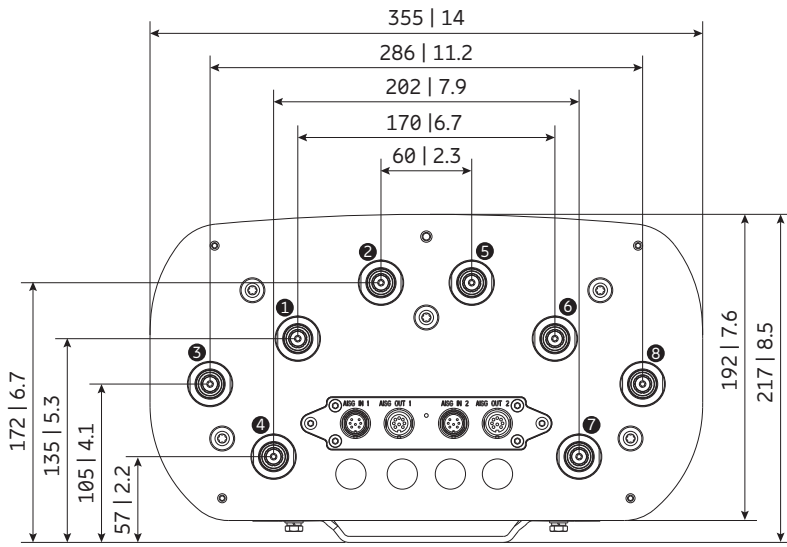
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

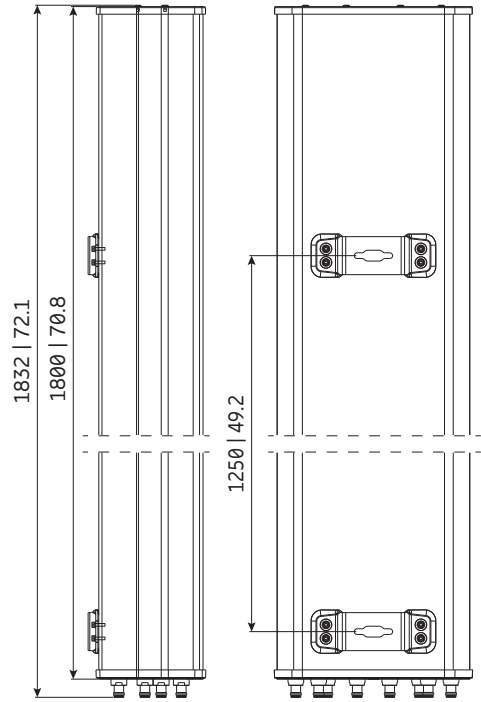
**Grounding:**

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

### Layout of interface



Bottom view  
All dimensions in mm | inches



### Correlation Table

Frequency range	Array	Connector / Ports
1695–2690 MHz	Y1	1–2
1695–2690 MHz	Y2	3–4
1695–2690 MHz	Y3	5–6
1695–2690 MHz	Y4	7–8





# Antenna 2480 0L 4M 2.0m

KRE 101 2538/1

Capacity

Compact

Coverage

33° | 2x 1695–2690 MHz | 19.0 dBi  
33° | 2x 1695–2690 MHz | 18.5 dBi  
Electrical downtilt set by integrated RET



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## Left side, midband, lower

## Y1, connector 1–2

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.4	17.6	17.8	18.4	19.0
Gain over all Tilts	dBi	17.4±0.5	17.6±0.5	17.8±0.6	18.4±0.8	18.9±0.9
<b>Horizontal Pattern:</b>						
Horizontal Beam Centers	°	-32	-33	-33	-30	-30
Azimuth Beamwidth	°	42±2	40±1	39±2	34±1	31±2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 23	> 22	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	9.9 ± 0.5	9.2 ± 0.7	8.7 ± 0.5	7.6 ± 0.3	7.0 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.7	< 0.6	< 0.6
First Upper Side Lobe Suppression	dB	> 15	> 16	> 17	> 16	> 17
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	28 (Y1 // Y2, Y3, Y4)				
Max. Effective Power per Port	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Left side, midband, upper

## Y2, connector 3–4

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.0	17.5	17.6	18.0	18.5
Gain over all Tilts	dBi	17.0 ± 0.6	17.4 ± 0.7	17.6 ± 0.6	18.0 ± 0.8	18.5 ± 0.9
<b>Horizontal Pattern:</b>						
Horizontal Beam Centers	°	-32	-33	-33	-30	-30
Azimuth Beamwidth	°	42 ± 3	40 ± 1	39 ± 2	33 ± 1	30 ± 2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 24	> 22	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.0 ± 0.6	9.3 ± 0.6	8.8 ± 0.4	7.7 ± 0.3	7.1 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.5	< 0.3	< 0.4
First Upper Side Lobe Suppression	dB	> 14	> 15	> 16	> 16	> 16
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	16 (Y2 // Y1, Y3, Y4)				
Max. Effective Power per Port	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.



## Right side, midband, lower

## Y3, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.5	17.9	18.1	18.6	19.1
Gain over all Tilts	dBi	17.4±0.7	17.9±0.8	18.1±0.6	18.6±0.8	19.0±1.0
<b>Horizontal Pattern:</b>						
Horizontal Beam Centers	°	32	33	33	30	30
Azimuth Beamwidth	°	42±3	40±1	39±2	34±1	30±2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 24	> 23	> 23
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.0 ± 0.5	9.3 ± 0.6	8.7 ± 0.7	7.8 ± 0.5	7.0 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.5	< 0.5	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 15	> 17	> 18	> 17	> 17
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	28 (Y1 // Y2, Y3, Y4)				
Max. Effective Power per Port	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Right side, midband, upper

## Y4, connector 7–8

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.2	17.6	17.8	18.5	18.8
Gain over all Tilts	dBi	17.1 ± 0.6	17.6 ± 0.7	17.8 ± 0.7	18.2 ± 0.8	18.8 ± 0.9
<b>Horizontal Pattern:</b>						
Horizontal Beam Centers	°	32	33	33	30	30
Azimuth Beamwidth	°	42 ± 3	40 ± 1	39 ± 2	34 ± 1	30 ± 2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 24	> 22	> 24
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	10.0 ± 0.5	9.3 ± 0.6	8.8 ± 0.5	7.6 ± 0.3	7.1 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.6	< 0.6	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 14	> 16	> 17	> 16	> 17
Cross Polar Isolation	dB	> 28				
Port to Port Isolation	dB	16 (Y2 // Y1, Y3, Y4)				
Max. Effective Power per Port	W	250 (at 40 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	800 (at 40° C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

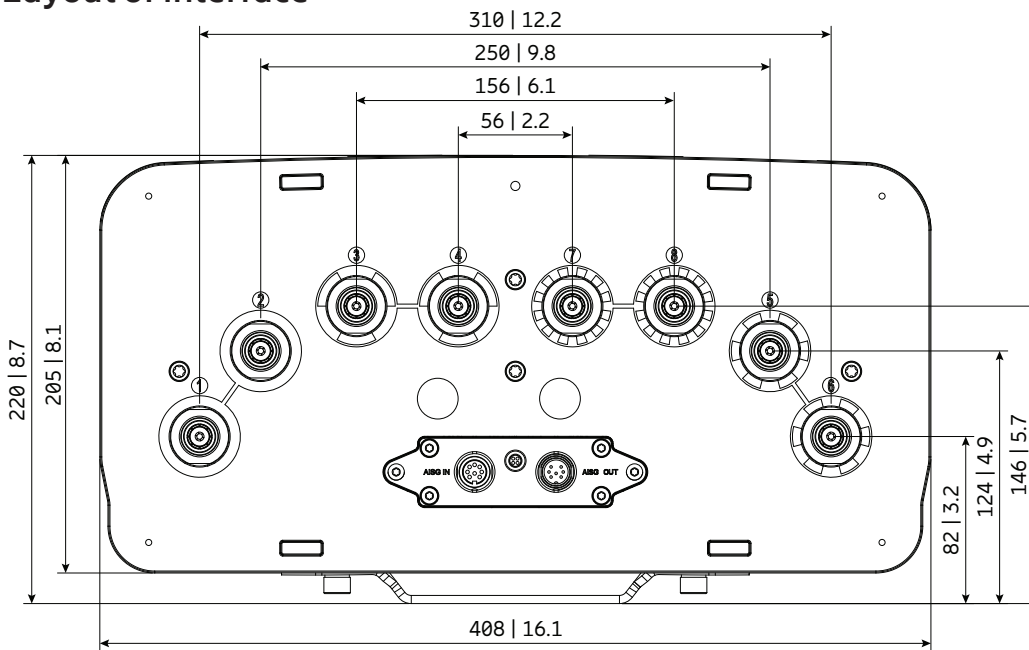
**Material:** **Reflector screen and dipoles:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

Input	8x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 920   207 Maximal: 980   220
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2000 / 398 / 195 78.7 / 15.6 / 7.6
Weight	kg lb	27.8 / 34.5 (clamps incl.) 61.3 / 76.1 (clamps incl.)
Packing Size	mm inches	2300 / 490 / 265 90.5 / 19.3 / 10.4
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit (0°–14°) SXA 120 128/2, integr. RET KRY 121 78/1	

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
1695–2690 MHz	Y1	1–2
1695–2690 MHz	Y2	3–4
1695–2690 MHz	Y3	5–6
1695–2690 MHz	Y4	7–8



New product



# Antenna 3891 1L 4M 2.4m

KRE 101 2632/2

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 16.0 dBi  
32° | 4x 1710–2690 MHz | 18.5 dBi  
Electrical downtilt set by integrated RET



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Lowband		R1, connector 1–2			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	15.8	16.3	16.3	15.7
Gain over all Tilts	dBi	15.7 ± 0.6	16.2 ± 0.5	16.2 ± 0.5	15.6 ± 0.6
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	67 ± 5.4	62 ± 3.5	63 ± 5.8	70 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 22	> 21	> 22
Cross Polar Discrimination at Boresight	dB	> 19	> 25	> 25	> 25
Azimuth Beam Port-to-Port Tracking	dB	1.5	2.0	2.5	2.0
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	9.2 ± 0.8	8.6 ± 0.5	8.3 ± 0.5	7.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0			
Tilt Accuracy	°	< 1.2	< 1.3	< 1.3	< 1.2
First Upper Sidelobe Suppression	dB	> 18	> 17	> 17	> 18
Intra-Cluster Isolation	dB	> 27			
Port to Port Isolation	dB	> 28 (R1 // Y1, Y2, Y3, Y4)			
Max. Effective Power per Port	W	300			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, lower midband		Y1, connector 3–4				
Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.4	18.0	18.3	19.0	19.6
Gain over all Tilts	dBi	17.3 ± 0.7	18.0 ± 0.8	18.2 ± 0.8	18.9 ± 1.0	19.5 ± 1.1
<b>Horizontal Pattern:</b>						
Horizontal Beam Center		+34	+33	+32	+32	+32
Azimuth Beamwidth	°	46 ± 2.0	45 ± 2.6	41 ± 4.5	34 ± 1.6	31 ± 1.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 23	> 25	> 24	> 24
Cross Polar Discrimination at Boresight	dB	> 15	> 15	> 15	> 18	> 19
Azimuth Beam Port-to-Port Tracking	dB	1.5	1.0	1.0	2.5	2.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.9 ± 0.6	8.3 ± 0.3	7.8 ± 0.7	6.9 ± 0.3	6.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.5	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 18	> 19	> 17	> 17	> 17
Intra-Cluster Isolation	dB	> 28				
Port to Port Isolation	dB	> 28 (Y1 // R1, Y2, Y3, Y4)				
Max. Effective Power per Port	W	200				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, upper midband		Y2, connector 5–6				
Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.2	17.6	17.8	18.4	18.8
Gain over all Tilts	dBi	17.1 ± 0.5	17.5 ± 0.7	17.7 ± 0.9	18.3 ± 0.9	18.7 ± 0.9
<b>Horizontal Pattern:</b>						
Horizontal Beam Center		+34	+33	+32	+32	+32
Azimuth Beamwidth	°	46 ± 2.2	46 ± 1.5	42 ± 4.7	35 ± 1.2	31 ± 1.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 25	> 24	> 24
Cross Polar Discrimination at Boresight	dB	> 14	> 15	> 16	> 18	> 21
Azimuth Beam Port-to-Port Tracking	dB	1.0	0.5	1.0	2.0	2.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.8 ± 0.6	8.2 ± 0.4	7.8 ± 0.5	6.9 ± 0.3	6.4 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.8	< 0.7	< 0.5	< 0.4	< 0.6
First Upper Sidelobe Suppression	dB	> 17	> 19	> 18	> 17	> 17
Intra-Cluster Isolation	dB	> 27				
Port to Port Isolation	dB	> 28 (Y2 // R1, Y1, Y3, Y4)				
Max. Effective Power per Port	W	200				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lower midband		Y3, connector 7–8				
Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.4	18.0	18.3	18.9	19.6
Gain over all Tilts	dBi	17.4 ± 0.7	18.0 ± 0.8	18.2 ± 0.8	18.9 ± 1.0	19.5 ± 1.0
<b>Horizontal Pattern:</b>						
Horizontal Beam Center		-34	-34	-33	-33	-33
Azimuth Beamwidth	°	46 ± 1.8	45 ± 2.4	41 ± 3.7	34 ± 1.6	31 ± 1.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 23	> 22	> 23	> 23
Cross Polar Discrimination at Boresight	dB	> 15	> 16	> 16	> 18	> 19
Azimuth Beam Port-to-Port Tracking	dB	1.0	1.0	1.5	2.5	1.5
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.9 ± 0.7	8.3 ± 0.4	7.8 ± 0.6	6.9 ± 0.3	6.3 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.4	< 0.4	< 0.4	< 0.4
First Upper Sidelobe Suppression	dB	> 17	> 18	> 17	> 17	> 16
Intra-Cluster Isolation	dB	> 28				
Port to Port Isolation	dB	> 28 (Y3 // R1, Y1, Y2, Y4)				
Max. Effective Power per Port	W	200				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, upper midband		Y4, connector 9–10				
Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.1	17.5	17.7	18.2	18.5
Gain over all Tilts	dBi	17.1 ± 0.6	17.5 ± 0.7	17.6 ± 0.8	18.1 ± 1.0	18.5 ± 0.9
<b>Horizontal Pattern:</b>						
Horizontal Beam Center		-34	-34	-33	-33	-33
Azimuth Beamwidth	°	46 ± 1.7	46 ± 1.4	42 ± 4.6	35 ± 0.9	31 ± 1.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 24	> 24	> 24
Cross Polar Discrimination at Boresight	dB	> 14	> 15	> 16	> 17	> 19
Azimuth Beam Squint	°	4 ± 1.3	3 ± 1.9	2 ± 2.2	2 ± 1.2	3 ± 0.9
Azimuth Beam Port-to-Port Tracking	dB	1.0	1.0	1.0	2.0	2.0
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.9 ± 0.6	8.3 ± 0.4	7.9 ± 0.5	6.9 ± 0.3	6.4 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.9	< 0.7	< 0.6	< 0.5	< 0.6
First Upper Sidelobe Suppression	dB	> 17	> 19	> 18	> 18	> 17
Intra-Cluster Isolation	dB	> 27				
Port to Port Isolation	dB	> 28 (Y4 // R1, Y1, Y2, Y3)				
Max. Effective Power per Port	W	200				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 27
Passive Intermodulation	dBc	< -150 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1000

Values based on NGMN-P-BASTA (version 11.1) requirements.

**Material:** **Reflector screen and dipoles:** Aluminum.  
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.  
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

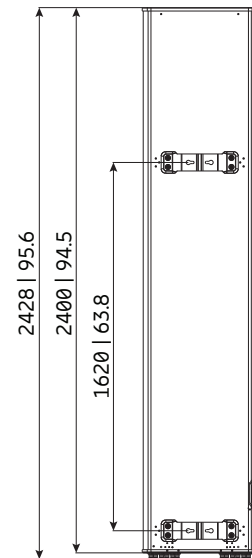
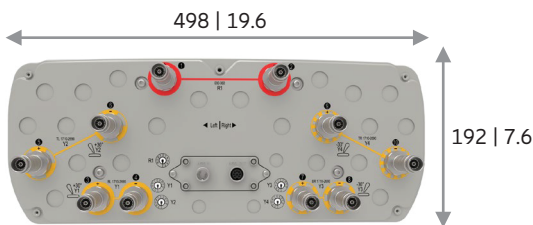
**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

**Lightning protection:** The antenna is tested against a lightning strike of 3 kA, 8/20  $\mu$ s.

## Mechanical specifications

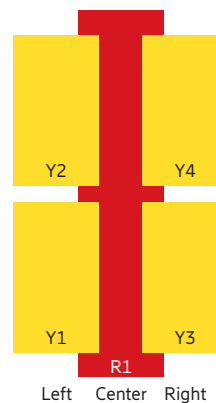
Input	10x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1475   332 Maximal: 1475   332
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2400 / 498 / 192 94.5 / 19.6 / 7.6
Weight	kg lb	38.8 / 46.8 (clamps incl.) 85.5 / 103.1 (clamps incl.)
Packing Size	mm inches	2745 / 550 / 265 108.1 / 21.7 / 10.4
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit (0°–10°) SXA 120 130/1, integr. RET KRY 121 78/4	

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
690–960 MHz	R1	1–2
1710–2690 MHz	Y1	3–4
1710–2690 MHz	Y2	5–6
1710–2690 MHz	Y3	7–8
1710–2690 MHz	Y4	9–10



New product



# Antenna 3891 1L 4M 2.7m

KRE 101 2544/1

Capacity

Compact

Coverage

65° | 1x 698–960 MHz | 16.2 dBi  
32° | 4x 1710–2690 MHz | 20.0 dBi  
Electrical downtilt set by integrated RET



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Center, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	16.0	16.3	16.0
Gain over all Tilts	dBi	16.1 ± 0.7	16.2 ± 0.4	16.0 ± 0.5
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	60 ± 4.6	59 ± 2.4	63 ± 3.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19	> 19	> 21
Cross Polar Discrimination at Boresight	dB	> 19	> 23	> 23
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	9.3 ± 0.8	8.5 ± 0.7	7.5 ± 0.5
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 0.8	< 0.9	< 1.1
First Upper Sidelobe Suppression	dB	> 21	> 17	> 17
Intra-Cluster Isolation	dB	> 28		
Port to Port Isolation	dB	> 28 (R1 // Y1, Y2, Y3, Y4)		
Max. Effective Power per Port	W	300		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, lower midband		Y1, connector 3–4				
Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	18.3	18.6	18.9	19.4	20.3
Gain over all Tilts	dBi	18.3 ± 0.7	18.6 ± 0.7	18.9 ± 0.8	19.4 ± 1.0	20.2 ± 1.0
<b>Horizontal Pattern:</b>						
Horizontal Beam Center	°	+32	+31	+30	+30	+30
Azimuth Beamwidth	°	44 ± 1.9	44 ± 1.3	41 ± 4.2	35 ± 1.1	30 ± 2.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 27	> 28	> 26	> 27
Cross Polar Discrimination at Boresight	dB	> 18	> 18	> 18	> 18	> 21
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.8	7.4 ± 0.3	7.0 ± 0.5	6.2 ± 0.2	5.6 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.8	< 0.9	< 0.9	< 0.8	< 0.8
First Upper Sidelobe Suppression	dB	> 14	> 17	> 17	> 22	> 24
Intra-Cluster Isolation	dB	> 28				
Port to Port Isolation	dB	> 28 (Y1 // R1, Y2, Y3, Y4)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, upper midband		Y2, connector 5–6				
Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.8	18.2	18.3	18.5	19.6
Gain over all Tilts	dBi	17.8 ± 0.7	18.1 ± 0.6	18.3 ± 0.8	18.5 ± 1.0	19.6 ± 0.9
<b>Horizontal Pattern:</b>						
Horizontal Beam Center	°	+32	+32	+30	+30	+31
Azimuth Beamwidth	°	43 ± 2.0	45 ± 1.6	41 ± 4.7	35 ± 1.6	30 ± 1.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 26	> 27	> 24	> 26
Cross Polar Discrimination at Boresight	dB	> 19	> 19	> 19	> 20	> 20
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.7	7.4 ± 0.3	7.0 ± 0.6	6.2 ± 0.2	5.6 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.6	< 0.5	< 0.6
First Upper Sidelobe Suppression	dB	> 15	> 18	> 18	> 20	> 21
Intra-Cluster Isolation	dB	> 28				
Port to Port Isolation	dB	> 28 (Y2 // R1, Y1, Y3, Y4)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lower midband		Y3, connector 7–8				
Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	18.3	18.7	18.9	19.3	20.3
Gain over all Tilts	dBi	18.3 ± 0.7	18.7 ± 0.9	18.9 ± 0.7	19.3 ± 1.1	20.2 ± 1.0
<b>Horizontal Pattern:</b>						
Horizontal Beam Center	°	-32	-31	-30	-30	-30
Azimuth Beamwidth	°	44 ± 1.8	45 ± 1.1	42 ± 3.8	36 ± 1.1	30 ± 1.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 26	> 27	> 25	> 26
Cross Polar Discrimination at Boresight	dB	> 18	> 18	> 19	> 19	> 21
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.7	7.3 ± 0.3	7.0 ± 0.5	6.2 ± 0.2	5.6 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.5	< 0.6	< 0.6	< 0.5	< 0.5
First Upper Sidelobe Suppression	dB	> 15	> 17	> 17	> 22	> 23
Intra-Cluster Isolation	dB	> 28				
Port to Port Isolation	dB	> 28 (Y3 // R1, Y1, Y2, Y4)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y4, connector 9–10

Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.7	18.1	18.2	18.4	19.6
Gain over all Tilts	dBi	17.7 ± 0.7	18.0 ± 0.7	18.2 ± 0.8	18.4 ± 1.1	19.5 ± 1.0
<b>Horizontal Pattern:</b>						
Horizontal Beam Center	°	-32	-32	-30	-30	-31
Azimuth Beamwidth	°	44 ± 1.7	45 ± 1.8	43 ± 4.5	36 ± 1.7	30 ± 1.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 25	> 26	> 23	> 25
Cross Polar Discrimination at Boresight	dB	> 18	> 19	> 19	> 19	> 22
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.8	7.4 ± 0.3	7.0 ± 0.5	6.1 ± 0.2	5.6 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.4	< 0.3	< 0.4
First Upper Sidelobe Suppression	dB	> 13	> 16	> 15	> 16	> 17
Intra-Cluster Isolation	dB	> 28				
Port to Port Isolation	dB	> 28 (Y4 // R1, Y1, Y2, Y3)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 28
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1000

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	10x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Maximal: 1670   375
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2680 / 498 / 192 105.5 / 19.6 / 7.6
Weight	kg lb	45.8 / 53.8 (clamps incl.) 100.9 / 118.5 (clamps incl.)
Packing Size	mm inches	2930 / 550 / 265 115.4 / 21.7 / 10.4
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit ( $0^{\circ}$ – $10^{\circ}$ ) SXA 216 2866/1, integr. RET KRY 121 78/5	

**Material:**

**Reflector screen and dipoles:** Aluminum.

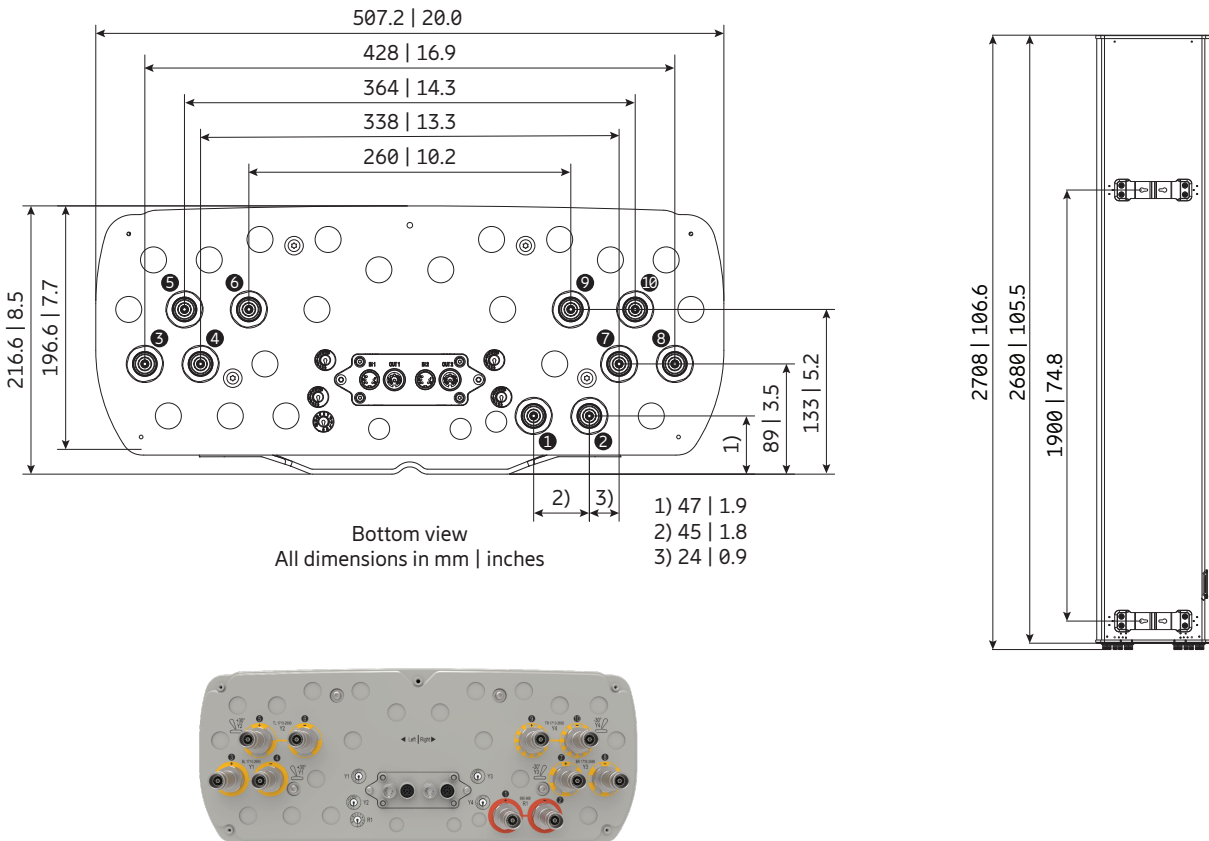
**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:**

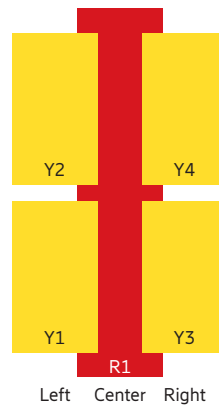
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Layout of interface

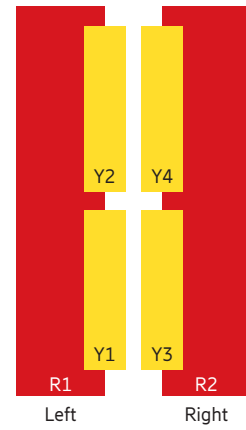


## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
1710–2690 MHz	Y1	3–4
1710–2690 MHz	Y2	5–6
1710–2690 MHz	Y3	7–8
1710–2690 MHz	Y4	9–10



New product



# Antenna 4280 2L 4M 2.7m

KRE 101 2502/1

Capacity

Compact

Coverage

65° | 2x 698–960 MHz | 15.5 dBi  
32° | 4x 1710–2690 MHz | 19.0 dBi  
Electrical downtilt set by integrated RET



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Left side, lowband		R1, connector 1–2		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.5	15.5
Gain over all Tilts	dBi	14.9 ± 0.5	15.4 ± 0.5	15.5 ± 0.4
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	67 ± 6.5	61 ± 5.5	56 ± 4.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 23
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	8.5 ± 0.6	7.7 ± 0.6	6.9 ± 0.3
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 1.0	< 1.0	< 1.0
First Upper Side Lobe Suppression	dB	> 15	> 16	> 15
Cross Polar Isolation	dB	> 26		
Port to Port Isolation	dB	> 25 (R1 // R2, Y1, Y2, Y3, Y4)		
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lowband		R2, connector 3–4		
Frequency Range	MHz	698 – 824	790 – 894	880 – 960
Gain at mid Tilt	dBi	15.0	15.4	15.6
Gain over all Tilts	dBi	15.0 ± 0.5	15.4 ± 0.6	15.5 ± 0.5
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	70 ± 8.9	63 ± 5.6	61 ± 6.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 25
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	8.4 ± 0.6	7.6 ± 0.7	6.9 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0		
Tilt Accuracy	°	< 1.0	< 1.0	< 1.0
First Upper Side Lobe Suppression	dB	> 16	> 16	> 13
Cross Polar Isolation	dB	> 26		
Port to Port Isolation	dB	> 25 (R2 // R2, Y1, Y2, Y3, Y4)		
Max. Effective Power per Port	W	350 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Left side, lower midband

## Y1, connector 5–6

Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	18.2	19.0	19.4	19.5	19.5
Gain over all Tilts	dBi	18.2 ± 1.1	19.0 ± 0.8	19.3 ± 1.0	19.5 ± 0.6	19.5 ± 1.1
<b>Horizontal Pattern:</b>						
Horizontal Beam Center	°	-30	-28	-27	-24	-23
Azimuth Beamwidth	°	33 ± 1.8	31 ± 2.1	29 ± 2.3	26 ± 1.6	25 ± 1.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 30	> 30	> 30	> 30
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.4	7.4 ± 0.3	7.0 ± 0.6	6.3 ± 0.2	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.4	< 0.4	< 0.4	< 0.5
First Upper Side Lobe Suppression	dB	> 18	> 21	> 22	> 22	> 18
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 28 (Y1 // R1, R2, Y2, Y3, Y4)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Left side, upper midband

## Y2, connector 7–8

Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.7	18.6	18.9	18.7	19.2
Gain over all Tilts	dBi	17.7 ± 0.9	18.6 ± 0.9	18.9 ± 0.9	18.7 ± 0.7	19.2 ± 1.1
<b>Horizontal Pattern:</b>						
Horizontal Beam Center	°	-30	-28	-27	-24	-23
Azimuth Beamwidth	°	35 ± 2.1	32 ± 2.8	29 ± 2.8	26 ± 1.8	25 ± 1.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 29	> 30	> 30	> 29	> 31
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	8.0 ± 0.5	7.5 ± 0.4	7.1 ± 0.5	6.3 ± 0.2	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.8	< 0.7	< 0.6	< 0.8	< 0.8
First Upper Side Lobe Suppression	dB	> 19	> 20	> 21	> 20	> 17
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 28 (Y2 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.



## Right side, lower midband

## Y3, connector 9–10

Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	18.2	19.1	19.3	19.4	19.6
Gain over all Tilts	dBi	18.2 ± 1.1	19.1 ± 0.8	19.2 ± 0.9	19.4 ± 0.8	19.5 ± 1.0
<b>Horizontal Pattern:</b>						
Horizontal Beam Center	°	+30	+28	+27	+24	+23
Azimuth Beamwidth	°	32 ± 1.3	30 ± 1.9	29 ± 2.0	25 ± 0.9	25 ± 1.0
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 28	> 28	> 29	> 29
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	7.9 ± 0.6	7.5 ± 0.3	7.1 ± 0.6	6.4 ± 0.3	5.7 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.7	< 0.6	< 0.4	< 0.2	< 0.3
First Upper Side Lobe Suppression	dB	> 19	> 22	> 21	> 20	> 18
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 28 (Y3 // R1, R2, Y1, Y3, Y4)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Right side, upper midband

## Y4, connector 11–12

Frequency Range	MHz	1710 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2490 – 2690
Gain at mid Tilt	dBi	17.7	18.5	18.8	18.5	19.2
Gain over all Tilts	dBi	17.7 ± 0.9	18.5 ± 0.9	18.8 ± 0.8	18.5 ± 0.6	19.1 ± 0.9
<b>Horizontal Pattern:</b>						
Horizontal Beam Center	°	+30	+28	+27	+24	+23
Azimuth Beamwidth	°	34 ± 1.4	31 ± 2.6	29 ± 2.3	27 ± 1.6	25 ± 1.1
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 228	> 29	> 30	> 298
<b>Vertical Pattern:</b>						
Horizontal Beam Centers	°	± 30	± 28	± 27	± 24	± 23
Elevation Beamwidth	°	7.9 ± 0.5	7.5 ± 0.2	7.1 ± 0.5	6.4 ± 0.2	5.8 ± 0.4
Electrical Downtilt continuously adjustable	°	2.0 – 12.0				
Tilt Accuracy	°	< 0.6	< 0.5	< 0.4	< 0.2	< 0.3
First Upper Side Lobe Suppression	dB	> 21	> 21	> 21	> 20	> 17
Cross Polar Isolation	dB	> 25				
Port to Port Isolation	dB	> 28 (Y4 // R1, R2, Y1, Y2, Y3)				
Max. Effective Power per Port	W	250				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 25
Beam to Beam Isolation	dB	> 16
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45 $^{\circ}$
Max. Effective Power for the Antenna	W	1000

Values based on NGMN-P-BASTA (version 11.1) requirements.

**Material:**

**Reflector screen and dipoles:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

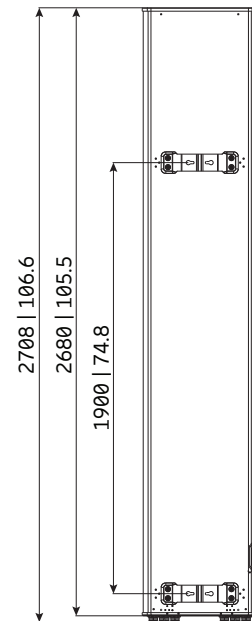
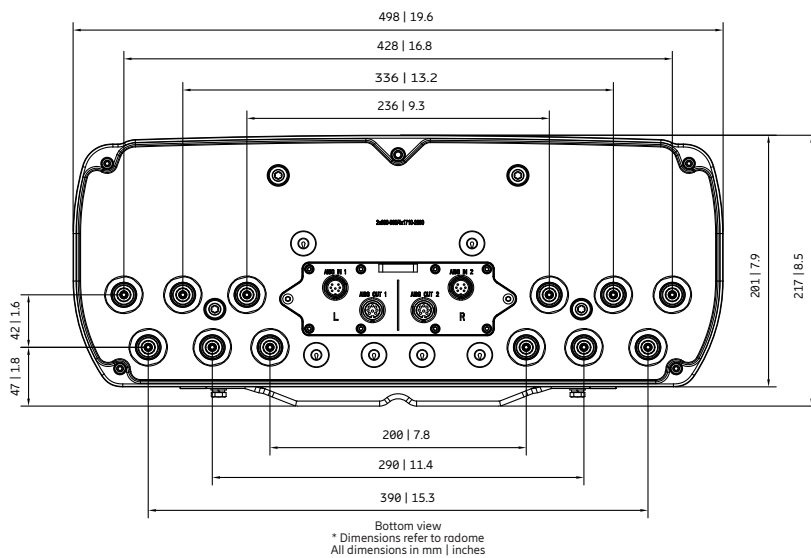
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	Integrated RET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 1670   375 Maximal: 1670   375
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	2680 / 498 / 192 105.5 / 19.6 / 7.6
Weight (approx.)	kg lb	50.5 / 58.5 (clamps incl.) 111.3 / 128.9 (clamps incl.)
Packing Size	mm inches	2930 / 550 / 265 115.4 / 21.7 / 10.4
Scope of Supply	Antenna, mounting kit (50–115 mm) incl. mech. Tilt-kit ( $0^{\circ}$ – $10^{\circ}$ ) SXA 216 2866/1, integr. RET KRY 121 78/3	

## Layout of interface



## Correlation Table

Frequency range	Array	Connector / Ports
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1710–2690 MHz	Y1	5–6
1710–2690 MHz	Y2	7–8
1710–2690 MHz	Y3	9–10
1710–2690 MHz	Y4	11–12



## Special Configuration

### Multi Port, Omni

Product Name Product No.	Frequency MHz	HPBW °	Gain dBi	Tilt °	Connector type	Page
<b>Multi Port</b>						
Antenna 9000 1LM 742192V02	690–2690	67	11.0	0	7-16	<a href="#">492</a>
Antenna 9011 1LM KRE 101 2571/1	617–4200	65	10.0	0	4.3-10	<a href="#">495</a>
Antenna 9009 0L 6M 0.4m 80010725	6x 1695–2200	11	19.0	5	4.3-10	<a href="#">498</a>
Antenna 9010 0L 6M 0.4m 80010726	6x 2300–2690	9	21.0	7	4.3-10	<a href="#">504</a>
Antenna 9003 1LM 0.43m 80020448	694–960/ 1710–2690	65	5.0	0	4.3-10	<a href="#">510</a>
Antenna 9012 1LM KRE 101 2572/1	617–960 1427–1518 1695–2690 3300–4200	65 65 65 65	4.5 5.5 7.0 8.0	0	4.3-10	<a href="#">512</a>
Antenna 9005 0L 4M 80010234	1695–2690/ 3300–4200/ 5150–5920	360	5.0	0	4.3-10	<a href="#">514</a>
Antenna 9014 2L 4M 0.5m KRE 101 2570/1	2x 690–960 2x 1695–2690 2x 3300–4200	65 65 65	8.0 11.7 11.7	0	4.3-10	<a href="#">516</a>
<b>Omni</b>						
Antenna 9002 1LM 0.2m 80010846	694–960/ 1695–2700	360	2.0	0	N	<a href="#">522</a>



# Antenna 9000 1LM

742192V02

Capacity

Compact

Coverage

67° | 690–2690 MHz | 11.0 dBi



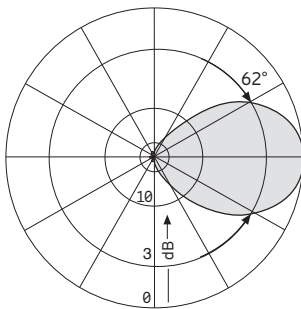
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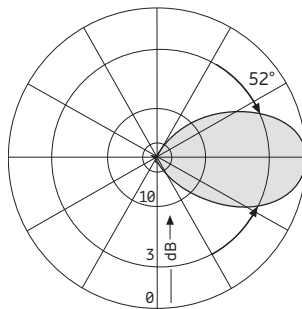
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Frequency range	MHz	690 – 880	880 – 960	960 – 1695	1695 – 2200	2200 – 2490	2490 – 2690
VSWR		< 1.6	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Gain	dBi	10.1	10.6	11.0	11.0	11.0	11.0
Impedance	$\Omega$	50	50	50	50	50	50
Polarization		Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Front-to-back ratio	db	> 25	> 25	> 25	> 25	> 22	> 25
Half-power beam width horizontal vertical	$^{\circ}$	69 54	64 53	57 50	53 48	47 46	45 44
Intermodulation IM3 (2 x 43 dBm carrier)	dBc	< -150	< -150	< -150	< -150	< -150	< -150
Max. power	W	300	300	250	200	170	150
Total power	W	500 (at 50 °C ambient temperature)					

## 690 – 1695 MHz

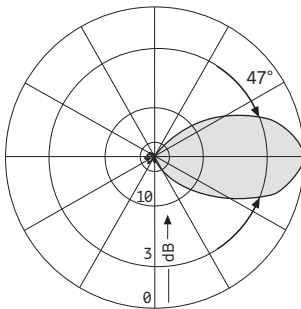


Horizontal Pattern

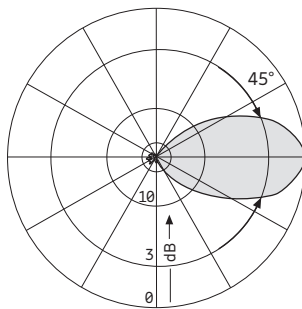


Vertical Pattern

## 1695 – 2690 MHz



Horizontal Pattern



Vertical Pattern

## Mechanical specifications

Input	1 x 7-16 female		
Connector position	Bottom		
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal Lateral Rearside	20   4 210   47 30   7
Max. wind velocity	km/h mph	241 150	
Height / width / depth	mm inches	300 / 155 / 785 11.8 / 6.1 / 30.9	
Weight	kg lb	5.5 12.1	
Packing size	mm inches	360 x 175 x 1000 14.2 x 6.9 x 39.4	

**Material:** **Radiator:** Tin-plated copper. **Reflector screen:** Weather-proof aluminum.  
**Radome:** Fiberglass, color: Grey.  
All screws and nuts: Stainless steel

**Mounting:** The antenna can be mounted on tubular mast with supplied clamps:

Mast diameter mm   inches	Wind speed km/h   mph
30–70   1.2–2.8	< 200   124
48–70   1.9–2.8	< 241   150

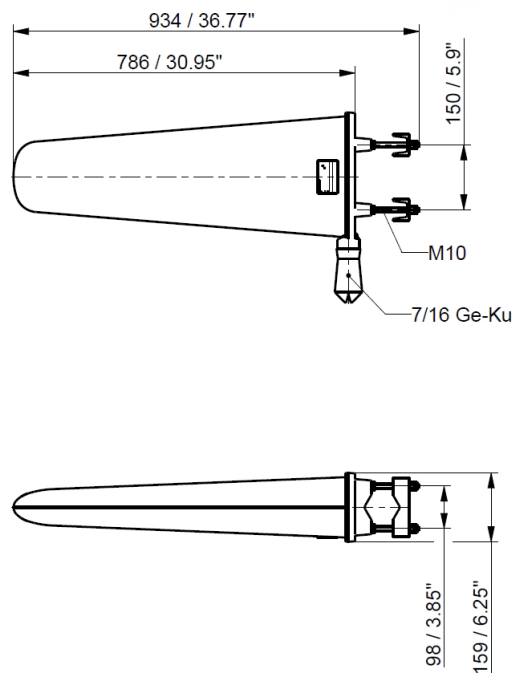
Recommended Torque:  $M_A = 25 \text{ Nm}$ .

**Please note: Ericsson does not recommend to use counter nuts.**

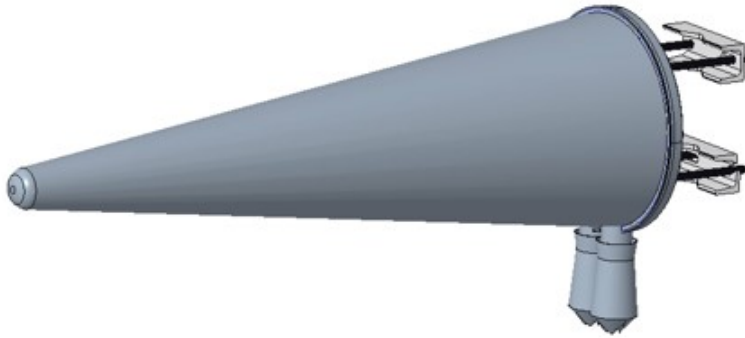
**Grounding:** All metal parts of the antenna as well as the inner conductor are DC grounded.

**Environmental tests:** Ericsson antennas have passed environmental tests as recommended in ETS 300 019-2-4. The homogenous design of Ericsson's antenna families use identical modules and materials. Extensive tests have been performed on typical samples and modules.

**Pressure test:** The antenna has passed a pressure test according to Official Journal of the European Communities L245/171 from 12.09.2002 for the use of the antenna in train tunnels for high speed railways. During test the antenna was subject to alternating pressure with a number of  $1 \times 10^6$  alternations of load. The antenna exceeds the standard as follows:  
Pressure difference according to L245/171: 10 kPa  
Pressure difference during test: 20 kPa



All dimensions in mm / inches



# Antenna 9011 1LM

KRE 101 2571/1

Capacity

Compact

Coverage

65° | 617–4200 MHz | 10.0 dBi  
2x 4.3-10



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Midband		P1, connector 1–2					
Frequency range	MHz	617 – 806	806 – 960	1427 – 1518	1695 – 2170	2170 – 2690	3300 – 4200
VSWR		< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.8
Gain	dBi	10.0	10.1	10.3	10.6	10.7	9.5
Impedance	Ω	50	50	50	50	50	50
Polarization	°	±45					
Front-to-back ratio	dB	≥ 30	≥ 28	≥ 23	≥ 25	≥ 20	≥ 19
Half-power beam width	°	60	60	57	52	48	41
		61	61	58	54	50	43
Intra-Cluster Isolation (typ.)	dB	≥ 26	≥ 26	≥ 25	≥ 25	≥ 22	≥ 21
Intermodulation IM3 (2 x 43 dBm carrier)	dBc	< -150					
Max. power	W	150	150	150	100	100	80
Total power	W	300 (at 50 °C ambient temperature)					

### Mechanical specifications

Input		2x 4.3-10 female
Connector position		Bottom
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 45   10 Lateral: 140   31 Rearside: 60   13
Max. wind velocity	km/h mph	241 150
Height / width / depth	mm inches	300 / 300 / 945 11.8 / 11.8 / 37.2
Weight	kg lb	6.5 14.2
Packing size	mm inches	349 x 366 x 1131 13.7 x 14.4 x 44.5



**Material:** **Radiator:** Silver-plated aluminum. **Reflector screen:** Weather-proof aluminum.  
**Radome:** Fiberglass, color: Grey.  
 All screws and nuts: Stainless steel  
 Clamps: Stainless steel

**Mounting:** The antenna can be mounted on tubular mast with supplied clamps:

Pole diameter mm   inches	Wind speed km/h   mph
30–70   1.2–2.8	< 200   124
48–70   1.9–2.8	< 241   150

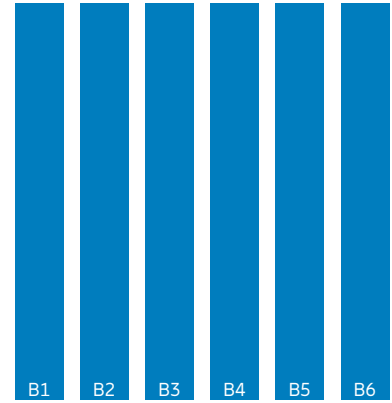
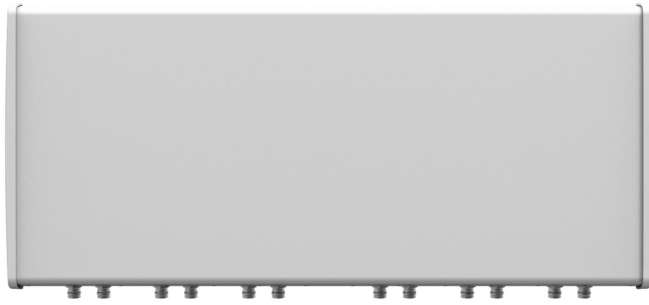
Recommended Torque:  $M_A = 25 \text{ Nm}$ .

**Please note: Ericsson does not recommend to use counter nuts.**

**Grounding:** All metal parts of the antenna as well as the inner conductor are DC grounded.

**Environmental tests:** Ericsson antennas have passed environmental tests as recommended in ETS 300 019-2-4. The homogenous design of Ericsson's antenna families use identical modules and materials. Extensive tests have been performed on typical samples and modules.

**Pressure test:** The antenna has passed a pressure test according to Official Journal of the European Communities L245/171 from 12.09.2002 for the use of the antenna in train tunnels for high speed railways. During test the antenna was subject to alternating pressure with a number of  $1 \times 10^6$  alternations of load. The antenna exceeds the standard as follows:  
 Pressure difference according to L245/171: 10 kPa  
 Pressure difference during test: 20 kPa



# Antenna 9009 0L 6M 0.4m

80010725

Capacity

Compact

Coverage

6x 1695–2200 MHz | 19.0 dBi



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		B1, connector 1 – 2		
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200
Gain	dBi	16.9 ± 1.0	18.1 ± 0.9	19.0 ± 1.1
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	16.3 ± 2.3	13.6 ± 0.8	12.6 ± 0.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 22	> 24	> 23
Cross Polar Discrimination at Boresight	dB	> 7	> 15	> 16
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	23.0 ± 2.0	24.3 ± 1.9	22.9 ± 2.7
Electrical Downtilt	°	5, fixed		
First Upper Side Lobe Suppression	dB	> 11	> 18	> 17
Cross Polar Port Isolation	dB	> 25		
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

		B2, connector 3 – 4		
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200
Gain	dBi	18.5 ± 1.1	19.5 ± 0.7	20.2 ± 1.2
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	13.2 ± 0.5	12.0 ± 0.8	11.0 ± 0.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 28	> 28
Cross Polar Discrimination at Boresight	dB	> 19	> 28	> 32
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	25.0 ± 0.9	24.6 ± 1.4	23.1 ± 2.2
Electrical Downtilt	°	5, fixed		
First Upper Side Lobe Suppression	dB	> 14	> 18	> 17
Cross Polar Isolation	dB	> 28		
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

## B3, connector 5–6

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200
Gain	dBi	18.7 ± 0.8	19.2 ± 0.8	19.9 ± 1.2
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	12.2 ± 0.5	11.1 ± 1.0	10.4 ± 0.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 25	> 24
Cross Polar Discrimination at Boresight	dB	> 20	> 23	> 25
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	25.7 ± 0.9	24.9 ± 1.0	23.3 ± 2.1
Electrical Downtilt	°	5, fixed		
First Upper Side Lobe Suppression	dB	> 20	> 20	> 16
Cross Polar Isolation	dB	> 28		
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

## B4, connector 7–8

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200
Gain	dBi	19.2 ± 0.9	19.7 ± 0.7	20.3 ± 1.2
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	12.0 ± 0.8	10.8 ± 0.9	10.2 ± 0.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 28	> 27
Cross Polar Discrimination at Boresight	dB	> 19	> 22	> 25
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	26.0 ± 0.8	25.0 ± 1.0	23.4 ± 2.0
Electrical Downtilt	°	5, fixed		
First Upper Side Lobe Suppression	dB	> 23	> 18	> 16
Cross Polar Isolation	dB	> 28		
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

## B5, connector 9–10

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200
Gain	dBi	18.6 ± 1.0	19.4 ± 0.9	19.9 ± 1.2
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	12.7 ± 0.3	11.7 ± 0.8	10.9 ± 0.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 24
Cross Polar Discrimination at Boresight	dB	> 18	> 24	> 28
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	25.6 ± 1.2	24.9 ± 0.6	23.2 ± 1.7
Electrical Downtilt	°	5, fixed		
First Upper Side Lobe Suppression	dB	> 20	> 19	> 15
Cross Polar Isolation	dB	> 28		
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

## B6, connector 11–12

Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200
Gain	dBi	17.4 ± 0.8	18.2 ± 0.9	19.0 ± 1.2
<b>Horizontal Pattern:</b>				
Azimuth Beamwidth	°	16.1 ± 2.3	13.5 ± 0.6	12.6 ± 0.9
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24	> 25
Cross Polar Discrimination at Boresight	dB	> 7	> 12	> 17
<b>Vertical Pattern:</b>				
Elevation Beamwidth	°	23.9 ± 2.8	24.9 ± 1.1	23.3 ± 2.4
Electrical Downtilt	°	5, fixed		
First Upper Side Lobe Suppression	dB	> 15	> 21	> 20
Cross Polar Isolation	dB	> 25		
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)		

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all systems

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input		12x 4.3-10 female
Connector Position		bottom
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal 470   106 Lateral 55   12
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	378 / 864 / 111 14.9 / 34.0 / 4.4
Category of Mounting Hardware		XM * (X-Medium)
Weight	kg lb	14.5 / 19.0 (clamps incl.) 32.0 / 41.9 (clamps incl.)
Packing Size	mm inches	474 x 959 x 238 18.7 x 37.8 x 9.4
Scope of Supply		Panel and 2 units of clamps for 55–115 mm   2.2–4.5 inches diameter

\* no downtilt possible

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110 – 220   4.3 – 8.7	1

## Accessories (included in the scope of supply)

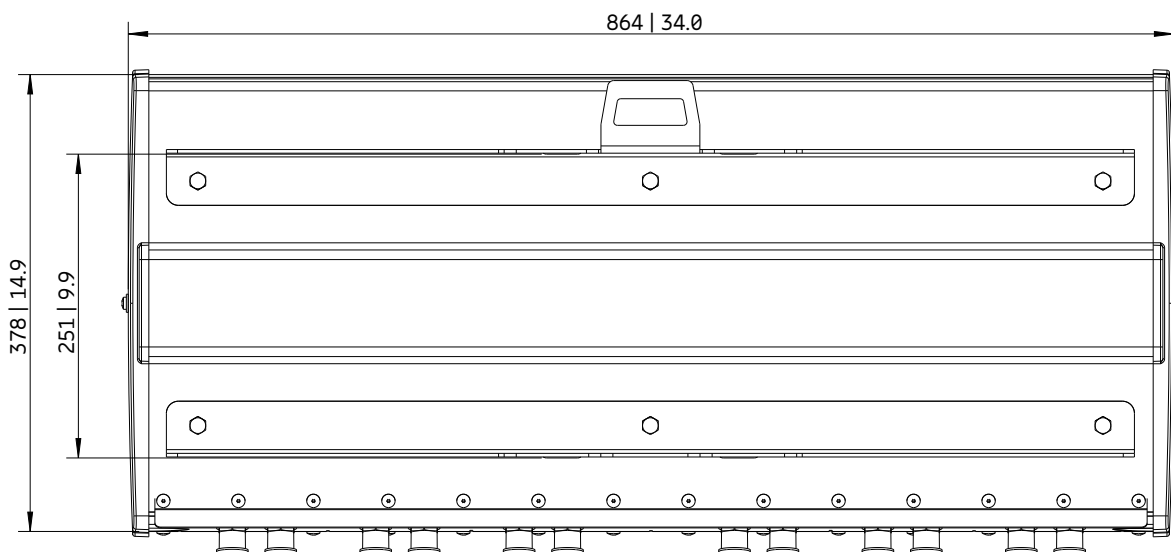
Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1

**Material:** Reflector screen: Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

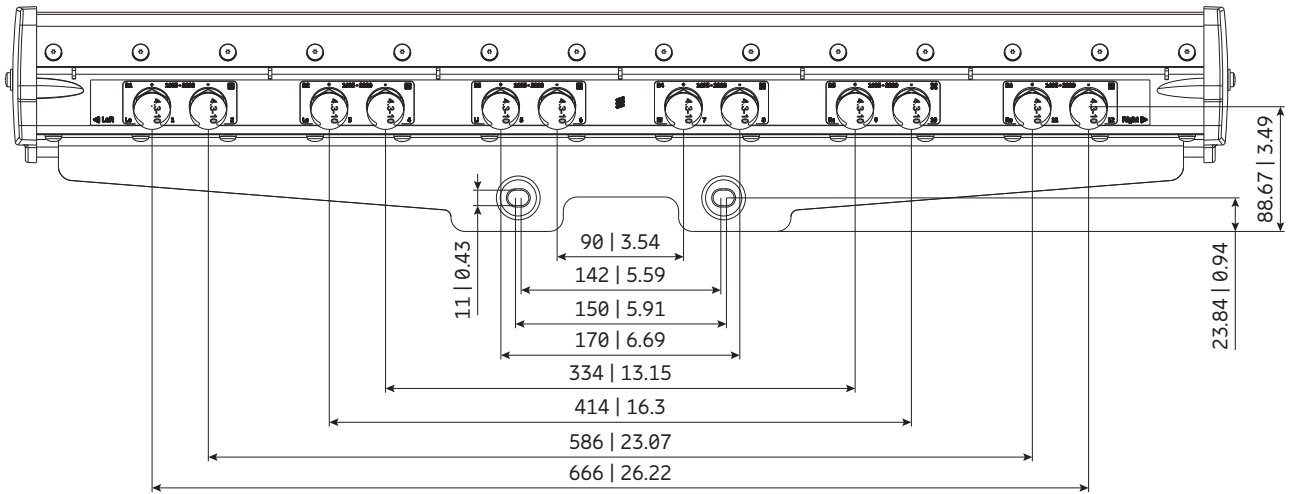
**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:** The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



\* Dimensions refer to radome  
All dimensions in mm | inches

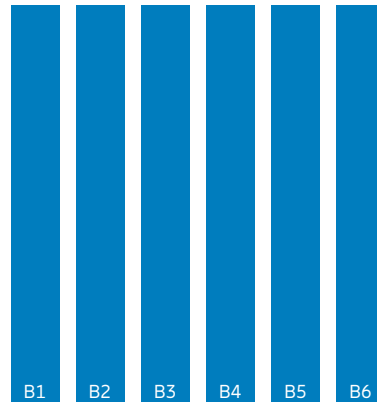
## Layout of interface

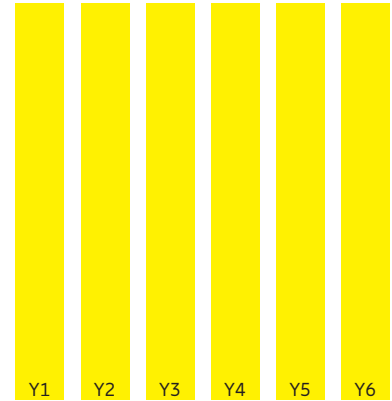


Bottom view  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
1695–2200 MHz	B1	1–2
1695–2200 MHz	B2	3–4
1695–2200 MHz	B3	5–6
1695–2200 MHz	B4	7–8
1695–2200 MHz	B5	9–10
1695–2200 MHz	B6	11–12





# Antenna 9010 0L 6M 0.4m

80010726

Capacity

Compact

Coverage

6x 2300–2690 MHz | 21.0 dBi



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## Y1, connector 1 – 2

Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain	dBi	20.3 ± 0.4	20.9 ± 0.7
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	10.5 ± 0.3	9.2 ± 0.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24
Cross Polar Discrimination at Boresight	dB	> 22	> 14
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	18.8 ± 1.2	17.6 ± 1.3
Electrical Downtilt	°	7, fixed	7, fixed
First Upper Side Lobe Suppression	dB	> 16	> 13
Cross Polar Port Isolation	dB	> 28	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Y2, connector 3 – 4

Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain	dBi	21.3 ± 0.6	21.7 ± 1.0
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	9.1 ± 0.2	8.2 ± 0.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 27	> 25
Cross Polar Discrimination at Boresight	dB	> 24	> 14
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	19.6 ± 0.9	17.7 ± 1.0
Electrical Downtilt	°	7, fixed	7, fixed
First Upper Side Lobe Suppression	dB	> 17	> 15
Cross Polar Port Isolation	dB	> 28	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Y3, connector 5–6

Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain	dBi	21.5 ± 0.8	21.6 ± 1.0
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	8.8 ± 0.1	7.9 ± 0.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 28	> 26
Cross Polar Discrimination at Boresight	dB	> 26	> 16
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	20.0 ± 0.9	18.0 ± 0.8
Electrical Downtilt	°	7, fixed	7, fixed
First Upper Side Lobe Suppression	dB	> 15	> 16
Cross Polar Port Isolation	dB	> 28	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Y4, connector 7–8

Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain	dBi	21.5 ± 0.7	21.6 ± 1.3
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	8.6 ± 0.1	7.9 ± 0.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 25
Cross Polar Discrimination at Boresight	dB	> 28	> 15
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	20.0 ± 0.7	17.9 ± 0.7
Electrical Downtilt	°	7, fixed	7, fixed
First Upper Side Lobe Suppression	dB	> 14	> 15
Cross Polar Port Isolation	dB	> 28	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Y5, connector 9–10

Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain	dBi	20.9 ± 0.7	21.4 ± 0.9
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	9.2 ± 0.2	8.4 ± 0.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23	> 24
Cross Polar Discrimination at Boresight	dB	> 23	> 15
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	19.6 ± 0.7	17.7 ± 1.1
Electrical Downtilt	°	7, fixed	7, fixed
First Upper Side Lobe Suppression	dB	> 15	> 13
Cross Polar Port Isolation	dB	> 28	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Y6, connector 11–12

Frequency Range	MHz	2300 – 2400	2490 – 2690
Gain	dBi	20.5 ± 0.7	21.0 ± 0.8
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	10.5 ± 0.2	9.3 ± 0.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24	> 25
Cross Polar Discrimination at Boresight	dB	> 21	> 13
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	18.5 ± 1.2	17.5 ± 1.5
Electrical Downtilt	°	7, fixed	7, fixed
First Upper Side Lobe Suppression	dB	> 15	> 11
Cross Polar Port Isolation	dB	> 28	
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)	

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Electrical specifications, all systems

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	1000 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 10.0) requirements.

## Mechanical specifications

Input		12x 4.3-10 female
Connector Position		bottom
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal 470   106 Lateral 55   112
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	378 / 864 / 111 14.9 / 34.0 / 4.4
Category of Mounting Hardware		XM * (X-Medium)
Weight	kg lb	14.8 / 19.3 (clamps incl.) 32.6 / 42.5 (clamps incl.)
Packing Size	mm inches	474 x 959 x 238 18.7 x 37.8 x 9.4
Scope of Supply		Panel and 2 units of clamps for 55–115 mm   2.2–4.5 inches diameter

\* no downtilt possible

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110 – 220   4.3 – 8.7	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1

## Material:

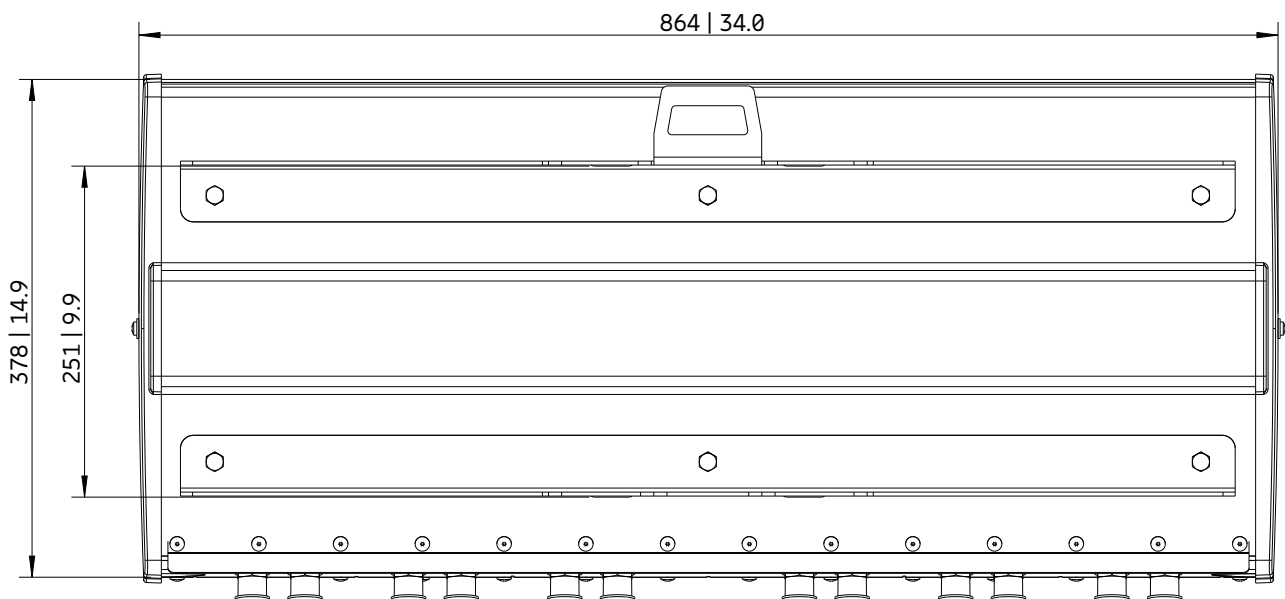
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

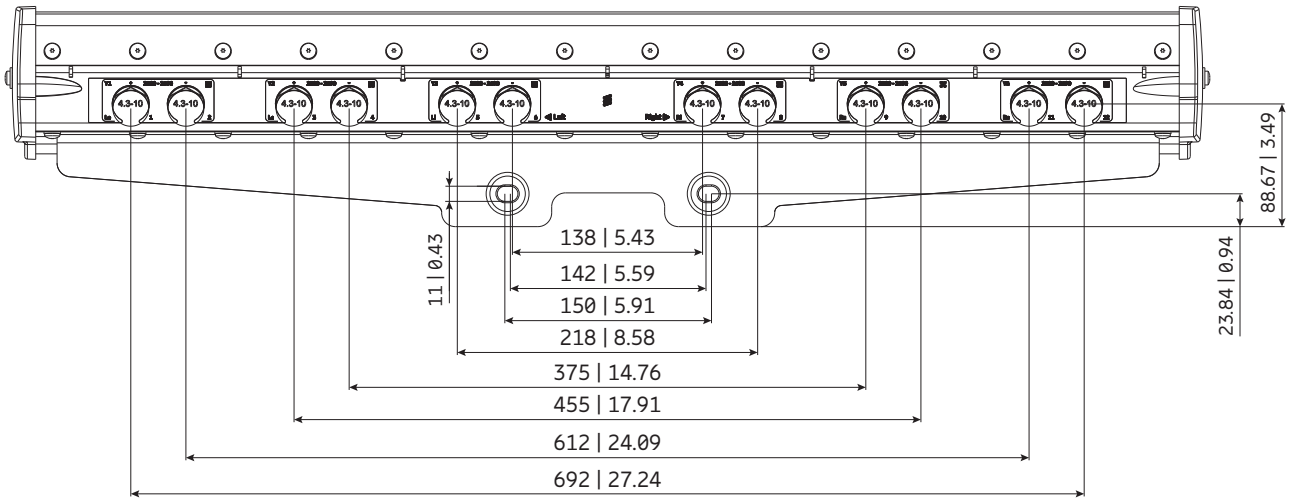
## Grounding:

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



\* Dimensions refer to radome  
All dimensions in mm | inches

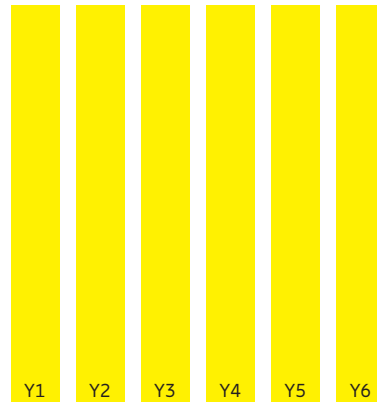
## Layout of interface



Bottom view  
All dimensions in mm | inches

## Correlation Table

Frequency range	Array	Connector / Ports
2300–2690 MHz	Y1	1–2
2300–2690 MHz	Y2	3–4
2300–2690 MHz	Y3	5–6
2300–2690 MHz	Y4	7–8
2300–2690 MHz	Y5	9–10
2300–2690 MHz	Y6	11–12





# Antenna 9003 1LM 0.43m

80020448

Capacity

Compact

Coverage

65° | 694–960 MHz | 5.0 dBi

65° | 1710–2690 MHz | 5.0 dBi



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Input		1 x 4.3-10 female
Frequency range	MHz	694 – 960, 1710 – 2690
VSWR		694 – 960 MHz: < 2.0 1710 – 2690 MHz: < 1.7
Gain	dBi	694 – 806 MHz: 5.0 806 – 960 MHz: 5.5 1710 – 2690 MHz: 6.5
Impedance	$\Omega$	50
Polarization		Vertical
Intermodulation IM3	dBc	< -150 (2 x 43 dBm carrier)
Max. power (total)	W	200 (at 50 °C ambient temperature)
Weight	kg lb	1.1 2.4
Wind load (at 150 km/h)	N   lbf	Frontal: 30   6.7 Lateral: 70   15.7 Rearside: 35   7.9
Max. wind velocity	km/h mph	200 124
Packing size	mm inches	450 x 205 x 110 17.7 x 8.1 x 4.3
Height/width/depth	mm inches	428 / 180 / 79 16.9 / 7.1 / 3.1
Fire load	kWh	4.46

**Material:**

**Radiator:** Tin-plated copper.  
**Reflector:** Weather-proof aluminum.  
**Radome:** High impact plastic, color: Grey.  
**All screws and nuts:** Stainless steel.

**Mounting:**

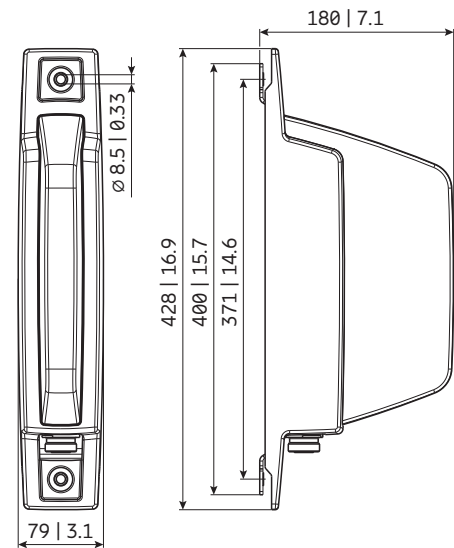
Wall mounting: Now additional mounting kit needed.  
 For pipe mast mounting use clamps listed below (order separately).

**Ice protection:**

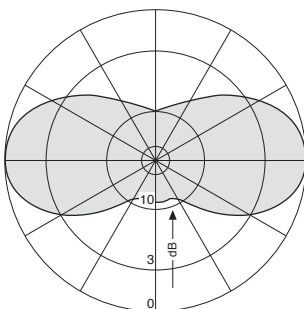
The radiating system is protected by the radome. Due to its very sturdy construction, the antenna remains operational even under icy conditions.

**Grounding:**

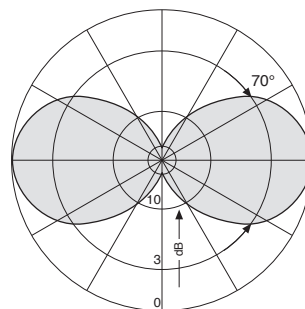
All metal parts of the antenna as well as the inner conductor are DC grounded.



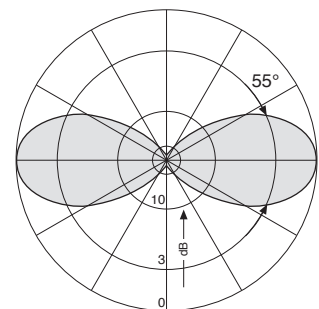
All dimensions in mm | inches



Horizontal Pattern



Vertical Pattern  
694–960 MHz



Vertical Pattern  
1710–2690 MHz



# Antenna 9012 1LM

KRE 101 2572/1

Capacity

Compact

Coverage

65° | 617–960 MHz | 4.5 dBi

65° | 1427–1518 MHz | 5.0 dBi

65° | 1695–2690 MHz | 7.0 dBi

65° | 3300–4200 MHz | 9.0 dBi



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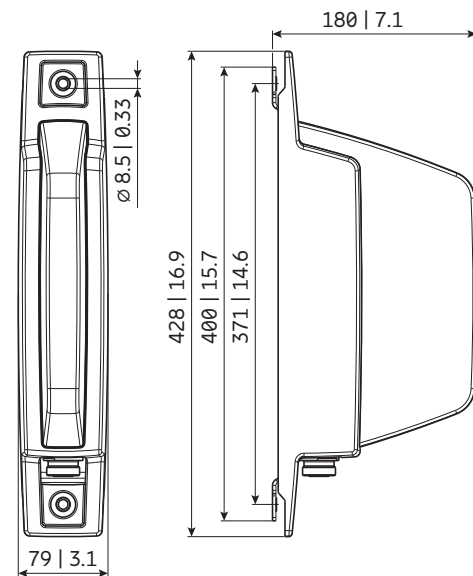


1-Port bi-directional		P1					
Frequency range	MHz	617 – 694	694 – 960	1427 – 1518	1695 – 1990	1990 – 2690	3300 – 4200
VSWR		1.7	1.9	1.95	1.8	1.7	1.8
Gain	dBi	3.5	4.7	4.9	6.4	7.3	9
Impedance	$\Omega$	50	50	50	50	50	50
Polarization		Vertical					
Azimuth Beamwidth	$^{\circ}$	85	71	41	43	39	56
Intermodulation IM3	dBc	< -150 (2 x 43 dBm carrier)					
Max. power	W	100 (at 50 °C ambient temperature)					

### Mechanical specifications

Input	1x 4.3-10 female	
Connector Position	bottom	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 30   6.7 Lateral: 70   15.7 Rearside: 35   7.9
Max. Wind Velocity	km/h mph	241 150
Height / Width / Depth	mm inches	428 / 180 / 79 16.9 / 7.1 / 3.1
Weight	kg lb	0.9 2.0
Packing Size	mm inches	469 x 229 x 129 18.5 x 9.0 x 5.1

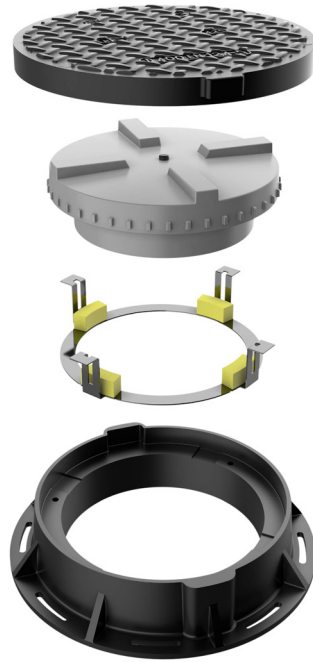
- Material:** Radiator: PCB (Printed Circuit Board).  
Reflector: Weather-proof aluminum.  
Radome: High impact plastic, color: Grey.  
All screws and nuts: Stainless steel.
- Mounting:** Wall mounting: Now additional mounting kit needed.  
For pole mounting use clamps listed below (order separately).
- Ice protection:** The radiating system is protected by the radome. Due to its very sturdy construction, the antenna remains operational even under icy conditions.
- Grounding:** All metal parts of the antenna as well as the inner conductor are DC grounded.



All dimensions in mm | inches

### Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2



# Antenna 9005 0L 4M

80010234

Capacity

**Compact**

Coverage

360° | 4x 1695–2690/3300–4200/5150–5920 MHz | 5.0 dBi



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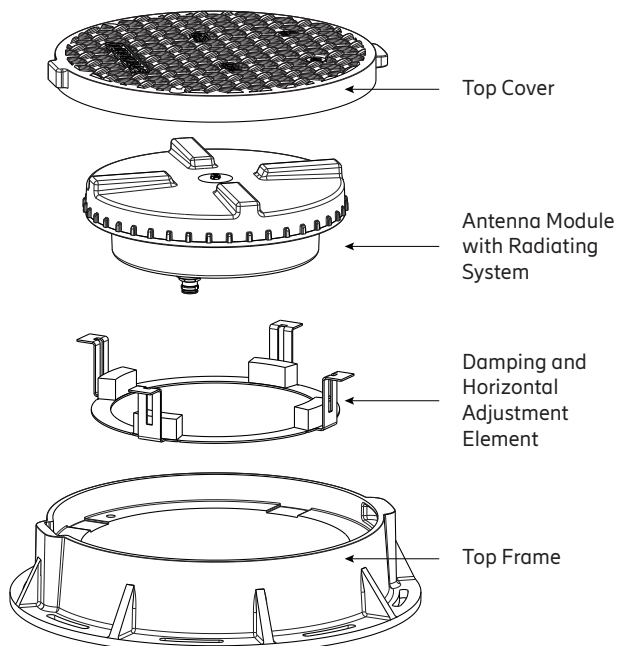
Use Case		In-Ground Installation, High traffic urban areas			
Midband		O1, connector 1; O2, connector 2; O3, connector 3; O4, connector 4			
Frequency Range	MHz	1695 – 2200	2200 – 2690	3300 – 4200	5150 – 5920
Max. Gain (Free Space)	dBi	7.0	9.5	7.5	8.0
Horizontal Pattern		Quasi Omni	Quasi Omni	Quasi Omni	Quasi Omni
Vertical Pattern		Several main lobes above ground level	Several main lobes above ground level	Several main lobes above ground level	Several main lobes above ground level
Isolation between all Ports	dB	> 20	> 20	> 20	> 20
Max. Effective Power per Port	W	20 (at 50 °C ambient temperature)	20 (at 50 °C ambient temperature)	10 (at 50 °C ambient temperature)	5 (at 50 °C ambient temperature)

### Electrical specifications, all systems

Impedance	$\Omega$	50
VSWR		< 1.7
Return Loss	dB	> 11.7
Passive Intermodulation	dBc	1695 – 2690 MHz: < -153 (2 x 43 dBm carrier) 3300 – 4200 MHz: < -153 (2 x 40 dBm carrier) 5150 – 5920 MHz: not relevant
Polarization		4 x vertical
Max. Effective Power for the Antenna	W	40 (at 50 °C ambient temperature)

### Mechanical specifications

Input		4x 4.3-10 female
Connector Position		Bottom
Adjustment Mechanism Horizontal		Set by hand, 9° steps
Feeder Cables		Tightening torque of 4.3-10 connectors is 5–8 Nm
Top Cover Diameter / Height	mm inches	375 / 32 14.8 / 1.3
Top Frame Outer / Inner Diameter / Height	mm inches	480 / 315 / 100 18.9 / 12.4 / 3.9
Antenna Modul Diameter / Height	mm inches	310 / 142 12.2/5.6
Weight Antenna Module	kg lb	2.9 6.4
Weight Complete System	kg lb	13.3 29.3
IP Protection Class		IP 68 (with appropriate feeder cable connector)
Max. Load Top Cover	kN	50 (without permanent deformation, according EN 124 – Class D400)



#### Mounting:

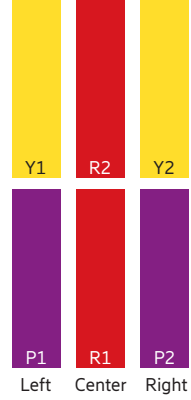
Follow the installation guidelines for Polieco Kio D400 / EN 124 top cover and frame. Feeder cable to be installed strain-relieved. Maximum force 5 N per cable. Avoid mounting locations where obstructions may have impact on the antenna performance, e.g. parking cars.

Recommended tightening torque for the cover screws (2x): 50 Nm.

Attention: Please follow the mounting and instruction guidelines carefully. Liability cannot be assumed for damages as a result of unsatisfactory fitting and installation, improper putting into service, incorrect operation and maintenance, as well as any alterations or modifications carried out by the operator and accessory parts by the customer.

#### Remark:

All electrical values are stated for the complete system with top frame and cover.



# Antenna 9014 2L 4M 0.5m

KRE 101 2570/1

- Capacity
- Compact**
- Coverage

65° | 2x 690–960 MHz | 8.0 dBi  
65° | 2x 1695–2690 MHz | 11.7 dBi  
65° | 2x 3300–4200 MHz | 11.7 dBi



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Center, lower lowband		R1, connector 1–2			
Frequency Range	MHz	690 – 806	791 – 862	824 – 894	880 – 960
Gain	dBi	7.1 ± -0.3	7.4 ± -0.3	7.6 ± -0.7	7.8 ± -0.5
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	71.3 ± 6.2	66.2 ± 2.7	67.2 ± 3.7	68.6 ± 3.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 15.5	> 17.9	> 18.1	> 20.7
Cross Polar Discrimination at Boresight	dB	> 15.1	> 16.2	> 16.8	> 15.9
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	75.9 ± 12.2	80.4 ± 10.9	77.2 ± 3.1	69.5 ± 7.5
Electrical Downtilt	°	0; fixed			
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 20 (R1 // R2) > 25 (R1 // Y1, Y2, P1, P2)			
Max. Effective Power per Port	W	200 (at 50° C ambient temperature)			
Max. Effective Power Ports R1	W	400 (at 50° C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Center, upper lowband		R2, connector 3–4			
Frequency Range	MHz	690 – 806	791 – 862	824 – 894	880 – 960
Gain	dBi	7.5 ± -0.4	7.9 ± -0.4	8 ± -0.7	7.8 ± -0.8
<b>Horizontal Pattern:</b>					
Azimuth Beamwidth	°	68.8 ± 6.1	67.2 ± 3	68.8 ± 2.0	71.2 ± 3.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 15.6	> 17.6	> 17.1	> 19
Cross Polar Discrimination at Boresight	dB	> 21.3	> 23.5	> 21.3	> 14.9
<b>Vertical Pattern:</b>					
Elevation Beamwidth	°	79.5 ± 4.4	76 ± 2.6	76.5 ± 1.9	77.9 ± 2.2
Electrical Downtilt	°	0; fixed			
Intra-Cluster Isolation	dB	> 25			
Inter-Cluster Isolation	dB	> 20 (R2 // R1, Y1) > 25 (R2 // Y2, P1, P2)			
Max. Effective Power per Port	W	200 (at 50° C ambient temperature)			
Max. Effective Power Ports R2	W	400 (at 50° C ambient temperature)			

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, upper midband		Y1, connector 5–6				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain	dBi	11.0 ± 0.0	11.2 ± 0.2	10.9 ± 0.3	11.6 ± -0.4	11.7 ± 0.0
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	65.5 ± 6.3	63.2 ± 11.2	71 ± 11	61.0 ± 8.6	63.6 ± 5.2
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23.2	> 24.6	> 25	> 26.8	> 26
Cross Polar Discrimination at Boresight	dB	> 16.2	> 18.9	> 16.6	> 18.8	> 19.6
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	32.4 ± 4.4	30.2 ± 2.7	30.5 ± 2.8	25.3 ± 1.7	24.3 ± 1.7
Electrical Downtilt	°	0; fixed				
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 20 (Y1 // R2) > 25 (Y1 // R1, Y2, P1, P2)				
Max. Effective Power per Port	W	150 (at 50° C ambient temperature)				
Max. Effective Power Ports Y1	W	300 (at 50° C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, upper midband		Y2, connector 7–8				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2200	2300 – 2400	2490 – 2690
Gain	dBi	10.8 ± -0.1	11.1 ± 0.2	11.1 ± 0.3	11.8 ± 0.0	11.7 ± 0.0
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	68.6 ± 3.4	67.7 ± 8.4	69.8 ± 9.9	63.4 ± 6.6	61.3 ± 3.5
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20.2	> 22.8	> 23.4	> 26.7	> 25.8
Cross Polar Discrimination at Boresight	dB	> 17.8	> 21.3	> 17.6	> 18.4	> 17.7
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	32.1 ± 4.1	30.5 ± 2.1	30.1 ± 3.3	26.1 ± 2	24.3 ± 2.7
Electrical Downtilt	°	0; fixed				
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (Y2 // R1, R2, Y1, P1, P2)				
Max. Effective Power per Port	W	150 (at 50° C ambient temperature)				
Max. Effective Power Ports Y2	W	300 (at 50° C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Left side, lower midband		P1, connector 9–10				
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800	3800 – 4000	4000 – 4200
Gain	dBi	10.9 ± 0.1	11.4 ± 0.2	11.6 ± 0.2	11.6 ± -0.2	11.7 ± 0.0
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	55.7 ± 10.8	56.1 ± 5.3	57.7 ± 5.1	51.7 ± 13.3	39.0 ± 9.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 19.7	> 21.7	> 20.6	> 19.1	> 19.6
Cross Polar Discrimination at Boresight	dB	> 13.4	> 18.5	> 18.1	> 13.0	> 12
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	26.7 ± 6.2	31.4 ± 3.6	31.2 ± 2.3	28.2 ± 2.5	29.4 ± 5
Electrical Downtilt	°	0; fixed				
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (P1 // R1, R2, Y1, Y2, P2)				
Max. Effective Power per Port	W	50 (at 50° C ambient temperature)				
Max. Effective Power Ports P1	W	100 (at 50° C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

Right side, lower midband		P2, connector 11–12				
Frequency Range	MHz	3300 – 3400	3400 – 3600	3600 – 3800	3800 – 4000	4000 – 4200
Gain	dBi	10.4 ± 0.3	11.3 ± -0.2	11.6 ± 0.1	11.5 ± 0.2	11.6 ± 0.2
<b>Horizontal Pattern:</b>						
Azimuth Beamwidth	°	63.4 ± 6.4	56.1 ± 5.1	56.7 ± 3.8	51.1 ± 11.7	42.3 ± 9.7
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20	> 21.7	> 19.7	> 17.8	> 19.2
Cross Polar Discrimination at Boresight	dB	> 14.3	> 17.2	> 15.7	> 11.1	> 13.7
<b>Vertical Pattern:</b>						
Elevation Beamwidth	°	30 ± 5.1	30.2 ± 3.2	31.0 ± 4.3	26.1 ± 5.0	28.0 ± 5.4
Electrical Downtilt	°	0; fixed				
Intra-Cluster Isolation	dB	> 25				
Inter-Cluster Isolation	dB	> 25 (P2 // R1, R2, Y1, Y2, P1)				
Max. Effective Power per Port	W	50 (at 50° C ambient temperature)				
Max. Effective Power Ports P2	W	100 (at 50° C ambient temperature)				

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Electrical specifications, all ports

Impedance	$\Omega$	50
VSWR		< 1.5
Return Loss	dB	> 14
Inter-Cluster Isolation	dB	> 20
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	800 (at 50 $^{\circ}$ C ambient temperature)

Values based on NGMN-P-BASTA (version 11.1) requirements.

## Mechanical specifications

Input	12x 4.3-10 female	
Connector Position	bottom	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Maximal: 190   43 Frontal: 110   25
Wind Load Standard	EN 1994-1-4	
Wind Load Laboratory	TU Dresden; Göttinger-type wind tunnel	
Max. Wind Velocity	km/h mph	324 201
Height / Width / Depth	mm inches	500 / 378 / 164 19.7 / 14.9 / 6.5
Category of Mounting Hardware	XM (X-Medium)	
Weight	kg lb	9.6 / 10.1 (clamps incl.) 21.2 / 22.2 (clamps incl.)
Packing Size	mm inches	634 / 449 / 307 24.9 / 17.7 / 12.1
Scope of Supply	Panel and 2 units of clamps for 55–115 mm   2.2–4.5 inches diameter	

## Accessories (order separately if required)

Product No.	Description	Remarks mm   inches	Units per antenna
85010097	2 clamps	Mast diameter: 110–220   4.3–8.7	1
85010110	1 downtilt kit	Downtilt angle: 0 $^{\circ}$ –20 $^{\circ}$	1

## Accessories (included in the scope of supply)

Product No.	Description	Remarks mm   inches	Units per antenna
85010111	2 clamps	Mast diameter: 55–115   2.2–4.5	1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

**Material:**

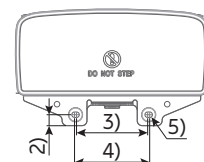
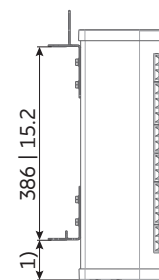
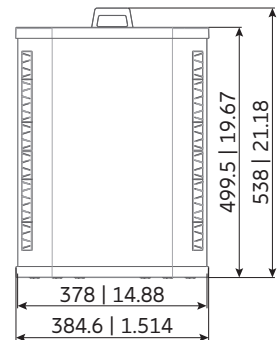
**Reflector screen:** Aluminum.

**Fiberglass housing:** It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.

**All nuts and bolts:** Stainless steel or hot-dip galvanized steel.

**Grounding:**

The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

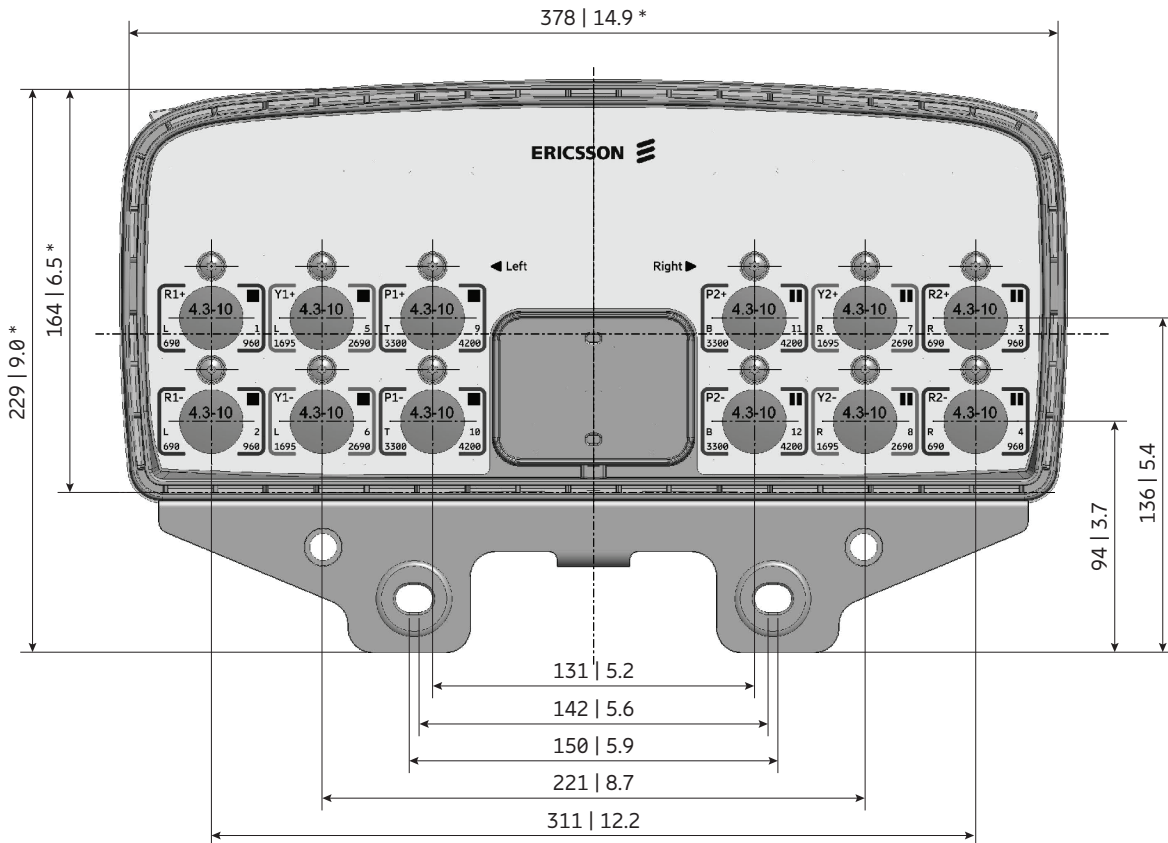


- 1) 79 | 3.1
- 2) 22 | 0.9
- 3) 142 | 5.6
- 4) 150 | 5.9
- 5)  $\varnothing$  11 | 0.4

All dimensions  
in mm | inches

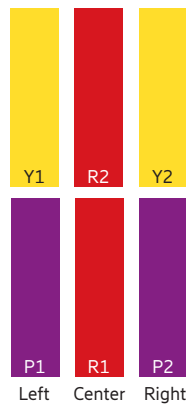


### Layout of interface



### Correlation Table

Frequency range	Array	Connector / Ports
690–960 MHz	R1	1–2
690–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8
3200–4200 MHz	P1	9–10
3200–4200 MHz	P2	11–12





# Antenna 9002 1LM 0.2m

80010846

Capacity

Compact

Coverage

360° | 694–960 MHz | 2.0 dBi

360° | 1695–2700 MHz | 2.0 dBi



[ericsson.com/antenna-system](https://ericsson.com/antenna-system)

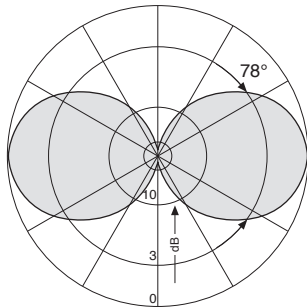
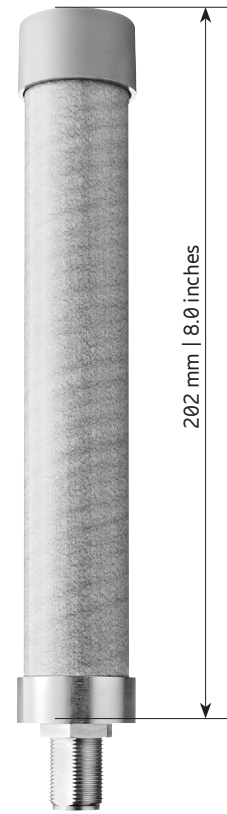


Scan or [click](#)

Input		1x N female			
Connector position		Bottom or top			
Frequency range	MHz	694 – 960 / 1695 – 2700			
VSWR	MHz	694 – 864 < 2.0	864 – 894 < 2.2	894 – 960 < 2.5	1695 – 2700 < 2.0
Gain	dBi	2			
Impedance	$\Omega$	50			
Intermodulation IM3	dBc	< -150 (2 x 43 dBm carrier)			
Polarization		Vertical			
Max. power	W	50 (at 50 °C ambient temperature)			
Weight	g	210			
	lb	0.46			
Wind load (at 150 km/h)	N	6			
	lbf	1.3			
Radome diameter	mm	30			
	inches	1.2			
Height	mm	202			
	inches	8.0			
Fire load	kWh	0.2			

Material: Radiator: Brass.  
Radome: Fiberglass, colour: White.

Mounting: One hole mounting (16 mm | 0.6 inches diameter) to surfaces of max. 10 mm | 0.4 inches thickness.



Vertical Pattern

Multi-Band Combiner	Dual-Band Combiner Triple-Band Combiner Quad-Band Combiner	Multi-Band Combiner
Tower Mounted Amplifier	Single-Band TMA Dual-Band TMA Triple-Band TMA	Tower Mounted Amplifier
Spectrum Limitation Filter		Spectrum Limitation Filter
Hybrid Combiner		Hybrid Combiner
RF Component	DC-Stop Smart Bias Tee / RIU / RMU Splitter / Tapper 50 Ohm Load	RF Component

## Multi-Band Combiner – Dual-Band

Product Name Product No.	Frequency (MHz)	Combiner type	Connector type (female)	Page
Dual-Band Combiner (2-1) 78211180V43	690-2180 + 2400-2700	DC bypass all ports	4.3-10	<a href="#">534</a>
Dual-Band Combiner (4-2) 78211181V43	690-2180 + 2400-2700	DC bypass all ports	4.3-10	
Dual-Band Combiner (4-2) KRF 102 301/2	698-960, 1710-2200 + 2495-2690	DC bypass on all ports	7-16	<a href="#">537</a>
Dual-Band Combiner (4-2) KRF 102 301/9	698-960, 1710-2200 + 2495-2690	DC bypass on all ports	4.3-10	
Dual-Band Combiner (8-4) KRF 102 301/10	698-960, 1710-2200 + 2495-2690	DC bypass on all ports	4.3-10	
Dual-Band Combiner (4-2) 78211288V43	698-806 + 824-960	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">539</a>
Dual-Band Combiner (4-2) 78211288V44	698-806 + 824-960	DC Auto-Sense 'Priority Controlled'	4.3-10	
Dual-Band Combiner (4-2) KRF 102 378/12	698-803 + 824-894	DC bypass on all ports	4.3-10	<a href="#">542</a>
Dual-Band Combiner (2-1) 78211430V43	694-862 + 880-960	DC bypass all ports	4.3-10	<a href="#">544</a>
Dual-Band Combiner (4-2) 78211431V43	694-862 + 880-960	DC bypass all ports	4.3-10	
Dual-Band Combiner (4-2) 78211438V43	694-862 + 880-960	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">547</a>
Dual-Band Combiner (4-2) 78211438V44	694-862 + 880-960	DC Auto-Sense 'Priority Controlled'	4.3-10	
Dual-Band Combiner (4-2) KRF 102 405/2	694-862 + 880-960	DC bypass on all ports	4.3-10	<a href="#">550</a>
Dual-Band Combiner (2-1) 78211470	703-788 + 791-960	DC bypass all ports	4.3-10	<a href="#">552</a>
Dual-Band Combiner (4-2) 78211471	703-788 + 791-960	DC bypass all ports	4.3-10	
Dual-Band Combiner (2-1) 78211472	703-788 + 791-960	DC bypass 791-960	4.3-10	
Dual-Band Combiner (4-2) 78211473	703-788 + 791-960	DC bypass 791-960	4.3-10	
Dual-Band Combiner (4-2) 78211476	703-788 + 791-960	DC bypass cross version	4.3-10	<a href="#">555</a>
Dual-Band Combiner (4-2) 78211478	703-788 + 791-960	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">558</a>
Dual-Band Combiner (4-2) 78211478V01	703-788 + 791-960	DC Auto-Sense 'Priority Controlled'	4.3-10	
Dual-Band Combiner (2-1) 78210970V43	790-862 + 880-960	DC bypass all ports	4.3-10	<a href="#">561</a>
Dual-Band Combiner (4-2) 78210971V43	790-862 + 880-960	DC bypass all ports	4.3-10	
Dual-Band Combiner (2-1) 78210972V43	790-862 + 880-960	DC bypass 880-960	4.3-10	
Dual-Band Combiner (4-2) 78210973V43	790-862 + 880-960	DC bypass 880-960	4.3-10	
Dual-Band Combiner (2-1) 78210974V43	790-862 + 880-960	DC bypass 790-862	4.3-10	<a href="#">564</a>
Dual-Band Combiner (4-2) 78210975V43	790-862 + 880-960	DC bypass 790-862	4.3-10	
Dual-Band Combiner (4-2) 78210978V43	790-862 + 880-960	DC Auto-Sense 'First In - First Out'	4.3-10	
Dual-Band Combiner (4-2) 78210978V44	790-862 + 880-960	DC Auto-Sense 'Priority Controlled'	4.3-10	<a href="#">567</a>
Dual-Band Combiner (4-2) 78210979V43	790-862 + 880-960	DC bypass cross version	4.3-10	

## Multi-Band Combiner – Dual-Band

Product Name Product No.	Frequency (MHz)	Combiner type	Connector type (female)	Page
Dual-Band Combiner (2-1) 78211460	380-960 + 1427-3800	DC bypass all ports	4.3-10	<a href="#">570</a>
Dual-Band Combiner (4-2) 78211461	380-960 + 1427-3800	DC bypass all ports	4.3-10	
Dual-Band Combiner (2-1) 78211462	380-960 + 1427-3800	DC bypass 1427-3800	4.3-10	
Dual-Band Combiner (4-2) 78211463	380-960 + 1427-3800	DC bypass 1427-3800	4.3-10	
Dual-Band Combiner (4-2) 78211466	380-960 + 1427-3800	DC bypass cross version	4.3-10	<a href="#">573</a>
Dual-Band Combiner (4-2) 78211468	380-960 + 1427-3800	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">576</a>
Dual-Band Combiner (4-2) 78211468V01	380-960 + 1427-3800	DC Auto-Sense 'Priority Controlled'	4.3-10	
Dual-Band Combiner (2-1) 78210660	470-960 + 1695-2700	DC bypass all ports	7-16	<a href="#">579</a>
Dual-Band Combiner (4-2) 78210661	470-960 + 1695-2700	DC bypass all ports	7-16	
Dual-Band Combiner (2-1) 78210662	470-960 + 1695-2700	DC bypass 1695-2700	7-16	
Dual-Band Combiner (4-2) 78210663	470-960 + 1695-2700	DC bypass 1695-2700	7-16	
Dual-Band Combiner (4-2) 78210669	470-960 + 1695-2700	DC bypass cross version	7-16	<a href="#">582</a>
Dual-Band Combiner (2-1) 78210660V43	470-960 + 1695-2700	DC bypass all ports	4.3-10	<a href="#">585</a>
Dual-Band Combiner (4-2) 78210661V43	470-960 + 1695-2700	DC bypass all ports	4.3-10	
Dual-Band Combiner (2-1) 78210662V43	470-960 + 1695-2700	DC bypass 1695-2700	4.3-10	
Dual-Band Combiner (4-2) 78210663V43	470-960 + 1695-2700	DC bypass 1695-2700	4.3-10	
Dual-Band Combiner (4-2) 78210669V43	470-960 + 1710-2700	DC bypass cross version	4.3-10	<a href="#">588</a>
Dual-Band Combiner (4-2) 78211628	1427-1880 + 1920-2690	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">591</a>
Dual-Band Combiner (4-2) 78211628V01	1427-1880 + 1920-2690	DC Auto-Sense 'Priority Controlled'	4.3-10	
Dual-Band Combiner (4-2) KRF 102 386/8	1710-1880 + 1920-2690	DC bypass on all ports	4.3-10	<a href="#">594</a>
Dual-Band Combiner (2-1) 78210620V43	1710-1880 + 1920-2200	DC bypass all ports	4.3-10	<a href="#">596</a>
Dual-Band Combiner (4-2) 78210621V43	1710-1880 + 1920-2200	DC bypass all ports	4.3-10	
Dual-Band Combiner (2-1) 78210622V43	1710-1880 + 1920-2200	DC bypass 1920-2200	4.3-10	
Dual-Band Combiner (4-2) 78210623V43	1710-1880 + 1920-2200	DC bypass 1920-2200	4.3-10	
Dual-Band Combiner (4-2) 78210626V43	1710-1880 + 1920-2200	DC bypass cross version	4.3-10	<a href="#">599</a>
Dual-Band Combiner (4-2) 78210628V43	1710-1880 + 1920-2200	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">602</a>
Dual-Band Combiner (4-2) 78210628V44	1710-1880 + 1920-2200	DC Auto-Sense 'Priority Controlled'	4.3-10	

## Multi-Band Combiner – Dual-Band

Product Name Product No.	Frequency (MHz)	Combiner type	Connector type (female)	Page
Dual-Band Combiner (2-1) 78211530	1427-1518 + 1710-2690	DC bypass all ports	4.3-10	<a href="#">605</a>
Dual-Band Combiner (4-2) 78211531	1427-1518 + 1710-2690	DC bypass all ports,	4.3-10	
Dual-Band Combiner (2-1) 78211532	1427-1518 + 1710-2690	DC bypass 1710-2690	4.3-10	
Dual-Band Combiner (4-2) 78211533	1427-1518 + 1710-2690	DC bypass 1710-2690	4.3-10	
Dual-Band Combiner (4-2) 78211536	1427-1518 + 1710-2690	DC bypass cross version	4.3-10	<a href="#">608</a>
Dual-Band Combiner (4-2) 78211538	1427-1518 + 1710-2690	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">611</a>
Dual-Band Combiner (4-2) 78211538V01	1427-1518 + 1710-2690	DC Auto-Sense 'Priority Controlled'	4.3-10	
Dual-Band Combiner (4-2) KRF 102 419/1	1427-1518 + 1710-2690	DC bypass on all ports	4.3-10	<a href="#">614</a>
Dual-Band Combiner (2-1) 78211790	1427-2200 + 2300-2690	DC bypass all ports	4.3-10	<a href="#">616</a>
Dual-Band Combiner (4-2) 78211791	1427-2200 + 2300-2690	DC bypass all ports	4.3-10	
Dual-Band Combiner (2-1) 78211794	1427-2200 + 2300-2690	DC bypass 1427-2200	4.3-10	
Dual-Band Combiner (4-2) 78211795	1427-2200 + 2300-2690	DC bypass 1427-2200	4.3-10	
Dual-Band Combiner (4-2) 78211796	1427-2200 + 2300-2690	DC bypass cross version	4.3-10	<a href="#">619</a>
Dual-Band Combiner (4-2) 78211798	1427-2200 + 2300-2690	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">622</a>
Dual-Band Combiner (4-2) 78211798V01	1427-2200 + 2300-2690	DC Auto-Sense 'Priority Controlled'	4.3-10	
Dual-Band Combiner (4-2) KRF 102 409/1	1850-1995 + 1695-1780, 2110-2360	DC bypass on all ports	4.3-10	<a href="#">625</a>
Dual-Band Combiner (8-4) KRF 102 409/2	1850-1995 + 1695-1780, 2110-2360	DC bypass on all ports	4.3-10	
Dual-Band Combiner (4-2) KRF 102 409/3	1850-1995 + 1695-1780, 2110-2360	DC bypass on all ports	4.3-10	
Dual-Band Combiner (8-4) KRF 102 407/2	2300-2400 + 2496-2690	DC bypass on all ports	4.3-10	<a href="#">627</a>
Dual-Band Combiner (4-2) KRF 102 432/4	2540-2560, 2660-2680 + 2600-2615	DC bypass on all ports	4.3-10	<a href="#">629</a>

## Multi-Band Combiner – Triple-Band

Product Name Product No.	Frequency (MHz)	Combiner type	Connector type (female)	Page
Triple-Band Combiner (3-1) 78211820	690-862 + 880-960 + 1427-3800	DC bypass all ports	4.3-10	<a href="#">631</a>
Triple-Band Combiner (6-2) 78211821	690-862 + 880-960 + 1427-3800	DC bypass all ports	4.3-10	
Triple-Band Combiner (6-2) 78211828	690-862 + 880-960 + 1427-3800	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">634</a>
Triple-Band Combiner (6-2) 78211828V01	690-862 + 880-960 + 1427-3800	DC Auto-Sense 'Priority Controlled'	4.3-10	
Triple-Band Combiner (3-1) 78211450	380-960 + 1427-2200 + 2300-2690	DC bypass all ports	4.3-10	<a href="#">637</a>
Triple-Band Combiner (6-2) 78211451	380-960 + 1427-2200 + 2300-2690	DC bypass all ports	4.3-10	
Triple-Band Combiner (3-1) 78211452	380-960 + 1427-2200 + 2300-2690	DC bypass 2300-2690	4.3-10	
Triple-Band Combiner (6-2) 78211453	380-960 + 1427-2200 + 2300-2690	DC bypass 2300-2690	4.3-10	
Triple-Band Combiner (6-2) 78211458	380-960 + 1427-2200 + 2300-2690	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">640</a>
Triple-Band Combiner (6-2) 78211458V01	380-960 + 1427-2200 + 2300-2690	DC Auto-Sense 'Priority Controlled'	4.3-10	
Triple-Band Combiner (3-1) 78211560	380-960 + 1427-1880 + 1920-2690	DC bypass all ports	4.3-10	<a href="#">643</a>
Triple-Band Combiner (6-2) 78211561	380-960 + 1427-1880 + 1920-2690	DC bypass all ports	4.3-10	
Triple-Band Combiner (3-1) 78211562	380-960 + 1427-1880 + 1920-2690	DC bypass 1920-2690	4.3-10	
Triple-Band Combiner (6-2) 78211563	380-960 + 1427-1880 + 1920-2690	DC bypass 1920-2690	4.3-10	
Triple-Band Combiner (6-2) 78211568	380-960 + 1427-1880 + 1920-2690	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">646</a>
Triple-Band Combiner (6-2) 78211568V01	380-960 + 1427-1880 + 1920-2690	DC Auto-Sense 'Priority Controlled'	4.3-10	
Triple-Band Combiner (3-1) 78211570	380-960 + 1427-1518 + 1710-2690	DC bypass all ports	4.3-10	<a href="#">649</a>
Triple-Band Combiner (6-2) 78211571	380-960 + 1427-1518 + 1710-2690	DC bypass all ports	4.3-10	
Triple-Band Combiner (3-1) 78211574	380-960 + 1427-1518 + 1710-2690	DC bypass 1710-2690	4.3-10	
Triple-Band Combiner (6-2) 78211575	380-960 + 1427-1518 + 1710-2690	DC bypass 1710-2690	4.3-10	
Triple-Band Combiner (6-2) 78211578	380-960 + 1427-1518 + 1710-2690	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">652</a>
Triple-Band Combiner (6-2) 78211578V01	380-960 + 1427-1518 + 1710-2690	DC Auto-Sense 'Priority Controlled'	4.3-10	



## Multi-Band Combiner – Triple-Band

Product Name Product No.	Frequency (MHz)	Combiner type	Connector type (female)	Page
Triple-Band Combiner (3-1) 78211690	1427-1880 + 1920-2360 + 2496-2690	DC bypass all ports	4.3-10	<a href="#">655</a>
Triple-Band Combiner (6-2) 78211691	1427-1880 + 1920-2360 + 2496-2690	DC bypass all ports	4.3-10	
Triple-Band Combiner (6-2) 78211696	1427-1880 + 1920-2360 + 2496-2690	DC bypass cross version	4.3-10	<a href="#">658</a>
Triple-Band Combiner (6-2) 78211698	1427-1880 + 1920-2360 + 2496-2690	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">661</a>
Triple-Band Combiner (6-2) 78211698V01	1427-1880 + 1920-2360 + 2496-2690	DC Auto-Sense 'Priority Controlled'	4.3-10	
Triple-Band Combiner (3-1) 78211400V43	1710-1880 + 1920-2170 + 2300-2700	DC bypass all ports	4.3-10	<a href="#">664</a>
Triple-Band Combiner (6-2) 78211401V43	1710-1880 + 1920-2170 + 2300-2700	DC bypass all ports	4.3-10	
Triple-Band Combiner (3-1) 78211402V43	1710-1880 + 1920-2170 + 2300-2700	DC bypass 1710-1880	4.3-10	
Triple-Band Combiner (6-2) 78211403V43	1710-1880 + 1920-2170 + 2300-2700	DC bypass 1710-1880	4.3-10	
Triple-Band Combiner (3-1) 78211404V43	1710-1880 + 1920-2170 + 2300-2700	DC bypass 1920-2170	4.3-10	
Triple-Band Combiner (6-2) 78211405V43	1710-1880 + 1920-2170 + 2300-2700	DC bypass 1920-2170	4.3-10	
Triple-Band Combiner (6-2) 78211408V43	1710-1880 + 1920-2170 + 2300-2700	DC Auto-Sense 'First In - First Out'	4.3-10	
Triple-Band Combiner (6-2) 78211408V44	1710-1880 + 1920-2170 + 2300-2700	DC Auto-Sense 'Priority Controlled'	4.3-10	
Triple-Band Combiner (6-2) KRF 102 449/1	1710-1780, 2110-2180 + 1850-1995 + 2496-2690	no DC/AISG bypass	NEX10/4.3-10	
Triple-Band Combiner (6-2) KRF 102 449/2	1710-1780, 2110-2180 + 1850-1995 + 2496-2690	no DC/AISG bypass	NEX10/4.3-10	

## Multi-Band Combiner – Quad-Band

Product Name Product No.	Frequency (MHz)	Combiner type	Connector type (female)	Page
Quad-Band Combiner (4-1) 78211580	380-960 + 1427-1880 + 1920-2200 + 2300-2690	DC bypass all ports	4.3-10	<a href="#">672</a>
Quad-Band Combiner (8-2) 78211581	380-960 + 1427-1880 + 1920-2200 + 2300-2690	DC bypass all ports	4.3-10	
Quad-Band Combiner (4-1) 78211584	380-960 + 1427-1880 + 1920-2200 + 2300-2690	DC bypass 1920-2200	4.3-10	<a href="#">675</a>
Quad-Band Combiner (8-2) 78211585	380-960 + 1427-1880 + 1920-2200 + 2300-2690	DC bypass 1920-2200	4.3-10	
Quad-Band Combiner (8-2) 78211588	380-960 + 1427-1880 + 1920-2200 + 2300-2690	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">675</a>
Quad-Band Combiner (8-2) 78211588V01	380-960 + 1427-1880 + 1920-2200 + 2300-2690	DC Auto-Sense 'Priority Controlled'	4.3-10	
Quad-Band Combiner (4-1) 78211340	690-862 + 880-960 + 1427-1880 + 1920-2690	DC bypass all ports	4.3-10	<a href="#">678</a>
Quad-Band Combiner (8-2) 78211341	690-862 + 880-960 + 1427-1880 + 1920-2690	DC bypass all ports	4.3-10	
Quad-Band Combiner (8-2) 78211348	690-862 + 880-960 + 1427-1880 + 1920-2690	DC Auto-Sense 'First In - First Out'	4.3-10	<a href="#">681</a>
Quad-Band Combiner (8-2) 78211348V01	690-862 + 880-960 + 1427-1880 + 1920-2690	DC Auto-Sense 'Priority Controlled'	4.3-10	



## Auto-Sense Combiners – Functionality and Benefits

In order to enable the control of ALDs<sup>1)</sup> when deploying standard multi-band combiners in mobile communication networks, such combiners are fitted with integrated DC/AISG bypass circuits. Depending on the application, different bypass configurations are available. The correct bypass combination needs to be selected in order to ensure the proper control and configuration of the ALDs.

With Auto-Sense Combiners the correct bypass is detected automatically, thereby enabling safe and easy deployment in universal applications.

### How does it work?

#### Two different modes

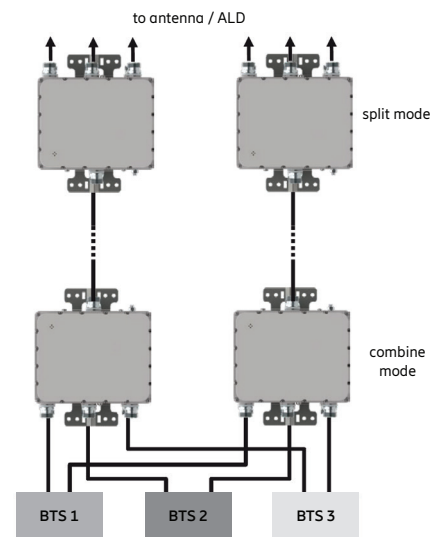
Auto-Sense Combiners automatically switch into the appropriate mode by checking the DC voltage on all ports.

##### Split mode: close to the antenna

- Combiners detect if an ALD (DC load) or an antenna (short circuit) is connected to a port and therefore bypass or block the DC/AISG signal.
- LEDs for each port indicate if DC is bypassed or not.

##### Combine mode: close to the BTS

- Automatic detection of DC voltage on one or more input ports. DC/AISG signal is bypassed to connected ALDs according to three different functional preconfigurations.
- In combine mode, LEDs show if DC is connected to a port and which DC/AISG signal is put through to the common port.

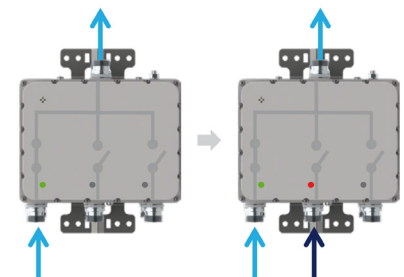


#### Two different functional preconfigurations

Auto-Sense Combiners are available in two variants with different preconfigured functions.

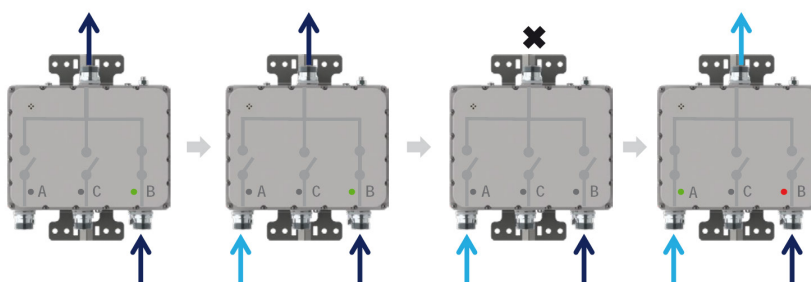
##### First In – First Out function

- The first BTS which supplies DC voltage at any input port is bypassed to the common port, other DC/AISG signals will be ignored and blocked.
- After installation, LED lights help to adjust the system by indicating the bypass situation.



##### Priority Controlled function

- The combiner detects all ports that are supplied with DC and bypasses the AISG/DC signal with the highest priority according to a preprogrammed priority table setting. (For detailed information on the preset priorities of each combiner, please check the latest datasheets on our website.)
- LED lights indicate which port/signal is bypassed and which ones are blocked. If a new base station is connected, the combiner automatically switches the DC/AISG bypass to this port if the priority is higher than the one of the currently bypassed port.



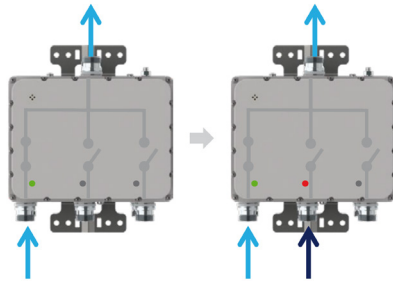
<sup>1)</sup> ALD = Antenna Line Device

# Auto-Sense Combiners – Functionality and Benefits

## Benefits and features

### • LED status indication

Installation mistakes can be easily revealed as LEDs for each port indicate if DC is bypassed or not and even if the DC is blocked.



combine mode

Green LED light indicates that this is the port / DC signal that is bypassed to the common port.

Red light indicates that this port would also be supplied with a DC/AISG signal, but the signal is blocked.

No light indicates that no DC has been detected on this port.

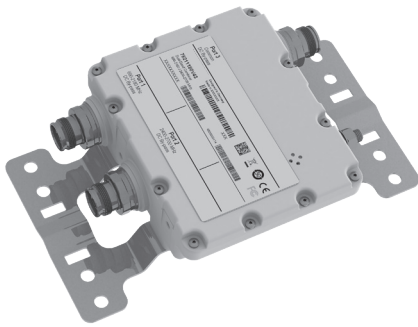
### • Simplification

Auto-Sense Combiners can be used for split and combine applications – one type for all DC bypass situations. As soon as DC is connected to the combiner, the combiner will detect its role in the system and automatically adjust the behavior accordingly.

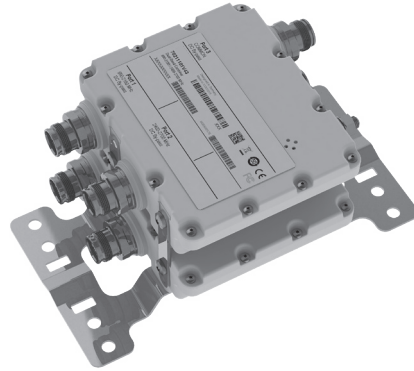
### • Savings and efficiency

The multi usability of Auto-Sense Combiners helps to reduce stock, ordering logistics and number of parts. No external DC stops are required either.

For more detailed information please see the Auto-Sense quickguide on our website.



2-1 Unit



4-2 Unit

# Dual-Band Combiner

78211180V43, 78211181V43

690–2180 MHz  
2400–2700 MHz

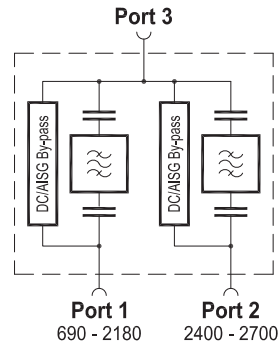
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 2-1 Unit or 4-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211180V43 (2-1)
		78211181V43 (4-2)
Pass band		
Band 1	MHz	690 – 2180
Band 2	MHz	2400 – 2700
Insertion loss		
Port 1 ↔ Port 3	dB	< 0.2 (690 – 2180 MHz) typ. 0.1
Port 2 ↔ Port 3	dB	< 0.15 (2400 – 2700 MHz) typ. 0.1
Isolation		
Port 1 ↔ Port 2	dB	> 50 (690 – 2180 MHz), > 48 (2400 – 2700 MHz)
VSWR		
		< 1.22 (690 – 2180 MHz)
		< 1.2 (2400 – 2700 MHz)
Impedance	Ω	50
Input power		
Band 1 / Band 2	W	< 300 / < 300
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F	-55 ... +60   -67 ... +140
Connectors		4.3-10 female
Application		Indoor or outdoor (IP 66)
DC/AISG transparency		
Port 1 ↔ Port 3	mA	By-pass (max. 2500)
Port 2 ↔ Port 3	mA	By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set
Weight	kg   lb	2-1 Unit: 1.5   3.3 4-2 Unit: 2.8   6.2
Dimensions (w x h x d)	mm   in	2-1 Unit: 141 x 119 x 48   5.6 x 4.7 x 1.9 4-2 Unit: 141 x 119 x 99   5.6 x 4.7 x 3.9 (without connectors, without mounting brackets)
Packing size	mm   in	2-1 Unit: 266 x 196 x 130   10.5 x 7.7 x 5.1 4-2 Unit: 266 x 196 x 180   10.5 x 7.7 x 7.1

**Accessories (order separately if required)**

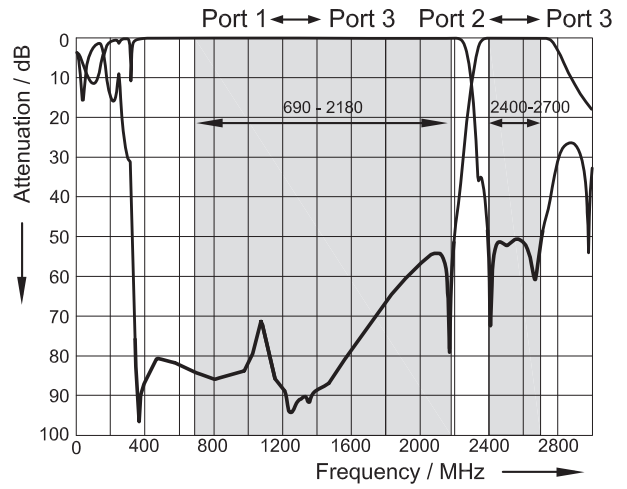
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

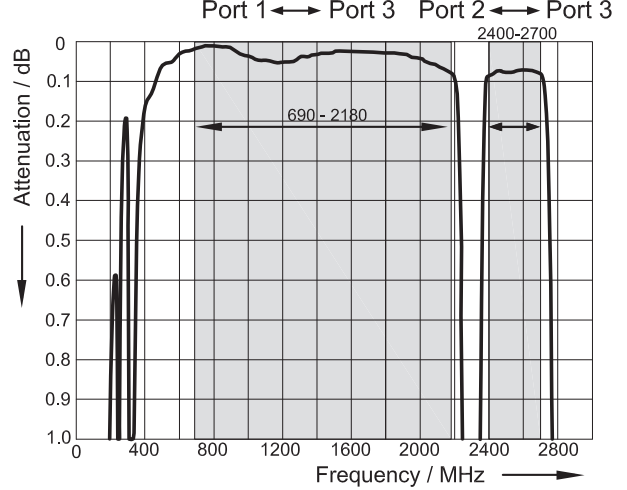
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

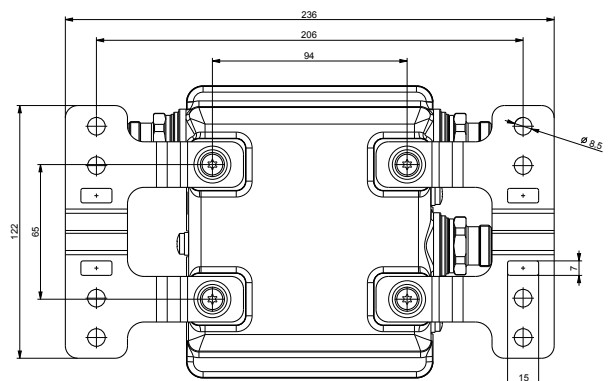
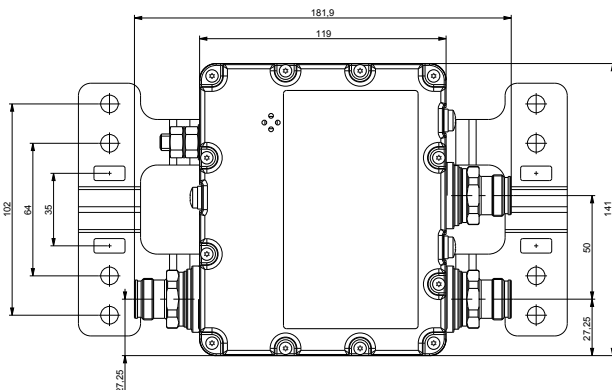
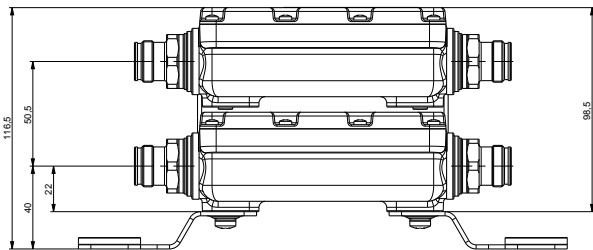
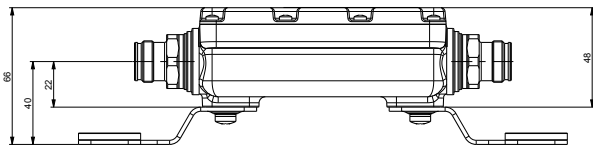
**Diagram I**



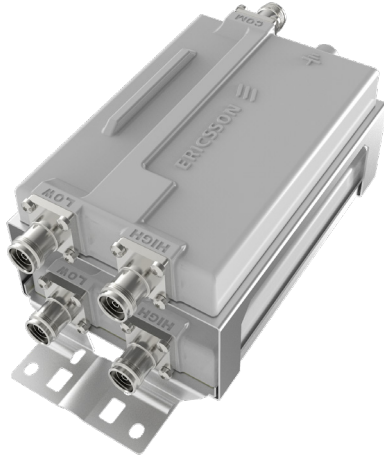
**Diagram II**



**Dimensions in mm**







4-2 Unit



8-4 Unit

# Dual-Band Combiner

KRF 102 301/2, KRF 102 301/9, KRF 102 301/10

698–960 MHz, 1710–2200 MHz  
2495–2690 MHz

- Designed for Ericsson and non-Ericsson system compatibility
- Easy and fast installation
- Long neck connectors for easier optional sealing
- Extremely low insertion loss
- High power handling capability
- Excellent isolation performance
- Both indoor and outdoor applicable
- Wall mounting brackets and pole clamps are included



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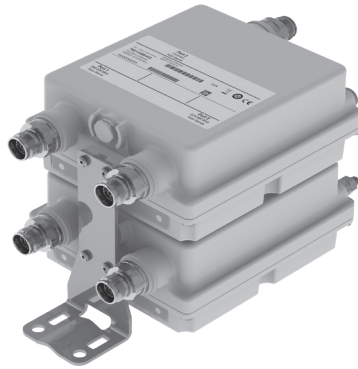


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Product No.		KRF 102 301/2 (4-2)	KRF 102 301/9 (4-2)	KRF 102 301/10 8-4
<b>Electrical Specifications**</b>				
Frequency range - Low port: - High port:	MHz	698 – 960 / 1710 – 2200 2495 – 2690		
Max. power handling (continuous) - Low Port: - High Port:	W	500 80		
Insertion loss low band - 698–1980 MHz: - 1980–2170 MHz: - 2170–2200 MHz:	dB	0.12* 0.21* 0.24*		
Insertion loss high band - 2495–2690 MHz:	dB	0.18*		
All ports Return loss: Isolation:	dB	> 20 > 55 (698–2200 MHz) > 55 (2495–2500 MHz)		
Impedance	$\Omega$	50		
Intermodulation IM3 (at 2x43 dBm): IM5 (at 2x43 dBm): IM7 (at 2x43 dBm):	dBm	< -114 < -123 < -123		
DC + AISG transparency Maximum DC voltage: Maximum DC current:	Vdc A	40 3		
<b>Mechanical Specifications</b>				
Dimensions (H x W x D)	mm	200 x 145 x 91	200 x 145 x 91	200 x 289 x 83
Weight	kg	4	4	7.3
Mounting options		Pole or wall	Pole or wall	Pole or wall
RF connectors		7-16 (f), long neck	4.3-10 (f), long neck	4.3-10 (f), long neck
<b>Environmental Specifications**</b>				
Operating temperature	°C	-40 to +55		
Humidity		Relative 5–100%		
IP class		IP67		
Lightning protection		3 kA 10/350 $\mu$ s		
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETL): CSA/UL 62368-1		

\* Typical values

\*\* Common values for all variants

AUTO-  
SENSE

4-2 Unit

# Dual-Band Combiner

78211288V43, 78211288V44

698–806 MHz

824–960 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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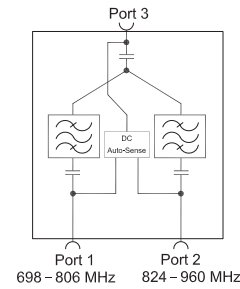


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**Priority table for 78211288V44 with Priority Controlled Function**

698–806 MHz	Priority 1 (highest)
824–960 MHz	Priority 2 (lowest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211288V43 (4-2)	clamps included	78211288V44 (4-2)
DC/AISG transparency		First In - First Out Function		Priority Controlled Function
Pass band Band 1 Band 2	MHz MHz		698 – 806 824 – 960	
Insertion loss Port 1 ↔ Port 3 Port 2 ↔ Port 3	dB dB		< 0.3 (698 – 796 MHz); < 0.5 (796 – 806 MHz) < 0.5 (824 – 834 MHz); < 0.3 (834 – 960 MHz)	
Isolation Port 1    Port 2	dB		> 50	
VSWR			< 1.2	
Impedance	Ω		50	
Input power Band 1 / Band 2	W		< 300	
Intermodulation products	dBc		< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F		-40 ... +60   -40 ... +140	
Connectors			4.3-10 female	
Application			Indoor or outdoor (IP 66)	
DC/AISG transparency Port 1    Port 3 Port 2    Port 3	mA mA		Auto-Sense (max. 2000) Auto-Sense (max. 2000)	
Lightning protection	kA		3, 10/350 μs pulse	
Mounting	mm   in		Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With included clamp set	
Windload (at Rated Wind Speed: 150 km/h)	N   lbf N   lbf		49   11.0 (frontal) 40   9.0 (lateral)	
Weight	kg   lb		5.0   11.0	
Dimensions (w x h x d)	mm   in		153 x 171 x 167   6.0 x 6.7 x 6.5 (without connectors, without mounting brackets)	
Packing size	mm   in		365 x 235 x 245   14.4 x 9.3 x 9.6	

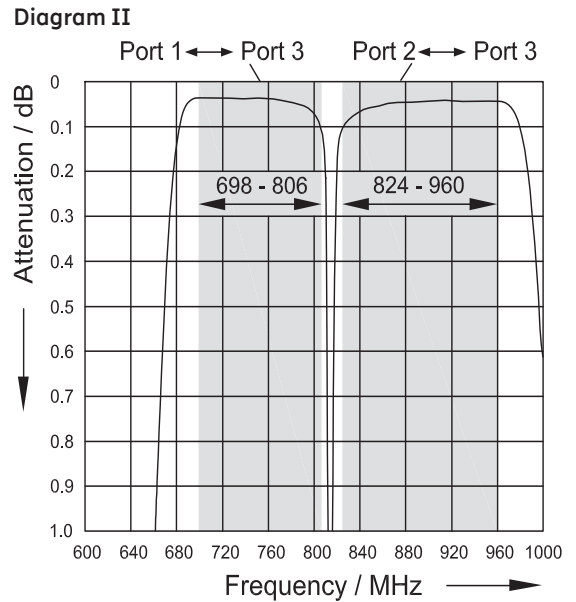
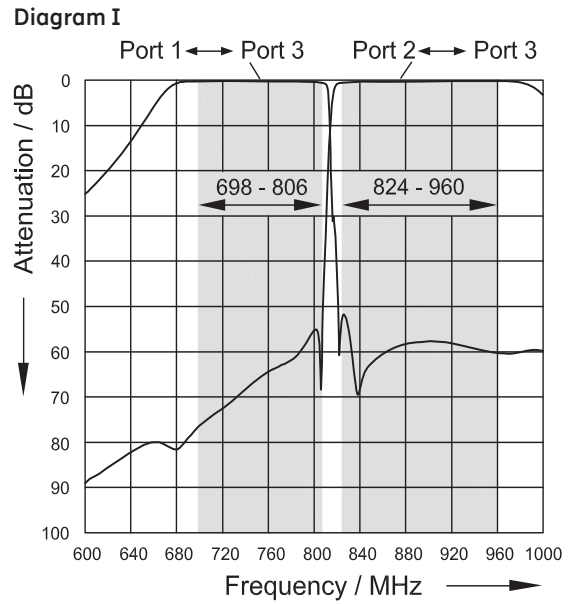
**Accessories (included in the scope of supply)**

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

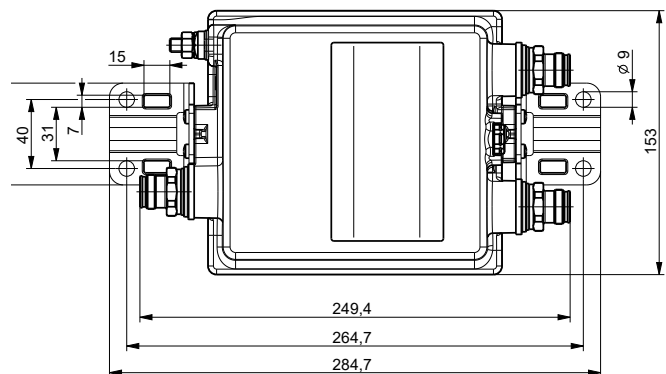
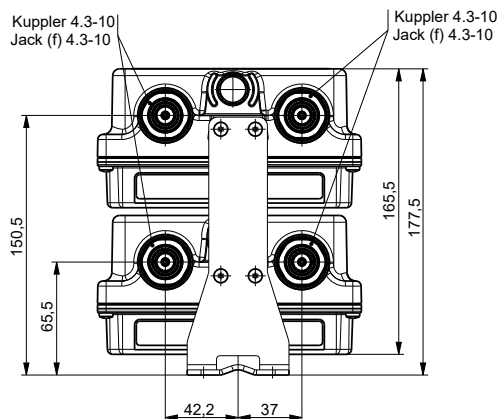
**Accessories (order separately if required)**

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**



**Dimensions in mm**





4-2 Unit

# Dual-Band Combiner

KRF 102 378/12

698–803 MHz  
824–894 MHz

- Designed for Ericsson and non-Ericsson system compatibility
- Easy and fast installation
- Low insertion loss
- Wall mounting brackets and pole clamps are included
- The diplex filter is IP67 class and weatherproof

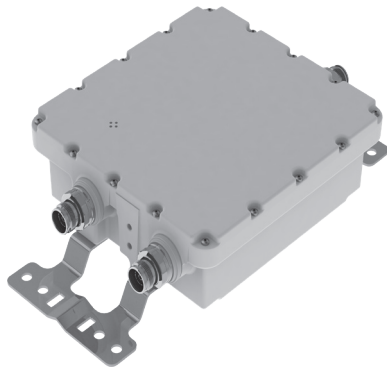


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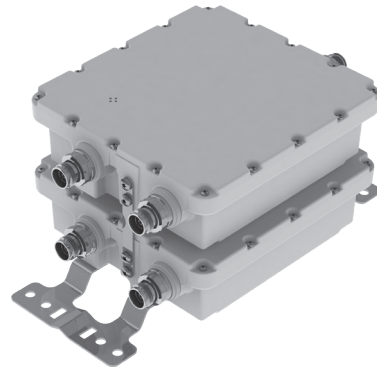


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Product No.	KRF 102 378/12 (4-2)	
<b>Electrical Specifications</b>		
Frequency range - Low port: - High port:	MHz	698–803 (B28, B12-B14, B17) 824–894 (B5)
Insertion loss	dB	< 0.4
Return loss	dB	> 20
Isolation	dB	> 50
Power handling - Continuous: - Peak:	dBm	53 61
Intermodulation (IM3) at 2x43 dBm	dBm	< -117
DC By-pass	40 V, 3 A. 3GPP (AISG) transparent	
<b>Mechanical Specifications (coupler unit)</b>		
Dimensions (H x W x D)	mm	310 × 160 × 69 (excl. connectors)
Weight	kg	5.3
RF connectors	4.3-10 (f)	
Mounting options	Pole or wall	
<b>Environmental Specifications</b>		
Temperature range, full performance	°C	-40 to +55 -40 to +70 (non-destructive)
IP class	Outdoor, IP67	



2-1 Unit



4-2 Unit

# Dual-Band Combiner

78211430V43, 78211431V43

694–862 MHz  
880–960 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 2-1 Unit or 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory

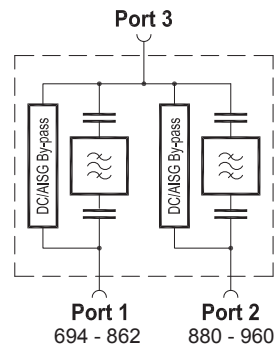


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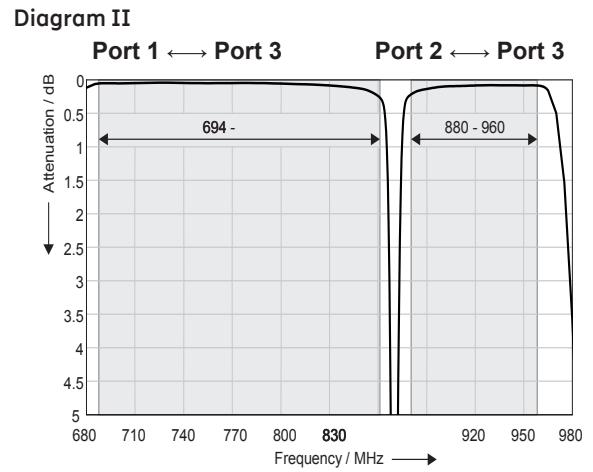
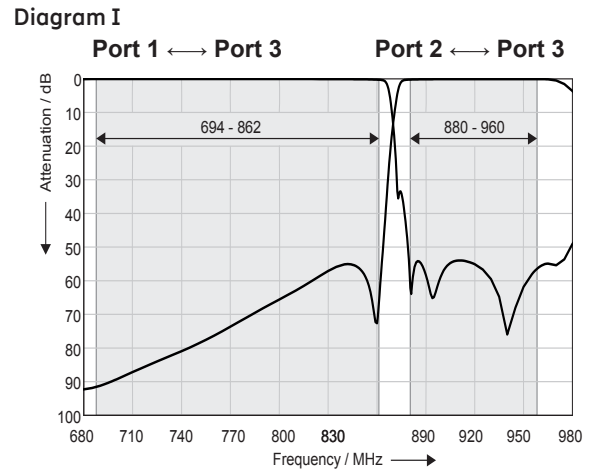


Product No.		78211430V43 (2-1)
		78211431V43 (4-2)
Pass band Band 1 Band 2	MHz MHz	694 – 862 880 – 960
Insertion loss Port 1 Port 3 Port 2 Port 3	dB dB	< 0.4, typically 0.2 (694 – 862 MHz) < 0.4, typically 0.2 (880 – 960 MHz)
Isolation Port 1 Port 2	dB	> 45 (694 – 862 MHz / 880 – 960 MHz)
VSWR		< 1.25 (694 – 862 / 880 – 960 MHz)
Impedance	Ω	50
Input power Band 1 / Band 2	W	< 300
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F	-55 ... +60 -67 ... +140
Connectors		4.3-10 female
Application		Indoor or outdoor (IP 66)
DC/AISG transparency Port 1 Port 3 Port 2 Port 3	mA mA	By-pass (max. 2500) By-pass (max. 2500)
Lightning protection	kA	3, 10/350 s pulse
Mounting	mm   in	Wall mounting: With 4 screws (max. 8 0.315 diameter) Pole mounting: With additional clamp set
Weight	kg   lb	2-1 nit 3 6.6 4-2 nit 6 13.2
Dimensions (w x h x d)	mm   in	2-1 nit 200 x 214 x 66 mm 7.9 x 8.4 x 2.6 4-2 nit 200 x 214 x 137 7.9 x 8.4 x 5.4 (without connectors, without mounting brackets)
Packing size	mm   in	2-1 nit 400 x 265 x 150 15.7 x 10.4 x 5.9 4-2 nit 400 x 265 x 220 15.7 x 10.4 x 8.7

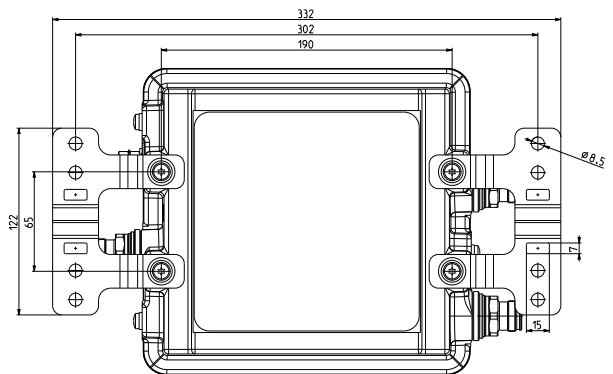
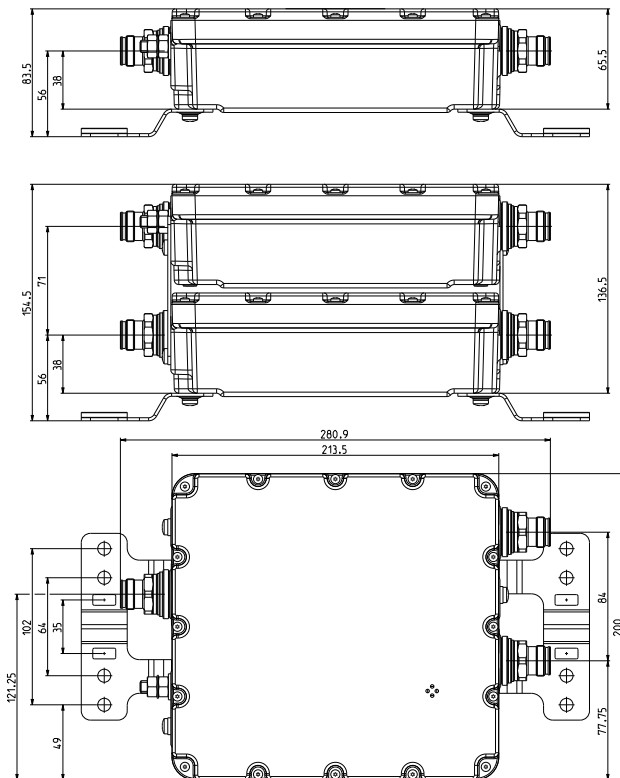
Accessories (order separately if required)

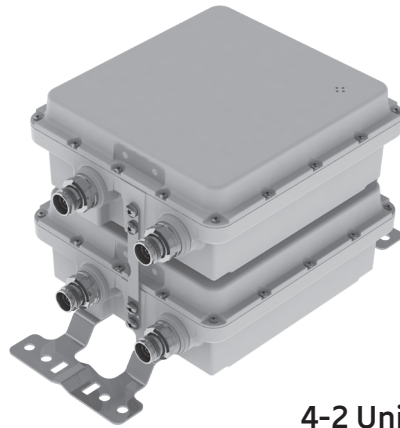
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2
<hr/>			
Product No.	Product Name		
78210484	50 Ohm Load		
78211000	DC Stop		

Typical Attenuation Curves



Dimensions in mm



AUTO-  
SENSE

4-2 Unit

# Dual-Band Combiner

78211438V43, 78211438V44

694–862 MHz

880–960 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 4-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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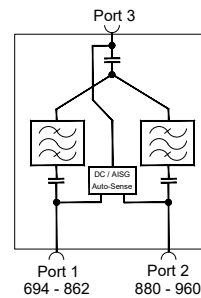


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**Priority table for 78211438V44 with Priority Controlled Function**

694–862 MHz	Priority 1 (highest)
880–960 MHz	Priority 2 (lowest)

For more information see Auto-Sense quick guide later in this datasheet.



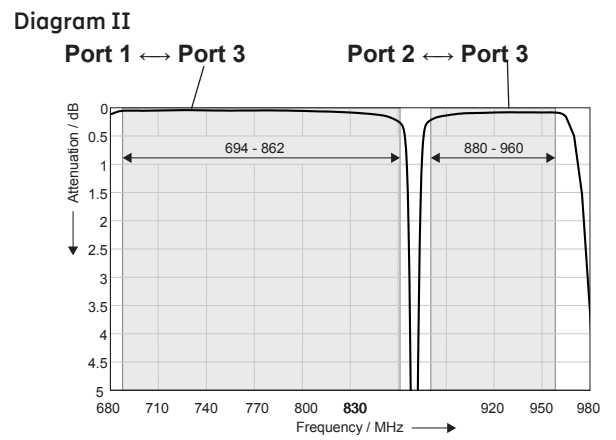
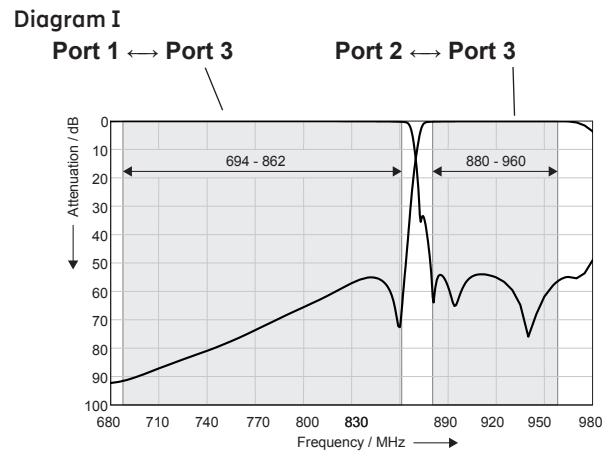
Product No.		78211438V43 (4-2)	78211438V44 (4-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
Pass band			
Band 1	MHz		694 – 862
Band 2	MHz		880 – 960
Insertion loss			
Port 1 ↔ Port 3	dB		< 0.4, typically 0.2 (694 – 862 MHz)
Port 2 ↔ Port 3	dB		< 0.4, typically 0.2 (880 – 960 MHz)
Isolation			
Port 1 ↔ Port 2	dB		> 45 (694 – 862 MHz / 880 – 960 MHz)
VSWR			< 1.25 (694 – 862 / 880 – 960 MHz)
Impedance	Ω		50
Input power			
Band 1 / Band 2	W		< 300
Intermodulation products	dBc		< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F		-55 ... +60   -67 ... +140
Connectors			4.3-10 female
Application			Indoor or outdoor (IP 66)
DC/AISG transparency			
Port 1 ↔ Port 3	mA		Auto-Sense (max. 2000)
Port 2 ↔ Port 3	mA		Auto-Sense (max. 2000)
Lightning protection	kA		3, 10/350 μs pulse
Mounting	mm   in		Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set
Weight	kg   lb		6.4   14.1
Dimensions (w x h x d)	mm   in		200 x 214 x 173   7.9 x 8.4 x 6.8 (without connectors, without mounting brackets)
Packing size	mm   in		395 x 260 x 253   15.6 x 10.2 x 10.0

Accessories (order separately if required)

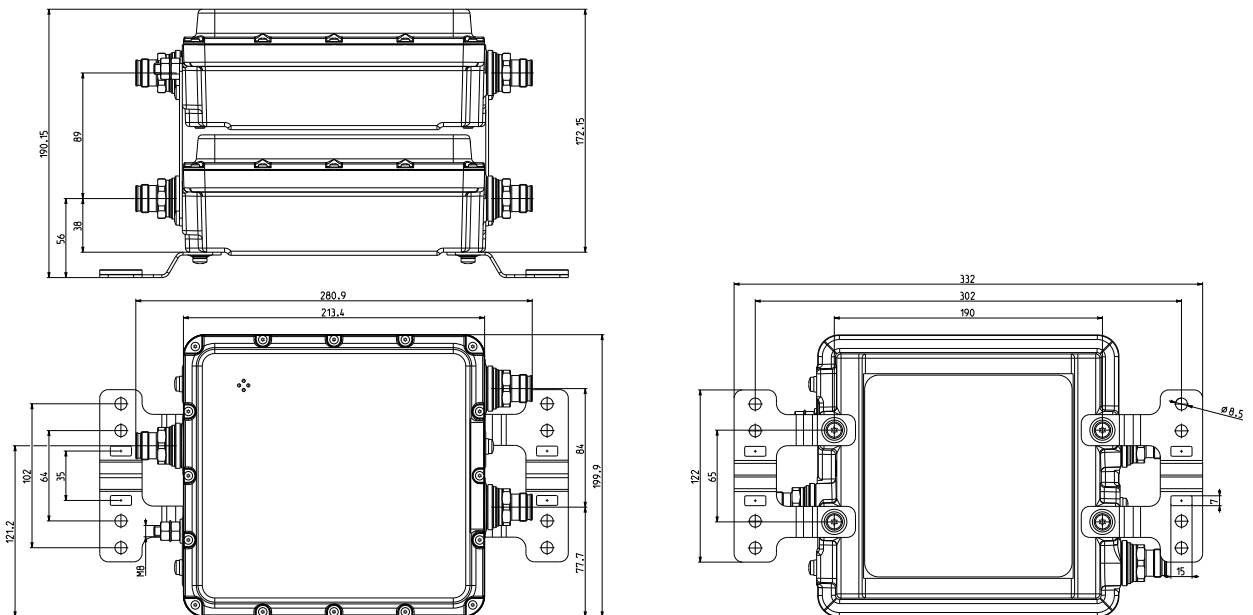
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves



Dimensions in mm





4-2 Unit

# Dual-Band Combiner

KRF 102 405/2

694–862 MHz  
880–960 MHz

- Excellent isolation performance
- Verified with Ericsson RBSs
- Very low insertion loss
- Indoor and outdoor proof



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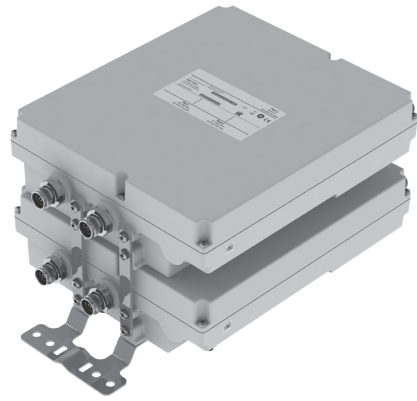


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<b>Product No.</b>		KRF 102 405/2 (4-2)
<b>Electrical Specifications</b>		
Frequency range - Low port: - High port:	MHz	694–862 880–960
DC configuration		Pass all
Insertion loss	dB	< 0.15 (typical), < 0.4 (guaranteed)
Return loss	dB	> 19
Isolation	dB	> 50
Power handling - Continuous power, max: - Peak power:	dBm	53 61
Intermodulation (IM3) at 2x43 dBm	dBm	< -115
<b>Mechanical Specifications</b>		
Dimensions (H × W × D)	mm	219.6 × 219.6 × 70 (excl. connectors)
Weight	kg	5.3
RF connectors		4.3-10 (f)
Mounting options		Rail, pole, or wall mounting (Rail bracket ordered separately)
<b>Environmental Specifications</b>		
Sealing		IP67
Temperature range, full performance	°C	-40 to +55



2-1 Unit



4-2 Unit

# Dual-Band Combiner

78211470, 78211471,  
78211472, 78211473

703–788 MHz  
791–960 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 2-1 Unit or 4-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory

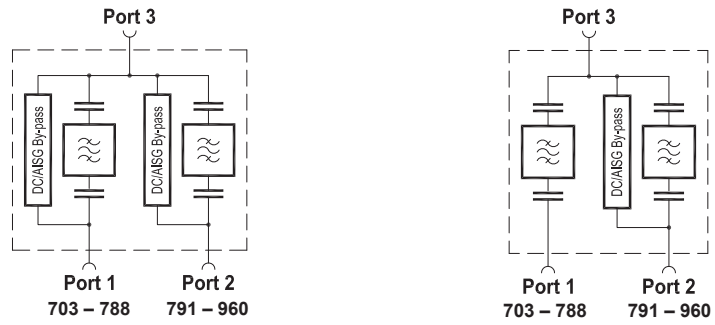


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Product No.		78211470 (2-1)	78211472 (2-1)
		78211471 (4-2)	78211473 (4-2)
Pass band Band 1 Band 2	MHz MHz	703 – 788 791 – 960	
Insertion loss Port 1 ↔ Port 3 Port 2 ↔ Port 3	dB dB	< 0.3 (703 – 777 MHz) / < 0.5 (777 – 784 MHz) / < 1.3 (784 – 788 MHz), typically 0.3 < 1.3 (791 – 798 MHz) / < 0.5 (798 – 802 MHz) / < 0.4 (802 – 960 MHz), typically 0.4	
Isolation Port 1 ↔ Port 2	dB	> 40	
VSWR		< 1.25	
Impedance	Ω	50	
Input power Band 1 / Band 2	W	< 200 / < 200	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency Port 1 ↔ Port 3 Port 2 ↔ Port 3	mA mA	By-pass (max. 2500) By-pass (max. 2500)	Stop By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. diameter 8   0.315) Pole mounting: With additional clamp set	
Weight	kg   lb	2-1 Unit: 6.2   13.7 4-2 Unit: 12   26.5	
Dimensions (w x h x d)	mm   in	2-1 Unit: 258 x 301 x 88   10.2 x 11.9 x 3.5 4-2 Unit: 258 x 301 x 178   10.2 x 11.9 x 7.0 (without connectors, without mounting brackets)	
Packin size	mm   in	2-1 Unit: 477 x 334 x 175   18.8 x 13.1 x 6.9 4-2 Unit: 477 x 334 x 265   18.8 x 13.1 x 10.4	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

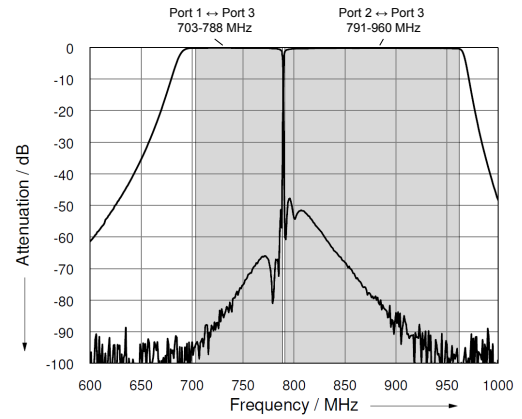
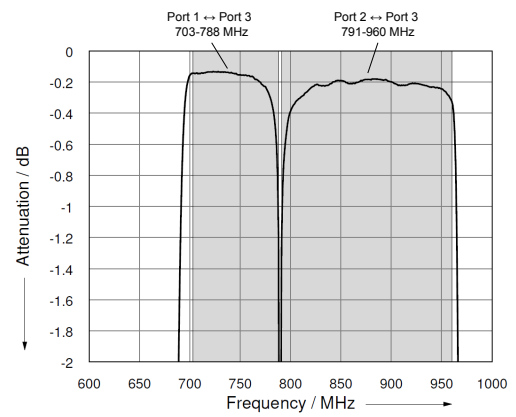
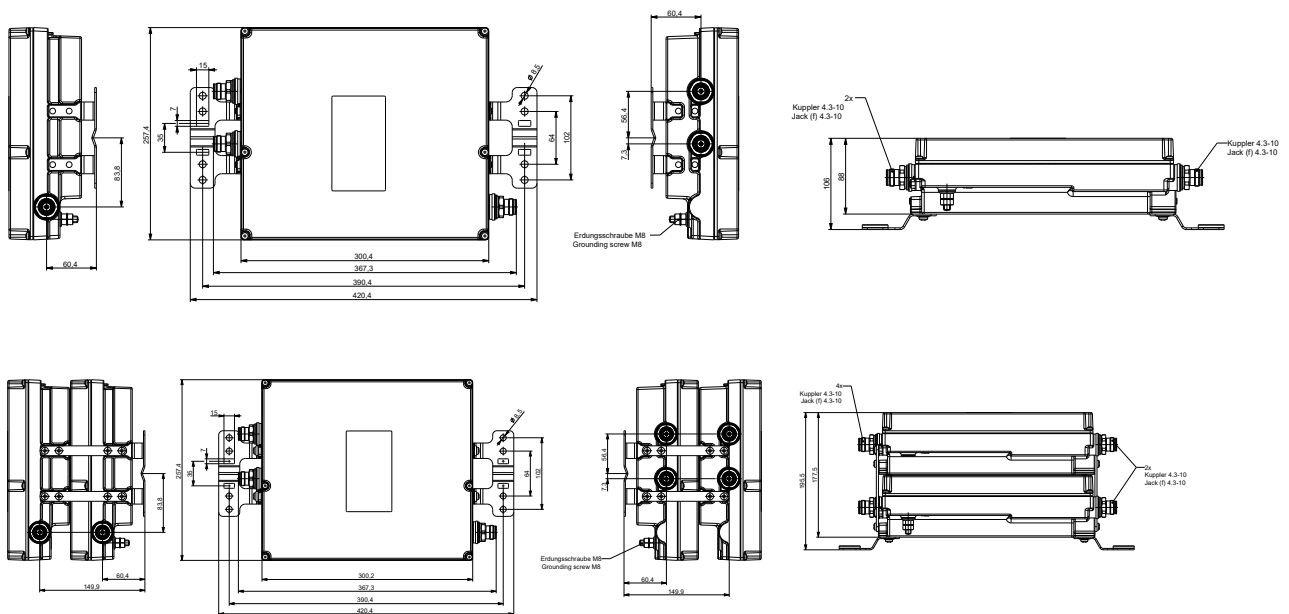
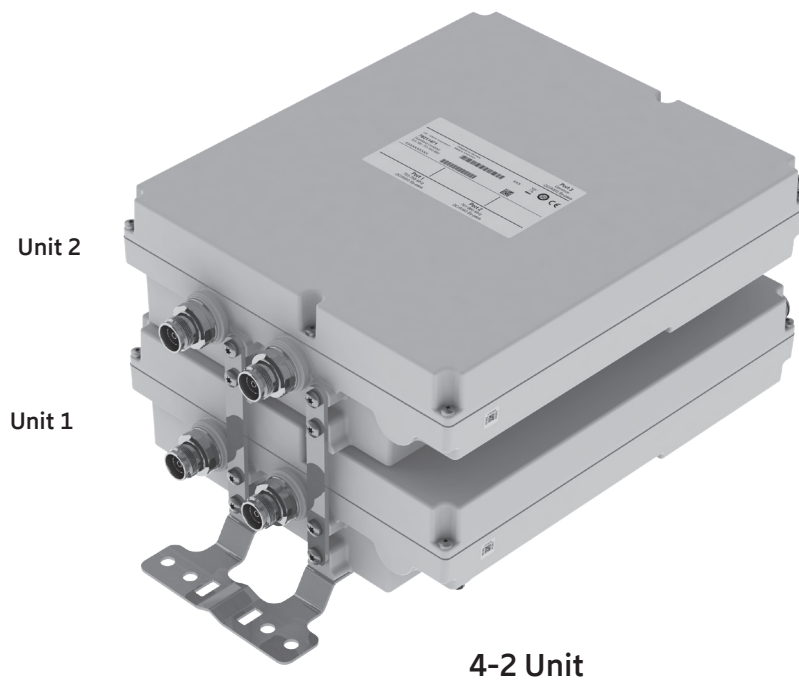


Diagram II



Dimensions in mm





# Dual-Band Combiner

78211476

703–788 MHz

791–960 MHz

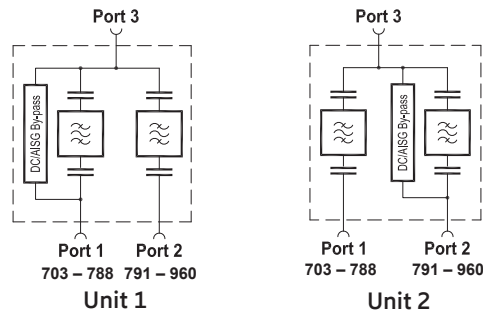
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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<b>Product No.</b>		<b>78211476 (4-2)</b>	
Pass band			
Band 1	MHz	703 – 788	
Band 2	MHz	791 – 960	
Insertion loss			
Port 1 ↔ Port 3	dB	< 0.3 (703 – 777 MHz) / < 0.5 (777 – 784 MHz) / < 1.3 (784 – 788 MHz), typically 0.3	
Port 2 ↔ Port 3	dB	< 1.3 (791 – 798 MHz) / < 0.5 (798 – 802 MHz) / < 0.4 (802 – 960 MHz), typically 0.4	
Isolation	dB	> 40	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 200 / < 200	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 ↔ Port 3	mA	Unit 1 By-pass (max. 2500)	Unit 2 Stop
Port 2 ↔ Port 3	mA	Stop	By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	12   26.5	
Dimensions (w x h x d)	mm   in	258 x 301 x 178   10.2 x 11.9 x 7.0 (without connectors, without mounting brackets)	
Packing size	mm   in	477 x 334 x 265   18.8 x 13.1 x 10.4	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

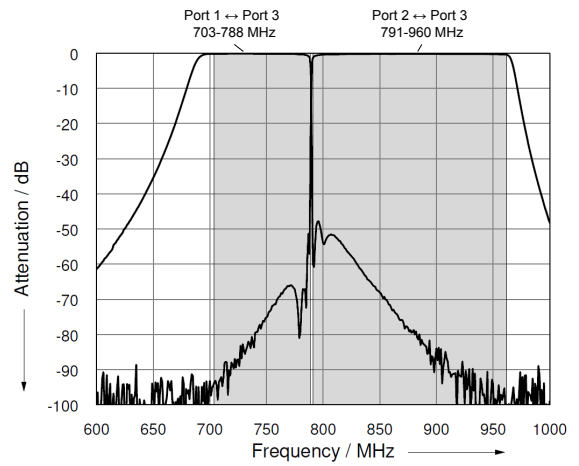
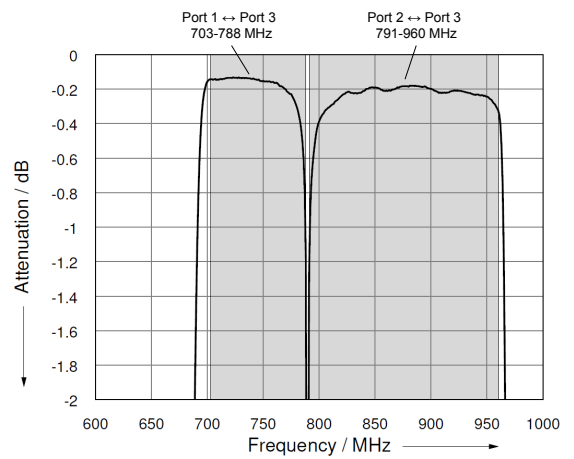
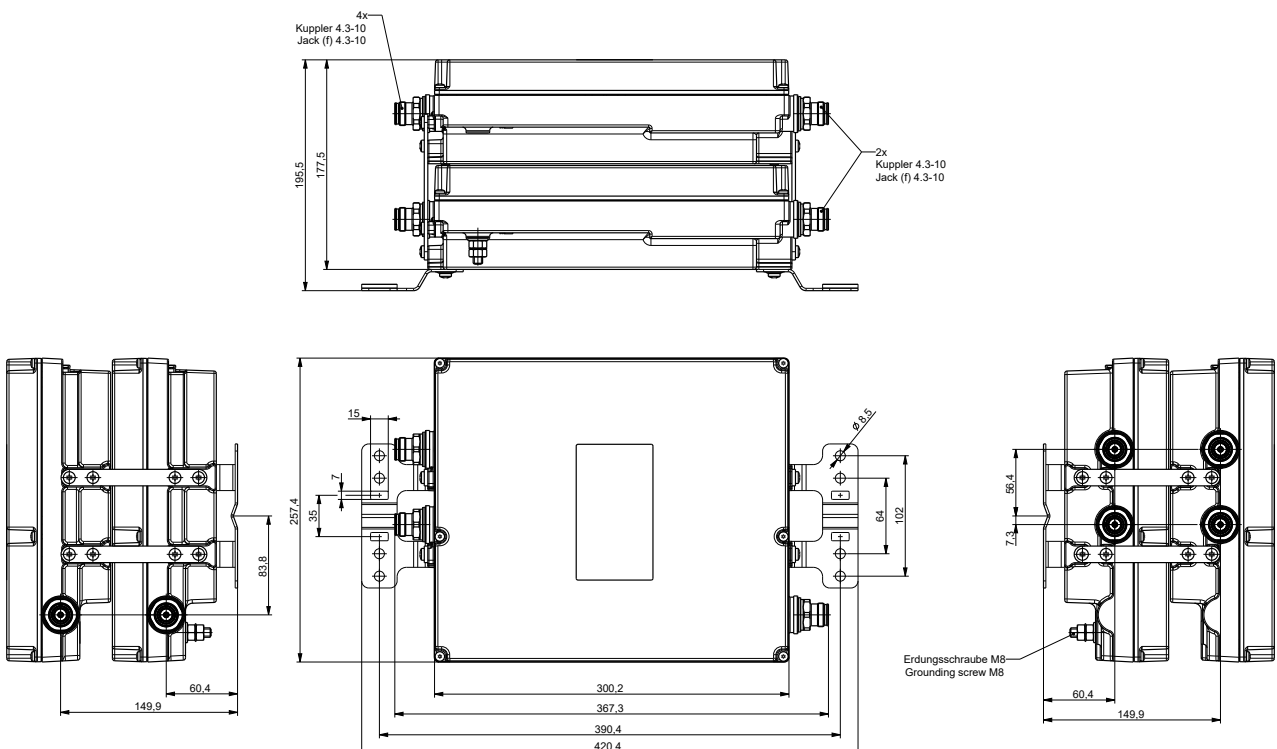
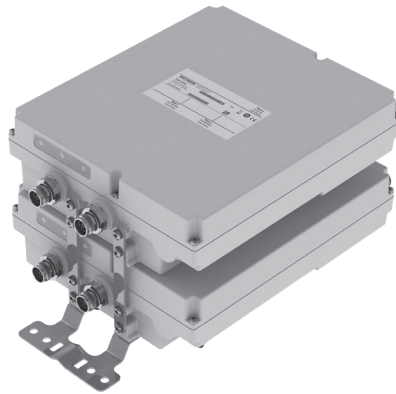


Diagram II



Dimensions in mm



AUTO-  
SENSE

4-2 Unit

# Dual-Band Combiner

78211478, 78211478V01

703–788 MHz  
791–960 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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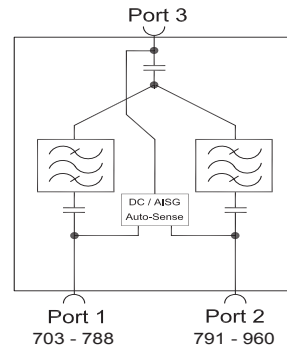


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**Priority table for 78211478V01 with Priority Controlled Function**

703–788 MHz	Priority 2 (lowest)
791–960 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.	78211478 (4-2)		78211478V01 (4-2)	
DC/AISG transparency	First In - First Out Function		Priority Controlled Function	
Pass band				
Band 1	MHz	703 – 788		
Band 2	MHz	791 – 960		
Insertion loss				
Port 1 Port 3	dB	< 0.3 (703 – 777 MHz) / < 0.5 (777 – 784 MHz) / < 1.3 (784 – 788 MHz), typically 0.3 < 1.3 (791 – 798 MHz) / < 0.5 (798 – 802 MHz) / < 0.4 (802 – 960 MHz), typically 0.4		
Port 2 Port 3	dB			
Isolation	dB	> 40		
VSWR	< 1.25			
Impedance	Ω	50		
Input power				
Band 1 / Band 2	W	< 200 / < 200		
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)		
Temperature range	°C   °F	-40 ... +60   -40 ... +140		
Connectors	4.3-10 female			
Application	Indoor or outdoor (IP 66)			
DC/AISG transparency				
Port 1 Port3	mA	Auto-Sense (max. 2000)		
Port 2 Port3	mA	Auto-Sense (max. 2000)		
Lightning protection	kA	3, 10/350 μs pulse		
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set		
Weight	kg   lb	12.2   26.9		
Dimensions	mm   in	258 x 301 x 178   10.2 x 11.9 x 7.0 (without connectors, without mounting brackets)		
Packing size	mm   in	477 x 334 x 265   18.8 x 13.1 x 10.4		

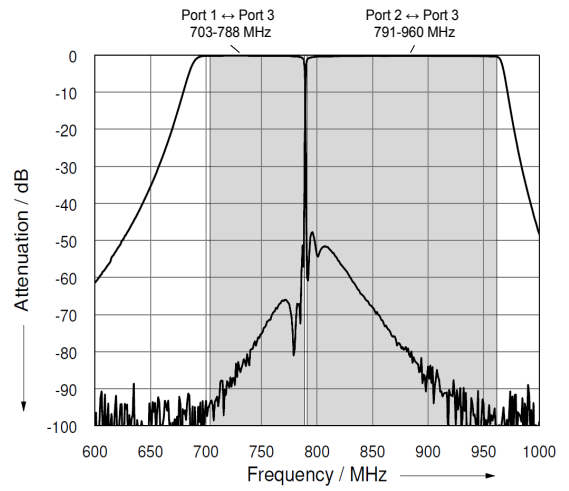
**Accessories (order separately if required)**

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

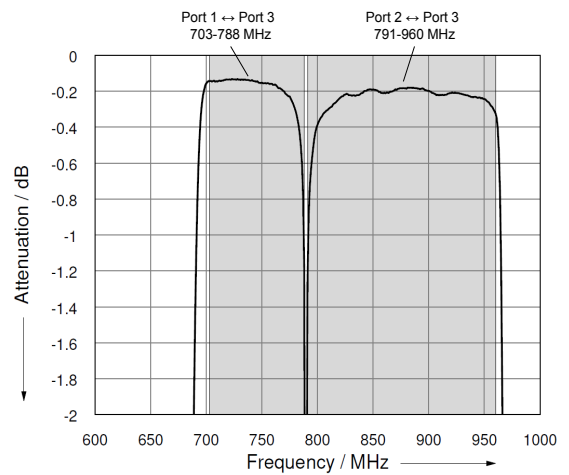
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

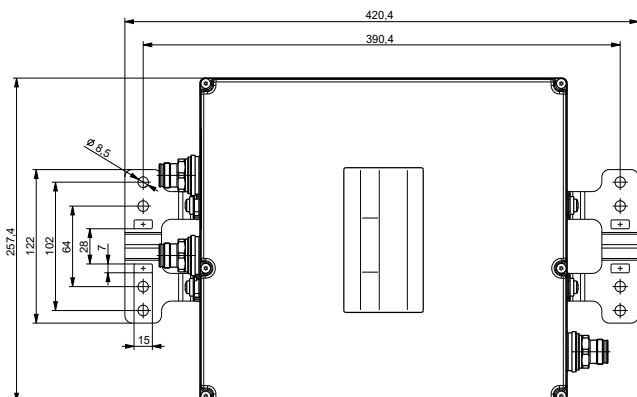
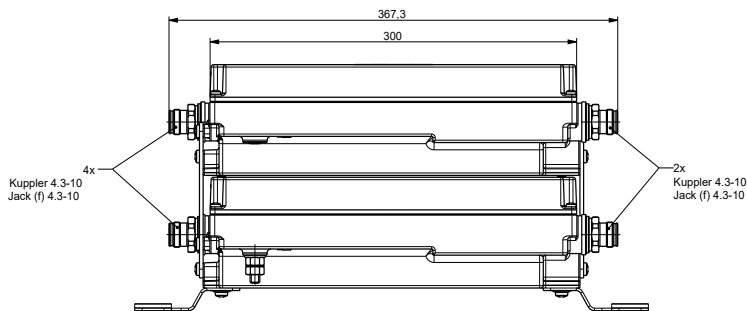
**Diagram I**



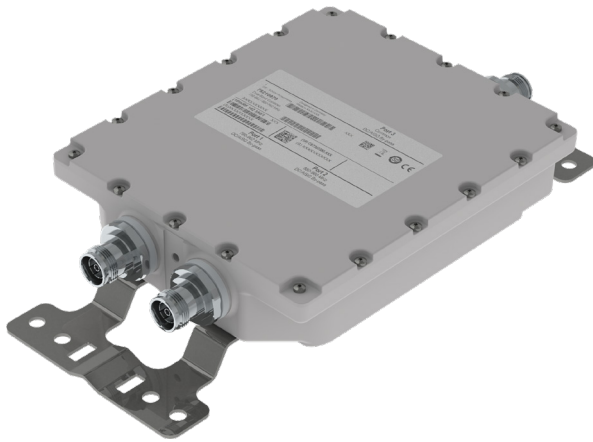
**Diagram II**



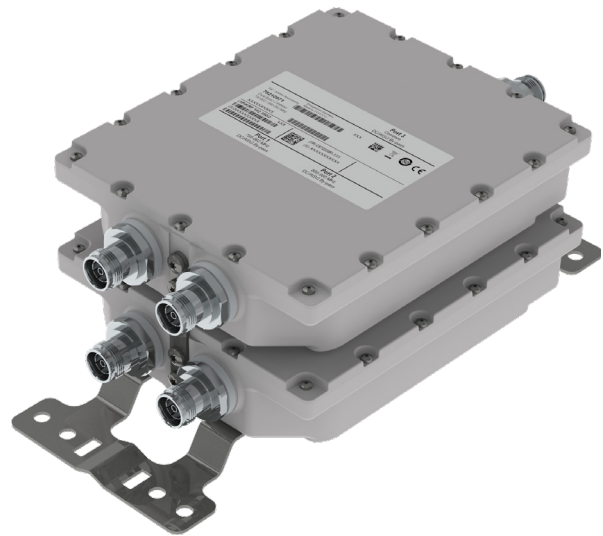
**Dimensions in mm**







2-1 Unit



4-2 Unit

# Dual-Band Combiner

78210970V43, 78210971V43, 78210972V43

78210973V43, 78210974V43, 78210975V43

790–862 MHz

880–960 MHz

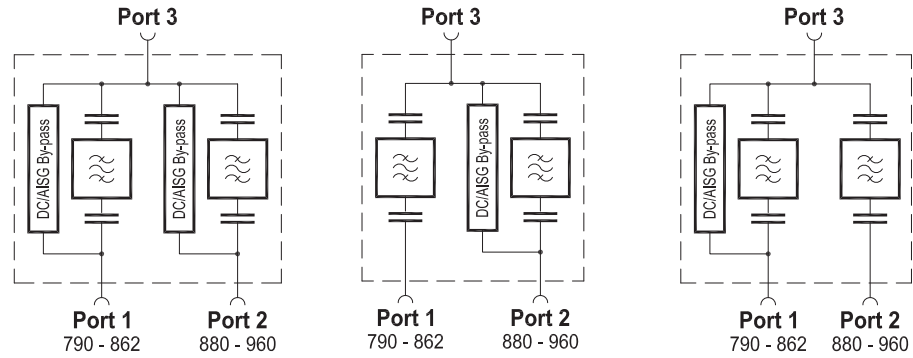
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 2-1 Unit or 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78210970V43 (2-1)	78210972V43 (2-1)	78210974V43 (2-1)
		78210971V43 (4-2)	78210973V43 (4-2)	78210975V43 (4-2)
Pass band				
Band 1	MHz	790 – 862		
Band 2	MHz	880 – 960		
Insertion loss				
Port 1 ↔ Port 3	dB	< 0.4, typically 0.2 (790 – 862 MHz)		
Port 2 ↔ Port 3	dB	< 0.4, typically 0.2 (880 – 960 MHz)		
Isolation				
Port 1 ↔ Port 2	dB	> 50 (790 – 862 MHz / 880 – 960 MHz)		
VSWR		< 1.25 (790 – 862 / 880 – 960 MHz)		
Impedance	Ω	50		
Input power				
Band 1 / Band 2	W	< 200 / < 200		
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)		
Temperature range	°C   °F	-40 ... +60   -40 ... +140		
Connectors		4.3-10 female (long neck)		
Application		Indoor or outdoor (IP 66)		
DC/AISG transparency				
Port 1 ↔ Port 3		By-pass (max. 2500 mA)	Stop	By-pass (max. 2500 mA)
Port 2 ↔ Port 3		By-pass (max. 2500 mA)	By-pass (max. 2500 mA)	Stop
Lightning protection	kA	3, 10/350 μs pulse		
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set		
Weight	kg   lb	2-1 Unit: 2.6   5.7 4-2 Unit: 5.1   11.0		
Dimensions (w x h x d)	mm   in	2-1 Unit: 178 x 210 x 53   7.0 x 8.3 x 2.1 4-2 Unit: 178 x 210 x 109   7.0 x 8.3 x 4.3 (without connectors, without mounting brackets)		
Packing size	mm   in	2-1 Unit: 392 x 272 x 139   15.4 x 10.7 x 5.5 4-2 Unit: 392 x 272 x 189   15.4 x 10.7 x 7.4		

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40-150   1.6-5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

Port 1 ↔ Port 3

Port 2 ↔ Port 3

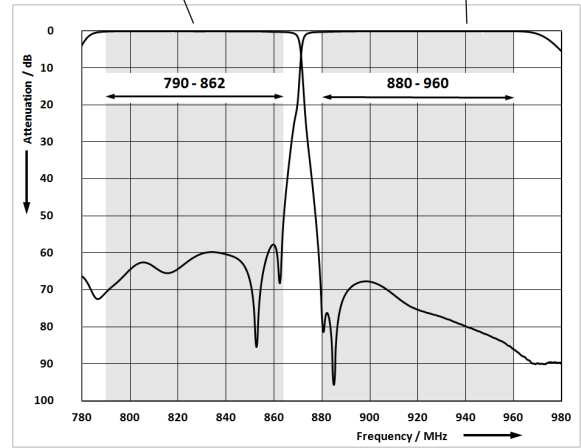
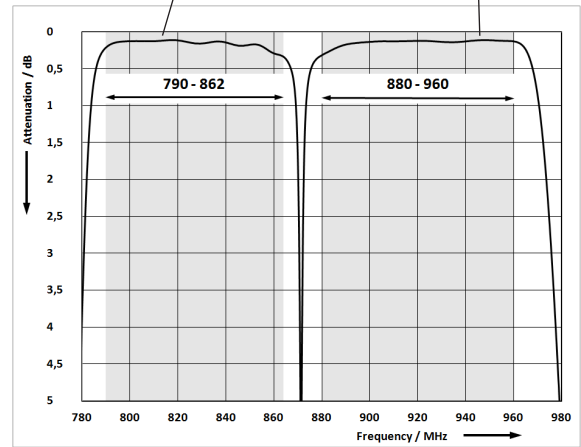


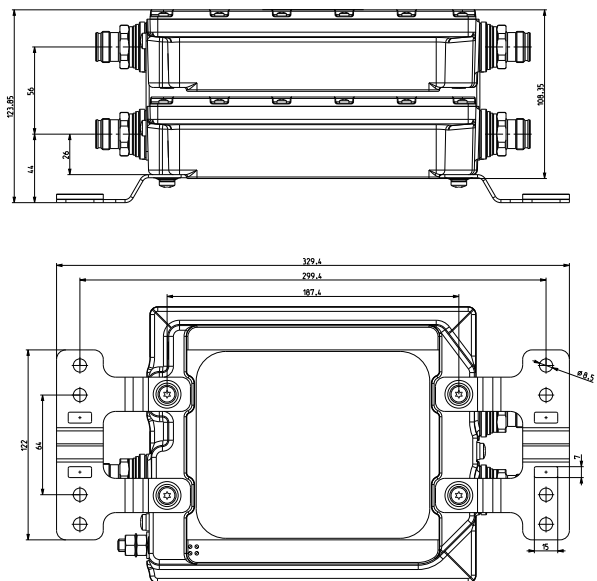
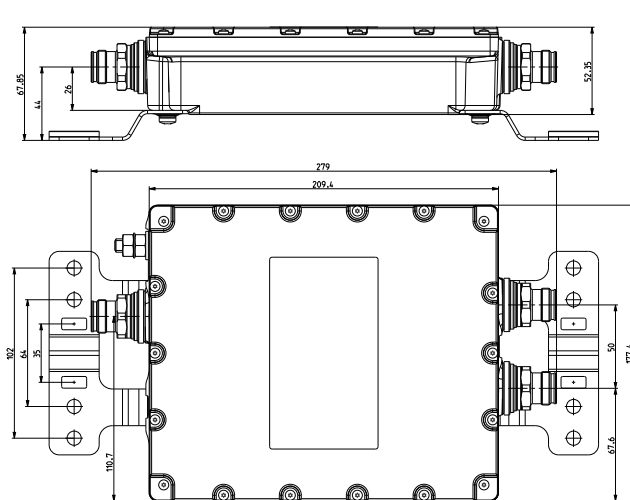
Diagram II

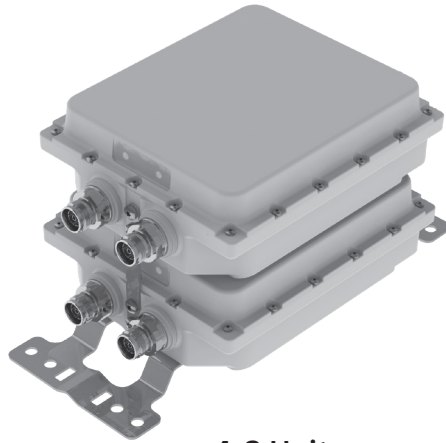
Port 1 ↔ Port 3

Port 2 ↔ Port 3



Dimensions in mm



AUTO-  
SENSE

4-2 Unit

# Dual-Band Combiner

78210978V43, 78210978V44

790–862 MHz  
880–960 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 4-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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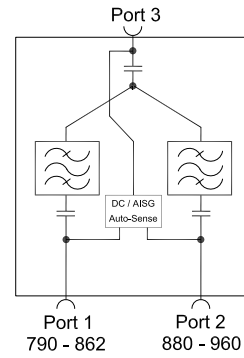


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**Priority table for 78210628V44 with Priority Controlled Function**

790—862 MHz	Priority 1 (highest)
880—960 MHz	Priority 2 (lowest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78210978V43 (4-2)	78210978V44 (4-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
Pass band			
Band 1	MHz	790 – 862	
Band 2	MHz	880 – 960	
Insertion loss			
Port 1 ↔ Port 3	dB	< 0.4 (790 – 862 MHz)	
Port 2 ↔ Port 3	dB	< 0.4 (880 – 960 MHz)	
Isolation			
Port 1 ↔ Port 2	dB	> 50	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 ↔ Port 3	mA	Auto-Sense (max. 2000)	
Port 2 ↔ Port 3	mA	Auto-Sense (max. 2000)	
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	5.8   12.7	
Dimensions (w x h x d)	mm   in	178 x 210 x 147   7.0 x 8.3 x 5.8 (without connectors, without mounting brackets)	
Packing size	mm   in	392 x 272 x 240   15.4 x 10.7 x 9.5	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40-150   1.6-5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

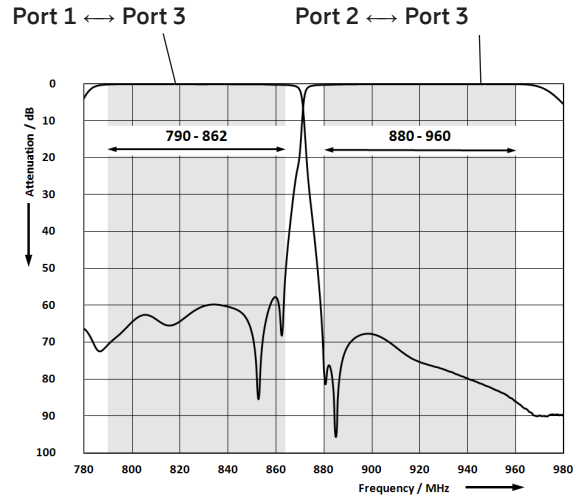
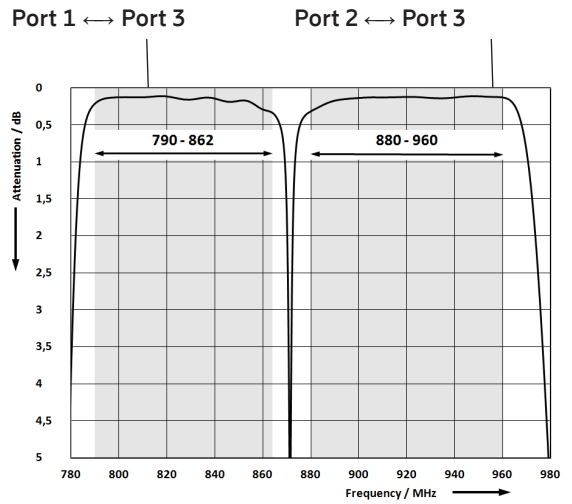
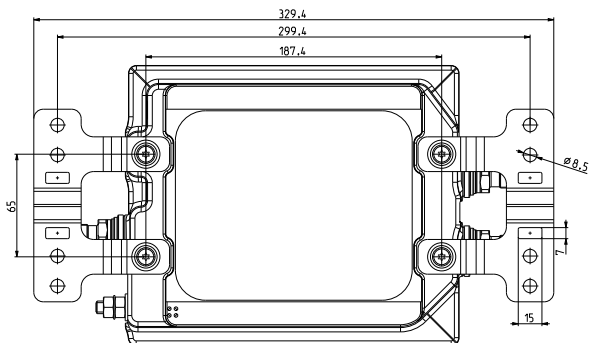
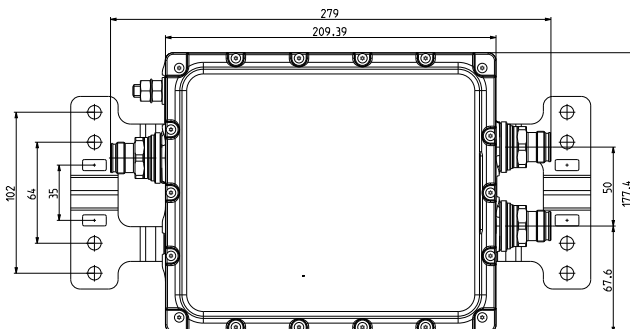
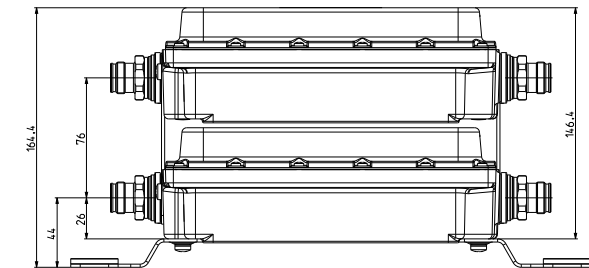
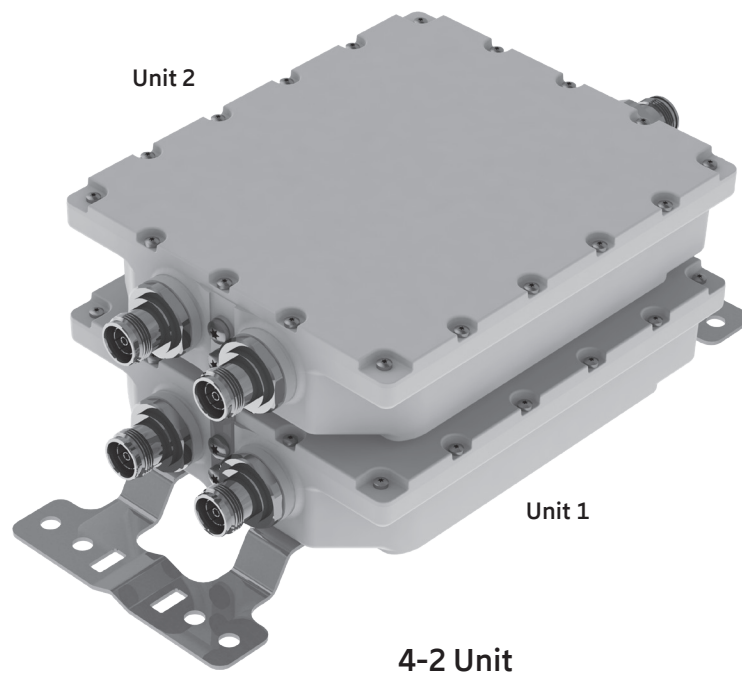


Diagram II



Dimensions in mm





# Dual-Band Combiner

78210979V43

790–862 MHz

880–960 MHz

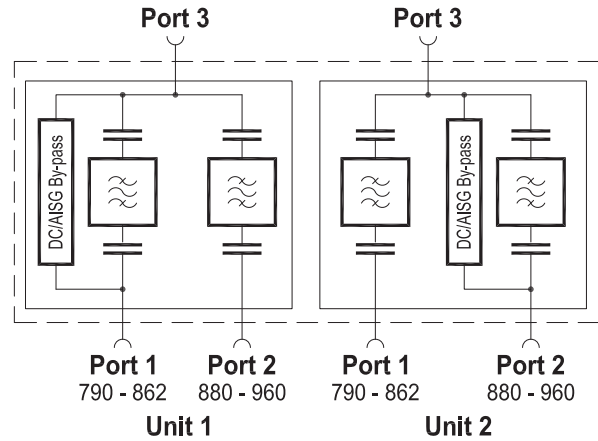
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78210979V43 (4-2)	
Pass band			
Band 1	MHz	790 – 862	
Band 2	MHz	880 – 960	
Insertion loss			
Port 1 ↔ Port 3	dB	< 0.4, typically 0.2 (790 – 862 MHz)	
Port 2 ↔ Port 3	dB	< 0.4, typically 0.2 (880 – 960 MHz)	
Isolation			
Port 1 ↔ Port 2	dB	> 50 (790 – 862 MHz / 880 – 960 MHz)	
VSWR		< 1.25 (790 – 862 / 880 – 960 MHz)	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 ↔ Port 3	mA	Unit 1	Unit 2
Port 2 ↔ Port 3	mA	By-pass (max. 2500)	Stop
		Stop	By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	5.1   11.2	
Dimensions (w x h x d)	mm   in	177.4 x 209.4 x 108.35   7.0 x 8.2 x 4.3 (without connectors, without mounting brackets)	
Packing size	mm   in	392 x 272 x 189   15.4 x 10.7 x 7.4	



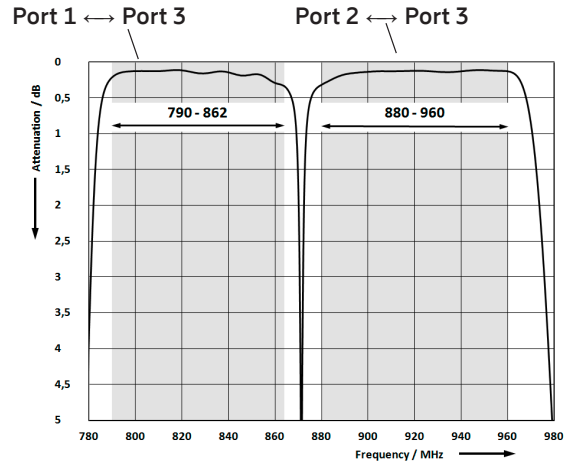
**Accessories (order separately if required)**

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

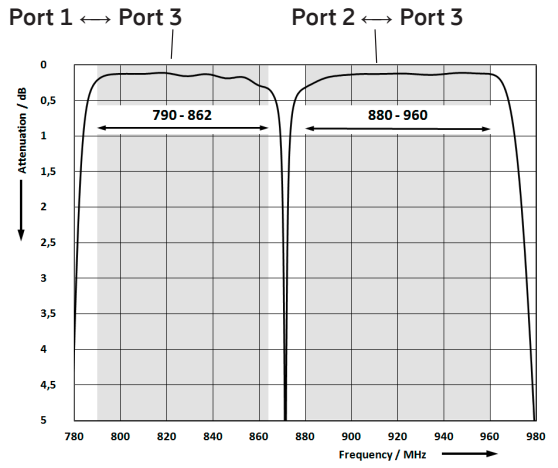
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

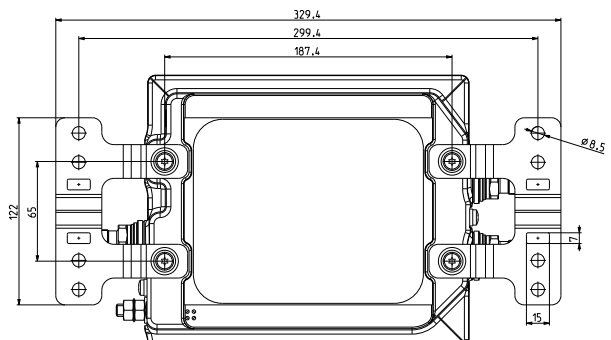
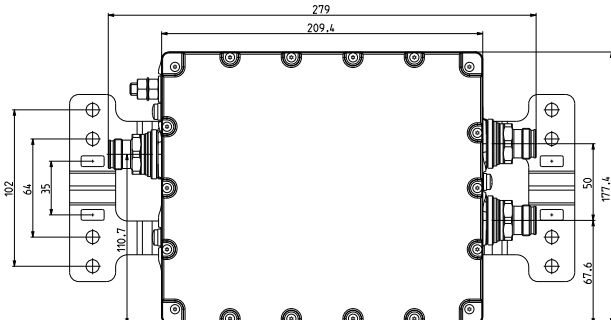
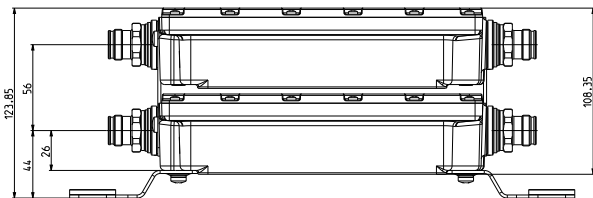
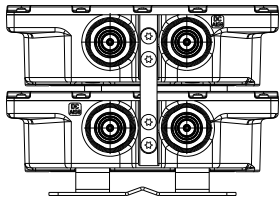
**Diagram I**

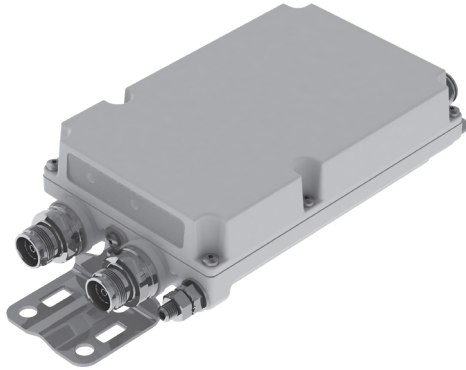


**Diagram II**

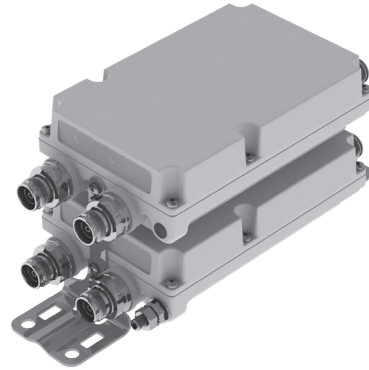


**Dimensions in mm**





2-1 Unit



4-2 Unit

# Dual-Band Combiner

78211460, 78211461,  
78211462, 78211463

380–960 MHz  
1427–3800 MHz

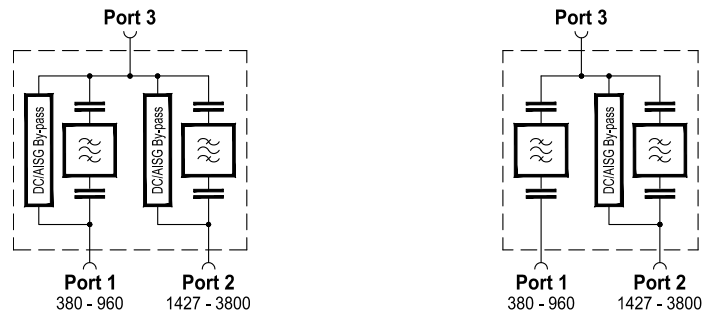
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 2-1 Unit or 4-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211460 (2-1)	78211462 (2-1)
		78211461 (4-2)	78211463 (4-2)
Pass band Band 1 Band 2	MHz MHz	380 – 960 1427 – 3800	
Insertion loss Port 1 ↔ Port 3 Port 2 ↔ Port 3	dB dB	< 0.2 (380 – 960 MHz) < 0.2 (1427 – 3800 MHz)	
Isolation Port 1 ↔ Port 2	dB	> 40	
VSWR		< 1.25	
Impedance	Ω	50	
Input power Band 1 / Band 2	W	< 300 / < 200 (1427 – 2700 MHz); < 100 (2700 – 3800 MHz)	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency Port 1 ↔ Port 3 Port 2 ↔ Port 3	mA mA	By-pass (max. 2500) By-pass (max. 2500)	Stop By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	2-1 Unit: 1.7   3.7 4-2 Unit: 3.4   7.5	
Dimensions (w x h x d)	mm   in	2-1 Unit: 183 x 117 x 55   7.2 x 4.6 x 2.2 4-2 Unit: 183 x 117 x 115   7.2 x 4.6 x 4.5 (without connectors, without mounting brackets)	
Packing size	mm   in	2-1 Unit: 353 x 181 x 129   13.9 x 7.1 x 5.1 4-2 Unit: 353 x 181 x 188   13.9 x 7.1 x 7.4	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

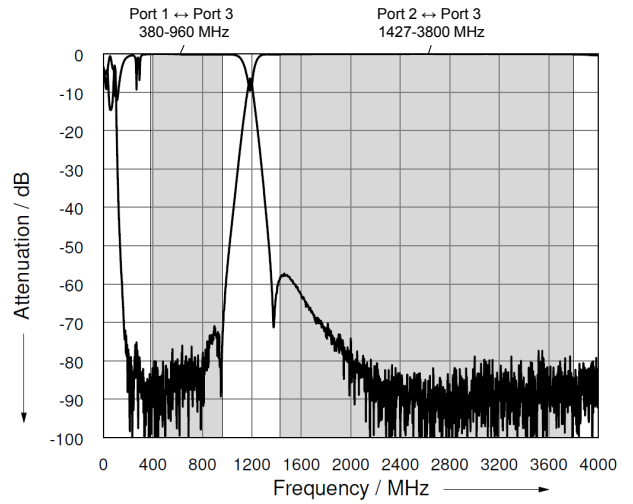
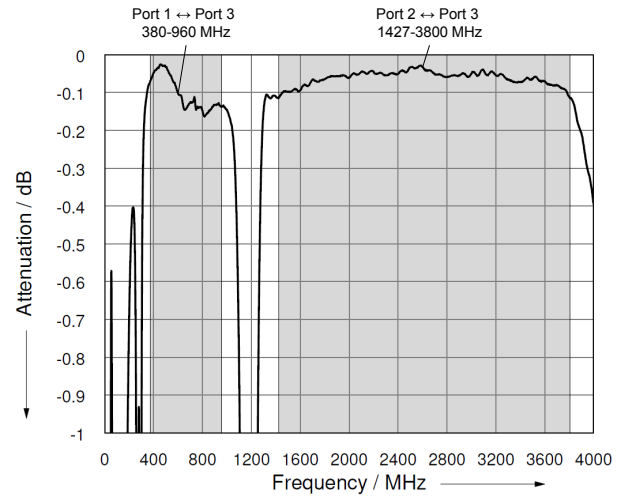
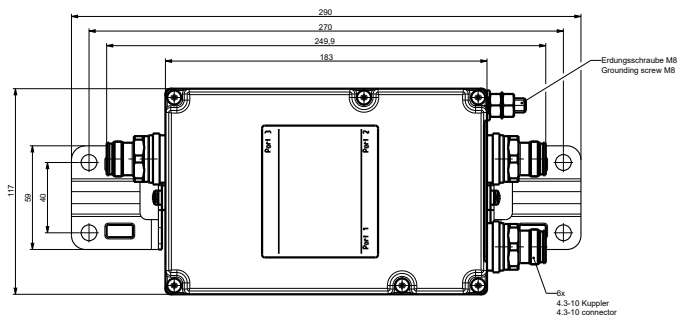
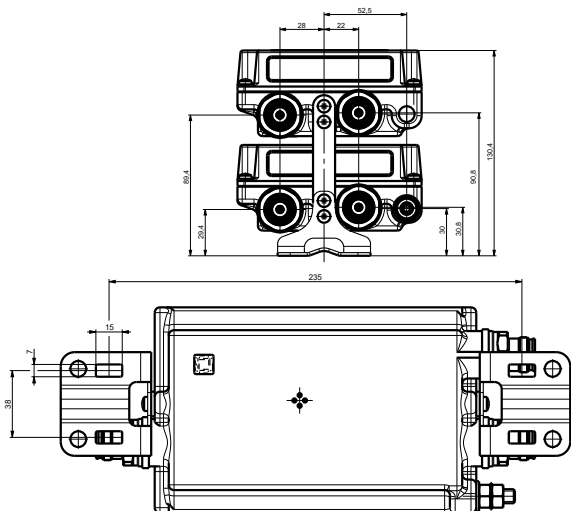
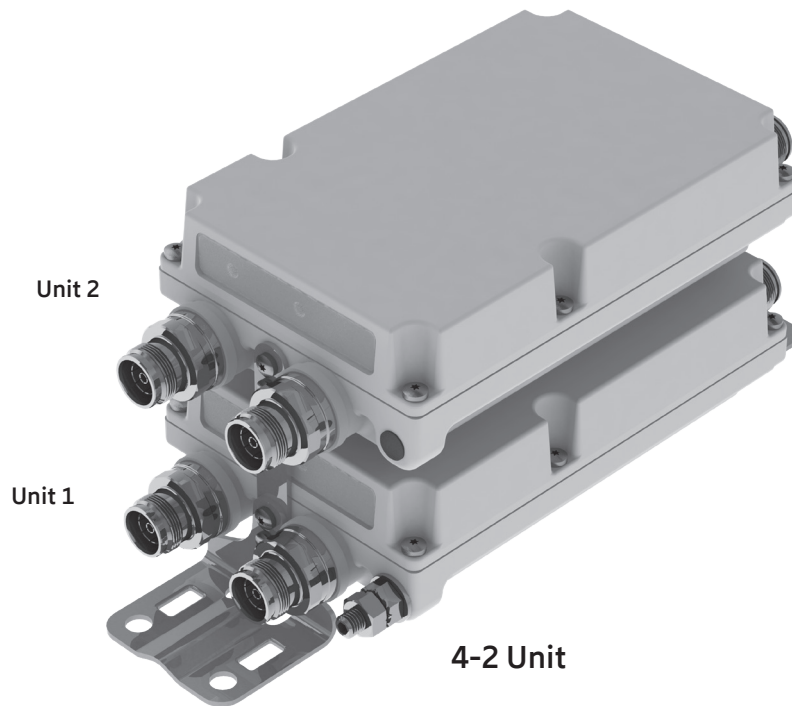


Diagram II



Dimensions in mm





# Dual-Band Combiner

78211466

380–960 MHz  
1427–3800 MHz

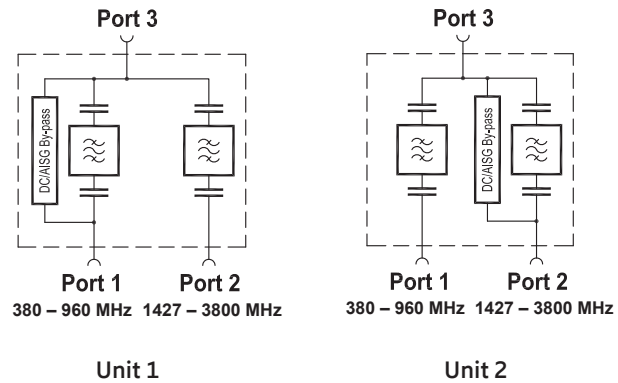
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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<b>Product No.</b>		<b>78211466</b> <b>4-2 Unit</b>	
Pass band			
Band 1	MHz	380 – 960	
Band 2	MHz	1427 – 3800	
Insertion loss			
Port 1 ↔ Port 3	dB	< 0.2 (380 – 960 MHz)	
Port 2 ↔ Port 3	dB	< 0.2 (1427 – 3800 MHz)	
Isolation	dB	> 40	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 300 / < 200 (1427 - 2700 MHz); < 100 (2700 - 3800 MHz)	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 ↔ Port 3	mA	Unit 1	Unit 2
Port 2 ↔ Port 3	mA	By-pass (max. 2500)	Stop
		Stop	By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	3.4   7.5	
Dimensions (w x h x d)	mm   in	183 x 117 x 115   7.2 x 4.6 x 4.5 (without connectors, without mounting brackets)	
Packing size	mm   in	353 x 181 x 188   13.9 x 7.1 x 7.4	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

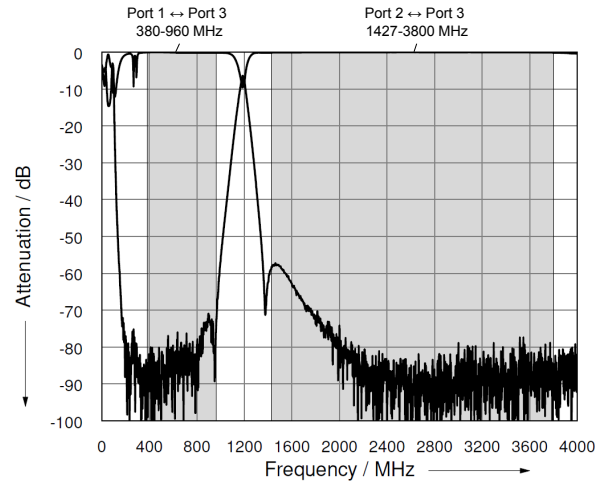
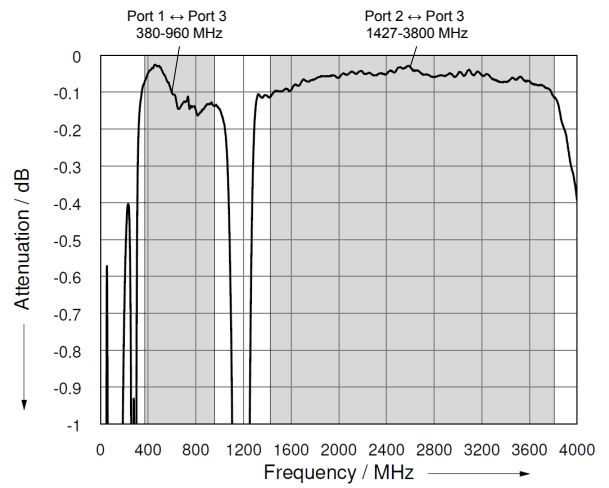
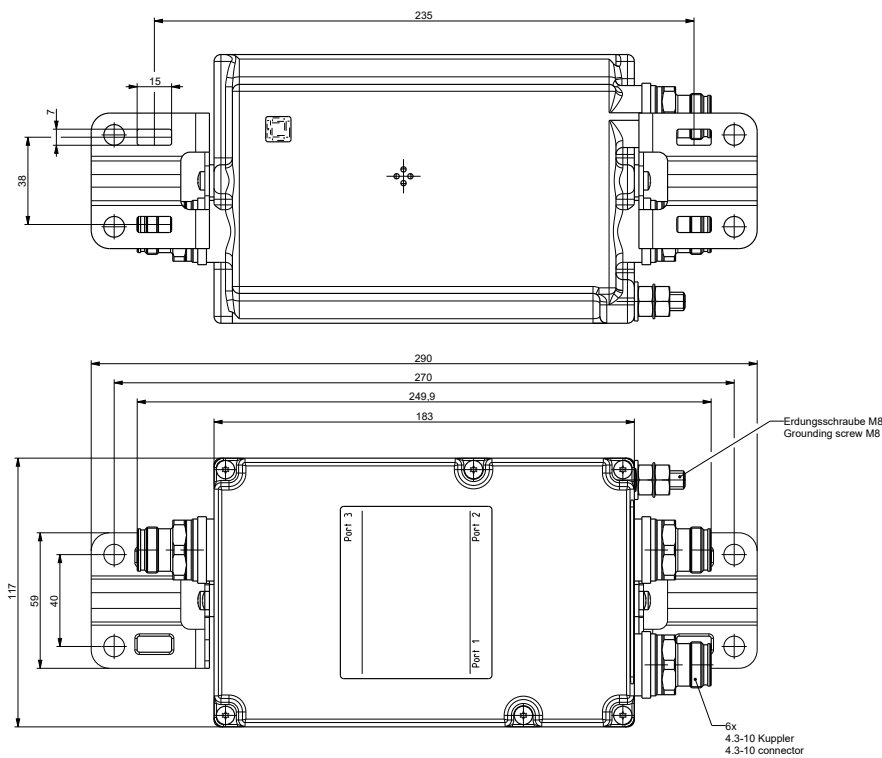
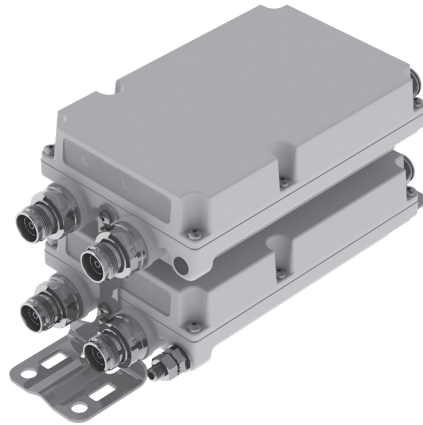


Diagram II



Dimensions in mm



AUTO-  
SENSE

4-2 Unit

# Dual-Band Combiner

78211468, 78211468V01

380–960 MHz  
1427–3800 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 4-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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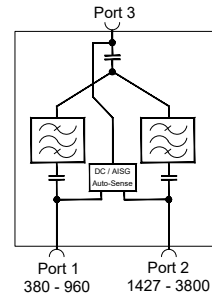
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**Priority table for 78211468V01 with Priority Controlled Function**

380–960 MHz	Priority 2 (lowest)
1427–3800 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide



Product No.		78211468 (4-2)	78211468V01 (4-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
Pass band			
Band 1	MHz	380 – 960	
Band 2	MHz	1427 – 3800	
Insertion loss			
Port 1 ↔ Port 3	dB	< 0.2 (380 – 960 MHz)	
Port 2 ↔ Port 3	dB	< 0.2 (1427 – 3800 MHz)	
Isolation			
Port 1 ↔ Port 2	dB	> 40	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 300 / < 200 (1427 – 2700 MHz); < 100 (2700 – 3800 MHz)	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 ↔ Port 3	mA	Auto-Sense (max. 2000)	
Port 2 ↔ Port 3	mA	Auto-Sense (max. 2000)	
Lightning protection	kA	3, 10/350 μs pulse	
Wind load (at Rated Wind Speed 150 km/h   93 mph)	N   lbf	frontal: 42   9 lateral: 31   7	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	3.4   7.5	
Dimensions (w x h x d)	mm   in	183 x 117 x 115   7.2 x 4.6 x 4.5 (without connectors, without mounting brackets)	
Packing size	mm   in	353 x 181 x 188   13.9 x 7.1 x 7.4	

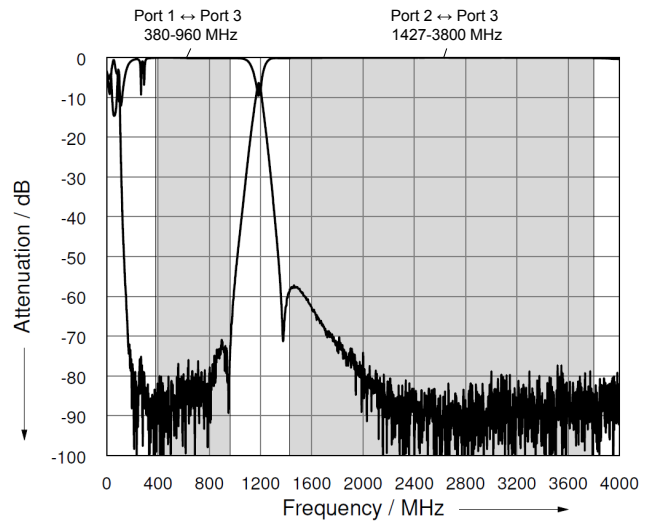
**Accessories (order separately if required)**

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

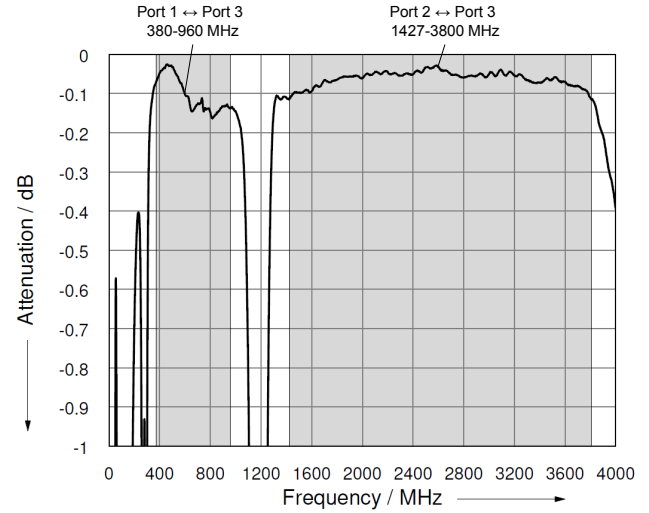
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

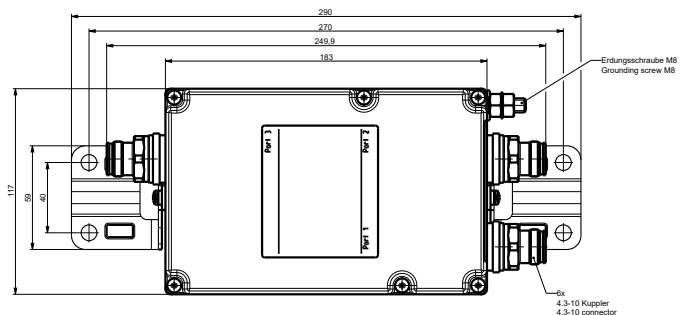
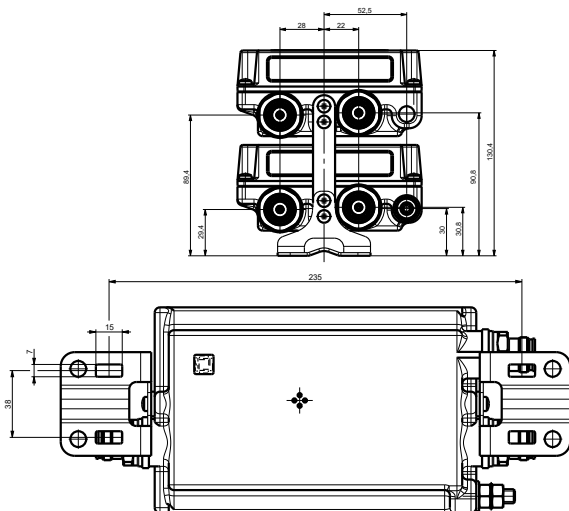
**Diagram I**

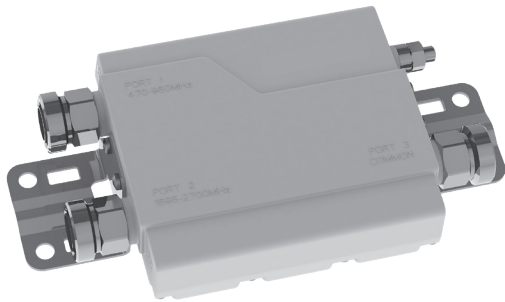


**Diagram II**

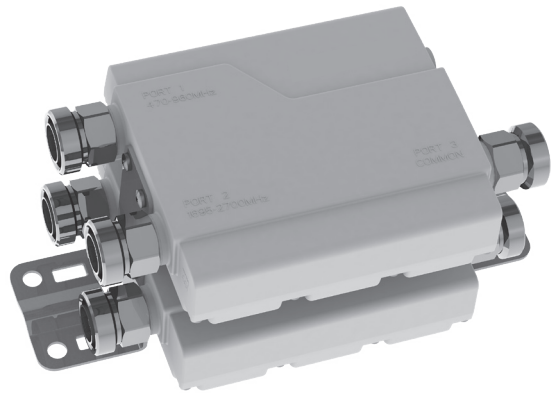


**Dimensions in mm**





2-1 Unit



4-2 Unit

# Dual-Band Combiner

78210660, 78210661,  
78210662, 78210663

470–960 MHz  
1695–2700 MHz

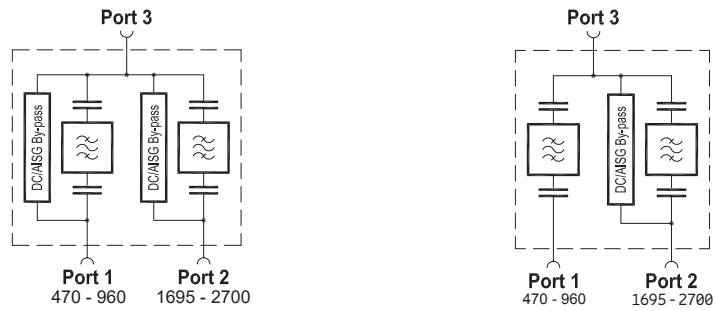
- Enables feeder sharing
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Available as 2-1 Unit or 4-2 Unit
- Built-in lightning protection
- External DC stop available as an accessory
- Very low insertion loss



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Product No.		78210660 (2-1)	78210662 (2-1)
		78210661 (4-2)	78210663 (4-2)
Pass band Band 1 Band 2	MHz MHz	470 – 960 1695 – 2700	
Insertion loss Port 1 ↔ Port 3 Port 2 ↔ Port 3	dB dB	< 0.1 (470 – 960 MHz) < 0.1 (1695 – 2700 MHz)	
Isolation Port 1 ↔ Port 2	dB	> 55 (470 – 960 MHz) / > 65 (1695 – 2700 MHz)	
VSWR		< 1.2 (470 – 960 MHz / 1695 – 2700 MHz)	
Impedance	Ω	50	
Input power Band 1 / Band 2	W	< 650 / < 350	
Intermodulation products	dBc	< – 160 dBc (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	–55 ... +60   –67 ... +140	
Connectors		7-16 female (long neck)	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency Port 1 ↔ Port 3 Port 2 ↔ Port 3	mA mA	By-pass (max. 2500) By-pass (max. 2500)	Stop By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse	
Mounting		Wall mounting: With 4 screws (max. 8 mm diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	2-1 Unit: 1.2   2.6 4-2 Unit: 2.4   5.3	
Dimensions (w x h x d)	mm   in	2-1 Unit: 126 x 145 x 38   5.0 x 5.7 x 1.5 4-2 Unit: 126 x 145 x 93   5.0 x 5.7 x 3.7 (without connectors, without mounting brackets)	
Packing size	mm   in	2-1 Unit: 285 x 157 x 93   11.2 x 6.2 x 3.7 4-2 Unit: 285 x 157 x 148   11.2 x 6.2 x 5.8	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40-150   1.6-5.9	2

Product No.	Product Name
78210367	50 Ohm Load
78210850V01	DC Stop

Typical Attenuation Curves

Diagram I

Port 1 ↔ Port 3

Port 2 ↔ Port 3

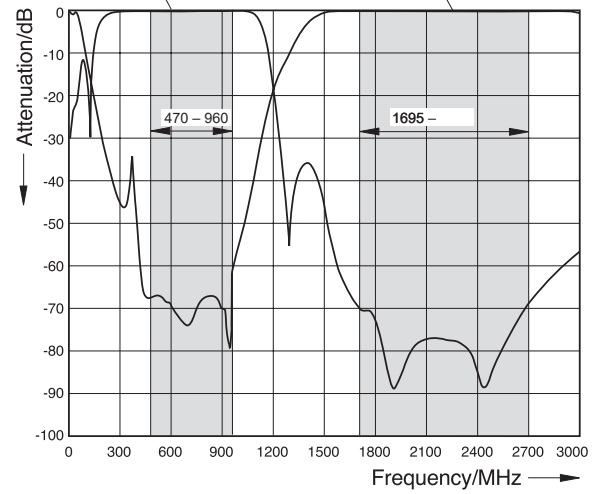
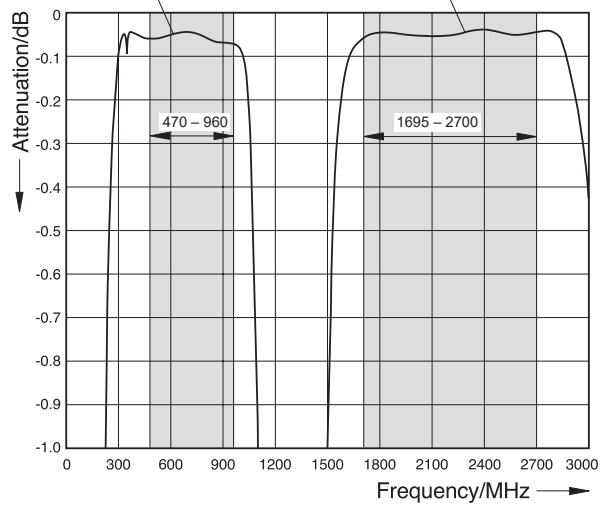


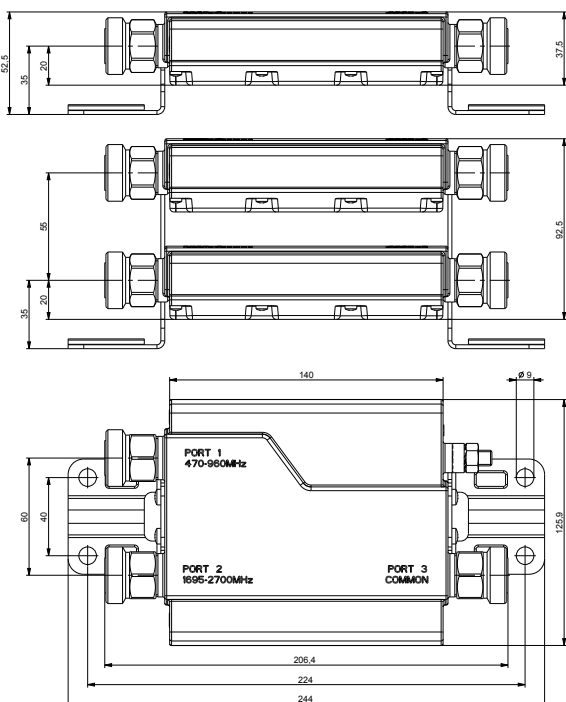
Diagram II

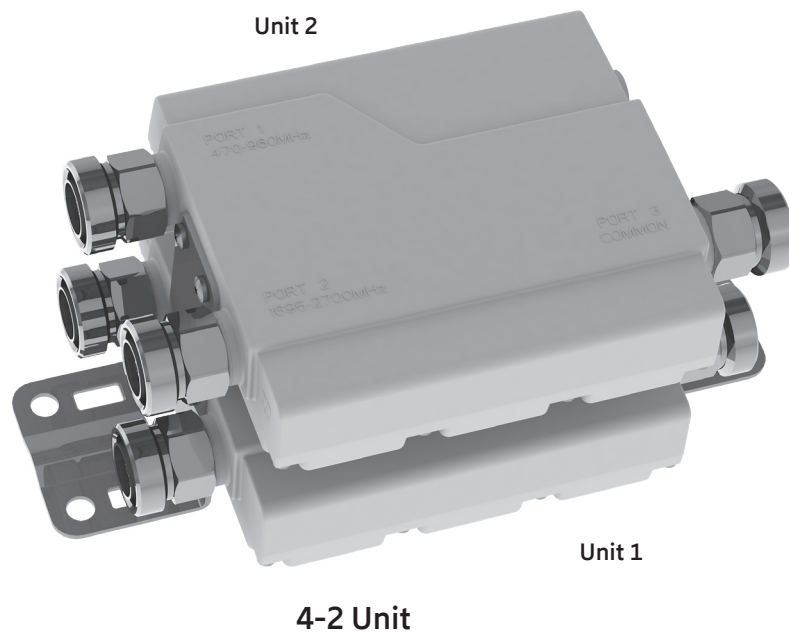
Port 1 ↔ Port 3

Port 2 ↔ Port 3



Dimensions in mm





# Dual-Band Combiner

78210669

470–960 MHz

1695–2700 MHz

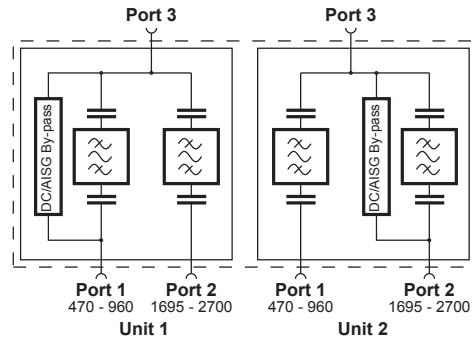
- Designed to support separate DC/AISG supply for a low-band and high-band DTMA via 2 feeder cables (see application)
- Enables feeder sharing
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Available as 4-2 Unit
- Built-in lightning protection
- Extremely small dimensions and low weight
- Very low insertion loss
- High input power



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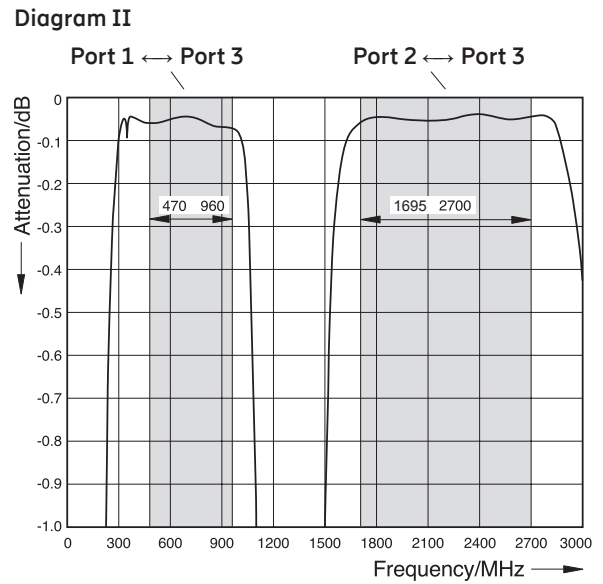
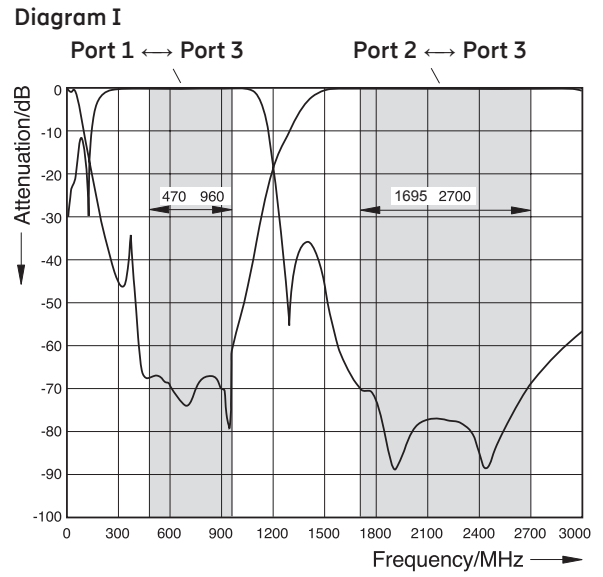
Product No.		78210669 (4-2)	
Pass band			
Band 1	MHz	470 – 960	
Band 2	MHz	1695 – 2700	
Insertion loss			
Port 1 ↔ Port 3	dB	< 0.1 (470 – 960 MHz)	
Port 2 ↔ Port 3	dB	< 0.1 (1695 – 2700 MHz)	
Isolation			
Port 1 ↔ Port 2	dB	> 55 (470 – 960 MHz) / > 65 (1695 – 2700 MHz)	
VSWR (all ports)		< 1.2 (470 – 960 / 1695 – 2700 MHz)	
Impedance	Ω	50	
Input power			
Band 1	W	< 650	
Band 2	W	< 350	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order with 2 x 20 W)	
Temperature range	°C   °F	-55 ... +60   -67 ... +140	
Connectors		7-16 female (long neck)	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 ↔ Port 3	mA	Unit 1	
Port 2 ↔ Port 3	mA	By-pass (max. 2500 )	
		Stop	
		Unit 2	
		Stop	
		By-pass (max. 2500 )	
Lighning protection	kA	3, 10/350 μs pulse	
Mounting		Wall mounting: With 4 screws (max. 8 mm diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	2.4   5.3	
Dimensions (w x h x d)	mm   in	126 x 145 x 93   5.0 x 5.7 x 3.7 (without connectors, without mounting brackets)	
Packing size	mm   in	285 x 157 x 148   11.2 x 6.2 x 5.8	

**Accessories (order separately if required)**

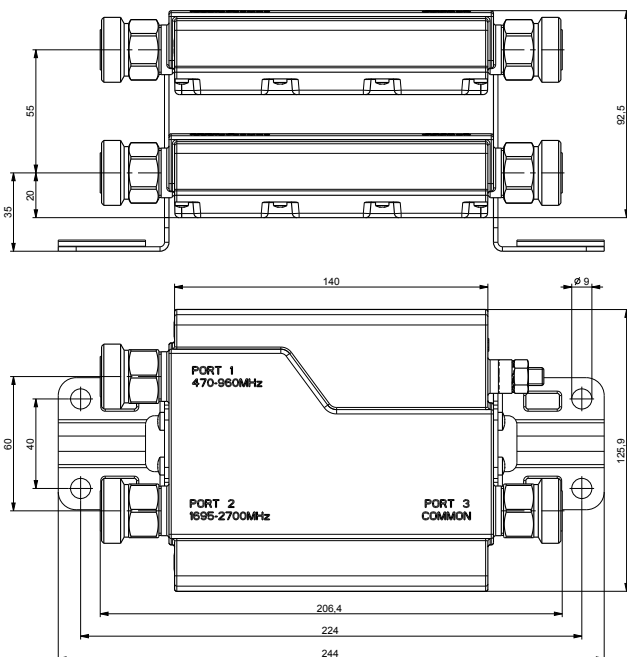
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210367	50 Ohm Load
78210850V01	DC Stop

**Typical Attenuation Curves**



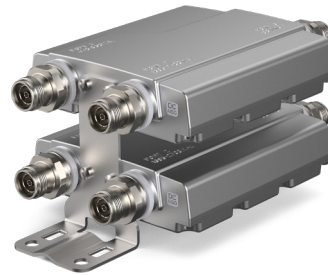
**Dimensions in mm**







2-1 Unit



4-2 Unit

# Dual-Band Combiner

78210660V43, 78210661V43,  
78210662V43, 78210663V43

470–960 MHz  
1695–2700 MHz

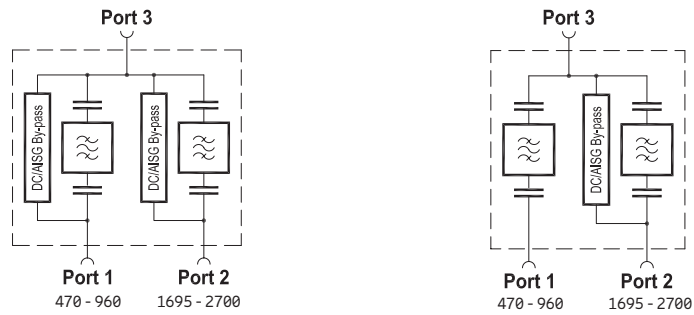
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Available as 2-1 Unit or 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78210660V43 (2-1)	78210662V43 (2-1)
		78210661V43 (4-2)	78210663V43 (4-2)
Pass band Band 1 Band 2	MHz MHz	470 – 960 1695 – 2700	
Insertion loss Port 1 ↔ Port 3 Port 2 ↔ Port 3	dB dB	< 0.1 (470 – 960 MHz) < 0.1 (1695 – 2700 MHz)	
Isolation Port 1 ↔ Port 2	dB	> 55 (470 – 960 MHz) / > 65 (1695 – 2700 MHz)	
VSWR		< 1.2 (470 – 960 MHz / 1695 – 2700 MHz)	
Impedance	Ω	50	
Input power Band 1 / Band 2	W	< 300 / < 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-55 ... +60   -67 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency Port 1 ↔ Port 3 Port 2 ↔ Port 3	mA mA	By-pass (max. 2500) By-pass (max. 2500)	Stop By-pass (max. 2500)
Lightning protection	kA	3, 10/350 ms pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	2-1 Unit: 1.2   2.6 4-2 Unit: 2.4   5.3	
Dimensions (w x h x d)	mm   in	2-1 Unit: 126 x 145 x 38   5.0 x 5.7 x 1.5 4-2 Unit: 126 x 145 x 93   5.0 x 5.7 x 3.7 (without connectors, without mounting brackets)	
Packing size	mm   in	2-1 Unit: 285 x 157 x 93   11.2 x 6.2 x 3.7 4-2 Unit: 285 x 157 x 148   11.2 x 6.2 x 5.8	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

Port 1 ↔ Port 3

Port 2 ↔ Port 3

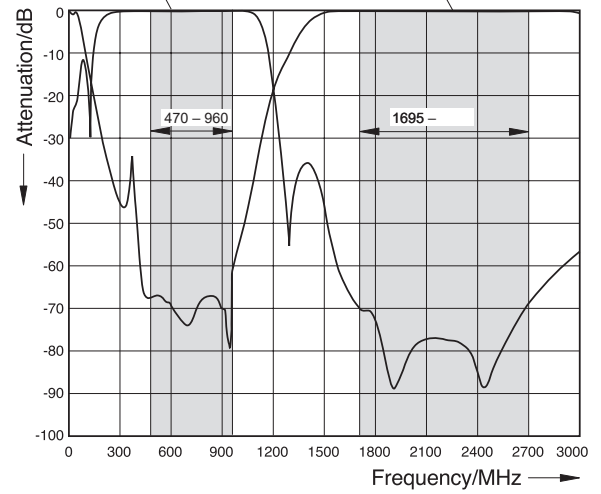
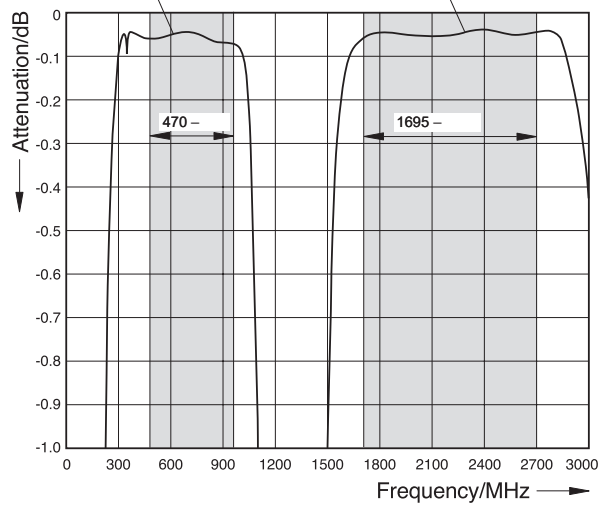


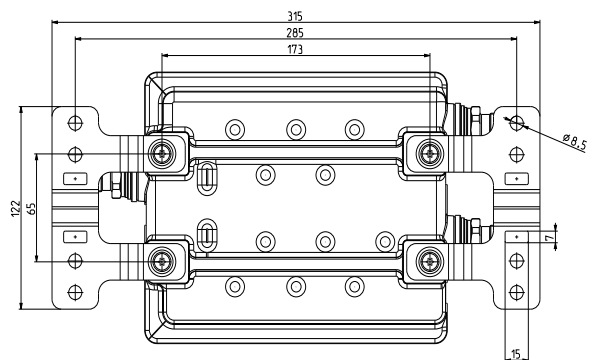
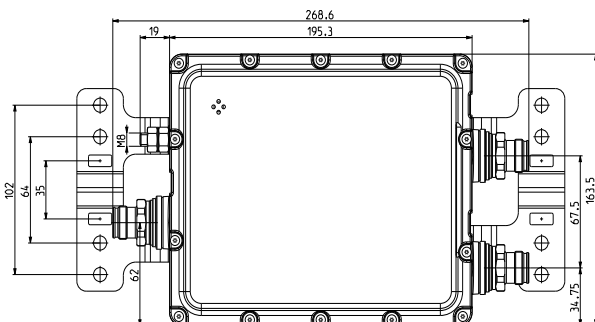
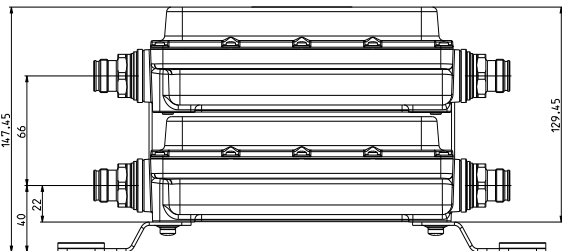
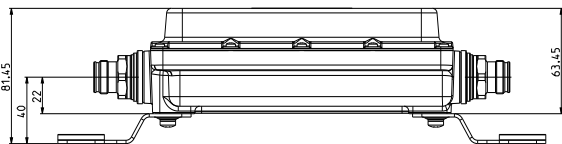
Diagram II

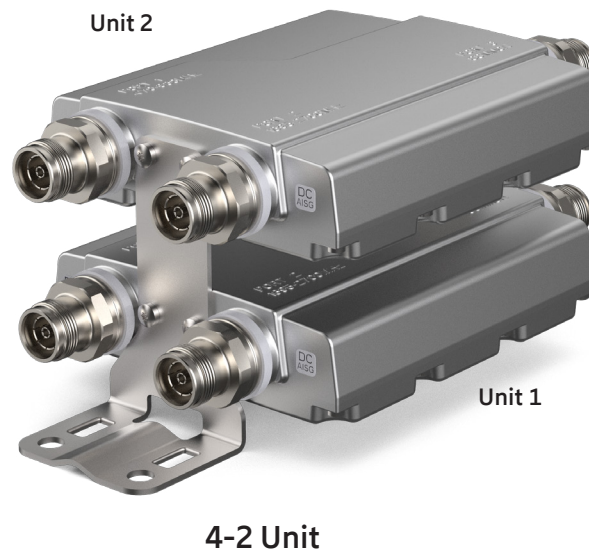
Port 1 ↔ Port 3

Port 2 ↔ Port 3



Dimensions in mm





# Dual-Band Combiner

78210669V43

470–960 MHz  
1695–2700 MHz

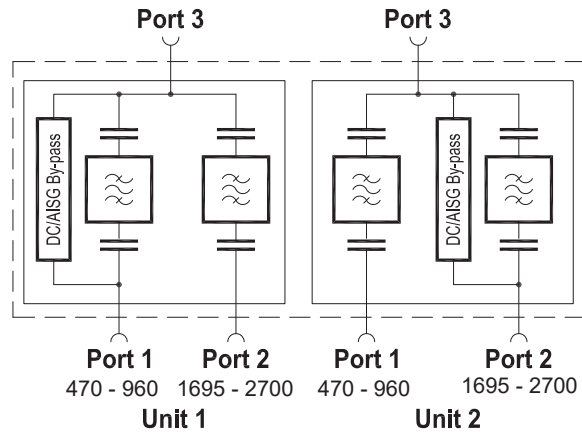
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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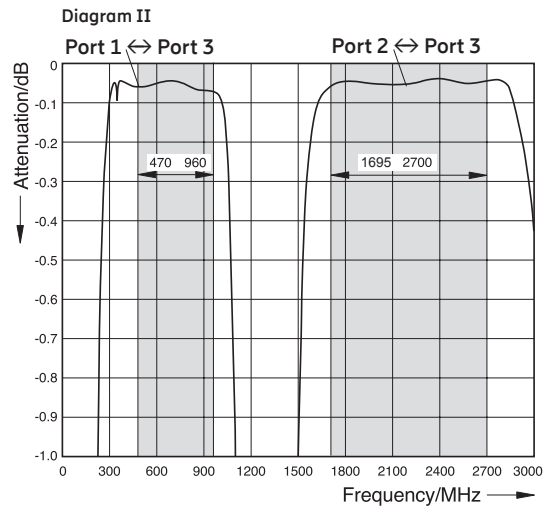
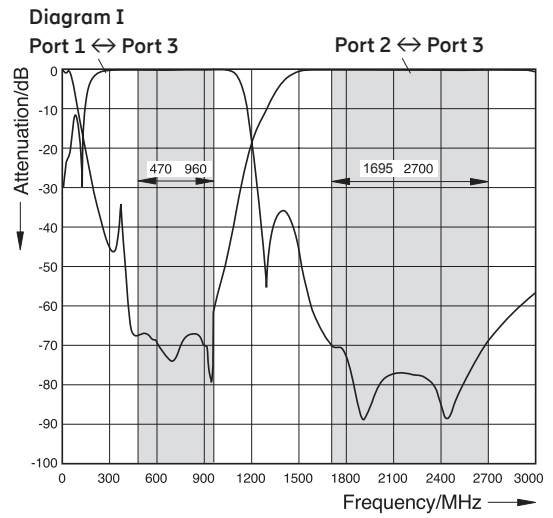
Product No.	78210669V43 (4-2)	
Pass band Band 1 Band 2	MHz MHz	470 – 960 1695 – 2700
Insertion loss Port 1 ↔ Port 3 Port 2 ↔ Port 3	dB dB	< 0.1 (470 – 960 MHz) < 0.1 (1695 – 2700 MHz)
Isolation Port 1 ↔ Port 2	dB	> 55 (470 – 960 MHz) / > 65 (1695 – 2700 MHz)
VSWR (all ports)		< 1.2 (470 – 960 / 1695 – 2700 MHz)
Impedance	Ω	50
Input power Band 1 / Band 2	W	< 300 / < 300
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order with 2 x 20 W)
Temperature range	°C   °F	-55 ... +60   -67 ... +140
Connectors		4.3-10 female
Application		Indoor or outdoor (IP 66)
DC/AISG transparency Port 1 ↔ Port 3 Port 2 ↔ Port 3	mA mA	Unit 1 By-pass (max. 2500) Stop Unit 2 Stop By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set
Weight	kg   lb	2.4   5.3
Dimensions (w x h x d)	mm   in	126 x 145 x 93   5.0 x 5.7 x 3.7 (without connectors, without mounting brackets)
Packing size	mm   in	285 x 157 x 148   11.2 x 6.2 x 5.8

Accessories (order separately if required)

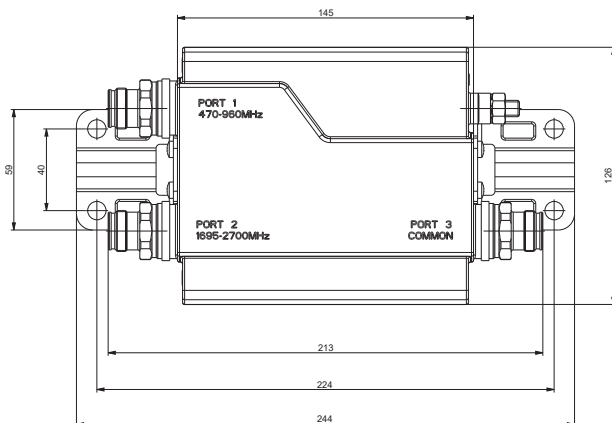
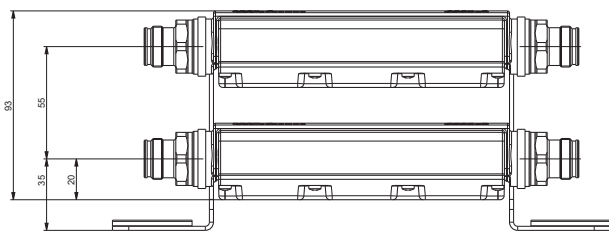
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

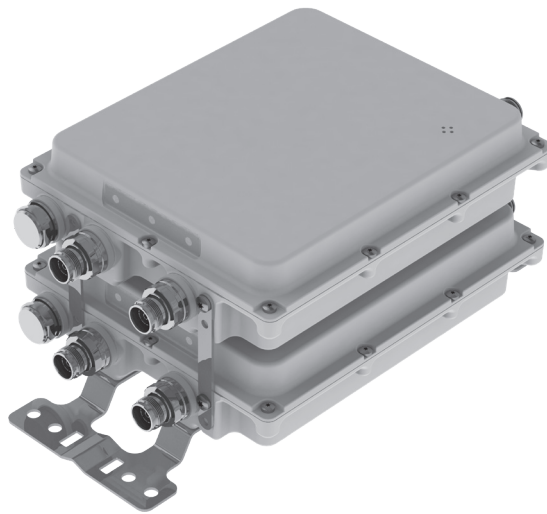
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves



Dimensions in mm



AUTO-  
SENSE

4-2 Unit

# Dual-Band Combiner

78211628, 78211628V01

1427–1880 MHz  
1920–2690 MHz

- Can be used as a combiner near the BTS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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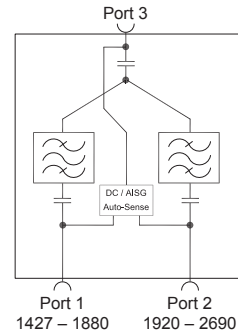


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**Priority table for 78211628V01 with Priority Controlled Function**

1427–1880 MHz	Priority 2 (lowest)
1920–2690 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211628 (4-2)	78211628V01 (4-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
Pass band			
Band 1	MHz	1427 – 1880	
Band 2	MHz	1920 – 2690	
Insertion loss			
Port 1 Port 4	dB	< 0.3 (1427 – 1880 MHz) typ. 0.2 dB	
Port 2 Port 4	dB	< 0.35 (1920 – 2690 MHz) typ. 0.2 dB	
Isolation	dB	> 40	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60 -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
Lightning protection	kA	3, 10/350 μs pulse	
DC/AISG transparency			
Port 1, 2 ↔ Port 3	mA	Auto-Sense (max. 2000)	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	6.8   15.0	
Dimensions (w x h x d)	mm   in	251 x 211 x 139   9.9 x 8.3 x 5.5 (without connectors, without mounting brackets)	
Packing size	mm   in	439 x 289 x 230   17.3 x 11.4 x 9.1	



Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

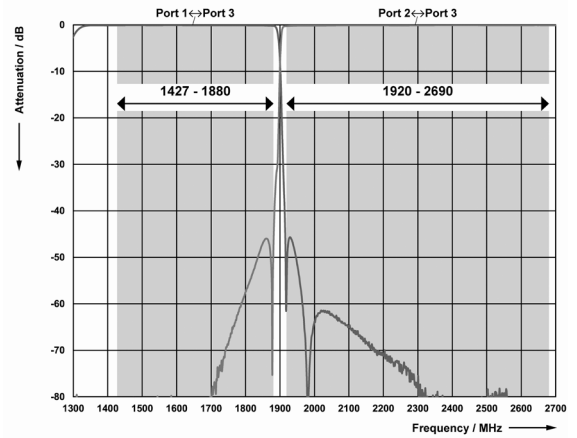
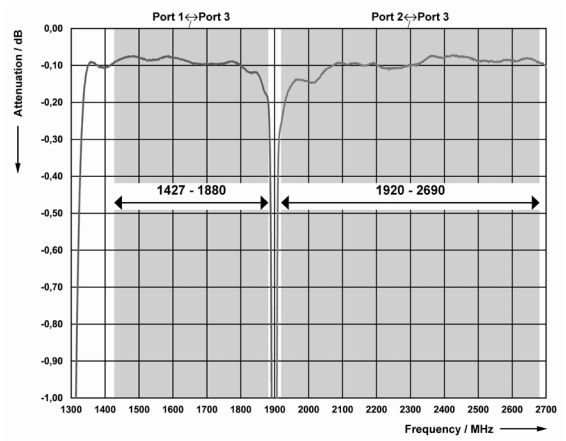
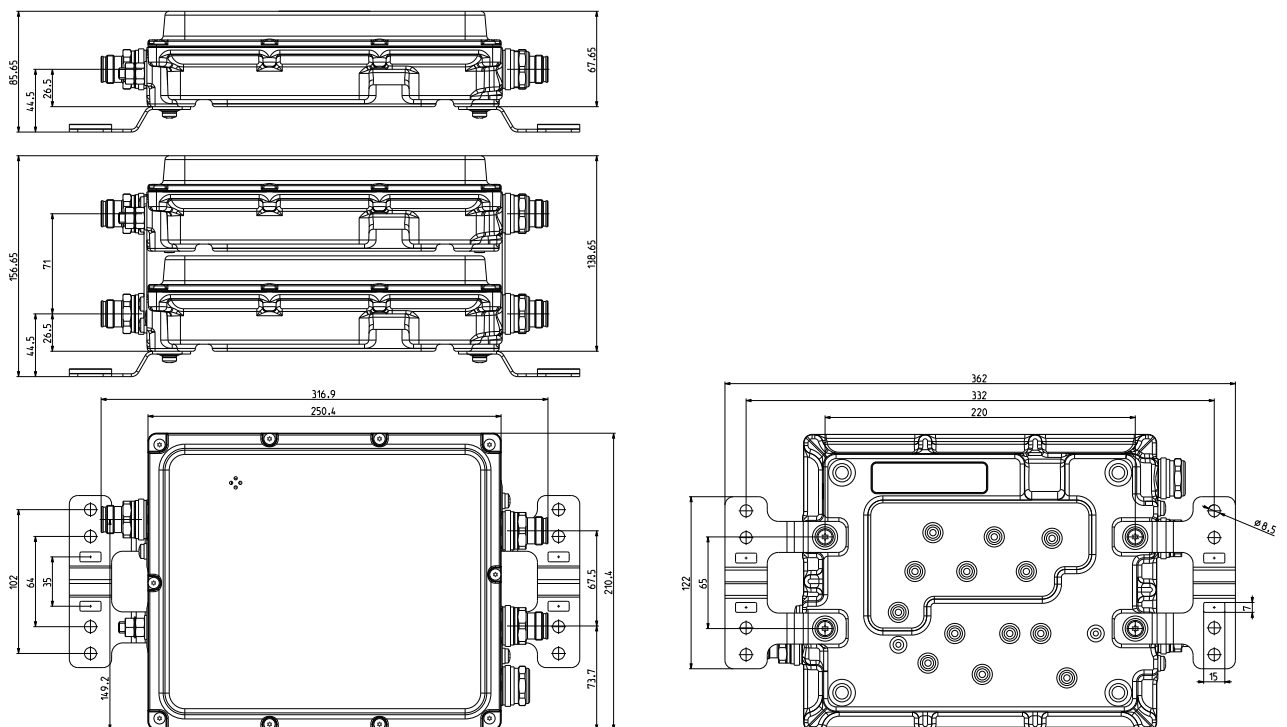


Diagram II



Dimensions in mm





4-2 Unit

# Dual-Band Combiner

KRF 102 386/8

1710–1880 MHz

1920–2690 MHz

- Easy and fast installation
- Low insertion loss
- Rail mounting is possible
- Wall mounting brackets and pole clamps are included
- Indoor and outdoor proof
- Can be used with both Ericsson and non-Ericsson RBSs



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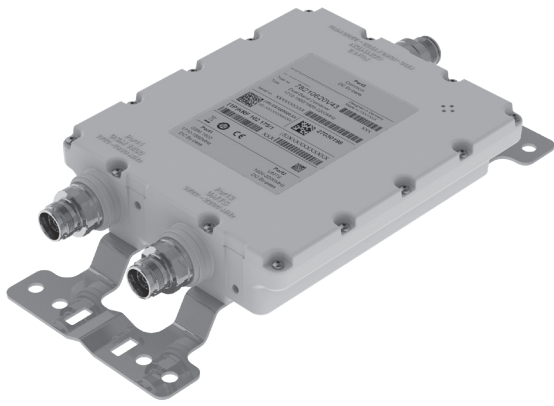


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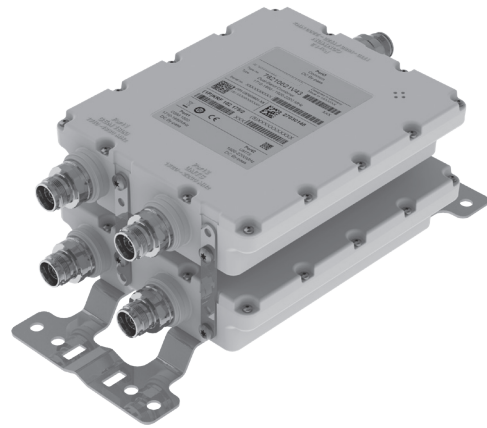
Product No.	KRF 102 386/8 (4-2)	
<b>Electrical Specifications**</b>		
Frequency range - Low port (B3): - High port (B1/B7):	MHz	1710 – 1880 1920 – 2690
Insertion loss	dB	0.2*
Return loss	dB	22*
Isolation	dB	> 50
Intermodulation (IM3) at 2x43 dBm	dBm	-118*
Max. power handling - Continuous: - Peak:	dBm	53 61
DC + AISG transparency - Maximum DC voltage: - Maximum DC current:	V DC A	40 3
DC configuration	Bypass on all ports	
<b>Mechanical Specifications</b>		
Dimensions (H × W × D)	mm	200 × 200 × 74
Weight	kg	5.1
RF connectors	4.3–10 (f)	
Mounting alternatives	Rail, pole, or wall mounting (Rail bracket ordered separately)	
<b>Environmental Specifications**</b>		
Temperature range, full performance	°C	-40 to +55
IP class	IP67	
Lightning protection	5 kA 10/350 μs, 20 kA 8/20 μs (Common mode)	
Corrosion resistance	ISO/FDIS 21207 method B (20 years in C4 environment)	

\* Typical values

\*\* Common values for both variants



2-1 Unit



4-2 Unit

# Dual-Band Combiner

78210620V43, 78210621V43,  
78210622V43, 78210623V43

1710–1880 MHz  
1920–2200 MHz

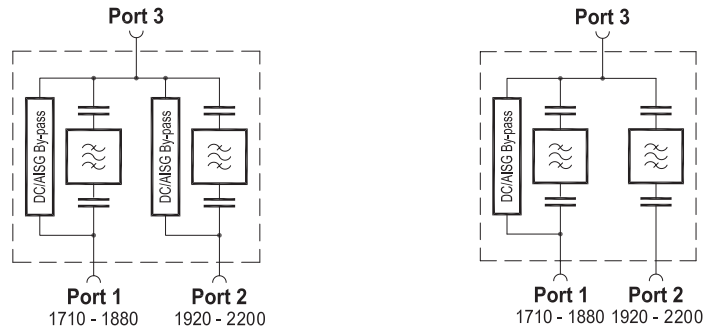
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 2-1 Unit or 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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Product No.		78210620V43 (2-1)	78210622V43 (2-1)
		78210621V43 (4-2)	78210623V43 (4-2)
Pass band Band 1 (GSM 1800) Band 2 (UMTS)	MHz MHz	1710 – 1880 1920 – 2200	
Insertion loss Port 1 ↔ Port 3 Port 2 ↔ Port 3	dB dB	< 0.3, typically 0.14 (1710 – 1880 MHz) < 0.3, typically 0.12 (1920 – 2200 MHz)	
Isolation Port 1 ↔ Port 2	dB	> 55 (1710 – 1880) / > 50 (1920 – 2200 MHz)	
VSWR		< 1.2 (1710 – 1880) / (1920 – 2200 MHz)	
Impedance	Ω	50	
Input power Band 1 / Band 2	W	< 300 / < 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-55 ... +60   -67 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency Port 1 ↔ Port 3 Port 2 ↔ Port 3	mA mA	By-pass (max. 2500) By-pass (max. 2500)	Stop By-pass (max. 2500)
Lightning protection	kA	3 kA, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb kg   lb	2-1 Unit: 2.2   4.9 4-2 Unit: 4.3   9.5	
Dimensions (w x h x d)	mm   in	2-1 Unit: 163.5 x 195.3 x 46   6.4 x 7.7 x 1.8 4-2 Unit: 163.5 x 195.3 x 102   6.4 x 7.7 x 4.0 (without connectors, without mounting brackets)	
Packing size	mm   in	2-1 Unit: 392 x 272 x 139   15.5 x 10.7 x 5.5 4-2 Unit: 392 x 272 x 189   15.5 x 10.7 x 7.4	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

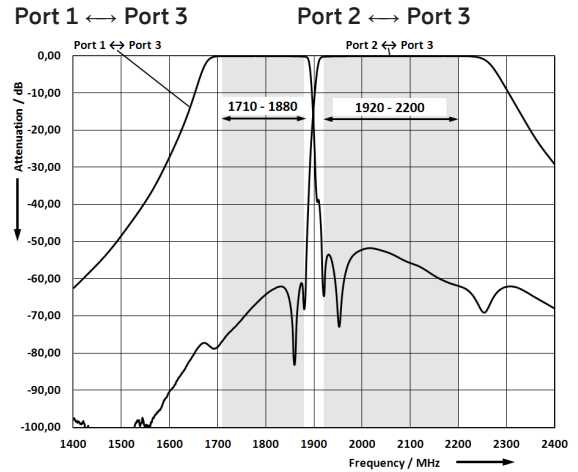
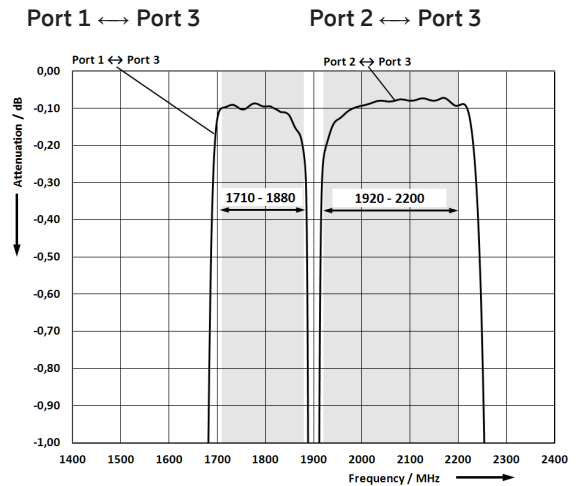
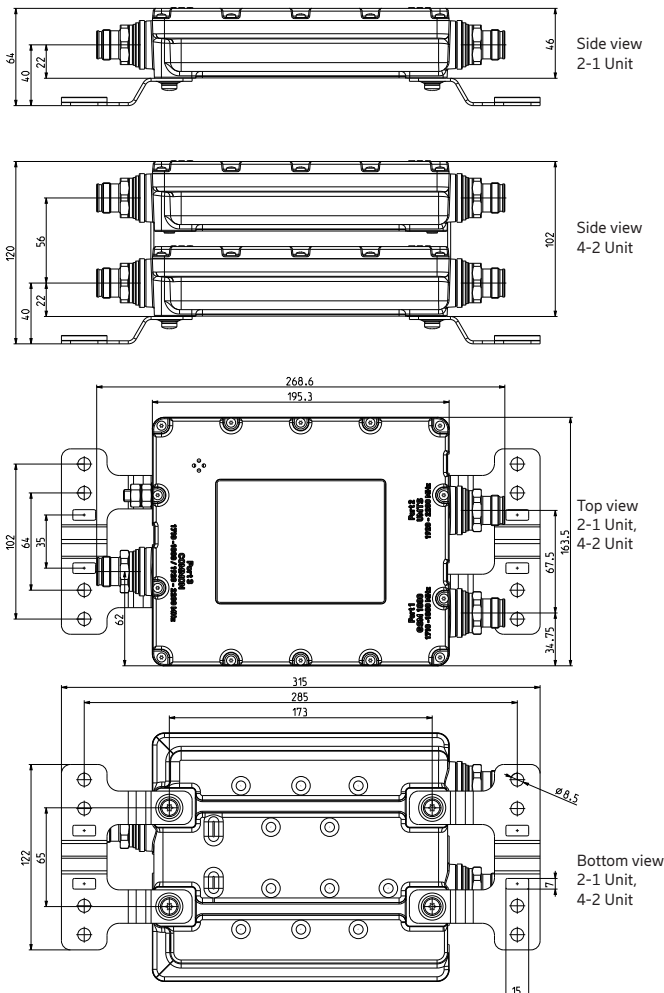
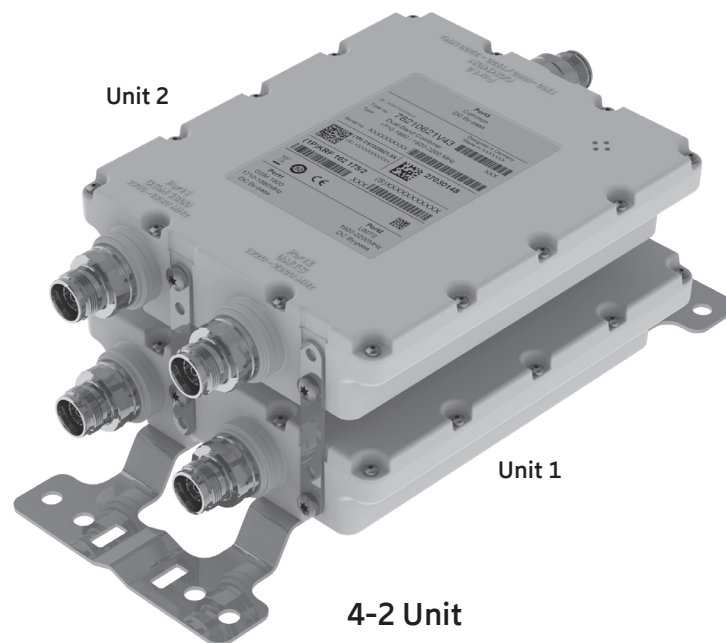


Diagram II



Dimensions in mm





# Dual-Band Combiner

78210626V43

1710–1880 MHz  
1920–2200 MHz

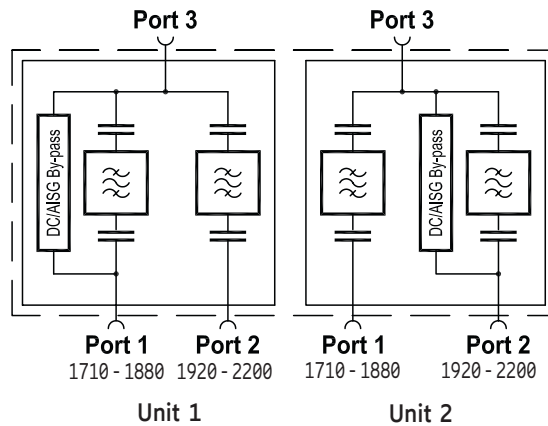
- Designed to support separate DC/AISG supply for a low-band and high-band DTMA via 2 feeder cables (see application)
- Enables feeder sharing
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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Product No.		78210626V43 (4-2)	
Pass band Band 1 (GSM 1800) Band 2 (UMTS)	MHz MHz	1710 – 1880 1920 – 2200	
Insertion loss Port 1 ↔ Port 3 Port 2 ↔ Port 3	dB dB	< 0.3 (1710 – 1880 MHz) < 0.3 (1920 – 2200 MHz)	
Isolation Port 1 ↔ Port 2	dB	> 55 (1710 – 1880 MHz) / > 50 (1920 – 2200 MHz)	
VSWR		< 1.2 (1710 – 1880) / (1920 – 2200 MHz)	
Impedance	Ω	50	
Input power Band 1 / Band 2	W	< 300 / < 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C	-55 ... +60   -67 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency Port 1 ↔ Port 3 Port 2 ↔ Port 3	mA mA	Unit 1 By-pass (max. 2500) Stop	Unit 2 Stop By-pass (max. 2500)
Lightning protection		3 kA, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	4.3   9.5	
Dimensions (w x h x d)	mm   in	164 x 195 x 102   6.4 x 7.7 x 4.0 (without connectors, without mounting brackets)	
Packing size	mm   in	392 x 272 x 189   15.4 x 10.7 x 7.4	



Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

Port 1 ↔ Port 3

Port 2 ↔ Port 3

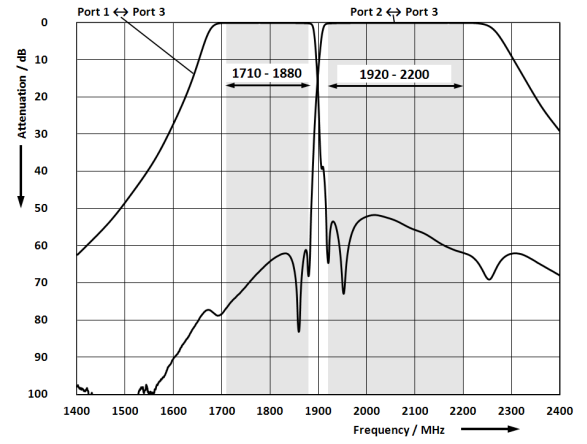
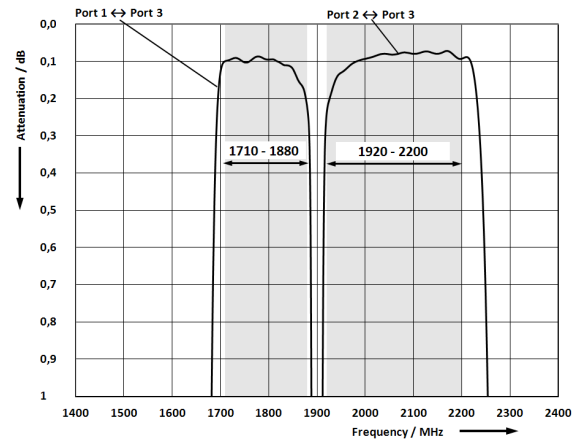


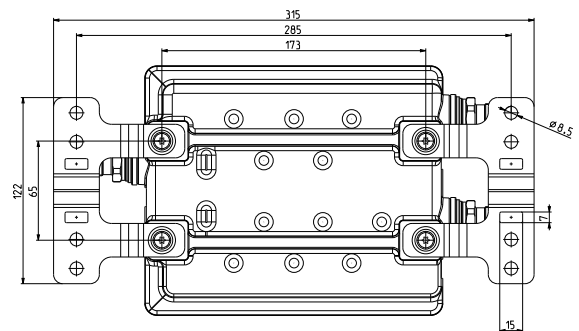
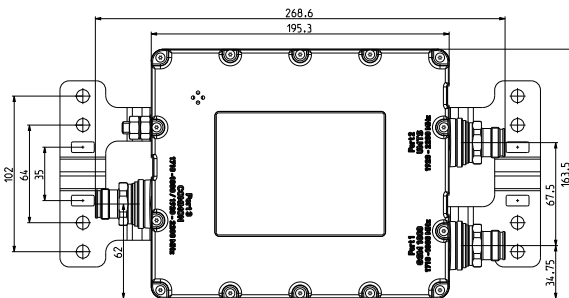
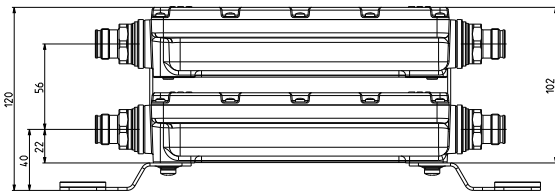
Diagram II

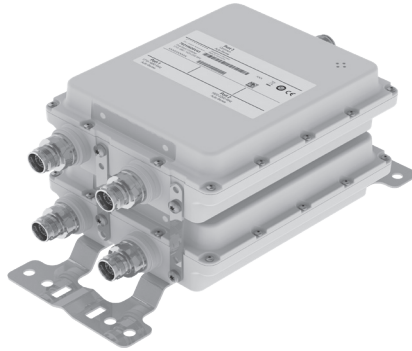
Port 1 ↔ Port 3

Port 2 ↔ Port 3



Dimensions in mm



AUTO-  
SENSE

4-2 Unit

# Dual-Band Combiner

78210628V43, 78210628V44

1710–1880 MHz  
1920–2200 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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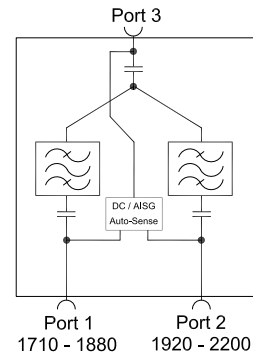


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**Priority table for 78210628V44 with Priority Controlled Function**

1710-1880 MHz	Priority 2 (lowest)
1920-2200 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78210628V43 (4-2)	78210628V44 (4-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
Pass band			
Band 1	MHz	1710 – 1880	
Band 2	MHz	1920 – 2200	
Insertion loss			
Port 1 Port 3	dB	< 0.3 (1710 – 1880 MHz)	
Port 2 Port 3	dB	< 0.3 (1920 – 2200 MHz)	
Isolation			
Port 1 Port 2	dB	> 55 (1710 – 1880 MHz) / > 50 (1920 – 2200 MHz)	
VSWR		< 1.2	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 300 / < 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-55 ... +60   -67 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor ( P 66)	
Lightning protection	kA	3, 10/350 s pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8 0.315 diameter) Pole mounting: With additional clamp set	
Grounding		M8 stud	
Weight	kg   lb	4.8   10.5	
Dimensions (w x h x d)	mm   in	164 x 195 x 129 6.4 x 7.7 x 5.1 (without connectors, without mounting brackets)	
Packing size	mm   in	392 x 272 x 189   15.4 x 10.7 x 7.4	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40-150 1.6-5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

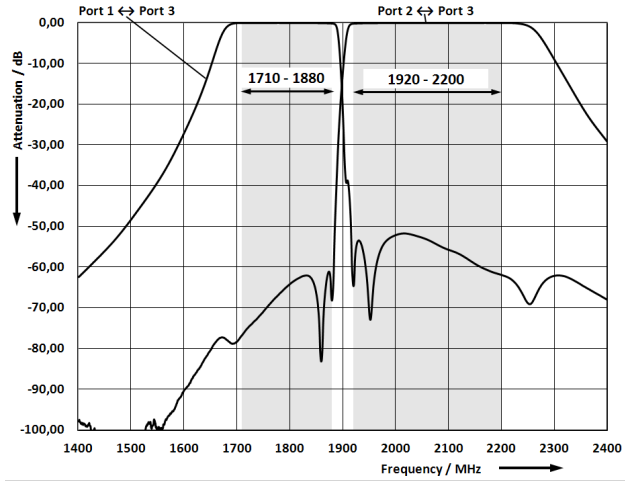
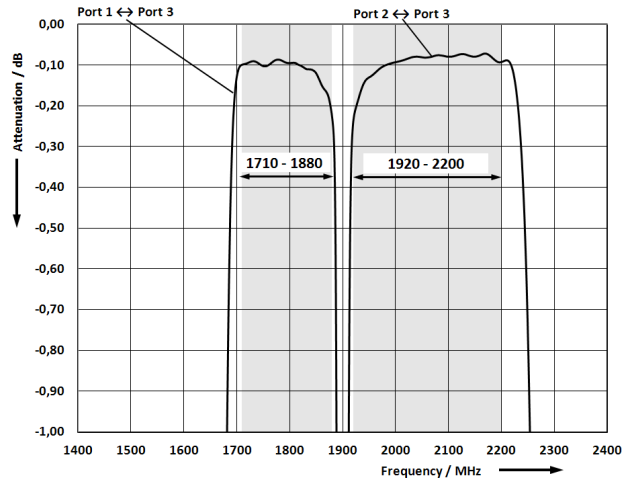
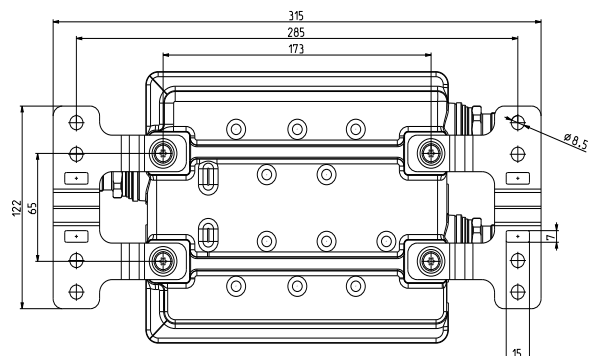
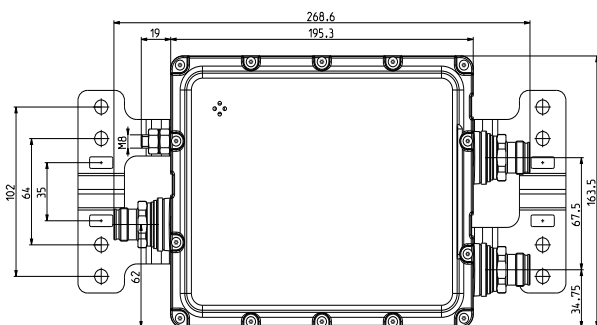
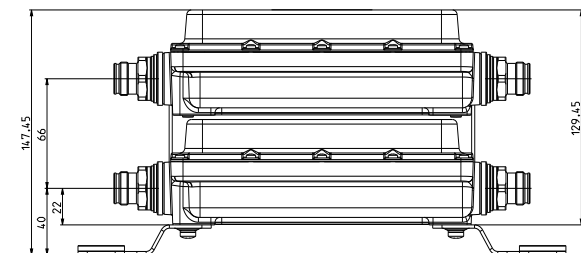
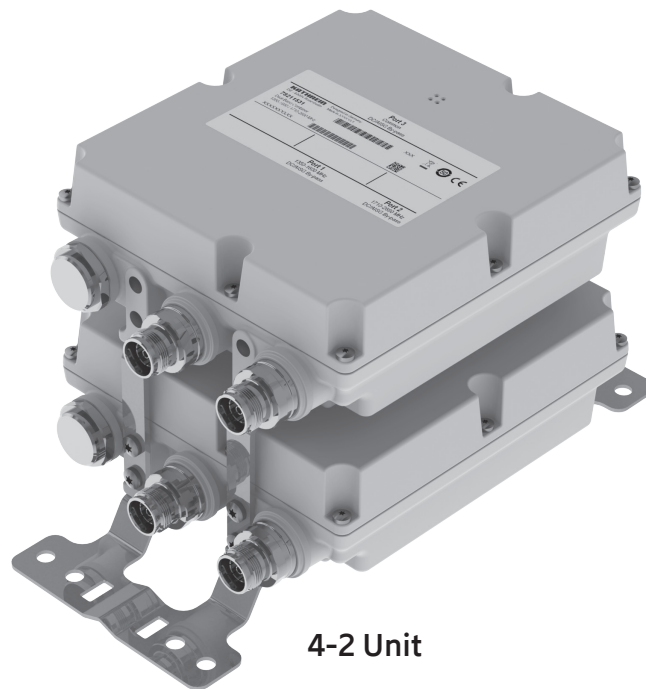


Diagram II



Dimensions





4-2 Unit

# Dual-Band Combiner

78211530, 78211531,  
78211532, 78211533

1427–1518 MHz  
1710–2690 MHz

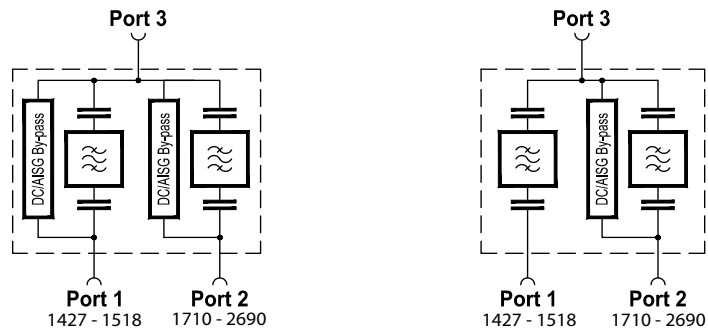
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 2-1 Unit or 4-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211530 (2-1)	clamps included	78211532 (2-1)
		78211531 (4-2)		78211533 (4-2)
Pass band				
Band 1	MHz	1427 – 1518		
Band 2	MHz	1710 – 2690		
Insertion loss				
Port 1 ↔ Port 3	dB	< 0.2 (1427 – 1518)		
Port 2 ↔ Port 3	dB	< 0.3 (1710 – 2690)		
Isolation	dB	> 40		
VSWR		< 1.25		
Impedance	Ω	50		
Input power				
Band 1 / Band 2	W	< 200		
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)		
Temperature range	°C   °F	-40 ... +60   -40 ... +140		
Connectors		4.3-10 female		
Application		Indoor or outdoor (IP 66)		
DC/AISG transparency				
Port 1 ↔ Port 3	mA	By-pass (max. 2500)		Stop
Port 2 ↔ Port 3	mA	By-pass (max. 2500)		By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse		
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With included clamp set		
Weight	kg   lb	2-1 Unit : 3.2   7.1 4-2 Unit: 6.3   13.9		
Dimensions (w x h x d)	mm   in	2-1 Unit: 190 x 176 x 77   7.5 x 7.0 x 3.0 4-2 Unit: 190 x 176 x 161   7.5 x 7.0 x 6.3 (without connectors, without mounting brackets)		
Packing size	mm   in	2-1 Unit: 375 x 245 x 160   14.8 x 9.7 x 6.3 4-3 Unit: 375 x 245 x 245   14.8 x 9.7 x 9.7		

**Accessories (included in the scope of supply)**

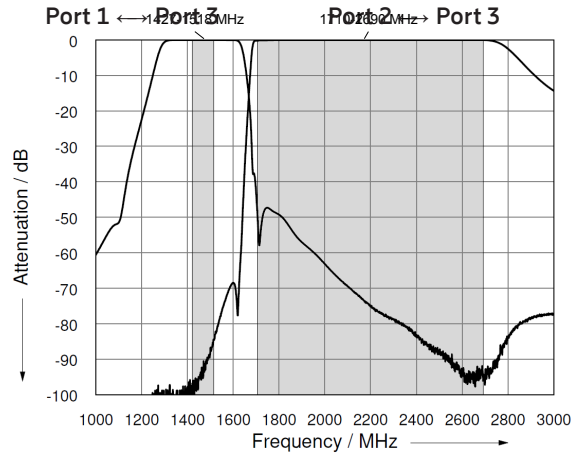
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

**Accessories (order separately if required)**

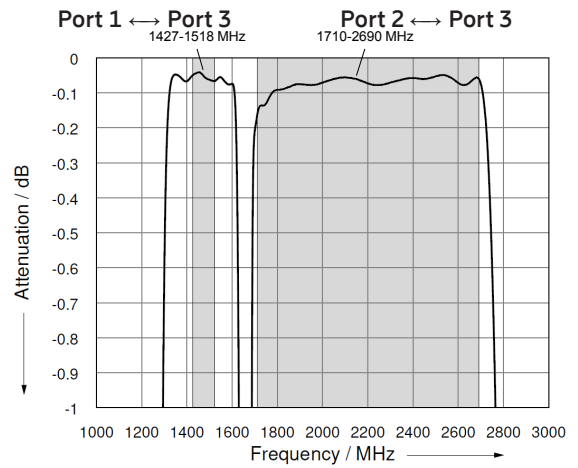
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

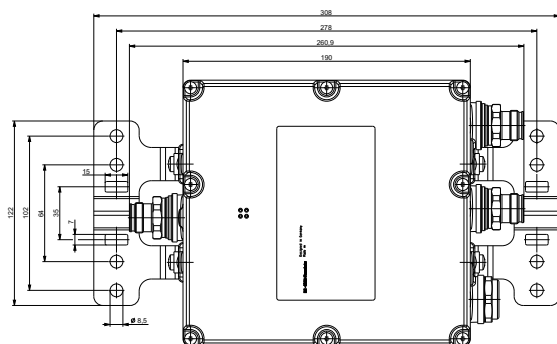
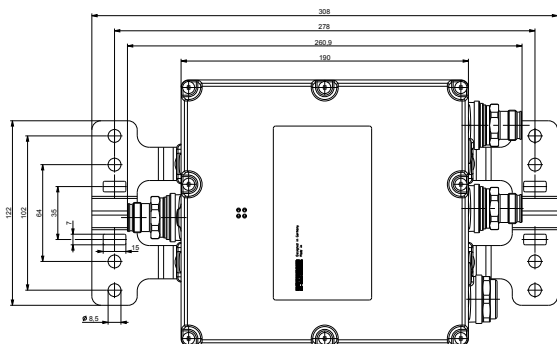
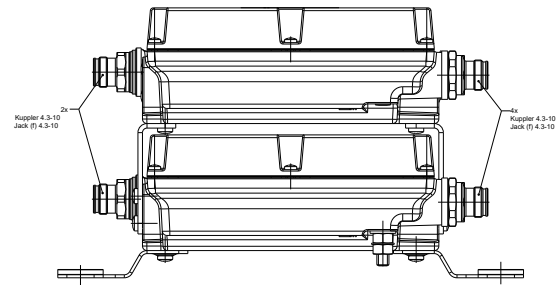
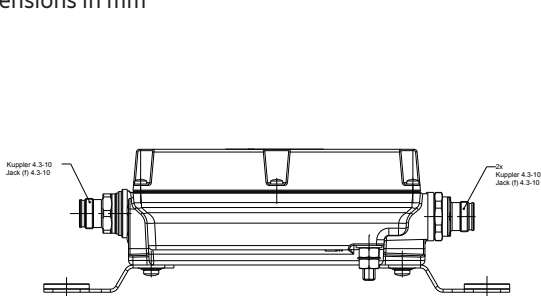
**Diagram I**



**Diagram II**

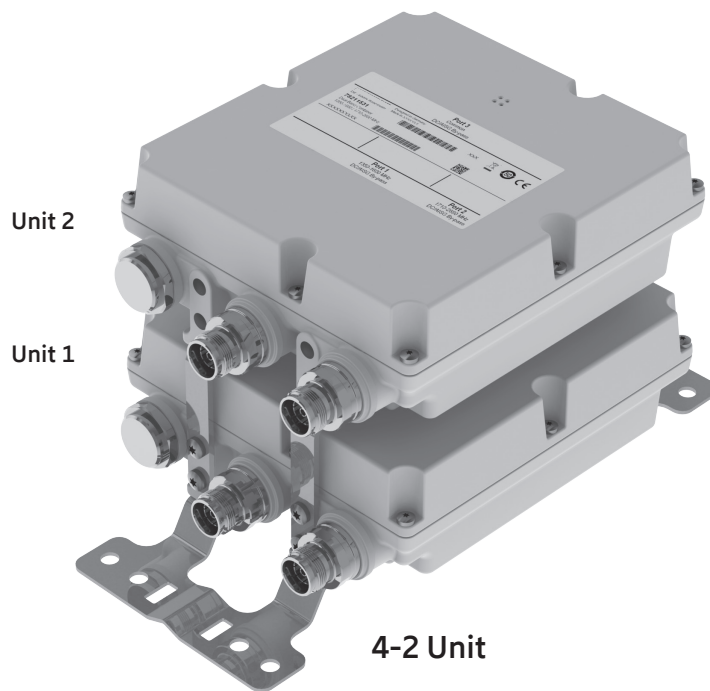


**Dimensions in mm**



Erdungsschraube M8

Erdungsschraube M8



# Dual-Band Combiner

78211536

1427–1518 MHz  
1710–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory

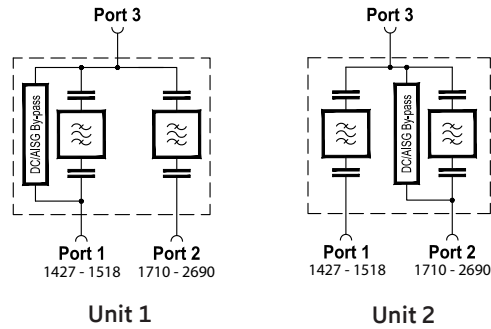


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Product No.		78211536 (4-2)		clamps included
Pass band				
Band 1	MHz	1427 – 1518		
Band 2	MHz	1710 – 2690		
Insertion loss				
Port 1 ↔ Port 3	dB	< 0.2 (1427 – 1518 MHz)		
Port 2 ↔ Port 3	dB	< 0.3 (1710 – 2690 MHz)		
Isolation	dB	> 40		
VSWR		< 1.25		
Impedance	Ω	50		
Input power				
Band 1 / Band 2	W	< 200		
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)		
Temperature range	°C   °F	-40 ... +60   -40 ... +140		
Connectors		4.3-10 female		
Application		Indoor or outdoor (IP 66)		
DC/AISG transparency				
Port 1 ↔ Port 3	mA	Unit 1	Unit 2	
Port 2 ↔ Port 3	mA	By-pass (max. 2500)	Stop	
		Stop	By-pass (max. 2500)	
Lightning protection	kA	3, 10/350 μs pulse		
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With included clamp set		
Weight	kg   lb	6.3   13.9		
Dimensions (w x h x d)	mm   in	190 x 176 x 161   7.5 x 6.9 x 6.3 (without connectors, without mounting brackets)		
Packing size	mm   in	375 x 245 x 245   14.8 x 9.7 x 9.7		

**Accessories (included in the scope of supply)**

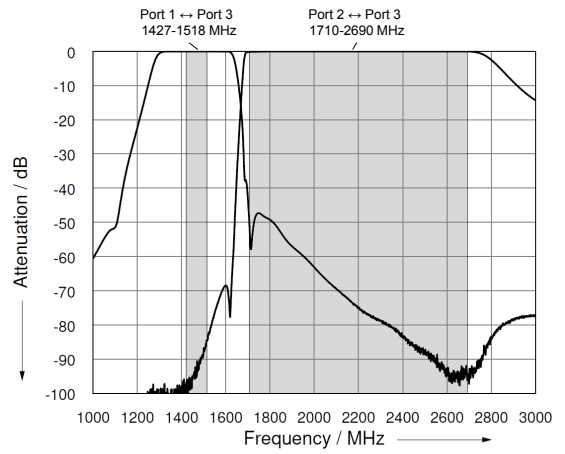
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

**Accessories (order separately if required)**

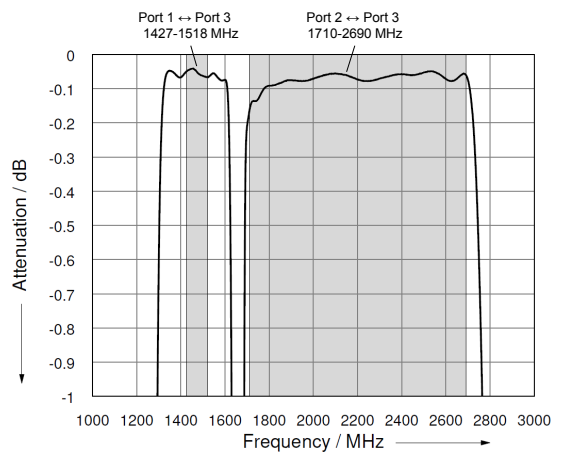
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

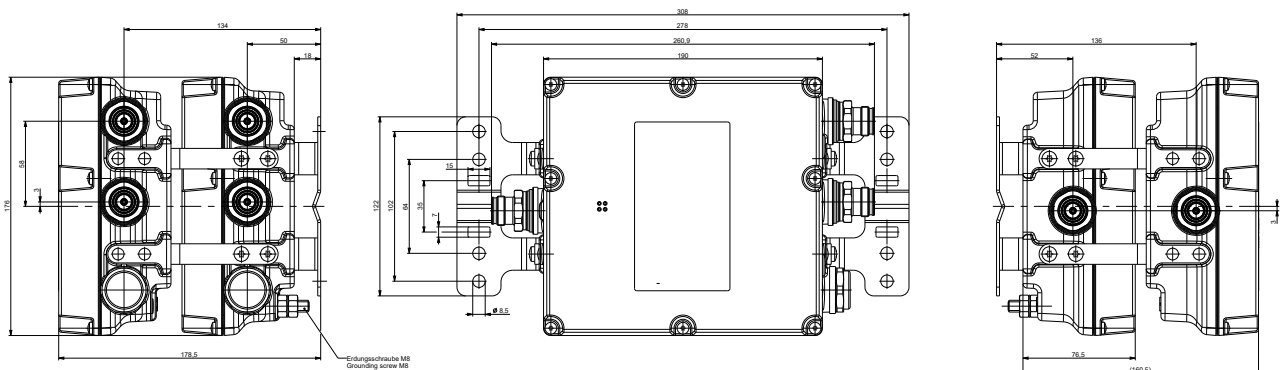
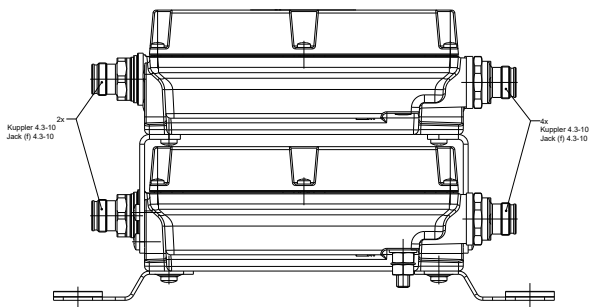
**Diagram I**

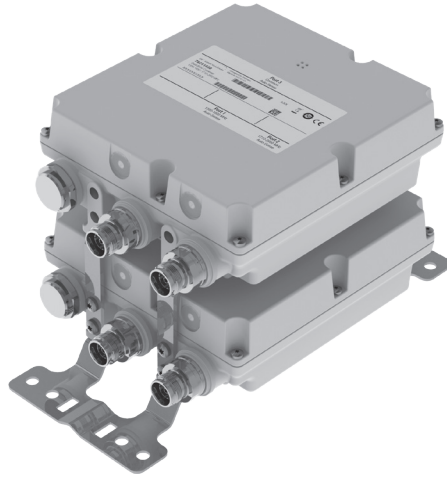


**Diagram II**



**Dimensions in mm**



AUTO-  
SENSE

4-2 Unit

# Dual-Band Combiner

78211538, 78211538V01

1427–1518 MHz  
1710–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 4-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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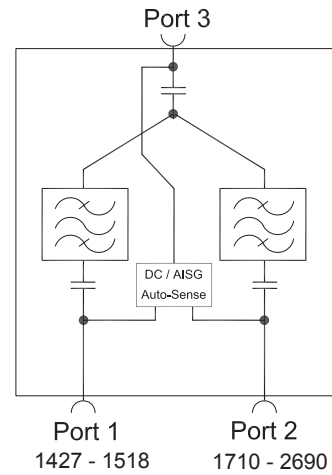


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**Priority table for 78211538V01 with Priority Controlled Function**

1427–1518 MHz	Priority 2 (lowest)
1710–2690 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211538 (4-2)	clamps included	78211538V01 (4-2)
DC/AISG transparency		First In - First Out Function		Priority Controlled Function
Pass band				
Band 1	MHz		1427 – 1518	
Band 2	MHz		1710 – 2690	
Insertion loss				
Port 1 ↔ Port 3	dB		< 0.2 (1427 – 1518)	
Port 2 ↔ Port 3	dB		< 0.3 (1710 – 2690)	
Isolation	dB		> 40	
VSWR			< 1.25	
Impedance	Ω		50	
Input power				
Band 1 / Band 2	W		< 200	
Intermodulation products	dBc		< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F		-40 ... +60   -40 ... +140	
Connectors			4.3-10 female	
Application			Indoor or outdoor (IP 66)	
Lightning protection	kA		3, 10/350 μs pulse	
Mounting	mm   in		Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With included clamp set	
Weight	kg   lb		6.3   13.9	
Dimensions (w x h x d)	mm   in		190 x 176 x 161   7.5 x 7.0 x 6.3 (without connectors, without mounting brackets)	
Packing size	mm   in		375 x 245 x 245   14.8 x 9.7 x 9.7	

**Accessories (included in the scope of supply)**

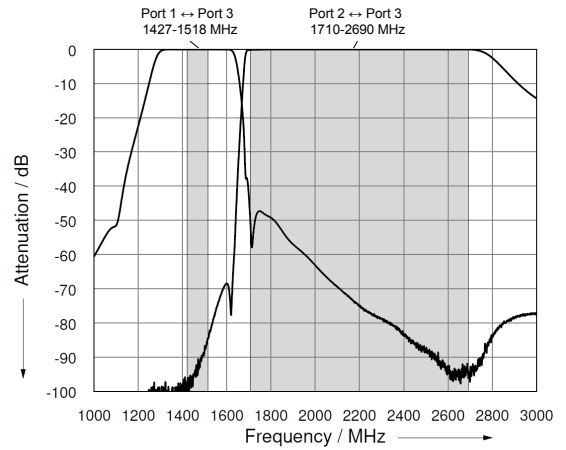
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

**Accessories (order separately if required)**

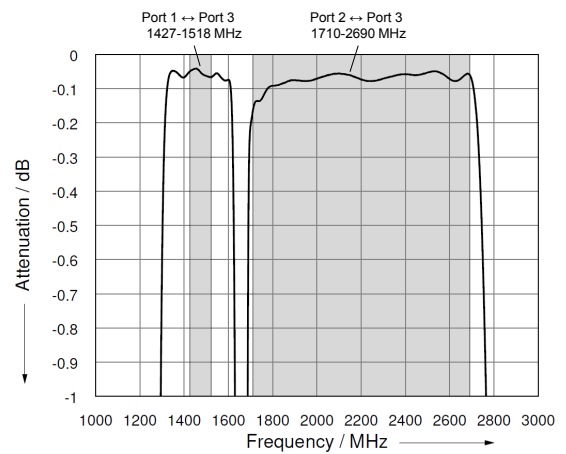
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

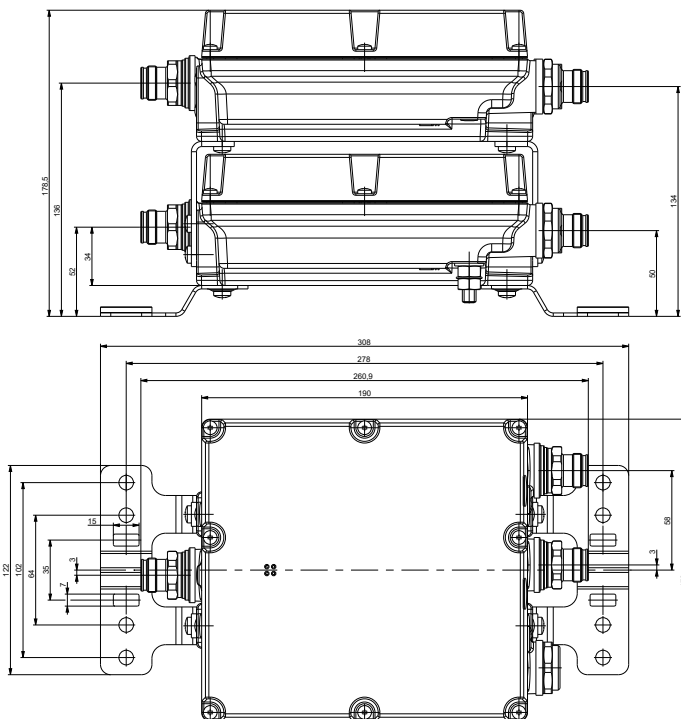
**Diagram I**



**Diagram II**



**Dimensions in mm**





4-2 Unit

# Dual-Band Combiner

KRF 102 419/1

1427–1518 MHz

1710–2690 MHz

- Part of Ericsson Radio System product family
- Verified with Ericsson RBSs
- Can be used with both Ericsson and non-Ericsson RBSs
- Very low insertion loss
- Excellent isolation performance
- Wall mounting brackets and pole clamps are included
- Rail mounting is possible
- Indoor and outdoor proof
- 4.3–10 connectors



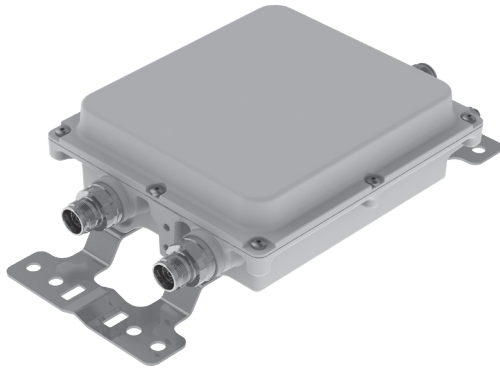
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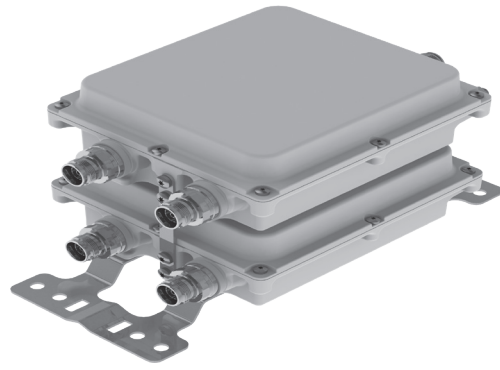
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<b>Product No.</b>		<b>KRF 102 419/1 (4-2)</b>
<b>Electrical Specifications</b>		
Frequency range - Low port: - High port:	MHz	1427 - 1518 1710 - 2690
Insertion loss	dB	0.1*
Return loss	dB	23*
Isolation	dB	> 50
Intermodulation (IM3) at 2x43 dBm	dBm	-116*
Power handling (continuous)	W	100 per port (200 W at COM Port)
DC configuration		Bypass
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm	190 x 150 x 82
Weight	kg	4
Volume	L	2.4
RF connectors		4.3-10 (f)
Mounting options		Rail, pole, or wall mounting (Rail bracket ordered separately)
<b>Environmental Specifications</b>		
Temperature range, full performance	°C	-40 to +55
IP class		IP67
Lightning protection		5 kA 10/350 µs
Product safety		International (CB): IEC 60 950-1, IEC 60 950-22 Europe (CE): EN 60 950-1, EN 60 950-22

\* Typical values



2-1 Unit



4-2 Unit

# Dual-Band Combiner

78211790, 78211791,  
78211794, 78211795

1427–2200 MHz  
2300–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 2-1 Unit or 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection

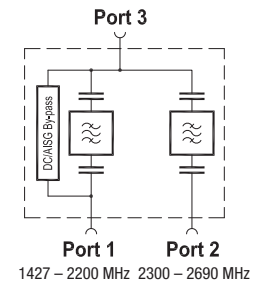
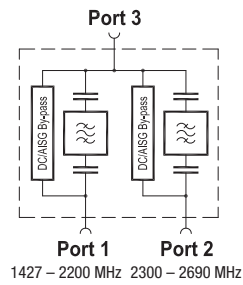


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Product No.		78211790 (2-1)	78211794 (2-1)
		78211791 (4-2)	78211795 (4-2)
Pass band			
Band 1	MHz	1427 – 2200	
Band 2	MHz	2300 – 2690	
Insertion loss			
Port 1	dB	< 0.2 (1427 – 2200 MHz)	
Port 3	dB	< 0.2 (2300 – 2690 MHz)	
Port 2	dB	< 0.2 (2300 – 2690 MHz)	
Port 3	dB	< 0.2 (2300 – 2690 MHz)	
Isolation	dB	> 50	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-55 ... +60   -67 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1	mA	By-pass (max. 2500)	By-pass (max. 2500)
Port 3	mA		
Port 2	mA	By-pass (max. 2500)	Stop
Port 3	mA	By-pass (max. 2500)	Stop
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With clamp set	
Weight	kg   lb	2-1 Unit: 2.5   5.5 4-2 Unit: 4.6   10.1	
Dimensions (w x h x d)	mm   in	2-1 Unit: 192 x 172 x 68   7.6 x 6.8 x 2.7 4-2 Unit: 192 x 172 x 139   7.6 x 6.8 x 5.5 (without connectors, without mounting brackets)	
Packing size	mm   in	2-1 Unit: 392 x 272 x 155   15.4 x 10.7 x 6.1 4-2 Unit: 392 x 272 x 220   15.4 x 10.7 x 8.7	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

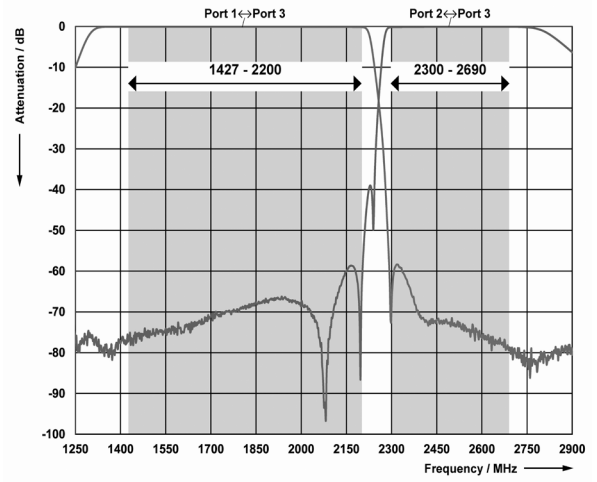
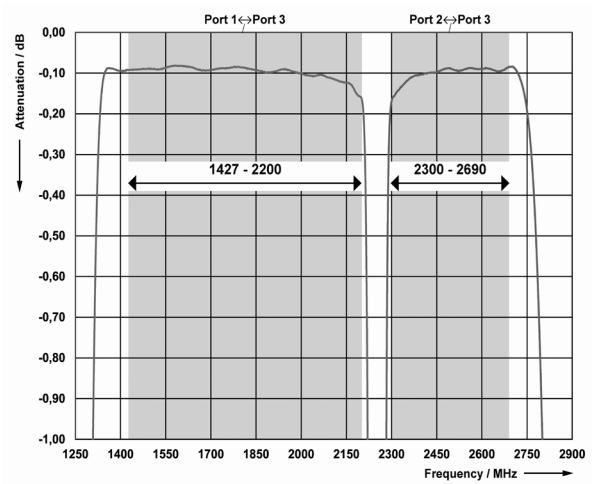
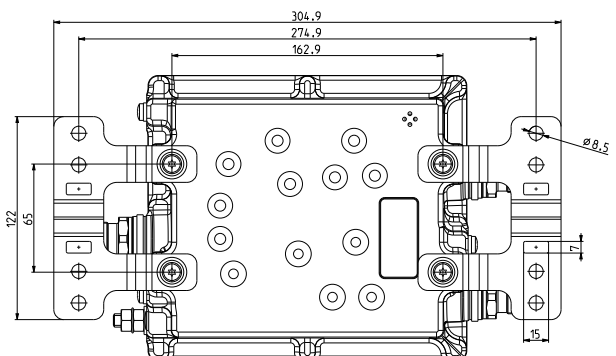
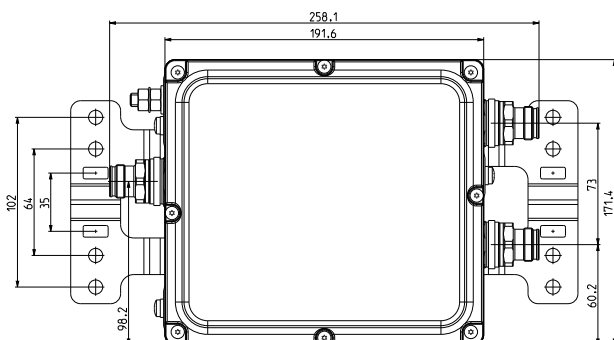
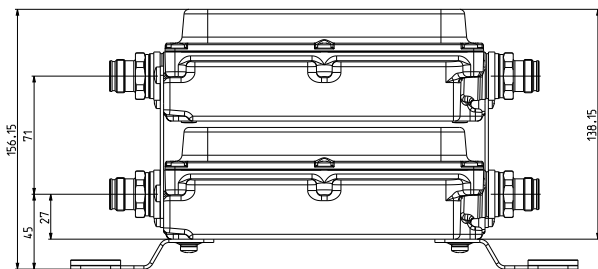
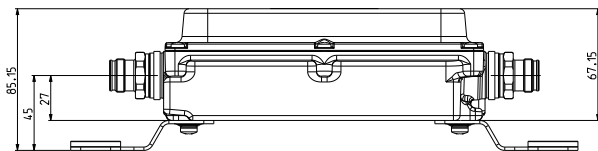
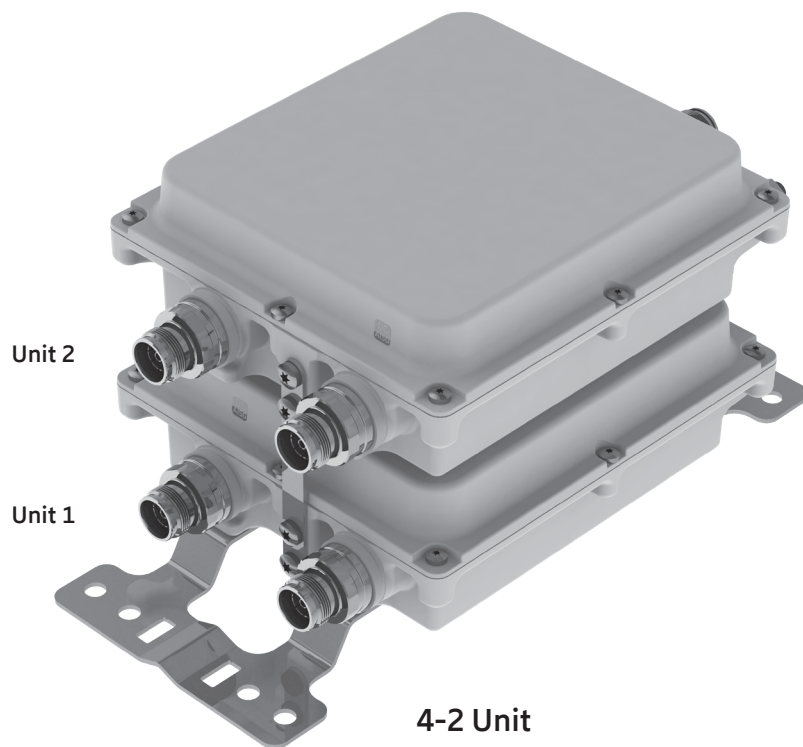


Diagram II



Dimensions in mm





# Dual-Band Combiner

78211796

1427–2200 MHz  
2300–2690 MHz

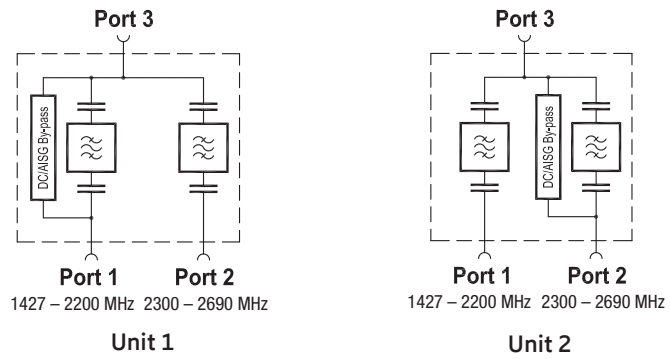
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211796 (4-2)	
Pass band			
Band 1	MHz	1427 – 2200	
Band 2	MHz	2300 – 2690	
Insertion loss			
Port 1 ↔ Port 3	dB	< 0.2 (1427 – 2200 MHz)	
Port 2 ↔ Port 3	dB	< 0.2 (2300 – 2690 MHz)	
Isolation	dB	> 50	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-55 ... +60   -67 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 ↔ Port 3	mA	Unit 1	Unit 2
Port 2 ↔ Port 3	mA	By-pass (max. 2500)	Stop
		Stop	By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With clamp set	
Weight	kg   lb	4.6   10.1	
Dimensions (w x h x d)	mm   in	192 x 172 x 139   7.6 x 6.8 x 5.5 (without connectors, without mounting brackets)	
Packing size	mm   in	392 x 272 x 220   15.4 x 10.7 x 8.7	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

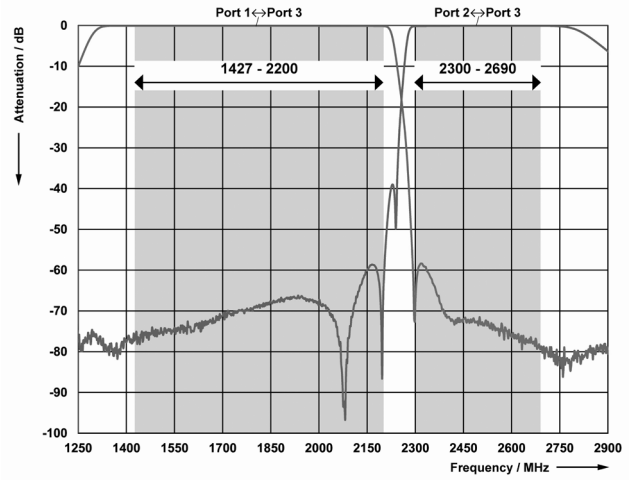
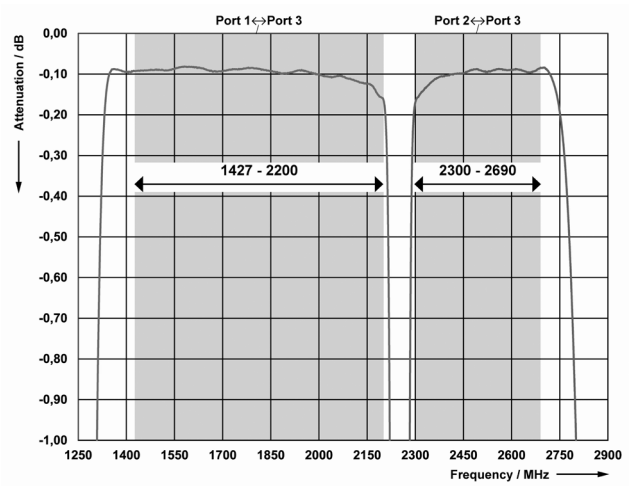
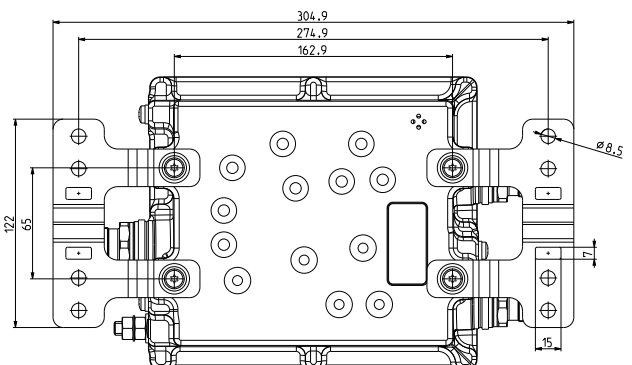
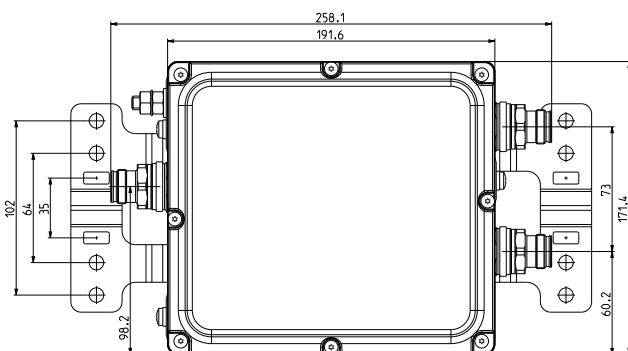
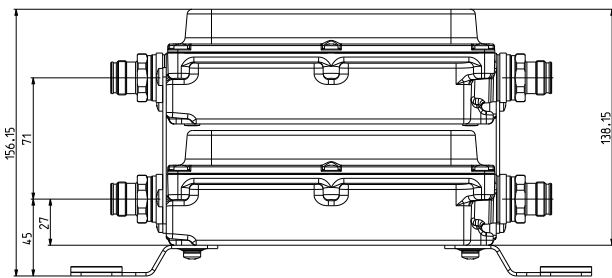
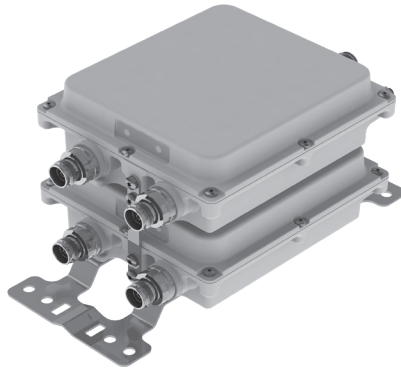


Diagram II



Dimensions in mm



AUTO-  
SENSE

4-2 Unit

# Dual-Band Combiner

78211798, 78211798V01

1427–2200 MHz  
2300–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 4-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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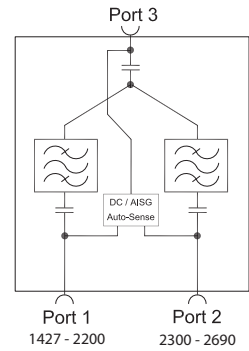


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## Priority table for 78211798V01 with Priority Controlled Function

1427–2200 MHz	Priority 2 (lowest)
2300–2690 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211798 (4-2)	78211798V01 (4-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
Pass band			
Band 1	MHz	1427 – 2200	
Band 2	MHz	2300 – 2690	
Insertion loss			
Port 1 Port 3	dB	< 0.2 (1427 – 2200 MHz)	
Port 2 Port 3	dB	< 0.2 (2300 – 2690 MHz)	
Isolation	dB	> 50	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2	W	< 300	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-55 ... +60   -67 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 Port3	mA	Auto-Sense (max. 2000)	
Port 2 Port3	mA	Auto-Sense (max. 2000)	
Lightning protection	kA	3, 10/350 μs pulse	
Wind load (at Rated Wind Speed 150 km/h   93 mph)	N   lbf	frontal: 65   15 lateral: 38   9	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	4.6   10.1	
Dimensions	mm   in	192 x 172 x 139   7.6 x 6.8 x 5.5 (without connectors, without mounting brackets)	
Packing size	mm   in	392 x 272 x 220   15.4 x 10.7 x 8.7	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

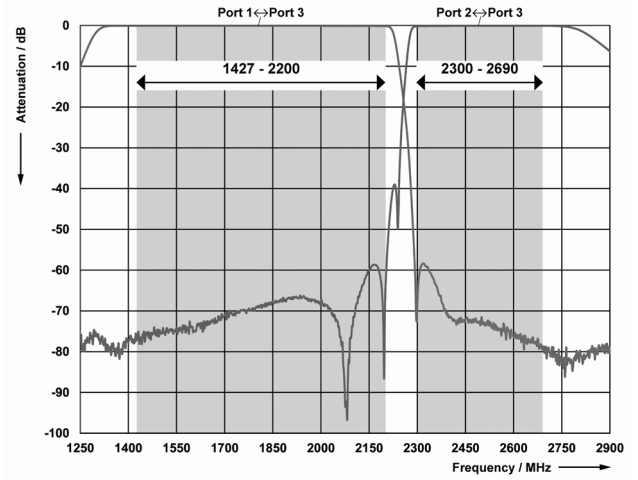
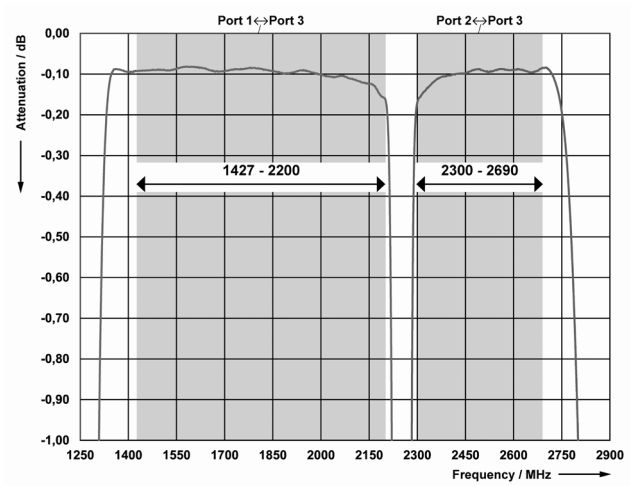
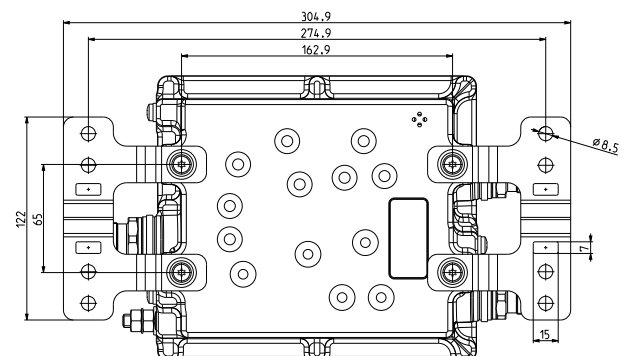
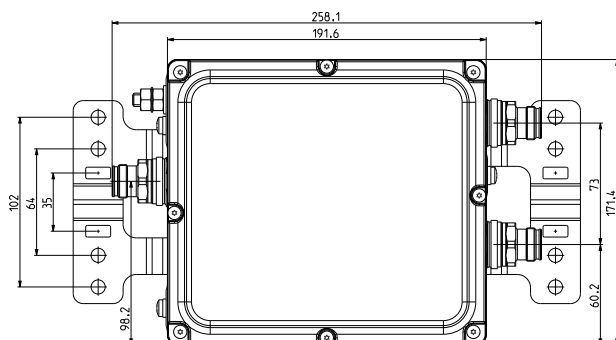
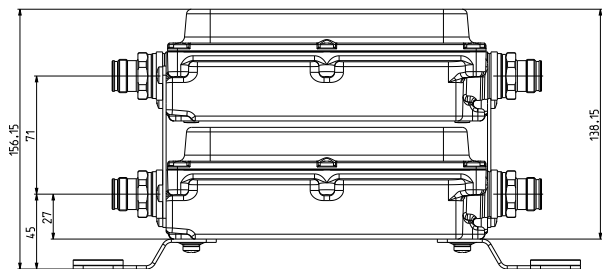


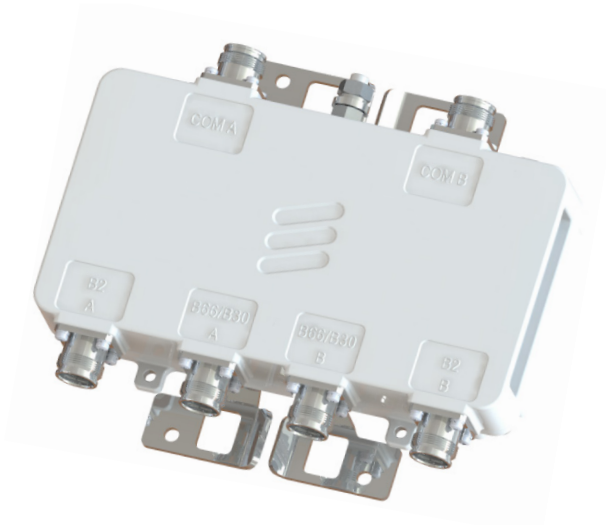
Diagram II



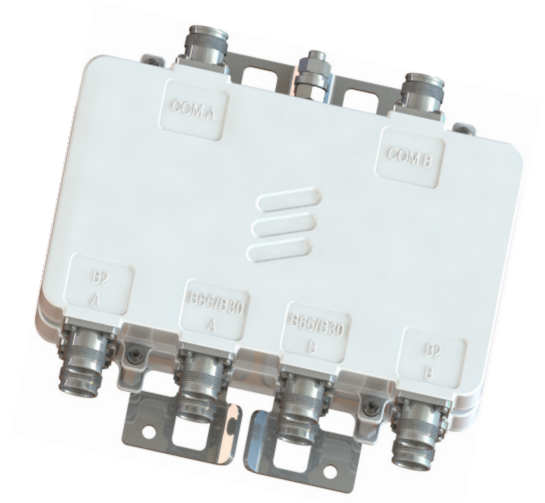
Dimensions in mm







4-2 Unit



8-4 Unit

# Dual-Band Combiner

KRF 102 409/1, KRF 102 409/2, KRF 102 409/3

1850–1995 MHz  
1695–1780 MHz, 2110–2360 MHz

- Suitable for MSS Radio Solution
- Excellent isolation performance
- Very low insertion loss
- Indoor and outdoor proof
- 4.3–10 connectors



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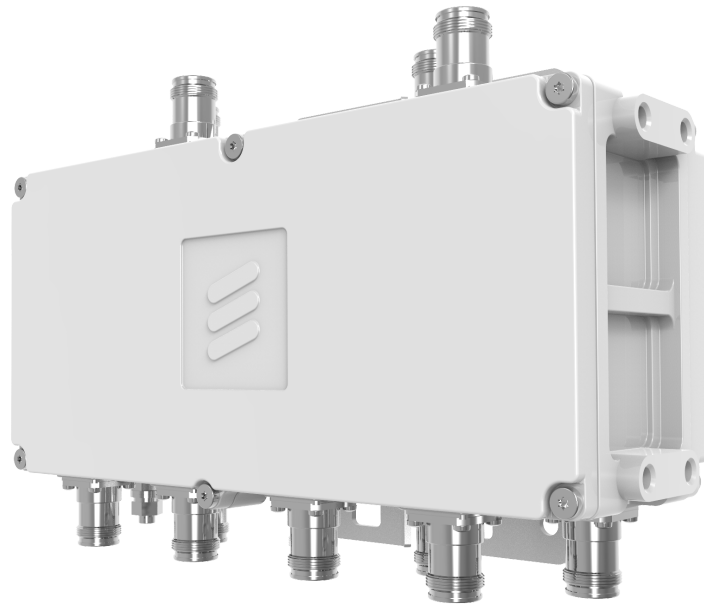


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Product No.		KRF 102 409/1 (4-2)	KRF 102 409/2 (8-4)	KRF 102 409/3 (4-2)
<b>Electrical Specifications**</b>				
Frequency range - B2/B25: - B66: - B66/B30:	MHz		1850 - 1995 1695 - 1780 2110 - 2360	
Insertion loss - B2/B25: - B66/B30:	dB		< 0.20* < 0.15*	
Return loss	dB		> 20	
Isolation	dB		> 40	
Power handling - Continuous power: - Peak power:	dBm		50 58	
DC configuration			Pass all	
<b>Mechanical Specifications</b>				
Dimensions (H × W × D)	mm	210 × 116 × 43 (excl. connectors)	210 × 116 × 90 (excl. connectors)	210 × 116 × 43 (excl. connectors)
Weight	kg	2.1	4.3	1.95
RF connectors		4.3-10 (f)	4.3-10 (f)	4.3-10 (f)
Mounting options		Pole or wall	Pole or wall	Brackets not included
<b>Environmental Specifications**</b>				
Temperature range, full performance	°C		-40 to +55	
MTBF			> 80 years	
IP class			IP67	
Lightning protection			5 kA 10/350 μs, 20 kA 8/20 μs (Common mode)	
Product safety			International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETL): CSA/UL 62368-1	

\* Typical values

\*\* Common values for all variants



8-4 Unit

# Dual-Band Combiner

KRF 102 407/2

2300–2400 MHz

2496–2690 MHz

- Easy and fast installation
- Low insertion loss
- Rail mounting is possible
- Wall mounting brackets and pole clamps are included (/2)
- Indoor and outdoor proof
- Can be used with both Ericsson and non-Ericsson RBSs



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<b>Product No.</b>		<b>KRF 102 407/2 (8-4) with bracket</b>
<b>Electrical Specifications</b>		
Frequency range - Low port: - High port:	MHz	2300 – 2400 2496 – 2690
Insertion loss - Low port: - High port:	dB	< 0.25 < 0.20
Return loss	dB	> 20
Isolation	dB	> 55
Intermodulation - IM3 at 2×43 dBm: - IM5 at 2×43 dBm:	dBm	< -106 < -121
Max power handling (continuous)	W	50 per port (100 W at COM port)
DC + AISG transparency - Maximum DC voltage - Maximum DC current	V A	40 3
DC configuration		Bypass
<b>Mechanical Specifications</b>		
Dimensions (H × W × D)	mm	95 × 285 × 134
Weight (approx.)	kg	5.6
Volume	L	3.6
RF connectors		4.3–10 (f)
Mounting alternatives		Rail, pole, or wall mounting (Rail bracket ordered separately)
Maximum wind load impact (at 50 m/s)	N	91
<b>Environmental Specifications</b>		
Temperature range, full performance	°C	-20 to +80
IP class		IP67
Lightning protection		5 kA 10/350 μs
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1



4-2 Unit

# Dual-Band Combiner

KRF 102 432/4

2540–2560 MHz, 2660–2680 MHz  
2600–2615 MHz

- High out of band refection
- Low insertion loss
- DC and AISG signaling by-pass
- Wall mounting brackets and pole clamps are included
- Rail mounting is possible

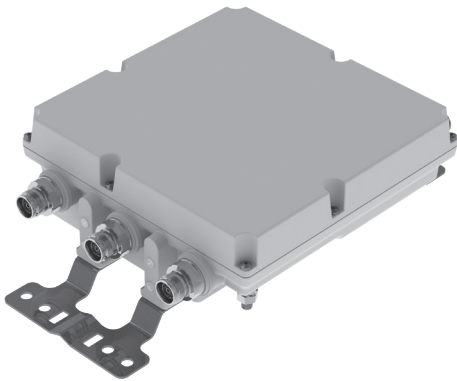


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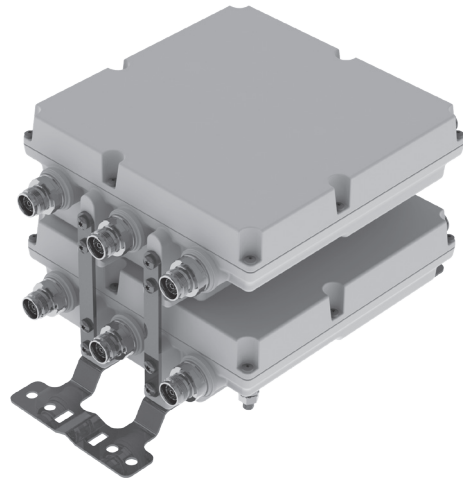


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<b>Product No.</b>		<b>KRF 102 432/4</b>	
<b>Product Name</b>		<b>DBC B7sub+B38sub (4-2)</b>	
<b>Electrical Specifications</b>			
Frequency range			
- Low port (B7 UL):	MHz		2540 – 2560
(B7 DL):			2660 – 2680
- High port (B38):			2600 – 2615
Insertion loss			
- Low port (B7 UL/DL):	dB		≤ 0.5
- High port:			≤ 0.5
Return loss	dB		> 20
Isolation	dB		> 50
Intermodulation IM3 at 2×43 dBm:	dBm		< -117
Power handling	W		250 (CW) max. per port
Maximum DC voltage:	V		40
Maximum DC current:	A		3
DC By-pass:			Bypass on all ports
<b>Mechanical Specifications</b>			
Dimensions (H × W × D)	mm		165 × 265 × 48
Weight	kg		3.5
RF connectors			4.3–10 (f)
Mounting options			Rail, pole, or wall mounting (Rail bracket ordered separately)
<b>Environmental Specifications</b>			
Temperature range, full performance			
- Operational:	°C		-40 to +55
- Non-destructive:			-40 to +70
IP class			IP67
Lightning protection			5 kA 10/350 μs, 20 kA μs (Common Mode)
Product safety			International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETL): CSA/UL 62368-1



3-1 Unit



6-2 Unit

# Triple-Band Combiner

78211820, 78211821

690–862 MHz  
880–960 MHz  
1427–3800 MHz

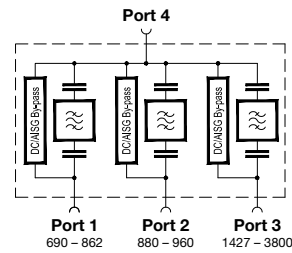
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 3-1 Unit or 6-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211820 (3-1)
		78211821 (6-2)
Pass band		
Band 1	MHz	690 – 862
Band 2	MHz	880 – 960
Band 3	MHz	1427 – 3800
Insertion loss		
Port 1 ↔ Port 4	dB	< 0.5 (690 – 862 MHz)
Port 2 ↔ Port 4	dB	< 0.5 (880 – 960 MHz)
Port 3 ↔ Port 4	dB	< 0.15 (1427 – 3800 MHz)
Isolation	dB	> 45
VSWR		< 1.25
Impedance	Ω	50
Input power		
Band 1 / Band 2 / Band 3	W	< 200 / < 200 / < 200 (1427 – 2700 MHz); < 100 (2700 – 3800 MHz)
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F	-40 ... +60   -40 ... +140
Connectors		4.3-10 female (long neck)
Application		Indoor or outdoor (IP 66)
DC/AISG transparency		
Port 1 ↔ Port 4	mA	By-pass (max. 2500)
Port 2 ↔ Port 4	mA	By-pass (max. 2500)
Port 3 ↔ Port 4	mA	By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With included clamp set
Weight	kg   lb	3-1 Unit: 5   11.0 6-2 Unit: 9.9   21.8
Packing size	mm   in	3-1 Unit: 405 x 295 x 170   15.95 x 11.61 x 6.69 6-2 Unit: 405 x 295 x 260   15.95 x 11.61 x 10.24
Dimensions (w x h x d)	mm   in	3-1 Unit: 222 x 222 x 86.5   8.7 x 8.7 x 3.4 6-2 Unit: 222 x 222 x 176   8.7 x 8.7 x 6.9 (without connectors, without mounting brackets)

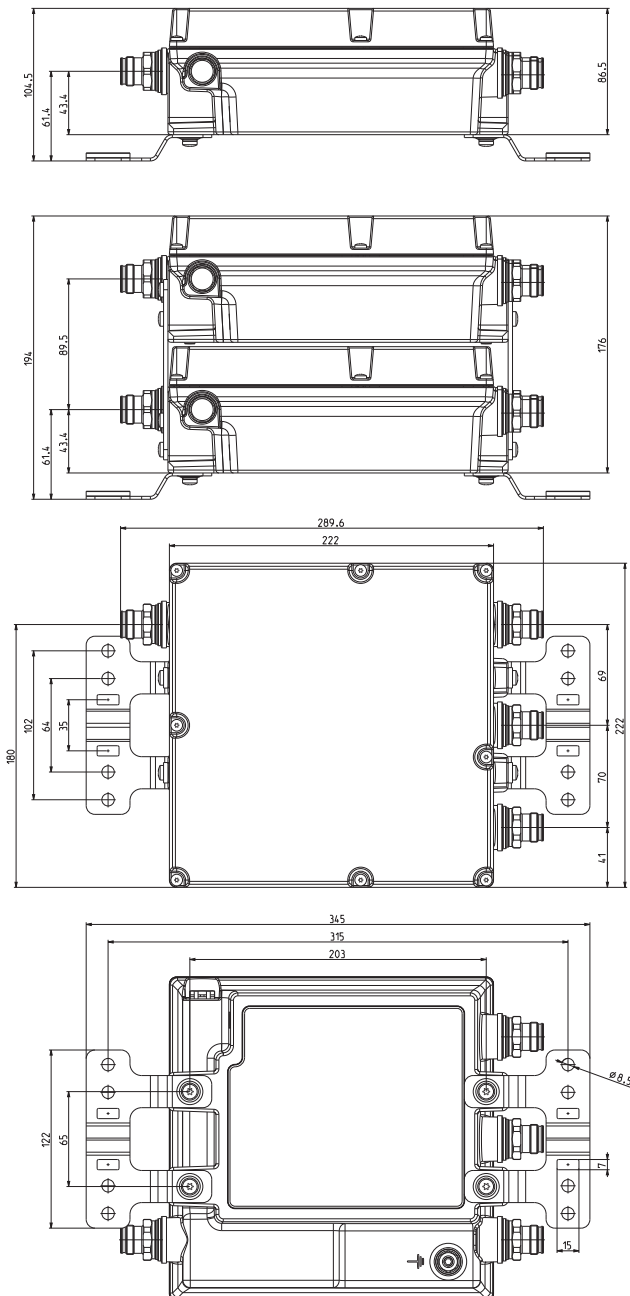


Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Dimensions in mm



Typical Attenuation Curves

Diagram I

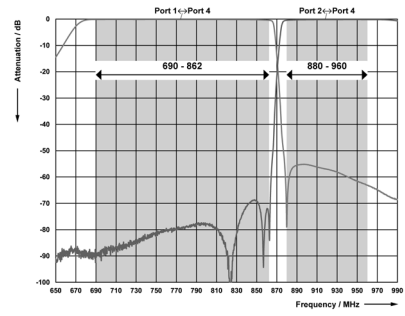


Diagram II

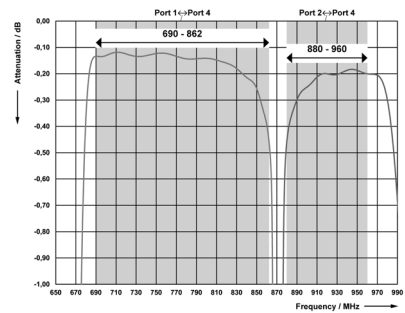


Diagram III

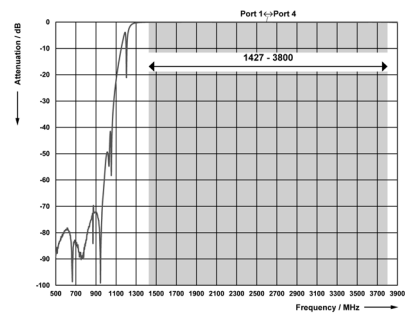
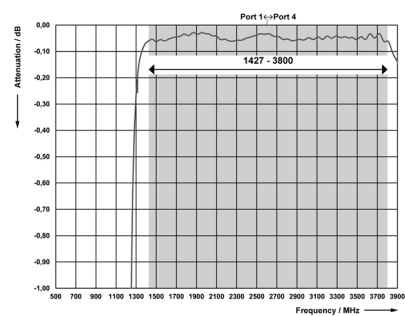
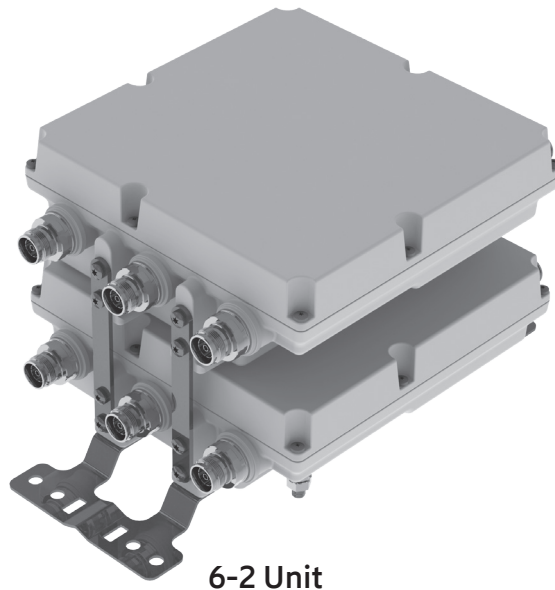


Diagram IV



AUTO-  
SENSE

6-2 Unit

# Triple-Band Combiner

78211828, 78211828V01

690–862 MHz  
880–960 MHz  
1427–3800 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 6-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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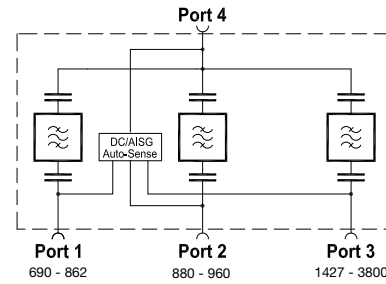


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**Priority table for 78211828V01 with Priority Controlled Function**

690–862 MHz	Priority 2
880–960 MHz	Priority 3 (lowest)
1427–3800 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211828 (6-2)	78211828V01 (6-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
Pass band			
Band 1	MHz	690 – 862	
Band 2	MHz	880 – 960	
Band 3	MHz	1427 – 3800	
Insertion loss			
Port 1 Port 4	dB	< 0.4 (690 – 852 MHz); < 0.6 (852 – 862 MHz)	
Port 2 Port 4	dB	< 0.6 (880 – 890 MHz); < 0.4 (890 – 960 MHz)	
Port 3 Port 4	dB	< 0.15 (1427 – 3800 MHz)	
Isolation			
Port 1 Port 2	dB	> 55 (690 – 862 MHz); > 50 (880 – 960 MHz)	
Port 1 Port 3	dB	> 65 (690 – 862 MHz); > 75 (1427 – 3800 MHz)	
Port 2 Port 3	dB	> 60 (880 – 960 MHz); > 75 (1427 – 3800 MHz)	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2 / Band 3	W	< 200 / < 200 / < 200 (1427 – 2700 MHz); < 100 (2700 – 3800 MHz)	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1, 2, 3 Port 4	mA	Auto-Sense (max. 2000)	
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With clamp set	
Weight	kg   lb	9.9   21.8	
Dimensions (w x h x d)	mm   in	222 x 222 176   8.7 x 8.7 x 6.9 (without connectors, without mounting brackets)	
Packing size	mm   in	405 x 295 x 260   16.0 x 11.6 x 10.3	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

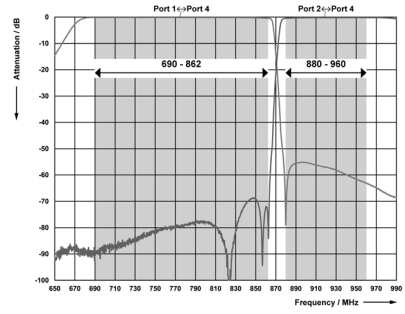
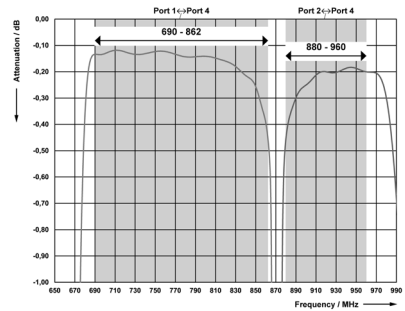


Diagram II



Dimensions

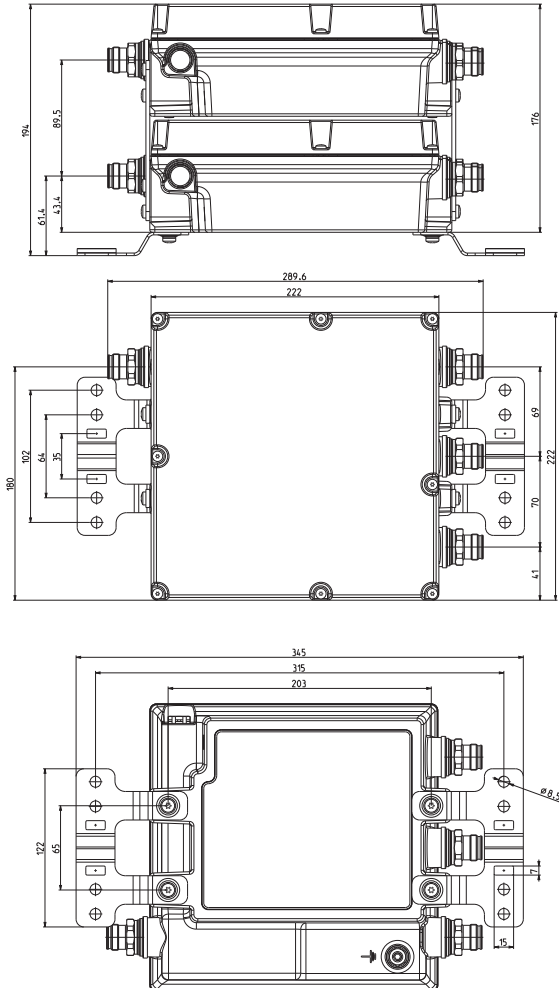


Diagram III

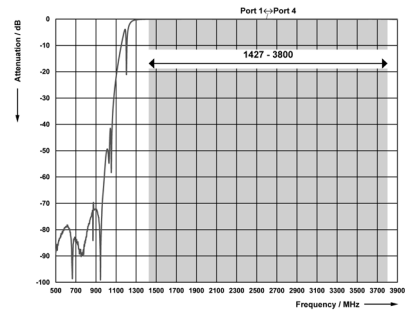
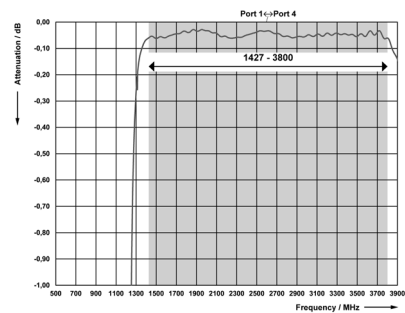
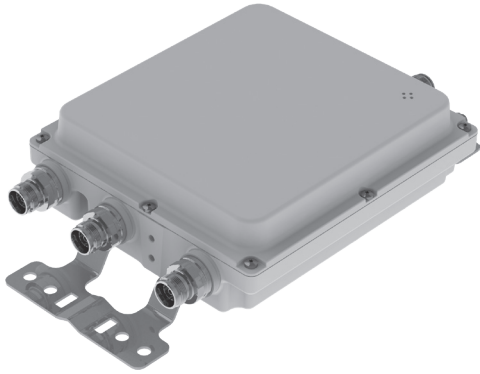
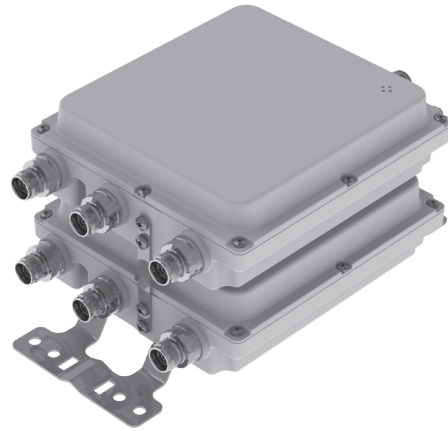


Diagram IV





3-1 Unit



6-2 Unit

# Triple-Band Combiner

78211450, 78211451,  
78211452, 78211453

380–960 MHz  
1427–2200 MHz  
2300–2690 MHz

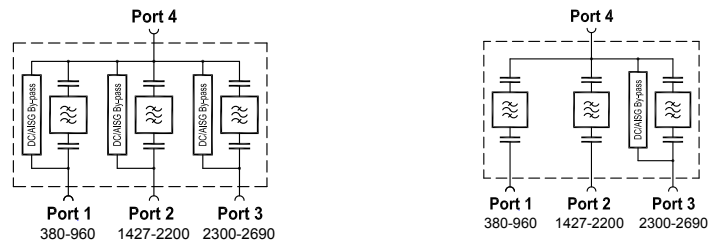
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 3-1 Unit or 6-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211450 (3-1)	clamps included	78211452 (3-1)
		78211451 (6-2)		78211453 (6-2)
Pass band				
Band 1	MHz	380 – 960		
Band 2	MHz	1427 – 2200		
Band 3	MHz	2300 – 2690		
Insertion loss				
Port 1 ↔ Port 4	dB	< 0.2 (380 – 960 MHz)		
Port 2 ↔ Port 4	dB	< 0.2 (1427 – 2200 MHz)		
Port 3 ↔ Port 4	dB	< 0.2 (2300 – 2690 MHz)		
Isolation	dB	> 50		
VSWR		< 1.25		
Impedance	Ω	50		
Input power				
Band 1 / Band 2 / Band 3	W	< 300 / < 200 / < 200		
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W), exempt from TETRA 360 – 470 MHz: < -150		
Temperature range	°C   °F	-40 ... +60   -40 ... +140		
Connectors		4.3-10 female		
Application		Indoor or outdoor (IP 66)		
DC/AISG transparency				
Port 1 ↔ Port 4	mA	By-pass (max. 2500)		Stop
Port 2 ↔ Port 4	mA	By-pass (max. 2500)		Stop
Port 3 ↔ Port 4	mA	By-pass (max. 2500)		By-pass (max. 2500)
Lightning protection	kA	3, 10/350 μs pulse		
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With included clamp set		
Weight	kg   lb	3-1 Unit: 3.5   7.7 6-2 Unit: 6.9   15.2		
Dimensions (w x h x d)	mm   in	3-1 Unit: 215 x 197 x 68   8.5 x 7.8 x 2.7 6-2 Unit: 215 x 197 x 139   8.5 x 7.8 x 5.5 (without connectors, inclusive mounting brackets)		
Packing size	mm   in	3-1 Unit: 392 x 272 x 165   15.4 x 10.7 x 6.5 6-2 Unit: 392 x 272 x 240   15.4 x 10.7 x 9.5		

**Accessories (included in the scope of supply)**

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

**Accessories (order separately if required)**

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

Diagram I

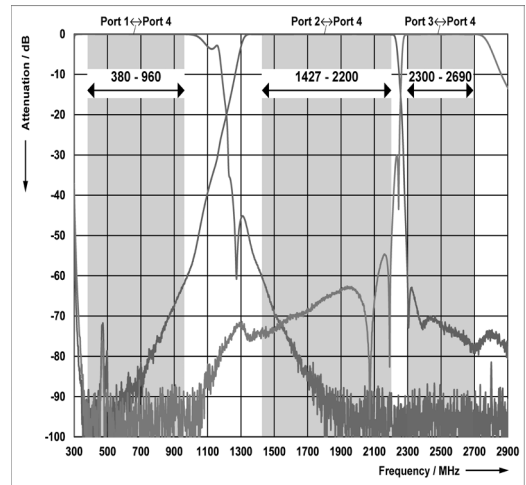
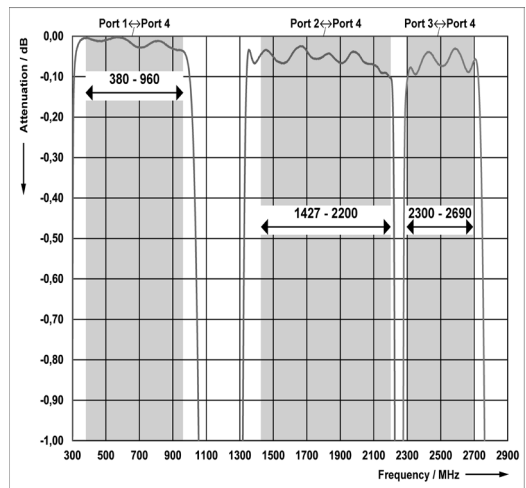
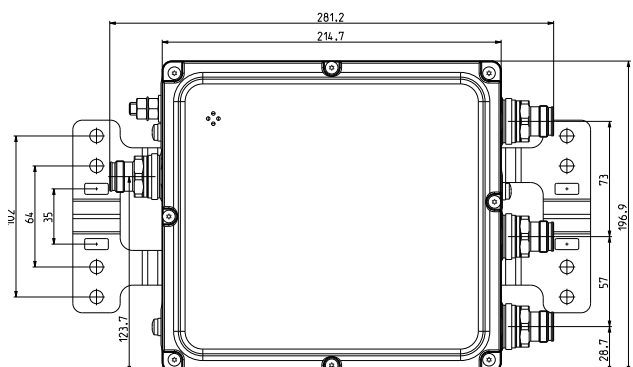
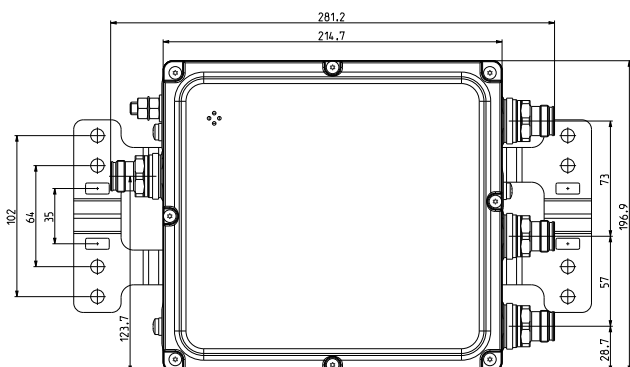
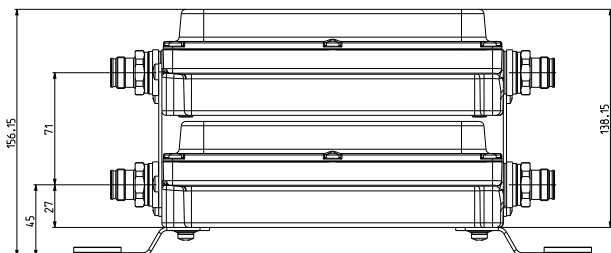
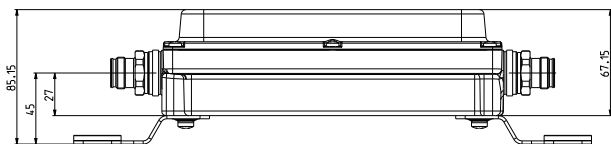
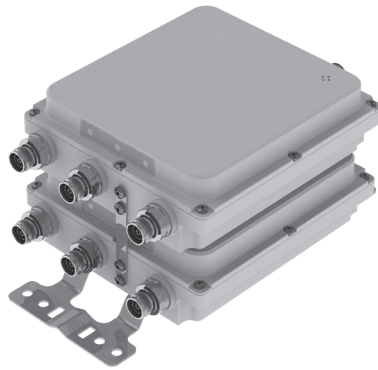


Diagram II



**Dimensions in mm**



AUTO-  
SENSE

6-2 Unit

# Triple-Band Combiner

78211458, 78211458V01

380–960 MHz  
1427–2200 MHz  
2300–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 6-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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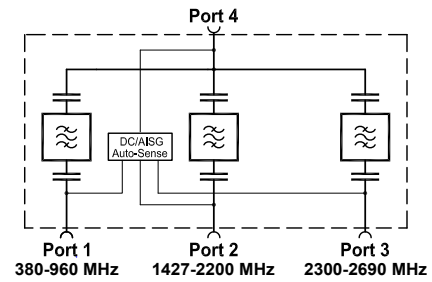
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**Priority table for 78211458V01 with Priority Controlled Function**

380–960 MHz	Priority 2
1427–2200 MHz	Priority 3 (lowest)
2300–2690 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211458 (6-2)	clamps included	78211458V01 (6-2)
DC/AISG transparency		First In - First Out Function		Priority Controlled Function
Pass band				
Band 1	MHz		380 – 960	
Band 2	MHz		1427 – 2200	
Band 3	MHz		2300 – 2690	
Insertion loss				
Port 1 Port 4	dB		< 0.2 (380 – 960 MHz)	
Port 2 Port 4	dB		< 0.2 (1427 – 2200 MHz)	
Port 3 Port 4	dB		< 0.2 (2300 – 2690 MHz)	
Isolation	dB		> 50	
VSWR			< 1.25	
Impedance	Ω		50	
Input power				
Band 1 / Band 2 / Band 3	W		< 300 / < 200 / < 200	
Intermodulation products	dBc		< -160 (3 <sup>rd</sup> order; with 2 x 20 W), exempt from TETRA 360 – 470 MHz: < -150	
Temperature range	°C   °F		-40 ... +60   -40 ... +140	
Connectors			4.3-10 female	
Application			Indoor or outdoor (IP 66)	
DC/AISG transparency				
Port 1, 2, 3 ↔ Port 4	mA		Auto-Sense (max. 2000)	
Lightning protection	kA		3, 10/350 μs pulse	
Mounting	mm   in		Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With included clamp set	
Weight	kg   lb		7.2   15.9	
Dimensions (w x h x d)	mm   in		215 x 197 x 139   8.5 x 7.8 x 5.5 (without connectors, without mounting brackets)	
Packing Size	mm   in		392 x 272 x 240   15.4 x 10.7 x 9.4	

**Accessories (included in the scope of supply)**

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

**Accessories (order separately if required)**

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

Diagram I

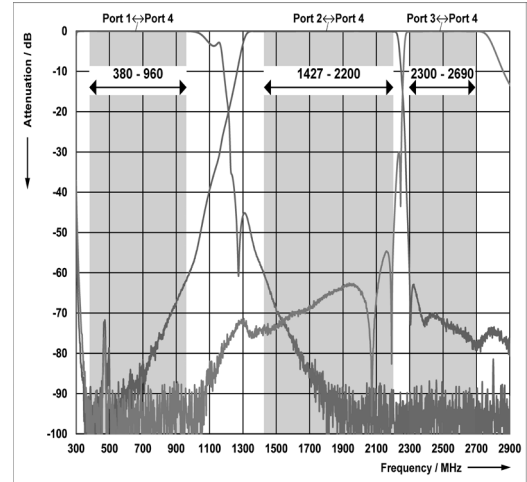
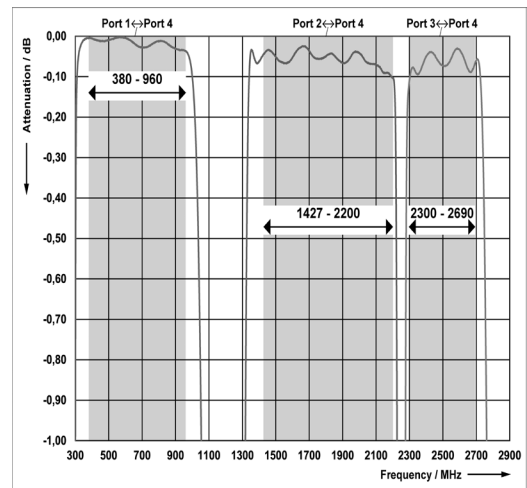
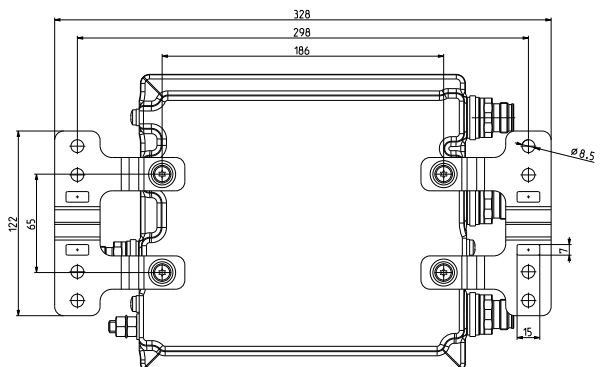
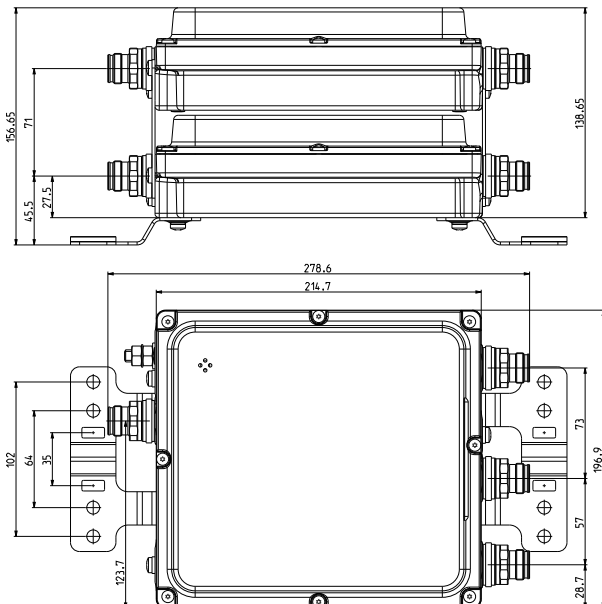
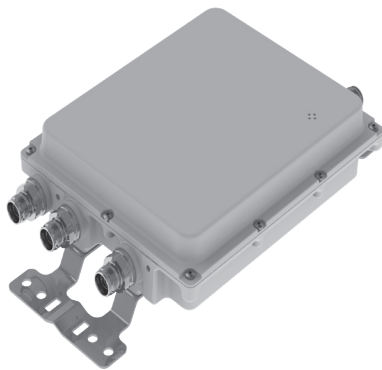


Diagram II

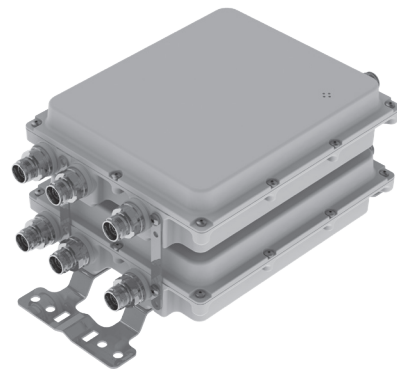


**Dimensions**





3-1 Unit



6-2 Unit

# Triple-Band Combiner

78211560, 78211561,  
78211562, 78211563

380–960 MHz  
1427–1880 MHz  
1920–2690 MHz

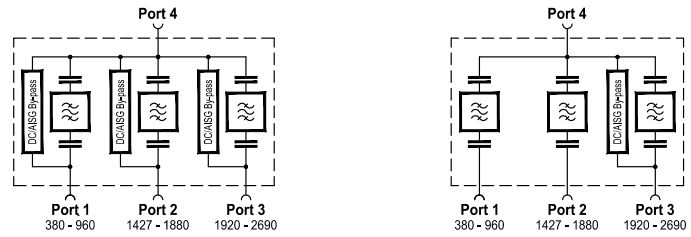
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 3-1 Unit or 6-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211560 (3-1)		78211562 (3-1)	
		78211561 (6-2)		78211563 (6-2)	
Pass band					
Band 1	MHz	380 – 960			
Band 2	MHz	1427 – 1880			
Band 3	MHz	1920 – 2690			
Insertion loss					
Port 1 Port 4	dB	< 0.2 (380 – 960 MHz)			
Port 2 Port 4	dB	< 0.3 (1427 – 1880 MHz)			
Port 3 Port 4	dB	< 0.35 (1920 – 2690 MHz)			
Isolation	dB	> 40			
VSWR		< 1.25			
Impedance	Ω	50			
Input power					
Band 1 / Band 2 / Band 3	W	< 200 / < 200 / < 200			
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order with 2 x 20 ), exempt from TETRA 360 – 470 MHz < -150 < -160 (1427 – 2690 MHz, 3 <sup>rd</sup> order; with 2 x 20 W)			
Temperature range	°C   °F	-40 ... +60   -40 ... +140			
Connectors		4.3-10 female			
Application		Indoor or outdoor (IP 66)			
DC/AISG transparency					
Port 1 Port 4	mA	By-pass (max. 2500)		Stop	
Port 2 Port 4	mA	By-pass (max. 2500)		Stop	
Port 3 Port 4	mA	By-pass (max. 2500)		By-pass (max. 2500)	
Lightning protection	kA	3, 10/350 μs pulse			
Mounting	mm   in	Wall mounting ith 4 screws (max. 8   0.315 diameter) Pole mounting ith clamp set			
Weight	kg   lb	3-1 nit 3.6   7.1 6-2 nit 7.0   15.4			
Dimensions (w x h x d)	mm   in	3-1 nit 251 x 211 x 68   9.9 x 8.3 x 2.7 6-2 nit 251 x 211 x 139   9.9 x 8.3 x 5.5 (without connectors, without mounting brackets)			
Packing size	mm   in	3-1 nit 439 x 289 x 160   17.3 x 11.4 x 6.3 6-2 nit 439 x 289 x 230   17.3 x 11.4 x 9.1			

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

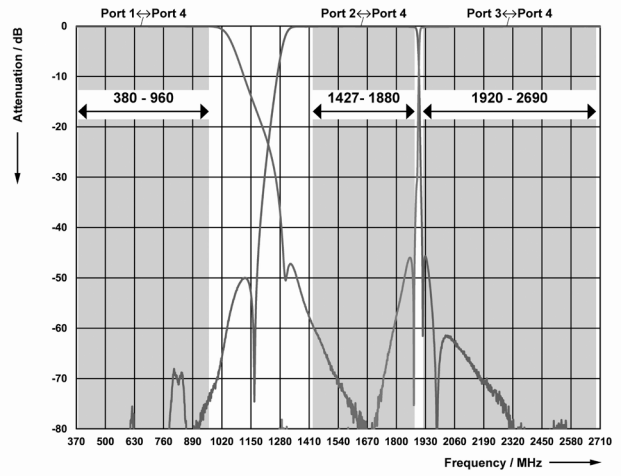
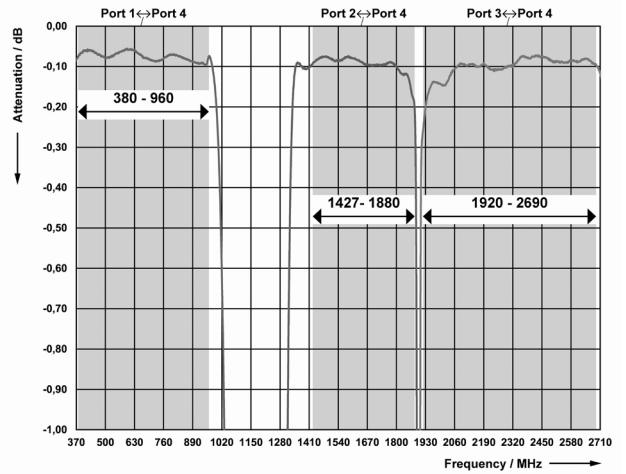
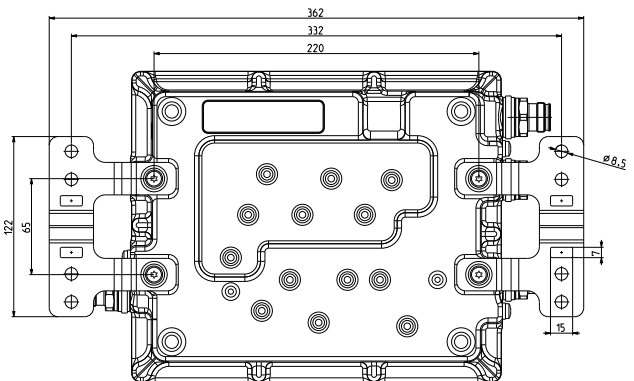
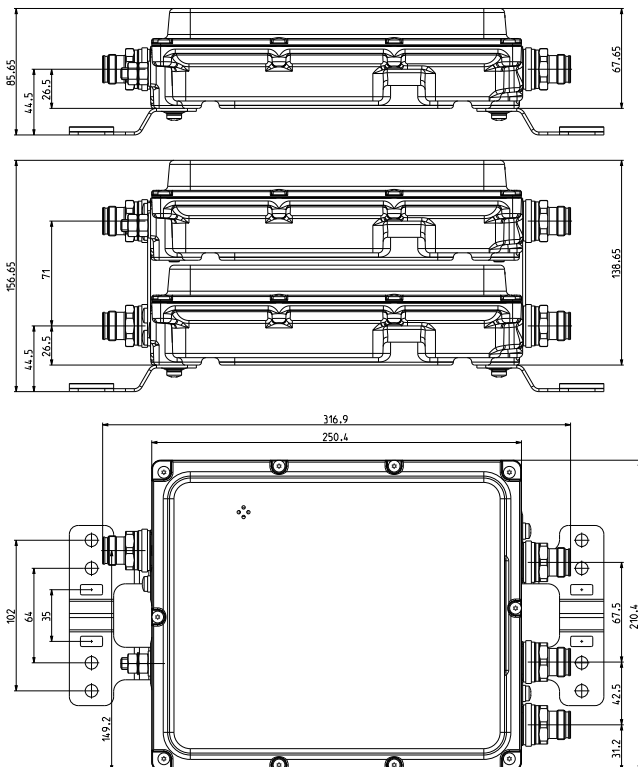
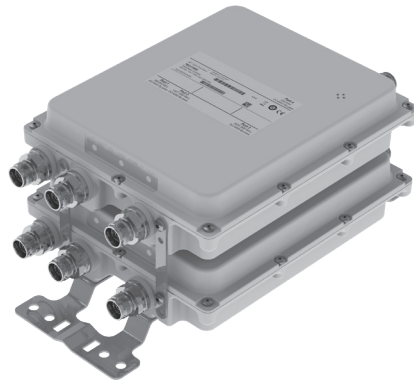


Diagram II



Dimensions in mm



AUTO-  
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6-2 Unit

# Triple-Band Combiner

78211568, 78211568V01

380–960 MHz  
1427–1880 MHz  
1920–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 6-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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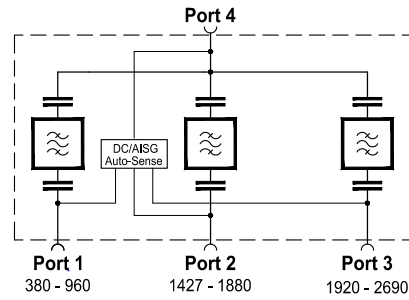


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## Priority table for 78211568V01 with Priority Controlled Function

380–960 MHz	Priority 2
1427–1880 MHz	Priority 3 (lowest)
1920–2690 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211568 (6-2)	78211568V01 (6-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
Pass band			
Band 1	MHz	380 – 960	
Band 2	MHz	1427 – 1880	
Band 3	MHz	1920 – 2690	
Insertion loss			
Port 1 Port 4	dB	< 0.2 (380 – 960 MHz)	
Port 2 Port 4	dB	< 0.3 (1427 – 1880 MHz)	
Port 3 Port 4	dB	< 0.35 (1920 – 2690 MHz)	
Isolation	dB	> 40	
VSWR		< 1.25	
Impedance	Ω	50	
Input power	W		
Band 1 / Band 2 / Band 3		< 200 / < 200 / < 200	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order with 2 x 20 ), exempt from TETRA 360 – 470 MH	< -150
Temperature range	°C   °F	-40 ... +60	-40 ... +140
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1, 2, 3 Port 4	mA	Auto-Sense (max. 2000)	
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting with 4 screws (max. 8   0.315 diameter) Pole mounting with additional clamp set	
Weight	kg   lb	7.1   15.7	
Dimensions (w x h x d)	mm   in	251 x 211 x 139   9.9 x 8.3 x 5.5 (without connectors, without mounting brackets)	
Packing size	mm   in	439 x 289 x 230   17.3 x 11.4 x 9.1	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

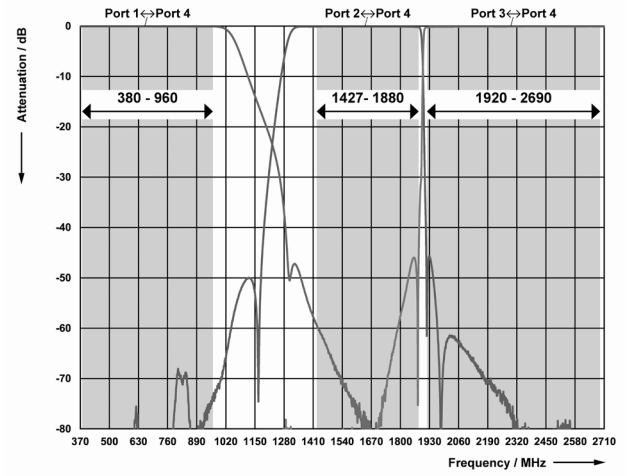
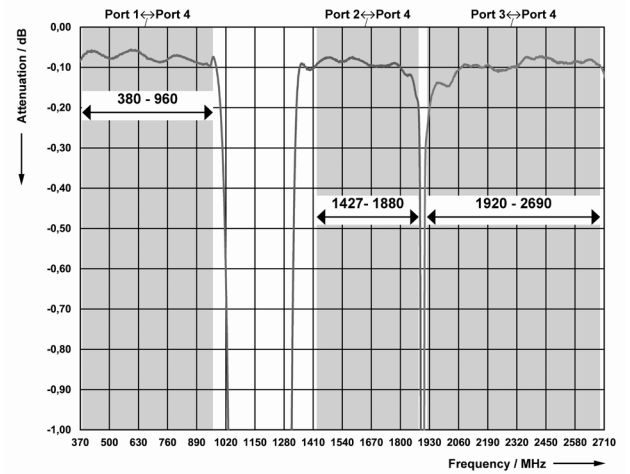
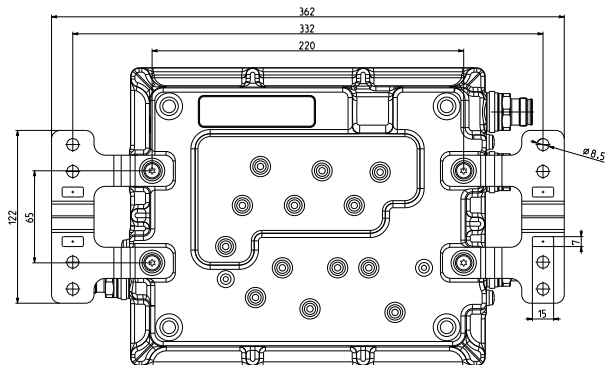
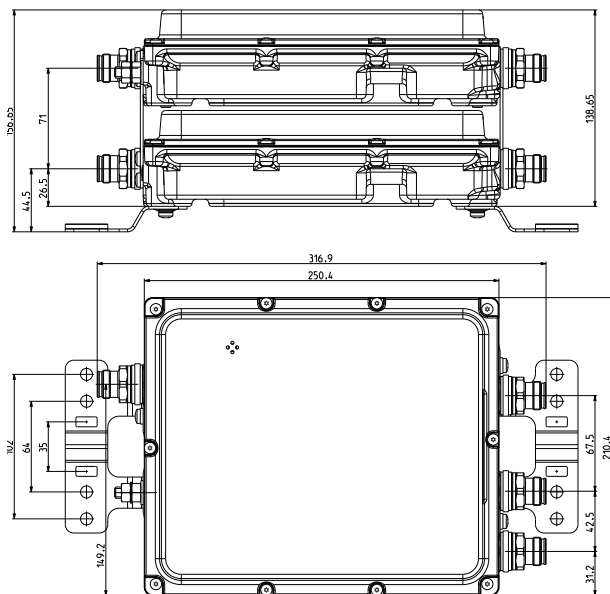


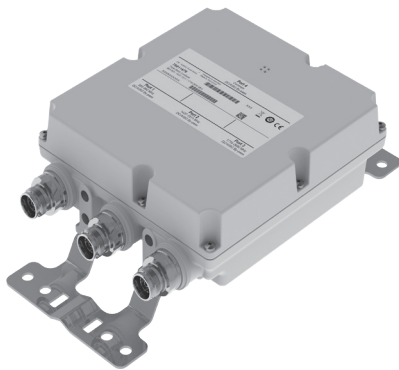
Diagram II



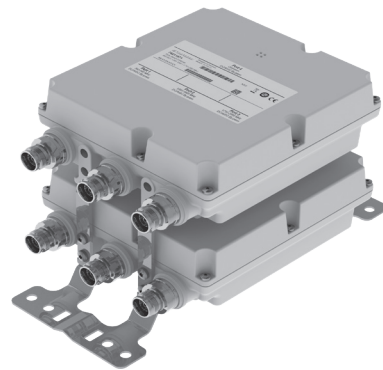
Dimensions







3-1 Unit



6-2 Unit

# Triple-Band Combiner

78211570, 78211571,  
78211574, 78211575

380–960 MHz  
1427–1518 MHz  
1710–2690 MHz

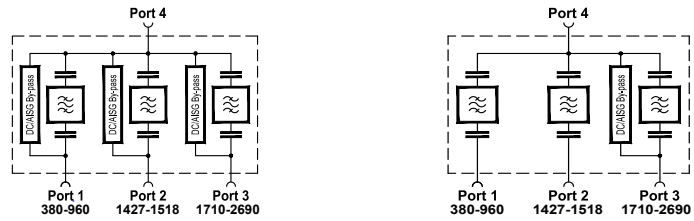
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 3-1 Unit or 6-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211570 (3-1)		78211574 (3-1)		
		78211571 (6-2)		78211575 (6-2)		
Pass band						
Band 1	MHz	380 – 960				
Band 2	MHz	1427 – 1518				
Band 3	MHz	1710 – 2690				
Insertion loss						
Port 1 Port 4	dB	< 0.2 (380 – 960 MHz)				
Port 2 Port 4	dB	< 0.2 (1427 – 1518 MHz)				
Port 3 Port 4	dB	< 0.3 (1710 – 2690 MHz)				
Isolation	dB	> 40				
VSWR		< 1.25				
Impedance	Ω	50				
Input power						
Band 1 / Band 2 / Band 3	W	< 200 / < 200 / < 200				
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)				
Temperature range	°C   °F	-40 ... +60   -40 ... +140				
Connectors		4.3-10 female				
Application		Indoor or outdoor (IP 66)				
DC/AISG transparency						
Port 1 Port 4	mA	By-pass (max. 2500)		Stop		
Port 2 Port 4	mA	By-pass (max. 2500)		Stop		
Port 3 Port 4	mA	By-pass (max. 2500)		By-pass (max. 2500)		
Lightning protection	kA	3, 10/350 μs pulse				
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With included clamp set				
Weight	kg   lb	3-1 Unit: 3.2   7.1 6-2 Unit: 6.3   13.9				
Dimensions (w x h x d)	mm   in	3-1 Unit: 190 x 176 x 77   7.5 x 6.9 x 3.0 6-2 Unit: 190 x 176 x 161   7.5 x 6.9 x 6.3 (without connectors, without mounting brackets)				
Packing size	mm   in	3-1 Unit: 375 x 245 x 160   14.8 x 9.7 x 6.3 6-2 Unit: 375 x 245 x 245   14.8 x 9.7 x 9.7				

**Accessories (included in the scope of supply)**

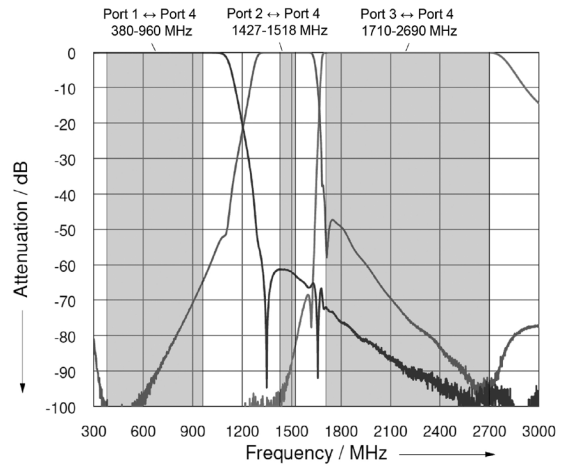
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

**Accessories (order separately if required)**

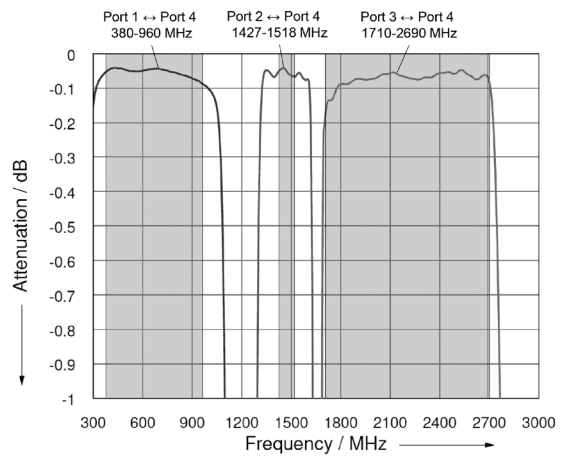
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

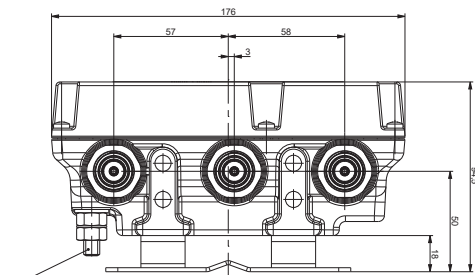
**Diagram I**



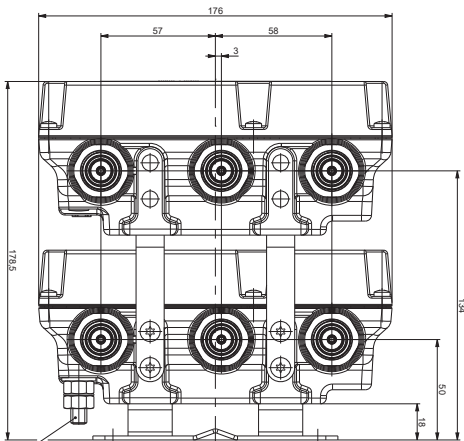
**Diagram II**



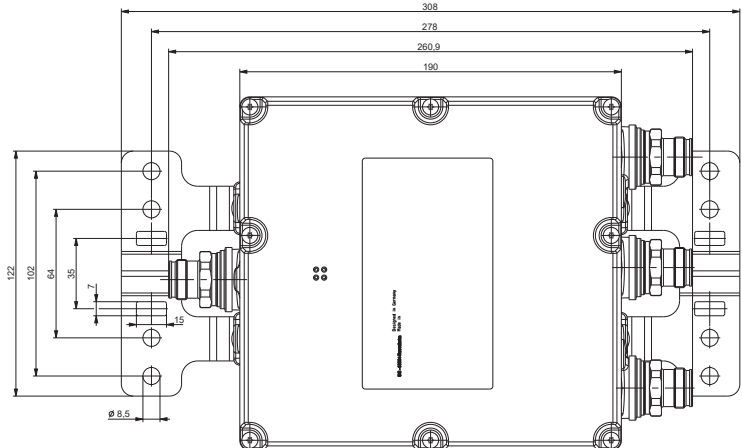
**Dimensions in mm**

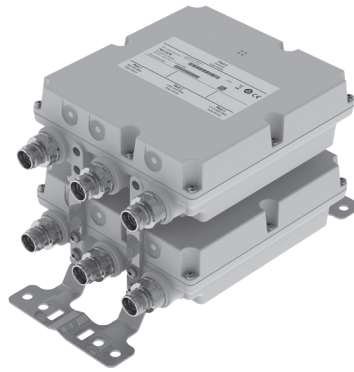


Erdungsschraube M8  
Grounding screw M8



Erdungsschraube M8  
Grounding screw M8



AUTO-  
SENSE

6-2 Unit

# Triple-Band Combiner

78211578, 78211578V01

380–960 MHz  
1427–1518 MHz  
1710–2690 MHz

- Can be used as a combiner near the BRS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 6-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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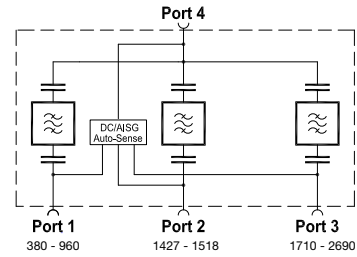


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**Priority table for 78211578V01 with Priority Controlled Function**

380–960 MHz	Priority 1 (highest)
1427–1518 MHz	Priority 3 (lowest)
1710–2690 MHz	Priority 2

For more information see Auto-Sense quick guide later in this datasheet.



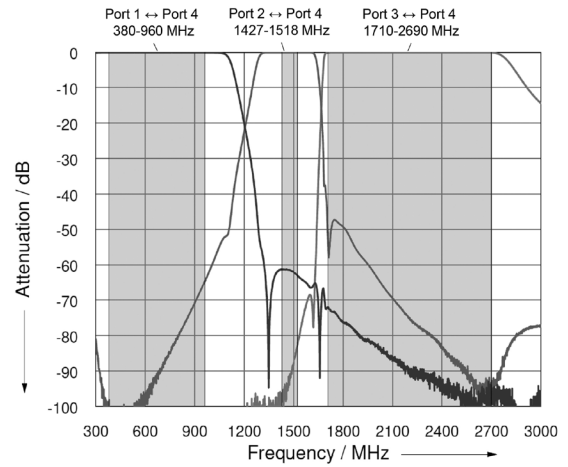
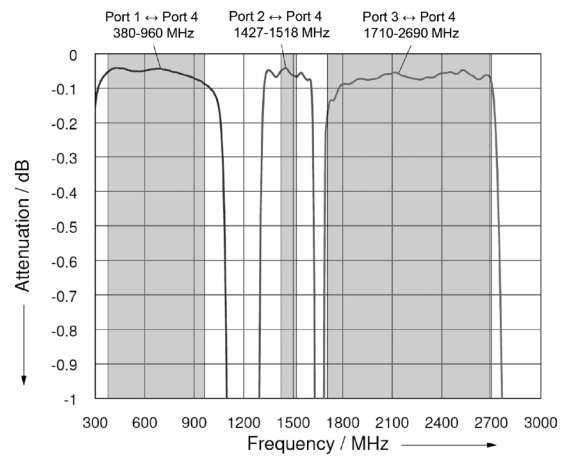
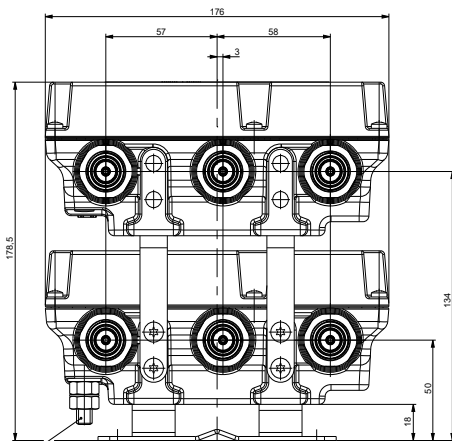
Product No.	78211578 (6-2)		clamps included	78211578V01 (6-2)
DC/AISG transparency	First In - First Out Function			Priority Controlled Function
Pass band				
Band 1	MHz			380 – 960
Band 2	MHz			1427 – 1518
Band 3	MHz			1710 – 2690
Insertion loss				
Port 1 Port 4	dB			< 0.2 (380 – 960 MHz)
Port 2 Port 4	dB			< 0.2 (1427 – 1518 MHz)
Port 3 Port 4	dB			< 0.3 (1710 – 2690 MHz)
Isolation	dB			> 40
VSWR				< 1.25
Impedance	Ω			50
Input power				
Band 1 / Band 2 / Band 3	W			< 200 / < 200 / < 200
Intermodulation products	dBc			< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F			-40 ... +60   -40 ... +140
Connectors				4.3-10 female
Application				Indoor or outdoor (IP 66)
DC/AISG transparency				
Port 1, 2, 3 Port 4	mA			Auto-Sense (max. 2000)
Lightning protection	kA			3, 10/350 μs pulse
Mounting	mm   in			Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With included clamp set
Weight	kg   lb			6.3   13.9
Dimensions (w x h x d)	mm   in			190 x 176 x 161   7.5 x 6.9 x 6.3 (without connectors, without mounting brackets)
Packing size	mm   in			375 x 245 x 245   14.8 x 9.7 x 9.7

**Accessories (included in the scope of supply)**

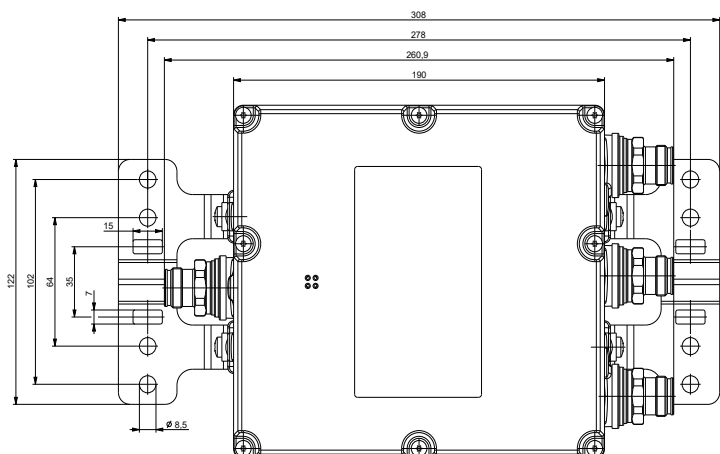
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

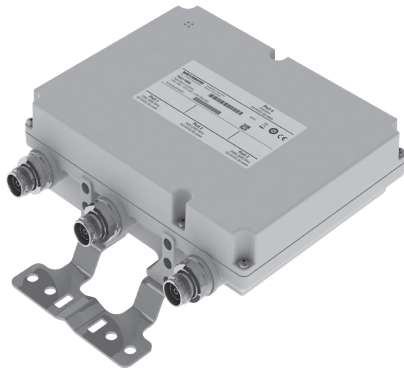
**Accessories (order separately if required)**

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

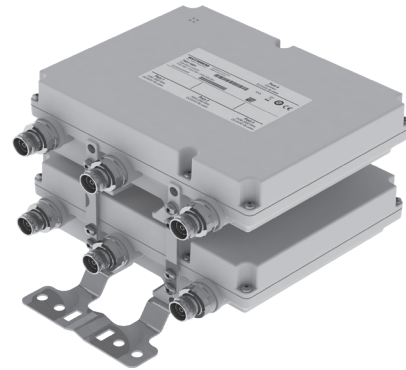
**Typical Attenuation Curves****Diagram I****Diagram II****Dimensions**

Erdungsschraube M8  
Grounding screw M8





3-1 Unit



6-2 Unit

# Triple-Band Combiner

78211690, 78211691

1427–1880 MHz  
1920–2360 MHz  
2496–2690 MHz

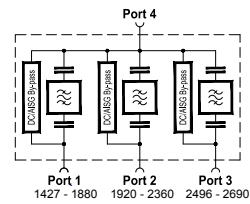
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality.
- Available as 3-1 Unit or 6-2 Unit
- Suitable for indoor or outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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<b>Product No.</b>		<b>78211690 (3-1)</b>
		<b>78211691 (6-2)</b>
<b>Pass band</b>		
Band 1 (GSM/LTE1800)	MHz	1427 – 1880
Band 2 (UMTS2100)	MHz	1920 – 2360
Band 3 (2300 ... LTE2600)	MHz	2496 – 2690
<b>Insertion loss</b>		
Port 1 Port 4	dB	< 0.5 (typ. 0.2 dB)
Port 2 Port 4	dB	< 0.5 (typ. 0.2 dB)
Port 3 Port 4	dB	< 0.5 (typ. 0.2 dB)
<b>Isolation</b>		
Port 1 Port 2	dB	> 45 (1427 – 1880 / 1920 – 2360 MHz)
Port 1 Port 3	dB	> 45 (1427 – 1880 / 2496 – 2690 MHz)
Port 2 Port 3	dB	> 45 (1920 – 2360 / 2496 – 2690 MHz)
<b>VSWR</b>		< 1.25
<b>Impedance</b>	Ω	50
<b>Input power</b> Band 1 / Band 2 / Band 3	W	< 150 / < 150 / < 150
<b>Intermodulation products</b>	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
<b>Temperature range</b>	°C   °F	-40 ... +60 -40 ... +140
<b>Connectors</b>		4.3-10 female
<b>Application</b>		Indoor or outdoor (IP 66)
<b>DC/AISG transparency</b>		
Port 1 Port 4	mA	By-pass (max. 2500)
Port 2 Port 4	mA	By-pass (max. 2500)
Port 3 Port 4	mA	By-pass (max. 2500)
<b>Lightning protection</b>	kA	3, 10/350 μs pulse
<b>Mounting</b>		Wall mounting: With 4 screws (max. 8 mm diameter) Pole mounting: With additional clamp set
<b>Weight</b>	kg   lb	3-1 Unit: 3.0   6.6 6-2 Unit: 6.0   13.2
<b>Dimensions (w x h x d)</b>	mm   in	3-1 Unit: 225 x 176 x 75   8.9 x 6.9 x 3.0 6-2 Unit: 225 x 176 x 156   8.9 x 6.9 x 6.1 (without connectors, without mounting brackets)
<b>Packing size</b>	mm   in	3-1 Unit: 367 x 289 x 152   14.4 x 11.4 x 6.0 6-2 Unit: 367 x 289 x 233   14.4 x 11.4 x 9.2



Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

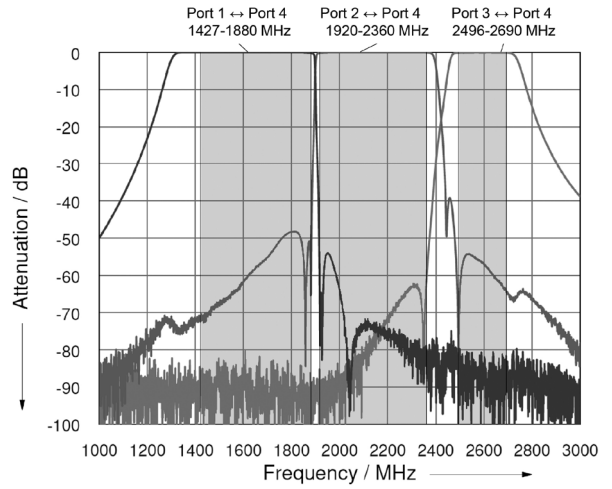
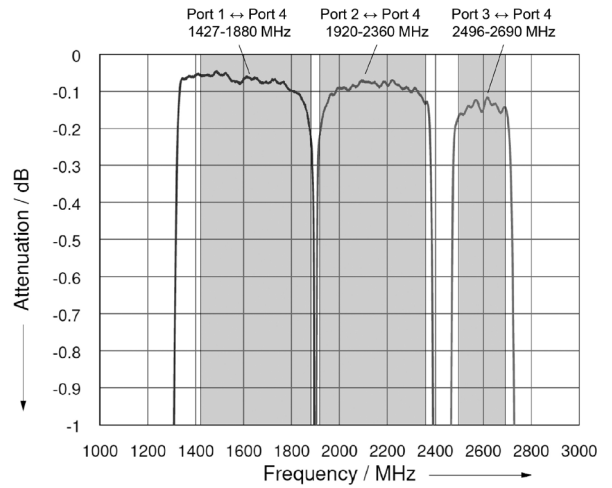
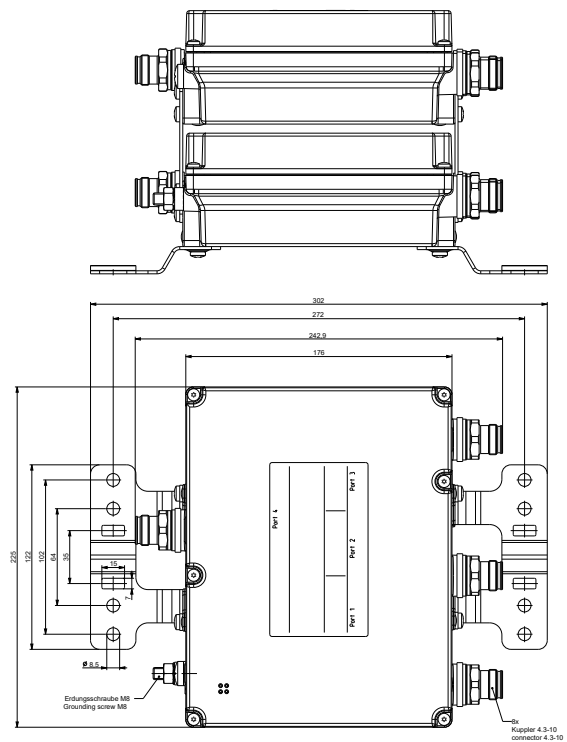
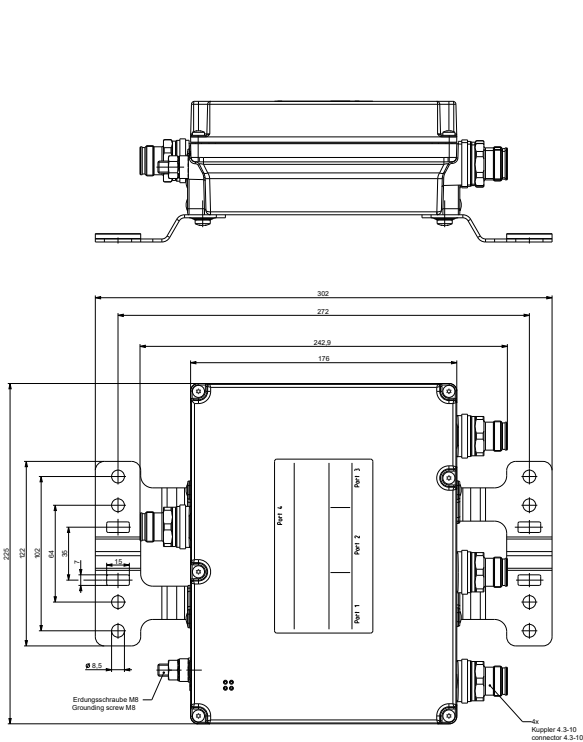
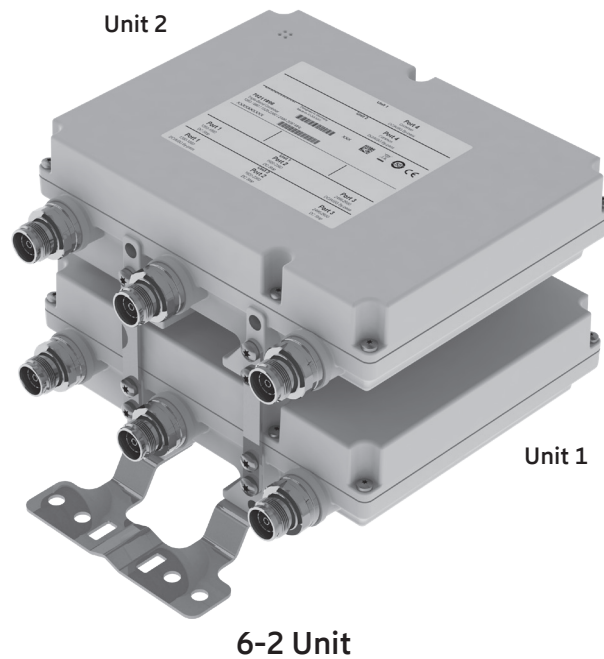


Diagram II



Dimensions in mm





# Triple-Band Combiner

78211696

1427–1880 MHz  
1920–2360 MHz  
2496–2690 MHz

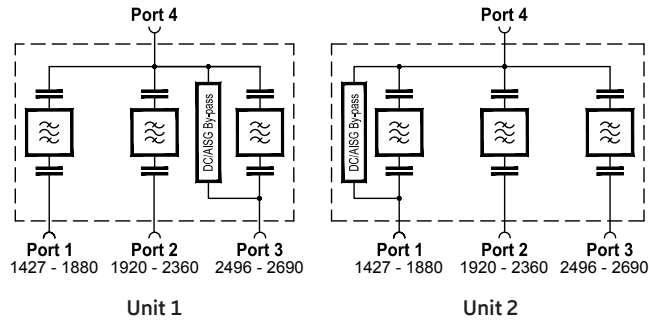
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211696 (6-2)	
Pass band			
Band 1 (GSM/LTE1800)	MHz	1427 – 1880	
Band 2 (UMTS2100)	MHz	1920 – 2360	
Band 3 (2300 ... LTE2600)	MHz	2496 – 2690	
Insertion loss			
Port 1 Port 4	dB	< 0.5 (typ. 0.2 dB)	
Port 2 Port 4	dB	< 0.5 (typ. 0.2 dB)	
Port 3 Port 4	dB	< 0.5 (typ. 0.2 dB)	
Isolation			
Port 1 Port 2	dB	> 45 (1427 – 1880 / 1920 – 2360 MHz)	
Port 1 Port 3	dB	> 45 (1427 – 1880 / 2496 – 2690 MHz)	
Port 2 Port 3	dB	> 45 (1920 – 2360 / 2496 – 2690 MHz)	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2 / Band 3	W	< 150 / < 150 / < 150	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60 -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 Port 4	mA	Unit 1	Unit 2
Port 2 Port 4	mA	Stop	By-pass (max. 2500)
Port 3 Port 4	mA	Stop	Stop
Lightning protection		3, 10/350 μs pulse	
Mounting		Wall mounting: With 4 screws (max. 8 mm diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	6.0   13.2	
Packing size	mm   in	367 x 289 x 233   14.4 x 11.4 x 9.2	
Dimensions (w x h x d)	mm   in	225 x 176 x 156   8.9 x 6.9 x 6.1 (without connectors, without mounting brackets)	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

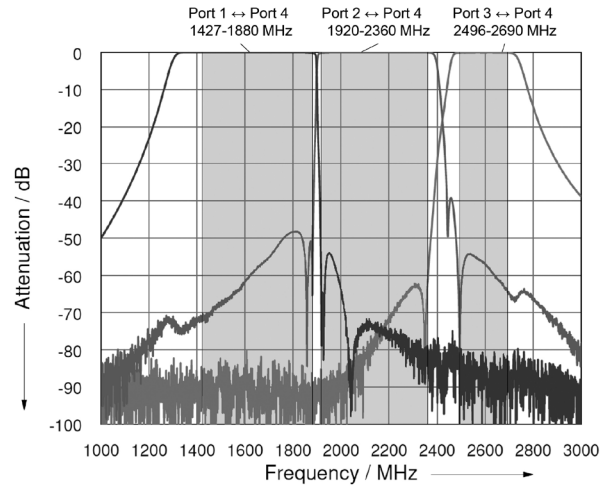
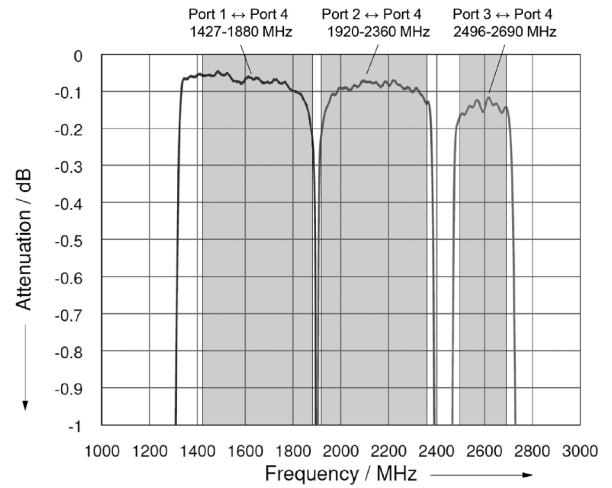
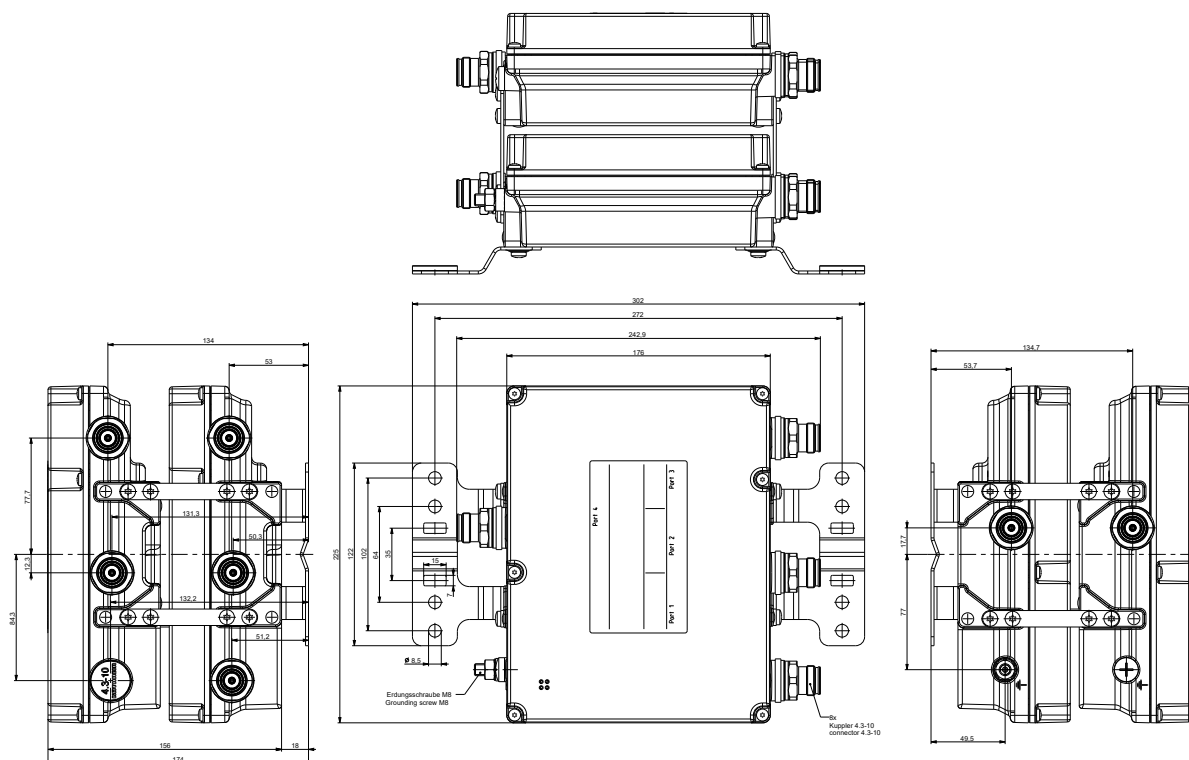
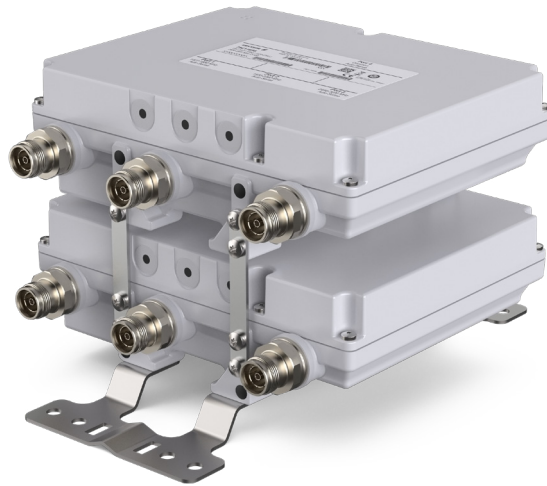


Diagram II



Dimensions in mm



AUTO-  
SENSE

6-2 Unit

# Triple-Band Combiner

78211698, 78211698V01

1427–1880 MHz  
1920–2360 MHz  
2496–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 6-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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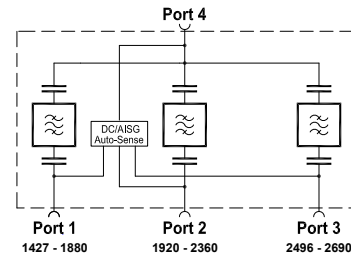


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**Priority table for 78211698V01 with Priority Controlled Function**

1427–1880 MHz	Priority 3 (lowest)
1920–2360 MHz	Priority 2
2496–2690 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.	78211698 (6-2)		78211698V01 (6-2)	
DC/AISG transparency	First In - First Out Function		Priority Controlled Function	
Pass band				
Band 1	MHz		1427 – 1880	
Band 2	MHz		1920 – 2360	
Band 3	MHz		2496 – 2690	
Insertion loss				
Port 1 Port 4	dB		< 0.5 (typ. 0.2 dB)	
Port 2 Port 4	dB		< 0.5 (typ. 0.2 dB)	
Port 3 Port 4	dB		< 0.5 (typ. 0.2 dB)	
Isolation				
Port 1 Port 2	dB		> 45 (1427 – 1880 / 1920 – 2360 MHz)	
Port 1 Port 3	dB		> 45 (1427 – 1880 / 2496 – 2690 MHz)	
Port 2 Port 3	dB		> 45 (1920 – 2360 / 2496 – 2690 MHz)	
VSWR			< 1.25	
Impedance	Ω		50	
Input power				
Band 1 / Band 2 / Band 3	W		< 150 / < 150 / < 150	
Intermodulation products	dBc		< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F		-40 ... +60 -40 ... +140	
Connectors			4.3-10 female	
Application			Indoor or outdoor (IP 66)	
DC/AISG transparency				
Port 1, 2, 3 Port 4	mA		Auto-Sense (max. 2000)	
Lightning protection	kA		3, 10/350 μs pulse	
Mounting			Wall mounting: With 4 screws (max. 8 mm diameter) Pole mounting: With additional clamp set	
Weight	kg   lb		6.0   13.2	
Dimensions (w x h x d)	mm   in		225 x 176 x 156   8.9 x 6.9 x 6.1 (without connectors, without mounting brackets)	
Packing size	mm   in		367 x 289 x 233   14.4 x 11.4 x 9.2	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

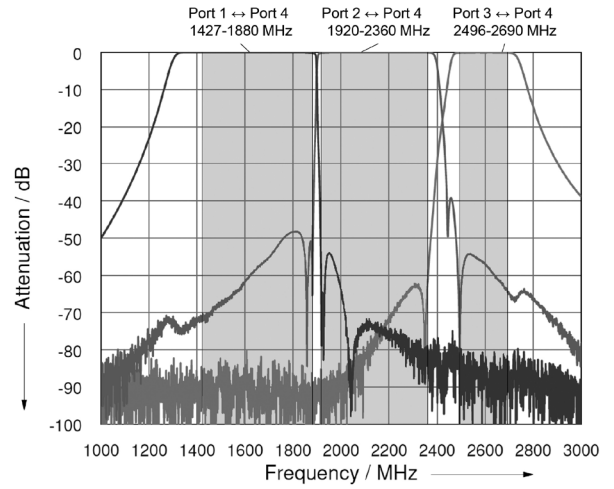
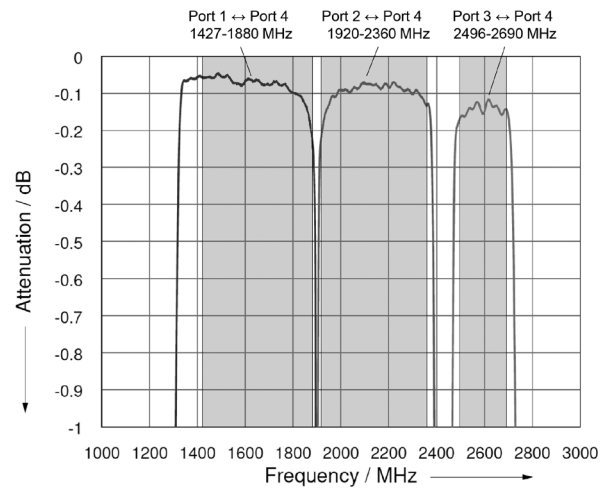
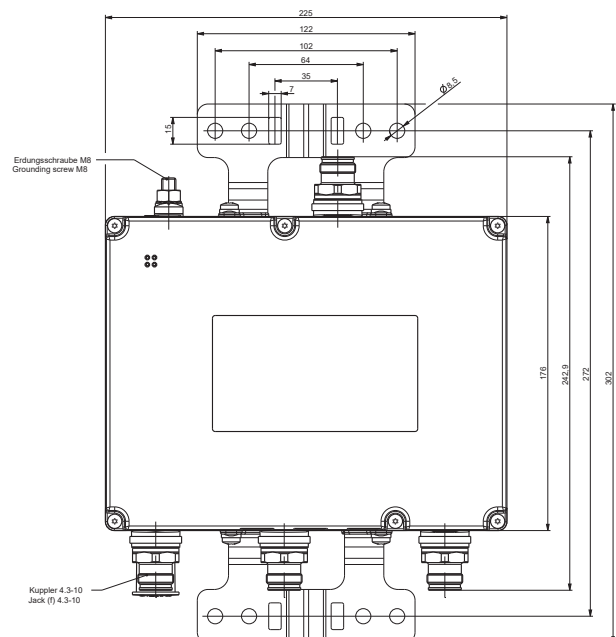
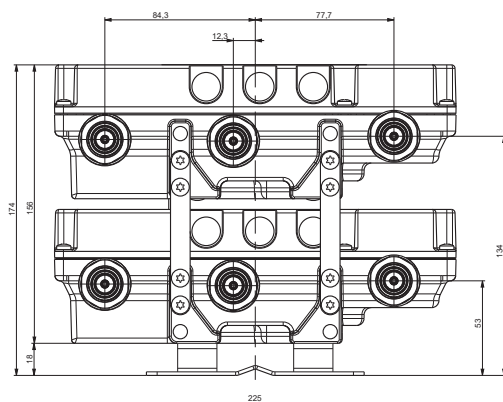
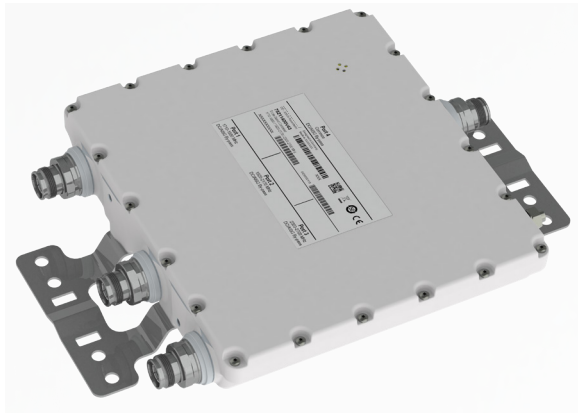


Diagram II

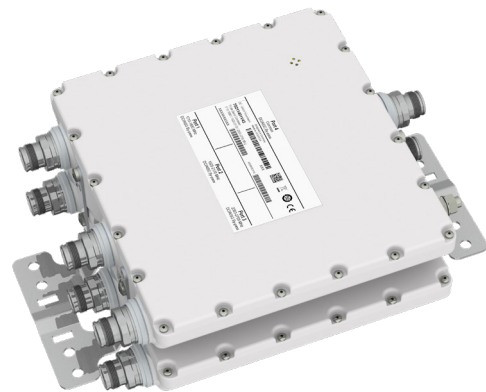


Dimensions in mm





3-1 Unit



6-2 Unit

# Triple-Band Combiner

78211400V43, 78211401V43, 78211402V43

78211403V43, 78211404V43, 78211405V43

1710–1880 MHz

1920–2170 MHz

2300–2700 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 3-1 Unit or 6-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory

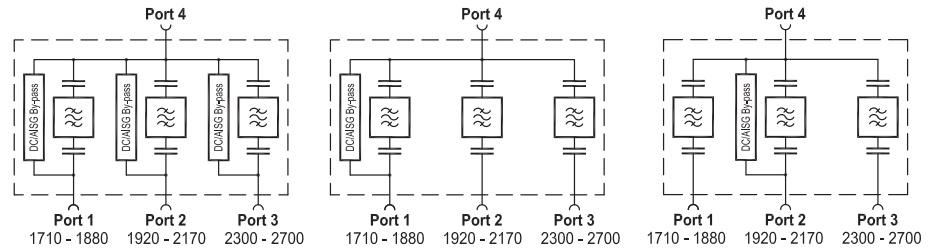


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Product No.		78211400V43 (3-1)		78211402V43 (3-1)		78211404V43 (3-1)	
		78211401V43 (6-2)		78211403V43 (6-2)		78211405V43 (6-2)	
Pass band							
Band 1	MHz	1710 – 1880					
Band 2	MHz	1920 – 2170					
Band 3	MHz	2300 – 2700					
Insertion loss							
Port 1 Port 4	dB	< 0.3 (typ. 0.1)					
Port 2 Port 4	dB	< 0.3 (typ. 0.1)					
Port 3 Port 4	dB	< 0.3 (typ. 0.1)					
Isolation							
Port 1 Port 2	dB	> 50 (1710 – 1880 / 1920 – 2170 MHz)					
Port 1 Port 3	dB	> 50 (1710 – 1880 / 2300 – 2700 MHz)					
Port 2 Port 3	dB	> 50 (1920 – 2170 / 2300 – 2700 MHz)					
VSWR		< 1.25					
Impedance	Ω	50					
Input power	W						
Band 1 / Band 2 / Band 3		< 200 / < 200 / < 200					
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)					
Temperature range	°C   °F	-55 ... +60 -67 ... +140					
Connectors		4.3-10 female					
Application		Indoor or outdoor (IP 66)					
DC/AISG transparency							
Port 1 Port 4	mA	By-pass (max. 2500)		By-pass (max. 2500)		Stop	
Port 2 Port 4	mA	By-pass (max. 2500)		Stop		By-pass (max. 2500)	
Port 3 Port 4	mA	By-pass (max. 2500)		Stop		Stop	
Lightning protection	kA	3, 10/350 μs pulse					
Mounting	mm   in	Wall mounting with 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set					
Weight	kg   lb	3-1 Unit: 3.3   7.3 6-2 Unit: 6.7   14.8					
Dimensions (w x h x d)	mm   in	3-1 nit 235 x 217 x 46   9.3 x 8.5 x 1.8 6-2 Unit: 235 x 217 x 97   9.3 x 8.5 x 3.8 (without connectors, without mounting brackets)					
Packing size	mm   in	3-1 nit 405 x 325 x 155   15.9 x 12.8 x 6.1 6-2 nit 405 x 325 x 205   15.9 x 12.8 x 8.1					

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150 1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

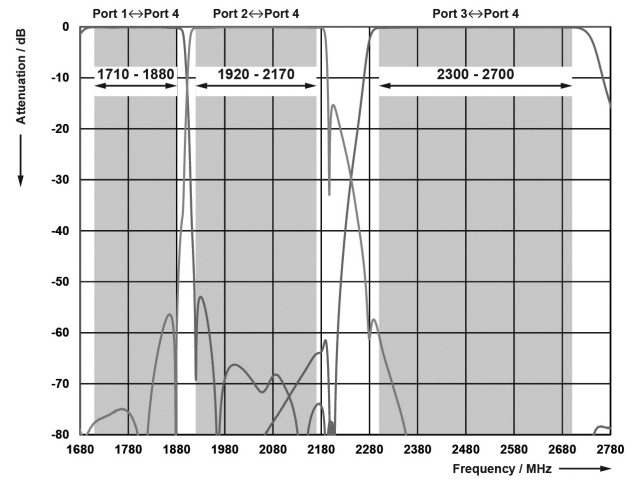
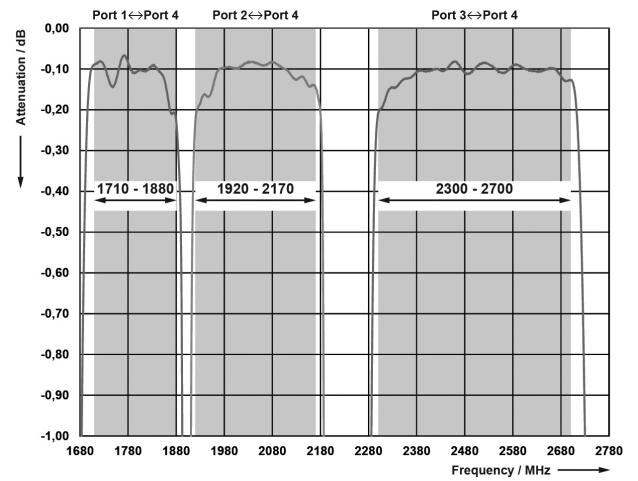
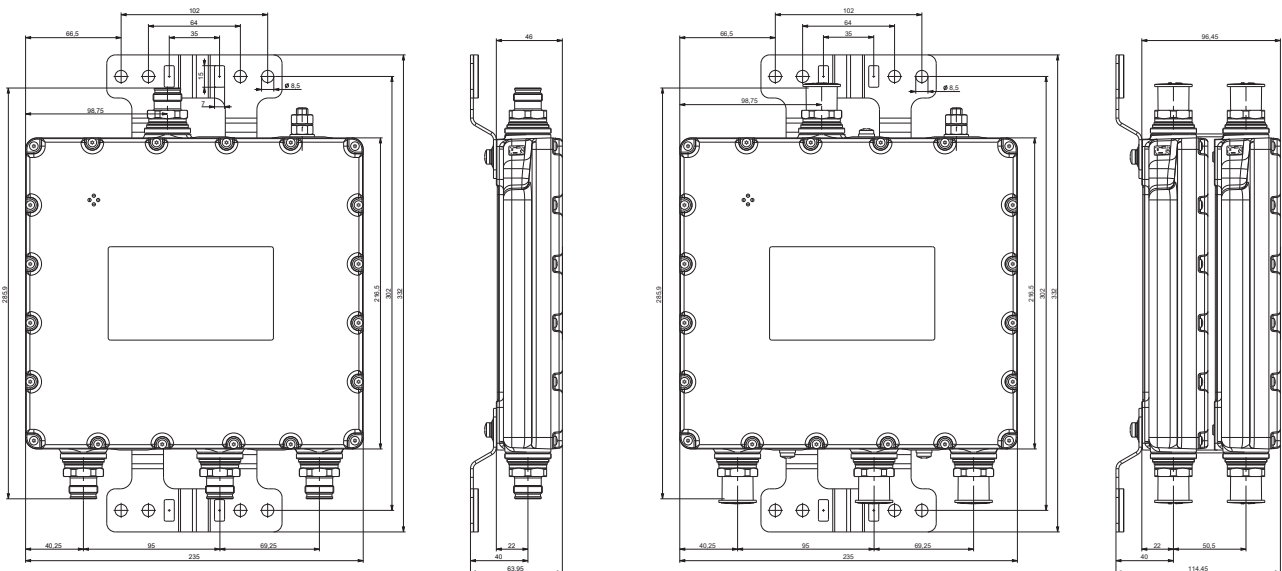
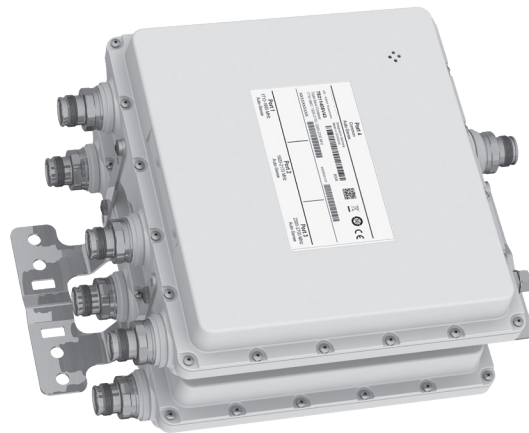


Diagram II



Dimensions in mm



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6-2 Unit

# Triple-Band Combiner

78211408V43, 78211408V44

1710–1880 MHz  
1920–2170 MHz  
2300–2700 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality.
- Available as 6-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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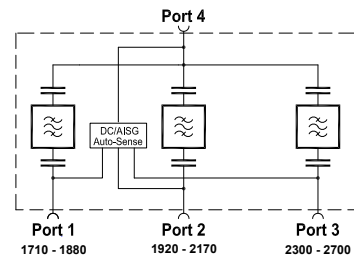


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**Priority table for 78211408V44 with Priority Controlled Function**

1710–1880 MHz	Priority 3 (lowest)
1920–2170 MHz	Priority 2
2300–2700 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211408V43 (6-2)	78211408V44 (6-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
Pass band			
Band 1	MHz		1710 – 1880
Band 2	MHz		1920 – 2170
Band 3	MHz		2300 – 2700
Insertion loss			
Port 1 Port 4	dB		< 0.3 (typ. 0.1 dB)
Port 2 Port 4	dB		< 0.3 (typ. 0.1 dB)
Port 3 Port 4	dB		< 0.3 (typ. 0.1 dB)
Isolation			
Port 1 Port 2	dB		> 50 (1710 – 1880 / 1920 – 2170 MHz)
Port 1 Port 3	dB		> 50 (1710 – 1880 / 2300 – 2700 MHz)
Port 2 Port 3	dB		> 50 (1920 – 2170 / 2300 – 2700 MHz)
VSWR			< 1.25
Impedance	Ω		50
Input power			
Band 1 / Band 2 / Band 3	W		< 200 / < 200 / < 200
Intermodulation products	dBc		< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F		-55 ... +60 -67 ... +140
Connectors			4.3-10 female
Application			Indoor or outdoor (IP 66)
DC/AISG transparency			
Port 1, 2, 3 Port 4	mA		Auto-Sense (max. 2000)
Lightning protection	kA		3, 10/350 μs pulse
Mounting	mm   in		Wall mounting with 4 screws (max. 8   Ø.315 diameter) Pole mounting: With additional clamp set
Weight	kg   lb		6.9   15.2
Dimensions (w x h x d)	mm   in		235 x 217 x 135   9.3 x 8.5 x 5.3 (without connectors, without mounting brackets)
Packing size	mm   in		404 x 324 x 245 15.9 x 12.8 x 9.6

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150 1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

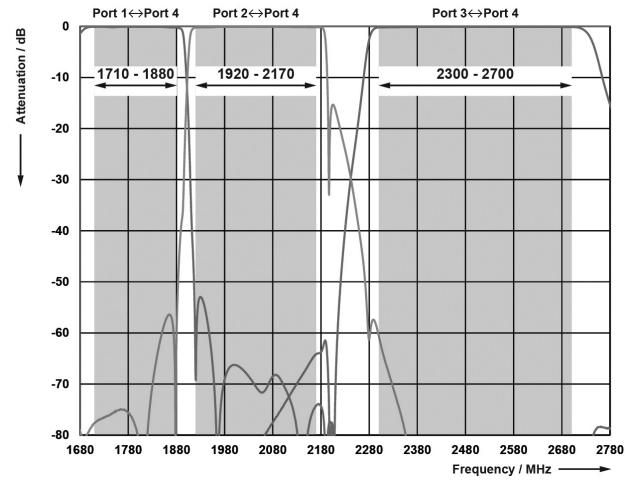
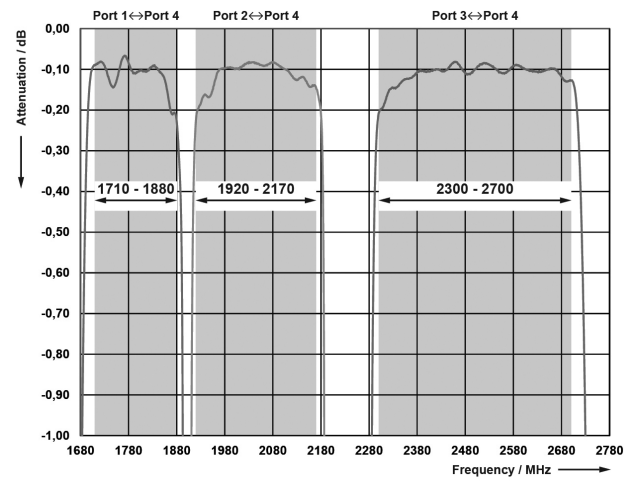
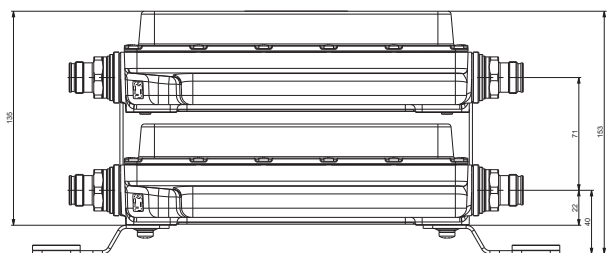
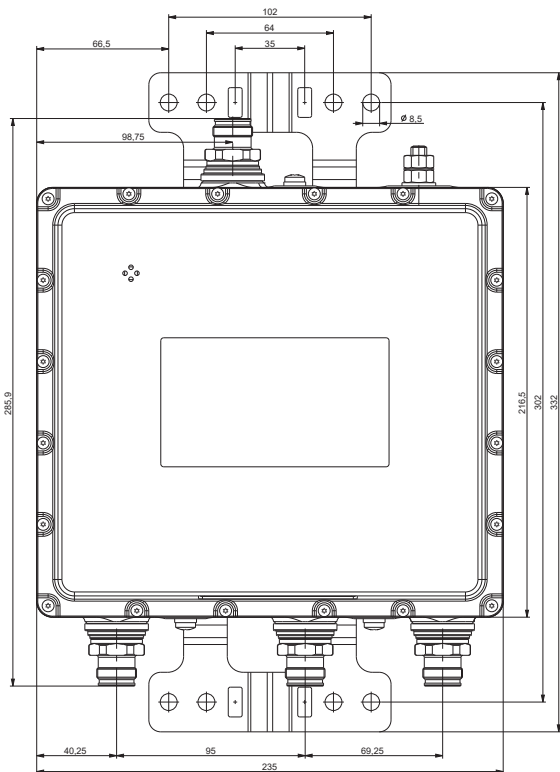
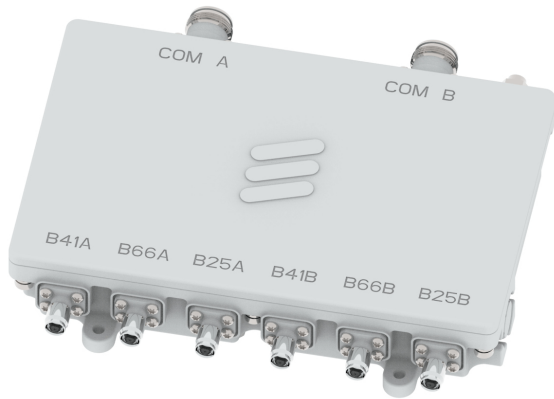


Diagram II

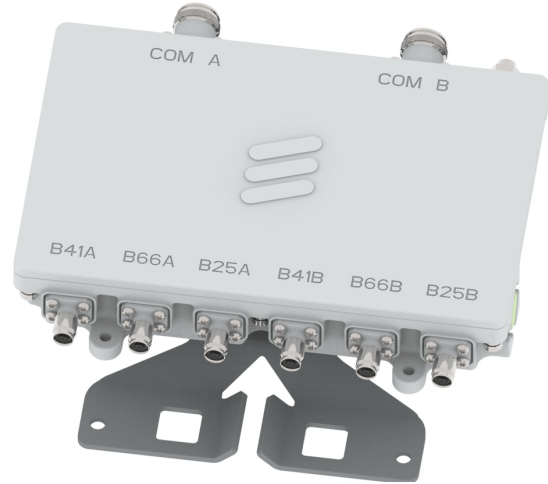


Dimensions in mm





6-2 Unit



6-2 Unit

# Triple-Band Combiner

KRF 102 449/1, KRF 102 449/2

1710–1780 MHz, 2110–2180 MHz  
1850–1995 MHz  
2496–2690 MHz

- High out of band rejection
- Low insertion loss
- IP67
- Wall mounting brackets and pole clamps included for KRF 102 449/2
- Designed for Ericsson and non-Ericsson system compatibility



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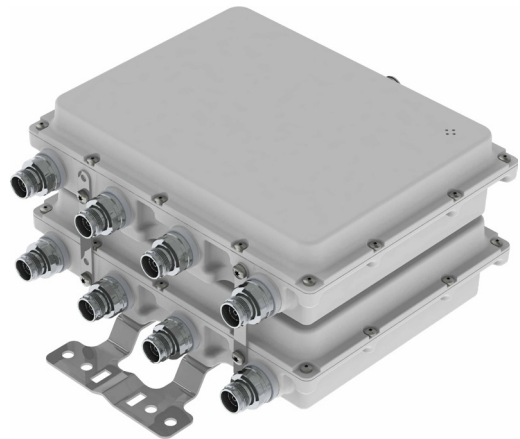
Product No.		KRF 102 449/1 (6-2) (without bracket)	KRF 102 449/2 (6-2) (with bracket)
<b>Electrical Specifications</b>			
Frequency range - B66A:  - B25: - B42:	MHz	1710–1780 2110–2180 1850–1995 2496–2690	
Insertion loss - B66A - 1710–1780 MHz: - 2110–2180 MHz: - B25: - B42:	dB	0.33* 0.31* 0.29* 0.26*	
Return loss	dB	> 20	
Isolation - Between port B66 and port B25: - Between port B66 and port B41: - Between port B25 and port B41: - Between branches**:	dB	> 40 > 50 > 50 > 60	
Intermodulation - IM3 at 2×43 dBm: - IM5 at 2×43 dBm:	dBm	< -115 < -123	
Power handling (continuous) - B66A and B25: - B41:	W	20 per port 25	
DC configuration		No DC/AISG bypass	
<b>Mechanical Specifications*</b>			
Dimensions (H×W×D)	mm	135 × 210 × 43	
Weight	kg	2.0	2.4
Volume	L	1.22	
RF connectors - COM ports: - RF ports:		4.3-10 (f) NEX10 (f)	
Mounting options		Cabinet	Pole or wall
<b>Environmental Specifications*</b>			
Temperature range	°C	-40 to +55	
IP class		IP67	
Lightning protection		5 kA 10/350 μs, 20 kA 8/20 μs (Common mode)	
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America: CSA/UL 62368-1	

\* Typical values

\*\* From one port in one branch to any other port in any other branch



4-1 Unit



8-2 Unit

# Quad-Band Combiner

78211580, 78211581,  
78211584, 78211585

380–960 MHz  
1427–1880 MHz  
1920–2200 MHz  
2300–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 4-1 Unit or 8-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory

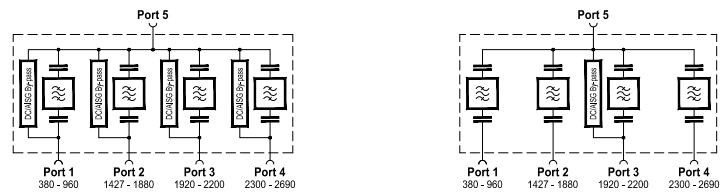


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Product No.		78211580 (4-1)	78211584 (4-1)
		78211581 (8-2)	78211585 (8-2)
Pass band			
Band 1 (TETRA ... GSM 900)	MHz	380 – 960	
Band 2 (GSM 1800)	MHz	1427 – 1880	
Band 3 (UMTS)	MHz	1920 – 2200	
Band 4 (LTE 2600)	MHz	2300 – 2690	
Insertion loss			
Port 1 ↔ Port 5	dB	< 0.2 (380 – 960 MHz)	
Port 2 ↔ Port 5	dB	< 0.3 (1427 – 1880 MHz)	
Port 3 ↔ Port 5	dB	< 0.3 (1920 – 2200 MHz)	
Port 4 ↔ Port 5	dB	< 0.3 (2300 – 2690 MHz)	
Isolation	dB	> 40	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1/Band 2/Band 3/Band 4	W	< 200 / < 200 / < 200 / < 100	
Intermodulation products	dBc	< -160 (3rd order; with 2 x 20 W), exempt from TETRA 360 – 470 MHz: < -150	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 ↔ Port 5	mA	By-pass (max. 2500)	Stop
Port 2 ↔ Port 5	mA	By-pass (max. 2500)	Stop
Port 3 ↔ Port 5	mA	By-pass (max. 2500)	By-pass (max. 2500)
Port 4 ↔ Port 5	mA	By-pass (max. 2500)	Stop
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max.: 8   0.315 diameter) Pole mounting: With clamp set	
Weight	kg   lb	4-1 Unit: 3.9   8.6 8-2 Unit: 7.7   17.0	
Dimensions (w x h x d)	mm   in	4-1 Unit: 270 x 213 x 67   10.6 x 8.4 x 2.6 8-2 Unit: 270 x 213 x 138   10.6 x 8.4 x 5.4 (without connectors, without mounting brackets)	
Packing size	mm   in	4-1 Unit: 394 x 339 x 160   15.5 x 13.3 x 6.3 8-2 Unit: 394 x 339 x 230   15.5 x 13.3 x 9.1	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

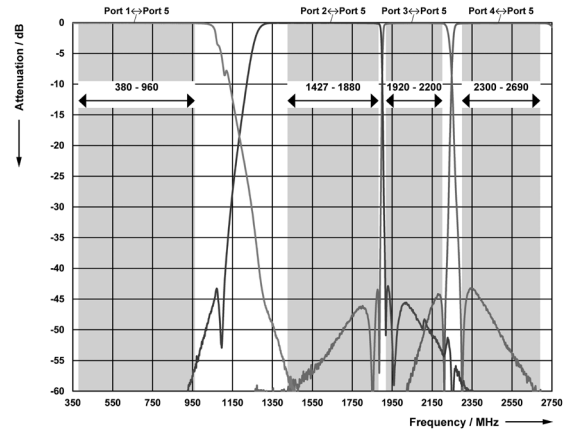
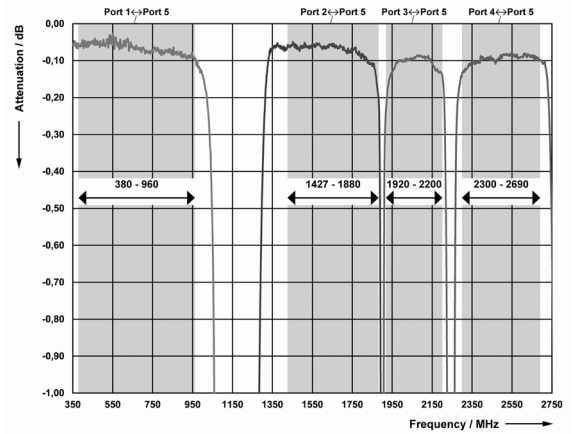
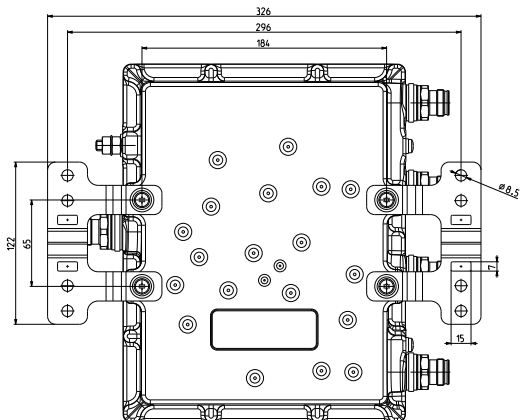
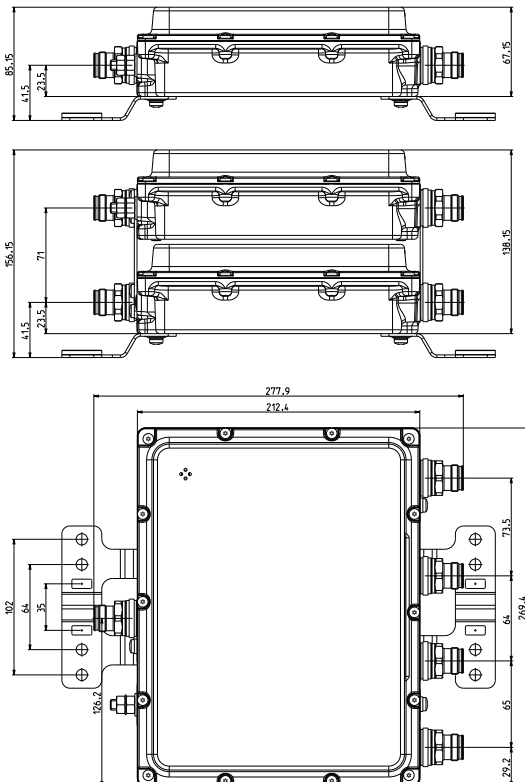
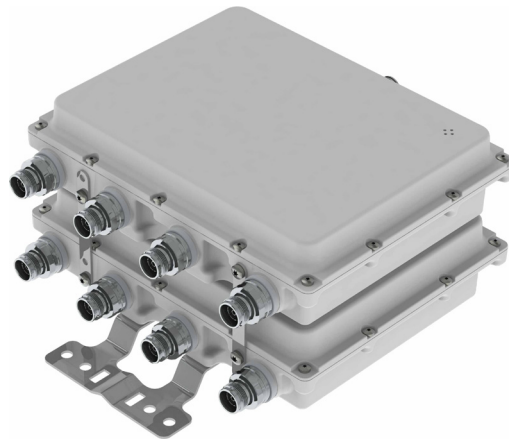


Diagram II



Dimensions in mm



AUTO-  
SENSE

8-2 Unit

# Quad-Band Combiner

78211588, 78211588V01

380–960 MHz  
1427–1880 MHz  
1920–2200 MHz  
2300–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated auto-sense technology for automatic DC / AISG detection and bypass functionality.
- Available as 8-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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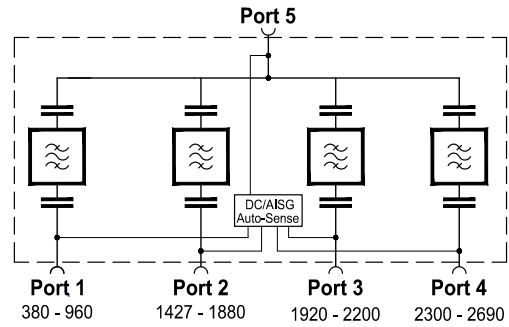


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**Priority table for 78211588V01 with Priority Controlled Function**

380–960 MHz	Priority 2
1427–1880 MHz	Priority 4 (lowest)
1920–2200 MHz	Priority 3
2300–2690 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211588 (8-2)	78211588V01 (8-2)
DC/AISG transparency		First In - First Out Function	Priority Controlled Function
<b>Pass band</b>			
Band 1 (TETRA ... GSM 900)	MHz		380 – 960
Band 2 (GSM 1800)	MHz		1427 – 1880
Band 3 (UMTS)	MHz		1920 – 2200
Band 4 (LTE 2600)	MHz		2300 – 2690
<b>Insertion loss</b>			
Port 1 ↔ Port 5	dB		< 0.2 (380 – 960 MHz)
Port 2 ↔ Port 5	dB		< 0.3 (1427 – 1880 MHz)
Port 3 ↔ Port 5	dB		< 0.3 (1920 – 2200 MHz)
Port 4 ↔ Port 5	dB		< 0.3 (2300 – 2690 MHz)
Isolation	dB		> 40
VSWR			< 1.25
Impedance	Ω		50
<b>Input power</b>			
Band 1/Band 2/Band 3/Band 4	W		< 200 / < 200 / < 200 / < 100
Intermodulation products	dBc		< -160 (3 <sup>rd</sup> order; with 2 x 20 W), exempt from TETRA 360 – 470 MHz: < -150
Temperature range	°C   °F		-40 ... +60   -40 ... +140
Connectors			4.3-10 female
Application			Indoor or outdoor (IP 66)
DC/AISG transparency Port 1, 2, 3, 4 ↔ Port 5			Auto-Sense (max. 2000)
Lightning protection	kA		3, 10/350 μs pulse
Mounting	mm   in		Wall mounting: With 4 screws (max.: 8   0.315 diameter) Pole mounting: With clamp set
Weight	kg   lb		7.8   17.2
Dimensions (w x h x d)	mm   in		270 x 213 x 138   10.6 x 8.4 x 5.4 (without connectors, without mounting brackets)
Packing size	mm   in		394 x 339 x 230   15.5 x 13.3 x 9.1

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40-150   1.6-5.9	2

Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

Typical Attenuation Curves

Diagram I

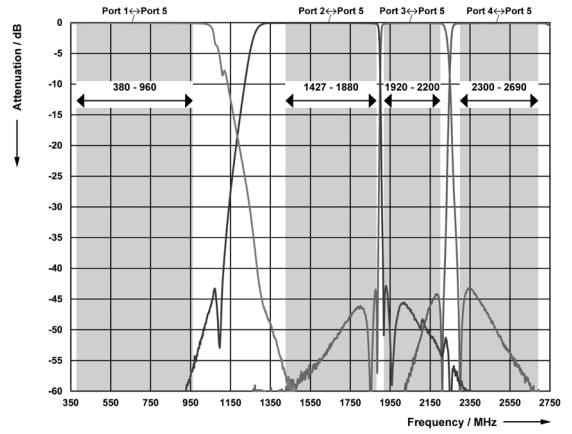
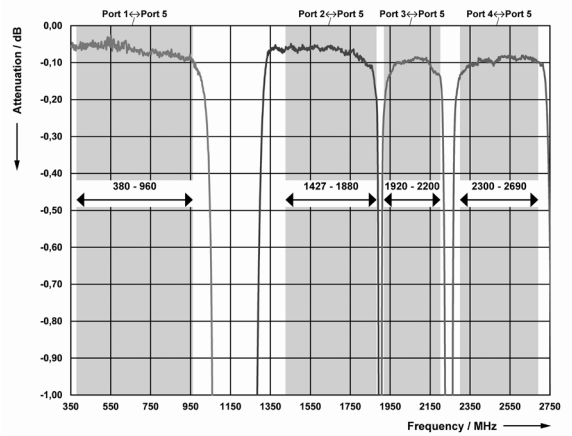
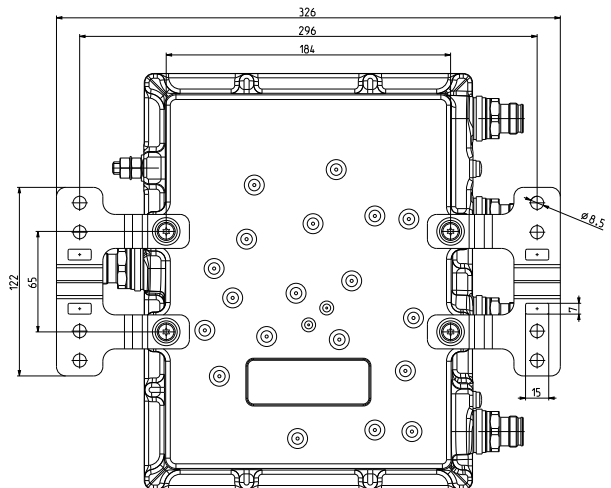
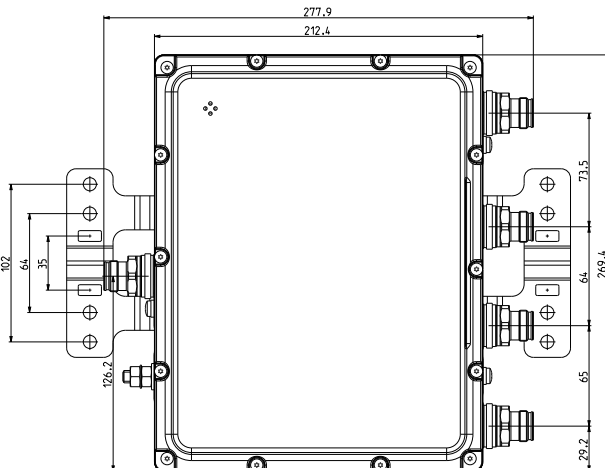
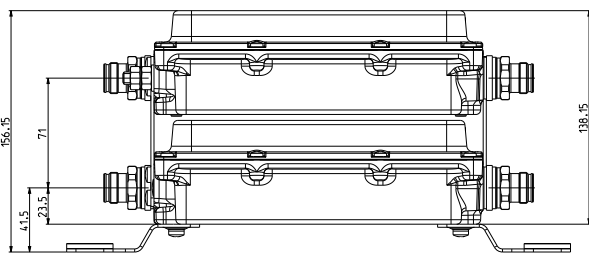
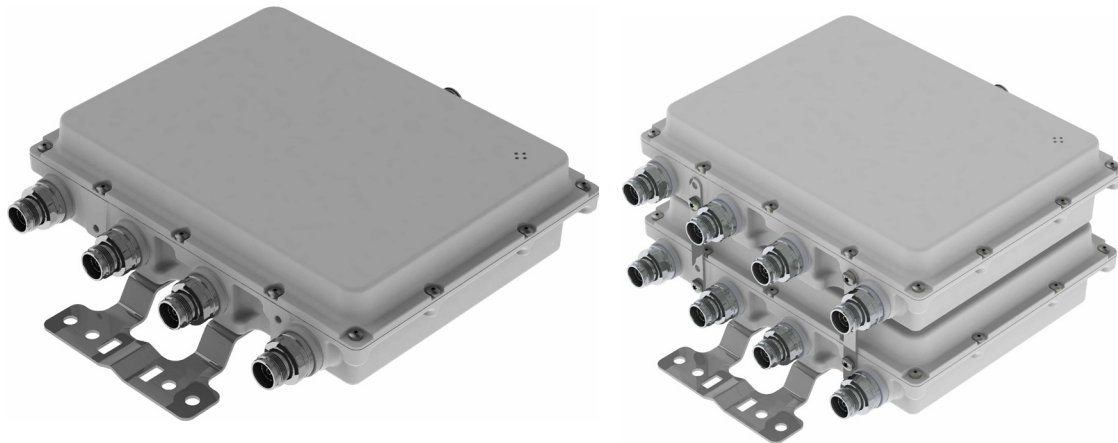


Diagram II



Dimensions in mm





4-1 Unit

8-2 Unit

# Quad-Band Combiner

78211340, 78211341

690–862 MHz  
880–960 MHz  
1427–1880 MHz  
1920–2690 MHz

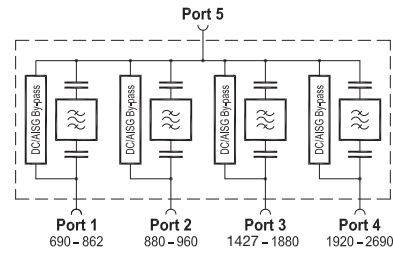
- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Available as 4-1 Unit or 8-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection
- External DC stop available as an accessory



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Product No.		78211340 (4-1)	clamps
		78211341 (8-2)	included
Pass band			
Band 1	MHz	690 – 862	
Band 2	MHz	880 – 960	
Band 3	MHz	1427 – 1880	
Band 4	MHz	1920 – 2690	
Insertion loss			
Port 1 ↔ Port 5	dB	< 0.45, typ. 0.25 (690 – 862 MHz)	
Port 2 ↔ Port 5	dB	< 0.45, typ. 0.3 (880 – 960 MHz)	
Port 3 ↔ Port 5	dB	< 0.35, typ. 0.2 (1427 – 1880 MHz)	
Port 4 ↔ Port 5	dB	< 0.35, typ. 0.3 (1920 – 2690 MHz)	
Isolation	dB	> 40	
VSWR		< 1.25	
Impedance	Ω	50	
Input power			
Band 1 / Band 2 / Band 3 / Band 4	W	< 200 / < 200 / < 200 / < 100	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency			
Port 1 ↔ Port 5	mA	By-pass (max. 2500)	
Port 2 ↔ Port 5	mA	By-pass (max. 2500)	
Port 3 ↔ Port 5	mA	By-pass (max. 2500)	
Port 4 ↔ Port 5	mA	By-pass (max. 2500)	
Lightning protection	kA	3, 10/350 μs pulse	
Mounting	mm   in	Wall mounting: With 4 screws (max. diameter 8   0.315) Pole mounting: With included clamp set	
Weight	kg   lb	4-1 Unit: 6.7   14.6 8-2 Unit: 13.3   29.3	
Dimensions (w x h x d)	mm   in	4-1 Unit approx.: 358 x 271 x 84   14.1 x 10.7 x 3.3 8-2 Unit approx.: 358 x 271 x 172   14.1 x 10.7 x 6.8 (without connectors, without mounting brackets)	
Packing size	mm   in	4-1 Unit: 460 x 440 x 177   18.1 x 17.3 x 7.0 8-2 Unit: 460 x 440 x 265   18.1 x 17.3 x 10.4	

**Accessories (included in the scope of supply)**

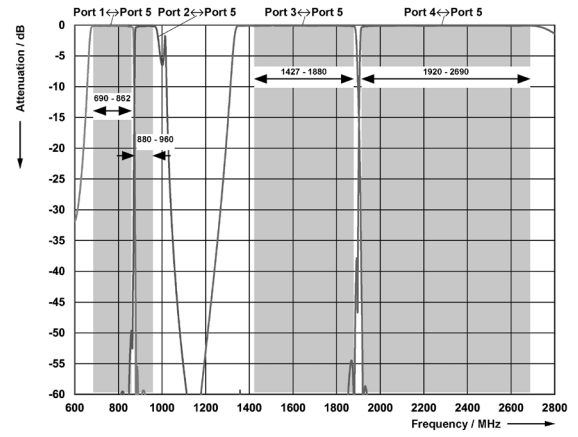
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

**Accessories (order separately if required)**

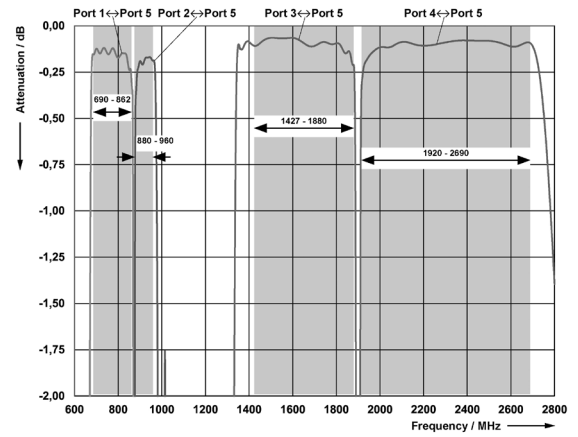
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

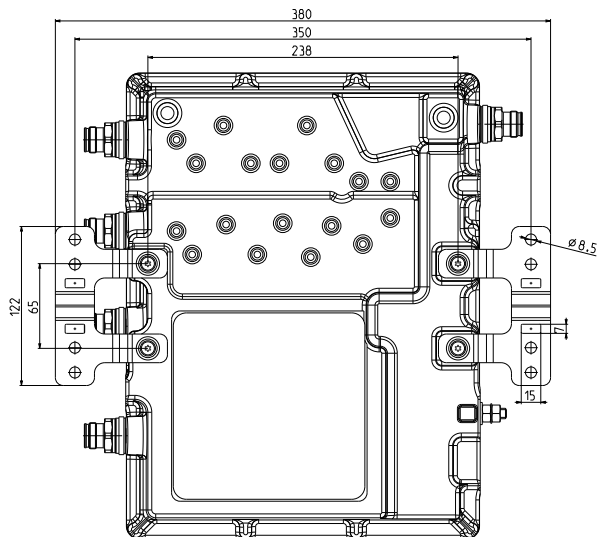
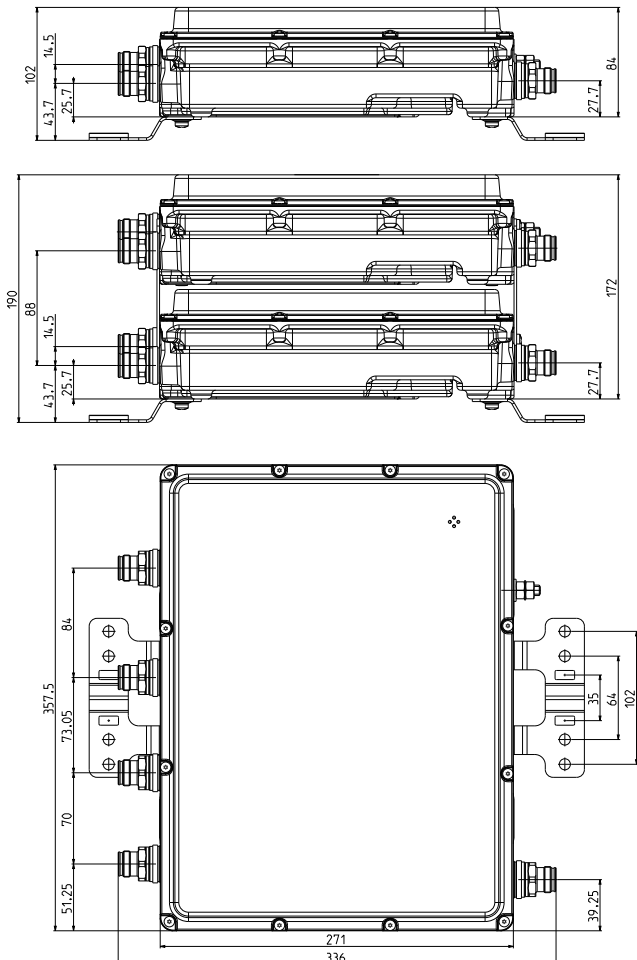
**Diagram I**



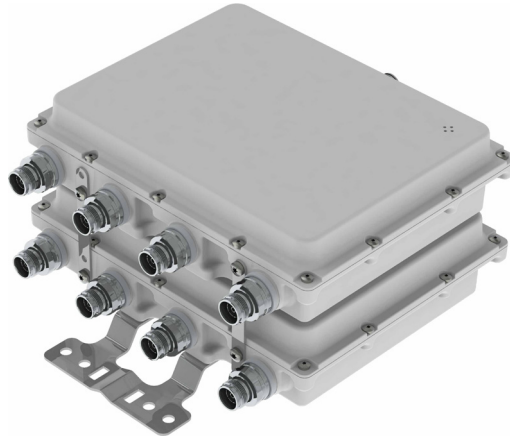
**Diagram II**



**Dimensions in mm**





AUTO-  
SENSE

8-2 Unit

# Quad-Band Combiner

78211348, 78211348V01

690–862 MHz  
880–960 MHz  
1427–1880 MHz  
1920–2690 MHz

- Can be used as a combiner near the RBS or in a reciprocal function near the antenna
- Very low insertion loss
- Enables feeder sharing
- Designed for co-siting purposes
- Integrated Auto-Sense technology for automatic DC / AISG detection and bypass functionality
- Available as 8-2 Unit
- Suitable for indoor and outdoor applications
- Wall or pole mounting
- Built-in lightning protection



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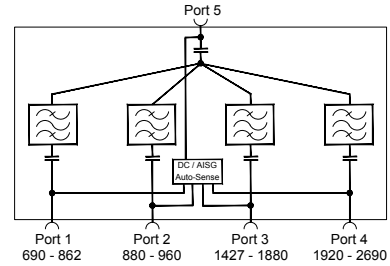


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**Priority table for 78211348V01 with Priority Controlled Function**

690–862 MHz	Priority 2
880–960 MHz	Priority 3
1427–1880 MHz	Priority 4 (lowest)
1920–2690 MHz	Priority 1 (highest)

For more information see Auto-Sense quick guide later in this datasheet.



Product No.		78211348 (8-2)	clamps included	78211348V01 (8-2)
DC/AISG transparency		First In - First Out Function		Priority Controlled Function
Pass band				
Band 1	MHz			690 – 862
Band 2	MHz			880 – 960
Band 3	MHz			1427 – 1880
Band 4	MHz			1920 – 2690
Insertion loss				
Port 1 ↔ Port 5	dB			< 0.45, typ. 0.25 (690 – 862 MHz)
Port 2 ↔ Port 5	dB			< 0.45, typ. 0.3 (880 – 960 MHz)
Port 3 ↔ Port 5	dB			< 0.35, typ. 0.2 (1427 – 1880 MHz)
Port 4 ↔ Port 5	dB			< 0.35, typ. 0.3 (1920 – 2690 MHz)
Isolation	dB			> 40
VSWR				< 1.25
Impedance	Ω			50
Input power				
Band 1 / Band 2 / Band 3 / Band 4	W			< 200 / < 200 / < 200 / < 100
Intermodulation products	dBc			< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F			-40 ... +60   -40 ... +140
Connectors				4.3-10 female
Application				Indoor or outdoor (IP 66)
DC/AISG transparency				
Port 1, 2, 3, 4 ↔ Port 5	mA			Auto-Sense (max. 2000)
Lightning protection	kA			3, 10/350 μs pulse
Mounting	mm   in			Wall mounting: With 4 screws (max. diameter 8   0.315) Pole mounting: With included clamp set
Weight	kg   lb			13.5   29.6
Dimensions (w x h x d)	mm   in			358 x 271 x 172   14.1 x 10.7 x 6.8 (without connectors, without mounting brackets)
Packing size	mm   in			460 x 440 x 265   18.1 x 17.3 x 10.4

**Accessories (included in the scope of supply)**

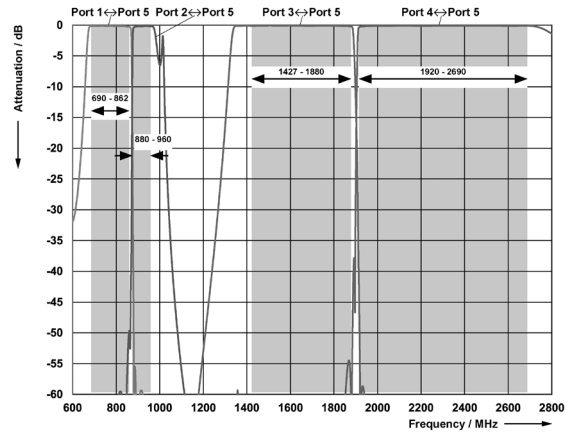
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

**Accessories (order separately if required)**

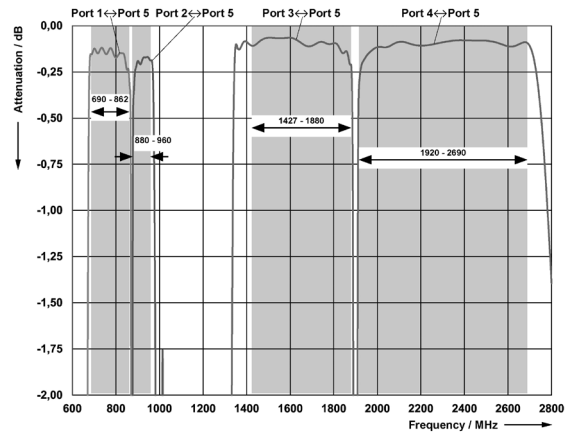
Product No.	Product Name
78210484	50 Ohm Load
78211000	DC Stop

**Typical Attenuation Curves**

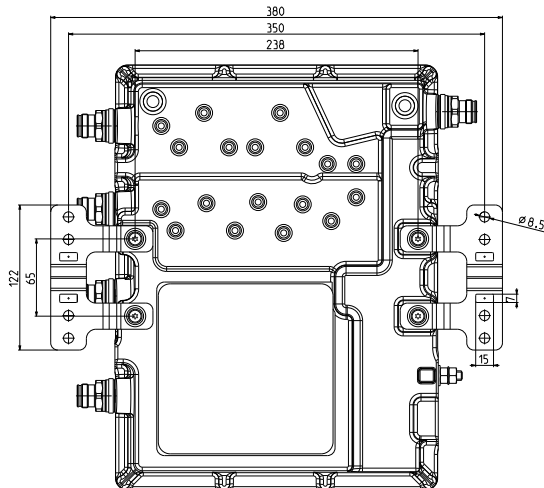
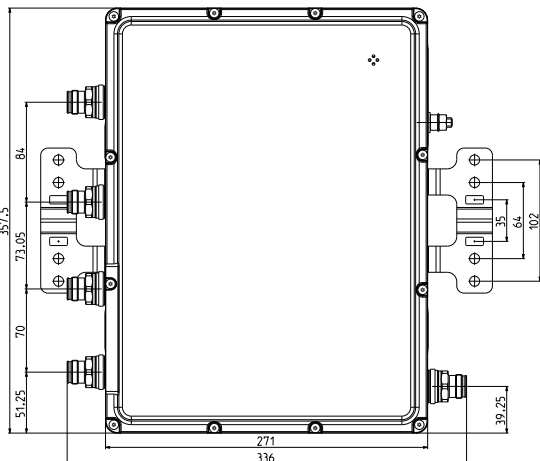
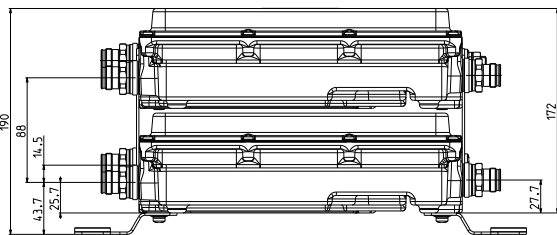
**Diagram I**



**Diagram II**



**Dimensions in mm**



## Tower Mounted Amplifier – Single-Band

Product Name Product No.	Frequency range	Gain	Connector type (female)	Page
TMA B28 (2-2) 78211275V43	UL: 703 – 748 / DL: 758 – 803 MHz	12 dB	4.3-10	<a href="#">689</a>
TMA B20 (2-2) 78210430V43	UL: 832 – 862 / DL: 791 – 821 MHz	12 dB	4.3-10	<a href="#">692</a>
TMA B5 (2-2) KRY 112 4159/2	UL: 824 – 849 / DL: 869 – 894 MHz	12 dB	7-16	<a href="#">695</a>
TMA B8 (2-2) KRY 112 587/16	UL: 880 – 915 / DL: 925 – 960 MHz	12 dB	4.3-10	<a href="#">697</a>
TMA B3 (2-2) 78210583V43	UL: 1710 – 1785 / DL: 1805 – 1880 MHz	12 dB	4.3-10	<a href="#">699</a>
TMA B3 (2-2) KRY 112 488/12	UL: 1710 – 1785 / DL: 1805 – 1880 MHz	12 dB	4.3-10	<a href="#">702</a>
TMA B66 (2-2) KRY 112 144/2	UL: 1710 – 1780 / DL: 2110 – 2200 MHz	12 dB	7-16	<a href="#">705</a>
TMA B1 (2-2) KRY 112 442/16	UL: 1920 – 1980 / DL: 2110 – 2170 MHz	12 dB	4.3-10	<a href="#">707</a>
TMA B7 (2-2) 78211330V43	UL: 2500 – 2570 / DL: 2620 – 2690 MHz	12 dB	4.3-10	<a href="#">710</a>

UL = Uplink / DL = Downlink

## Tower Mounted Amplifier – Dual-Band

Product Name Product No.	Frequency range	Gain	Connector type (female)	Page
TMA B8 B20 (2-2) KRY 112 228/11	UL: 832 – 862 / DL: 791 – 821 MHz UL: 880 – 915 / DL: 925 – 960 MHz	12 dB	4.3-10	<a href="#">713</a>
TMA B1 B3 Bypass 1400 (2-2) 78211107V02	UL: 1710 – 1785 / DL: 1805 – 1880 MHz UL: 1920 – 1980 / DL: 2110 – 2170 MHz	12 dB	4.3-10	<a href="#">716</a>
TMA B1 B3 (2-2) KRY 112 227/12	UL: 1710 – 1785 / DL: 1805 – 1880 MHz UL: 1920 – 1980 / DL: 2110 – 2170 MHz	12 dB	4.3-10	<a href="#">719</a>
TMA B1 B3 + Bypass 1400 + Bypass LB (2-6) KRY 112 234/1	UL: 1710 – 1785 / DL: 1805 – 1880 MHz UL: 1920 – 1980 / DL: 2110 – 2170 MHz	12 dB	4.3-10	<a href="#">722</a>
TMA B1 B3 Bypass 1400 + Bypass LB (2-4) KRY 112 235/1	UL: 1710 – 1785 / DL: 1805 – 1880 MHz UL: 1920 – 1980 / DL: 2110 – 2170 MHz	12 dB	4.3-10	<a href="#">725</a>
TMA B1 B3 + Bypass 1400 (4-2) KRY 112 238/1	UL: 1710 – 1785 / DL: 1805 – 1880 MHz UL: 1920 – 1980 / DL: 2110 – 2170 MHz	12 dB	4.3-10	<a href="#">728</a>
TMA B3 B7 Bypass 1400 (2-2) 78211912V02	UL: 1710 – 1785 / DL: 1805 – 1880 MHz UL: 2500 – 2570 / DL: 2620 – 2690 MHz	12 dB	4.3-10	<a href="#">731</a>

UL = Uplink / DL = Downlink

## Tower Mounted Amplifier – Triple-Band

Product Name Product No.	Frequency range	Gain	Connector type (female)	Page
TMA B8 B20 B28B (2-2) KRY 112 236/1	UL: 880 – 915 / DL: 925 – 960 MHz UL: 832 – 862 / DL: 791 – 821 MHz UL: 703 – 733 / DL: 758 – 788 MHz	12 dB	4.3-10	<a href="#">735</a>
TMA B1 B3 B7 Bypass 1400 (2-2) 78210587V02	UL: 1710 – 1785 / DL: 1805 – 1880 MHz UL: 1920 – 1980 / DL: 2110 – 2170 MHz UL: 2500 – 2570 / DL: 2620 – 2690 MHz	12 dB	4.3-10	<a href="#">738</a>

UL = Uplink / DL = Downlink

## Tower Mounted Amplifier (TMA) – Overview

Frequency Band											B28	B28B	B20	B5	B8	B3	B66	B1	B7
Order No.	Type	Connector Type	2 Radio Ports	4 Radio Ports	2 Antenna Ports	4 Antenna Ports	6 Antenna Ports	CWA	Lowband Bypass	L-Band Bypass									
<b>Single Band TMA</b>																			
78211275V43	TMA B28 (2-2)	4.3-10																	
78210430V43	TMA B20 (2-2)	4.3-10																	
KRY1124159/2	TMA B5 (2-2)	7-16																	
KRY112587/16	TMA B8 (2-2)	4.3-10																	
78210583V43	TMA B3 (2-2)	4.3-10																	
KRY112488/12	TMA B3 (2-2)	4.3-10																	
KRY112144/2	TMA B66 (2-2)	7-16																	
KRY112442/16	TMA B1 (2-2)	4.3-10																	
78211330V43	TMA B7 (2-2)	4.3-10																	
<b>Dual Band TMA</b>																			
KRY112228/11	TMA B8 B20 (2-2)	4.3-10																	
78211107V02	TMA B1 B3 Bypass 1400 (2-2)	4.3-10																	
KRY112227/12	TMA B1 B3 (2-2)	4.3-10																	
KRY112234/1	TMA B1 B3 + Bypass 1400 + Bypass LB (2-6)	4.3-10																	
KRY112235/1	TMA B1 B3 Bypass 1400 + Bypass LB (2-4)	4.3-10																	
KRY112238/1	TMA B1 B3 + Bypass 1400 (4-2)	4.3-10																	
78211912V02	TMA B3 B7 Bypass 1400 (2-2)	4.3-10																	
<b>Triple Band TMA</b>																			
KRY112236/1	TMA B8 B20 B28B (2-2)	4.3-10																	
78210587V02	TMA B1 B3 B7 Bypass 1400 (2-2)	4.3-10																	

all TMAs support AISG2.0

	Antenna / Radio ports
	amplified band
	RF bypass
	CWA in addition to AISG

## TMA Modes for AISG Communication between RBS and TMA

### Communication standard AISG 2.0

AISG communication between RBS and TMA is implemented acc. to AISG 2.0 standard. The Unique ID of the TMA has a maximum of 19 characters and includes vendor code and serial number of the device.

### One to one relation of RBS and TMA

AISG communication between TMA and RBS is always realized via one RBS port of the TMA, i.e. there's a one to one relation: one RBS controls the overall functionality of one TMA.

Depending on the specific TMA-product, the communication can be realized via the left side port (port RBS A) or via one of the two ports (port RBS A or RBS B – depending on where communication is established first). This product specific information is visualized in a block diagram in the product datasheet.

Multi-Band TMAs with AISG communication on port RBS A or RBS B have different Unique IDs on port RBS A and RBS B; they end with "\_WBM\_1" or "\_WBM\_2", cp. example below.

### Example

The table shows exemplary the Unique ID response of Dual-Band TMAs:

Multi-Band TMA with AISG-support on port	Unique ID on port RBS A	Unique ID on port RBS B
RBS A or RBS B	Vendor Code + Serial Number + "_WBM_1"	Vendor Code + Serial Number + "_WBM_2"
RBS A only	Vendor Code + Device Code + Serial Number	–





# TMA B28 (2-2)

78211275V43

- 2-2 Unit
- Supports AISG 2.0 and CWA
- Suitable for antenna RET control according to AISG/3GPP standard
- By-pass mode to ensure cell operation in case of DC power down
- Built-in lightning protection



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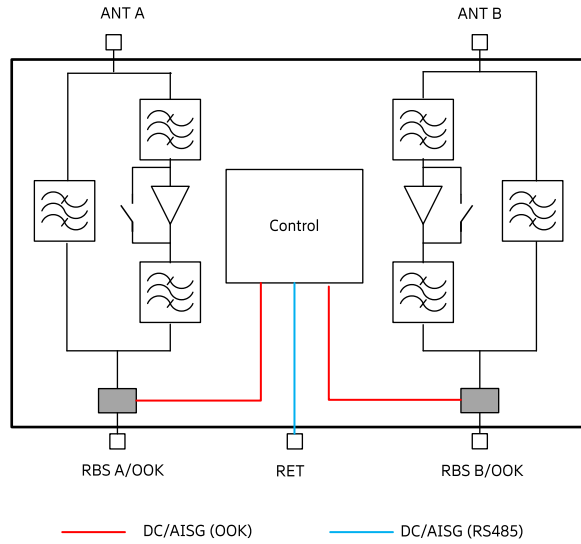
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<b>RET</b>	=	Remote Electrical Tilt
<b>AISG</b>	=	Antenna Interface Standards Group
<b>CWA</b>	=	Current Window Alarm

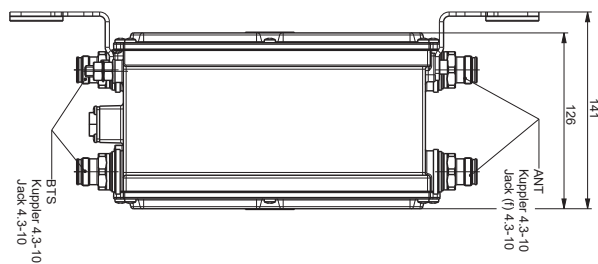
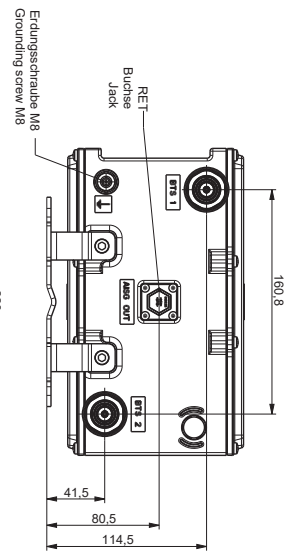
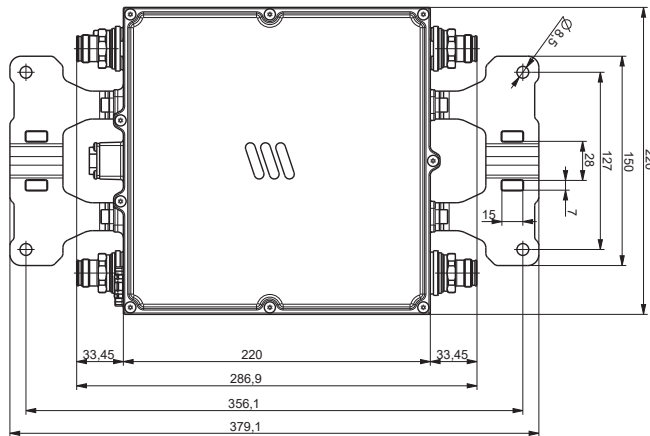
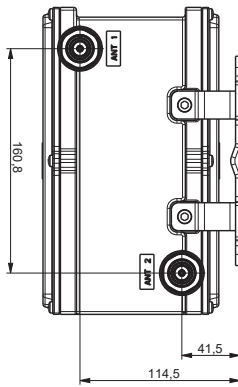
<b>Product No.</b>		<b>78211275V43</b>	
<b>Product Name</b>		<b>TMA B28 (2-2)</b>	
<b>Tx Characteristics</b>			
Frequency range	MHz	758 – 803	
Insertion loss	dB	Typically 0.45	
Input power (per input)	W	< 100 (+50 dBm)	
Intermodulation products in Rx band	dBm	< -117 (2 Tx carriers at +43 dBm)	
Return loss	dB	> 18	
<b>Rx Characteristics</b>			
Frequency range	MHz	703 – 748	
Loss in bypass mode	dB	Typically 1.6 (DC OFF)	
Return loss	dB	> 18 (DC ON) / > 12 (DC OFF)	
Gain	dB	12 nominal	
Noise figure	dB	Typically 1.3	
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 25	
DVB-T attenuation	dB	> 30 (< 698 MHz)	
<b>Environmental Characteristics</b>			
Operating temperature range	°C   F	-40 ... +65   -40 ... +149	
IP rating		IP67	
MTBF	hours	> 1 000 000 (per TMA)	
EMC		According to ETS 301 342-3	
<b>DC and Alarm Characteristics</b>		<b>CWA Mode</b>	<b>AISG Mode</b>
DC supply	V	9 – 19	9 – 30
Operating current per TMA	mA	80 – 130	Nom. 150 at 12 V
Alarm management	mA	170 – 200	AISG
<b>Mechanical Characteristics</b>			
<b>Material</b>		Aluminium housing	
<b>Connectors</b>	RF RET	4.3-10 female 8-pin female, IEC 60130-9 (Pin 3: RS485B, pin 5: RS485A, pin 6: 9 – 30 V DC, pin 7: DC return, other pins: Not connected)	
<b>Mounting</b>	mm   in	Wall mounting: With 4 screws (max. diameter 8   0.31) Pole mounting: With additional clamp set	
<b>Weight</b>	kg   lb	8.8   19.4	
<b>Dimensions (w x h x d)</b>	mm   in	220 x 220 x 126   8.7 x 8.7 x 5.0 (without connectors, without mounting brackets)	

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2



Note:  
DC and AISG can be provided via RBS A or RBS B



Dimensions in mm



# TMA B20 (2-2)

78210430V43

- 2-2 Unit
- Supports AISG 2.0
- Suitable for antenna RET control according to AISG/3GPP standard
- By-pass mode to ensure cell operation in case of DC power down
- Built-in lightning protection



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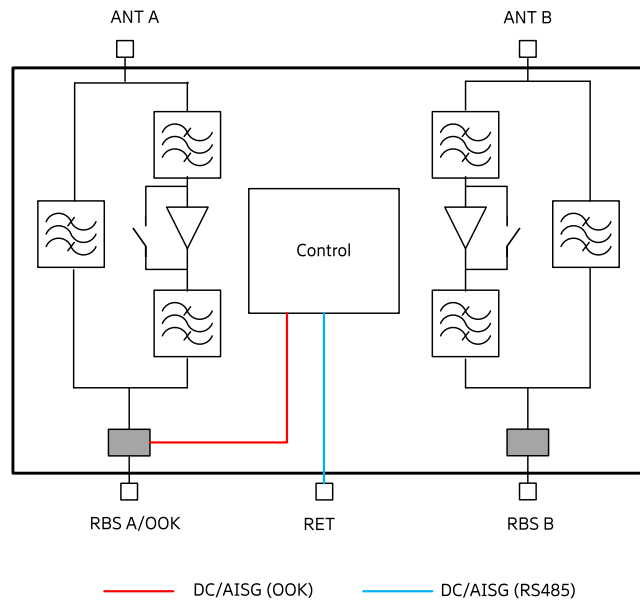
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**AISG** = Antenna Interface Standards Group  
**RET** = Remote Electrical Tilt

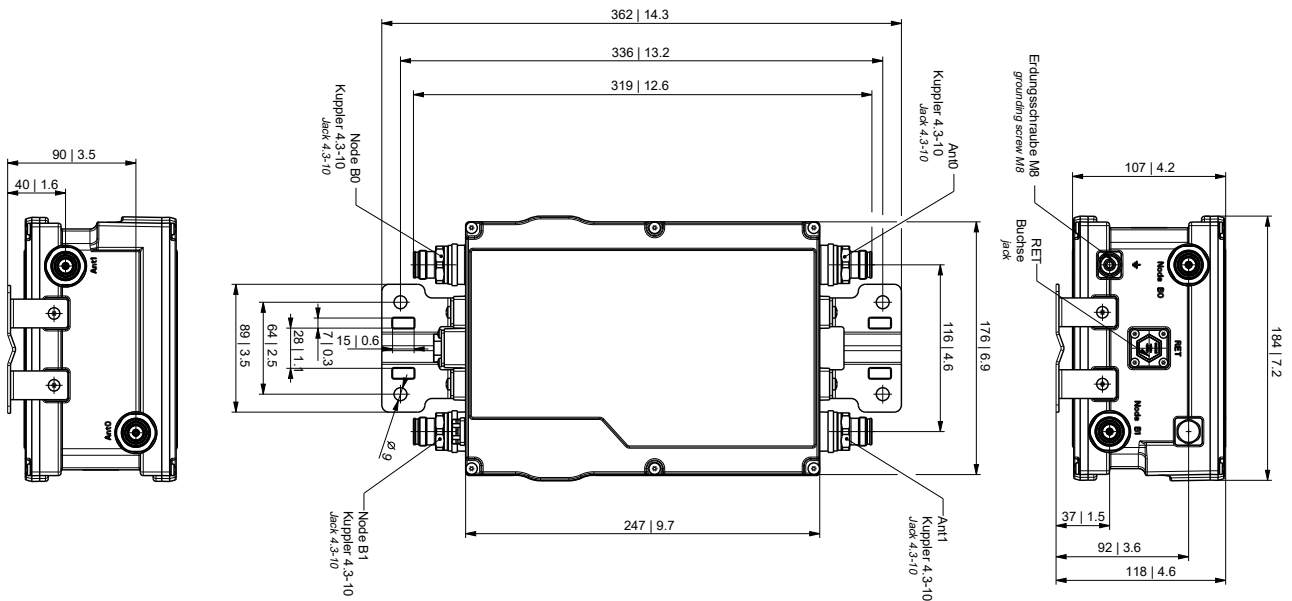
<b>Product No.</b>	<b>78210430V43</b>	
<b>Product Name</b>	<b>TMA B20 (2-2)</b>	
<b>Tx Characteristics</b>		
Frequency range	MHz	791 – 821
Insertion loss	dB	Typically 0.25
Ripple	dB	< 0.3
Input power (per input)	W	< 100 (+50 dBm) CW
Intermodulation products in RX band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>Rx Characteristics</b>		
Frequency range	MHz	832 – 862
Loss in by-pass mode	dB	Typically 2.0
Return loss	dB	> 16 (DC ON)
Gain	dB	12 nominal
Noise figure	dB	Typically 1.2
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 30
<b>Environmental Characteristics</b>		
Operating temperature range	°C   °F	-40 ... +65   -40 ... +149
IP rating		IP67
MTBF	hours	> 1 000 000 (per TMA)
EMC		According to ETS 300 342-3
<b>DC and Alarm Characteristics</b>		
DC supply	V	10 – 30
Operating current per DTMA (without RET)	mA mA	Nom. 155 at 10 V Nom. 60 at 30 V
Alarm management		AISG
<b>Mechanical Characteristics</b>		
Material		Aluminium housing
Connectors	RF RET	4.3-10 female 8-pin female, IEC 60130-9 (Pin 3: RS485B, pin 5: RS485A, pin 6: 10 - 30 V DC, pin 7: DC return, other pins: Not connected)
Mounting		Wall mounting: With 4 screws (max. 8 mm diameter) Pole mounting: With additional clamp set
Weight	kg   lb	6.2   13.7
Packing size	mm   in	250 x 450 x 210   9.8 x 17.7 x 8.3
Dimensions (w x h x d)	mm   in	176 x 247 x 104   6.9 x 9.7 x 4.1 (without connectors, without mounting brackets)

Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2



Note:  
DC and AISG can only be provided via RBS A





# TMA B5 (2-2)

KRY 112 4159/2

- Specified and verified as an integrated system solution for Ericsson RBSs
- Supports AISG 2.0 and CWA
- Possible to power either via one, or both feeders
- RET interface
- Automatic LNA by-pass function
- Built in lightning protection
- Excellent RF performance



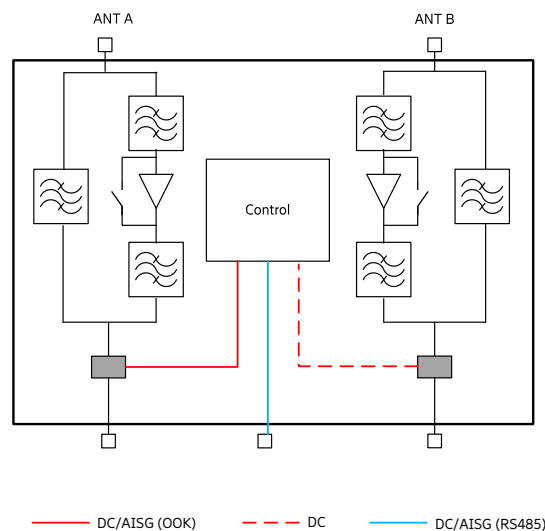
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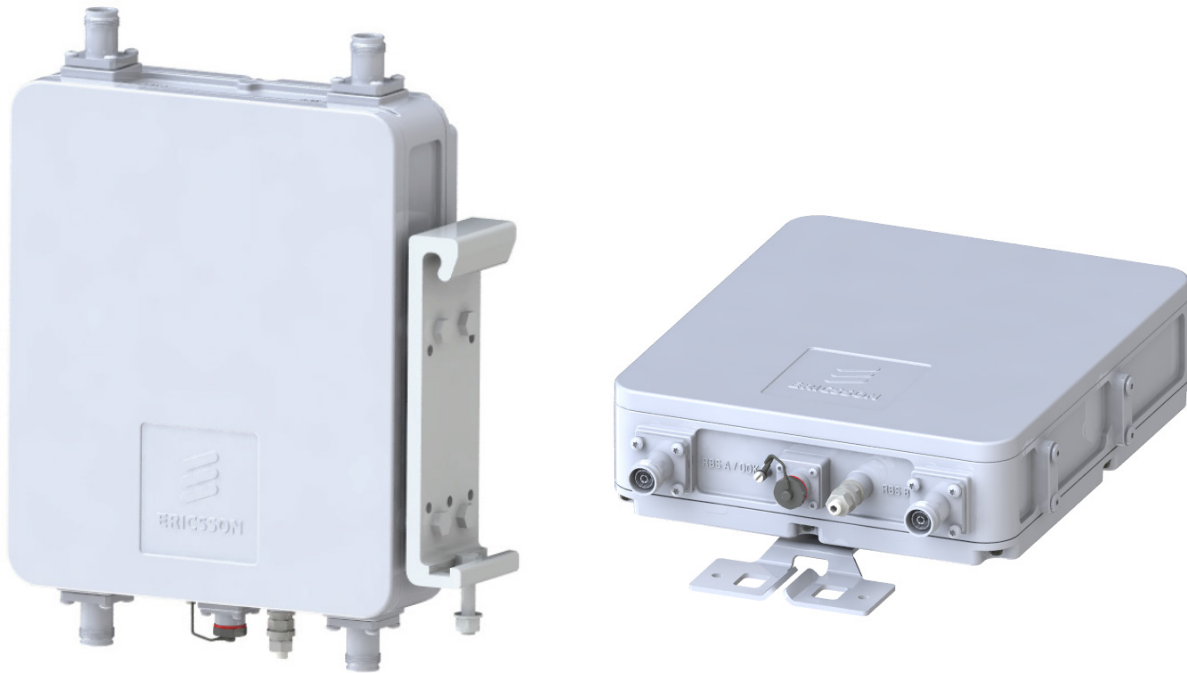
<b>Product No.</b> <b>Product Name</b>		<b>KRY 112 4159/2</b> <b>TMA B5 (2-2)</b>	
<b>Radio performance 850 MHz</b>			
Receiving pass band:	MHz	824 – 849	
Transmitting pass band:		869 – 894	
RX Gain: 824-849	dB	12 ± 0.9	
Input IP3	dBm	20*	
IM3 at antenna port (2 x 43 dBm)	dBm	-118	
Noise figure mid band	dB	1.2*	
Input power at RBS port (average 6 carriers)	dBm	51	
TX insertion loss	dB	0.45*	
RX return loss	dB	22*	
TX return loss	dB	21*	
<b>Mechanical Specifications</b>			
Dimensions (H x W x D)	mm   in	246 x 230 x 79   9.7 x 9.7 x 3.1	
Weight	kg   lb	6.0   13.22	
RF connectors		7-16 (f)	
RET connector		IEC 60130-9 - Ed. 3.0 female	
Ground connectors		M8	
DC/Alarm		Superimposed on the RF signal	
Mounting		Pole or wall mounting	
<b>Electrical Specifications</b>			
Supply voltage	VDC	10 - 32	
Power consumption (total)		<4.5 W in AISG mode or 100 ±10 mA in CWA mode	
Alarm: via 3GPP/AISG protocol, or in CWA mode	mA	>180	
<b>Environmental Specifications</b>			
Temperature range, full performance	°C	-40 to +55	
MTBF		80 years	
Sealing		IP67	
Lightning protection		IEC 62305-1	
Product safety		International (CB): IEC 60950-1, IEC 60950-22 Europe (CE): EN 60950-1, EN 60950-22 North America (ETL): UL 60950-1, CSA-C22.2 No.60950-1	

\* Typical values



KRY 112 42159/2 is designed to behave as CWA or AIS-compatible TMA





# TMA B8 (2-2)

KRY 112 587/16

- Excellent RF performance
- Ericsson Radio System designed TMA, Rail mounting is possible
- Verified as an RBS integrated system solution
- Possible to power both TMAs from one feeder, or from both feeders
- RET interface
- Automatic LNA by-pass
- Wall mounting bracket and pole clamps are included



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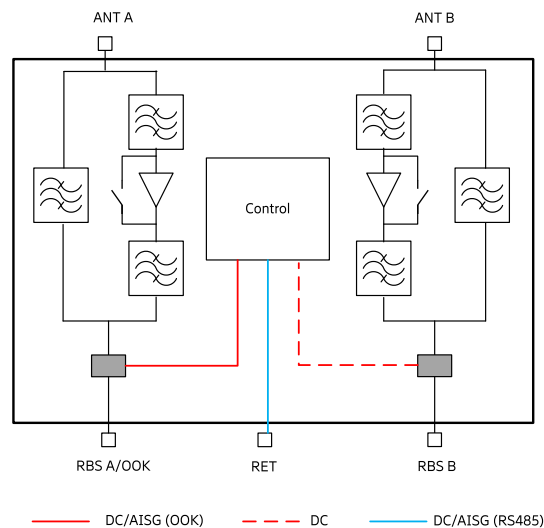


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<b>Product No.</b>		<b>KRY 112 587/16 TMA B8 (2-2)</b>
<b>Radio Performance**</b>		
Bandwidth	MHz	35
Receiving pass band:	MHz	880 – 915
Transmitting pass band:	MHz	925 – 960
RX gain	dB	12*
Input IP3	dBm	18*
IM3 at antenna port (2 x 43 dBm)	dBm	< -115*
Noise figure	dB	1.2*
TX max input power (max peak)	dBm	65
TX max input power (average peak)	dBm	54
TX insertion loss	dB	0.3*
RX return loss	dB	21*
TX return loss	dB	21*
<b>Electrical Specifications**</b>		
Input power	VDC	10 to 32
Power consumption (total)	W	2* in AISG mode, or 100 ± 10 mA in CWA mode
Alarm		Through AISG protocol, or in CWA mode >180 mA
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm   in	290 x 247 x 77   11.4 x 9.7 x 3.0
Weight	kg   lb	6.4   14.1
Color		White (NCS S 1002-B), textured
RF connectors		4.3-10 (f) long shank
RET connectors		8-pin (f). IEC 60130-9
Ground connector		M8 bolt
Mounting		Rail, pole or wall mounting (Rail bracket ordered separately)
<b>Environmental Specifications**</b>		
Temperature range, full performance	°C	-40°C to +55
MTBF		> 80 years
Sealing		IP67
Lightning protection		5 kA 10/350 μs, 20 kA 8/20 μs (Common mode)
Product Safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETL): CSA/UL 62368-1

\* Typical data in normal conditions

\*\* Common values for both variants



Note:

- KRY 112 587/16 provides DC redundancy via RBS B



# TMA B3 (2-2)

78210583V43

- Double units for easy use with XPol antennas
- Supports AISG 2.0 and CWA
- Suitable for antenna RET control according to AISG/3GPP standard
- By-pass mode to ensure cell operation in case of DC power down
- Built-in lightning protection



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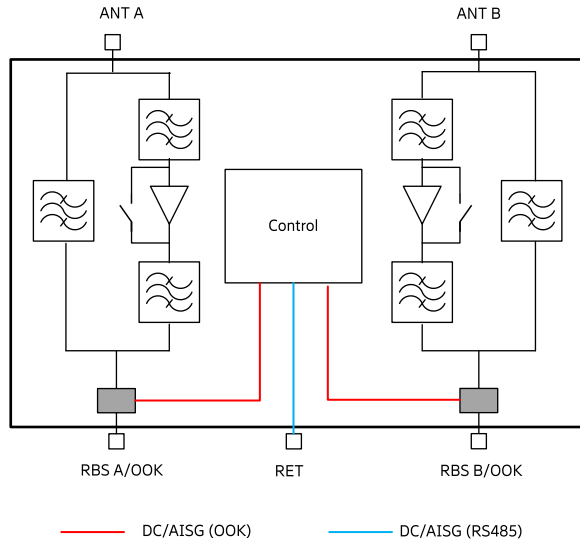
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<b>RET</b>	=	Remote Electrical Tilt
<b>AISG</b>	=	Antenna Interface Standards Group
<b>CWA</b>	=	Current Window Alarm

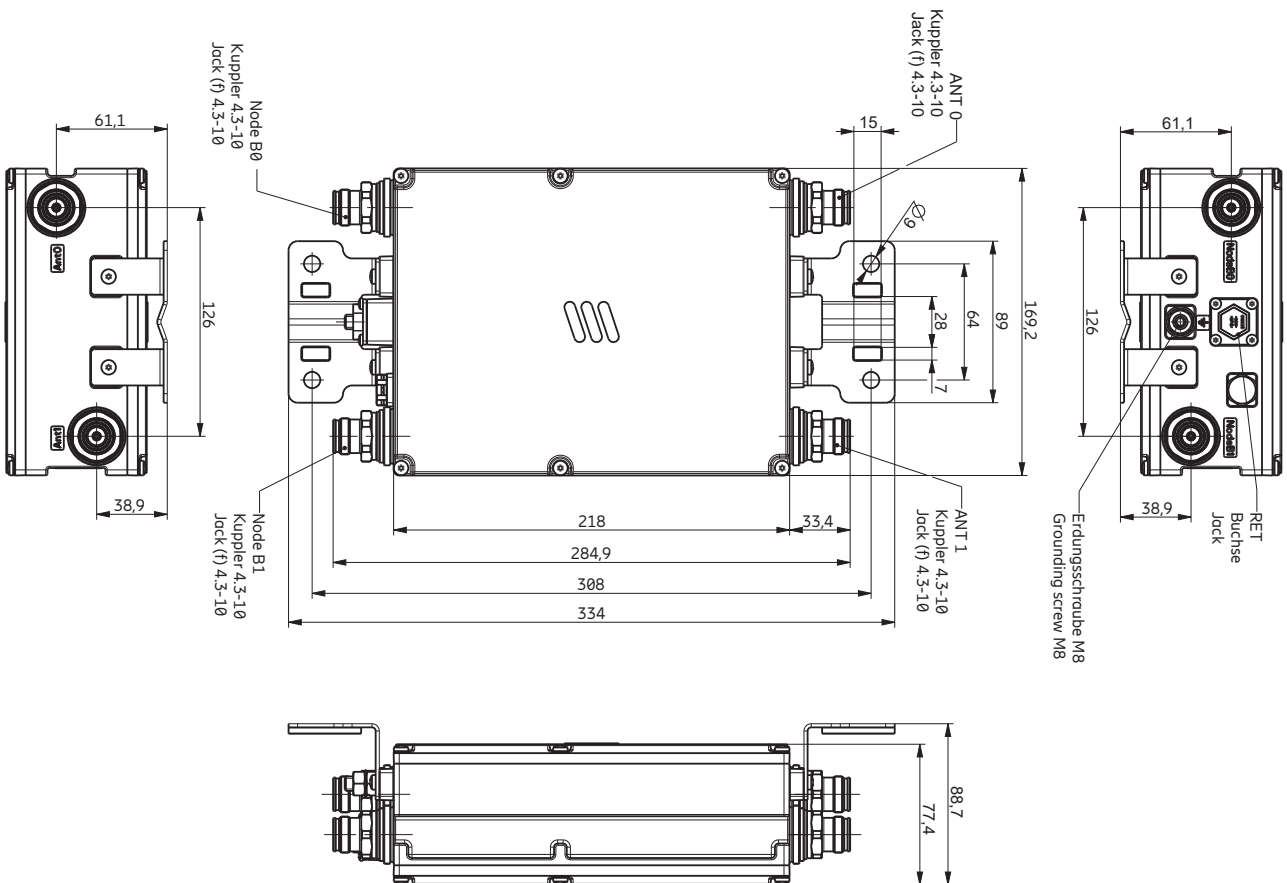
<b>Product No.</b>		<b>78210583V43</b>	
<b>Product Name</b>		<b>TMA B3 (2-2)</b>	
<b>Tx Characteristics</b>			
Frequency range	MHz	1805 - 1880	
Insertion loss	dB	Typically 0.25 dB	
Input power (per input)	kW	< 0.2 (+53 dBm) CW / < 1.6 (+62 dBm) peak	
Intermodulation products in Rx band	dBm	< -117 (2 Tx carriers at +43 dBm)	
Return loss	dB	> 18	
<b>Rx Characteristics</b>			
Frequency range	MHz	1710 – 1785	
Loss in bypass mode	dB	Typically 1.7	
Return loss	dB	> 16 (DC ON) / > 12 (DC OFF)	
Gain	dB	12 nominal	
Noise figure	dB	Typically 1.0	
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 30	
<b>Environmental Characteristics</b>			
Operating temperature range	°C   °F	-40 ... +65   -40 ... +149	
IP rating		IP67	
MTBF	hours	> 1 000 000 (per TMA)	
EMC		According to ETS 300 342-3	
<b>DC and Alarm Characteristics</b>		<b>CWA</b>	<b>AISG Mode</b>
DC supply	V	7 – 19	10 – 30
Operating current (without RET)	mA	80 – 120	Nom. 155 at 10 V Nom. 65 at 30 V
Alarm management		170–200 mA	AISG
<b>Mechanical Characteristics</b>			
Material		Aluminium housing	
Connectors	RF RET	4.3-10 female 8-pin female, IEC 60130-9 (Pin 3: RS485B, pin 5: RS485A, pin 6: 10 – = 30 V DC, pin 7: DC return, other pins: Not connected)	
Mounting		Wall mounting: With 4 screws (max. 8 mm diameter) Pole mounting: With additional clamp set	
Weight	kg   lb	4   8.8	
Dimensions (w x h x d)	mm   in	218 x 169 x 74   8.6 x 6.7 x 2.9 (without connectors, without mounting brackets)	
Packing size	mm   in	405 x 235 x 175   15.9 x 9.3 x 6.9	

Accessories (order separately if required)

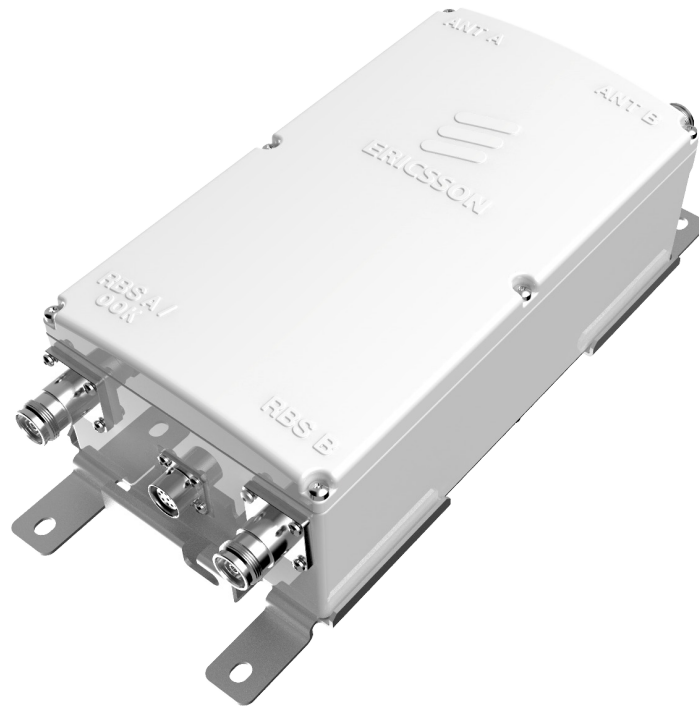
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2



Note:  
DC and AISG can be provided via RBS A or RBS B



Dimensions in mm



# TMA B3 (2-2)

KRY 112 488/12

- Specified and verified as an integrated system solution for Ericsson RBSs
- Supports AISG 2.0 and CWA
- Possible to power either via one, or both feeders
- RET interface
- Automatic LNA by-pass function
- Built in lightning protection
- Excellent RF performance



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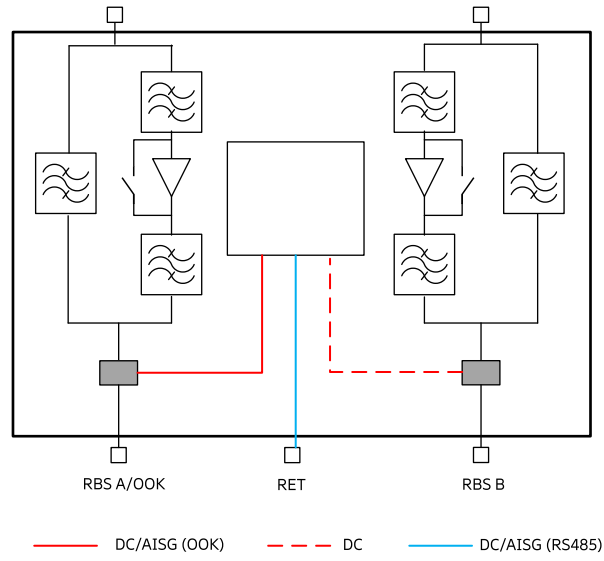


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<b>Product No.</b>		KRY 112 488/12
<b>Product Name</b>		TMA B3 (2-2)
<b>Radio performance</b>		
Bandwidth	MHz	75
Receiving pass band:	MHz	1710 – 1785
Transmitting pass band:		1805 – 1880
RX Gain	dB	12 ± 1
Input IP3	dBm	15*
IM3 at antenna port (2x43 dBm)	dBm	-118
Noise figure midband	dB	1.2*
TX max input power (Max Peak)	dBm	55
TX insertion loss	dB	0.4*
RX return loss	dB	22*
TX return loss	dB	22*
<b>Electrical Specifications</b>		
Input power	VDC	10 to 32
Power consumption	W	< 4.5 in AISG mode, or 100 ± 10 mA in CWA mode
Alarm		Via 3GPP/AISG protocol, or > 180 mA in CWA mode
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm   in	280 x 155 x 98   11.0 x 6.1 x 3.9
Weight	kg   lb	7.4   16.3
RF connectors		4.3–10 (f)
Ground connector		M8
DC/Alarm		Superimposed on the RF signal
Mounting options		Pole or wall
RET connectors		8-pin female. IEC 60130-9
<b>Environmental Specifications</b>		
Operating temperature	°C	-40 to +55
MTBF		> 80 years
IP class		IP67
Lightning protection		5 kA 10/350 μs, 20 kA 8/20 μs (Common mode)
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETC): CSA/UL 62368-1

\* Typical values

\*\* Rail bracket ordered separately

**Note:**

- KRY 112 488/12 provides DC redundancy via RBS B
- KRY 112 488/12 is designed to behave as CWA or AISG-compatible TMA





# TMA B66 (2-2)

KRY 112 144/2

- Easy and fast rail installation
- Specified and verified as a solution together with Ericsson RBSs
- Possible to power either via one, or both feeders
- RET interface
- Supports AISG 2.0
- Automatic LNA by-pass function
- Built-in lightning protection
- Excellent RF performance



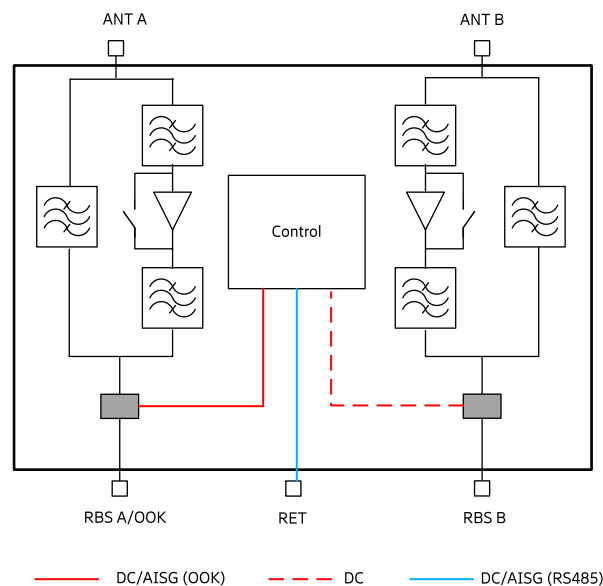
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<b>Product No.</b> <b>Product Name</b>		KRY 112 144/2 TMA B66 (2-2)	
<b>Radio Performance</b>			
Receiving pass band:	MHz	1710–1780	
Transmitting pass band:		2110–2200	
RX Gain	dB	12±0.8*	
Input IP3	dBm	≥ 22*	
Noise Figure (1710 –1780 MHz)		≤ 1.2*	
TX max input power (Max Peak)	dBm	60	
RX Return Loss	dB	≥ 20*	
TX Return Loss	dB	≥ 20*	
TX Insertion Loss		≥ 0.22*	
<b>Electrical Specifications</b>			
Input power	V DC	+10 – + 30 (Operating Voltage Range)	
Power Consumptions	W	< 4.5	
<b>Mechanical Specifications</b>			
Dimensions (WxDxH)	mm   in	219.6 × 169 × 81   86.5 × 6.7 × 3.2	
Weight	kg   lb	4.4   9.7	
RF connector		7-16 female	
RET Connector		8-pin (f) IEC 60130-9	
Ground connector		M8	
Mounting alternatives		Rail or wall	
MTBF		80 years	
<b>Environmental Specifications</b>			
Temperature range, full performance	°C	-40 – +55	
Sealing		IP 67	
Lightning protection		5 kA, 10/350 μs	
Wind Load		90 N at 50/s	
Product Safety		International (CB): IEC 60950-1, IEC 60 950-22, IEC 60 529 Europe (CE): EN 60950-1, EN 60 950-22, EN 60 529 North America (ETL): UL 60950-1, UL 60950-22 CAN/CSA-C22.2 NO. 60950-1A-07, CAN/CSA-C22.2 NO 60950-22-07, UL 50E Ed.1	

\* Typical values



Note:

- KRY 112 144/2 provides DC redundancy via RBS B



# TMA B1 (2-2)

KRY 112 442/16

- Ericsson Radio System designed TMA
- Verified as an RBS integrated system solution
- Possible to power either via one, or both feeders
- RET interface
- Supports AISG 2.0
- Automatic LNA by-pass
- Built-in lightning protection
- Excellent RF performance
- Wall mounting bracket and pole clamps are included



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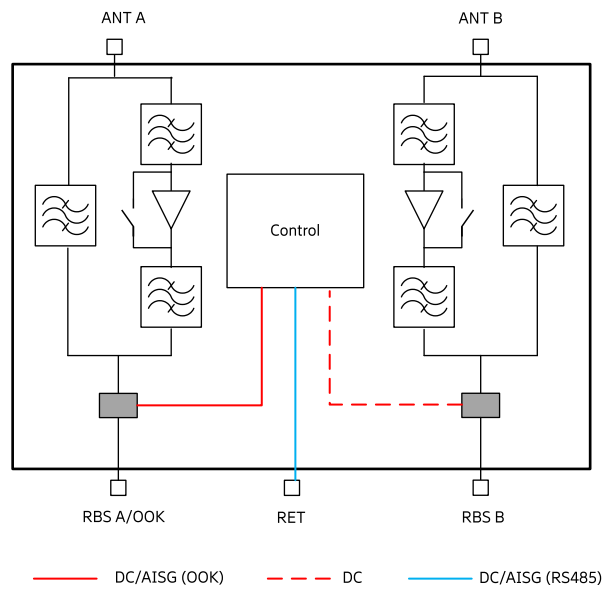


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<b>Product No.</b>	<b>KRY 112 442/16</b>	
<b>Product Name</b>	<b>TMA B1 (2-2)</b>	
<b>Radio Performance</b>		
Bandwidth	MHz	60
Receiving pass band:	MHz	1920 – 1980
Transmitting pass band:		2110 – 2170
RX Gain	dB	12±1
Input IP3	dBm	18*
Noise figure midband	dBm	1.3*
TX max input power (Max Peak)	dBm	58
TX max input power (Average Peak)	dBm	50
TX Insertion loss	dB	0.3*
RX return loss	dB	22*
TX return loss	dB	22*
<b>Electrical Specifications**</b>		
Input voltage	VDC	10 to 32
Power consumptions (total)	W	< 1.5 (30 VDC)
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm in	230 x 160 x 60 9.1 x 6.3 x 2.4
Weight	kg   lb	3.5   7.7
Color		White (NCS S 1002-B), textured
RF connector		4.3-10 (f) long shank
RET connectors		8-pin (f). IEC 60130-9
Ground connector		M8
Mounting		Pole or wall mounting
<b>Environmental Specifications**</b>		
Temperature range, full performance	°C	-40 to + 55
MTBF		> 80 years
Sealing		IP67
Lightning protection		5 kA 10/350 μs, 20 kA 8/20 μs (Common mode)
Product Safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETL): CSA/UL 62368-1

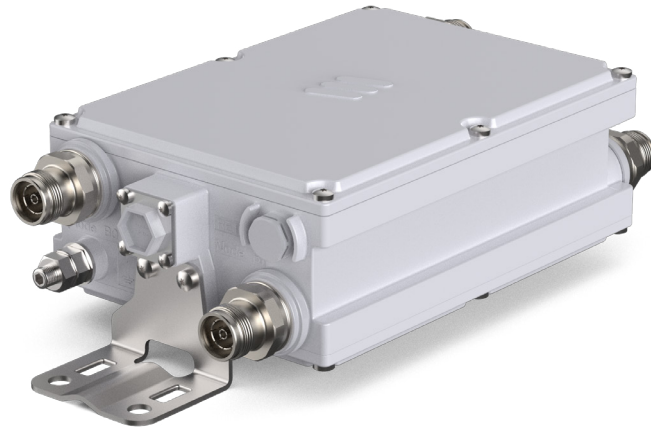
\* Typical values

\*\* Common values for all variants



Note:

- KRY 112 442/16 provides DC redundancy via RBS B



# TMA B7 (2-2)

78211330V43

- 2-2 Unit
- Supports AISG 2.0
- Suitable for antenna RET control according to AISG/3GPP standard
- By-pass mode to ensure cell operation in case of DC power down
- Built-in lightning protection



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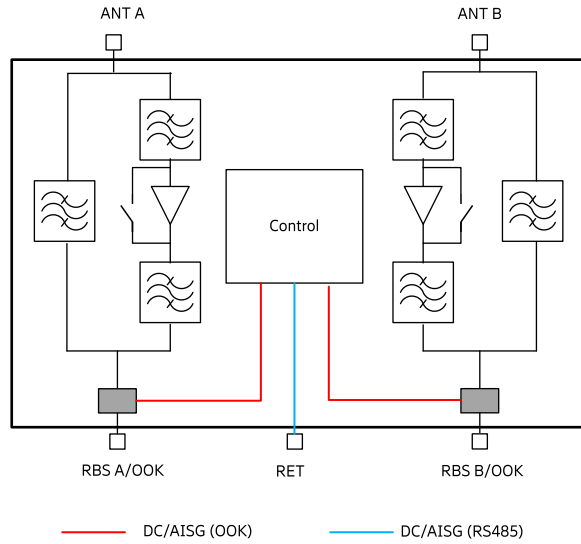
**AISG** = Antenna Interface Standards Group

**RET** = Remote Electrical Tilt

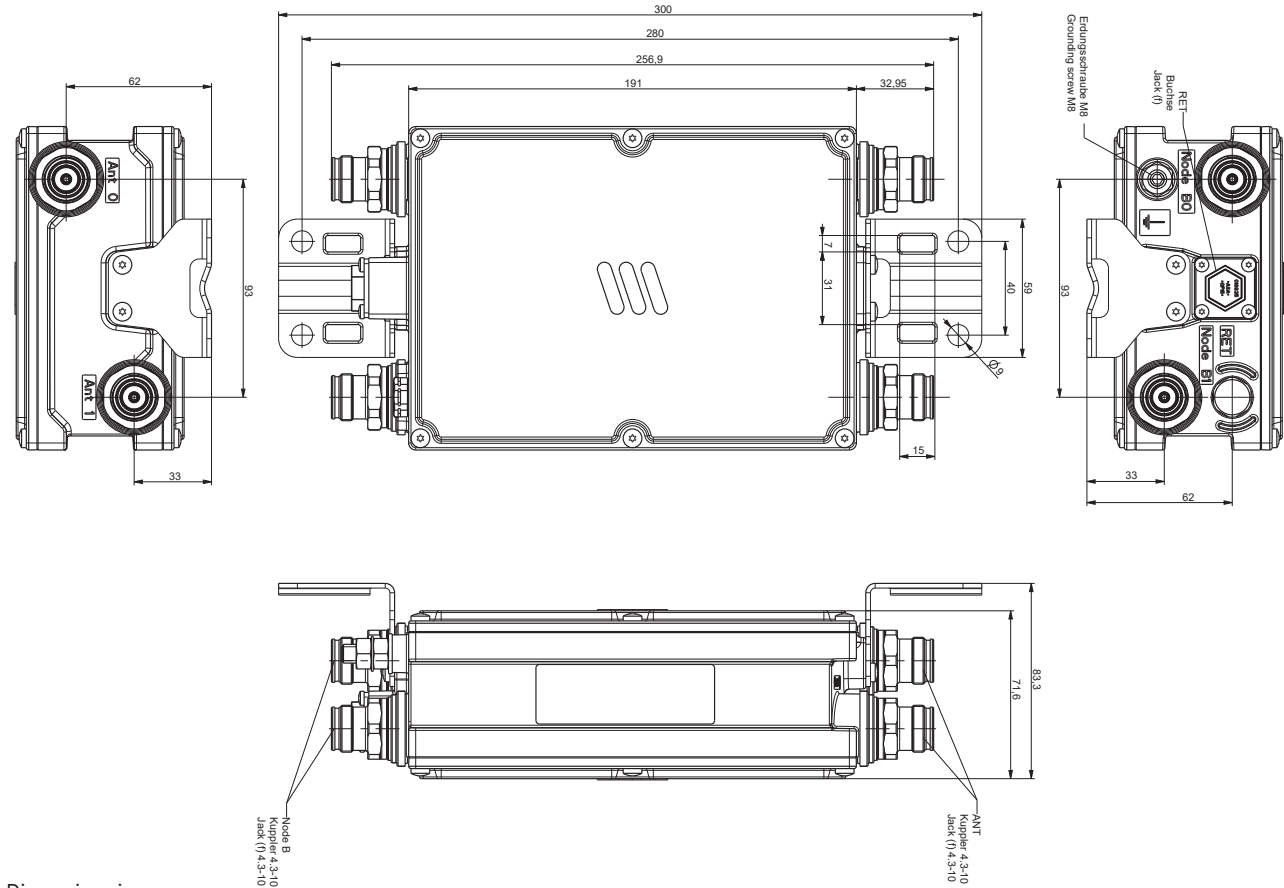
<b>Product No.</b>		<b>78211330V43</b>
<b>Product Name</b>		<b>TMA B7 (2-2)</b>
<b>Tx Characteristics</b>		
Frequency range	MHz	2620 – 2690
Insertion loss	dB	Typically 0.3
Input power (per input)	kW	< 0.1 (+50 dBm) CW / < 1.6 (+62 dBm) peak
Intermodulation products in RX band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>Rx Characteristics</b>		
Frequency range	MHz	2500 – 2570
Loss in by-pass mode	dB	Typically 1.8
Return loss	dB	> 18 (DC ON)
Gain	dB	12, nominal
Noise figure	dB	Typically 1.6
Output 1-dB compression point	dBm	> 10
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 25
<b>Environmental Characteristics</b>		
Operating temperature range	°C   °F	-40 ... +65   -40 ... +149
IP rating		IP67
MTBF	hours	> 1 000 000 (per TMA)
EMC		According to ETS 300 342-3
<b>DC and Alarm Characteristics</b>		
DC supply	V	10 – 30
Operating current per DTMA (without RET)	mA mA	Nom. 130 at 10 V DC Nom. 50 at 30 V DC
Alarm management		AISG
<b>Mechanical Characteristics</b>		
Material		Aluminium housing
Connectors	RF RET	4.3-10 female 8-pin female, IEC 60130-9 (Pin 3: RS485B, pin 5: RS485A, pin 6: 10 – 30 V DC, pin 7: DC return, other pins: not connected)
Mounting		Wall mounting: With 4 screws (max. 8 mm diameter) Pole mounting: With additional clamp set
Weight	kg   lb	3   6.6
Dimensions (w x h x d)	mm   in	138 x 191 x 72   5.4 x 7.5 x 2.8 (without connectors, without mounting brackets)
Packing size	mm   in	217 x 397 x 170   8.5 x 15.6 x 6.7

Accessories (order separately if required)

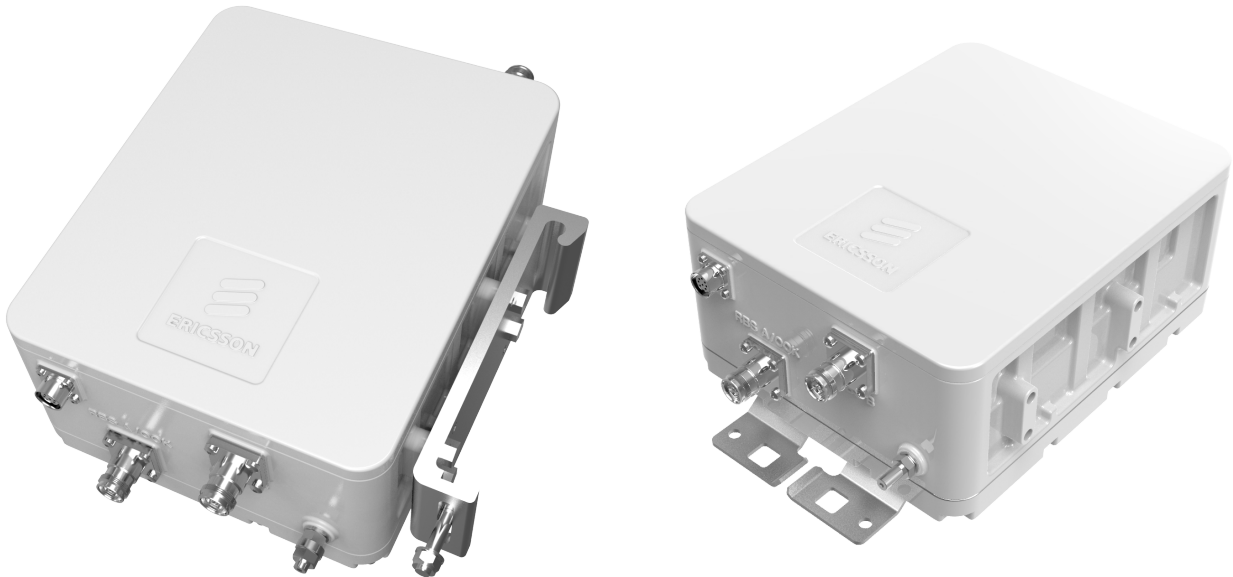
Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2



Note:  
DC and AISG can be provided via RBS A or RBS B







# TMA B8 B20 (2-2)

KRY 112 228/11

- Excellent RF performance
- Ericsson Radio System designed TMA, Rail mounting is possible
- Verified as an RBS integrated system solution
- Two RBS ports for feeder sharing, two ports for antenna sharing
- RET interface
- Supports AISG 2.0
- Automatic LNA by-pass
- Wall mounting bracket and pole clamps are included
- Possible to operate from one feeder



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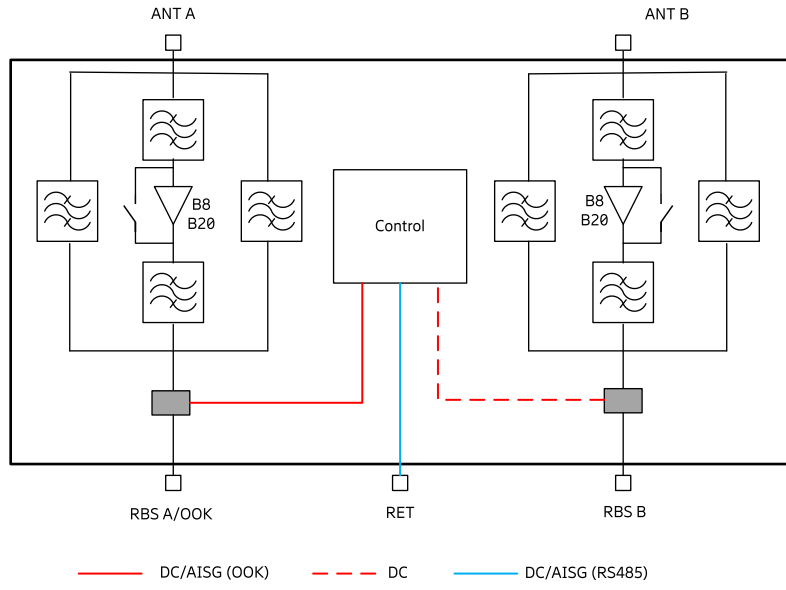


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<b>Product No.</b>		<b>TMA B8 B20 (2-2)</b>	
<b>Product Name</b>		<b>KRY 112 228/11</b>	
<b>Radio performance B20 **</b>			
Receiving pass band:	MHz	832 - 862	
Transmitting pass band:		791 - 821	
3GPP band		B20	
RX gain	dB	12*	
Noise figure	dB	1.2*	
Input IP3	dBm	> 16*	
RX return loss	dB	> 22*	
TX return loss	dB	> 22*	
Input power at RBS port (max. average)	dBm	50	
TX insertion loss	dB	0.3*	
IM3 at Antenna port (2 x 43 dBm)	dBm	< -115*	
<b>Radio performance B8 **</b>			
Receiving pass band:	MHz	880 - 915	
Transmitting pass band:		925 - 960	
3GPP band		B8	
RX gain	dB	12*	
Noise figure	dB	1.2*	
Input IP3	dBm	> 16*	
RX return loss	dB	> 22*	
TX return loss	dB	> 22*	
Input power at RBS port (max. average)	dBm	50	
TX insertion loss	dB	0.3*	
IM3 at Antenna port (2 x 43 dBm)	dBm	< -115*	
<b>Electrical Specifications **</b>			
Input voltage	VDC	10 to 32	
Power consumption	W	2*	
Alarm protocol		AISG 2.0	
<b>Mechanical Specifications</b>			
Dimensions (H x W x D)	mm   in	290 x 235 x 128   11.4 x 9.3 x 5.0	
Weight:	kg   lb	10.7   23.6	
Color:		White (NCS S 1002-B), textured	
RF connectors		4.3-10 (f) long shank	
RET connector		IEC 60130-9	
Ground connector		M8 bolt	
Mounting		Rail, pole, or wall mounting (Rail bracket ordered separately)	
<b>Environmental Specifications **</b>			
Temperature range, full performance:	°C	-40 to +55	
MTBF		> 80 years	
Sealing		IP 67	
Lightning protection		5 kA 10/350 μs, 20 kA 8/20 μs (Common mode)	
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETL): CSA/UL 62368-1	

\* Typical values

\*\* Complete coupling factor table see



Note:  
- KRY 112 228/11 provides DC redundancy via RBS B



# TMA B1 B3 Bypass 1400 (2-2)

78211107V02

- 2-2 Unit
- Suitable for antenna RET control according to AISG/3GPP standard
- Supports AISG 2.0
- Bypass mode to ensure cell operation in case of DC power down
- Built-in lightning protection
- DC Supply via RBS A, RBS B or both



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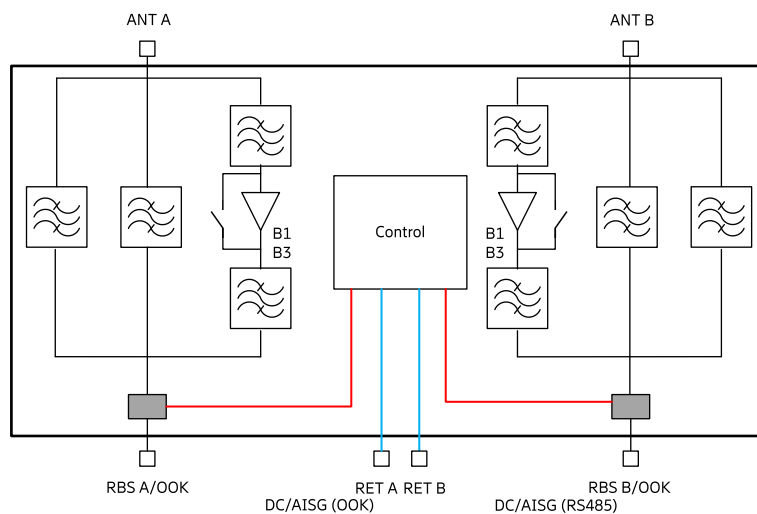
**AISG** = Antenna Interface Standards Group  
**RET** = Remote Electrical Tilt

Product No. Product Name	Wide-Band Mode	78211107V02 TMA B1 B3 Bypass 1400 (2-2)
<b>1800 MHz Tx Characteristics</b>		
Frequency range	MHz	1805 – 1880
Insertion loss	dB	Typically 0.5
Input power (per input and frequency band)	kW	< 0.1 (+50 dBm) / < 1.6 (+62 dBm) peak
Intermodulation products in RX band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>1800 MHz Rx Characteristics</b>		
Frequency range	MHz	1710 – 1785
Return loss	db	> 18 (DC ON) / > 12 (DC OFF)
Loss in bypass mode	dB	Typically 2.0 (DC OFF)
Gain	dB	12 nominal
Noise figure	dB	Typically 1.5
Output 1-dB compression point	dBm	> 10
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 25
<b>UMTS Tx Characteristics</b>		
Frequency range	MHz	2110 – 2170
Insertion loss	dB	Typically 0.3
Input power (per input and frequency band)	kW	< 0.1 (+50 dBm) / < 1.6 (+62 dBm) peak
Intermodulation products in RX band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>UMTS Rx Characteristics</b>		
Frequency range	MHz	1920 – 1980
Return loss	dB	> 18 (DC ON) / > 12 (DC OFF)
Loss in bypass mode	dB	Typically 2.0 (DC OFF)
Gain	dB	12 nominal
Noise figure	dB	Typically 1.5
Output 1-dB compression point	dBm	> 10
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 25

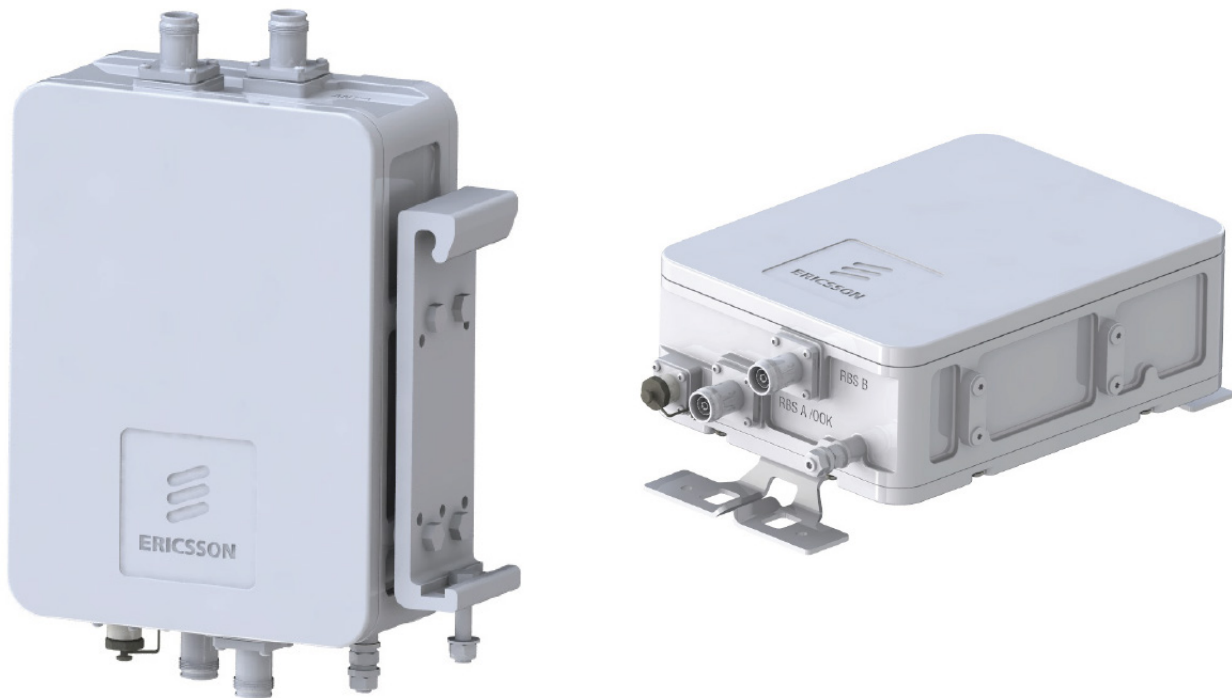
1427 - 1518 MHz Bypass Characteristics		
Frequency range	MHz	1427 – 1518
Insertion loss	dB	Typically 0.15
Input power	kW	< 0.1 (+50 dBm)
Intermodulation products	dBm	< -117 (2 Tx carriers at + 43 dBm)
Return loss	dB	> 18
Environmental Characteristics		
Operating temperature range	°C   °F	-40 ... +65   -40 ... +149
IP rating		IP67
MTBF	hours	> 1 000 000 (per TMA)
EMC		According to ETS 300 342-3
DC and Alarm Characteristics		
DC supply	V	10 – 30
Operating current per DTMA (without RET)	mA mA	Nom. 175 @ 10 V Nom. 65 @ 30 V
Alarm management		AISG
Mechanical Characteristics		
Material		Aluminium housing
Connectors	RF RET	4.3-10 female, 8-pin female, IEC 60130-9, (Pin 3: RS485B, pin 5: RS485A, pin 6: 10 - 30 V DC, pin 7: DC return, other pins: Not connected)
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Pole mounting: With additional clamp set
Weight	kg   lb	8.8   19.4
Dimensions (w x h x d)	mm   in	290 x 235 x 94 / 11.4 x 9.3 x 3.7
Packing size	mm   in	420 x 335 x 175 / 16.5 x 13.2 x 6.9

### Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2



Note:  
— DC and AISG can be provided via RBS A or RBS B  
— RS485 signal on RET ports is identical



# TMA B1 B3 (2-2)

KRY 112 227/12

- Excellent RF performance
- Ericsson Radio System designed TMA, Rail mounting is possible
- Verified as an RBS integrated system solution
- Two RBS ports for feeder sharing, two ports for antenna sharing
- RET interface
- Supports AIS 2.0
- Automatic LNA by-pass
- Wall mounting bracket and pole clamps are included
- Possible to operate from one feeder



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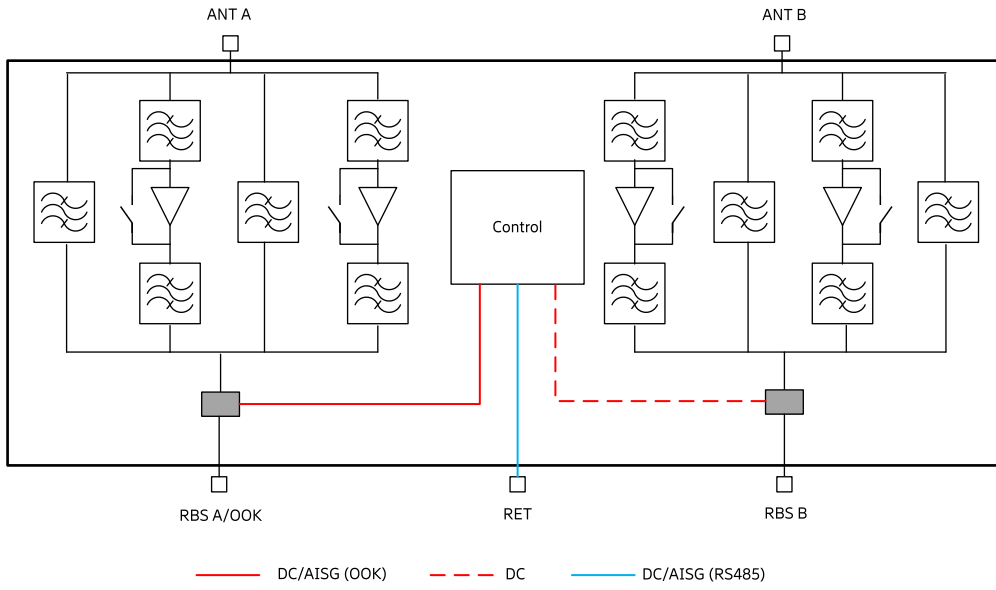
<b>Order No.</b>		<b>KRY 112 227/12</b>	
<b>Order Name</b>		<b>TMA B1 B3 (2-2)</b>	
<b>Radio Performance B3 **</b>			
Receiving pass band:	MHz	1710 – 1785	
Transmitting pass band:		1805 – 1880	
3GPP band		B3	
RX gain	dB	12*	
Noise figure	dB	1.2*	
Input IP3	dBm	> 14*	
RX return loss	dB	> 20*	
TX return loss: Input power at	dB	> 20*	
Input power RBS port (max. average)	dBm	55	
TX insertion loss	dB	0.4*	
IM3 at Antenna port (2x43 dBm)	dBm	< -118*	
<b>Radio Performance B1</b>			
Receiving pass band:	MHz	1920 – 1980	
Transmitting pass band:		2110 – 2170	
3GPP band		B1	
RX gain	dB	12*	
Noise figure	dB	1.2*	
Input IP3	dBm	> 15*	
RX return loss	dB	> 20*	
TX return loss	dB	> 20*	
Input power at RBS port (max.average)	dBm	50	
TX insertion loss	dB	0.3*	
IM7 at Antenna port (2x43 dBm)	dBm	< -128*	
<b>Electrical Specifications**</b>			
Input voltage	VDC	10 to 32	
Power consumption	W	4*	
Alarm protocol		AISG 2.0	
<b>Mechanical Specifications</b>			
Dimensions (H x W x D)	mm in	270 x 200 x 96 10.6 x 7.9 x 3.8	
Weight	kg   lb	7.7   17.0	
Color		White (NCS S 1002-B), textured	
RF connectors		4.3-10 (f) long shank	
RET connector		IEC 60130-9	
Ground connector		M8 bolt	
Mounting		Rail, pole, or wall***	
<b>Environmental Specifications**</b>			
Temperature range, full performance	°C	-40 to +55	
MTBF		> 80 years	
Sealing		IP67	
Lightning protection		5 kA 10/350 μs, 20 kA 8/20 μs (Common mode)	
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETL): CSA/UL 62368-1	

\* Typical values

\*\* Common values

\*\*\* Rail bracket ordered separately





Note:  
- KRY 112 227/12 provides DC redundancy via RBS B



# TMA B1 B3

## Bypass 1400 + Bypass LB (2-6)

KRY 112 234/1

- Excellent RF performance
- Ericsson Radio System designed TMA, Rail mounting is possible
- Verified as an RBS integrated system solution
- Two RBS ports for feeder sharing, two ports for antenna sharing
- RET interface
- Supports AISG 2.0
- Automatic LNA by-pass
- Wall mounting bracket and pole clamps are included
- Possible to operate from one feeder



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<b>Product No.</b>		<b>KRY 112 234/1</b>	
<b>Product Name</b>		<b>TMA B1 B3 + Bypass 1400 + Bypass LB (2-6)</b>	
<b>Radio performance B1</b>			
Receiving pass band:	MHz	1920 - 1980	
Transmitting pass band:		2110 - 2170	
3GPP band		B1	
RX gain	dB	12*	
Noise figure	dB	1.2*	
Input IP3	dBm	15*	
RX return loss	dB	> 18*	
TX return loss	dB	> 18*	
Input power at RBS port (max.average)	dBm	50	
TX insertion loss	dB	0.3*	
IM3 at Antenna port (2x43 dBm)	dBm	< -115*	
<b>Radio performance B3</b>			
Receiving pass band:	MHz	1710 - 1785	
Transmitting pass band:		1805 - 1880	
3GPP band		B3	
RX gain	dB	12*	
Noise figure	dB	1.3*	
Input IP3	dBm	15*	
RX return loss	dB	> 18*	
TX return loss	dB	> 18*	
Input power at RBS port (max.average)	dBm	50	
TX insertion loss	dB	0.4*	
IM3 at Antenna port (2x43 dBm)	dBm	< -115*	
<b>Radio performance 1400</b>			
Frequency range	MHz	1427 - 1517	
Insertion loss	dB	0.2*	
Return loss	dB	> 18*	
Input power at RBS port (max.average)	dBm	50	
IM3 at Antenna port (2x43 dBm)	dBm	< -115*	
<b>Radio performance LB</b>			
Frequency range	MHz	380 - 960	
Insertion loss	dB	0.1*	
Return loss	dB	> 18*	
Input power at RBS port (max.average)	dBm	54.8	
IM3 at Antenna port (2x43 dBm)	dBm	< -115*	
DC configuration		Bypass	
<b>Electrical Specifications</b>			
Input voltage	VDC	10 to 32	
Power consumption	W	9	
Alarm protocol		AISG 2.0	

**Mechanical Specifications**

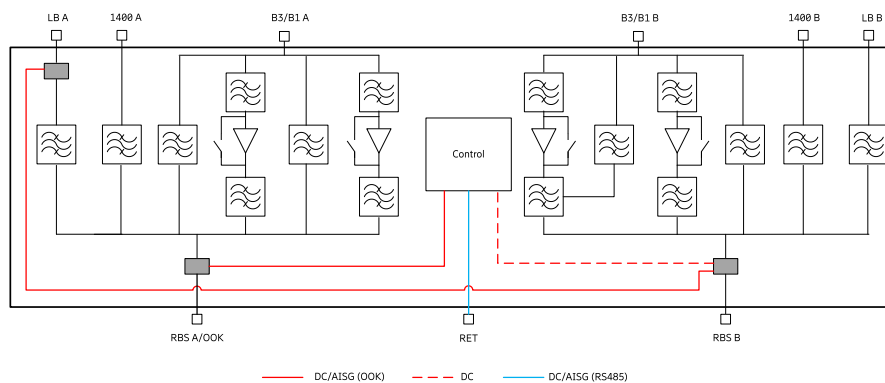
Dimensions (H x W x D)	mm   in	265 x 260 x 96   10.4 x 10.2 x 3.8
Weight	kg   lb	9.3   20.5
Color		White (NCS S 1002-B), textured
RF connectors		4.3-10 (f)
RET connector		IEC 60130-9
Ground connector		M8 bolt
Mounting		Rail, pole, or wall**

**Environmental Specifications**

Temperature range, full performance	°C	-40 to +55
MTBF		> 80 years
Sealing		IP67
Lightning protection		5 kA 10/350 $\mu$ s (Common mode)
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1

\* Typical values

\*\* Rail bracket ordered separately



Note:

- KRY 112 234/1 provides DC redundancy via RBS B
- KRY 112 234/1 supports an additional Low Band TMA (DC/AISG passthrough from port RBS B to port LB A)



# TMA B1 B3

## Bypass 1400 + Bypass LB (2-4)

KRY 112 235/1

- Excellent RF performance
- Ericsson Radio System designed TMA, Rail mounting is possible
- Verified as an RBS integrated system solution
- Two RBS ports for feeder sharing, two ports for antenna sharing
- RET interface
- Supports AISG 2.0
- Automatic LNA by-pass
- Wall mounting bracket and pole clamps are included
- Possible to operate from one feeder



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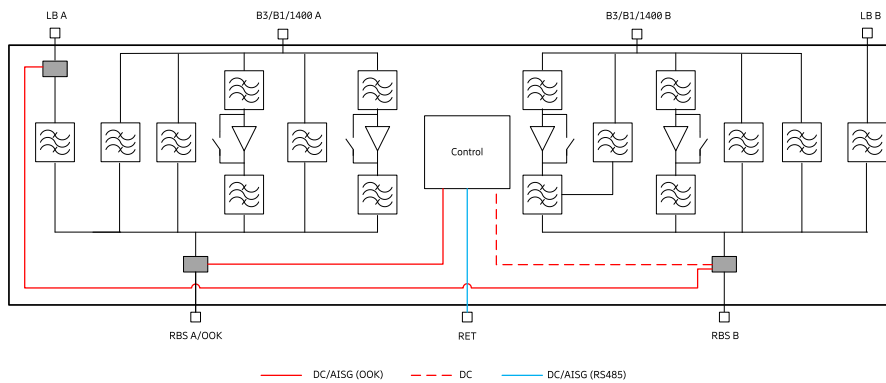
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<b>Product No.</b>		<b>KRY 112 235/1</b>	
<b>Product Name</b>		<b>TMA B1 B3 Bypass 1400 + Bypass LB (2-4)</b>	
<b>Radio performance B1</b>			
Receiving pass band:	MHz	1920 - 1980	
Transmitting pass band:		2110 - 2170	
3GPP band		B1	
RX gain	dB	12*	
Noise figure	dB	1.2*	
Input IP3	dBm	15*	
RX return loss	dB	> 20*	
TX return loss	dB	> 20*	
Input power at RBS port (max.average)	dBm	50	
TX insertion loss	dB	0.3*	
IM3 at Antenna port (2x43 dBm)	dBm	< -115*	
<b>Radio performance B3</b>			
Receiving pass band:	MHz	1710 - 1785	
Transmitting pass band:		1805 - 1880	
3GPP band		B3	
RX gain	dB	12*	
Noise figure	dB	1.2*	
Input IP3	dBm	15*	
RX return loss	dB	> 20*	
TX return loss	dB	> 20*	
Input power at RBS port (max.average)	dBm	50	
TX insertion loss	dB	0.4*	
IM3 at Antenna port (2x43 dBm)	dBm	< -115*	
<b>Radio performance 1400</b>			
Frequency range	MHz	1427 - 1517	
Insertion loss	dB	0.2*	
Return loss	dB	> 20*	
Input power at RBS port (max.average)	dBm	50	
IM3 at Antenna port (2x43 dBm)	dBm	< -115*	
<b>Radio performance LB</b>			
Frequency range	MHz	380 - 960	
Insertion loss:	dB	0.1*	
Return loss:	dB	20*	
Input power at RBS port (max.average)	dBm	54.8	
IM3 at Antenna port (2x43 dBm)	dBm	< -115*	
DC configuration		Bypass	
<b>Electrical Specifications</b>			
Input voltage	VDC	10 to 32	
Power consumption	W	9	
Alarm protocol		AISG 2.0	

Mechanical Specifications		
Dimensions (H x W x D)	mm   in	265 x 260 x 96   10.4 x 10.2 x 3.8
Weight	kg   lb	9.3   20.5
Color		White (NCS S 1002-B), textured
RF connectors		4.3-10 (f)
RET connector		IEC 60130-9
Ground connector		M8 bolt
Mounting		Rail, pole, or wall**
Environmental Specifications		
Temperature range, full performance	°C	-40 to + 55
MTBF		> 80 years
Sealing		IP67
Lightning protection		5 kA 10/350 μs (Common mode)
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1

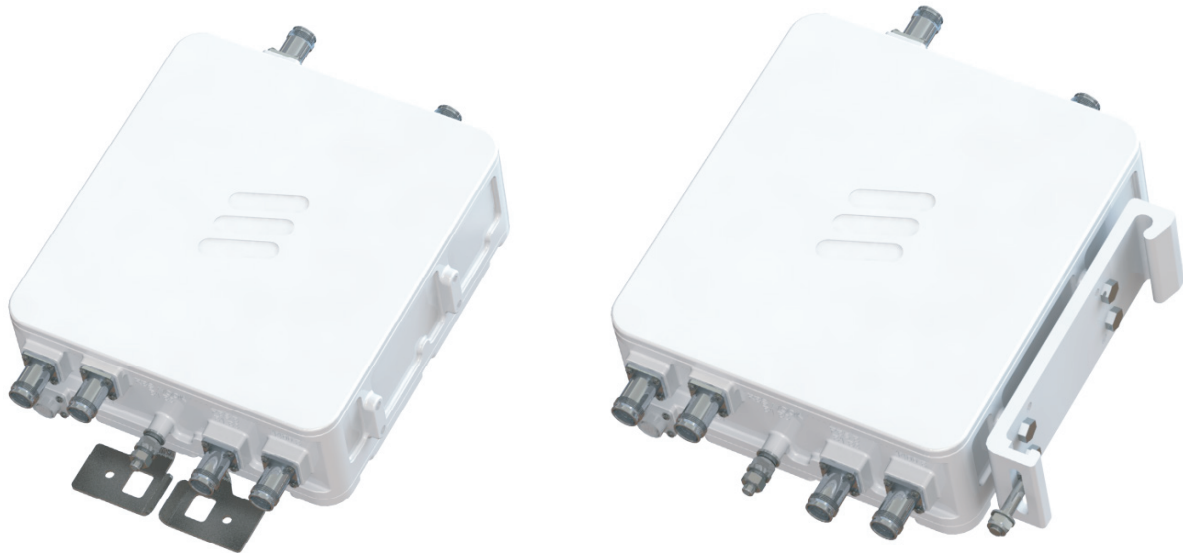
\* Typical values

\*\* Rail bracket ordered separately



Note:

- KRY 112 235/1 provides DC redundancy via RBS B
- KRY 112 235/1 supports an additional Low Band TMA (DC/AISG passthrough from port RBS B to port LB A)



# TMA B1 B3 + Bypass 1400 (4-2)

KRY 112 238/1

- Excellent RF performance
- Ericsson Radio System designed TMA, Rail mounting is possible
- Verified as an RBS integrated system solution
- Two RBS ports and two 1400 ports on one side to provide combiner functionality.  
Two ANT ports for antenna sharing.
- RET interface
- Supports AISG 2.0
- Automatic LNA by-pass
- Wall mounting bracket and pole clamps are included
- Possible to operate from one feeder



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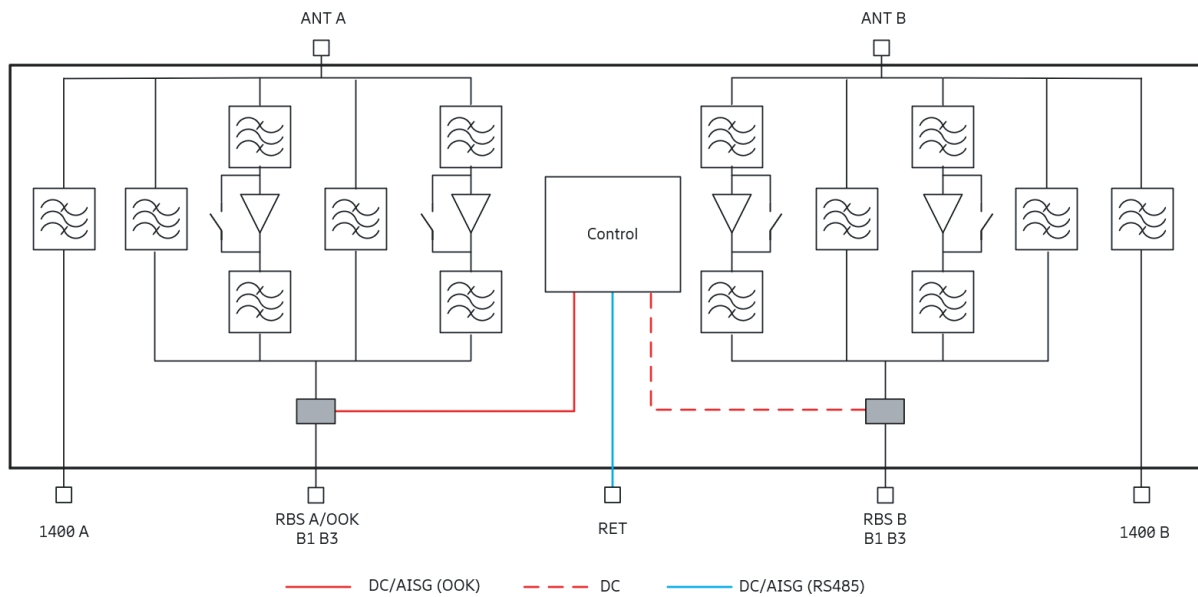


<b>Order No. Type</b>		<b>KRY 112 238/1 TMA B1 B3 + Bypass 1400 (4-2), 4.3-10</b>	
<b>Radio performance B1</b>			
Receiving pass band:		MHz	1920 - 1980
Transmitting pass band:			2110 - 2170
3GPP band			B1
RX gain		dB	12*
Noise figure		dB	1.2*
Input IP3		dBm	15*
RX return loss		dB	> 20*
TX return loss		dB	> 20*
Input power at RBS port (max.average)		dBm	50
TX insertion loss		dB	0.4*
IM3 at Antenna port (2x43 dBm)		dBm	< -115*
<b>Radio performance B3</b>			
Receiving pass band:		MHz	1710 - 1785
Transmitting pass band:			1805 - 1880
3GPP band			B3
RX gain		dB	12*
Noise figure		dB	1.2*
Input IP3		dBm	15*
RX return loss		dB	> 20*
TX return loss		dB	> 20*
Input power at RBS port (max.average)		dBm	50
TX insertion loss		dB	0.4*
IM3 at Antenna port (2x43 dBm)		dBm	< -115*
<b>Radio performance 1400</b>			
Frequency range		MHz	1427 - 1517
Insertion loss		dB	0.16*
Return loss		dB	> 20*
Input power at RBS port (max.average)		dBm	50
IM3 at Antenna port (2x43 dBm)		dBm	< -115*
<b>Electrical Specifications</b>			
Input voltage		VDC	10 to 32
Power consumption		W	9 (3.3* per active port)
Alarm protocol			AISG 2.0

Mechanical Specifications		
Dimensions (H x W x D)	mm   in	265 x 245 x 96   10.4 x 9.6 x 3.8
Weight	kg   lb	8.3   18.2
Color		White (NCS S 1002-B), textured
RF connectors		4.3-10 (f)
RET connector		IEC 60130-9
Ground connector		M8 bolt
Mounting		Rail, pole, or wall**
Environmental Specifications		
Temperature range, full performance	°C	-40 to + 55
MTBF		> 80 years
Sealing		IP67
Lightning protection		5 kA 10/350 $\mu$ s (Common mode)
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1

\* Typical values

\*\* Rail bracket ordered separately



Note:

- KRY 112 238/1 provides DC redundancy via RBS B



# TMA B3 B7

## Bypass 1400 (2-2)

78211912V02

- 2-2 Unit
- Suitable for antenna RET control according to AISG/3GPP standard
- Supports AISG 2.0
- Bypass mode to ensure cell operation in case of DC power down
- Built-in lightning protection
- DC Supply via RBS A, RBS B or both



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**AISG** = Antenna Interface Standards Group

**RET** = Remote Electrical Tilt

Product No. Product Name	Wide-Band Mode	78211912V02 TMA B3 B7 Bypass 1400 (2-2)
<b>1800 Tx Characteristics</b>		
Frequency range	MHz	1805 – 1880
Insertion loss	dB	Typically 0.5
Input power (per input and frequency band)	kW	< 0.1 (+50 dBm) / < 1.6 (+62 dBm) peak
Intermodulation products in RX band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>1800 Rx Characteristics</b>		
Frequency range	MHz	1710 – 1785
Return loss	dB	> 18 (DC ON) / > 12 (DC OFF)
Loss in bypass mode	dB	Typically 2.0 (DC OFF)
Gain	dB	12 nominal
Noise figure	dB	Typically 1.5
Output 1-dB compression point	dBm	> 10
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 25
<b>2600 MHz Tx Characteristics</b>		
Frequency range	MHz	2620 – 2690
Insertion loss	dB	Typically 0.4
Input power (per input and frequency band)	kW	< 0.1 (+50 dBm) / < 1.6 (+62 dBm) peak
Intermodulation products in RX band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>2600 MHz Rx Characteristics</b>		
Frequency range	MHz	2500 – 2570
Return loss	db	> 18 (DC ON) / > 12 (DC OFF)
Loss in bypass mode	dB	Typically 2.0 (DC OFF)
Gain	dB	12 nominal
Noise figure	dB	Typically 1.7
Output 1-dB compression point	dBm	> 10
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 25

**1427 – 1518 MHz Bypass Characteristics**

Frequency range	MHz	1427 – 1518
Insertion loss	dB	Typically 0.2
Input power	kW	< 0.1 (+50 dBm)
Intermodulation products	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18

**Environmental Characteristics**

Operating temperature range	°C   °F	-40 ... +65   -40 ... +149
IP rating		IP67
MTBF	hours	> 1 000 000 (per TMA)
EMC		According to ETS 300 342-3

**DC and Alarm Characteristics**

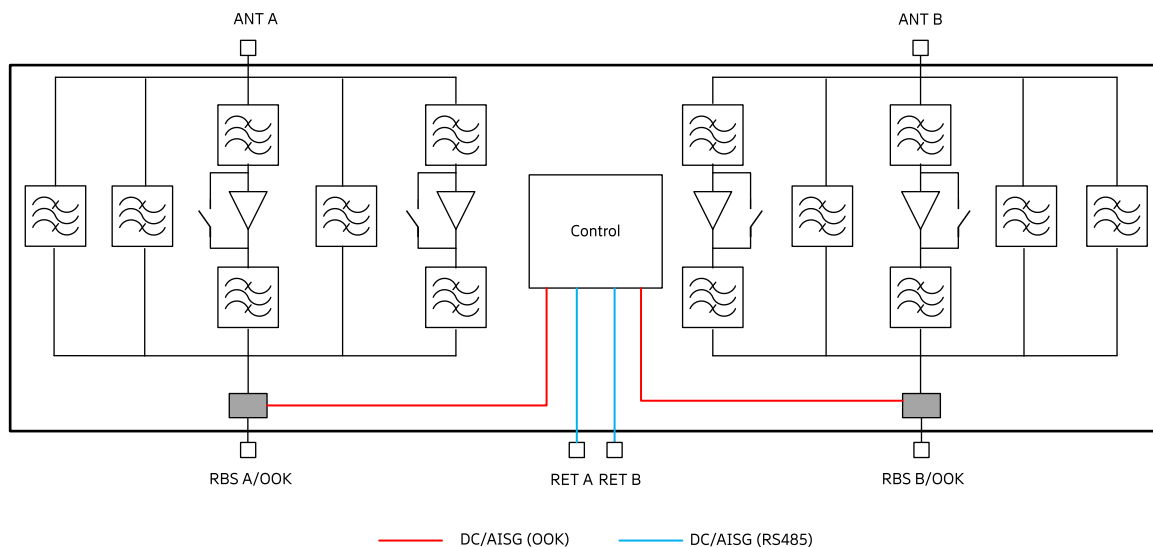
DC supply	V	10 – 30
Operating current per DTMA (without RET)	mA mA	Nom. 300 at 10 V Nom. 100 at 30 V
Alarm management		AISG

**Mechanical Characteristics**

Material		Aluminium housing
Connectors	RF AISG	4.3-10 female, 8-pin female, IEC 60130-9, (Pin 3: RS485B, pin 5: RS485A, pin 6: 10 - 30 V DC, pin 7: DC return, other pins: Not connected)
Mounting	mm   in	Wall mounting: With 4 screws (max. 8   0.315 diameter) Mast mounting
Weight	kg   lb	8.8   19.4
Dimensions (W x H x D)	mm   in	290 x 235 x 94   11.4 x 9.3 x 3.7

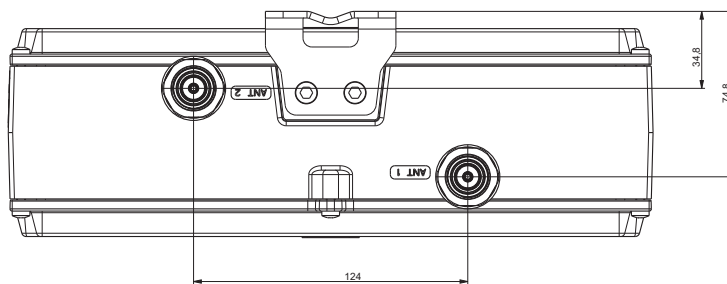
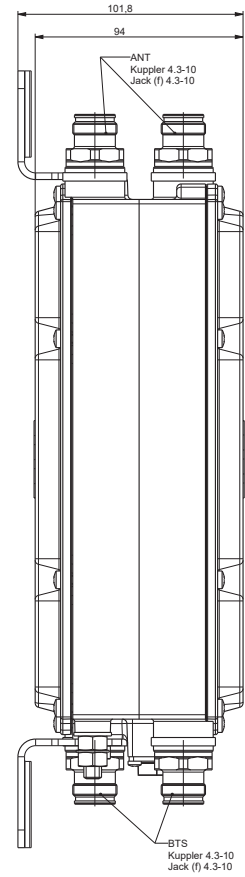
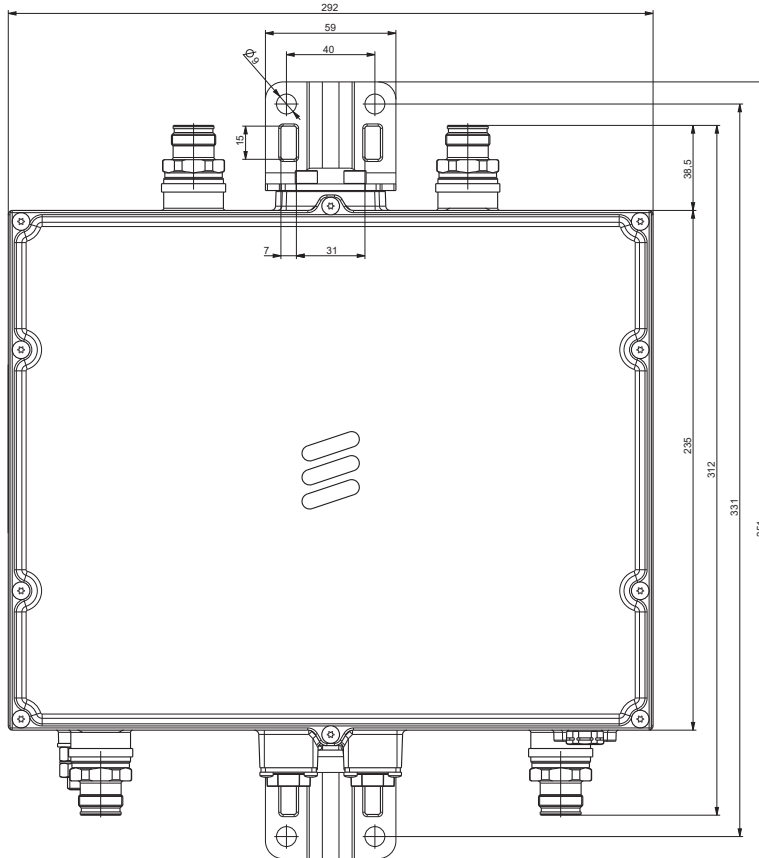
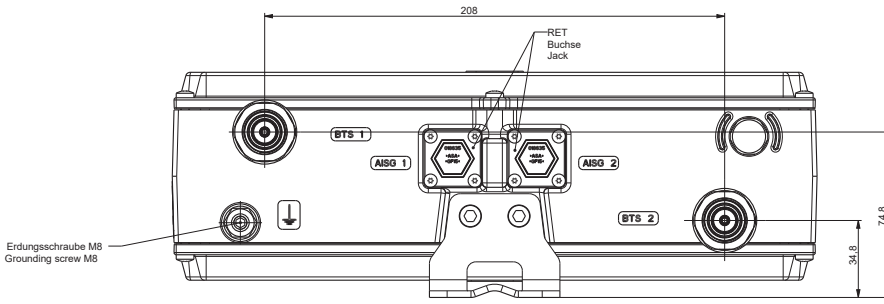
**Accessories (order separately if required)**

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2



Note:  
DC and AISG can be provided via RBS A or RBS B  
RS485 signal on RET ports is identical

Dimensions in mm





# TMA B8 B20 B28B (2-2)

KRY 112 236/1

- Excellent RF performance
- Ericsson Radio System designed TMA, Rail mounting is possible
- Verified as an RBS integrated system solution
- Two RBS ports for feeder sharing, two ports for antenna sharing
- RET interface
- Supports AISG 2.0
- Automatic LNA by-pass
- Wall mounting bracket and pole clamps are included
- Possible to operate from one feeder



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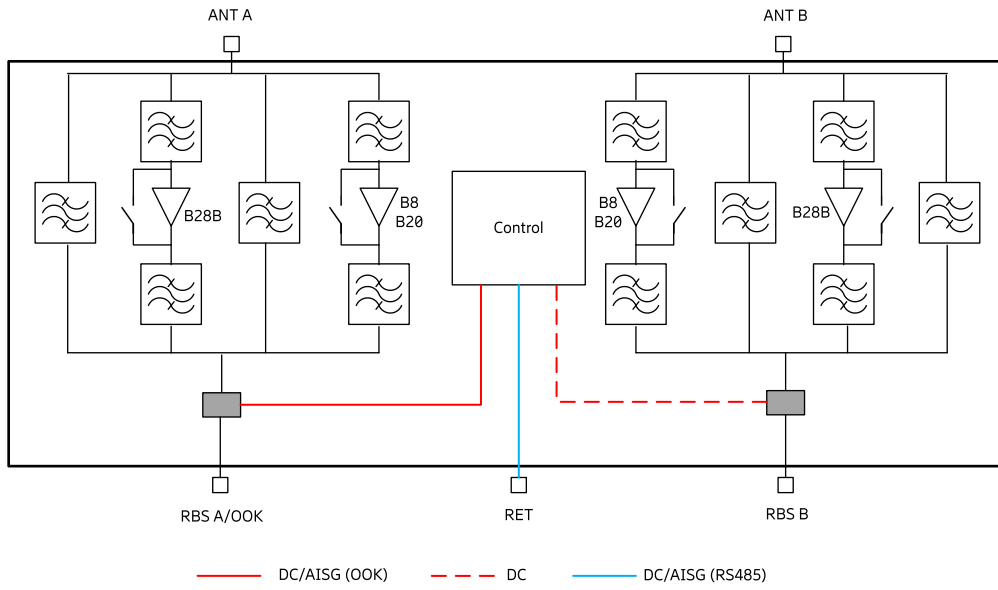
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Product No. Product Name		KRY 112 236/1 TMA B8 B20 B28B (2-2)		
Radio performance		B8	B20	B28B
Receiving pass band:	MHz	880 - 915	832 - 862	703 - 733
Transmitting pass band:		925 - 960	791 - 821	758 - 788
3GPP band		B8	B20	B28B
RX gain	dB	12*	12*	12*
Noise figure	dB	1.8*	1.8*	1.8*
Input IP3	dBm	> 12	> 12	> 12
RX return loss	dB	> 18	> 18	> 18
TX return loss	dB	> 18	> 18	> 18
Input power at RBS port (max. average)	dBm	50	50	50
TX insertion loss	dB	0.5*	0.5*	0.5*
IM3 at Antenna port (2 x 43 dBm)	dBm	< -115*	< -115*	< -115*
<b>Electrical Specifications</b>				
Input voltage	VDC	10 to 32		
Power consumption	W	< 9		
Alarm protocol		AISG 2.0		
<b>Mechanical Specifications</b>				
Dimensions (H x W x D)	mm   in	290 x 300 x 130   11.4 x 11.8 x 5.1		
Weight	kg   lb	14   30.9		
Color		White (NCS S 1002-B), textured		
RF connectors		4.3-10 (f) long shank		
RET connector		IEC 60130-9		
Ground connector		M8 bolt		
Mounting		Rail, pole, or wall mounting**		
<b>Environmental Specifications</b>				
Temperature range, full performance	°C	-40 to +55		
MTBF		> 80 years		
Sealing		IP67		
Lightning protection		5 kA 10/350 μs (Common mode)		
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1		

\* Typical values

\*\* Rail bracket ordered separately





Note:  
- KRY 112 236/1 provides DC redundancy via RBS B



# TMA B1 B3 B7 Bypass 1400 (2-2)

78210587V02

- 2-2 Unit
- Suitable for antenna RET control according to AISG/3GPP standard
- Supports AISG 2.0
- Bypass mode to ensure cell operation in case of DC power down
- Built-in lightning protection
- DC Supply via RBS A, RBS B or both



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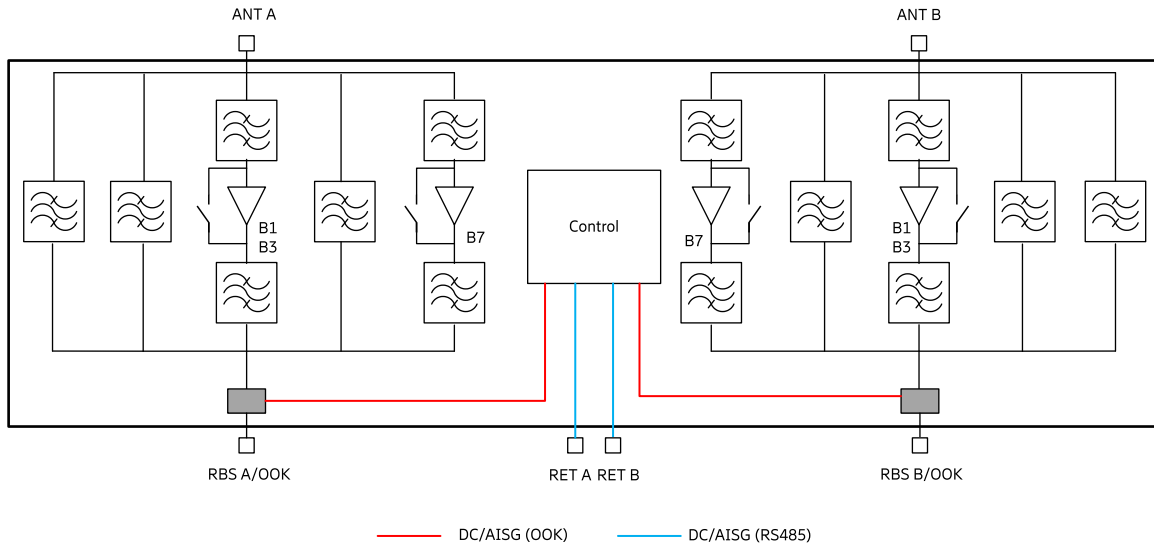
<b>AISG</b>	=	Antenna Interface Standards Group
<b>RET</b>	=	Remote Electrical Tilt
<b>BYP</b>	=	RF-BYPass

Product No. Product Name	Wide-Band Mode	78210587V02 TMA B1 B3 B7 Bypass 1400 (2-2)
<b>1800 MHz Tx Characteristics</b>		
Frequency range	MHz	1805 – 1880
Insertion loss	dB	Typically 0.4
Input power (per input and frequency band)	kW	< 0.1 (+50 dBm)   < 1.6 (+62 dBm) peak
Intermodulation products in Rx band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>1800 MHz Rx Characteristics</b>		
Frequency range	MHz	1710 – 1785
Loss in bypass mode	dB	Typically 2.0
Return loss	dB	> 18 (DC ON)   > 12 (DC OFF)
Gain	dB	12 nominal
Noise figure	dB	Typically 1.5
Output 1-dB compression point	dBm	> 10
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 25
<b>2100 MHz Tx Characteristics</b>		
Frequency range	MHz	2110 – 2170
Insertion loss	dB	Typically 0.3
Input power (per input and frequency band)	kW	< 0.1 (+50 dBm)   < 1.6 (+62 dBm) peak
Intermodulation products in Rx band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>2100 MHz Rx Characteristics</b>		
Frequency range	MHz	1920 – 1980
Loss in bypass mode	dB	Typically 2.0
Return loss	dB	> 18 (DC ON)   > 12 (DC OFF)
Gain	dB	12 nominal
Noise figure		Typically 1.5
Output 1-dB compression point	dBm	> 10
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 25

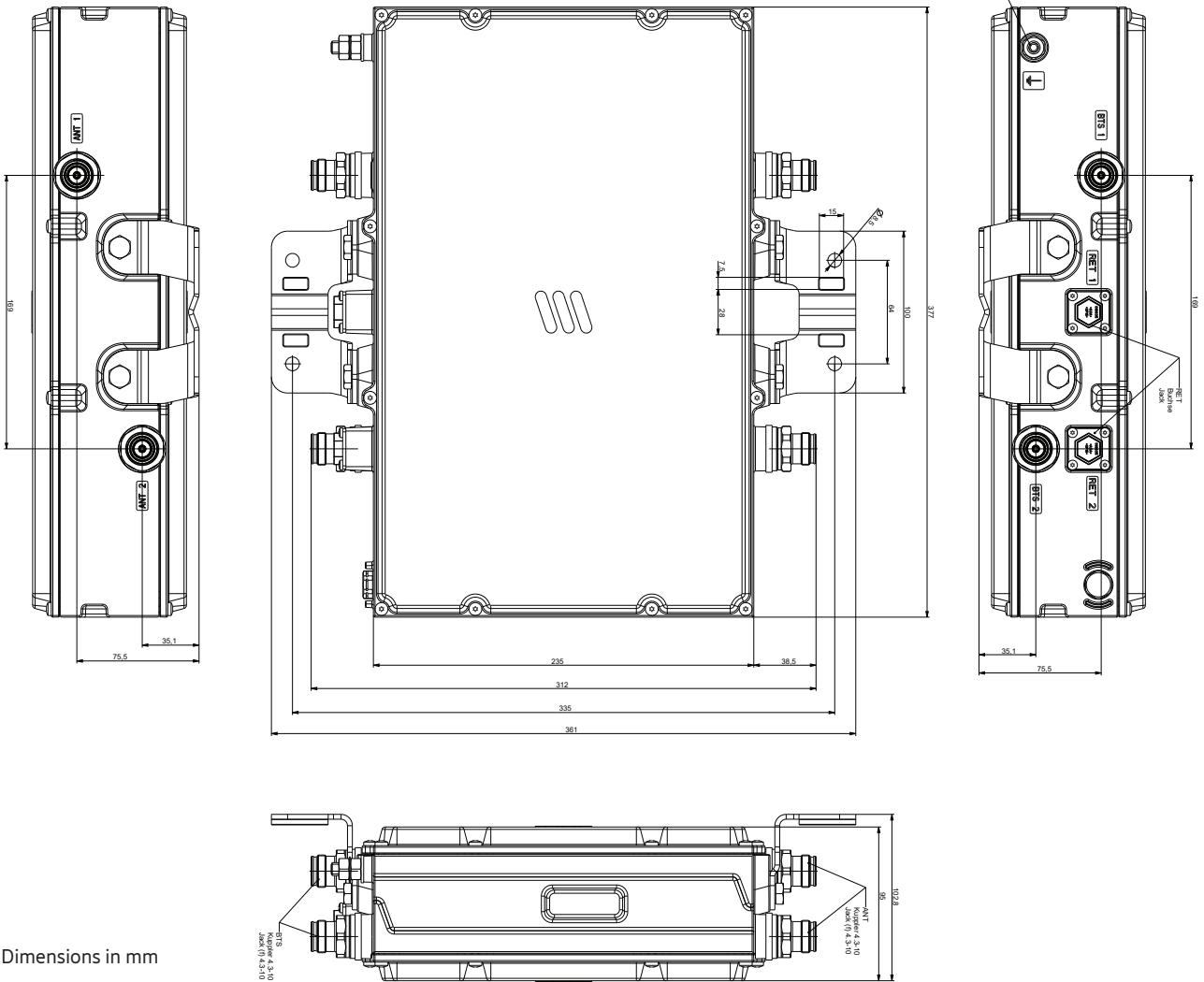
<b>2600 MHz Tx Characteristics</b>		
Frequency range	MHz	2620 – 2690
Insertion loss	dB	Typically 0.4
Input power (per input and frequency band)	kW	< 0.1 (+50 dBm)   < 1.6 (+62 dBm) peak
Intermodulation products in Rx band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>2600 MHz Rx Characteristics</b>		
Frequency range	MHz	2500 – 2570
Loss in bypass mode	dB	Typically 1.8
Return loss	dB	> 18 (DC ON)   > 12 (DC OFF)
Gain	dB	12 nominal
Noise figure		Typically 1.7
Output 1-dB compression point	dBm	> 10
3 <sup>rd</sup> order intercept point (OIP3)	dBm	Typically 25
<b>1427 – 1518 MHz Bypass Characteristics</b>		
Frequency range	MHz	1427 – 1518
Insertion loss	dB	Typically 0.2
Input power	kW	< 0.1 (+50 dBm)   < 1.6 (+62 dBm) peak
Intermodulation products in Rx band	dBm	< -117 (2 Tx carriers at +43 dBm)
Return loss	dB	> 18
<b>Environmental Characteristics</b>		
Operating temperature range	°C   °F	-40 ... +65   -40 ... +149
IP rating		IP67
MTBF	hours	> 1 000 000 (per TMA)
EMC		According to ETS 300 342-3
<b>DC and Alarm Characteristics</b>		
		<b>AISG Mode</b>
DC supply	V	10 - 30
Operating current (without RET)	mA	Nom. 400 at 10 V Nom. 150 at 30 V
Alarm management		AISG
<b>Mechanical Characteristics</b>		
Material		Aluminium housing
Connectors	RF RET	4.3-10 female 8-pin female, IEC 60130-9 (Pin 3: RS485B, pin 5: RS485A, pin 6: 10 – 30 V DC, pin 7: DC return, other pins: Not connected)
Mounting	mm   in	Wall mounting: With 4 screws (diameter: max. 8   0.31) Pole mounting: With additional clamp set
Weight	kg   lb	10   22.05
Dimensions (w x h x d)	mm   in	377 x 235 x 95   14.8 x 9.3 x 3.7 (without connectors, without mounting brackets)

### Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2



Note:  
DC and AISG can be provided via RBS A or RBS B  
RS485 signal on RET ports is identical



## Spectrum Limitation Filter

Product Name Product No.	Frequency (MHz)	Connector type (female)	Page
SLF B20, DTV Reject (2-2) KRF 102 436/1	Passband 791–960 Rejection 694–790	4.3-10	<a href="#">743</a>
SLF 703–905 / 930–960 MHz, GSM-R Reject (2-2) KRF 102 433/1	703–905 / 930–960 Rejection GSM-R	4.3-10	<a href="#">745</a>
SLF 703–915 / 930–960 MHz, GSM-R Reject (2-2) KRF 102 433/4	703–915 / 930–960 Rejection GSM-R	4.3-10	<a href="#">747</a>
<a href="#">SLF B26B V2 (2-2)</a> KRF 102 366/2	814–824 / 859.25–869 Rejection 853.5 – 858.5	4.3-10	<a href="#">749</a>
SLF B28/B8, B5 Reject (4-4) KRF 102 442/12 and /2	Passband 703–803/884–960 Rejection 869–880	4.3-10	<a href="#">751</a>
SLF B28/B8, B5 Reject (4-4) KRF 102 442/13	Passband 703–803/888–960 Rejection 869–884	4.3-10	
SLF B28/B8, B5 Reject (4-4) KRF 102 442/n	Passband 703–803/(880~898)–960 Rejection ((8xx-18)-(8xx-4)xx-4)	4.3-10	
SLF B8 Stop B5 KRF 102 352/1	Passband 890–960 Rejection start 886.8	7-16	<a href="#">753</a>
SLF B8 Stop B5 KRF 102 352/2	Passband 883–960 Rejection start 879.8	7-16	
SLF B8 Stop B5 KRF 102 352/3	Passband 897.2–960 Rejection start 894	7-16	
SLF B8 Stop B5 KRF 102 352/4	Passband 900–960 Rejection start 894 (Customized)	7-16	
SLF B0A KRF 102 395/1	Passband 890.1–960 Rejection 869–888.4	7-16	<a href="#">755</a>
SLF B0A KRF 102 395/n	Passband 890.1–960 Rejection 869–8xx	7-16	
SLF B8C (2-2) KRF 102 456/1	Passband 897.65–900.35/936.65–939.35 Rejection 933.5–936.4/939.6–942.5	4.3-10	<a href="#">757</a>
SLF B32H-OFDM (2-2) KRF 102 452/3	Passband 1452–1472 Rejection 1495–1518	4.3-10	<a href="#">759</a>
SLF B32E-OFDM (4-4) KRF 102 452/2	Passband 1472–1492 Rejection 1498.5–1518	4.3-10	<a href="#">761</a>
SLF B38A (2-2) Co-located with B7 KRF 102 415/1	Passband 2575–2615 Rejection 2500–2570/2620–2690	4.3-10	<a href="#">763</a>
SLF B38A (4-4) Co-located with B7 KRF 102 415/2	Passband 2575–2615 Rejection 2500–2570/2620–2690	4.3-10	
<a href="#">SLF B42-VG (4-4)</a> KRF 102 457/1	Passband 3410–3490 Rejection 694–3400	4.3-10	<a href="#">765</a>
SLF B78C (4-4) KRF 102 446/2	Passband 3300–3700 Rejection 3710–4200	4.3-10	<a href="#">767</a>
SLF B77E (8-8) remotely reconfigurable KRF 102 444/2	Passband 3700–3800 Rejection 3810–4200	4.3-10	<a href="#">769</a>
SLF B77E OOK (8-8) remotely reconfigurable KRF 102 444/4	Passband 3700–3800 Rejection 3810–4200	4.3-10	<a href="#">771</a>

[New product](#)



2-2 Unit

# SLF B20 / Stop DTV

## Spectrum Limitation Filter

	passband	rejection
KRF 102 436/1	791–960 MHz	694–790 MHz (DTV)

- Designed for co-location existence with the Digital TV broadcasting system
- Optimized for use with Ericsson Radios to fulfill the 3GPP requirements
- Minimal insertion loss
- High rejection ensures system integrity between the co-sited systems
- High reliability and continuous operation in both indoor and outdoor environments
- An integrated DC by-pass function allows DC voltage and control signals to Antenna Line Devices such as RET or TMAs
- Wall mounting brackets and pole clamps are included



Product No. Product Name	KRF 102 436/1 SLF B20, DTV REJECT (2-2)	
<b>Electrical Specifications</b>		
Insertion loss - 791–791.25 MHz: - 791.25–801 MHz: - 801–960 MHz:	dB	1.4* 0.5* 0.1*
Out of band rejection - 694–750 MHz: - 750–782 MHz: - 782–790 MHz:	dB	> 40* > 23* > 19, RMS over 8 MHz
Return loss	dB	21*
Isolation	dB	> 50
Power handling	W	120 (max. 80 per band)
Intermodulation (IM3)	dBm	< -114 (at 2x43 dBm)
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm	217 x 210 x 70
Weight	kg	5
Mounting options	Rail, pole or wall (Rail bracket ordered separately)	
RF connectors	4.3-10 (f)	
<b>Environmental Specifications</b>		
Operating temperature	°C	-40 to +55
IP class	Outdoor, IP67	
Lightning protection	5 kA 10/350 µs	
Product safety	International (CB): IEC 62368-1 Europe (CE): EN 62368-1	

\* Typical values





2-2 Unit

# SLF 703-905/930-960 MHz

## Spectrum Limitation Filter

KRF 102 433/1      703-905/930-960 MHz / GSM-R reject (2-2)

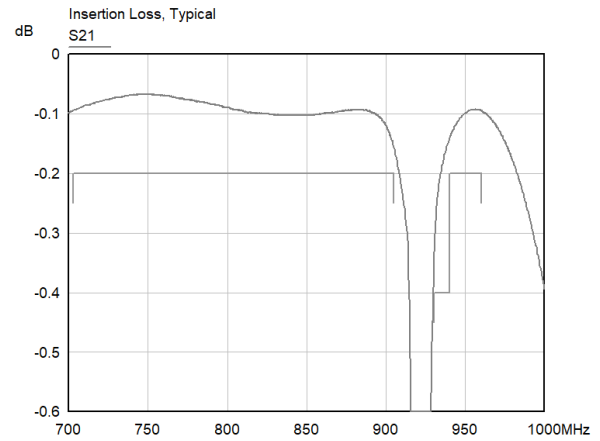
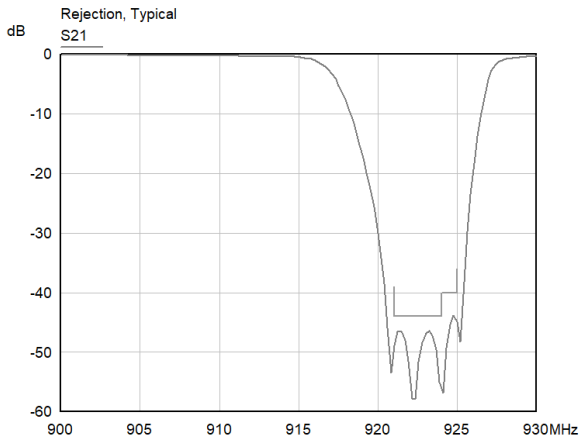
- Designed for co-location existence with the GSM-Railway system
- Optimized for use with Ericsson Radios to fulfill the 3GPP requirements
- Minimal insertion loss
- High rejection ensures system integrity between the co-sited systems
- High reliability and continuous operation in both indoor and outdoor environments
- An integrated DC by-pass function allows DC voltage and control signals to Antenna Line Devices such as RET or TMAs
- Wall mounting brackets and pole clamps are included



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Product No. Product Name	KRF 102 433/1 SLF 703–905 / 930–960 MHz, GSM-R Reject (2-2)	
<b>Electrical Specifications – Guaranteed Values</b>		
Insertion loss - 703–905 MHz: - 930–940 MHz: - 940–960 MHz:	dB	< 0.2 < 0.4 (< 0.3 rms over 5 MHz) < 0.2
Out of band rejection - 921–924 MHz: - 924–925 MHz:	dB	< 44 < 40
Return loss	dB	> 20
Power handling	W	160
Intermodulation (IM3)	dBm	< -117* (at 2x43 dBm)
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm	62 x 263 x 175
Weight	kg	3.8
Mounting options	Rail, pole or wall (Rail bracket ordered separately)	
RF connectors	4.3-10 (f)	
<b>Environmental Specifications</b>		
Operating temperature	°C	-40 to +55
IP class	Outdoor, IP67	
Lightning protection	5 kA 10/350 μs	
Product safety	International (CB): IEC 62368-1 Europe (CE): EN 62368-1	

\* Typical values



2-2 Unit

# SLF 703-915/930-960 MHz

## Spectrum Limitation Filter

KRF 102 433/4      703-915/930-960 MHz / GSM-R reject (2-2)

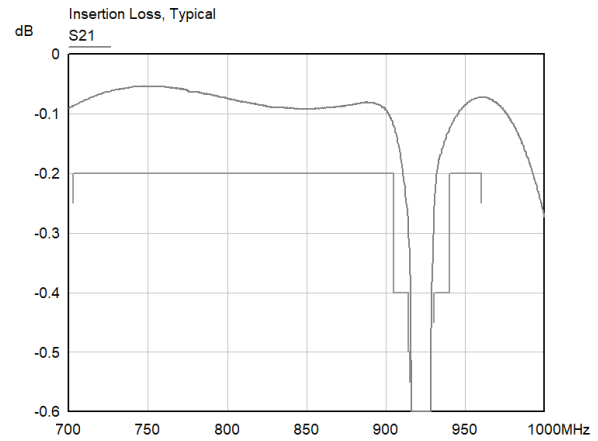
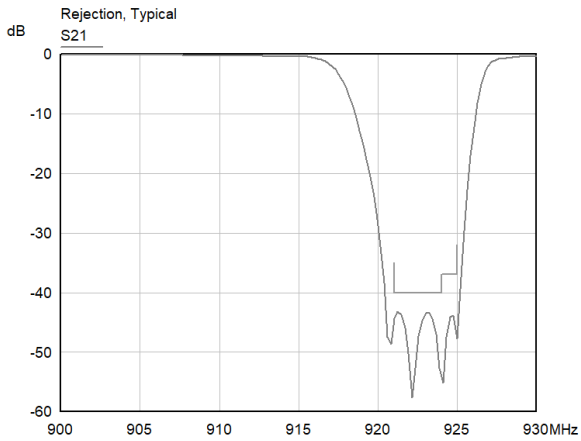
- Designed for co-location existence with the GSM-Railway system
- Optimized for use with Ericsson Radios to fulfill the 3GPP requirements
- Minimal insertion loss
- High rejection ensures system integrity between the co-sited systems
- High reliability and continuous operation in both indoor and outdoor environments
- An integrated DC by-pass function allows DC voltage and control signals to Antenna Line Devices such as RET or TMAs
- Wall mounting brackets and pole clamps are included



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<b>Product No.</b>		<b>KRF 102 433/4</b>
<b>Product Name</b>		<b>SLF 703–915 / 930–960 MHz (2-2), GSM-R Reject</b>
<b>Electrical Specifications – Guaranteed Values</b>		
Insertion loss		
- 703–905 MHz:		< 0.2
- 905–914 MHz:		< 0.4
- 914–915 MHz:		< 0.5
- 930–940 MHz:		< 0.4 (< 0.3 rms over 5 MHz)
- 940–960 MHz:		< 0.2
Out of band rejection		
- 921–924 MHz:		< 40
- 924–925 MHz:		< 37
Return loss		> 20
Power handling		160
Intermodulation (IM3)		< -117* (at 2x43 dBm)
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm	62 x 263 x 175
Weight	kg	3.8
Mounting options		Rail, pole or wall (Rail bracket ordered separately)
RF connectors		4.3-10 (f)
<b>Environmental Specifications</b>		
Operating temperature	°C	-40 to +55
IP class		Outdoor, IP67
Lightning protection		5 kA 10/350 µs
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1

\* Typical values

New product



(2-2) Unit

# SLF B26B V2

## Spectrum Limitation Filter

KRF 102 366/2

passband  
814 – 824 / 859.25 – 869 MHzrejection  
853.5 – 858.5 MHz

- DC and AISG bypass on all ports
- For indoor and outdoor use
- Wall mounting brackets and pole clamps are included
- Rail mounting is possible



New product

<b>Product No.</b>		<b>KRF 102 366/2</b>
<b>Product Name</b>		<b>SLF B26B V2 (2-2)</b>
<b>Electrical Specifications</b>		
Frequency range	MHz	UL: 814 – 824 DL: 859.25 – 869
Insertion loss:	dB	
- UL: 814 – 824 MHz		0.1*
- DL: 859.25 – 861 MHz		0.4*
861 – 863 MHz		0.2*
863 – 869 MHz	0.1*	
Out of band rejection:	dB	
- 853.5 – 854 MHz		7.5 dB
- 854 – 854.5 MHz		11 dB
- 854.5 – 855 MHz		17 dB
- 855 – 855.5 MHz		23 dB
- 855.5 – 856 MHz		31 dB
- 856 – 858.5 MHz	35 dB	
Return loss	dB	> 23*
Isolation	dB	> 95
Power handling (Prms)	dBm	48.4 per port
Intermodulation (IM3) at 2x43 dB	dBm	< -90
Maximum DC voltage	V	40
Maximum DC current	A	3
DC Bypass	Bypass on all ports	
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm	401 × 210 × 78
Weight	kg	11
Mounting options	Rail, pole or wall (Rail bracket ordered separately)	
Wind load (at 50 m/s)	116 N	
RF connectors	4.3-10 (f)	
<b>Environmental Specifications</b>		
Operating temperature	°C	-40 to +55
IP class	IP67	
Lightning protection	5 kA 10/350 μs , 20 kA 8/20 μs (Common Mode)	
Product safety	International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETC): CSA/UL 62368-1	

\* Typical values



4-4 Unit (Example)

# SLF B28/B8 , B5 Reject

## Spectrum Limitation Filter

	passband	Rejection
KRF 102 442/12 and /2	803/884–960 MHz	869–880 MHz
KRF 102 442/13	703–803/888–960 MHz	870–884 MHz
KRF 102 442/n	703–803/8xx–960 MHz	(8xx–18)–(8xx–4) MHz

- Designed for Ericsson and non-Ericsson system compatibility
- Customized versions are available on request
- Low insertion loss
- For indoor and outdoor use
- Integrated mounting bracket for quick pole or wall mounting

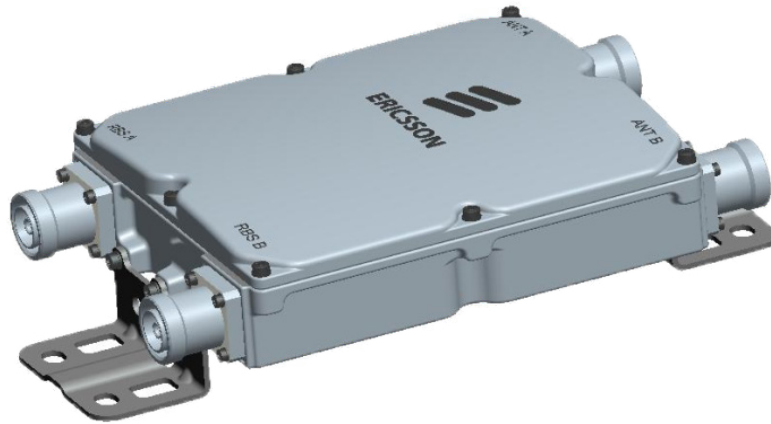


Product No. Product Name		KRF 102 442/12 and /2 SLF B28/B8, B5 Reject (4-4) and (2-2)	KRF 102 442/13 SLF B28/B8, B5 Reject (4-4)	KRF 102 442/n** SLF (4-4) or (2-2)
<b>Electrical Specifications</b>				
Rejection	MHz	869–880	870–884	(8xx–18)–(8xx–4)
Passband	MHz	884–960 (B8sub) 703–803 (B28)	888–960 (B8sub) 703–803 (B28)	(880~898)–960 703–803 (B28)
Insertion Loss - B28: - B8 typical: - B8 typical:	dB	< 0.2 0.4 (886–960 MHz) 1.0 (884– 886 MHz)	< 0.2 0.4 (890–960 MHz) 1.0 (888–890 MHz)	< 0.2 0.4 (except first 2 MHz) 1.0 (first 2 MHz)
Out of band rejection	dB	871–880 MHz: > 53 59 (Typical value) 870–871 MHz: > 41 48 (Typical value) 869–870 MHz: > 24 35 (Typical value)	875–884 MHz: > 53 59 (Typical value) 874–875 MHz: > 41 48 (Typical value) 872–874 MHz: > 24 35 (Typical value) 870–872 MHz: > 14 20 (Typical value)	(8xx–13)–(8xx–4) MHz: > 53 (8xx–14)–(8xx–13) MHz: > 41 (8xx–16)–(8xx–14) MHz: > 24 (8xx–18)–(8xx–16) MHz: > 14
Return loss	dB	> 20	> 20	> 20
Power handling (Continuous)*	W	120 (max. 100 per band)		
Intermodulation*	dBm	IM3: < -117 (at 2x43 dBm) IM5: < -125 (at 2x43 dBm)		
DC Path*		40 V, 3 A, 3GPP (AISG) transparent		
<b>Mechanical Specifications</b>				
Dimensions (H x W x D)	mm	205 x 273 x 111 (4-4)	205 x 273 x 51 (2-2)	
Weight	kg	7.9	4.1	
Mounting options*		Rail (Bookshelf position), pole or wall (Rail bracket ordered separately)		
RF connectors*		4.3-10 (f)		
Wind load at 50 m/s*	N	91		
<b>Environmental Specifications*</b>				
Operating temperature	°C	-40 to +55		
Operating environment		Outdoor, IP67		
Lightning protection		5 kA 10/350 µs, (Common Mode)		
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1		

\* Common values for all variants

\*\* Ericsson can develop customer specific filters with similar RF properties and in different variants





2-2 Unit

# SLF B8 / Stop B5

## Spectrum Limitation Filter

	passband	rejection start
KRF 102 352/1	890–960 MHz	886.8 MHz
KRF 102 352/2	883–960 MHz	879.8 MHz
KRF 102 352/3	897.2–960 MHz	894 MHz
KRF 102 352/4	900–960 MHz	894 MHz

- Designed for Ericsson and non-Ericsson system compatibility
- Customized versions are available on request
- Low insertion loss and steep filter flanks
- For indoor and outdoor use
- Integrated mounting bracket for quick pole or wall mounting



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Product No. Product Name		KRF 102 352/1 SLF 900	KRF 102 352/2 SLF 900	KRF 102 352/3 SLF 900	KRF 102 352/4* SLF 900
<b>Radio Performance</b>					
900 Passband	MHz	890–960	883–960	897.2–960	900–960
850 Rejection start	MHz	886.8	879.8	894	894
Frequency range UL: DL:	MHz	890–915 935–960	883–915 928–960	897.2–915 942.2–960	900–915 945–960
Out of band rejection	dB	> 35 (869–875 MHz) > 45 (875–880 MHz) > 55 (880–885 MHz) > 35 (885–886.8 MHz)	> 45 (869–873 MHz) > 55 (873–878 MHz) > 35 (878–879.8 MHz)	> 35 (869–882.2 MHz) > 45 (882.2–887.2 MHz) > 55 (887.2–892.2 MHz) > 35 (892.2–894 MHz)	> 40 (869–894 MHz)
Insertion loss UL typical: UL max.: DL typical: DL max.:	dB	0.5 < 2.0 0.2 < 0.3	0.5 < 2.0 0.2 < 0.3	0.5 < 2.0 0.2 < 0.3	0.5 (900–915 MHz) 0.4 (902.1–913.1 MHz) < 1.0 (900–915 MHz) < 0.8 (902.1–913.1 MHz) 0.2 < 0.3
Return loss	dB	> 20	> 20	> 20	> 20
Isolation UL: DL:	dB	> 55 > 50	> 55 > 50	> 55 > 50	> 55 > 50
Power handling	dBm	Continuous: 53, Peak: 61			
Intermodulation (IM3)	dBm	< -110 (at 2x43 dBm)			
DC Path		40 V, 3A, 3GPP (AISG) transparent			
<b>Mechanical Specifications</b>					
Dimensions (W x D x H)	mm	181 x 204 x 54 (excl. bracket and connectors)			
Weight	kg	3.4			
Mounting options		Wall or pole			
RF connectors		7-16 (f)			
<b>Environmental Specifications</b>					
Operating temperature	°C	-40 to +55			
Operating environment		Outdoor, IP67			
Lightning protection		IEC 623 05-1			

\* Customized variant: Extended temperature range -40°C to +65°C



2-2 Unit

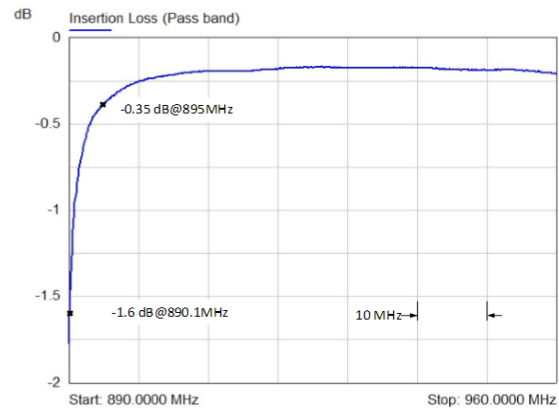
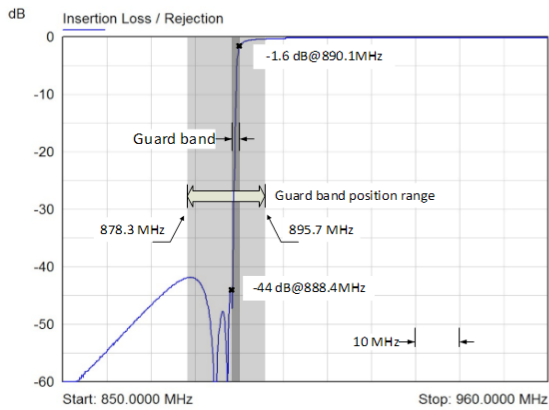
# SLF B0A/B8 / Stop B5

## Spectrum Limitation Filter

	passband	rejection
KRF 102 395/1	890.1–960 MHz	869–888.4 MHz
KRF 102 395/n	8xx–960 MHz	869–8xx MHz

- Designed for Ericsson and non-Ericsson system compatibility
- Factory-tuned to meet any B8 operator's requirements of high rejection in adjacent B5 band
- >40 dB rejection with only 1.5–1.7 MHz Guard Band
- Low insertion loss
- Wall mounting brackets and pole clamps are included





Product No.		KRF 102 395/1	KRF 102 395/n
Product Name		SLF B0A	SLF B8 variant *
<b>Electrical Specifications</b>			
Rejection	MHz	869 to 888.4	869 to 8xx (max. 894)
Passband	MHz	890.1 to 960	(880~895.7) to 960
Guard band	MHz	1.7	1.5 to 1.7
Insertion Loss, UL typical	dB	0.7 (890.1 to 895 MHz) 0.25 (895 to 915 MHz)	0.7 (lowest 5 MHz) 0.25 (remaining frequency band)
Insertion loss, DL typical	dB	0.2 (925 to 960 MHz) (see graphs above for typical values)	0.2 (925 to 960 MHz) (see graphs above for typical values)
Out of band rejection	dB	> 40 (869 to 888.4 MHz)	> 40 (869 to (878.4~894) MHz)
Return loss	dB	> 20	> 20
Power handling	dBm	Continuous: 46.6, Peak: 54.6	Continuous: 46.6, Peak: 54.6
Intermodulation	dBm	IM3 < -115 at 2x43 dBm IM5 < -123 at 2x43 dBm	IM3 < -115 at 2x43 dBm IM5 < -123 at 2x43 dBm
DC Path		40 V, 3A, 3GPP (AISG) transparent	40 V, 3A, 3GPP (AISG) transparent
<b>Mechanical Specifications**</b>			
Dimensions (H x W x D)	mm	215 x 291 x 72 (excl. bracket and connectors)	
Weight	kg	7.1	
Mounting options		Rail, pole or wall (Rail bracket ordered separately)	
RF connectors		7-16 (f) Upon request: 4.3-10 (f)	
Wind load at 50 m/s	N	161	
<b>Environmental Specifications**</b>			
Operating temperature	°C	-40 to +55	
IP class		Outdoor, IP67	
Lightning protection		3 kA 10/350 μs, (IEC 623 05-1)	
Product safety		International (CB): IEC 60 950-1, IEC 62368-1 Europe (CE): EN 60 950-1, EN 60 950-22, EN 62368-1 North America (ETC): UL 60 950-1, CSA-C22.2 No. 60 950-1	

\* Can be produced upon request

\*\* Common values for all variants



2-2 Unit



2-2 Unit

# SLF B8C

## Spectrum Limitation Filter

KRF 102 456/1

passband 897.65–900.35/936.65–939.35 MHz  
rejection 933.5–936.4/939.6–942.5 MHz

- Stable narrow-band performance
- DC bypass on all ports
- Wall mounting brackets and pole clamps are included
- Rail mounting is possible

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<b>Product No.</b> <b>Product Name</b>	KRF 102 456/1 SLF B8C (2-2)	
<b>Electrical Specifications</b>		
Frequency range	MHz	UL: 897.65–900.35 DL: 936.65–939.35
Insertion loss: - UL: 897.65–900.35 MHz - DL: 936.65–939.35 MHz	dB	< 0.35 rms 0.3* rms < 1.1 rms 0.98* rms
Out of band rejection: - 933.5–936.4 MHz - 939.6–942.5 MHz	dB	> 7.5 rms in 100 kHz BW 10* rms in 100 kHz BW > 7.5 rms in 100 kHz BW 10* rms in 100 kHz BW
Return loss	dB	> 18 (UL and DL) 21* (UL and DL)
Isolation	dB	> 60
Power handling (Prms)	W	100 per port
Maximum DC voltage	V	40
Maximum DC current	A	3
DC Bypass	Bypass on all ports	
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm	259 × 349 × 72
Weight	kg	9
Mounting options	Rail, pole or wall (Rail bracket ordered separately)	
RF connectors	4.3–10 (f)	
<b>Environmental Specifications</b>		
Temperature range, full performance - Operational - Non-destructive	°C	-40 to +55 -40 to +70
IP class	IP67	
Lightning protection	5 kA 10/350 μs, 20 kA 8/20 μs (Common Mode)	
Product safety	International (CB): IEC 62368-1	

\* Typical values



2-2 Unit

# SLF B32H-OFCOM

## Spectrum Limitation Filter

	passband	rejection
KRF 102 452/3	1452–1472 MHz	1495–1518 MHz

- Designed for Ericsson and non-Ericsson system compatibility
- Part of Ericsson Radio System concept
- Verified as an RBS integrated system solution
- DC by-pass on all ports
- Wall mounting brackets and pole clamps are included



<b>Product No.</b>		<b>KRF 102 452/3</b>
<b>Product Name</b>		<b>SLF B32H-OFCOM (2-2)</b>
<b>Electrical Specifications*</b>		
Frequency range	MHz	1452–1472
Insertion loss	dB	< 0.55 rms for an LTE20
Out of band rejection - 1495–1498.5 MHz: - 1498.5–1505 MHz: - 1505–1518 MHz.	dB	> 10 > 53 > 48
Return loss	dB	> 20
Power handling (Prms)	W	100 per port
Intermodulation (IM3)	dBm	< -110 (at 2x43 dBm)
DC configuration		Bypass
<b>Mechanical Specifications</b>		
Dimensions (W x D x H)	mm	165 x 187 x 52
Weight	kg	2.85
Mounting options		Rail, pole or wall (Rail bracket ordered separately)
RF connectors		4.3-10 (f)
<b>Environmental Specifications</b>		
Operating temperature	°C	-40 to +55
IP class		IP67
Lightning protection		5 kA 10/350 µs (Common mode)
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1
<b>Accessories</b>		
Pole clamps (50–150 mm) included		

\* Common values for both variants





4-4 Unit

# SLF B32E-OFCOM

## Spectrum Limitation Filter

KRF 102 452/2	passband 1472–1492 MHz	rejection 1498.5–1518 MHz
---------------	---------------------------	------------------------------

- Designed for Ericsson and non-Ericsson system compatibility
- Part of Ericsson Radio System concept
- Verified as an RBS integrated system solution
- DC by-pass on all ports
- Wall mounting brackets and pole clamps are included



Product No. Product Name	KRF 102 452/2 SLF B32E-OFCOM (4-4)	
<b>Electrical Specifications</b>		
Frequency range	MHz	1472–1492
Insertion loss	dB	< 0.55 rms for an LTE20
Out of band rejection - 1498.5–1505 MHz: - 1505–1518 MHz:	dB	> 53 > 48
Return loss	dB	> 20
Power handling (Prms)	W	100 per port
Intermodulation (IM3)	dBm	< -110 (at 2x43 dBm)
DC configuration	Bypass	
<b>Mechanical Specifications</b>		
Dimensions (W x D x H)	mm	165 x 187 x 112
Weight	kg	5.4
Mounting options	Rail, pole or wall (Rail bracket ordered separately)	
RF connectors	4.3-10 (f)	
<b>Environmental Specifications</b>		
Operating temperature	°C	-40 to +55
IP class	IP67	
Lightning protection	5 kA 10/350 μs (Common mode)	
Product safety	International (CB): IEC 62368-1 Europe (CE): EN 62368-1	
<b>Accessories</b>		
Pole clamps (50–150 mm) included		



2-2 Unit

# SLF B38A

## Spectrum Limitation Filter

	passband	rejection
KRF 102 415/1	2575–2615 MHz	2500–2570/2620–2690 MHz
KRF 102 415/2	2575–2615 MHz	2500–2570/2620–2690 MHz

- Optimized for use with Ericsson Radios to fulfill the 3GPP requirements
- B38A (2-2) or (4-4) Co-located with B7
- Cost-effective design for deliveries as both a double and a quadruple unit
- Suitable for indoor or outdoor applications
- Low insertion loss
- Wall mounting brackets and pole clamps are included

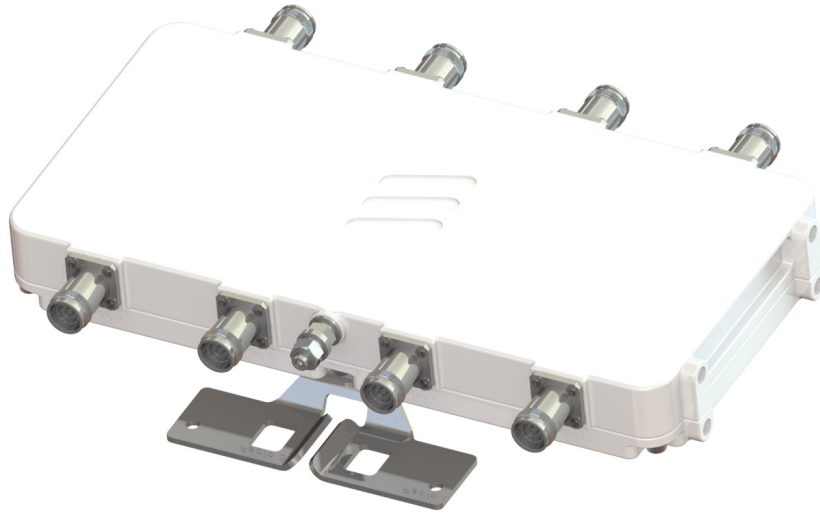


Product No. Product Name		KRF 102 415/1 SLF B38A (2-2)	KRF 102 415/2 SLF B38A (4-4)
<b>Electrical Specifications**</b>			
Frequency range - TDD:	MHz	2575–2615	
Insertion loss - 2575–2585 MHz: - 2585–2605 MHz: - 2605–2615 MHz:	dB	0.75* 0.55* 0.70*	
Out of band rejection: - 2500–2570 MHz: - 2620–2690 MHz:	dB	> 27 > 27	
Return loss	dB	> 22 > 20	
Isolation	dB	> 50	
Power handling (Prms)	dBm	50	
Intermodulation (IM3)	dBm	< -110 (at 2x43 dBm)	
<b>Mechanical Specifications</b>			
Dimensions (H x W x D)	mm	48 x 183 x 193 (excl. brackets and connectors)	99 x 183 x 193 (excl. brackets and connectors)
Weight	kg	2.7	5.7
Mounting options		Pole or wall	Pole or wall
RF connectors		4.3-10 (f)	4.3-10 (f)
<b>Environmental Specifications**</b>			
Operating temperature	°C	-40 to +55	
IP class		Outdoor, IP67	
Lightning protection		5 kA 10/350 µs, 20 kA 8/20 µs (Common mode)	
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETC): CSA/UL 62368-1	

\* Typical values

\*\* Common values for both variants

New product



4-4 Unit

# SLF B42-VG

## Spectrum Limitation Filter

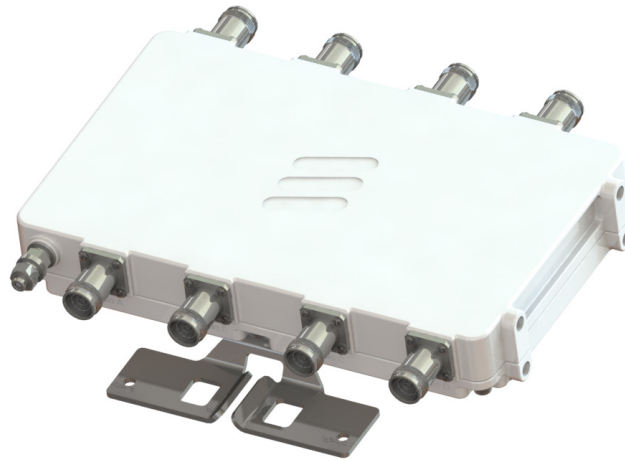
KRF 102 457/1	passband 3410–3490 MHz	rejection 694–3400 MHz
---------------	---------------------------	---------------------------

- High out of band rejection
- Low insertion loss
- DC bypass on all ports
- For both indoor and outdoor use
- Wall mounting brackets and pole clamps are included
- Rail mounting is possible



<b>Product No.</b>		KRF 102 457/1
<b>Product Name</b>		SLF B42-VG (4-4)
<b>Electrical Specifications</b>		
Frequency range	MHz	3410–3490
Insertion loss: - 3410–3490 MHz - 3420–3490 MHz	dB	< 1.3 (0.32*) < 0.52 (0.25*)
Out of band rejection: - 694–3400 MHz	dB	> 50
Return loss	dB	> 20
Power handling (Prms)	W	60 per port
Intermodulation (IM3) at 2 × 43 dBm	dBm	< -117
Maximum DC voltage	V	40
Maximum DC current	A	3
DC Bypass	Bypass on all ports	
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm	165 × 336 × 44
Weight	kg	3.8
Mounting options	Rail, pole or wall (Rail bracket ordered separately)	
RF connectors	4.3–10 (f)	
<b>Environmental Specifications</b>		
Temperature range, full performance - Operational - Non-destructive	°C	-40 to +55 -40 to +70
IP class	IP67	
Lightning protection	5 kA 10/350 μs, (Common Mode)	
Product safety	International (CB): IEC 62368-1 Europe (CE): EN 62368-1	

\* Typical values



2-2 Unit

# SLF B78C

## Spectrum Limitation Filter

KRF 102 446/2	passband 3300–3700 MHz	rejection 3710–4200 MHz
---------------	---------------------------	----------------------------

- High out of band rejection
- Low insertion loss
- DC bypass on all ports
- Wall mounting brackets and pole clamps are included
- Rail mounting is possible



<b>Product No.</b>		<b>KRF 102 446/2</b>
<b>Product Name</b>		<b>SLF B78C (4-4)</b>
<b>Electrical Specifications</b>		
Frequency range	MHz	3300–3700
Insertion loss: - 3300–3680 MHz - 3680–3700 MHz	dB	0.11* 0.41*
Out of band rejection: - 3710–3720 MHz - 3720–3740 MHz - 3740–3800 MHz - 3800–4200 MHz	dB	> 14 dB > 40 dB > 20 dB > 34 dB
Return loss	dB	> 20
Isolation	dB	> 50
Power handling (Prms)	W	100 per port
Intermodulation (IM3) at 2 × 43 dBm	dBm	< -105
Maximum DC voltage	V	40
Maximum DC current	A	3
DC Bypass		
<b>Mechanical Specifications</b>		
Dimensions (H x W x D)	mm	165 × 273 × 44
Weight	kg	3.55
Mounting options	Rail, pole or wall (Rail bracket ordered separately)	
RF connectors	4.3–10 (f)	
<b>Environmental Specifications**</b>		
Temperature range, full performance - Operational - Non-destructive	°C	-40 to +55 -40 to +70
IP class	IP67	
Lightning protection	5 kA 10/350 μs, (Common Mode)	
Product safety	International (CB): IEC 62368-1 Europe (CE): EN 62368-1	

\* Typical values





4-4 Unit

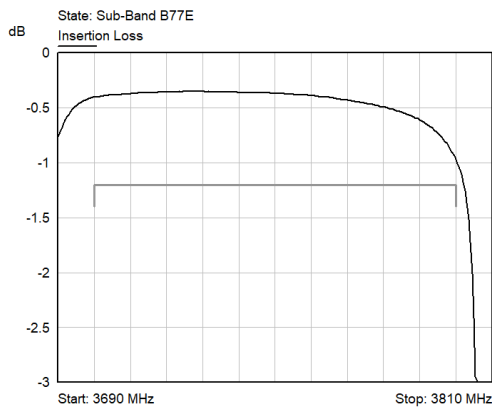
# SLF B77E

## Spectrum Limitation Filter

KRF 102 444/2	passband 3700–3800 MHz	rejection 3810–4200 MHz (remotely reconfigurable)
---------------	---------------------------	--

- Designed for co-existence with satellite communication in the upper part of B77D also known as the C-Band
- Remotely reconfigurable
- Low insertion loss
- For indoor and outdoor use
- Integrated mounting bracket for quick pole or wall mounting





Product No. Product Name		KRF 102 444/2 SLF B77E (8-8)		
Electrical Specifications		Radio 8863+SL Filter B77E	SL Filter B77E only	SL Filter B77E only
State		Sub-Band B77E	Sub-Band B77E	Full-Band B77D
Passband	MHz		3700–3800	3700–3980
Insertion Loss	dB		< 1.2 0.45*	< 0.3 0.25*
Out of band rejection	dB			
- 3810–3820 MHz:		≥ 7 dB	≥ 7 dB	N/A
- 3820–4000 MHz:		≥ 50 dB	≥ 50 dB	N/A
- 4000–4100 MHz:		>> 60 dB	≥ 50 dB	N/A
- 4100–4200 MHz:		>> 60 dB	≥ 40 dB	N/A
Return loss	dB		20*	20*
Isolation	dB		> 50	> 50
Power handling	W		70 (RMS per port)	70 (RMS per port)
Intermodulation (IM3)	dBm		< -105* (at 2x43 dBm)	< -105* (at 2x43 dBm)
<b>Mechanical Specifications*</b>				
Dimensions (H x W x D)	mm	180 x 345 x 113		
Weight	kg	9.8		
Mounting options		Rail, pole or wall (Rail bracket ordered separately)		
RF connectors		4.3-10 (f)		
<b>DC supply and control</b>				
Control interface		AISG RS-485 (RET IN port), AISG bypass for RET control (RET OUT port)		
Power supply	V DC	10–30 (RET IN port)		
Power consumption	W	Idle 1.5, Configuring 4.2		
DC/AISG bypass		All RF paths A - H		
<b>Environmental Specifications</b>				
Operating temperature	°C	-40 to +55		
Operating environment		Outdoor, IP67		
Lightning protection		5 kA 10/350 μs, 20 kA 8/20 μs (common mode)		
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETC): CSA/UL 62368-1		

\* Typical values



4-4 Unit

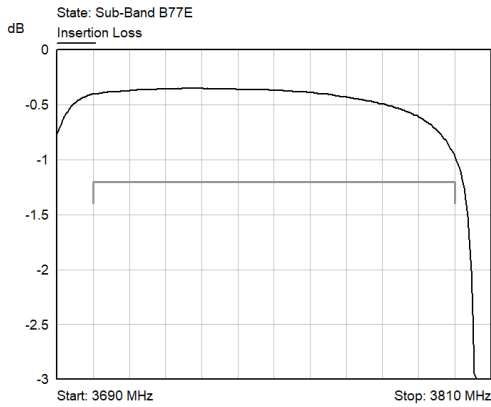
# SLF B77E OOK

## Spectrum Limitation Filter

KRF 102 444/4	passband 3700–3800 MHz	rejection 3810–4200 MHz (remotely reconfig. OOK)
---------------	---------------------------	---

- Designed for co-existence with satellite communication in the upper part of B77D also known as the C-Band
- Remotely reconfigurable / OOK
- Low insertion loss
- For indoor and outdoor use
- Integrated mounting bracket for quick pole or wall mounting





Product No. Product Name		KRF 102 444/4 SLF B77E OOK (8-8)		
Electrical Specifications		Radio 8863+SL Filter B77E	SL Filter B77E only	SL Filter B77E only
State		Sub-Band B77E	Sub-Band B77E	Full-Band B77D
Passband	MHz		3700–3800	3700–3980
Insertion Loss	dB		< 1.2 0.45*	< 0.3 0.25*
Out of band rejection	dB			
- 3810–3820 MHz:		≥ 7 dB	≥ 7 dB	N/A
- 3820–4000 MHz:		≥ 50 dB	≥ 50 dB	N/A
- 4000–4100 MHz:		>> 60 dB	≥ 50 dB	N/A
- 4100–4200 MHz:		>> 60 dB	≥ 40 dB	N/A
Return loss	dB		20*	20*
Isolation	dB		> 50	> 50
Power handling	W		70 (RMS per port)	70(RMS per port)
Intermodulation (IM3)	dBm		< -105* (at 2x43 dBm)	< -105* (at 2x43 dBm)
<b>Mechanical Specifications*</b>				
Dimensions (H x W x D)	mm	180 x 345 x 113		
Weight	kg	9.8		
Mounting options		Rail, pole or wall (Rail bracket ordered separately)		
RF connectors		4.3-10 (f)		
<b>DC supply and control</b>				
Control interface		AISG OOK (RBS A port)		
Power supply	V DC	10–30 (RET IN port)		
Power consumption	W	Idle 1.5, Configuring 4.2		
DC bypass		RF path H		
<b>Environmental Specifications</b>				
Operating temperature	°C	-40 to +55		
Operating environment		Outdoor, IP67		
Lightning protection		5 kA 10/350 μs, 20 kA 8/20 μs (common mode)		
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETC): CSA/UL 62368-1		

\* Typical values

## Hybrid Combiner

Product Name Product No.	Frequency range	Max. input power	Connector type (female)	Page
Hybrid Combiner (2-1) 78210506	698 – 2690 MHz	150 W at each port	7-16	<a href="#">775</a>
Hybrid Combiner (2-1) 78210507	698 – 2690 MHz	60 W at each port	4.3-10	<a href="#">778</a>
Hybrid Combiner (2-2) 78210527	698 – 2690 MHz	150 W at each port	4.3-10	<a href="#">781</a>
Hybrid Combiner (4-4) 78210536	698 – 2690 MHz	150 W at each port	4.3-10	<a href="#">784</a>

## Hybrid Combiner – Overview

Product No.	Type	Connector Type	Frequency / MHz														
			600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800			
78210506	(2-1), 2 x 150 W	7-16				698 - 2690											
78210507	(2-1), 2 x 60 W	4.3-10				698 - 2690											
78210527	(2-2), 2 x 150 W	4.3-10				698 - 2690											
78210536	(4-4), 4 x 150 W	4.3-10				698 - 2690											



# Hybrid Combiner (2-1)

78210506

698–2690 MHz | 2x150 W

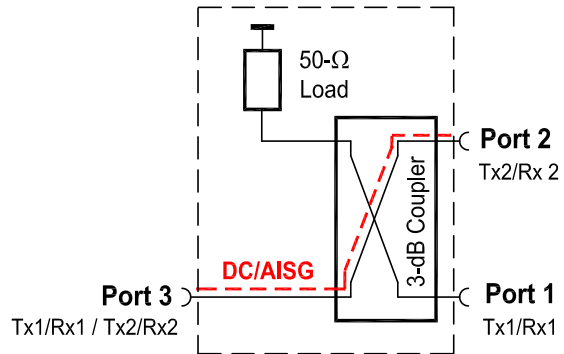
- Designed for the decoupled combining of 2 transmitter or receiver signals onto one common antenna
- The frequency spacing between transmitter signals can be as small as required
- Excellent intermodulation performance
- Suitable for indoor or outdoor applications
- DC by-pass between port 2 and port 3



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Product No.		78210506
Frequency range	MHz	698 – 2690
Attenuation		
Port 1 ↔ Port 3	dB	3 ± 0.6
Port 2 ↔ Port 3	dB	3 ± 0.6
Port 1 ↔ Port 2	dB	> 25*
VSWR (all ports)		< 1.12 (698 – 2690 MHz)
Impedance	Ω	50
Input power		
Port 1	W	< 150
Port 2	W	< 150
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C	-40 ... +55
Connectors		7-16 female
Application		Indoor or outdoor (IP 66)
DC/AISG transparency		
Port 1 ↔ Port 3		Stop
Port 2 ↔ Port 3		By-pass (max. 2500 mA)
Mounting	mm   in	Wall mounting: With 4 screws (diameter max. 8   0.31) / Mast mounting: With additional clamp set
Weight	kg   lbs	8   17.64
Packing size	mm   in	545 x 280 x 190   21.46 x 11.02 x 7.48
Dimensions (w x h x d)	mm   in	235 x 480 x 120   9.25 x 18.90 x 4.72 (without connectors, without mounting brackets)

\* Valid if all ports are terminated with 50-Ohm loads.

#### Note:

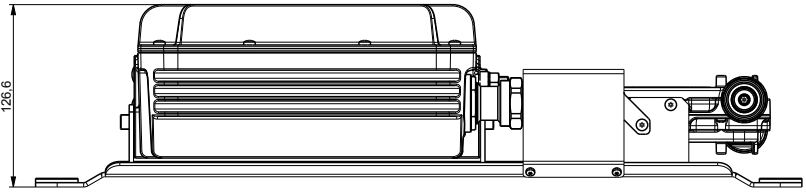
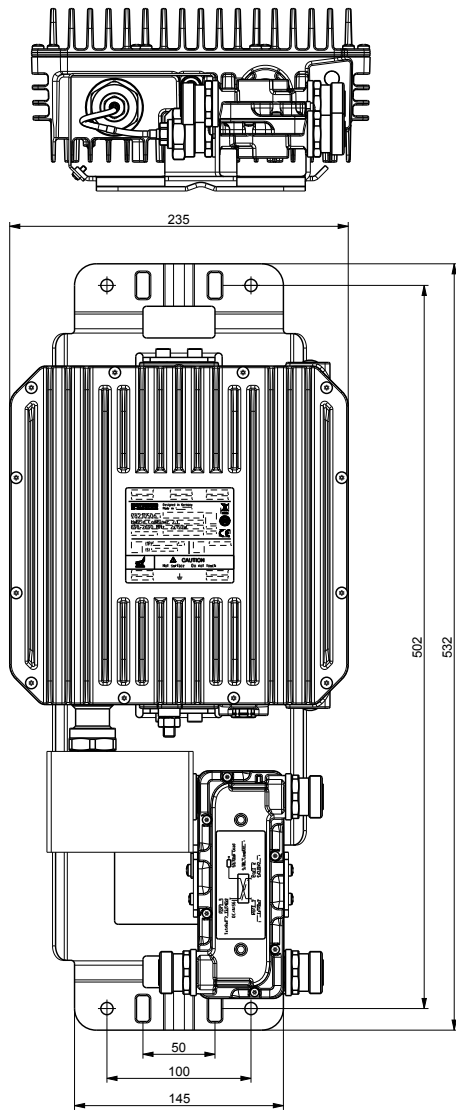
The input power rating of 150 W is specified at an ambient temperature of +40 °C with the combiner mounted vertically, without additional cooling, and while respecting the safety standard EN IEC 60950 (max. surface temperature +90 °C).

The max. power rating increases or decreases with falling or rising ambient temperature and depending on horizontal or vertical mounting in accordance with the following table:

	Mounted horizontally	Mounted vertically
Max. ambient temperature		
+55 °C	80 W	100 W
+40 °C	110 W	150 W
+25 °C	150 W	100 W



Dimensions in mm



**Accessories (order separately if required)**

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40-150   1.6-5.9	2



# Hybrid Combiner (2-1)

78210507

698–2690 MHz | 2x60 W

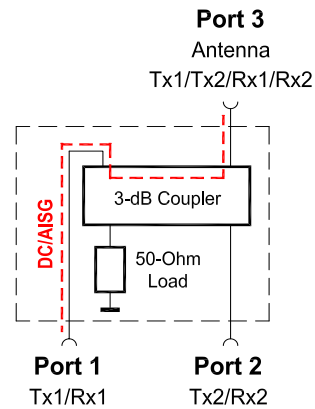
- With 4.3-10 connectors
- Designed for the decoupled combining of 2 transmitter or receiver signals onto one common antenna
- The frequency spacing between transmitter signals can be as small as required
- Excellent intermodulation performance
- Suitable for indoor or outdoor applications
- Wall or mast mounting
- DC by-pass between port 1 and port 3



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Product No.	78210507	
Frequency range	MHz	698 – 2690
Attenuation		
Port 1 ↔ Port 3	dB	3.1 ±0.5
Port 2 ↔ Port 3	dB	3.1 ±0.5
Port 1 ↔ Port 2	dB	> 23*
VSWR (all ports)	< 1.2 (698 – 2170 MHz) / < 1.25 (2170 – 2690 MHz)	
Impedance	Ω	50
Input power		
Port 1	W	< 60
Port 2	W	< 60
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F	-40 ... +55   -40 ... +131
Connectors	4.3-10 female	
Application	Indoor or outdoor (IP 66)	
DC/AISG transparency		
Port 1 ↔ Port 3	By-pass (max. 2500 mA)	
Port 2 ↔ Port 3	Stop	
Mounting	mm   in	Wall mounting: With 4 screws (diameter max. 8   0.31) / Mast mounting: With additional clamp set
Weight	kg   lb	4.3   9.5
Dimensions (w x h x d)	mm   in	264 x 203 x 72.5   10.4 x 8.0 x 2.9 (without connectors, without mounting brackets)
Packing size	mm   in	385 x 345 x 168   15.3 x 13.7 x 6.6

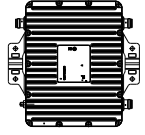
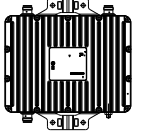
\* Valid if all ports are terminated with 50-Ohm loads.

#### Note:

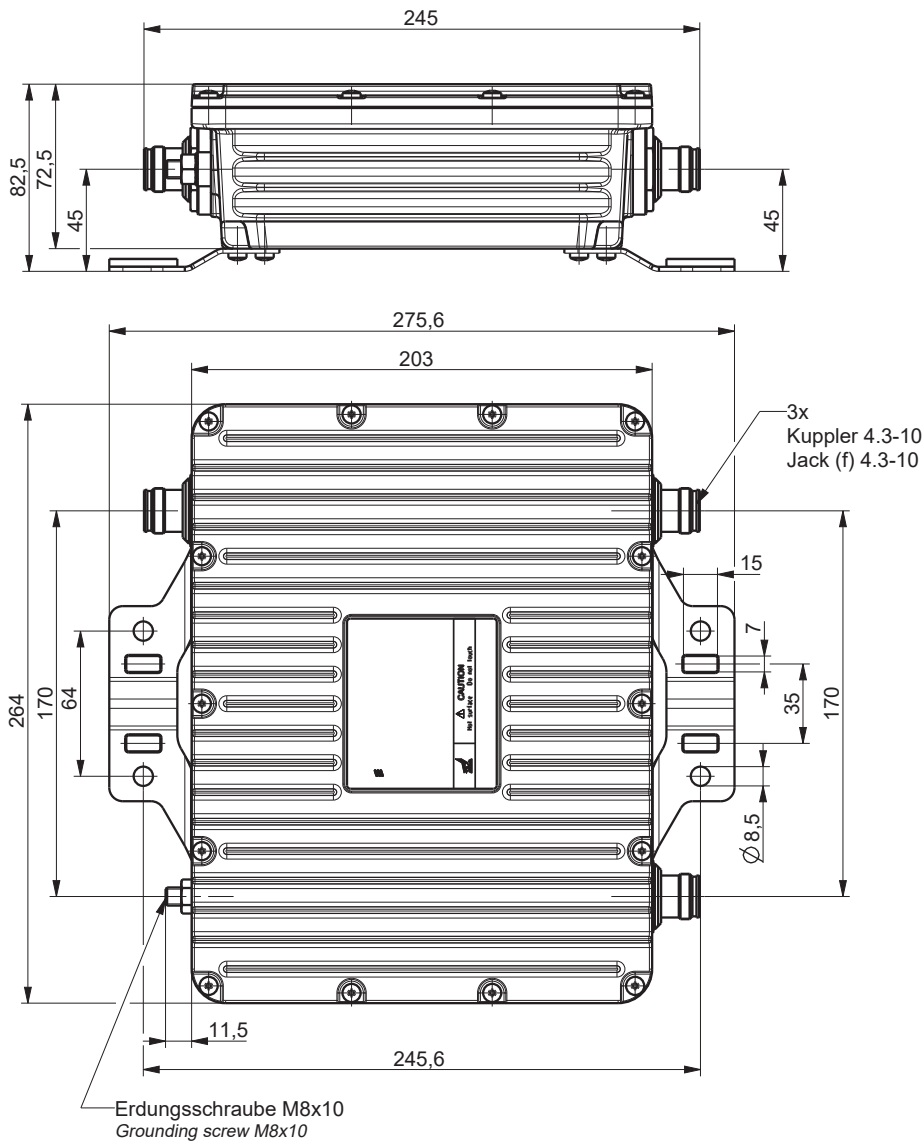
The input power rating of 150 W is specified at an ambient temperature of +40 °C with the combiner mounted vertically, without additional cooling, and while respecting the safety standard EN IEC 60950 (max. surface temperature +90 °C).

If used at a lower ambient temperature, then a higher input power in accordance with the following table is possible:

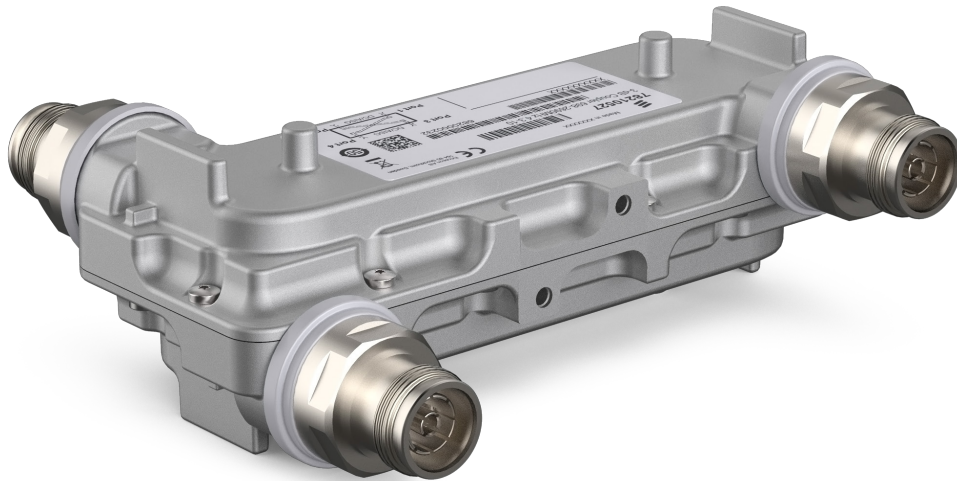
#### Max. input power per port

	Mounted horizontally	Mounted vertically
Max. ambient temperature		
+55 °C	55 W	60 W
+40 °C	70 W	75 W
+25 °C	80 W	85 W

Dimensions in mm

**Accessories (order separately if required)**

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2



# Hybrid Combiner (2-2)

78210527

698–2690 MHz | 2x150 W

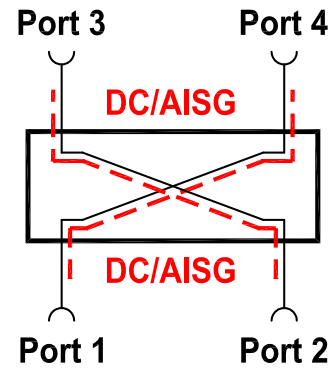
- With 4.3-10 connectors
- Can be used for the decoupled combining of 2 transmitters onto a common antenna with frequency spacing as narrow as desired (3 dB loss)
- Can be used for the decoupled combining of 2 transmitters onto two antennas with frequency spacing as narrow as desired
- Can be used as a decoupled 2-way splitter
- Can be used as a frequency-independent 90° phase shifter (90° Hybrid)
- Suitable for indoor and outdoor applications
- DC/AISG by-pass
- External DC stop available as an accessory



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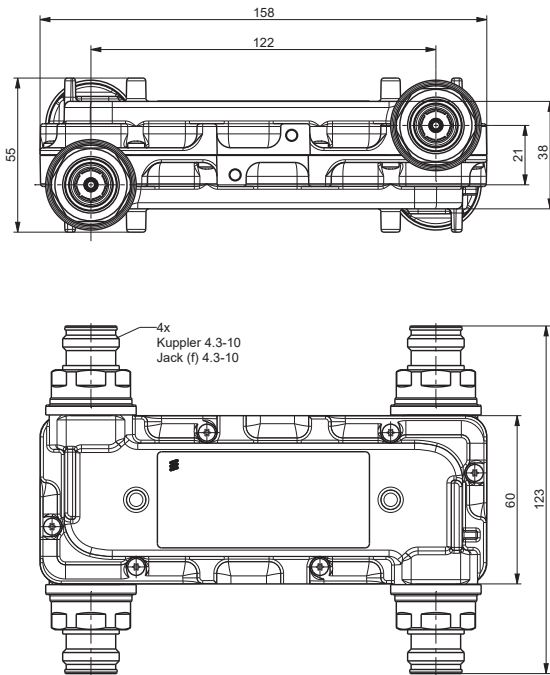
Product No.		78210527
Frequency range	MHz	698 – 2690
Attenuation		
Port 1 ↔ Port 3	dB	3 ±0.5
Port 1 ↔ Port 4	dB	3 ±0.5
Port 1 ↔ Port 2	dB	> 25
Directivity	dB	> 23
Return loss	dB	> 25
Impedance	Ω	50
Input power	W	< 150 at each input port
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F	-40 ... +70   -40 ... +158
Connectors		4.3-10 female
Application		Indoor or outdoor (IP66)
DC/AISG transparency		By-pass between Port 1 ↔ Port 4 / Port 2 ↔ Port 3 (max. 2500 mA) External DC stop available as an accessory
Weight	kg   lb	0.7   1.5
Dimensions (w x h x d)	mm   in	158 x 55 x 60   6.22 x 2.17 x 2.36 (without connectors)

## Note:

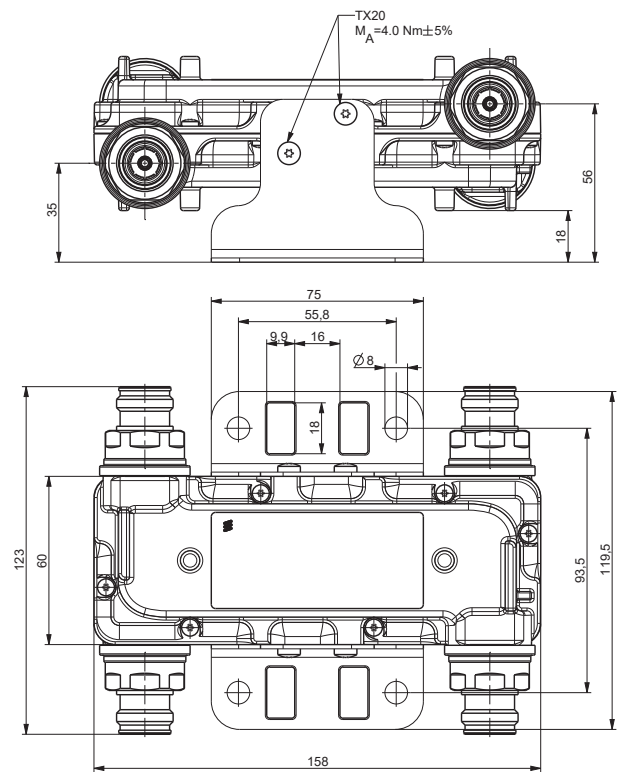
VSWR and attenuation values only valid if all ports are terminated with 50-Ohm-loads.

Dimensions in mm

without mounting kit 78210526



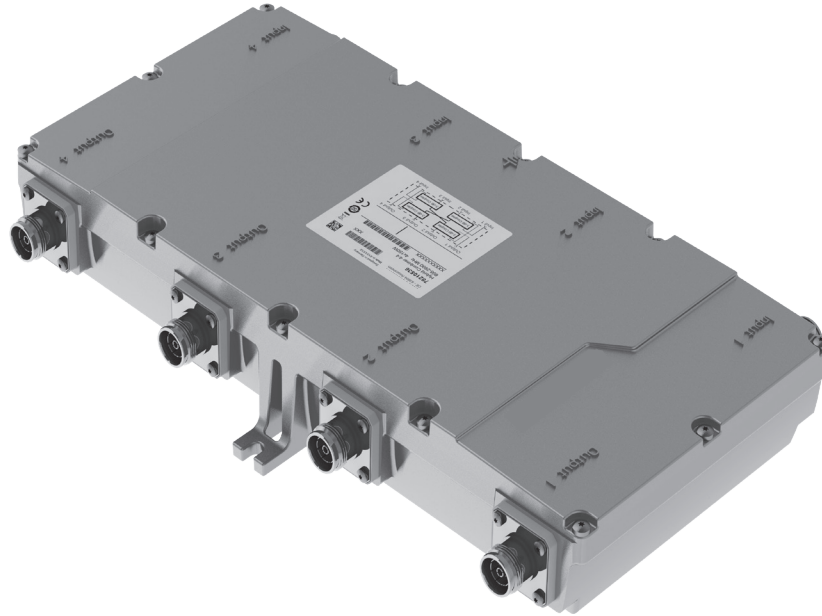
including mounting kit 78210526



## Accessories (order separately if required)

Product No.	Product Name	Pole diameter mm   inches	Units per product
SET 133 069/1	Hose Clamp	40–150   1.6–5.9	2

Product No.	Product Name	Description
78210473	50 Ohm Load	80 W
78210484	50 Ohm Load	2 W
78211000	DC Stop	–
78210526	Mounting Kit	–



# Hybrid Combiner (4-4)

78210536

698–2690 MHz | 4x150 W

- Designed for the decoupled combining of 4 transmitter or receiver signals and distributing these signals equally onto 4 antenna outputs
- Suitable for indoor or outdoor applications
- DC/AISG bypass
- External DC stop available as an accessory

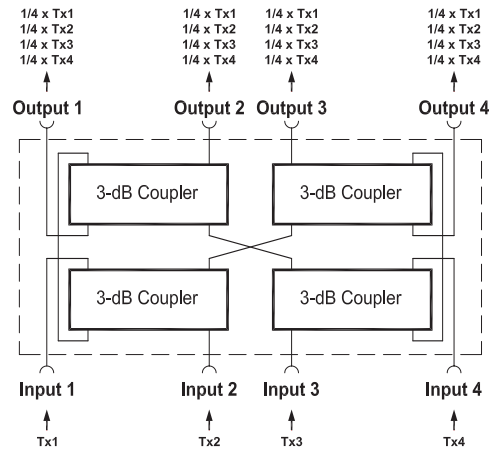


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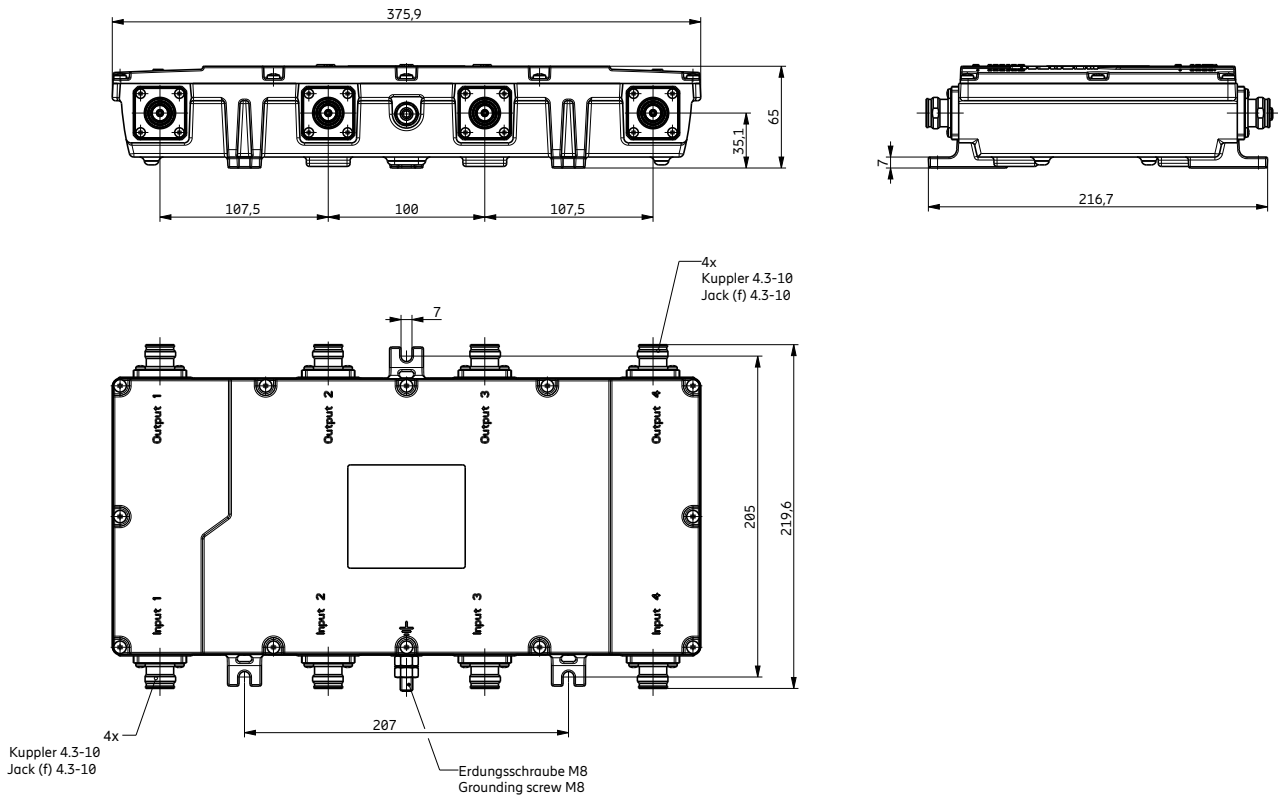




Product No.		78210536	
Frequency range	MHz	698 – 2690	
Insertion loss Input 1...4 ↔ Output 1...4	dB	0.35 ± 0.15	} typically 6.3
Power distribution loss (excluding insertion loss) Input 1...4 ↔ Output 1...4	dB	6 ± 0.75	
Isolation Input 1...4 ↔ Input 1...4 Output 1...4 ↔ Output 1...4	dB	$> 20$ * (698 – 2170 MHz) $> 19$ * (2170 – 2690 MHz), typically $> 20$	
VSWR (all ports)		$< 1.22$ (698 – 2170 MHz) $< 1.4$ , typ. 1.2 (2170 – 2690 MHz)	
Impedance	$\Omega$	50	
Input power	W	$< 150$ at each input port	
Intermodulation products	dBc	$< -160$ (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	$^{\circ}\text{C}$   $^{\circ}\text{F}$	-40 ... +60   -40 ... +140	
Connectors		4.3-10 female	
Application		Indoor or Outdoor (IP 66)	
DC/AISG transparency		Bypass (max. 2500 mA) between Input 1 ↔ Output 4 / Input 2 ↔ Output 2 / Input 3 ↔ Output 3 / Input 4 ↔ Output 1 External DC stop available as an accessory	
Mounting		Wall mounting: With 4 screws (max. 8 mm diameter)	
Weight	kg   lb	4.5   9.9	
Dimensions (w x h x d)	mm   in	376 x 65 x 224   14.8 x 2.6 x 8.8 (with connectors and mounting feet)	
Packing size	mm   in	453 x 125 x 273   17.8 x 4.9 x 10.7	

\* Valid if all ports are terminated with 50-Ohm loads

## Dimensions in mm



## Accessories (order separately)

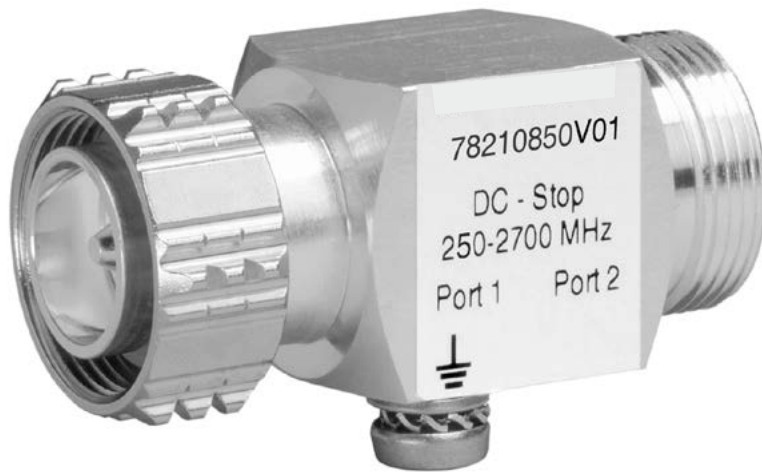
Product No.	Description
78211000	DC stop
78210473	50-Ohm load (80 W; 4.3-10 connectors)
78210484	50-Ohm load (2 W)

Note: The use of fewer than 4 inputs or outputs is possible. Any unused input ports have to be terminated with low-power 50-Ohm loads (e.g. 78410484), unused output ports have to be terminated with highpower 50-Ohm loads (e.g. 78210473).

## RF Component

Product No.	Product Name	Page
DC Stop		
78210850V01	DC Stop, 250-2700 MHz, 7-16	<a href="#">789</a>
78211000	DC Stop, 250-3800 MHz, 4.3-10	<a href="#">791</a>
Smart Bias Tee / RIU / RMU		
78211055	SBT, 617-2700 MHz, 8-32VDC, near BTS, 7-16	<a href="#">793</a>
78211056	SBT, 617-2700 MHz, 8-32VDC, near ANT, 7-16	
78211592	SBT, 617-2700 MHz, 8-32VDC, near BTS, 4.3-10	<a href="#">797</a>
78211593	SBT, 617-2700 MHz, 8-32VDC, near ANT, 4.3-10	
KRC 115 032/6	RIU, 617-2690 MHz, 10-32VDC, integrated cables, 4.3-10	<a href="#">801</a>
KRC 115 032/7	RIU, 617-2690 MHz, 10-32VDC, 4.3-10	
KRC 115 108/1	RMU, 617-2690 MHz, 10-32VDC, integrated cables, 4.3-10	<a href="#">803</a>
Splitter / Tapper		
86010131	2-way Splitter, 380-3800 MHz, 7-16	<a href="#">805</a>
86010101	2-way Splitter, 694-3800 MHz, 7-16	<a href="#">807</a>
86010103	3-way Splitter, 694-3800 MHz, 7-16	
86010105	4-way Splitter, 694-3800 MHz, 7-16	
86010136	2-way Tapper, 694-2700 MHz, 7.0/1.0 dB, N	<a href="#">809</a>
86010137	2-way Tapper, 694-2700 MHz, 10.4/0.4 dB, N	
86010138	2-way Tapper, 694-2700 MHz, 15.1/0.1 dB, N	
50 Ohm Load		
78410367	50 Ohm Load, 1.5 W, 0-4000 MHz, 7-16 male	<a href="#">811</a>
78210484	50 Ohm Load, 2 W, 0-6000 MHz, 4.3-10 male	<a href="#">813</a>
78211762	50 Ohm Load, 50 W, 690-5800 MHz, 4.3-10 male	<a href="#">815</a>
78211763	50 Ohm Load, 50 W, 690-5800 MHz, 4.3-10	
78210473	50 Ohm Load, 80 W, 380-3800 MHz, 4.3-10	<a href="#">818</a>
78210475	50 Ohm Load, 150 W, 380-5800 MHz, 7-16	<a href="#">821</a>





# DC Stop

78210850V01

250–2700 MHz

- Low RF signal insertion loss
- High DC signal isolation from port 1 to port 2 and vice versa
- Isolation of AISG signals
- Suitable for indoor or outdoor applications

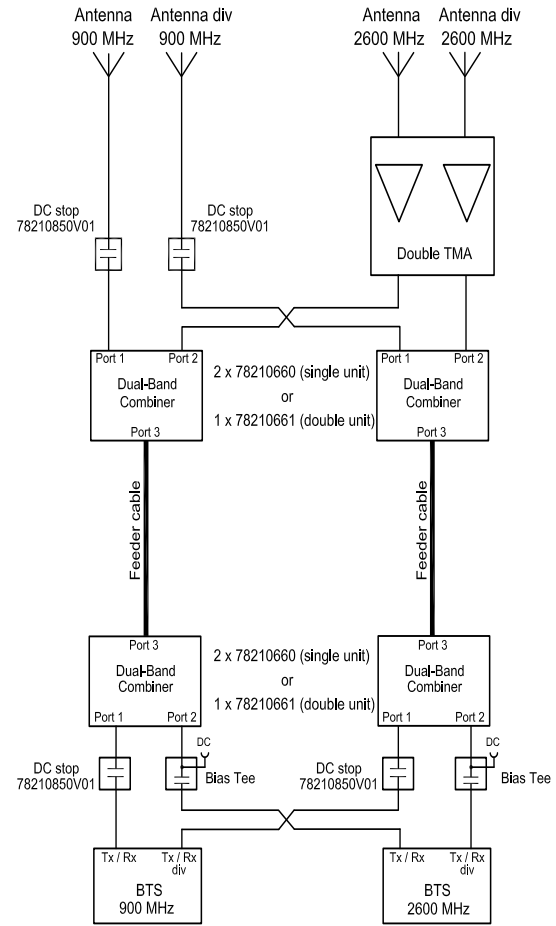
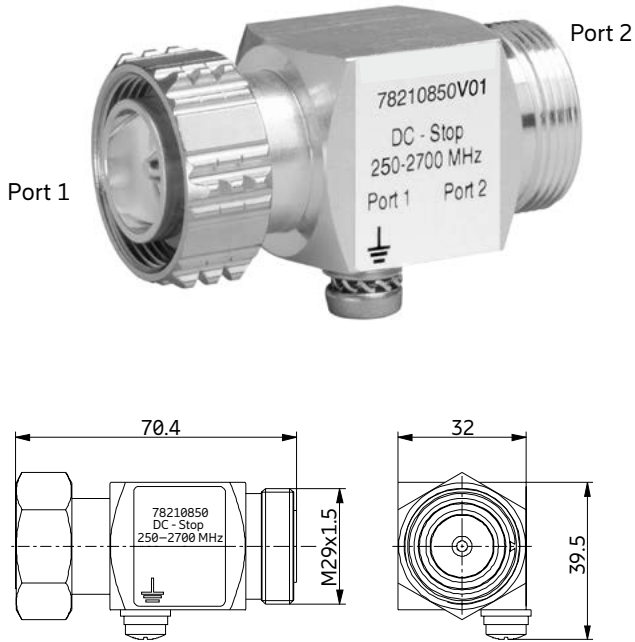


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DC Stop is used in dual- or multi-band antenna systems where one or more antenna systems require a DC supply for an installed mast head amplifier. The DC Stop prevents DC voltage from being shorted within the non-biased antenna system(s) and isolates the corresponding base station output(s) from DC voltage.



Product No.	<b>78210850V01</b>
Frequency range	250 – 2700 MHz
Insertion loss Port 1 ↔ Port 2	< 0.1 dB (250 – 2700 MHz)
Isolation Port 1 ↔ Port 2	DC Stop > 23 dB (AISG 2.176 MHz)
VSWR	< 1.5 (250 – 380 MHz) < 1.25 (380 – 690 MHz) < 1.1 (690 – 2700 MHz)
Impedance	50 Ω
Input power	< 750 W (250 - 2700 MHz)
Intermodulation products	< -160 dBc (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	-40 ... +70 °C
Connectors Port 1 Port 2	7-16 male 7-16 female
Application	Indoor or outdoor (IP 67)
Weight	0.32 kg
Dimensions (w x h x d)	70.4 mm x 39.5 mm x 32 mm (including connectors and earthing screw of 6 mm diameter)



# DC Stop

78211000

250–3800 MHz

- Low RF signal insertion loss
- High DC signal isolation from port 1 to port 2 and vice versa
- Isolation of AISG signals
- Suitable for indoor or outdoor applications

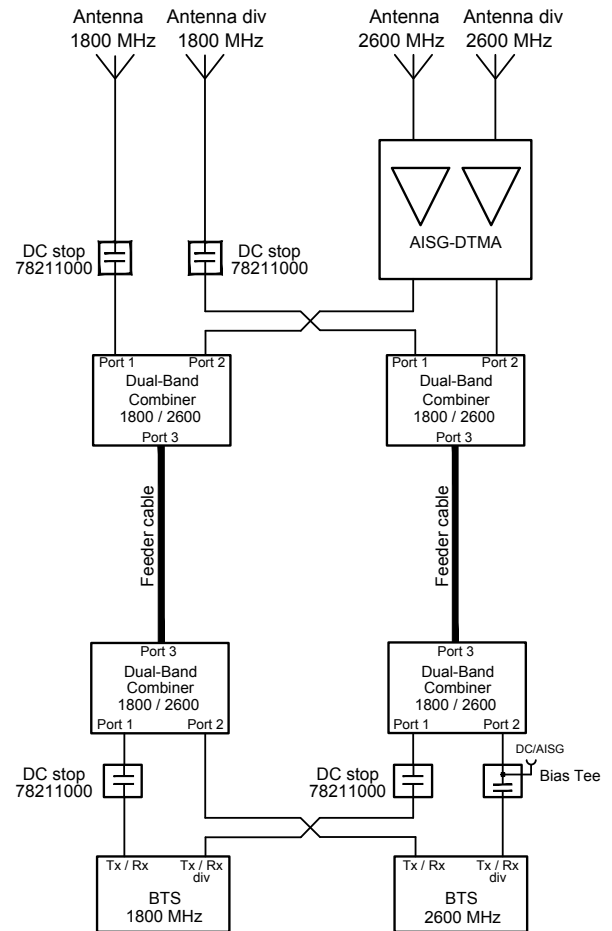


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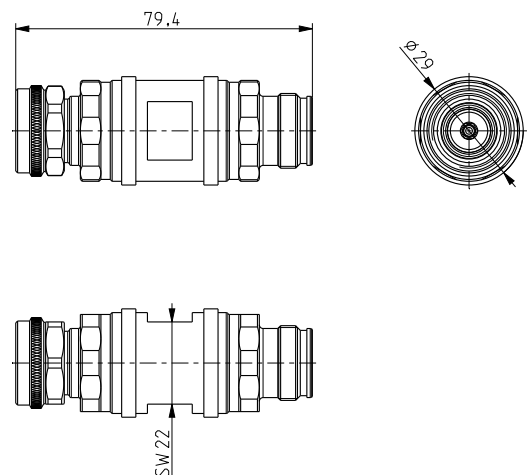


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DC Stop is used in dual- or multi-band antenna systems where one or more antenna systems require a DC supply for an installed mast head amplifier. The DC Stop prevents DC voltage from being shorted within the non-biased antenna system(s) and isolates the corresponding base station output(s) from DC voltage.



<b>Product No.</b>		<b>78211000</b>
Frequency range	MHz	250 - 3800
Insertion loss Port 1 ↔ Port 2	dB	< 0.1
Isolation Port 1 ↔ Port 2	dB	DC Stop > 23 (AISG 2.176 MHz)
VSWR		< 1.5 (250 - 380 MHz) < 1.25 (380 - 575 MHz) < 1.1 (575 - 3700 MHz) < 1.2 (3700 - 3800 MHz)
Impedance	Ω	50
Input power	W	< 500 (250 - 2700 MHz)
	W	< 300 (2700 - 3800 MHz)
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	dBc   °C   °F	-40 ... +70   -40 ... +158
Connectors Port 1 Port 2		4.3-10 male 4.3-10 female
Application		Indoor or outdoor (IP 67)
Weight	kg   lb	0.2   0.44
Dimensions (w x Ø)	mm   in	79.4 x 29   3.13 x 1.14 (including connectors)







78211055



78211056

# Smart Bias Tee

78211055, 78211056

617–2700 MHz | 8-32VDC

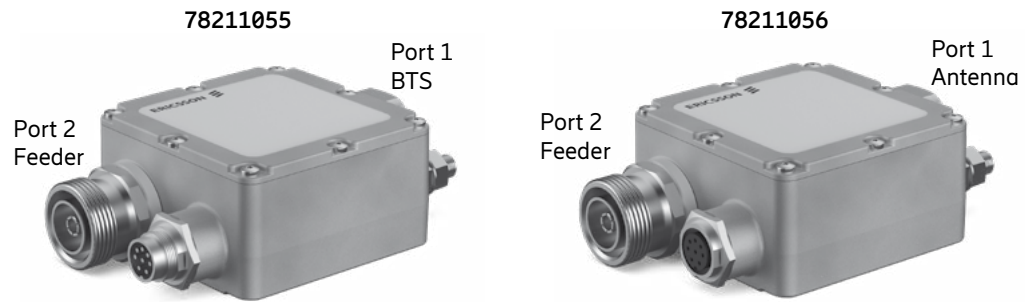
- 7-16 connectors
- combines the performance of a standard Bias Tee with the function of an additional modem (AISG standard) in order to provide either DC voltage as well as remote control signals via an RF feeder cable to a TMA or RCU
- provides low RF signal insertion loss from port 1 to port 2 and vice versa
- protection against static discharge and lightning ensures a high level of reliability and operational safety



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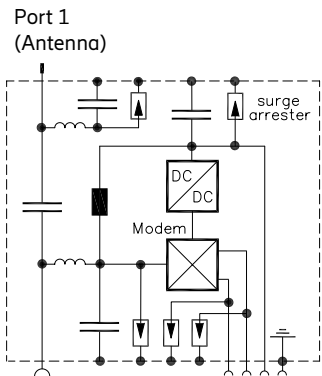


Product No.		78211055 +8 ... +32 VDC / BTS	78211056 +8 ... +32 VDC / Antenna
		+8 ... 32 VDC (DC on pin6) version for <b>use near the BTS</b> , in order to feed-in DC voltage and RCU control signals into a feeder cable	+8 ... 32 VDC (DC on pin6) version for <b>use near the antenna</b> , in order to control an RCU (only required if <b>no TMA</b> is in use)
Port 1: 7-16 male		BTS	Antenna
Port 2: 7-16 female		Feeder	Feeder
Frequency range	MHz	617 – 2700	
Insertion loss Port 1 ↔ Port 2	dB	< 0.1 (617 – 2700 MHz)	
Isolation for DC and RCU signals Port 1 ↔ Port 2	dB	> 70	
Port 1 ↔ Port DC/RCU	dB	> 70	
Port 2 ↔ Port DC/RCU	dB	> 0	
VSWR		< 1.1 (617 – 2700 MHz)	
Impedance	Ω	50	
Input power Port 1 or Port 2	W	< 750 (617 – 2700 MHz)	
Port DC/RCU		< 2.5 A / +8 ... +32 VDC	
Power consumption	W	Typically 0.6 W	
Lightning protection	kA	3, 10/350 μs pulse	
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	°C   °F	-40 ... +60   -40 ... +140	
Modem carrier frequency	MHz	2.176	
Application		Indoor or outdoor (IP 66)	
Weight	kg   lb	0.8   1.8	
Dimensions (w x h x d)	mm   in	81 x 81 x 46   3.2 x 3.2 x 1.8 (without connectors)	
Packing size (w x h x d)	mm   in	167 x 102 x 86   6.6 x 4.0 x 3.4	

## Abbreviations:

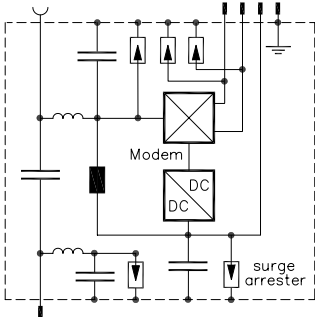
<b>RCU</b>	= Remote Control Unit for remote electrical control of antenna tilt
<b>BTS</b>	= Base Transceiver Station
<b>TMA</b>	= Tower Mounted Amplifier
<b>AISG</b>	= Antenna Interface Standards Group
<b>Port 1</b>	= Port for BTS or for Antenna
<b>Port 2</b>	= Port for Feeder Cable
<b>Port DC/RCU</b>	= Port for DC voltage and Remote Control Unit signals

Block diagrams:



Port 2 (Feeder) Port DC/RCU (RCU)

Port 2 (Feeder) Port DC/RCU (CCU)

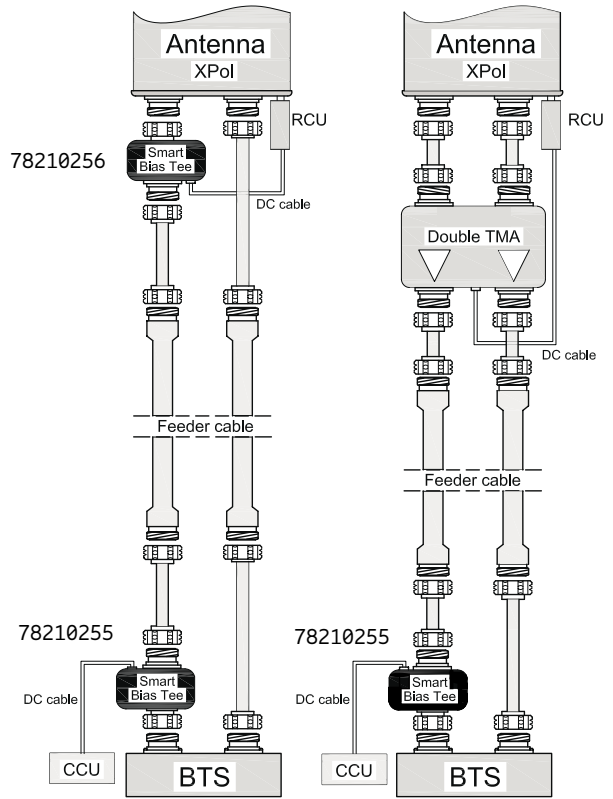


Port 1 (BTS)

Pin connections:

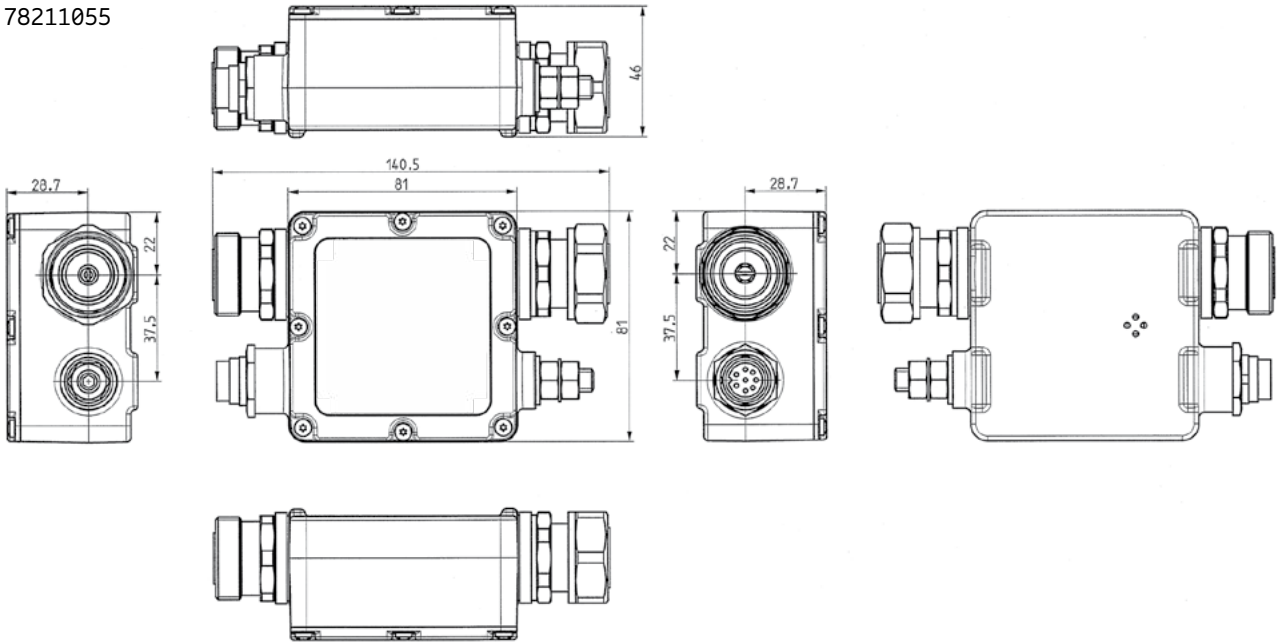
	78211055	78211056
8-pin connector (IEC 60130-9)		
	male	female
Pin 1	Not connected	Not connected
Pin 2	Not connected	Not connected
Pin 3	RS485-B	RS485-B
Pin 4	Not connected	Not connected
Pin 5	RS485-A	RS485-A
Pin 6	+8...+32 VDC in	+8...+32 VDC out
Pin 7	DC return (grounded)	DC return (grounded)
Pin 8	Not connected	Not connected

Application Examples:

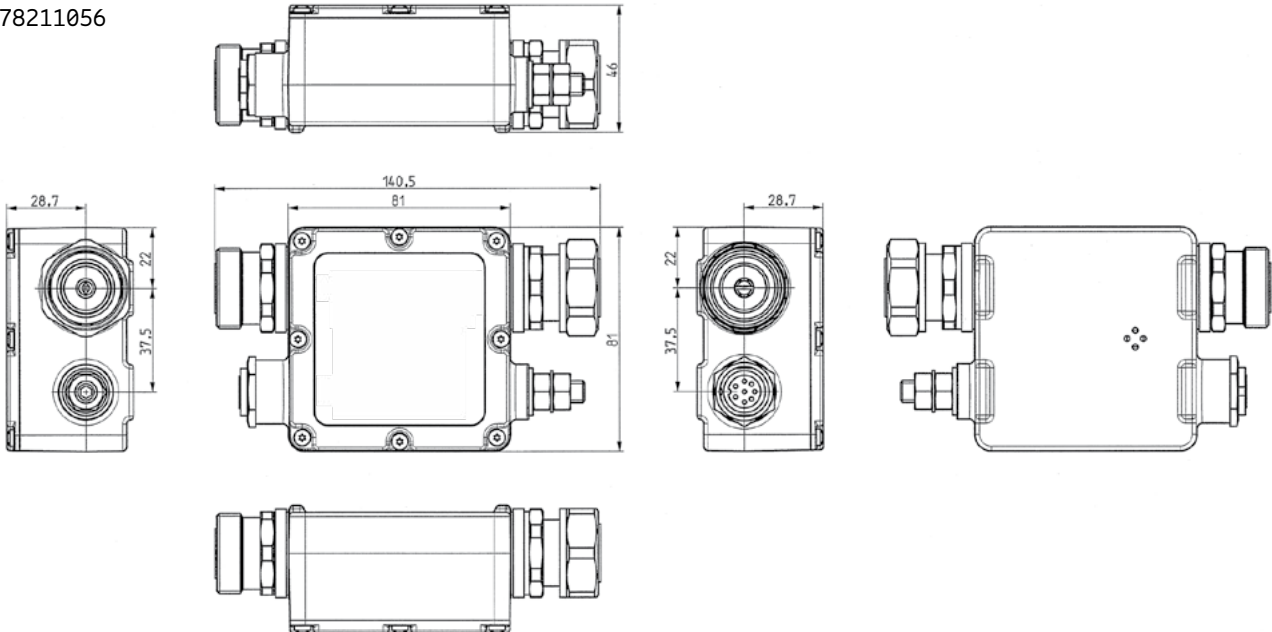


## Dimensions in mm

78211055



78211056

**Please note:**

The Smart Bias Tees are designed to operate under the environmental conditions as described in ETS 300 019-1-4 class 4.1 E and have passed environmental tests as recommended in ETS 300 019-2-4.

The installation team must be properly qualified and also be familiar with the relevant national safety regulations.

The coupling torque at 7-16 connectors is 25 – 30 Nm!

Hold the smart bias tee housing securely while tightening the 7-16 locking nut.

The tightening torque for fixing the AISG connector must be 0.5 – 1.0 Nm ('hand-tightened').



78211592



78211593

# Smart Bias Tee

78211592, 78211593

617–2700 MHz | 8-32VDC

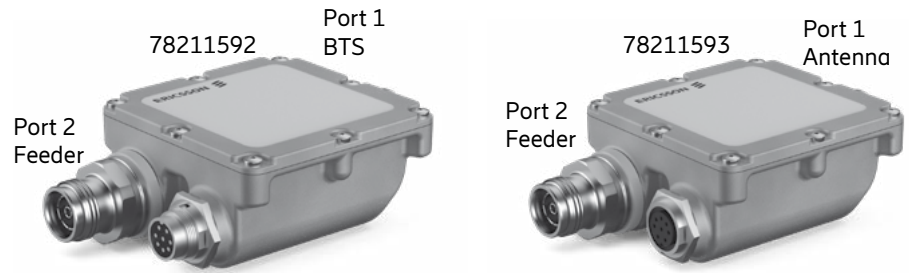
- 4.3-10 connectors
- combines the performance of a standard Bias Tee with the function of an additional modem (AISG standard) in order to provide either DC voltage as well as remote control signals via an RF feeder cable to a TMA or RCU
- provides low RF signal insertion loss from port 1 to port 2 and vice versa.
- protection against static discharge and lightning ensures a high level of reliability and operational safety



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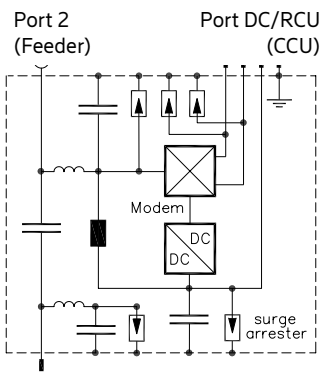
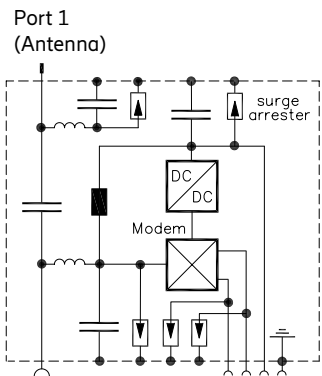


Product No.	78211592 +8 ... +32 VDC / BTS	78211593 +8 ... +32 VDC / Antenna
	+8 ... 32 VDC (DC on pin6) version for <b>use near the BTS</b> , in order to feed-in DC voltage and RCU control signals into a feeder cable	+8 ... 32 VDC (DC on pin6) version for <b>use near the antenna</b> , in order to control an RCU (only required if <b>no TMA</b> is in use)
Port 1: 4.3-10 male	BTS	Antenna
Port 2: 4.3-10 female	Feeder	Feeder
Frequency range	MHz	617 – 2700
Insertion loss Port 1 ↔ Port 2	dB	< 0.1 (617 – 2700 MHz)
Isolation for DC and RCU signals Port 1 ↔ Port 2	dB	> 70 (DC), > 30 dB 2.176 MHz (AISG signal)
Port 1 ↔ Port DC/RCU	dB	> 70
Port 2 ↔ Port DC/RCU	dB	> 0
VSWR		< 1.2 (617 – 690 MHz), < 1.1 (690 – 2700 MHz)
Impedance	Ω	50
Input power Port 1 or Port 2 Port DC/RCU	W	< 500 (617 – 2700 MHz) < 2.5 A / +8 ... +32 VDC
Power consumption	W	Typically 0.6
Lightning protection	kA	3, 10/350 μs pulse
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	°C   °F	-40 ... +60   -40 ... +140
Modem carrier frequency	MHz	2.176
Application		Indoor or outdoor (IP 66)
Weight	kg   lb	0.4   1.0
Dimensions (w x h x d)	mm   in	81 x 81 x 42   3.2 x 3.2 x 1.6
Packing size (w x h x d)	mm   in	167 x 102 x 86   6.6 x 4.0 x 3.4

## Abbreviations:

<b>RCU</b>	= Remote Control Unit for remote electrical control of antenna tilt
<b>BTS</b>	= Base Transceiver Station
<b>TMA</b>	= Tower Mounted Amplifier
<b>AISG</b>	= Antenna Interface Standards Group
<b>Port 1</b>	= Port for BTS or for Antenna
<b>Port 2</b>	= Port for Feeder Cable
<b>Port DC/RCU</b>	= Port for DC voltage and Remote Control Unit signals

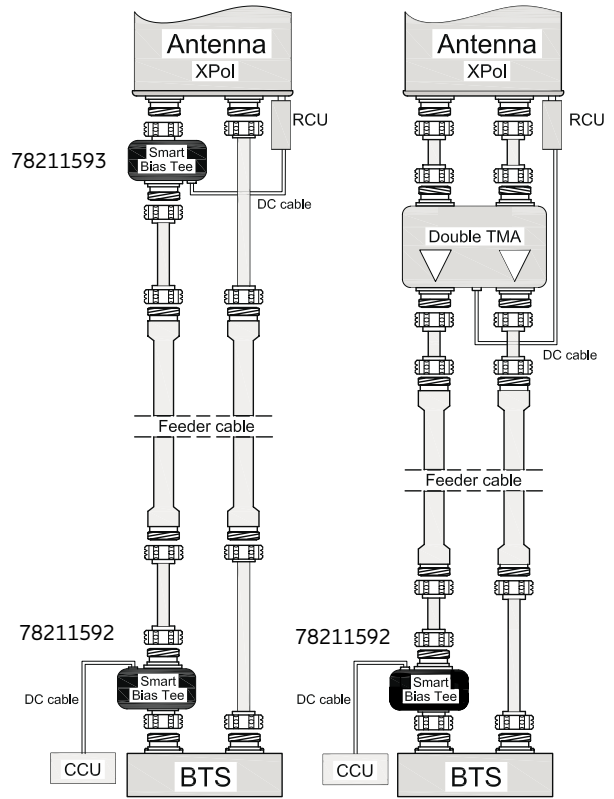
Block diagrams:



Pin connections:

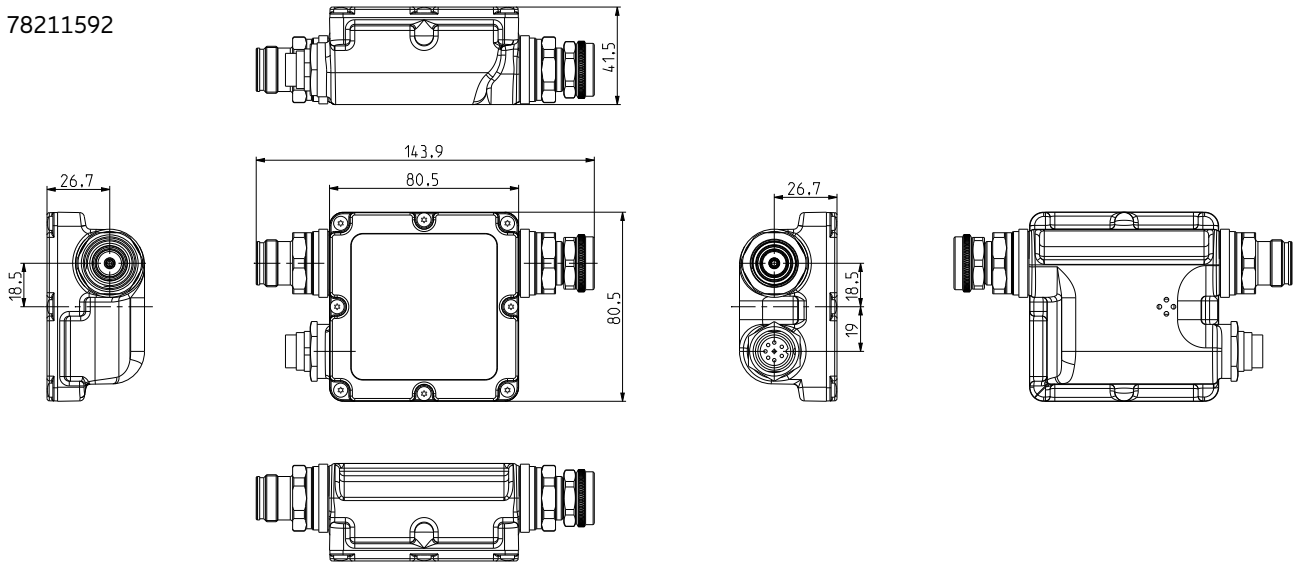
	78211592	78211593
8-pin connector (IEC 60130-9)		
	male	female
Pin 1	Not connected	Not connected
Pin 2	Not connected	Not connected
Pin 3	RS485-B	RS485-B
Pin 4	Not connected	Not connected
Pin 5	RS485-A	RS485-A
Pin 6	+8...+32 VDC in	+8...+32 VDC out
Pin 7	DC return (grounded)	DC return (grounded)
Pin 8	Not connected	Not connected

Application Examples:

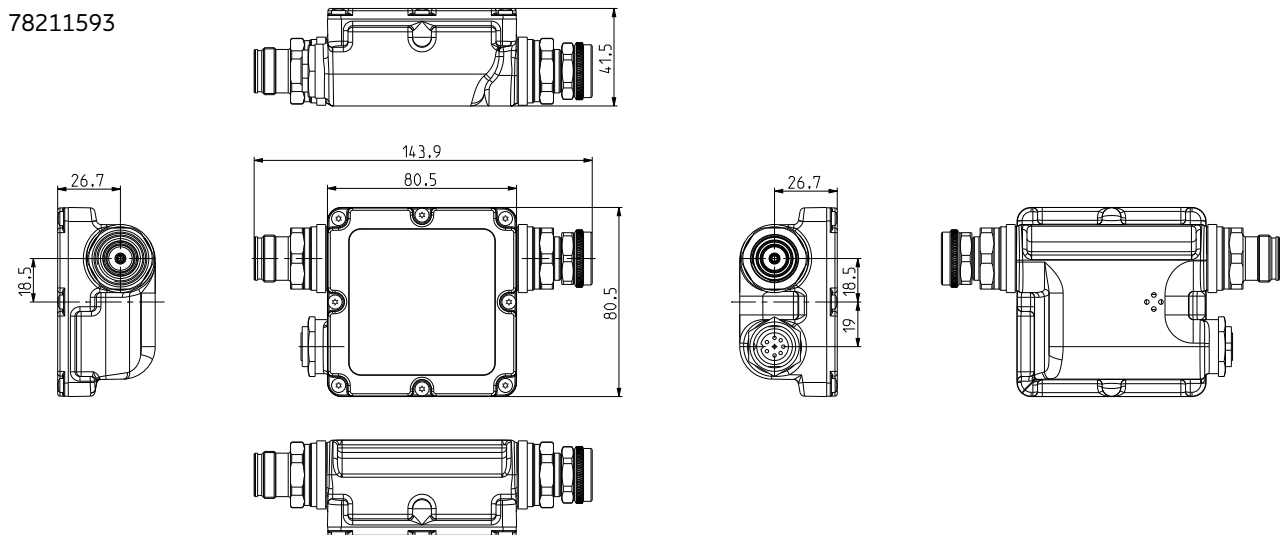


## Dimensions in mm

## 78211592



## 78211593

**Please note:**

The Smart Bias Tees are designed to operate under the environmental conditions as described in ETS 300 019-1-4 class 4.1 E and have passed environmental tests as recommended in ETS 300 019-2-4.

The installation team must be properly qualified and also be familiar with the relevant national safety regulations.

The coupling torque at 4.3-10 connectors is 5 – 8 Nm!

Hold the smart bias tee housing securely while tightening the 4.3-10 locking nut.

The tightening torque for fixing the AISG connector must be 0.5 – 1.0 Nm ('hand-tightened')

No lateral pressure may be placed on the Smart Bias Tee when mounting directly on an antenna.





KRC 115 032/6



KRC 115 032/7

# RET Interface Unit - Smart Bias Tee

KRC 115 032/6, KRC 115 032/7

617–2690 MHz | 10-32VDC

- Frequency range: 617 MHz to 2690 MHz
- Some variants include 0.3 m jumper cable and 0.55 m RET cable
- Support for 3GPP / AISG 2.0
- Low insertion loss
- IP67
- Temperature range: -40 to +55 °C
- Power consumption < 1.5 W
- Weight: 0.9 kg, or 1.0 kg including cables
- Wall mounting brackets and pole clamps are included



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**Technical Specifications**

Product Name		RIU 4.3-10 Integrated Cables	RIU 4.3-10
Product No.		KRC 115 032/6	KRC 115 032/7
<b>Radio Performance</b>			
Frequency Range	MHz	617 – 2690	617 – 2690
Insertion loss	dB	< 0.1 + 0.15 cable loss	< 0.1
Return loss	dB	> 21*	> 21*
IM3 (2 x 43 dBm)	dBm	< -118*	< -118*
Power handling (average)	W	600	600
<b>Electrical Specifications **</b>			
Input voltage	V DC	10 to 32	
Power consumption	W	< 1.5	
<b>Mechanical Specifications (Coupler Unit)</b>			
Dimensions (H x W x D)	mm	95 x 82 x 38	95 x 82 x 38
Weight	kg	1.0 (including cables)	0.9
Color		White (NCS S 1002-B), textured	White (NCS S 1002-B), textured
Mounting options		Wall or pole	Wall or pole
<b>Connectors</b>			
• ANT		Jumper cable with 4.3-10 (m)	4.3-10 (f)
• RBS		4.3-10 (f)	4.3-10 (f)
• ALD		RET cable with 8-pin (f) IEC 60130-9	RET cable with 8-pin (f) IEC 60130-9
<b>Environmental Specifications **</b>			
Temperature range, full performance	°C	-40 to +55	
MTBF		> 100 years	
IP class		IP67	
Lightning protection		5 kA 10/350 µs, 20 kA 8/20 µs (Common mode)	
Product safety		International (CB): IEC 62368-1 Europe (CE): EN 62368-1 North America (ETC): CSA/UL 62368-1	

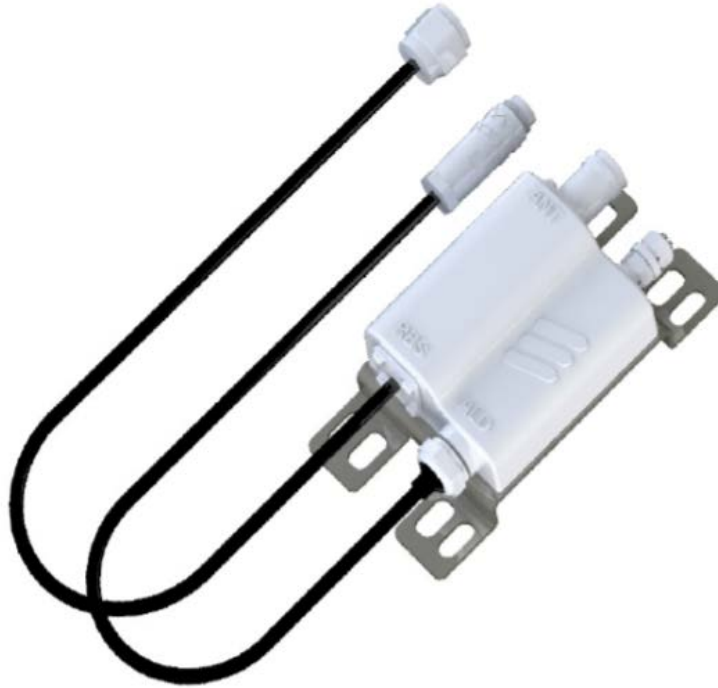
\* Typical values

\*\* Common values for all variants

The RET Interface Unit (RIU) is needed for RET control when AISG signaling + DC is fed through the feeder system. The RIU converts the modulated signals from the feeder to a RS-485 signal, and vice versa. The RS-485 can handle external RET devices and potentially other AISG devices.

**System Integration**

This Ericsson product has been system verified together with Ericsson RBSs and Ericsson Antenna Line Devices to ensure high system performance. Power, AISG control, and supervision has also been verified.



# Radio Modem Unit - Smart Bias Tee

KRC 115 108/1

617–2690 MHz | 10-32VDC integrated cables

- Frequency range: 617 MHz to 2690 MHz
- Includes 0.55 m jumper cable and 0.55 m ALD cable
- Support for 3GPP / AISG 2.0
- Low insertion loss
- IP67
- Temperature range: -40 to +55 °C
- Power consumption < 1.5 W
- Weight: 1.0 kg including cables
- Wall mounting brackets and pole clamps are included



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Technical Specifications		
Product Name	RMU 4.3-10 Integrated Cables	
Product No.	KRC 115 108/1	
Radio Performance		
Frequency range	MHz	617 – 2690
Insertion loss	dB	< 0.1 + 0.2 cable loss
Return loss	dB	> 21*
IM3 (2 x 43 dBm)	dBm	< -118*
Electrical Specifications		
Input voltage	V DC	10 to 32
Power consumption	W	< 1.5
Mechanical Specifications (Coupler Unit)		
Dimensions (H x W x D)	mm	95 x 82 x 38
Weight	kg	1.0 (including cables)
Color	White (NCS S 1002-B), textured	
Mounting options	Wall or pole	
Connectors	ANT: 4.3-10 (f) RBS: jumper cable with 4.3-10 (m) ALD: ALD cable with 8-pin (m) IEC 60130-9	
Environmental Specifications		
Temperature range, full performance	°C	-40 to +55
MTBF	> 100 years	
IP class	IP67	
Lightning protection	5 kA 10/350 μs, 20 kA 8/20 μs (Common mode)	
Product safety	International (CB): IEC 60950-1, IEC 60950-22 Europe (CE): EN 60950-1, EN 60950-22 North America (ETL): UL 60950-1, UL 60950-22, CSA-C22.2 No.60950-1, CSA-C22.2 No.60950-22	

\* Typical values

The Ericsson Radio Modem Unit (RMU) with 4.3-10 connectors has integrated jumper and ALD cable which makes it easy to install.

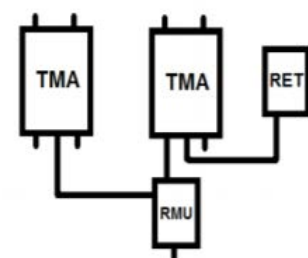
The RMU is used for superimposing AISG signals + DC onto the RF feeder line from an RS-485 interface when the radio (for example Radio 2219) does not support AISG + DC on the RF ports.

There are three main scenarios when the RMU is needed when used together with radios that have a separate RS-485 port for antenna system control:

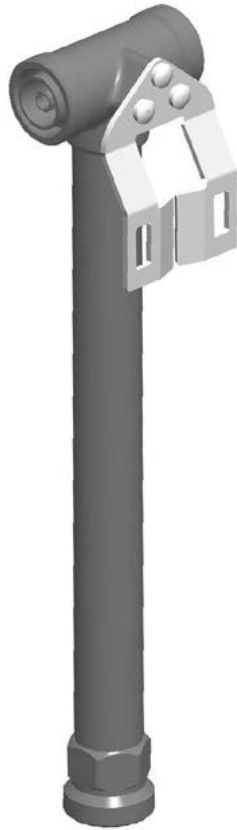
- Antennas with integrated RET and Bias-T
  - TMAs
  - Distance between radio and antenna RET connector is >15m
- An additional scenario is to support TMA cascading.

#### System Integration

This Ericsson product has been system verified together with Ericsson RBSs and Ericsson Antenna Line Devices to ensure high system performance. Power, AISG control, and supervision has also been verified.



TMA cascading



# Splitter

86010131

380–3800 MHz



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**For indoor and outdoor use.****2-way Splitter 380–3800**

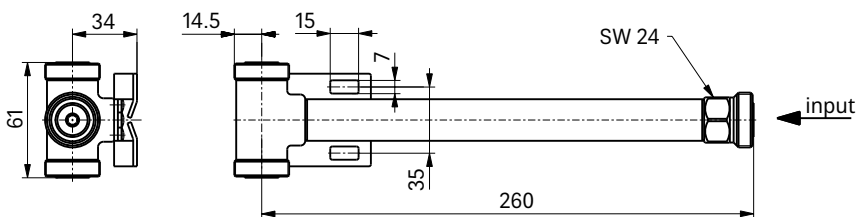
Product No.		86010131
Connector		7-16 female
Max. power (at 50 °C ambient temperature)	W	700
For connecting ... antennas		2
Frequency range	MHz	380 – 3800
VSWR		< 1.5
Intermodulation IM3	dBc	< -150 (2 x 43 dBm carrier)
Impedance	$\Omega$	50
Insertion loss	dB	< 0.05
Weight	g   lb	0.870   1.9
Packing size	mm   in	300 x 75 x 75   11.8 x 3.0 x 3.0

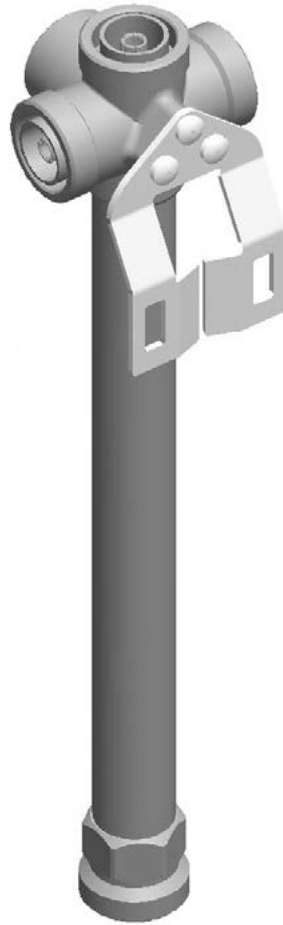
Material: Brass. Surface treatment: CuSnZn3

Mounting: Bracket for wall mounting included in the scope of supply.  
For pipe mast mounting use clamps listed below (order separately).

DC capability: DC transmission between all terminations (suitable for remote power supply systems).

Environmental conditions: ETS 300 019-1-4 class 4.1 E  
 • Low temperature: -55 °C  
 • High temperature (dry): +60 °C IP 65





# Splitter

86010101, 86010103, 86010105

694–3800 MHz



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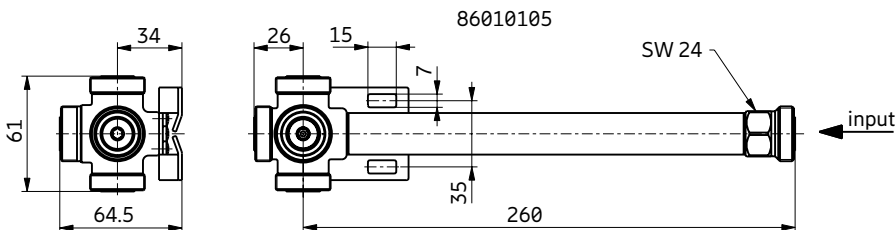


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**For indoor and outdoor use.****2-way Splitter 694–3800****3-way Splitter 694–3800****4-way Splitter 694–3800**

Product No.		86010101	86010103	86010105
Connector (female)		7-16	7-16	7-16
Max. power (at 50 °C ambient temperature)	W	700	700	700
For connecting ... antennas		2	3	4
Frequency range	MHz	694 – 3800		
VSWR		694 – 894 MHz: < 1.32 790 – 3800 MHz: < 1.15		
Intermodulation IM3	dBc	< -150 (2 x 43 dBm carrier)		
Impedance	$\Omega$	50		
Insertion loss	dB	< 0.05		
Weight	g   lb	870   1.9	900   2.0	960   2.1
Packing size	mm   in	300 x 75 x 75   11.8 x 3.0 x 3.0		

Material:	Brass. Surface treatment: CuSnZn3
Mounting:	Bracket for wall mounting included in the scope of supply. For pipe mast mounting use clamps listed below (order separately).
DC capability:	DC transmission between all terminations (suitable for remote power supply systems).
Environmental conditions:	ETS 300 019-1-4 class 4.1 E – Low temperature: -55 °C – High temperature (dry): +60 °C IP 65







# Tapper

86010136, 86010137, 86010138

694–2700 MHz



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**For indoor use.**

2-way Tapper 694–2700 7.0/1.0dB  
 2-way Tapper 694–2700 10.4/0.4dB  
 2-way Tapper 694–2700 15.1/0.1dB

Product No.		86010136	86010137	86010138
Frequency range	MHz	694 – 2700 MHz		
Tap Loss				
Input $\leftrightarrow$ P <sub>1</sub>	dB	-1.0	-0.4	-0.1
Input $\leftrightarrow$ P <sub>2</sub>		-7.0	-10.4	-15.1
For connecting ... antennas		2		
Insertion loss	dB	< 0.05		
Impedance	$\Omega$	50		
VSWR		694–790 MHz: < 2.0 790–2500 MHz: < 1.5 2500–2700 MHz: < 2.0		
Intermodulation IM3	dBc	< -150 (2 x 43 dBm carrier)		
Max. power	W	100 (at 50 °C ambient temperature)		
Connectors		N female		
Weight	g lb	500 1.1		
Profile cross-section	mm inches	25 x 25 1.0 x 1.0		
Packing size	mm inches	267 x 95 x 111 10.5 x 3.7 x 4.4		
Max. size	mm inches	244 / 64 / 25 9.6 / 2.5 / 1.0		

Material: Housing: Aluminum.  
Inner conductor: Brass.

DC capability: DC transmission only between input and port P<sub>1</sub>.  
P<sub>2</sub> is coupled capacitively.

Environmental conditions: IP 52



# 50 Ohm Load

78410367

1.5 W | 0–4000 MHz

- Standard 50-Ohm terminations for small power
- Suitable for terminating open ports on RF equipment for indoor and /or outdoor applications



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<b>Product No.</b>		<b>78410367</b>
Connector		7-16 male
Frequency range	MHz	0 – 4000
VSWR	0 – 2000 MHz	< 1.10
	2000 – 4000 MHz	< 1.30
Max. input power	W	1.5*
Application		Indoor or outdoor (IP65)
Weight	g   lb	120   0.26
Dimensions	mm   in	40 / 32 diameter   1.6 / 1.3 diameter
Packing size	mm   in	Approx. 50 x 90 x 100   2.0 x 3.5 x 3.9

\* Rated power at 40 °C ambient temperature. The max. power rating increases or decreases with falling or rising ambient temperature.



# 50 Ohm Load

78210484

2 W | 0-6000 MHz

- Standard 50-Ohm terminations for small power
- Suitable for terminating open ports on RF equipment for indoor and /or outdoor applications



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<b>Product No.</b>		<b>78210484</b>
<b>Connector</b>		4.3-10 male
<b>Frequency range</b>	<b>MHz</b>	0 – 6000
<b>VSWR</b>	0 – 1000 MHz	< 1.08
	1000 – 2500 MHz	< 1.13
	2500 – 6000 MHz	< 1.25
<b>Max. input power</b>	<b>W</b>	2*
<b>Application</b>		Indoor or outdoor (IP 67)
<b>Weight</b>	<b>g   lb</b>	63   0.1
<b>Dimensions</b>	<b>mm   in</b>	42.9 / 24.0 diameter   1.7 / 0.9 diameter
<b>Packing size</b>	<b>mm   in</b>	90 x 100 x 25   3.5 x 3.9 x 1.0

\* Rated power at 40 °C ambient temperature. The max. power rating increases or decreases with falling or rising ambient temperature.



78211762, 78211763

# 50 Ohm Load

78211762, 78211763

50 W | 690–5800 MHz

- Designed as 50-Ohm termination wherever improved intermodulation performance compared to standard loads is required
- Excellent intermodulation performance
- Suitable for indoor or outdoor applications
- Wall or mast mounting
- Built-in DC stop



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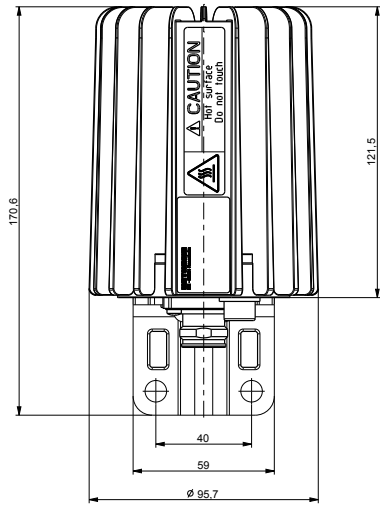
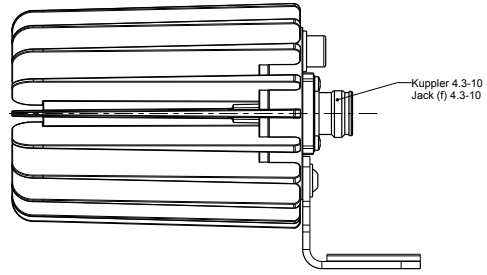
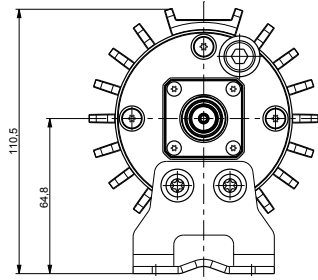
Scan or [click](#)

Product No.		78211762	78211763
Frequency range	MHz	690 – 5800 MHz	
VSWR		< 1.2	
Impedance	$\Omega$	50	
Input power	W	50	50
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)	
Temperature range	$^{\circ}\text{C}$   $^{\circ}\text{F}$	-40 ... +55   -40 ... +131	
Connector		4.3-10 male	4.3-10 female
Application		Indoor or outdoor (IP 66)	
DC/AISG transparency		Built-in DC stop AISG: Attenuation up to 3 dB when used in a network	
Mounting		Wall mounting: With 2 screws (max. 8.0 mm diameter)	
Weight	kg   lb	1.2   2.6	
Dimensions	mm   in	$\emptyset$ 96 x 122   3.8 x 4.8	



Dimensions [mm]

50 W - version  
78211763





# 50 Ohm Load

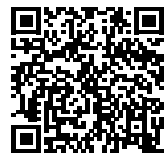
78210473

80 W | 380–3800 MHz

- Designed as 50-Ohm termination wherever improved intermodulation performance compared to standard loads is required
- Excellent intermodulation performance
- Suitable for indoor or outdoor applications
- Wall or mast mounting
- Built-in DC stop



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**Technical Data**

<b>Product No.</b>		<b>78210473</b>
Frequency range	MHz	380 – 3800
VSWR		< 1.2 (380 – 450 MHz) < 1.12 (450 – 3200 MHz) < 1.29 (3200 – 3800 MHz)
Impedance	$\Omega$	50
Input power	W	< 80 (see table)
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	$^{\circ}\text{C}$   $^{\circ}\text{F}$	-40 ... +55   -40 ... +131
Connector		4.3-10 female
Application		Indoor or outdoor (IP 66)
DC/AISG transparency		Built-in DC stop AISG: Attenuation up to 3 dB when used in a network
Mounting		Wall mounting: With 4 screws (max. 6.5 mm diameter) Mast mounting: With additional Clamp set (see next page)
Weight	kg   lb	3.1   6.8
Dimensions (w x h x d)	mm   in	144 x 216 x 79   5.7 x 8.5 x 3.1 (including connector)
Packing size	mm   in	377 x 232 x 189   14.8 x 9.1 x 7.4

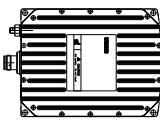

**Note:**

The RF port connector should always point downwards if mounted outdoors.

The input power rating of 80 W is specified at an ambient temperature of +40  $^{\circ}\text{C}$  with the combiner mounted vertically, without additional cooling, and while respecting the safety standard EN IEC 60950 (max. surface temperature +90  $^{\circ}\text{C}$ ).

The max. power rating increases or decreases with falling or rising ambient temperature and depending on horizontal or vertical mounting in accordance with the following table:

**Max. input power per port**

	Mounted horizontally	Mounted vertically
Max. ambient temperature		
+55 $^{\circ}\text{C}$	50 W	60 W
+40 $^{\circ}\text{C}$	70 W	80 W
+25 $^{\circ}\text{C}$	90 W	100 W

## Mast mounting with Clamp set 734361 ...

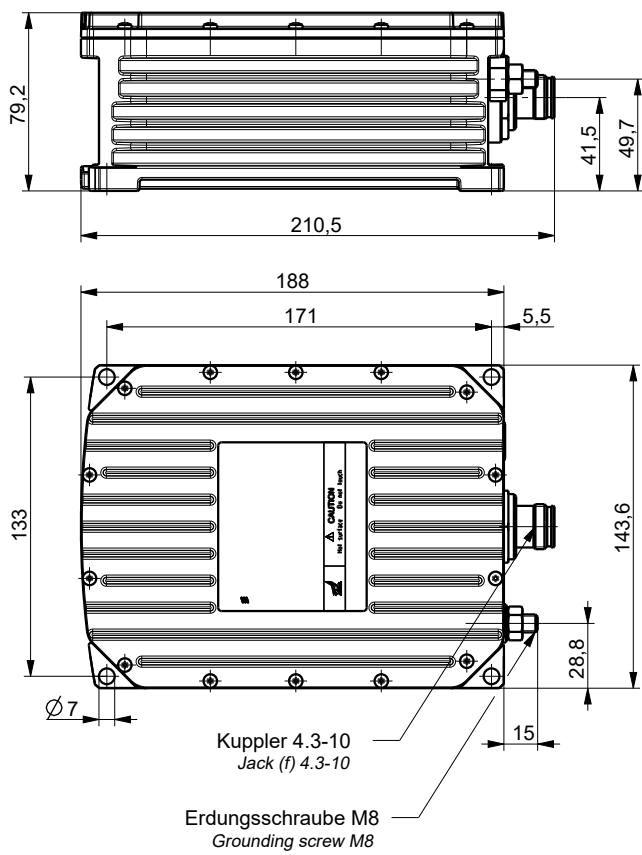
Clamps inserted into slots at rear side of the 50-Ohm Load



Side view of a mast mounted 50-Ohm Load



Picture similar





# 50 Ohm Load

78210475

150 W | 380–5800 MHz

- Designed as 50-Ohm termination wherever improved intermodulation performance compared to standard loads is required
- Excellent intermodulation performance
- Suitable for indoor or outdoor applications
- Wall or mast mounting
- Built-in DC stop



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**Technical Data**

<b>Product No.</b>		<b>78210475</b>
Frequency range	MHz	380 – 5800
VSWR		< 1.2 (380 – 450 MHz) < 1.12 (450 – 5000 MHz) < 1.25 (5000 – 5800 MHz)
Impedance	$\Omega$	50
Input power	W	< 150
Intermodulation products	dBc	< -160 (3 <sup>rd</sup> order; with 2 x 20 W)
Temperature range	$^{\circ}\text{C}$   $^{\circ}\text{F}$	-40 ... +55   -40 ... +131
Connectors		7-16 female (long neck)
Application		Indoor or outdoor (IP 66)
DC/AISG transparency		Built-in DC stop AISG: Attenuation up to 3 dB when used in a network
Mounting		Wall mounting: With 4 screws (max. 6.5 mm diameter) Mast mounting: With additional clamp set (see next page)
Weight	kg   lb	6   13.2
Dimensions (w x h x d)	mm   in	235 x 235 x 107   9.3 x 9.3 x 4.2 (without connectors, without mounting brackets)
Packing size (w x h x d)	mm   in	405 x 305 x 195   15.9 x 12.0 x 7.7

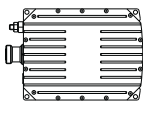
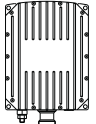
**Note:**

The RF port connector should always point downwards if mounted outdoors.

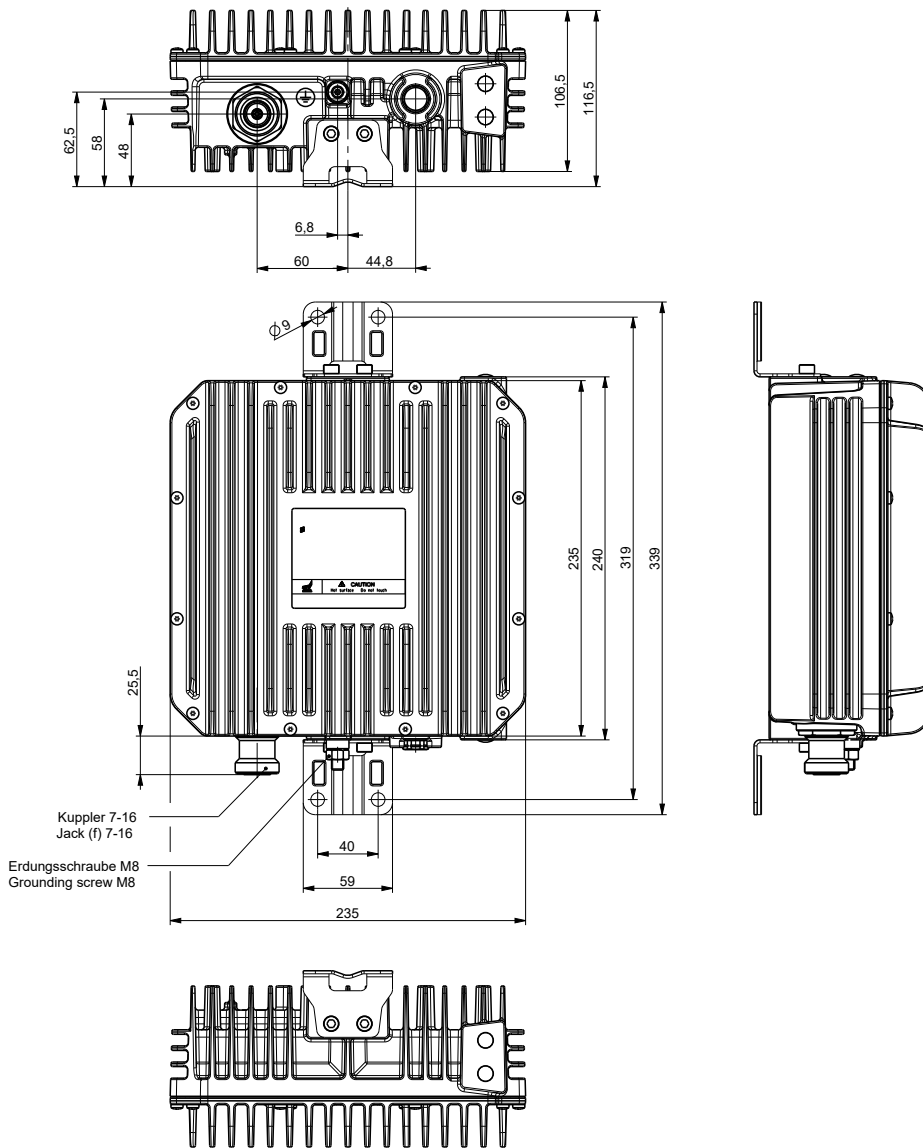
The input power rating of 150 W is specified at an ambient temperature of +40  $^{\circ}\text{C}$  with the combiner mounted vertically, without additional cooling, and while respecting the safety standard EN IEC 60950 (max. surface temperature +90  $^{\circ}\text{C}$ ).

The max. power rating increases or decreases with falling or rising ambient temperature and depending on horizontal or vertical mounting in accordance with the following table:

**Max. input power per port**

	Mounted horizontally	Mounted vertically
Max. ambient temperature		
+55 $^{\circ}\text{C}$	80 W	100 W
+40 $^{\circ}\text{C}$	110 W	<b>150 W</b>
+25 $^{\circ}\text{C}$	150 W	180 W

## Dimensions in mm



## RET

- RET Modules
- Service Tools
- RET System Components
- RET Control Cables

RET

---

## Mounting Accessories

- Clamps
- Downtilt Kits
- Azimuth Adjustment Kits
- Offsets
- Other Accessories

Mounting Accessories



## RET

Product No.	Product Name	Page
RET Modules		
86010148V01	external RET	<a href="#">830</a>
86010153V01	FlexRET 6-fold	<a href="#">832</a>
86010165	FlexRET 8-fold	<a href="#">834</a>
86010165RAE	FlexRET 8-fold RAE	<a href="#">836</a>
86010167	FlexRET 8-fold	<a href="#">838</a>
<a href="#">KRY 121 117/2</a>	FlexRET 8-fold 2x2	<a href="#">840</a>
<a href="#">KRY 121 79/2</a>	Internal Remote Control Unit	<a href="#">842</a>
Service Tools		
86010046	Portable Control Adapter, PCA	<a href="#">844</a>
86010158	Antenna Line Configurator, ALC	<a href="#">846</a>
RET System Components		
86010129	Antenna Monitoring Unit AMU	<a href="#">848</a>
86010154	Site Sharing Adapter 3-way	<a href="#">850</a>
86010155	Site Sharing Adapter 6-way	<a href="#">852</a>
86010162	Gender Adapter for FlexRET	<a href="#">854</a>
KRY 121 108/1	Port Extender for FlexRET	<a href="#">856</a>

[New product](#)

## RET

Product No.	Product Name	Page
RET Control Cables		
1/TSR48421/500	RET control cable, black, 0.5 m	<a href="#">858</a>
1/TSR48421/1000	RET control cable, black, 1 m	
1/TSR48421/2000	RET control cable, black, 2 m	
1/TSR48421/3000	RET control cable, black, 3 m	
1/TSR48421/5000	RET control cable, black, 5 m	
1/TSR48421/10M	RET control cable, black, 10 m	
1/TSR48421/15M	RET control cable, black, 15 m	
86010032	RET control cable, black, 20 m	
1/TSR48422/500	RET control cable, grey, 0.5 m	
1/TSR48422/1000	RET control cable, grey, 1 m	
1/TSR48422/2000	RET control cable, grey, 2 m	
1/TSR48422/3000	RET control cable, grey, 3 m	
1/TSR48422/15M	RET control cable, grey, 15 m	

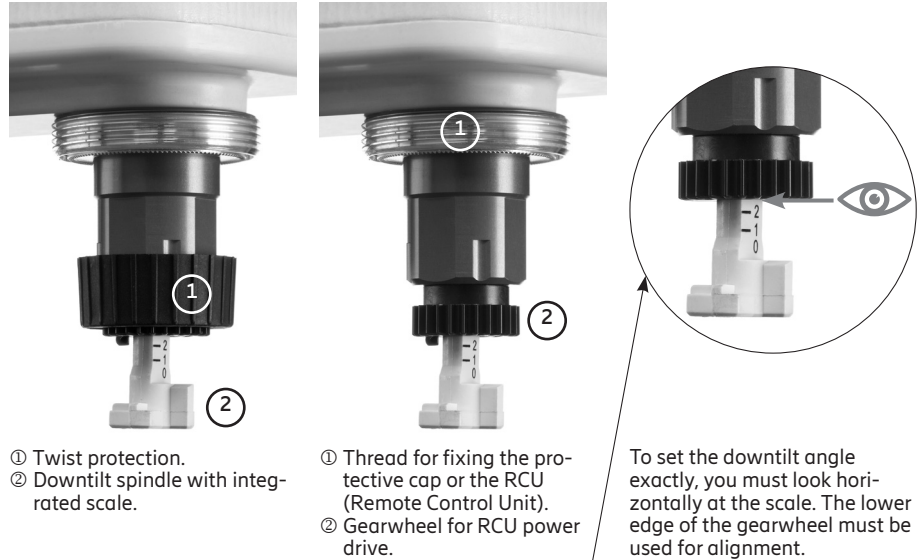
# Downtilting of Antennas with external RCU: Downtilt Possibilities

## Mechanical downtilt

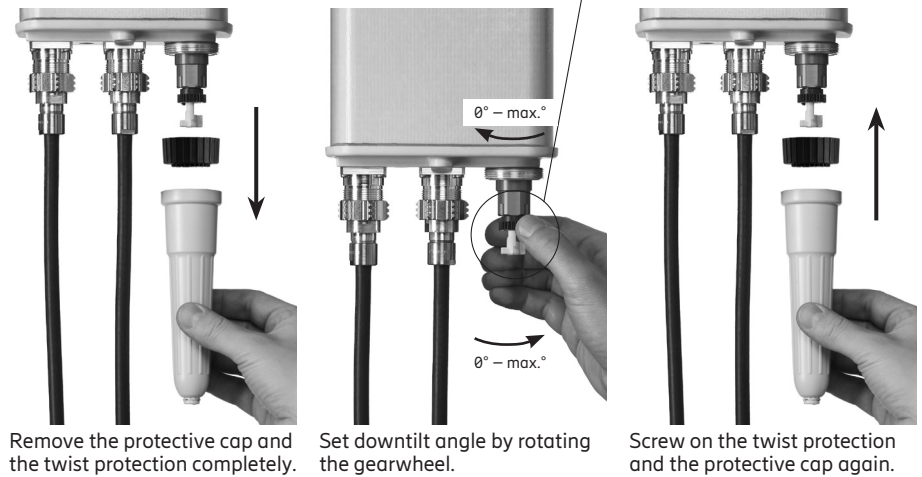
For further technical information please see "Mounting Accessories", pages 862 and 863.

## Electrical downtilt

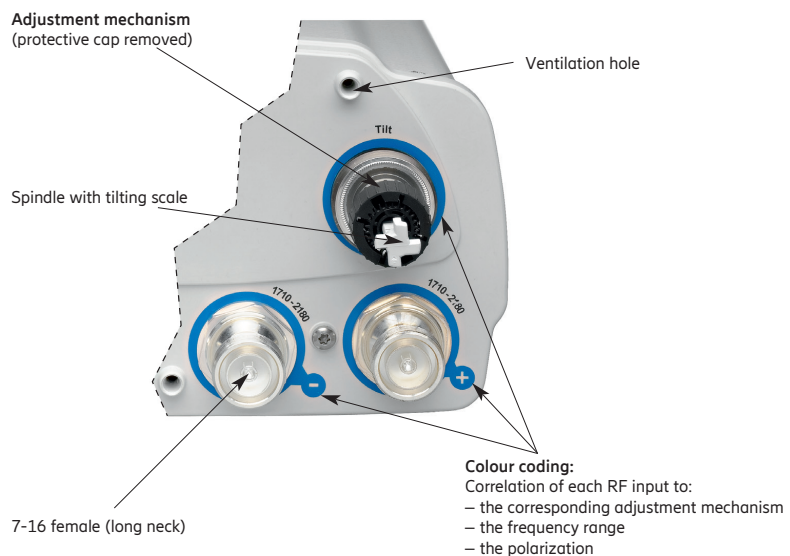
Description of the adjustment mechanism (protective cap removed):



### Manual adjustment procedure:



### Description of bottom end cap (exemplary picture):



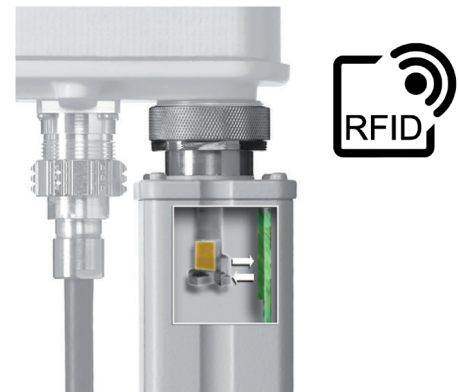
## Remote Electrical Tilt System Functionality of different RET Technologies



Ericsson's overall RET system works in accordance with the AISG (Antenna Interface Standards Group) standard and 3GPP (3rd Generation Partnership Project).

### RCU with RFID Feature

- External RCU 86010148V01 includes a RFID reader
- Antenna spindles are equipped with RFID tags
- The antenna specific data is stored on this tag:
  - Type number
  - Serial number
  - Configuration File
- With power on, the data is read out automatically from the tag by the RCU



### FlexRET

- Integrated RET module inside the antenna (86010153V01 / 86010165 / 86010165RAE / 86010167\*)
- Pre-configured with the antenna specific parameters:
  - Type number
  - Serial number
  - Configuration file
- Calibrated ex-factory
- The FlexRET module is exchangeable
  - Automatic data transfer in case of exchange with internal RFID tag
  - Only calibration is necessary
- Daisy chain possibility with FlexRET antennas and / or external RCUs
- Same module for all antennas
- SingleRET or MultiRET selection possible
- Array allocation possible with special Site Sharing Adapter or Gender Adapter / Port Extender



### AISG standard compliency overview for the Ericsson FlexRET modules

	AISG2		AISG3		RAE
	3GPP / AISG2 v2.0		AISG3 v3.0.2.1	ADB vADB3.1.3.1	AISG-ES-RAE-v2.2.0
86010153V01	✓		X	X	X
86010165	✓		✓	✓	X
86010165RAE	✓		✓	✓	✓
86010167*	✓		✓	✓	X

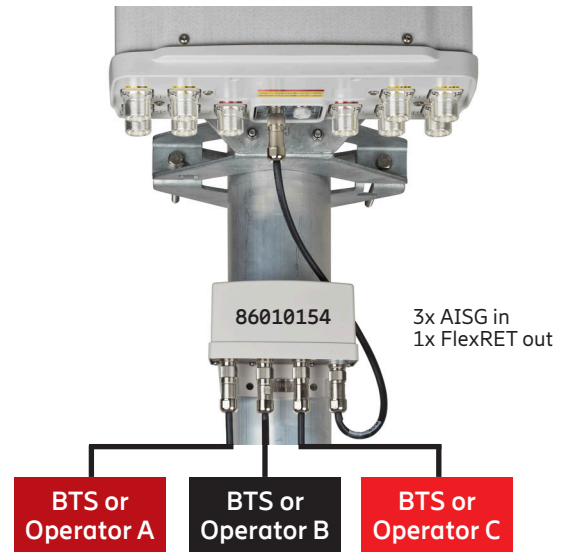
\* 86010167 is without RFID tag. In case of exchange, the antenna data has to be loaded manually to the FlexRET. Gender Adapter and Port Extender are not supported

# Remote Electrical Tilt System

## Functionality of different RET Technologies

### Site Sharing Adapter

- Needed whenever the AISG control of a FlexRET antenna shall be performed by a higher number of base stations (BTS)
- 2 different realizations available
  - 3-way Site Sharing Adapter: Product No. 86010154 – FlexRET control with up to 3 BTS
  - 6-way Site Sharing Adapter: Product No. 86010155 – FlexRET control with up to 6 BTS
- Daisy chaining of up to 3 FlexRET antennas
- Additional ALDs can be mounted prior to the Site Sharing Adapter
- Flexible allocation of antenna arrays to the different BTS units using a special software application via PC
- Each BTS can act independently
- Individual password protection of configuration possible
- Configuration can be sent to the Site Sharing Adapter with every AISG control device (BTS or e.g. Ericsson ALC)



### Gender Adapter (86010162)

- Can be used if 2 base stations (BTS) are interconnected to one common FlexRET antenna
- Mounted on the FlexRET output of the module
- Converts the AISG output to an AISG input
- The allocation of the antenna arrays can easily be performed during the commissioning process via the BTS or flexible allocation of antenna arrays to the different BTS units using a special software application via PC

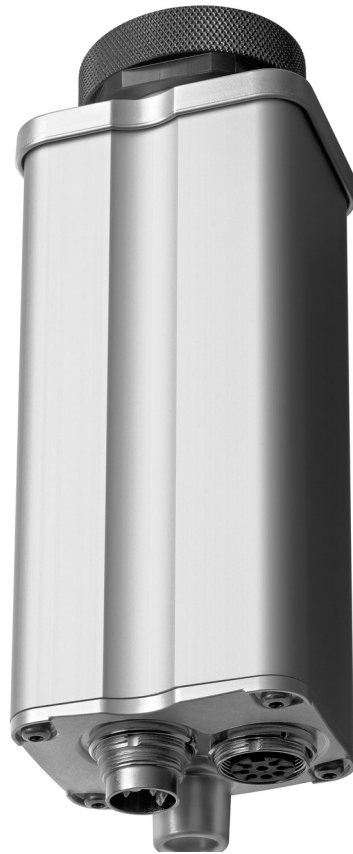


### Port Extender (KRY 121 108/1)

- Can be used if 2 BTS are interconnected to common FlexRET antennas in daisy chain
- Mounted on the FlexRET module by 2 screws
- Converts 1 FlexRET input and output to 2 FlexRET inputs and outputs
- Daisy chaining with further FlexRET antennas and / or external RCUs
- The allocation of the antenna arrays can easily be performed during the commissioning process via the BTS or flexible allocation of antenna arrays to the different BTS units using a special software application via PC



Manuals for all our AISG control devices and for the Site Sharing Adapter as well as the corresponding software downloads can be found on our website [ericsson.com/antenna-system](http://ericsson.com/antenna-system)



# External RET

86010148V01



[ericsson.com/antenna-system](https://ericsson.com/antenna-system)



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Remote Control Unit (RCU) for Ericsson base station antennas with adjustable electrical down-tilt and appropriate mechanical interface.

- Compliant to AISG 1.1 and 3GPP/AISG 2.0
- Compact size
- Prepared for automatic configuration and calibration
- Daisy Chain feasibility
- Suitable for operation under outdoor conditions

<b>Product No.</b>		<b>86010148V01</b>
Protocols		compliant to AISG 1.1 and 3GPP/AISG 2.0
Logical interface ex factory <sup>1)</sup>		3GPP/AISG 2.0
Input voltage range	V	10 ... 30 (pin 1, pin 6)
Power consumption	W	< 1 (stand by); < 10 (motor activated)
Connectors <sup>2) 3)</sup>		2 x 8 pin connector according to IEC 60130-9; according to AISG Daisy chain in: male; Daisy chain out: female
Hardware interfaces		RS 485A/B (pin 5, pin 3); power supply (pin 1, pin 6); DC return (pin 7); according to AISG / 3GPP
Adjustment time (full range)	sec	40 (typically, depending on antenna type)
Adjustment cycles		> 50,000
Temperature range	°C	-40 ... +60
Protection class		IP 24
Lightning protection		AISG interface (each pin) 2.5 kA (10/350 µs) 8 kA (8/20 µs)
Housing material		Profile: Aluminum anodized; cover: Aluminum die cast coated
Weight	kg lbs	0.5 0.99
Packing size	mm inches	245 x 93 x 102 9.6 x 3.6 x 4
Dimensions (H x W x D)	mm inches	177.5 x 59.5 x 49.5 7.0 x 2.3 x 1.9

<sup>1)</sup> The protocol of the logical interface can be switched from 3GPP/AISG 2.0 AISG 1.1 to with a vendor specific command. Start-up operation of the RCU is only possible in a RET system supporting 3GPP/AISG 2.0!  
The protocol can also be changed as follows: 3GPP to AISG 1.1: Enter "AISG1" into the additional data field "Installer's ID" and perform a layer 2 reset or a power reset. AISG 1.1 to 3 GPP: Enter "3GPP" into the additional data field "Installer's ID" and perform a layer 7 reset or a power reset. After switching the protocol any other information can be entered into the "Installer's ID" field.

Please note:

If the Primary of the RET system doesn't support the standard of the 'logical interface ex factory', the RCU must be switched to the appropriate standard of the Primary before installation. Please contact Ericsson for further information.

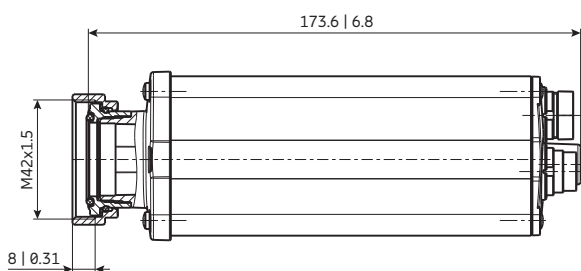
- <sup>2)</sup> The tightening torque for fixing the connector must be 0.5 – 1.0 Nm. The connector should be tightened by hand or using the torque screwdriver as described in the connecting cable data sheet (only valid for 860... cables)
- <sup>3)</sup> The RCU gets the information stored in the antenna after power on automatically if a corresponding antenna is used. In this case, it is not necessary to configure the RCU manually.

Standards:  
EN 60950-1 (Safety)  
EN 60950-22 (Safety – Equipment installed outdoor)  
EN 55022 (Emission)  
EN 55024 (Immunity)  
ETS 300019-1-4 (Environmental)  
UL 60950-1; 1<sup>st</sup> edition

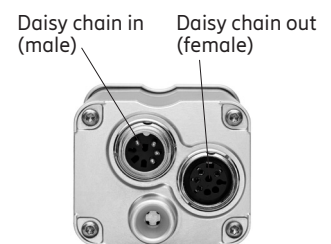
EU-RED  
Hereby, Ericsson declares that the radio equipment type 86010148v01 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: mobilcom.eag@ericsson.com

Certification: CE, FCC

Scope of supply: Remote Control Unit, Assembly paste



All dimensions in mm | inches



Bottom view of RCU



# FlexRET 6-fold

86010153V01

- Compliant to 3GPP/AISG 2.0
- Daisy Chain feasibility
- Single RETs or Multi RET displayed
- Pre-configured
- Two way antenna sharing feasibility



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Product No.	86010153V01	
Protocols	compliant to 3GPP/AISG 2.0	
Logical interface ex factory	3GPP/AISG 2.0	
Operates as	Single RETs or Multi RET	
Ex factory	Single RETs	
Input voltage range	V	10 ... 30 (pin 6)
Power consumption	W	Typically < 1; < 10 (motor activated)
Connectors	2x 8 pin connector according to IEC 60130-9; according to AISG-C 485 Daisy chain in: male; Daisy chain out: female	
Hardware interfaces	RS 485A/B (pin 5, pin 3); power supply (pin 6); DC return (pin 7); according to AISG / 3GPP	
Adjustment time (full range)	sec	40 (typically, depending on antenna type)
Adjustment cycles	> 50,000	
Temperature range	°C	-40 ... +60
Protection class	IP 24 (installed)	
Lightning protection	AISG interface (each pin) 2.5 kA (10/350 µs) 8 kA (8/20 µs) according to IEC 61000-4-5	
Housing material	Profile: Aluminum anodized; cover: Aluminum die cast coated	
Weight	g lb	350 0.77
Packing size (H x W x D)	mm inches	245 x 93 x 102 9.6 x 3.6 x 4
Dimensions (H x W x D)	mm inches	142 x 71 x 51 5.6 x 2.8 x 2

This device is not compatible to antennas with other FlexRET versions. These FlexRET devices can not be replaced by 86010165, 86010165RAE or 86010167.

Non-observance can damage the antenna and the RET device.

**Please note:**

If the Primary which controls the FlexRET system does not support the default ex-factory interface setting, then the FlexRET must be switched to the appropriate standard of the Primary before installation. Please contact Ericsson for further information.

If the FlexRET of an antenna has to be replaced, the FlexRET gets the information stored in the antenna after power on automatically. It is not necessary to configure the FlexRET manually.

Standards: EN 60950-1 (Safety)  
EN 60950-22 (Safety – Equipment installed outdoor)  
EN 55022 (Emission)  
EN 55024 (Immunity)  
ETS 300019-1-4 (Environmental)  
UL 60950-1; 1<sup>st</sup> edition

EU-RED: Hereby, Ericsson declares that the radio equipment type 86010153V01 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available and can be requested at the following address: mobilcom.eag@ericsson.com

Certification: CE, FCC

Scope of supply: FlexRET

Optional: **Site Sharing Adapter** (86010154 or 86010155) to create independent logical interfaces at one antenna or site. Makes it possible to operate with more than one independent Node B.

**Gender Adapter** (86010162) to convert the AISG out (female) to an AISG in (male) port in order to operate one FlexRET with exactly 2 BTS.  
Detailed information is given in the data sheet of the Gender Adapter.

**Port Extender** (KRY 121 108/1) to convert the existing AISG input and output in order to operate FlexRET with exactly 2 BTS while maintaining the daisy chain capability.  
Detailed information is given in the data sheet of the Port Extender.

**Please note:**

In general, the addressing of the FlexRET is automatically performed. Only in case the FlexRET is manually addressed, the serial number has to be extended by the corresponding colour coding extension (e.g. CSG351234-R1). The respective information can be found on the site documentation which is included in the scope of supply.



# FlexRET 8-fold

86010165

- Compliant to 3GPP / AISG 2.0 – AISG 3
- Daisy Chain feasibility
- Single RETs or Multi RET displayed
- Pre-configured
- Individual user-specific configuration possible:
  - Antenna sharing-assignment of certain RET-subunits to RET-ports
  - Antenna tilt consolidations for RET control of several arrays by one RET-subunit



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<b>Product No.</b>		<b>86010165</b>
Protocols		compliant to 3GPP / AISG 2.0 – AISG 3
Logical interface ex factory		3GPP / AISG 2.0
Operates as		Single RETs or Multi RET
Ex factory		Single RETs
Input voltage range	V	10 ... 30 (pin 6)
Power consumption	W	Typically < 1; < 10 (motor activated)
Connectors		2 x 8 pin connector according to IEC 60130-9; according to AISG-C 485 Daisy chain in: male; Daisy chain out: female
Hardware interfaces		RS 485A/B (pin 5, pin 3); power supply (pin 6); DC return (pin 7); according to AISG / 3GPP
Adjustment time (full range)	sec	40 (typically, depending on antenna type)
Adjustment cycles		> 50,000
Temperature range	°C	-40 ... +60
Protection class		IP 24 (installed)
Lightning protection		AISG interface (each pin) 2.5 kA (10/350 µs) 8 kA (8/20 µs) according to IEC 61000-4-5
Housing material		Profile: Aluminum anodized; cover: Aluminum die cast coated
Weight	g lb	350 0.77
Packing size (H x W x D)	mm inches	245 x 93 x 102 9.6 x 3.6 x 4
Dimensions (H x W x D)	mm inches	142 x 71 x 51 5.6 x 2.8 x 2

This device is not compatible to antennas with FlexRET 86010153 or 86010153V01. These FlexRET devices can not be replaced by 86010165.

Non-observance can damage the antenna and the RET device.

**Please note:**

If the Primary which controls the FlexRET system does not support the default ex-factory interface setting, then the FlexRET must be switched to the appropriate standard of the Primary before or higher installation. Please contact Ericsson for further information.

For support of AISG3 features ADB and MALD FW\_V03.01.01 is needed. The latest firmware is available via our customer portal on [www.ericsson.com/antenna-system](http://www.ericsson.com/antenna-system)

The FlexRET needs to be powered by a LPS (Limited Power Source, Class: P2) according to IEC/EN 62368-1.

If the FlexRET of an antenna has to be replaced, the FlexRET gets the information stored in the antenna after power on automatically. It is not necessary to configure the FlexRET manually.

Standards: EN 62368-1 (Safety)  
EN 60950-22 (Safety – Equipment installed outdoor)  
ETSI EN 301489-1 (EMI)  
ETSI EN 301489-3 (EMI)  
ETS 300019-1-4 (Environmental)  
ETSI EN 300330 (Radio equipment)  
EN 50364 (Health)

EU-RED: Hereby, Ericsson declares that the radio equipment type 86010165 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available and can be requested at the following address: [mobilcom.eag@ericsson.com](mailto:mobilcom.eag@ericsson.com)

Certification: CE, FCC

Scope of supply: FlexRET

Optional: Site Sharing Adapter (86010154 or 86010155) to create independent logical interfaces at one antenna or site. Makes it possible to operate with more than one independent Node B. Operation in AISG 2.0 mode only.

Gender Adapter (86010162) to convert the AISG out (female) to an AISG in (male) port in order to operate one FlexRET with exactly 2 BTS.  
Detailed information is given in the data sheet of the Gender Adapter.

Port Extender (KRY 121 108/1) to convert the existing AISG input and output in order to operate FlexRET with exactly 2 BTS while maintaining the daisy chain capability.  
Detailed information is given in the data sheet of the Port Extender.

**Please note:**

In general, the addressing of the FlexRET is automatically performed. Only in case the FlexRET is manually addressed, the serial number has to be extended by the corresponding colour coding extension (e.g. CSG351234-R1). The respective information can be found on the site documentation which is included in the scope of supply.



# FlexRET 8-fold RAE

## 86010165RAE

- Compliant to 3GPP / AISG 2.0 – AISG 3
- Daisy Chain feasibility
- Single RETs or Multi RET displayed
- Pre-configured
- Separate RAE device integrated
- Individual user-specific configuration possible:
  - Antenna sharing-assignment of certain RET-subunits to RET-ports
  - Antenna tilt consolidations for RET control of several arrays by one RET-subunit



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<b>Product No.</b>		<b>86010165RAE</b>
Protocol		compliant to 3GPP / AISG 2.0 – AISG 3 – AISG-ES-RAE-v2.2.0
Logical interface ex factory		3GPP / AISG 2.0
Operates as		Single RETs or Multi RET
Ex factory		Single RETs
Input voltage range	V	10 ... 30 (pin 6)
Power consumption	W	Typically < 1; < 10 (motor activated)
Connectors		2x 8 pin connector according to IEC 60130-9; according to AISG-C 485 Daisy chain in: male; Daisy chain out: female
Hardware interfaces		RS 485A/B (pin 5, pin 3); power supply (pin 6); DC return (pin 7); according to AISG / 3GPP
Adjustment time (full range)	sec	40 (typically, depending on antenna type)
Adjustment cycles		> 50,000
Temperature range	°C	-40 ... +60
Protection class		IP 24 (installed)
Lightning protection		AISG interface (each pin) 2.5 kA (10/350 µs) 8 kA (8/20 µs) according to IEC 61000-4-5
Housing material		Profile: Aluminum anodized; cover: Aluminum die cast coated
Weight	g lb	350 0.77
Packing size (H x W x D)	mm inches	245 x 93 x 102 9.6 x 3.6 x 4
Dimensions (H x W x D)	mm inches	142 x 71 x 51 5.6 x 2.8 x 2

This device is not compatible to antennas with other FlexRET. Non-observance can damage the antenna and the RET device.

**Please note:**

If the Primary which controls the FlexRET system does not support the default ex-factory interface setting, then the FlexRET must be switched to the appropriate standard of the Primary before installation. Please contact Ericsson for further information.

The FlexRET needs to be powered by a LPS (Limited Power Source, Class: P2) according to IEC/EN 62368-1.

Standards: EN 62368-1 (Safety)  
EN 60950-22 (Safety – Equipment installed outdoor)  
ETSI EN 301489-1 (EMI)  
ETSI EN 301489-3 (EMI)  
ETS 300019-1-4 (Environmental)  
ETSI EN 300330 (Radio equipment)  
EN 50364 (Health)

EU-RED: Hereby, Ericsson declares that the radio equipment type is in compliance with Directive 2014/53/EU.  
The full text of the EU declaration of conformity is available and can be requested at the following address:  
mobilcom.eag@ericsson.com

Certification: CE, FCC

Scope of supply: FlexRET

Optional: Site Sharing Adapter (86010154 or 86010155) to create independent logical interfaces at one antenna or site.  
Makes it possible to operate with more than one independent Node B. Operation in AISG 2.0 mode only.

Gender Adapter (86010162) to convert the AISG out (female) to an AISG in (male) port in order to operate one FlexRET with exactly 2 BTS.  
Detailed information is given in the data sheet of the Gender Adapter.

Port Extender (KRY 121 108/1) to convert the existing AISG input and output in order to operate FlexRET with exactly 2 BTS while maintaining the daisy chain capability.  
Detailed information is given in the data sheet of the Port Extender.

**Please note:**

In general, the addressing of the FlexRET is automatically performed. Only in case the FlexRET is manually addressed, the serial number has to be extended by the corresponding colour coding extension (e.g. CSG351234-R1). The respective information can be found on the site documentation which is included in the scope of supply.



# FlexRET 8-fold

## 86010167

A flexible, integrated solution for adjusting the electrical downtilt of FlexRET antennas.

- Compliant to 3GPP / AISG 2.0 – AISG 3\*
- Daisy Chain feasibility
- Single RETs or Multi RET displayed
- Pre-configured
- Individual user-specific configuration possible:
  - Antenna tilt consolidations for RET control of several arrays by one RET-subunit



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<b>Product No.</b>		<b>86010167</b>
Protocols		compliant to 3GPP / AISG 2.0 – AISG 3*
Logical interface ex factory		3GPP / AISG 2.0
Operates as		Single RETs or Multi RET
Ex factory		Single RETs
Input voltage range	V	10 ... 30 (pin 6)
Power consumption	W	Typically < 1; < 10 (motor activated)
Connectors		2 x 8 pin connector according to IEC 60130-9; according to AISG-C 485 Daisy chain in: male; Daisy chain out: female
Hardware interfaces		RS 485A/B (pin 5, pin 3); power supply (pin 6); DC return (pin 7); according to AISG / 3GPP
Adjustment time (full range)	sec	40 (typically, depending on antenna type)
Adjustment cycles		> 20,000
Temperature range	°C	-40 ... +60
Protection class		IP 24 (installed)
Lightning protection		AISG interface (each pin) 8 kA (8/20 µs) according to IEC 61000-4-5
Housing material		Profile: Aluminum anodized; cover: Aluminum die cast coated
Weight	g lb	380 0.84
Packing size (H x W x D)	mm inches	245 x 93 x 102 9.6 x 3.6 x 4
Dimensions (H x W x D)	mm inches	142 x 71 x 51 5.6 x 2.8 x 2

**This device is not compatible to antennas with FlexRET 86010153 or 86010153v01. These FlexRET devices can not be replaced by 86010167.**

**Non-observance can damage the antenna and the RET device.**

**Please note:**

If the Primary which controls the FlexRET system does not support the default ex-factory interface setting, then the FlexRET must be switched to the appropriate standard of the Primary before installation. Please contact Ericsson for further information.

The FlexRET needs to be powered by a LPS (Limited Power Source, Class: P2) according to IEC/EN 62368-1.

If the FlexRET of an antenna has to be replaced, it is necessary to configure the FlexRET manually.

\*FlexRET 86010167 does not support AISG 3 feature MALD.

Standards: EN 62368-1 (Safety)  
EN 60950-22 (Safety – Equipment installed outdoor)  
ETSI EN 301489-1 (EMI)  
ETS 300019-1-4 (Environmental)  
EN 50364 (Health)

Certification: CE, FCC

Scope of supply: FlexRET

Optional: Site Sharing Adapter (86010154 or 86010155) to create independent logical interfaces at one antenna or site. Makes it possible to operate with more than one independent Node B. Operation in AISG 2.0 mode only.

**Please note:**

In general, the addressing of the FlexRET is automatically performed. Only in case the FlexRET is manually addressed, the serial number has to be extended by the corresponding colour coding extension (e.g. CSG351234-R1). The respective information can be found on the site documentation which is included in the scope of supply.



# FlexRET 8-fold 2x2

KRY 121 117/2

- 2 pairs of AISG in and AISG out connectors
- Compliant to 3GPP / AISG 2.0 – AISG 3
- Daisy Chain feasibility
- Single RETs or Multi RET displayed
- Pre-configured
- Individual user-specific configuration possible:
  - Antenna sharing-assignment of certain RET-subunits to RET-ports
  - Antenna tilt consolidations for RET control of several arrays by one RET-subunit



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<b>Product No.</b>		<b>KRY 121 117/2</b>
Protocols		compliant to 3GPP / AISG 2.0 – AISG 3
Logical interface ex factory		3GPP / AISG 2.0
Operates as		Single RETs or Multi RET
Ex factory		Single RETs
Input voltage range	V	10 ... 30 (pin 6)
Power consumption	W	Typically < 1; < 10 (motor activated)
Connectors		4x 8 pin connector according to IEC 60130-9; according to AISG-C 485 2x AISG in: male; 2x AISG out: female
Hardware interfaces		RS 485A/B (pin 5, pin 3); power supply (pin 6); DC return (pin 7); according to AISG / 3GPP
Adjustment time (full range)	sec	40 (typically, depending on antenna type)
Adjustment cycles		> 50,000
Temperature range	°C	-40 ... +60
Protection class		IP 24 (installed)
Lightning protection		AISG interface (each pin) 2.5 kA (10/350 µs) 8 kA (8/20 µs) according to IEC 61000-4-5
Housing material		Profile: Aluminum anodized; cover: Aluminum die cast coated
Weight	g lb	350 0.77
Packing size (H x W x D)	mm inches	255 x 193 x 102 10.1 x 7.6 x 4
Dimensions (H x W x D)	mm inches	152 x 170.5 x 38 6 x 6.7 x 1.5

**Please note:**

If the Primary which controls the FlexRET system does not support the default ex-factory interface setting, then the FlexRET must be switched to the appropriate standard of the Primary before or higher installation. Please contact Ericsson for further information.

The FlexRET needs to be powered by a LPS (Limited Power Source, Class: P2) according to IEC/EN 62368-1.

If the FlexRET of an antenna has to be replaced, the FlexRET gets the information stored in the antenna after power on automatically. It is not necessary to configure the FlexRET manually. Only calibration is necessary.

Standards: EN 62368-1 (Safety)  
EN 60950-22 (Safety – Equipment installed outdoor)  
ETSI EN 301489-1 (EMI)  
ETSI EN 301489-3 (EMI)  
ETS 300019-1-4 (Environmental)  
ETSI EN 300330 (Radio equipment)  
EN 50364 (Health)

EU-RED: Hereby, Ericsson declares that the radio equipment type KRY 121 117/2 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available and can be requested at the following address:  
mobilcom.eag@ericsson.com

Certification: CE, FCC

Scope of supply: FlexRET

Optional: Site Sharing Adapter (86010154 or 86010155) to create independent logical interfaces at one antenna or site. Makes it possible to operate with more than one independent Node B. Operation in AISG 2.0 mode only. The Site Sharing Adapter has to be connected to AISG in port 1.

**Please note:**

The material number of the FlexRET as a part of the antenna is 1/SDD 901 34/2. KRY 121 117/2 is the spare part product number that has to be ordered for replacement.



# Internal Remote Control Unit

KRY 121 79/2

- Compliant to 3GPP/AISG 2.0
- Daisy Chain feasibility
- Two way antenna sharing feasibility
- Single RETs



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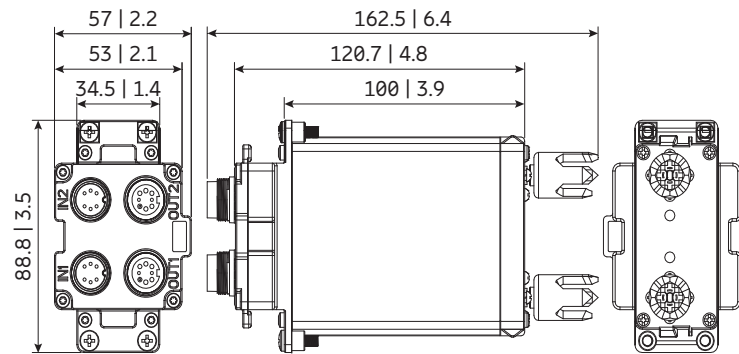
<b>Type No.</b>		<b>KRY 121 79/2</b>
Protocols		Compliant to AISG 1.1 and 3GPP/AISG 2.0
Logical interface ex factory		3GPP / AISG 2.0
Operates as		Single RETs
Ex factory		Single RETs
Input voltage range	V	10 ... 30 (pin 6)
Power consumption	W	< 1 (stand by); < 13 (motor activated)
Connectors		4×8 pin connector according to IEC 60130-9; according to AISG Daisy chain IN1: male; Daisychain OUT1: female; Daisy chain IN2: male; Daisy chain OUT2: female
Hardware interfaces		Pin 6 (Power Supply), Pin 7 (DC Return), Pin 5 (RS485A), Pin 3 (RS485B)
Adjustment time (full range)	sec	50 (typically, depending on antenna type)
Adjustment cycles		> 50,000
Temperature range	°C	-40 ... +60
Protection class		IP 24 (installed)
Lightning protection		AISG interface (each pin) 8 KA (8/20μS)
Housing material		Profile: Aluminum anodized; Cover: Die cast zinc alloy
Weight	g lb	500 1.1
Dimensions (H x W x D)	mm inches	162.5 x 88.8 x 57 9.6 x 3.6 x 4

**Please note:**

The internal RET needs to be powered by a LPS (Limited Power Source, Class: PS2) according to IEC/EN 62368-1. If the primary of the RET system does not support the default ex-factory interface setting, then the RCU must be switched to the appropriate standard of the primary before installation. Please contact us for further information.

Standards: EN 62368-1:2014 + A11:2017  
EN 55032:2015  
EN 55035:2017

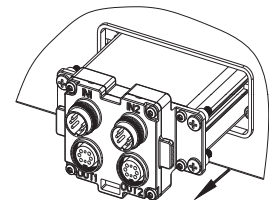
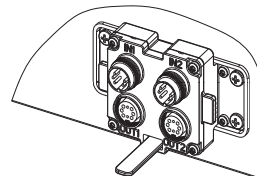
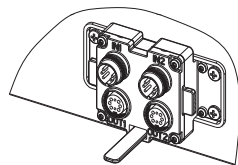
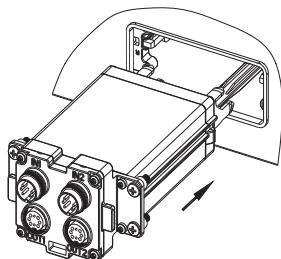
Certification: CE



All dimensions in mm | inches

**Installation and removal instructions****1. Installation Notes**

Step 1: Push the RET into the bottom of antenna.  
Step 2: Tighten the four sides unloosening screw with cross-head screwdrivers.

**2. Removal Notes**

Step 1: Use cross-head screwdrivers to loosen the four screws of the RET, pay attention not to twist out.  
Step 2: Pull the RET out.



# Portable Control Adapter (PCA)

86010046



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**Portable Control Adapter**

<b>Product No.</b>		<b>86010046</b>	
Connector * to RCU/TMA		1x 8-pin connector according to IEC 60130-9, female, conforming to AISG RF-connector (SMB male)	
Input voltage of PCA	V DC	24	
Output voltage to RCU's/TMA's	V DC	AISG female pin 6 (24 V DC): 24 ±10% AISG female pin 1 (12 V DC): 14 ±7% RF male (at 24 V DC): 24 ±10% *** RF male (at 12 V DC): 14 ±7% ***	
Output power (power supply to RCU's/TMA's)	W	AISG female pin 6 (24 V DC) without load on pin 1 (12 V DC) and on RF-plug: ≤ 60 AISG female Pin 1 (12 V DC) with max. 30 W load on pin 6 (24 V DC) and/or on RF plug: ≤ 30	
Current monitoring measurement level	mA	Per branch (12 V, 24 V, RF): 10 – 2500	
Over-current protection		Per branch (12 V, 24 V, RF): < 2500	
Interface to RCU/TMA		RS 485 / power supply / RF connector (SMB male)	
Protocol to RCU/TMA		HDLC hex-coded command set, conforming to AISG 1.1 and 3GPP / AISG 2.0	
Interface to PC		USB 1.1/2.0	
Max. number of RCU's/TMA's		27/3 pcs., depending on system configuration and length of control cable	
Max. length of control cable	m   ft	9 RCU's (in daisy chain configuration): 200   656.17 6 RCU's (in splitter configuration): 150   492.13	
Weight	g   lb	535   1.2 (incl. external power adapter)	
Temperature range	°C	0 ... +55 ambient temperature	
Height x width x depth	mm inches	40 x 95 x 160 1.57 x 3.74 x 6.29	
External power supply **		Input: 90 – 264 V AC, 47 – 63 Hz 24 V DC / 3.0 A	

\* Tightening torque for fixing the connector must be 0.5 – 1.0 Nm ('hand-tightened').

The connector should be tightened by hand only!

\*\* If powered via AISG-interface, no external power supply is required.

\*\*\* Switchable with software

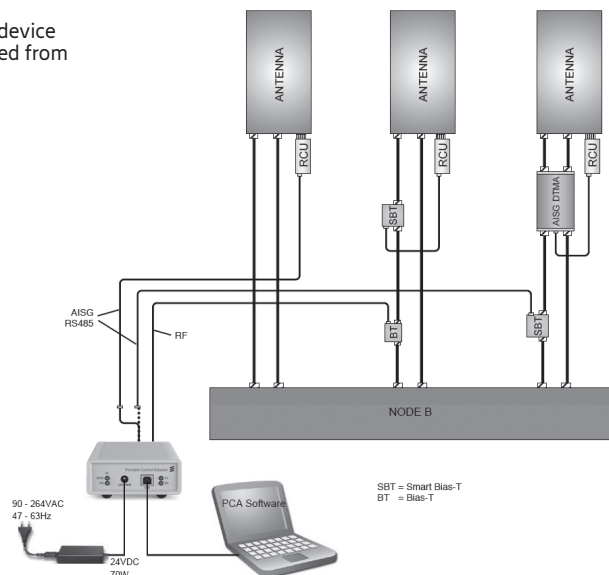
Certificate: CE  
FCC part 15 class B  
UL (for external power adapter)

Standards: EN 60950-1  
EN 55022  
EN 55024

System requirements for PCA Software: Windows XP or later version

Scope of supply: PCA  
External power supply (24 V DC / 70 W)  
USB cable  
AC power cable  
Installation guide

Please note: The latest PCA application software, the device driver and PCA manual can be downloaded from [www.ericsson.com/antenna-system](http://www.ericsson.com/antenna-system)



SBT = Smart Bias-T  
BT = Bias-T



# Antenna Line Configurator (ALC)

86010158

- AISG 2 / AISG 3
- HDLC-logging feature
- High-resolution display
- Wi-Fi and USB interface



[ericsson.com/antenna-system](https://ericsson.com/antenna-system)



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## Antenna Line Configurator

<b>Product No.</b>		<b>86010158</b>	
Connector* to RCU/TMA		1 x 8-pin connector according to IEC 60130-9, female, conforming to AISG RF-connector (SMB male)	
Input voltage of ALC		24 V DC	
Display		High-resolution display, sunlight visible	
Tiltensor		Measuring range $\pm 80^\circ$ , accuracy $\pm 1^\circ$	
Output voltage to RCU's/TMA's		AISG female pin 6: 24 $\pm$ 1 V DC	RF-plug: 24 $\pm$ 1 V DC
Output power (power supply to RCU's/TMA's)		RF-plug + AISG female pin 6 $\leq$ 15 W	
Current monitoring measurement level		AISG female pin 6, RF-plug: 10 – 650 mA	
Over-current protection		AISG female pin 6, RF-plug: < 650 mA	
Interface to RCU/TMA		RS 485 / power supply / RF connector (SMB male)	
Protocol to RCU/TMA		HDLC hex-coded command set, conforming to 3GPP / AISG 2 and AISG 3	
Interface		W-LAN (802.11g), USB 2.0	
Max. number of RCU's/TMA's		9/1 pcs., depending on system configuration and length of control cable	
Max. length of control cable		200 m / 9 RCU's (in daisy chain configuration) 150 m / 6 RCU's (in splitter configuration)	
Internal memory	MB	512	
Weight	kg   lb	1   2.2	
Protection class		IP 54	
Temperature range (operating)	$^\circ\text{C}$	-20 ... +45 ambient temperature	
Temperature range (charging)	$^\circ\text{C}$	10 ... +40 ambient temperature	
Dimensions (H x W x D)	mm   in	265 x 102 x 37   10.4 x 4.0 x 1.5	
Packing size	mm   in	405 x 290 x 105   15.9 x 11.4 x 4.1	
Power supply		LiPo-battery (16.6 V, > 1850 mAh)	

\* Tightening torque for fixing the connector must be 0.5–1.0 Nm ('hand-tightened').  
The connector should be tightened by hand only!

## Please Note:

The user manual can be downloaded from our website: [www.ericsson.com/antenna-system](http://www.ericsson.com/antenna-system)

## Certificate:

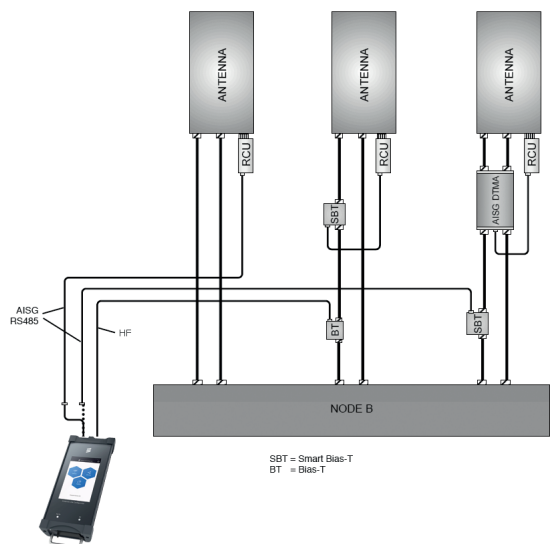
CE  
FCC  
UL (for external power adapter)

## Standards:

EN 60950-22  
EN 62368-1  
EN 62479  
EN 50581  
ETSI EN 301489-1  
ETSI EN 301489-17  
ETSI EN 300328 2.1.1

## Scope of supply:

ALC  
Charging device (can also be used as external power supply)  
USB cable  
RET cable  
HF cable (SMB / 7-16)  
Transport case  
Screen cover





# Antenna Monitoring Unit AMU

86010129



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GPS/GLONASS based Antenna Monitoring Unit to monitor base station antennas in the field.

- Compatible to most Ericsson passive antennas (download the product list here)
- Compact size
- Easy to adapt onto an antenna
- BTS time sync via GPS clock
- AISG 2.0 device according to AISG Extension AISG-ES-ASD v2.2.0 and AISG-ES-GLS v2.2.0.

### Antenna Monitoring Unit AMU

<b>Product No.</b>		<b>86010129</b>
<b>Monitoring Unit</b>		
Receiver Type		L1, C/A code
Channels		72 channel, GPS and GLONASS parallel tracking
Used Geodetic System		WGS 84
Horizontal Accuracy	m	± 10
Azimuth Accuracy*	°	± 5
Tilt- Roll Accuracy*	°	± 2
Altitude Accuracy*	m	± 5
First start (after installation)	h	3 – 12
Connector		2x 8 pin connector according to IEC 60130-9; according to AISG C485; Daisy chain in: male; Daisy chain out: female
Hardware Interfaces		RS 485 A/B (pin 5, pin 3); power supply (pin 6); DC return (pin 7); according to AISG / 3GPP
Input Voltage Range	V	10...30 DC (pin 6)
Power Consumption	W	< 2
Protocols		AISG 2.0
Protection Class		IP 65
Environmental Temperature Range	°C	-40 – +55
Lightning Protection		AISG interface (each pin) 2.5 kA (10/350 µs) 8 kA (8/20 µs)
<b>BTS Time Sync</b>		
Frequency Range	MHz	1572 – 1608 (GPS and GLONASS)
LNA Gain	dB	27 ± 3
Noise Figure	dB	Typ. 3
Supply Voltage	V	4 – 6 V DC
DC Current	mA	< 80
Non-destruction Supply Voltage	V	-32 ... +32 V DC
Lightning Protection	kA	2.5 (10/350 µs) 8 (8/20 µs)
Connector		SMA female
Housing Material		ALU, ASA
Weight	kg   lb	1.6   3.5
Packing Size	mm inches	400 x 190 x 136 15.7 x 7.5 x 5.4
Dimensions (H x W x D)	mm inches	65.8 x 355.7 x 143.2 2.6 x 14.0 x 5.6
<b>Scope of Supply</b>		
AMU		1 pc.
Adapter Plate		1 pc.

\* Depends on multipath environment, number of satellites in view; satellite geometry, ionospheric activity and use of SBAS.

**Please note:** Please follow the user manual for installation and operating details. The AMU needs to be powered by a LPS (Limited Power Source, Class: PS2) according to IEC/EN 62368-1.

Standards: IEC/EN 62368-1 (Safety),  
EN 60950-22 (Safety – Equipment installed outdoor),  
EN 55024 (Immunity),  
ETS 300019-1-4 class 4.1 and 4.2 H (Environmental).

EU-RED: Hereby, Ericsson declares that the radio equipment type 86010129 is in compliance with Directive 2014/53/EU.  
The full text of the EU declaration of conformity is available and can be requested at the following address: mobilcom.eag@ericsson.com

Certification: CE, FCC



# Site Sharing Adapter 3-way

86010154

- Compliant to AISG 1.1 and 3GPP/AISG 2.0
- Selectable arrangement of arrays
- Single RETs or Multi RET displayed
- Possible for up to three FlexRETs (daisy chain)



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<b>Product No.</b>		<b>86010154</b>
Protocols		compliant to AISG 1.1 and 3GPP/AISG 2.0
Logical interface ex factory		3GPP/AISG 2.0
Input voltage range	V	10 ... 30 (pin 1, pin 6)
Power consumption	W	< 3 (stand by); < 12 (motor activated)
Connectors		4x 8 pin connector according to IEC 60130-9; according to AISG In: male; Out: female
Hardware interfaces		RS 485A/B (pin 5, pin 3); power supply (pin 1, pin 6); DC return (pin 7); according to AISG / 3GPP
Temperature range	°C   °F	-40 ... +60   -40 ... +140
Protection class		IP 54 (installed)
Lightning protection		AISG interface (each pin) 2.5 kA (10/350 µs) 8 kA (8/20 µs)
Max. cable length (Site Sharing Adapter to last FlexRET Antenna)	m ft	150 492
Housing material		Cover: Aluminum die cast coated
Weight	g   lb	650   1.4 lb
Dimensions (H x W x D)	mm inches	123 x 166 x 62 4.8 x 6.5 x 2.4
Packing size	mm inches	160 x 250 x 100 6.3 x 9.8 x 3.9 inches

**Please note:**

The Site Sharing Adapter can exclusively be used with FlexRET antennas. The FlexRET output of the Site Sharing Adapter needs to be directly connected to the FlexRET antenna. For selecting the arrangement of the antenna arrays, a separate software application is available.

The Site Sharing Adapter expands the AISG interface of max. three FlexRETs up to three AISG interfaces for three independent AISG primaries. The alignment of antenna arrays can be configured individually.

For site sharing with antennas which have 7 or 8 arrays, Site Sharing Adapter Firmware from version FW\_V02.03.00 is needed. The latest firmware and update information for the Site Sharing Adapter are provided via our customer portal on [www.ericsson.com/antenna-system](http://www.ericsson.com/antenna-system)

Only FlexRET devices from firmware version FW\_V02.01.00 are suitable for operation with the Site Sharing Adapter.

- The firmware version can be queried through the AISG command "get information".
- The latest firmware version for FlexRET can be downloaded at [www.ericsson.com/antenna-system](http://www.ericsson.com/antenna-system)
- FlexRET Antennas with firmware version FW\_V02.00.XX must be updated before the initial setup of the Site Sharing Adapter. The FlexRET device will not be detected otherwise.
- A firmware update can be performed with a corresponding primary (e.g. Node B) or Controller (e.g. Ericsson ALC, -PCA).

Standby power for Site Sharing Adapter and FlexRET system is taken by the BTS with the highest DC input voltage. When the motor is in operation, the electrical power is allocated fairly to the base stations, according to the individual input. The Site Sharing Adapter can not be used in combination with an AISG splitter. For the connection of the Site Sharing Adapter and the FlexRETs, a standard AISG cable shall be used.

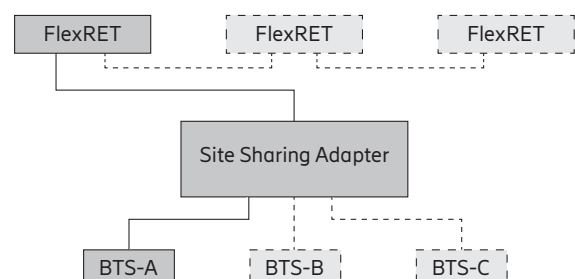
The latest configuration software and the manual with detailed configuration information are provided via our customer portal on [www.ericsson.com/antenna-system](http://www.ericsson.com/antenna-system)

Additional earthing may be needed depending on the used installation. Please follow the guidelines given in the manual.

Standards: EN 60950-1 (Safety),  
EN 60950-22 (Safety – Equipment installed outdoor)  
EN 55022 (Emission),  
EN 55024 (Immunity),  
ETS 300019-1-4 (Environmental),  
UL 60950-1; 1<sup>st</sup> edition

Certification: CE, FCC

Scope of supply: Site Sharing Adapter, tension band





# Site Sharing Adapter 6-way

86010155

- Compliant to AISG 1.1 and 3GPP/AISG 2.0
- Selectable arrangement of arrays
- Single RETs or Multi RET displayed
- Possible for up to three FlexRETs (daisy chain)



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Scan or [click](#)

<b>Product No.</b>	<b>86010155</b>	
Protocols	compliant to AISG 1.1 and 3GPP/AISG 2.0	
Logical interface ex factory	3GPP/AISG 2.0	
Input voltage range	V	10 ... 30 (pin 1, pin 6)
Power consumption	W	< 3 (stand by); < 12 (motor activated)
Connectors	7x 8 pin connector according to IEC 60130-9; according to AISG In: male; Out: female	
Hardware interfaces	RS 485A/B (pin 5, pin 3); power supply (pin 1, pin 6); DC return (pin 7); according to AISG / 3GPP	
Temperature range	°C   °F	-40 ... +60   -40 ... +140
Protection class	IP 54 (installed)	
Lightning protection	AISG interface (each pin) 2.5 kA (10/350 μs) 8 kA (8/20 μs)	
Max. cable length (Site Sharing Adapter to last FlexRET Antenna)	m ft	150 492
Housing material	Cover: Aluminum die cast coated	
Weight	g   lb	1350   3.0 lb
Dimensions (H x W x D)	mm inches	156 x 265 x 65 6.1 x 10.3 x 2.6
Packing size	mm inches	195 x 360 x 110 7.7 x 14.2 x 4.3

**Please note:**

The Site Sharing Adapter can exclusively be used with FlexRET antennas. The FlexRET output of the Site Sharing Adapter needs to be directly connected to the FlexRET antenna. For selecting the arrangement of the antenna arrays, a separate software application is available.

The Site Sharing Adapter expands the AISG interface of max. three FlexRETs up to three AISG interfaces for six independent AISG primaries. The alignment of antenna arrays can be configured individually.

For site sharing with antennas which have 7 or 8 arrays, Site Sharing Adapter Firmware from version FW\_V02.03.00 is needed. The latest firmware and update information for the Site Sharing Adapter are provided via our customer portal on [www.ericsson.com/antenna-system](http://www.ericsson.com/antenna-system)

Only FlexRET devices from firmware version FW\_V02.01.00 are suitable for operation with the Site Sharing Adapter.

- The firmware version can be queried through the AISG command "get information".
- The latest firmware version for FlexRET can be downloaded from the Ericsson website.
- FlexRET Antennas with firmware version FW\_V02.00.XX must be updated before the initial setup of the Site Sharing Adapter. The FlexRET device will not be detected otherwise.
- A firmware update can be performed with a corresponding primary (e.g. Node B) or Controller (e.g. Ericsson ALC, -PCA).

When the motor is in operation, the electrical power is allocated fairly to the base stations, according to the individual input. The Site Sharing Adapter can not be used in combination with an AISG splitter. For the connection of the Site Sharing Adapter and the FlexRETs, a standard AISG cable shall be used.

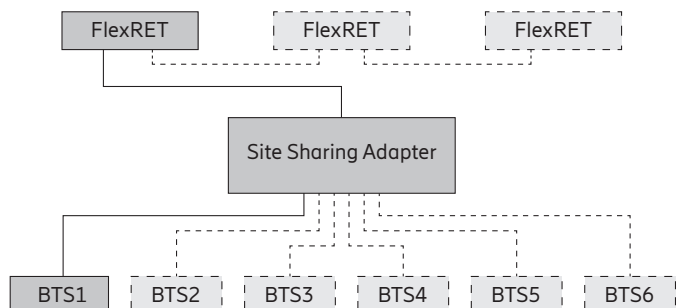
The latest configuration software and the manual with detailed configuration information are provided via our customer portal on [www.ericsson.com/antenna-system](http://www.ericsson.com/antenna-system)

Additional earthing may be needed depending on the used installation. Please follow the guidelines given in the manual.

Standards: EN 60950-1 (Safety),  
EN 60950-22 (Safety – Equipment installed outdoor)  
EN 55022 (Emission),  
EN 55024 (Immunity),  
ETS 300019-1-4 (Environmental),  
UL 60950-1; 1<sup>st</sup> edition

Certification: CE, FCC

Scope of supply: Site Sharing Adapter, tension band





# Gender Adapter for FlexRET

86010162



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Converts the AISG out (female) to an AISG in (male) port in order to operate the FlexRET with two BTS.  
Not compatible with 86010167.

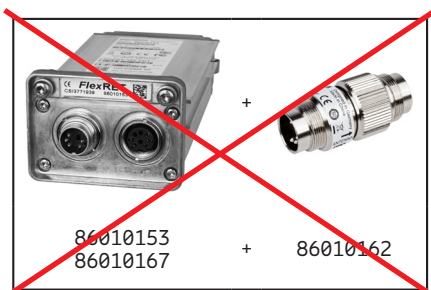
<b>Product No.</b>		<b>86010162</b>
<b>Protocols</b>		compliant to 3GPP/AISG 2.0
<b>Input voltage range</b>	V	10 ... 30 (pin 6)
<b>Connectors</b>		1x 8 pin connector (male) according to IEC 60130-9; according to AISG C485 1x 8 pin connector (female) according to IEC 60130-9; according to AISG C485 Female mates with FlexRET
<b>Hardware interfaces</b>		RS 485A/B (pin 5, pin 3); power supply (pin 6); DC return (pin 7); according to AISG / 3GPP
<b>Temperature range</b>	°C	-40 ... +60
<b>Protection class</b>		IP 67 (installed)
<b>Surge current capability</b>		AISG interface (each pin) in combination with FlexRET 2.5 kA (10/350 µs) 8 kA (8/20 µs) according to IEC 61000-4-5
<b>Housing material</b>		Connector shell: Zinc die cast Ni plated; Contacts: Ag plated
<b>Weight</b>	g   lb	45   0.099
<b>Packing size (H x W x D)</b>	mm inches	43 x 20 x 20 1.7 x 0.78 x 0.78
<b>Dimensions (H x W x D)</b>	mm inches	43 x 20 x 20 1.7 x 0.78 x 0.78

**Standards:** EN 60950-1 (Safety)  
EN 60950-22 (Safety – Equipment installed outdoor)  
ETS 300019-1-4 (Environmental)  
UL 60950-1; 1<sup>st</sup> edition

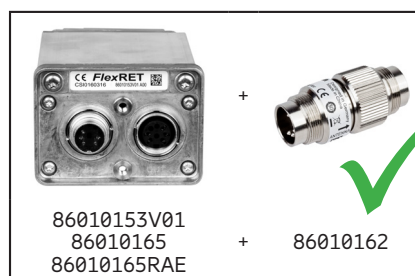
**Certification:** CE

**Scope of supply:** Gender Adapter

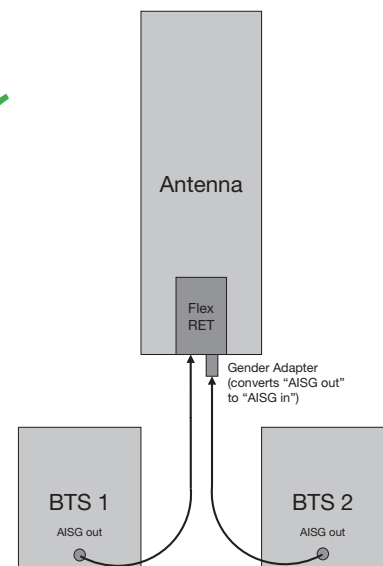
**Notice:** The Gender Adapter is solely to be used in combination with the FlexRET modules. A combination with the FlexRET module 86010153 and 86010167, must be avoided since this could lead to unexpected behaviour in the FlexRET module and could cause overvoltage in the primary power supply. For avoidance of doubt, the combination with 86010153 or 86010167, with exception of the FlexRET modules 86010153V01, 86010165 and 86010165RAE, could lead to a damage. In no event will Ericsson, its affiliates and/or subsidiaries be liable for direct, incidental, consequential, special, indirect damages arising from or relating to the combination with another module except FlexRET modules 86010153V01, 86010165 and 86010165RAE. These limitations will apply even if Ericsson has been advised of the possibility of such damages and whether such damages are foreseeable or not.



In combination with 86010153 and 86010167:  
Gender Adapter is not usable.



In combination with 86010153V01, 86010165 and 86010165RAE:  
Gender Adapter can be used.





# Port Extender for FlexRET

KRY 121 108/1



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Port Extender allows daisy chaining of FlexRET 86010153V01, 86010165 and 86010165RAE when the FlexRET operates with two BTS. G-in and G-out is converting the AISG-out (female) of FlexRET to an AISG-in while maintaining the daisy chain capability on this port. Not compatible with 86010167.

<b>Product No.</b>		<b>KRY 121 108/1</b>
Protocols		compliant to 3GPP/AISG 2.0; AISG 3
Input voltage range	V	10 ... 30 (pin 6)
Connectors		4x 8 pin connector according to IEC 60130-9; according to AISG C485 Daisy chain in: male; Daisy chain out: female Daisy chain G-in: male; Daisy chain G-out: female
Hardware interfaces		RS 485A/B (pin 5, pin 3); power supply (pin 6); DC return (pin 7); according to AISG / 3GPP
Temperature range	°C	-40 ... +60
Protection class		IP 67 (installed)
Surge current capability		AISG interface (each pin) in combination with FlexRET 2.5 kA (10/350 µs) 8 kA (8/20 µs) according to IEC 61000-4-5
Weight	g lb	150 0.33
Dimensions approx. (H x W x D)	mm inches	50.5 x 70 x 54 1.9 x 1.5 x 2.1

Standards: EN 60950-1 (Safety)  
EN 60950-22 (Safety – Equipment installed outdoor)  
ETS 300019-1-4 (Environmental)  
UL 60950-1; 1<sup>st</sup> edition

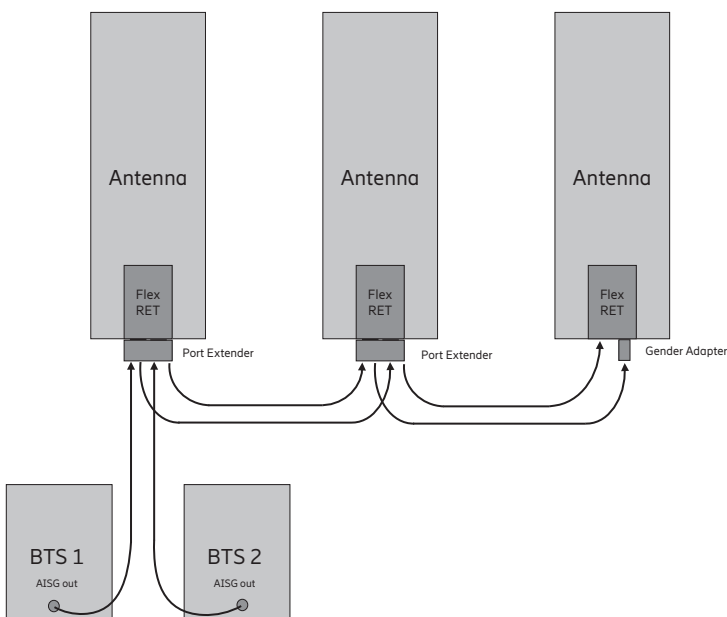
Certification: CE

Scope of supply: Port Extender

**Notice:**

The Port Extender is solely to be used in combination with the FlexRET modules. A combination with the FlexRET module 86010153 and 86010167, must be avoided since this could lead to unexpected behaviour in the FlexRET module and could cause overvoltage in the primary power supply.

For avoidance of doubt, the combination with 86010153 or 86010167, with exception of the FlexRET modules 86010153V01, 86010165 and 86010165RAE, could lead to a damage. In no event will Ericsson, its affiliates and/or subsidiaries be liable for direct, incidental, consequential, special, indirect damages arising from or relating to the combination with another module except FlexRET modules 86010153V01, 86010165 and 86010165RAE. These limitations will apply even if Ericsson has been advised of the possibility of such damages and whether such damages are foreseeable or not.



# RET control cable

1/TSR48421/xxxx, black

1/TSR48422/xxxx, grey



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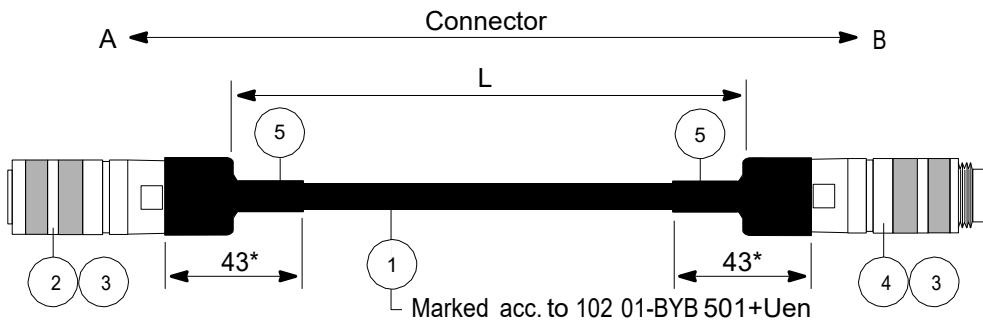
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**Vital Safety Requirements**

This Assembly Shall Be Approved As A Recognized Wiring Harness According To Ericsson Specification.

**Mechanical Design**

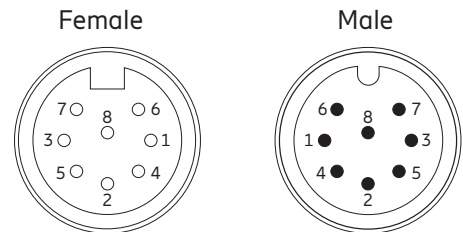
Length L, See Product Number And R-State (Clause 4) Length Tolerances Acc. To 1030-Tsr 101 + Uen



\*) The max. length after shrinkage (molding) is 43±3 mm.

NOTE! It is important to secure that item 5 shrinks down on the cable completely and its adhesive melts and makes a waterproof sealing.

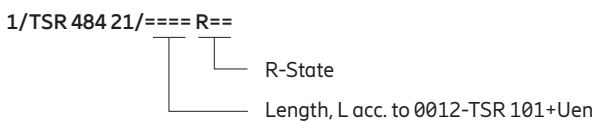
Length	Color	Product No.
0.5 m	black	1/TSR48421/500
0.5 m	grey	1/TSR48422/500
1 m	black	1/TSR48421/1000
1 m	grey	1/TSR48422/1000
10 m	black	1/TSR48421/10M
15 m	black	1/TSR48421/15M
15 m	grey	1/TSR48422/15M
20 m	black	86010032
2 m	black	1/TSR48421/2000
2 m	grey	1/TSR48422/2000
3 m	black	1/TSR48421/3000
3 m	grey	1/TSR48422/3000
5 m	black	1/TSR48421/5000



**PIN assignment according AISG:**

- 1 not connected
- 2 not connected
- 3 RS485 B
- 4 not connected
- 5 RS485 A
- 6 +29 V DC (+24 V DC nominal)
- 7 DC Return
- 8 not connected

NOTE! ALL THE DIMENSIONS OF THE INCLUDED CONNECTORS (RNT 148 07/x AND RPT 148 07/x) SHOULD BE IN ACCORDANCE WITH THE DIMENSIONS STATED IN IEC 60130-9 STANDARD.



## Mounting Accessories

Product No.	Product Name	Pole Diameter	Page
Clamps			
731651	Clamp L/M	28–60 mm	<a href="#">866</a>
738546	Clamp L/M/H	42–115 mm	
85010002	Clamp L/M/H	110–220 mm	
85010003	Clamp L/M/H	210–380 mm	
85010111	Clamp XM	55–115 mm	<a href="#">868</a>
85010096	Clamp XH	55–115 mm	<a href="#">870</a>
85010097	Clamp XH	110–220 mm	<a href="#">872</a>
85010101	Clamp XH	210–380 mm	<a href="#">874</a>
85010102	3-Sector Clamp Kit XH	114.3 mm	<a href="#">876</a>








## Mounting Accessories

Product No.	Product Name	Page
<b>Downtilt Kits</b>		
732327	Downtilt Kit L	<a href="#">878</a>
737978	Downtilt Kit L/M	<a href="#">880</a>
85010009	Downtilt Kit H	<a href="#">882</a>
85010110	Downtilt Kit XM	<a href="#">884</a>
85010099	Downtilt Kit XH	<a href="#">886</a>
85010112	Uptilt joint for Downtilt Kit XM/XH	<a href="#">888</a>
85010513	Spacer for Downtilt Kit XM	<a href="#">890</a>
85010512	Spacer for Downtilt Kit XH	
<b>Azimuth Adjustment Kits</b>		
85010098	Azimuth Adjustment Kit XH	<a href="#">892</a>
<b>Offsets</b>		
85010060	Offset L/M	<a href="#">894</a>
85010061	Offset H	
SXA 216 3025/1	Offset XM	<a href="#">896</a>
85010104	Offset XH	<a href="#">898</a>
<b>Other Accessories</b>		
85010075	2-Panel Mounting Kit L/M	<a href="#">900</a>
85010087	2-Panel Mounting Kit H	<a href="#">902</a>
85010103	2-Panel Mounting Kit XH 110-220mm	<a href="#">904</a>
78211293	Protection Cap 7-16	<a href="#">906</a>
78211297	Protection Cap 4.3-10	<a href="#">908</a>
85010004	Protection Cap RET Spindle (5pcs)	<a href="#">910</a>






## Mounting Configurations



## Mounting Accessories – Overview

Type	Windload Classification	Pole Diameter in mm	Product No.	Remark	Page
Clamp 	L/M (Light/Medium)	∅ 28–60	731651		<a href="#">866</a>
	L/M/H (Light/Medium/Heavy)	∅ 42–115	738546		
		∅ 110–220	85010002		
		∅ 210–380	85010003		
Clamp 	XM (X-Medium)	∅ 55–115	85010111		<a href="#">868</a>
	XH (X-Heavy)	∅ 55–115	85010096		<a href="#">870</a>
	XH (X-Heavy)	∅ 110–220	85010097		<a href="#">872</a>
	XH (X-Heavy)	∅ 210–380	85010101		<a href="#">874</a>
3-Sector Clamp 	XH (X-Heavy)	∅ 114.3	85010102		<a href="#">876</a>
Downtilt Kit 	L (Light)		732327	also released for uptilt mounting	<a href="#">878</a>
	L/M (Light/Medium)		737978		<a href="#">880</a>
	H (Heavy)		85010009		<a href="#">882</a>
Downtilt Kit 	XM (X-Medium)		85010110	also released for uptilt mounting	<a href="#">884</a>
	XH (X-Heavy)		85010099		<a href="#">886</a>
Uptilt Joint for Downtilt Kit 	XM/XH (X-Medium/X-Heavy)		85010112	enables uptilt angles higher than 2.5° with 85010099 / 6° with 85010110	<a href="#">888</a>
Spacer for Downtilt Kit 	XM (X-Medium)		85010513	eases mounting in „no-downtilt“ position (0°)	<a href="#">890</a>
	XH (X-Heavy)		85010512		

## Mounting Accessories – Overview

Type	Windload Classification	Pole Diameter in mm		Product No.	Remark	Page
Azimuth Adjustment Kit 	XH (X-Heavy)			85010098	pole mounting adjustment angle $\pm 30^\circ$	<a href="#">892</a>
Offset 	L/M (Light/Medium)			85010060	increases clearance between pole and antenna	<a href="#">894</a>
	H (Heavy)			85010061		<a href="#">896</a>
	XM (X-Medium)			SXA 216 3025/1		<a href="#">898</a>
	XH (X-Heavy)			85010104		<a href="#">898</a>
2-Panel Mounting Kit 	L/M (Light/Medium)	max. Panel width 325		85010075	mounts two panel antennas side by side	<a href="#">900</a>
	H (Heavy)	max. Panel width 377		85010087		<a href="#">902</a>
	XH (X-Heavy)	$\varnothing 110-220$	max. Panel width 378	85010103		<a href="#">904</a>
Protection Cap 				78211293	7-16	<a href="#">906</a>
				78211297	4.3-10	<a href="#">908</a>
Protection Cap RET Spindle 				85010004	5 pcs	<a href="#">910</a>

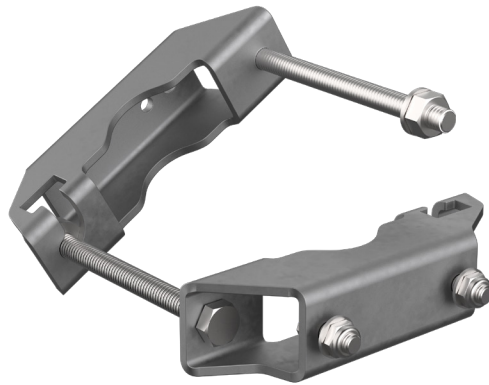


## Possible Combinations of Mounting Hardware XM and XH

	85010111 Clamp XM	85010096 85010097 85010101 Clamp XH	85010110 Downtilt Kit XM	85010099 Downtilt Kit XH	85010112 Uptilt Joint XM/XH	85010102 3-Sector Clamp Kit XH	SXA 216 3025/1 Offset XM	85010104 Offset XH	85010098 Azimuth Adjustment XH	85010103 2-Panel Mounting Kit XH
85010111 Clamp XM	—	—	✓	✗	✓	—	✓	✗	✗	—
85010096 85010097 85010101 Clamp XH	—	—	✓	✓	✓	—	✓	✓	✓	—
85010110 Downtilt Kit XM	✓	✓	—	—	✓	✓ <sup>1)</sup>	✗	✗	✗	✓
85010099 Downtilt Kit XH	✗	✓	—	—	✓	✓ <sup>1)</sup>	✗	✗	✗	✓
85010112 Uptilt Joint XM/XH	✓	✓	✓	✓	—	✓ <sup>1)</sup>	✗	✗	✗	✓
85010102 3-Sector Clamp Kit XH	—	—	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	—	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✓ <sup>1)</sup>	✗
SXA 216 3025/1 Offset XM	✓	✓	✗	✗	✗	✓ <sup>1)</sup>	—	✗	✗	✗
85010104 Offset XH	✗	✓	✗	✗	✗	✓ <sup>1)</sup>	✗	—	✗	✗
85010098 Azimuth Adjustment XH	✗	✓	✗	✗	✗	✓ <sup>1)</sup>	✗	✗	—	✗
85010103 2-Panel Mounting Kit XH	—	—	✓	✓	✓	✗	✗	✗	✗	—
XM Antenna	✓	✓	✓	✓ <sup>2)</sup>	✓	✓	✓	✓ <sup>2)</sup>	✓ <sup>2)</sup>	✓
XH Antenna	✗	✓	✗	✓	✓	✓	✗	✓	✓	✓

✓ OK  
✗ Not allowed

1) The use of Downtilt Kit XM / XH in combination with Offset XH / Azimuth Adjustment XH is strictly forbidden  
2) With Clamp XH / Accessories XH / Antenna XM



# Clamp L/M/H

731651, 738546, 85010002, 85010003



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## Clamps

Product No.	731651	738546	85010002	85010003
Suitable for mast diameter	28–60 mm	42–115 mm	110–220 mm	210–380 mm
Antenna – mast distance F	25–28 mm	20–26 mm	47–55 mm	48–68 mm
Number of pieces	1 clamp	1 clamp	1 clamp	1 clamp
Material – Clamp	Hot-dip galvanized steel	Hot-dip galvanized steel	Hot-dip galvanized steel	Hot-dip galvanized steel
– Screws	Hot-dip galvanized steel/ Stainless steel	Hot-dip galvanized steel/ Stainless steel	Hot-dip galvanized steel/ Stainless steel	Stainless steel/ Stainless steel
– Nuts	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Weight	0.8 kg	1.1 kg	2.7 kg	4.8 kg

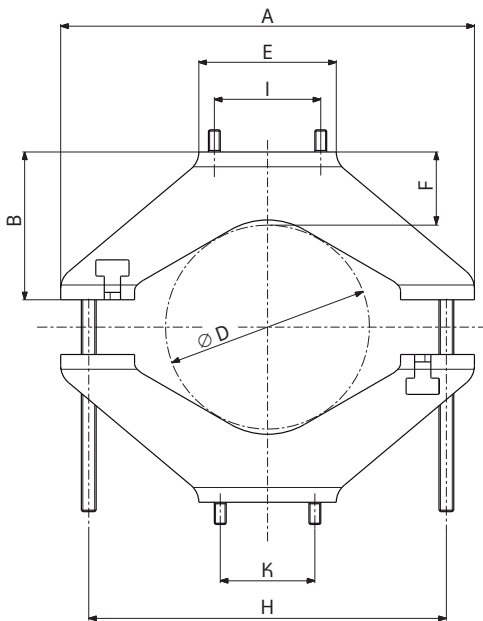
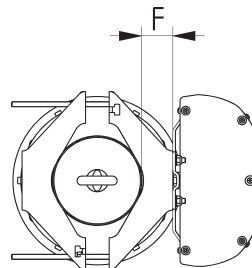
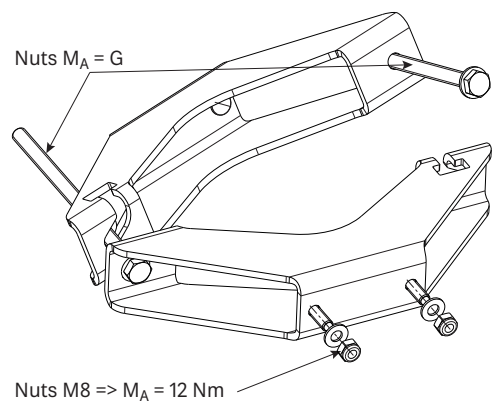
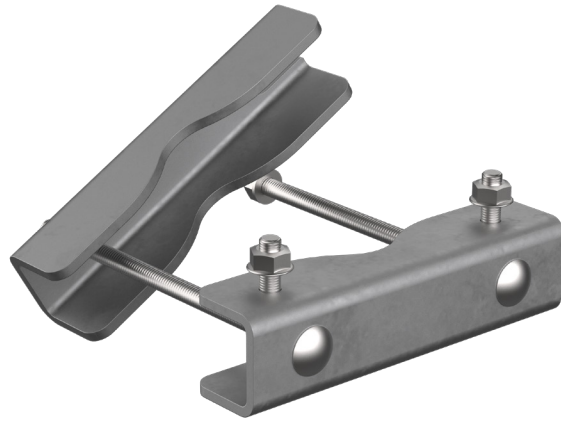


Figure similar to 85010002



Product No.	A	B	C	D	E	F	G	H	I	K
731651	116 mm	40 mm	40 mm	28–60 mm	93 mm	25–28 mm	20 Nm	84 mm	–	64 mm
738546	152 mm	40 mm	40 mm	42–115 mm	93 mm	20–26 mm	25 Nm	125 mm	72 mm	64 mm
85010002	280 mm	100 mm	50 mm	110–220 mm	93 mm	47–55 mm	35 Nm	240 mm	72 mm	64 mm
85010003	442 mm	150 mm	50 mm	210–380 mm	150 mm	48–68 mm	35 Nm	392 mm	72 mm	64 mm

Please note: Ericsson does not recommend to use counter nuts.  
The additional nuts supplied are only meant as spares.



# Clamp XM

85010111

pole diameter 55–115 mm



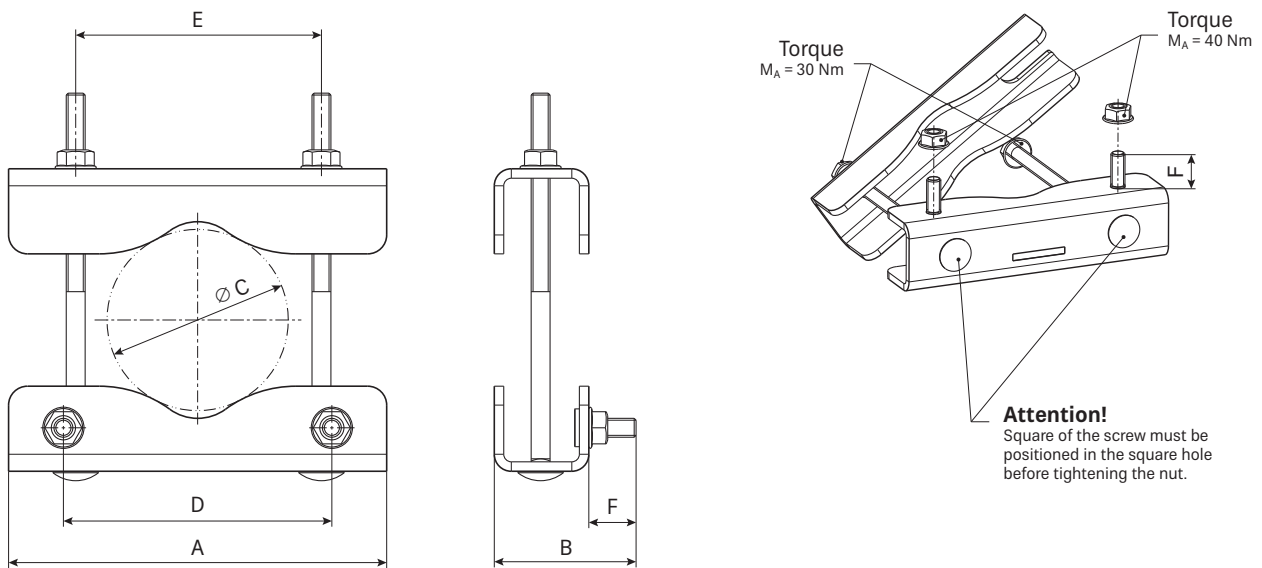
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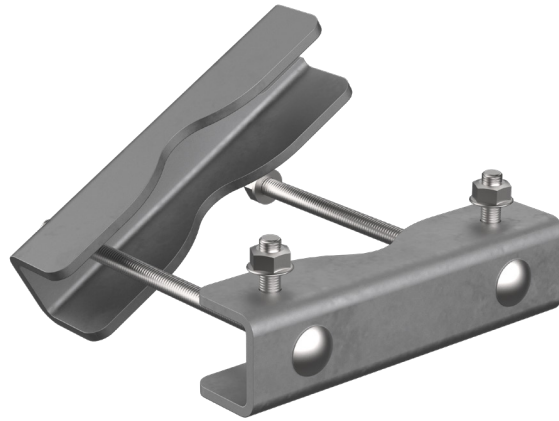
## Clamps 55–115mm XM

Product No.		85010111	
Suitable for mast diameter	mm inches	55 – 115 2.2 – 4.5	
Scope of supply		2 x clamps	
Material: – Clamp – Screws – Nuts		Hot-dip galvanized steel Hot-dip galvanized steel Stainless steel	
Weight	kg lb	4.5 9.9	



	A	B	C	D	E	F
mm	200	75	55 – 115	142	130	(25)
inches	7.9	2.9	2.2 – 4.5	5.6	5.1	(1)

Please note: Ericsson does not recommend to use counter nuts.



# Clamp XH

85010096

pole diameter 55–115 mm

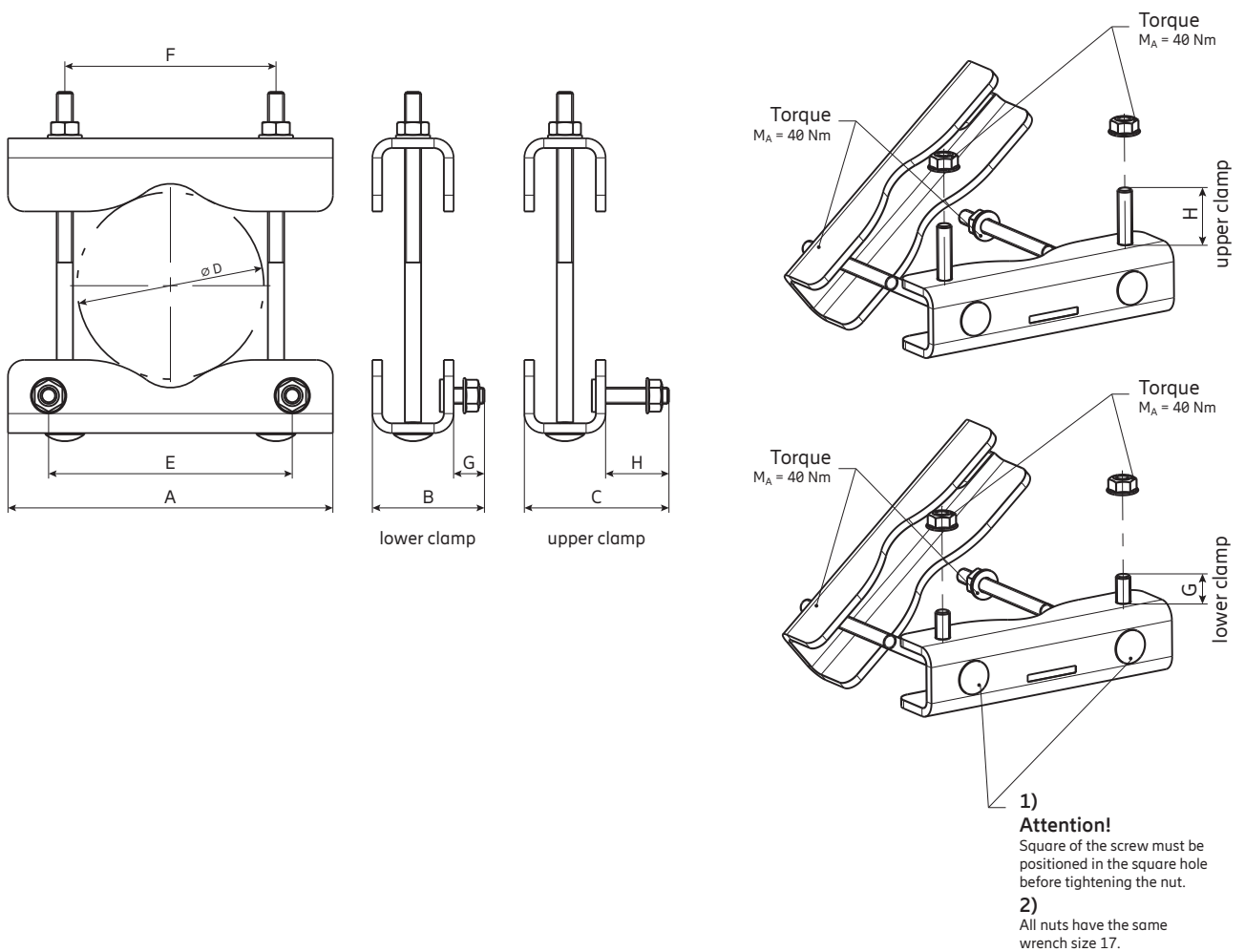


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<b>Product No.</b>		<b>85010096</b>
Suitable for mast diameter	mm inches	55 – 115 2.2 – 4.5
Scope of supply		1x lower clamp 1x upper clamp
Material: – Clamp – Screws – Nuts		Hot-dip galvanized steel Hot-dip galvanized steel Stainless steel
Weight	kg lb	5.0 11.0



	A	B	C	D	E	F	G	H
mm	200	69	89	55 – 115	150	130	(19)	(39)
inches	7.9	2.7	3.5	2.2 – 4.5	5.9	5.1	(0.7)	(1.5)

Please note: Ericsson does not recommend to use counter nuts.

# Clamp XH

85010097

pole diameter 110–220 mm



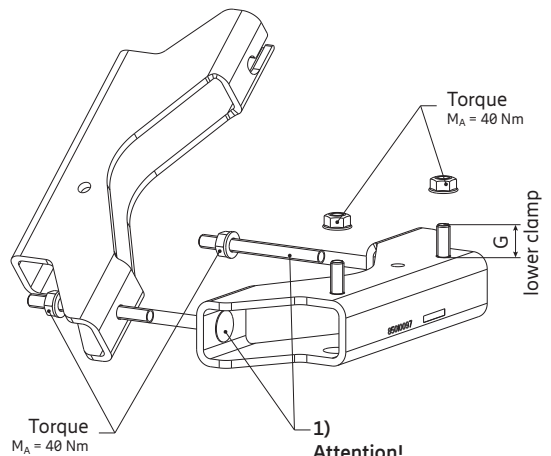
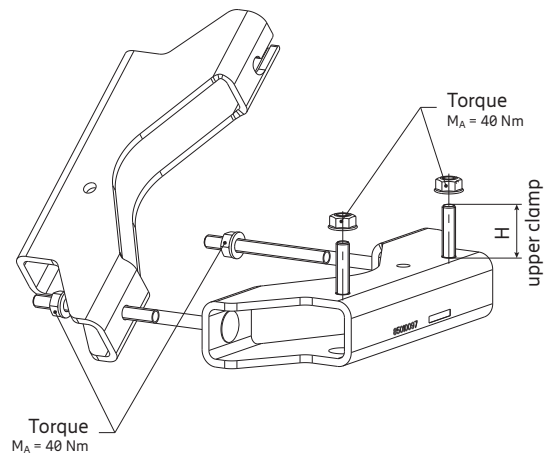
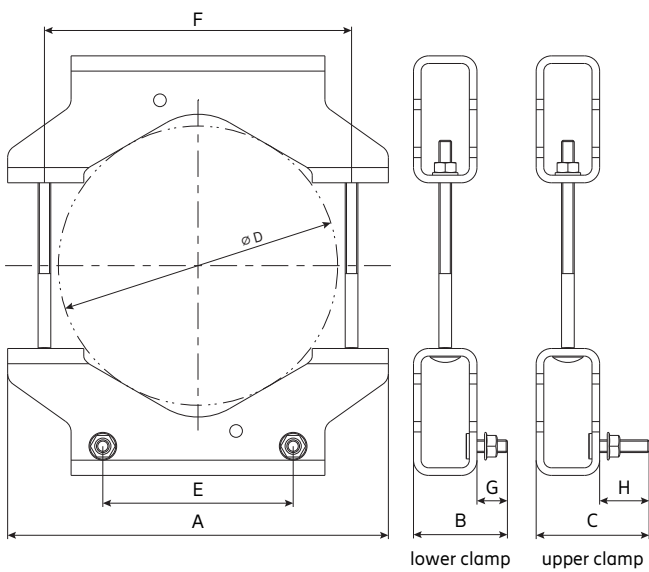
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<b>Product No.</b>		<b>85010097</b>
Suitable for mast diameter	mm inches	110 – 220 4.3 – 8.7
Scope of supply		1x lower clamp 1x upper clamp
Material: – Clamp – Screws – Nuts		Hot-dip galvanized steel Hot-dip galvanized steel Stainless steel
Weight	kg lb	9.4 20.7



**1)**  
**Attention!**  
Square of the screw must be positioned in the square hole before tightening the nut.  
**2)**  
All nuts have the same wrench size 17.

	A	B	C	D	E	F	G	H
mm	300	69	89	110 – 220	150	242	(19)	(39)
inches	11.8	2.7	3.5	4.3 – 8.7	5.9	9.5	(0.7)	(1.5)

Please note: Ericsson does not recommend to use counter nuts.



# Clamp XH

85010101

pole diameter 210–380 mm

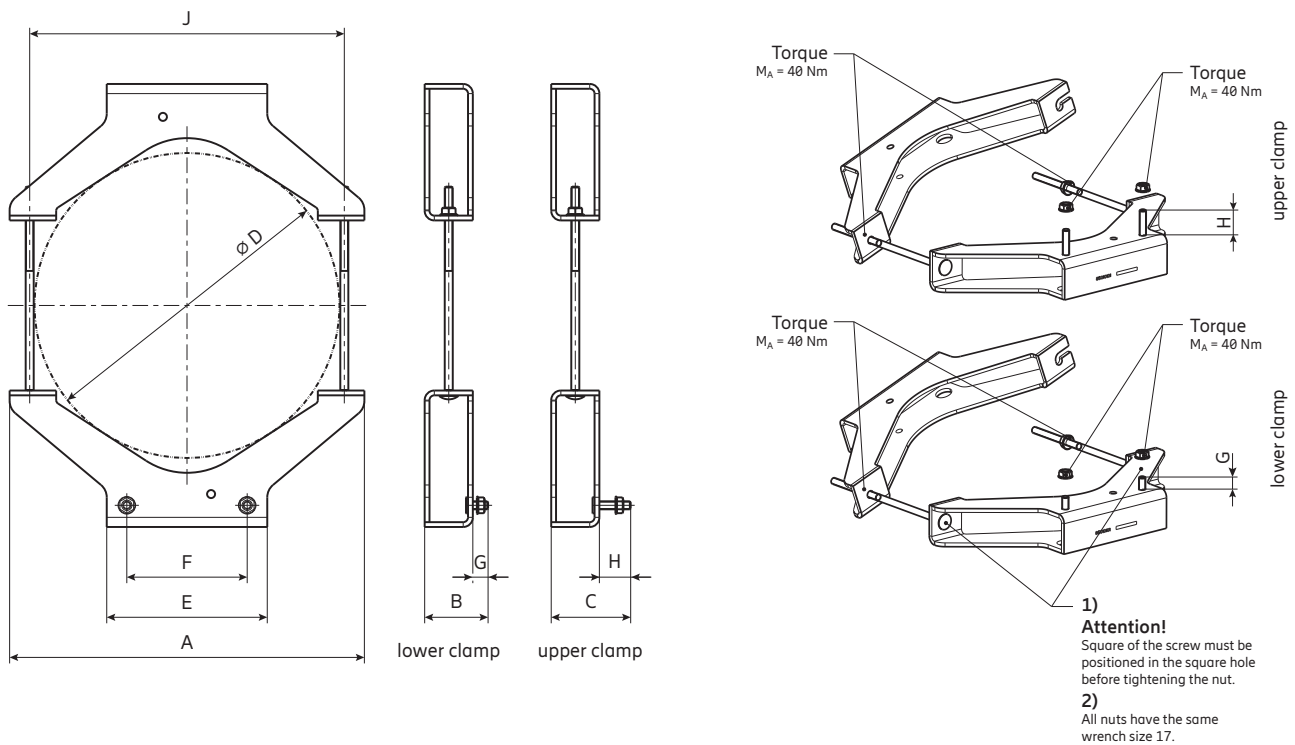


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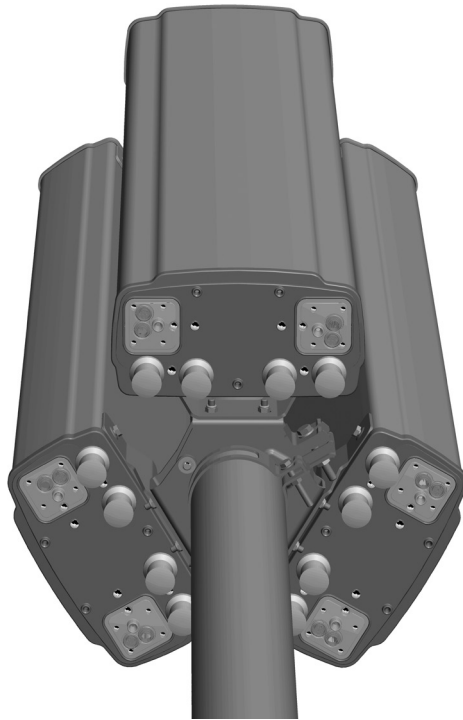
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Product No.		85010101	
Suitable for mast diameter	mm inches	210 – 380 8.27 – 14.96	
Scope of supply		1 x upper clamp 1 x lower clamp	
Material: – Clamp – Screws – Nuts		Hot-dip galvanized steel Hot-dip galvanized steel Stainless steel	
Weight	kg lb	14.6 32.2	



	A	B	C	D	E	F	G	H	J
mm	442	79	99	210 – 380	200	150	19	39	392
inches	17.4	3.1	3.9	8.27 – 14.96	7.87	5.9	0.75	1.54	15.43

Please note: Ericsson does not recommend to use counter nuts.



# 3-Sector Clamp Kit XH

85010102

pole diameter 114.3 mm

- Slim and unobtrusive design.
- Nearly cylindrical optical appearance with small outer diameter.
- Suitable for all antennas with a panel width up to 488 mm | 19.2 inches, in combination with Offset or Downtilt Kit up to 596 mm | 23.5 inches.

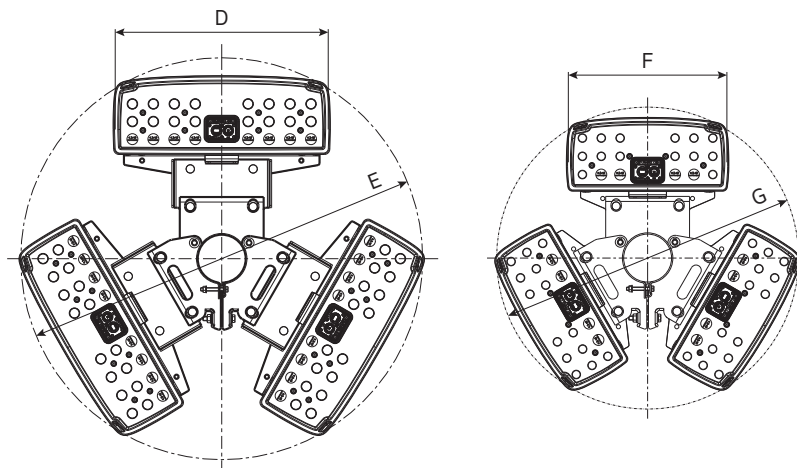
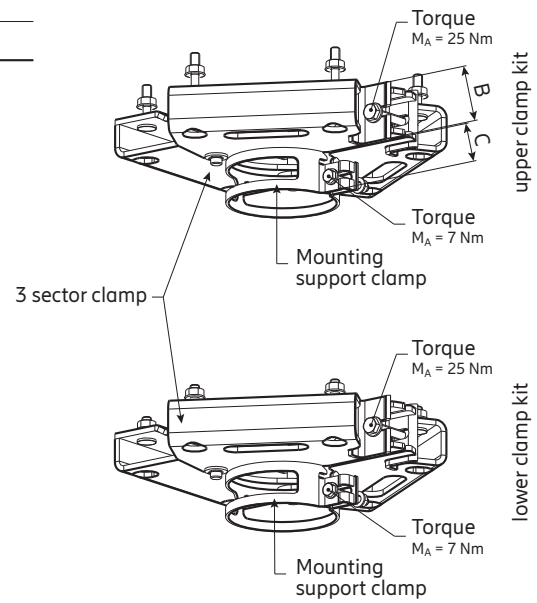
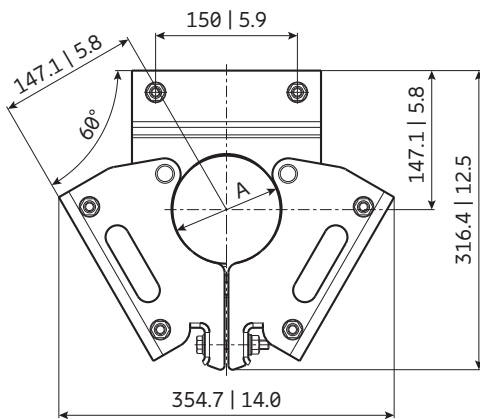


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<b>Product No.</b>		<b>85010102</b>
Angle between antennas	°	120
Suitable for mast diameter	mm inches	114.3 4.5
Number of pieces		2x 3 sector clamp 2x mounting support clamp
Material: – 3 sector clamp – Mounting support clamp – Screws / threaded stud – Nuts		Hot-dip galvanized steel Aluminum Hot-dip galvanized steel Stainless steel
Weight	kg   lb	14.5   31.9



Bottom view with offset

Bottom view without offset

Dimensions	mm	inches
A	∅ 114.3	∅ 4.5
B	62	2.4
C	45	1.8
D	max. 596	max. 23.5
E	∅ 1005	∅ 39.6
F	max. 488	max. 19.2
G	∅ 797	∅ 31.4

All dimensions in mm | inches

**Please note:**

- Antennas with a panel width larger than 488 mm / 19.2 inches are only suitable in combination with offset 85010104 or downtilt kit 85010099.
- A simultaneous combination of downtilt kit and offset is not permitted.

**Possible accessories**

85010104	Offset
85010099	Downtilt kit

**Please note:**

Panels with connector position "Rearside" fit only with downtilt kit, azimuth adjustment kit or offset mounted in-between.



# Downtilt Kit L

732327



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**Downtilt kit for Panel antennas with wind load category L.****Downtilt kit**

<b>Product No.</b>		<b>732327</b>
<b>Preferred range of use</b>		– Panel antennas with attached mounting plates – Downtilt kit without scale for universal use
<b>Weight</b>	kg	1.3
	lb	2.9
<b>Material</b>		Hot-dip galvanized steel
<b>Screws</b>		Hot-dip galvanized steel / stainless steel
<b>Nuts / washers</b>		Stainless steel

**Attention: The downtilt kit is not to be used together with azimuth kits or offsets.**

**Recommended torque for all bolted connections**

<b>Screw size</b>		<b>Torque</b>
M8	Nm	20

**Maximum acceptable load**

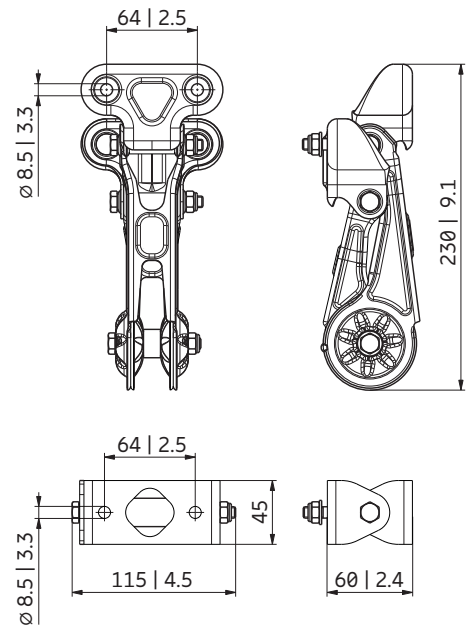
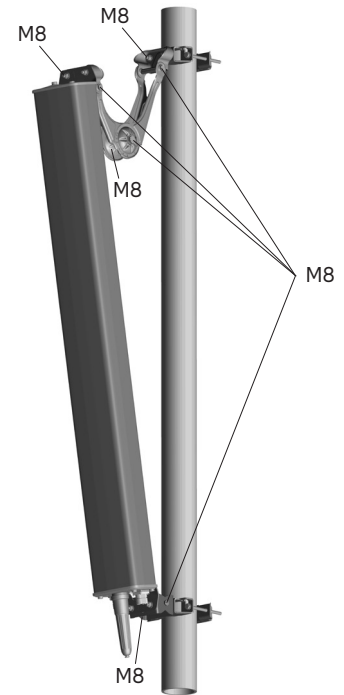
Frontal wind load	N   lbf	< 725   163
Lateral wind load	N   lbf	< 200   45

Before the adjustment, all joint bolts must be loosened.  
After the adjustment has been completed, all loosened bolts must be tightened.

Mounting this downtilt kit enlarges the spacing between mast and antenna by a minimum of 42 mm | 1.7 inches.

Use the downtilt kit together with the clamps as described in the antenna data-sheet.

The downtilt kit can also be used for uptilting the antenna.



All dimensions in mm | inches

**Max. possible mechanical downtilt / uptilt**

Antenna type	80020711	80010761	80010753
Max. downtilt / uptilt angle	58°	46°	44°



# Downtilt Kit L/M

737978



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**Downtilt kit for Panel antennas with wind load category L/M.****Downtilt kit**

<b>Product No.</b>	<b>737978</b>	
<b>Preferred range of use</b>	– Panel antennas with attached mounting plates – Downtilt kit without scale for universal use	
<b>Weight</b>	kg lb	2.3 5.1
<b>Material</b>	Hot-dip galvanized steel	
<b>Screws</b>	Hot-dip galvanized steel / stainless steel	
<b>Nuts / washers</b>	Stainless steel	

**Attention: The downtilt kit is not to be used together with azimuth kits or offsets.**

**Recommended torque for all bolted connections**

<b>Screw size</b>		<b>Torque</b>
M8	Nm	20
M12	Nm	50

**Maximum acceptable load**

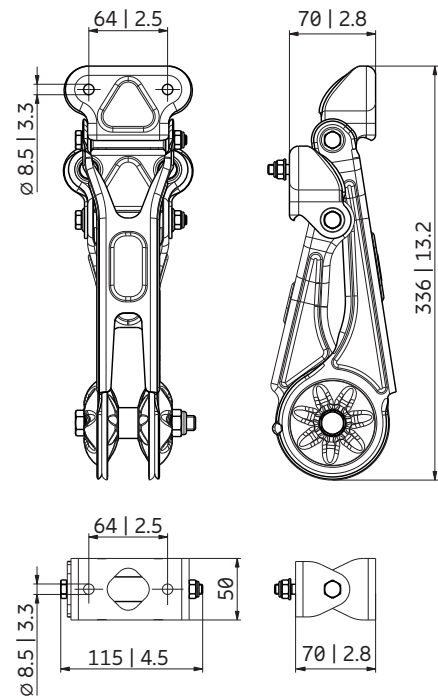
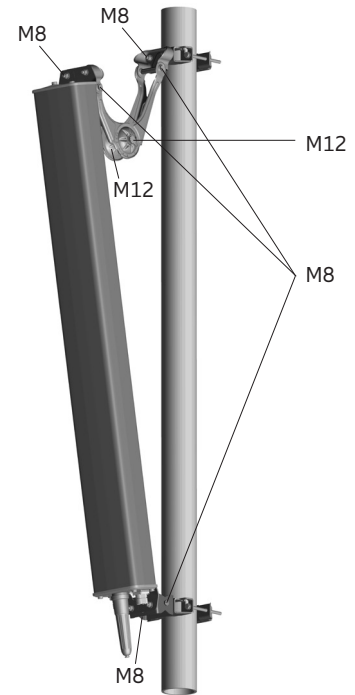
<b>Frontal wind load</b>	N   lbf	< 1950   438
<b>Lateral wind load</b>	N   lbf	< 725   163

Before the adjustment, all joint bolts must be loosened.  
After the adjustment has been completed, all loosened bolts must be tightened.

Mounting this downtilt kit enlarges the spacing between mast and antenna by a minimum of 70 mm | 2.8 inches.

Use the downtilt kit together with the clamps as described in the antenna data-sheet.

The downtilt kit can also be used for uptilting the antenna.



All dimensions in mm | inches

**Max. possible mechanical downtilt / uptilt**

<b>Antenna length class</b>	1.3 m (4 ft)	1.5 m	1.8 m (6 ft)	2.0 m	2.4 m (8 ft)	2.6 m
<b>Max. downtilt / uptilt angle</b>	17°	15°	12°	11°	9°	8°



# Downtilt Kit H

85010009



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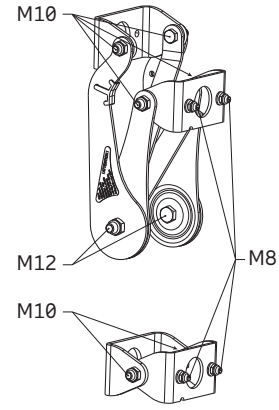
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**Downtilt kit for Panel antennas with wind load category H.**

**Downtilt kit**

<b>Product No.</b>		<b>85010009</b>	
<b>Preferred range of use</b>		– Panel antennas with attached mounting plates – Downtilt kit without scale for universal use	
<b>Weight</b>	kg	4.4	
	lb	9.7	
<b>Material</b>		Hot-dip galvanized steel	
<b>Screws</b>		Hot-dip galvanized steel / stainless steel	
<b>Nuts</b>		Stainless steel	

**Attention: The downtilt kit is not to be used together with azimuth kits or offsets.**



**Recommended mast clamps**

Product No.	Description	Mast diameter mm   inches	Weight approx. kg   lb	Units per antenna
738546	1 clamp	42–115   1.7–4.5	1.1   2.4	2
85010002	1 clamp	110–220   4.3–8.7	2.7   6.0	2
85010003	1 clamp	210–380   8.3–14.9	4.8   10.6	2

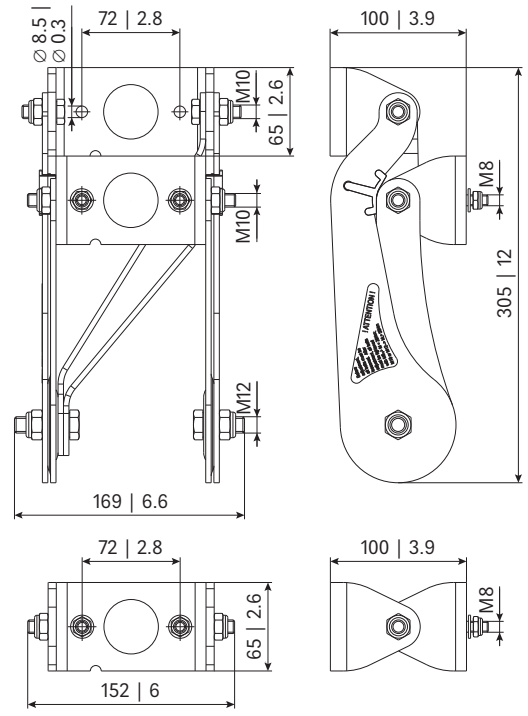
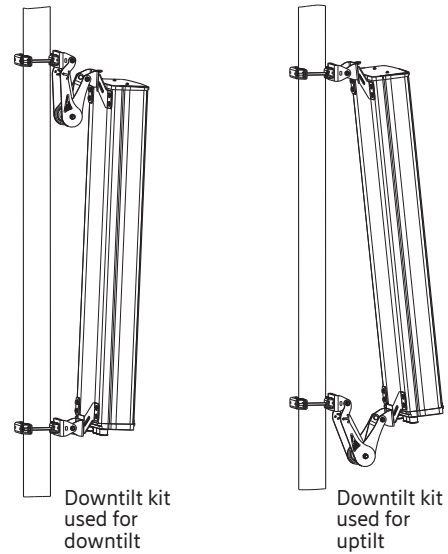
**Recommended torque for bolted connections**

Screw size		Torque
M8	Nm	20
M10	Nm	50
M12	Nm	85

**Maximum acceptable load**

Frontal wind load	N   lbf	< 5000   1124
Lateral wind load	N   lbf	< 1300   292

Before the adjustment, all joint bolts must be loosened. After the adjustment has been completed, all loosened bolts must be tightened. Mounting this downtilt kit enlarges the spacing between mast and antenna by a minimum of 100 mm | 3.9 inches. Use the downtilt kit together with the clamps as described in the antenna data-sheet. The downtilt kit can also be used for uptilting the antenna.



All dimensions in mm | inches

**Max. possible mechanical downtilt / uptilt**

Antenna length class	1.5 m	1.8 m (6 ft)	2.0 m	2.4 m (8 ft)	2.6 m
Max. downtilt / uptilt angle	14°	12°	11°	8°	8°



# Downtilt Kit XM

85010110



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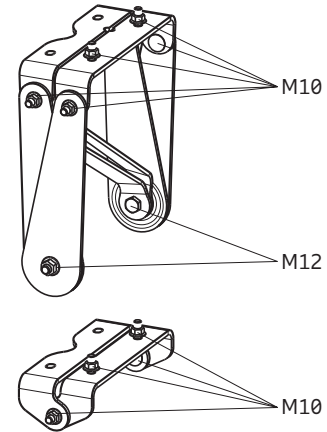


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**Downtilt kit for Panel antennas with wind load category XM (X-Medium).****Downtilt kit**

<b>Product No.</b>		<b>85010110</b>
<b>Preferred range of use</b>		– Panel antennas with attached mounting plates – Downtilt kit without scale for universal use
<b>Weight</b>	kg lb	8.5 18.7
<b>Material</b>		Hot-dip galvanized steel
<b>Screws</b>		Hot-dip galvanized steel
<b>Nuts</b>		Stainless steel

**Attention: The downtilt kit is not to be used together with azimuth kits or offsets.**

**Recommended mast clamps:**

Product No.	Description	Mast diameter mm   inches	Weight approx. kg   lb	Units per antenna
85010111	2 clamps	55 – 115   2.2 – 4.5	4.5   9.9	1
85010097	2 clamps	110 – 220   4.3 – 8.7	9.7   20.7	1
85010101	2 clamps	210 – 380   8.3 – 14.9	14.6   32.2	1

**Recommended torque for bolted connections**

<b>Screw size</b>		<b>Torque</b>
M10	Nm	50
M12	Nm	85

**Maximum acceptable load**

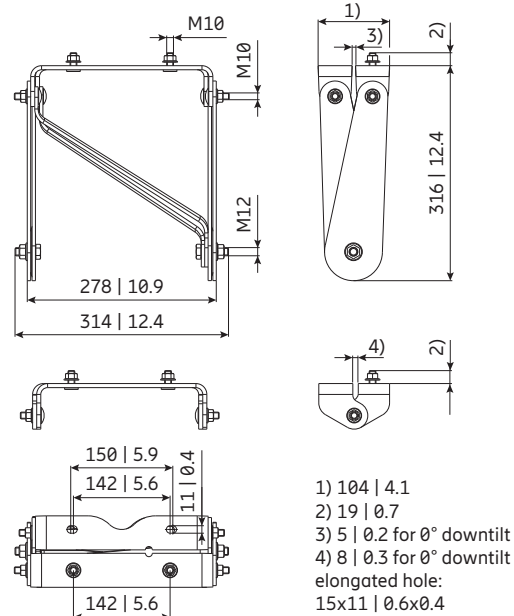
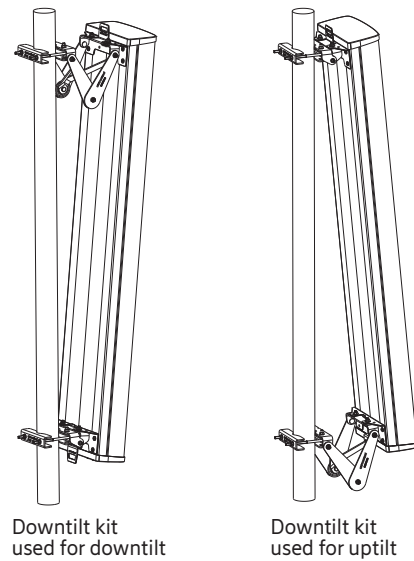
Wind load	Unit	Value
Frontal wind load	N   lbf	< 5500   1236
Lateral wind load	N   lbf	< 1450   326

Before the adjustment, all joint bolts must be loosened.  
After the adjustment has been completed, all loosened bolts must be tightened.

Mounting this downtilt kit enlarges the spacing between mast and antenna by a minimum of 59mm | 2.3 inches.

Use the downtilt kit together with the clamps as described in the antenna data-sheet.

The downtilt kit can also be used for uptilting the antenna with an angle up to max. 6°.



All dimensions in mm | inches

**Max. possible mechanical downtilt / uptilt**

Antenna length class	1.3 m (4 ft)	1.5 m	1.8 m (6 ft)	2.0 m	2.4 m (8 ft)	2.6 m
Max. downtilt / uptilt angle	21°	17°	14°	12°	10°	9°

Uptilt only in connection with 85010112



# Downtilt Kit XH

85010099



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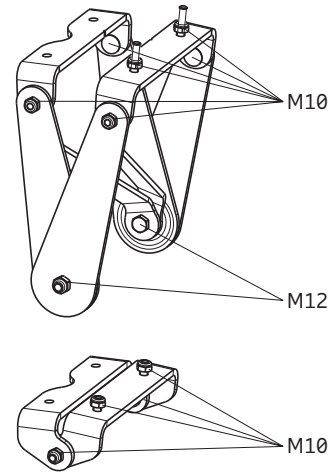
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**Downtilt kit for Panel antennas with wind load category XH (X-Heavy).**

**Downtilt kit**

<b>Product No.</b>	<b>85010099</b>	
<b>Preferred range of use</b>	– Panel antennas with attached mounting plates – Downtilt kit without scale for universal use	
<b>Weight</b>	kg lb	10.6 23.4
<b>Material</b>	Hot-dip galvanized steel	
<b>Screws</b>	Hot-dip galvanized steel	
<b>Nuts</b>	Stainless steel	

**Attention: The downtilt kit is not to be used together with azimuth kits or offsets.**



**Recommended mast clamps**

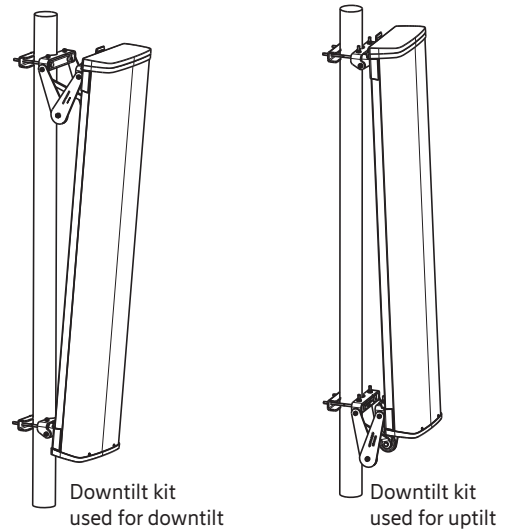
Product No.	Description	Mast diameter mm   inches	Weight approx. kg   lb	Units per antenna
85010096	2 clamps	55–115   2.2–4.5	5.0   11.0	1
85010097	2 clamps	110–220   4.3–8.7	9.7   20.7	1
85010101	2 clamps	210–380   8.3–14.9	14.6   32.2	1

**Recommended torque for all bolted connections**

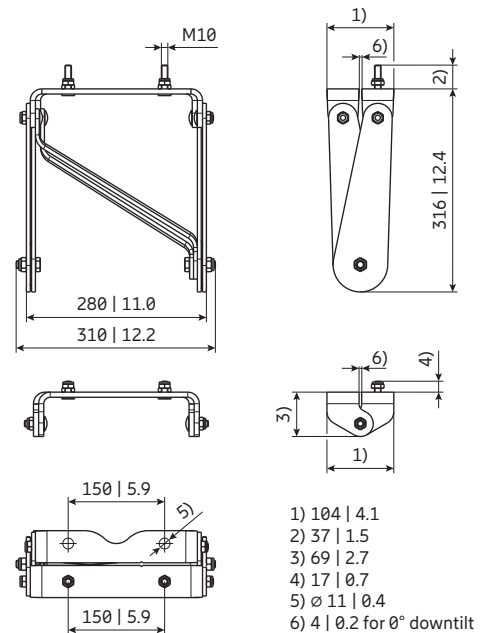
Screw size		Torque
M10	Nm	50
M12	Nm	85

**Maximum acceptable load**

Frontal wind load	N   lbf	< 6000   1349
Lateral wind load	N   lbf	< 1950   438



Before the adjustment, all joint bolts must be loosened. After the adjustment has been completed, all loosened bolts must be tightened. Mounting this downtilt kit enlarges the spacing between mast and antenna by a minimum of 59 mm | 2.3 inches. Use the downtilt kit together with the clamps as described in the antenna data-sheet. The downtilt kit can also be used for uptilting the antenna with an angle up to max. 2.5°.

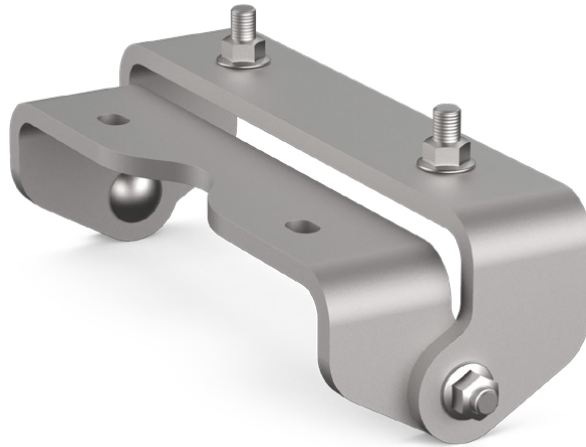


All dimensions in mm | inches

**Max. possible mechanical downtilt / uptilt**

Antenna length class	1.5 m	1.8 m (6 ft)	2.0 m	2.4 m (8 ft)	2.6 m
Max. downtilt / uptilt angle	16°	13°	12°	10°	9°

Uptilt only in connection with 85010112



# Uptilt Joint for Downtilt Kit XM/XH

85010112

- Enhances the functionality of the existing downtilt kits 85010099 and 85010110 to a fully functional uptilt kit
- The max. possible uptilt angle is identical to the max. downtilt angle (depending on antenna length)
- Enables easy antenna installation on sites with special uptilt requirements without the need of cost intensive site-specific constructions
- Compatible with antennas, clamps and downtilt kits in windload category XM and XH



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**Uptilt joint for downtilt kit**

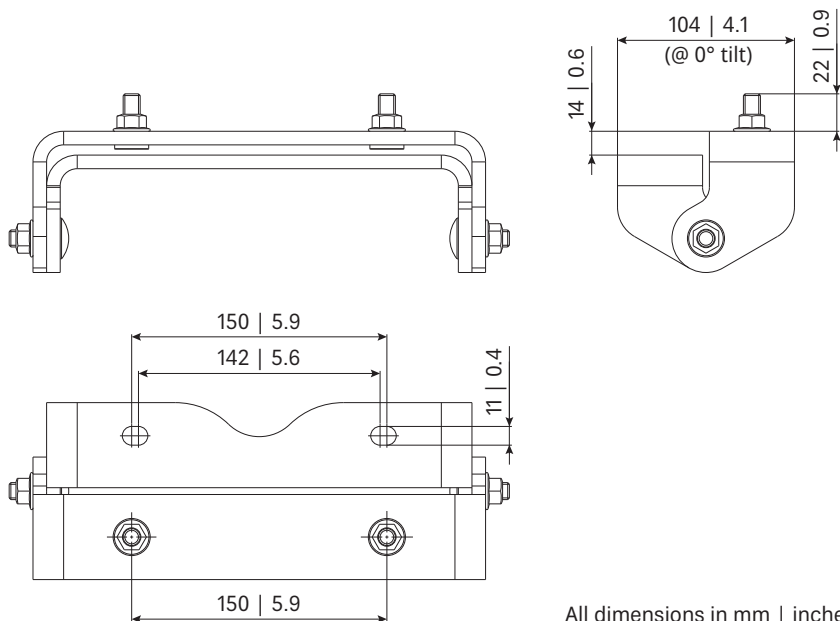
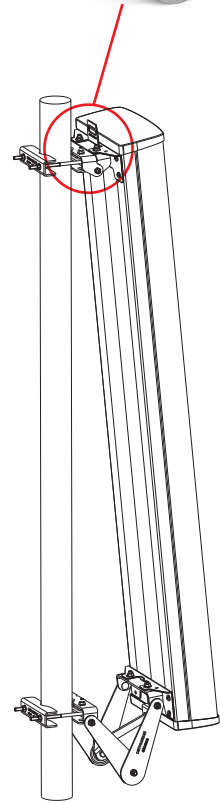
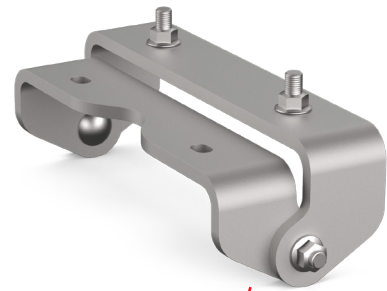
<b>Product No.</b>		<b>85010112</b>
<b>Weight</b>	kg	2.5
	lb	5.5
<b>Material</b>		Hot-dip galvanized steel
<b>Bolts</b>		Hot-dip galvanized steel
<b>Nuts</b>		Stainless steel

**Recommended torque for bolted connections:**

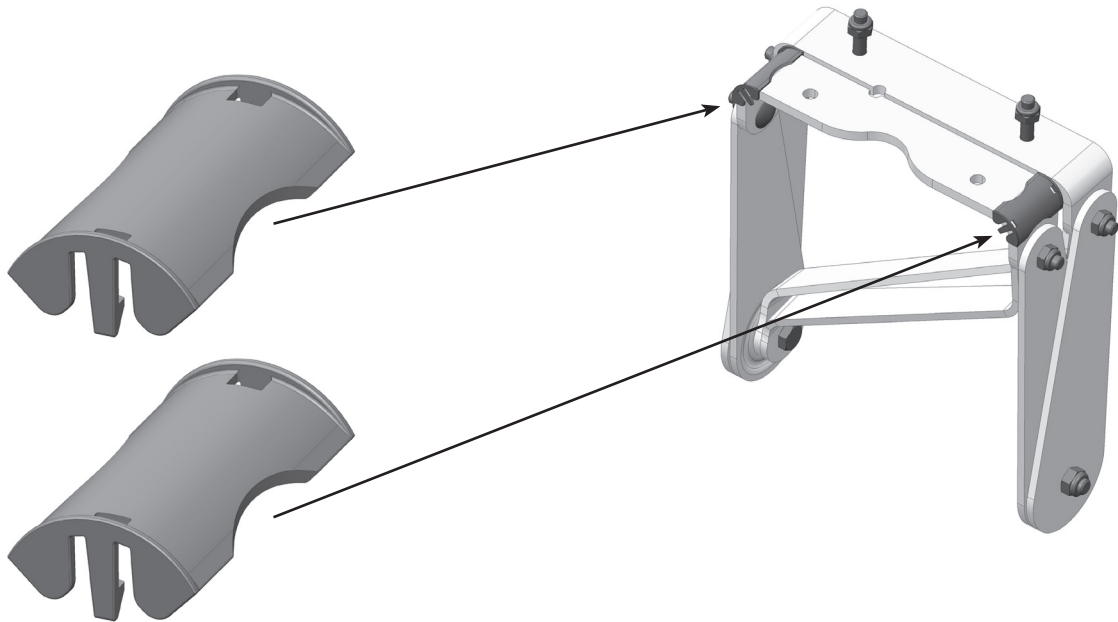
<b>Screw size</b>		<b>Torque</b>
M10	Nm	50

**Attention:** Always make sure, that the used mounting accessories fit to the windload category of the antenna to be mounted. It is NOT permitted to use a XM-clamp for a XH-antenna in combination with this uptilt joint.

**Scope of supply:** One uptilt joint (downtilt kit, clamps etc. need to be ordered separately)



All dimensions in mm | inches



# Spacer for Downtilt Kit XM/XH

85010512, 85010513

- Plastic spacer to ease mounting of the Downtilt Kit XH 85010099 and XM 85010110 in “no-downtilt” position ( $0^\circ$ ), only.
- For downtilt positions  $> 0^\circ$ , no spacer is needed. If spacers have been attached anyway, they have to be removed.
- High performance plastic with exceptional UV-stability.
- Snap-on design for easy assembly prior mounting the downtilt kit.
- Two spacers necessary for each downtilt kit.

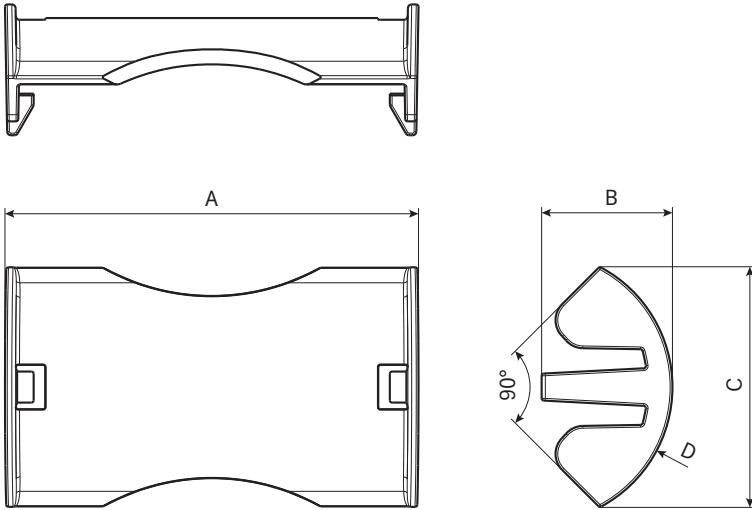


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Product No.	Description	Packing unit
85010512	Spacer for Downtilt Kit XH 85010099	50 pcs.
85010513	Spacer for Downtilt Kit XM 85010110	50 pcs.



		85010512	85010513
A	mm   inches	54.7   2.2	54.7   2.2
B	mm   inches	17.3   0.7	15.3   0.6
C	mm   inches	31.8   1.3	29.0   1.1
D	mm   inches	R 19.5   R 0.8	R 17.5   R 0.7



# Azimuth Adjustment Kit XH

85010098

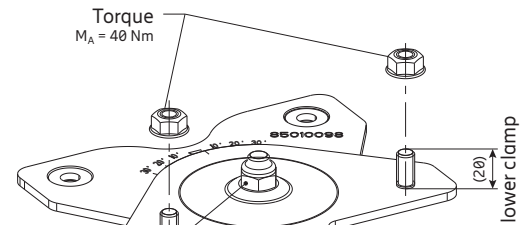
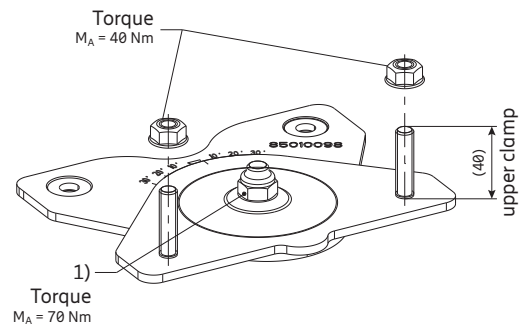
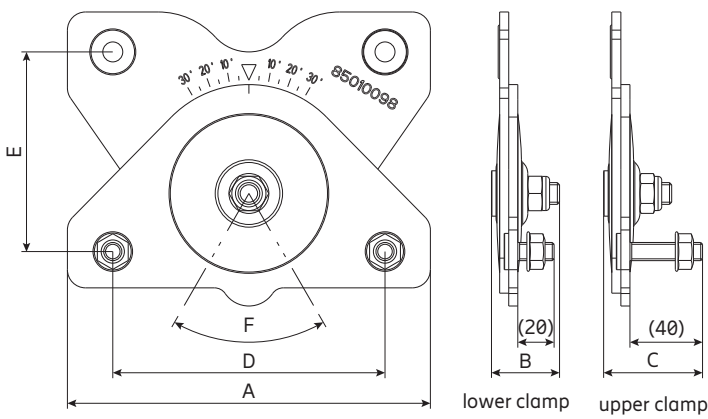


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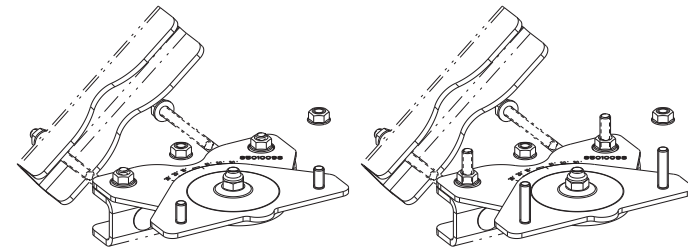


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<b>Product No.</b>		<b>85010098</b>
<b>Scope of supply</b>		1x lower clamp 1x upper clamp
<b>Material:</b> – Clamp – Bolts – Nuts		Hot-dip galvanized steel Hot-dip galvanized steel Stainless steel
<b>Weight</b>	kg	3.3
	lb	7.3

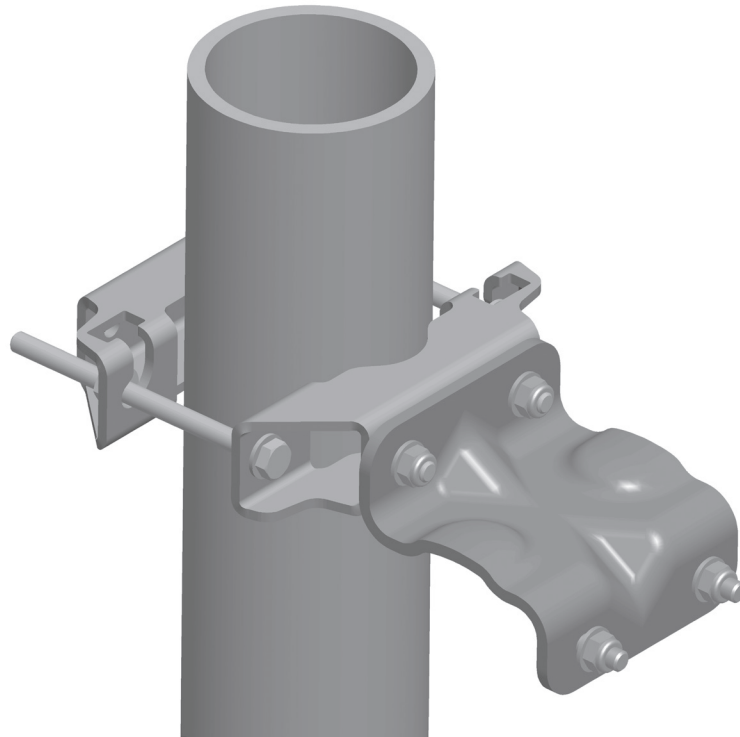


**1) Attention!**  
Do not remove the self-locking nut.  
For the azimuth adjustment range loosen only the self-locking nut (one or two rotations) and afterwards tighten it with a torque  $M_A = 70 \text{ Nm}$ .



	A	B	C	D	E	F
mm	200	37.5	54.5	150	110	$\pm 30^\circ$
inches	7.9	1.48	2.15	5.9	4.3	

Please note: Ericsson does not recommend to use counter nuts.



# Offset L/M/H

85010060, 85010061

- Increases distance to pole by 90 mm | 3.6 inches



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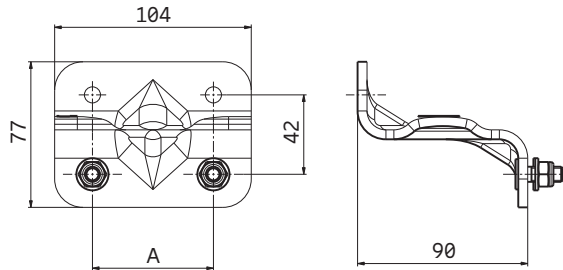


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<b>Product No.</b>	<b>85010060</b>		<b>85010061</b>
Wind load category	L/M		H
Quantity needed per antenna	2x spacer		
Material: – spacer – nuts	Hot-dip galvanized steel Stainless steel		
Dimension "A"	mm   in	64   2.5	72   2.8
Weight	kg   lb	0.7   1.5	
Scope of supply	1x spacer, Fitting accessories		

Recommended torque for M8 bolted connections: 20 Nm

Please use the offset in combination with clamps corresponding to the pole diameter.



#### Mounting accessories (order separately)

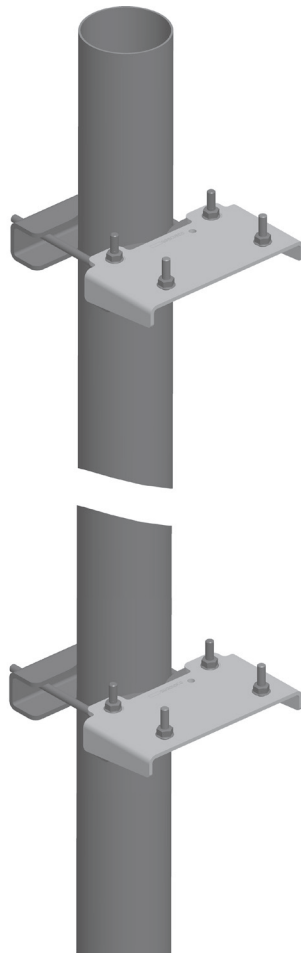
Possible clamps in combination with:

**85010060**

Product No.	Description	Mast diameter	Weight approx.	Units per antenna
731651	1 clamp	28 – 64 mm	0.8 kg	2
738546	1 clamp	42 – 115 mm	1.1 kg	2
85010002	1 clamp	110 – 220 mm	2.9 kg	2
85010003	1 clamp	210 – 380 mm	4.8 kg	2
742263	2x 3 sector clamp	88.9 mm	4.0 kg	1
742317	2x 3 sector clamp	88.9 mm	4.0 kg	1

**85010061**

Product No.	Description	Mast diameter	Weight approx.	Units per antenna
738546	1 clamp	42 – 115 mm	1.1 kg	2
85010002	1 clamp	110 – 220 mm	2.9 kg	2
85010003	1 clamp	210 – 380 mm	4.8 kg	2



# Offset XM

SXA 216 3025/1

- Increases distance to pole by 60 mm | 2.4 inches



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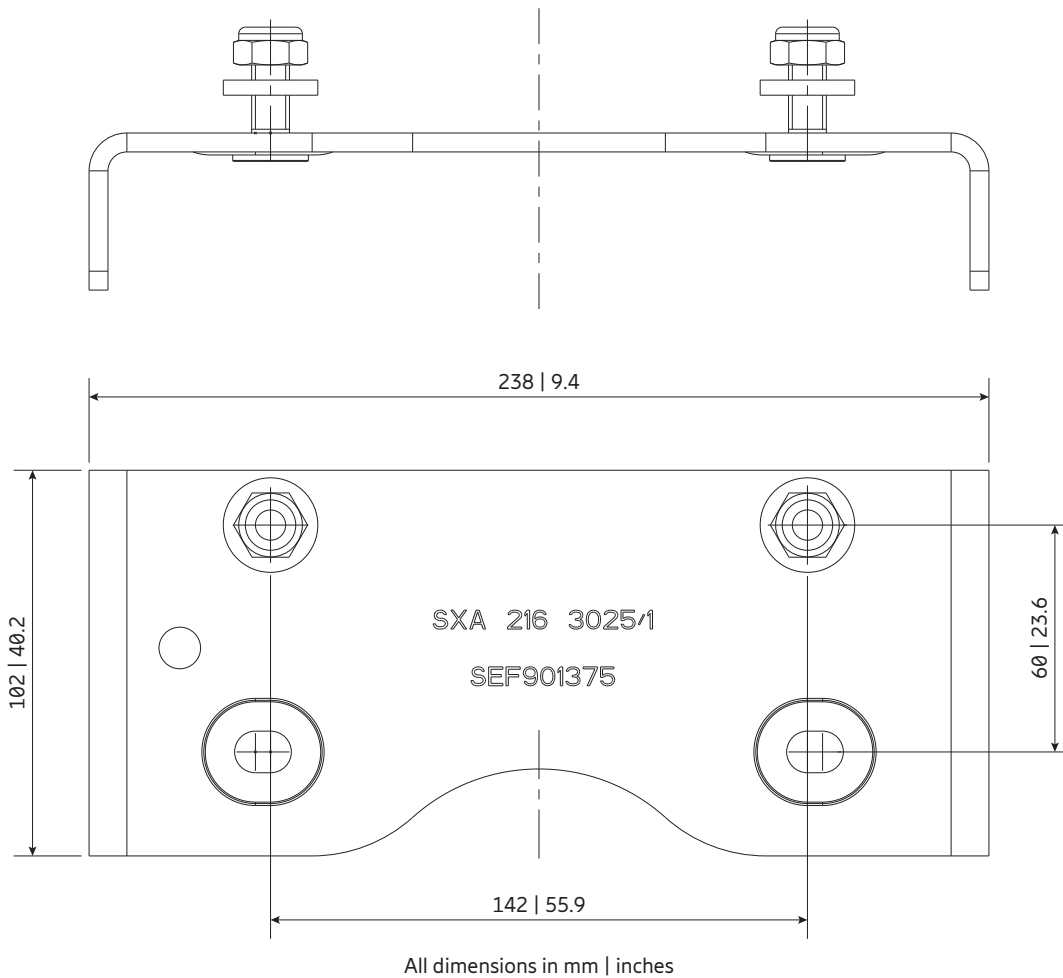
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<b>Product No.</b>		<b>SXA 216 3025/1</b>
Wind load category		XM (X-Medium)
Quantity needed per antenna		1x spacer kit
Material: – spacer – nuts and washers		Hot-dip galvanized steel Stainless steel
Weight	kg	2.45
	lb	5.40
Scope of supply		2x spacer, Fitting accessories

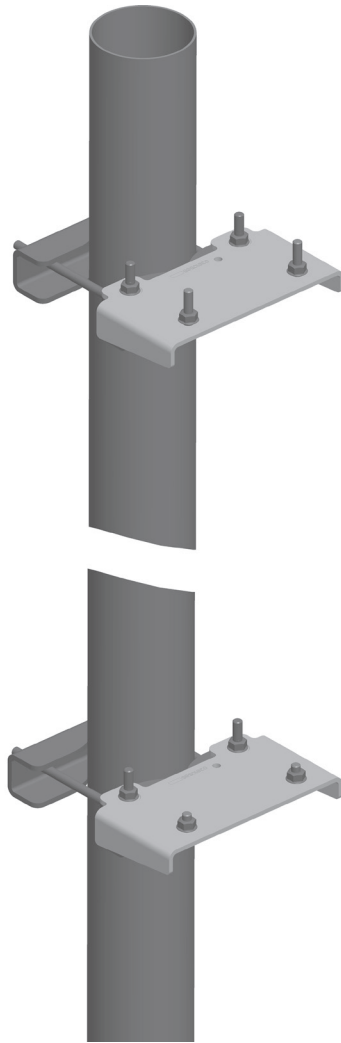
Recommended torque for M10 bolted connections: 40 Nm

Please use the offset in combination with clamps corresponding to the pole diameter.



#### Mounting accessories (order separately)

Product No.	Description	Remarks mm   inches	Weight approx. kg   lb	Units per antenna
85010111	Clamp XM	Mast diameter: 55–115   2.2–4.5	4.5   9.9	1 kit
85010097	Clamps XH	Mast diameter: 110–220   4.3–8.7	9.4   20.7	1 kit
85010101	Clamps XH	Mast diameter: 280–380   11.0–15.0	14.6   32.2	1 kit
85010102	3 Sector Clamp XH	Mast diameter: 114.3   4.5	14.5   31.9	1 kit



# Offset XH

85010104

- Increases distance to pole by 90 mm | 3.6 inches



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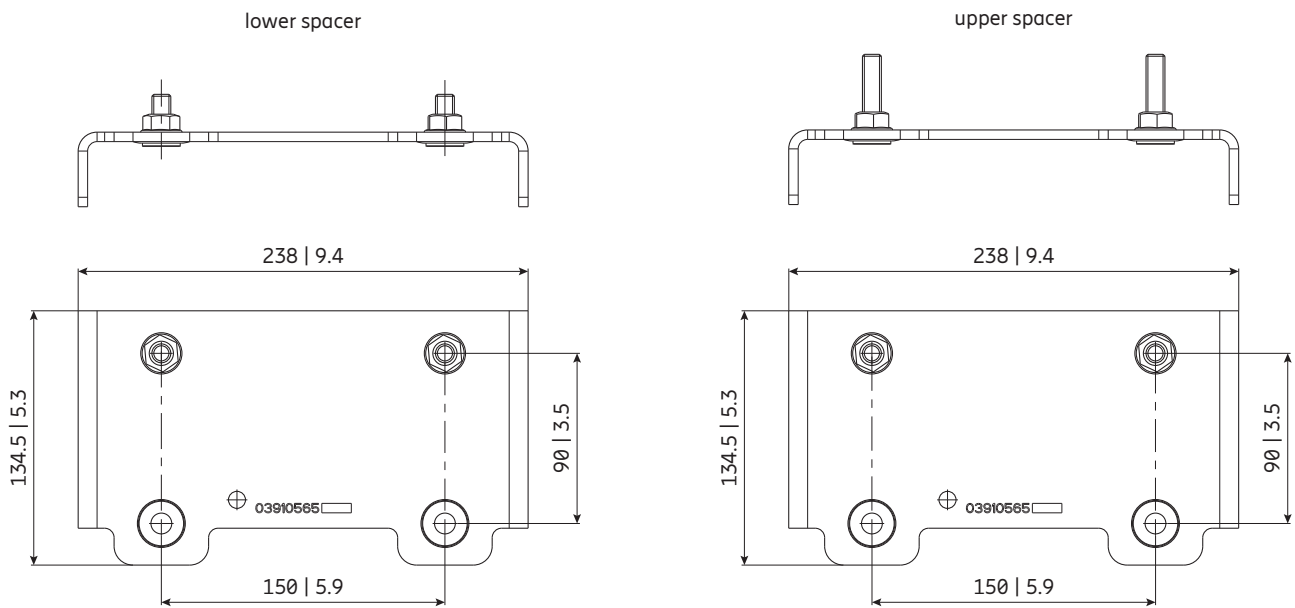


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<b>Product No.</b>		<b>85010104</b>
Wind load category		XH
Quantity needed per antenna		1x spacer kit
Material: – spacer – nuts		Hot-dip galvanized steel Hot-dip galvanized steel
Weight	kg   lb	2.88   6.35
Scope of supply		2x spacer, Fitting accessories

Recommended torque for M10 bolted connections: 40 Nm

Please use the offset in combination with clamps corresponding to the pole diameter.



All dimensions in mm | inches

#### Mounting accessories (order separately)

Product No.	Description	Remarks mm   inches	Weight kg   lb	Units per antenna
85010096	Clamp XH	Mast diameter: 55–115   2.2–4.5	5.0   11.0	1 kit
85010097	Clamp XH	Mast diameter: 110–220   4.3–8.7	9.4   20.7	1 kit
85010101	Clamp XH	Mast diameter: 280–380   11.0–15.0	14.6   32.2	1 kit
85010102	3 Sector Clamp XH	Mast diameter: 114.3   4.5	14.5   31.9	1 kit



# 2-Panel Mounting Kit L/M, H

85010075

- For antennas with a maximum panel width of 325 mm | 12.8 inches



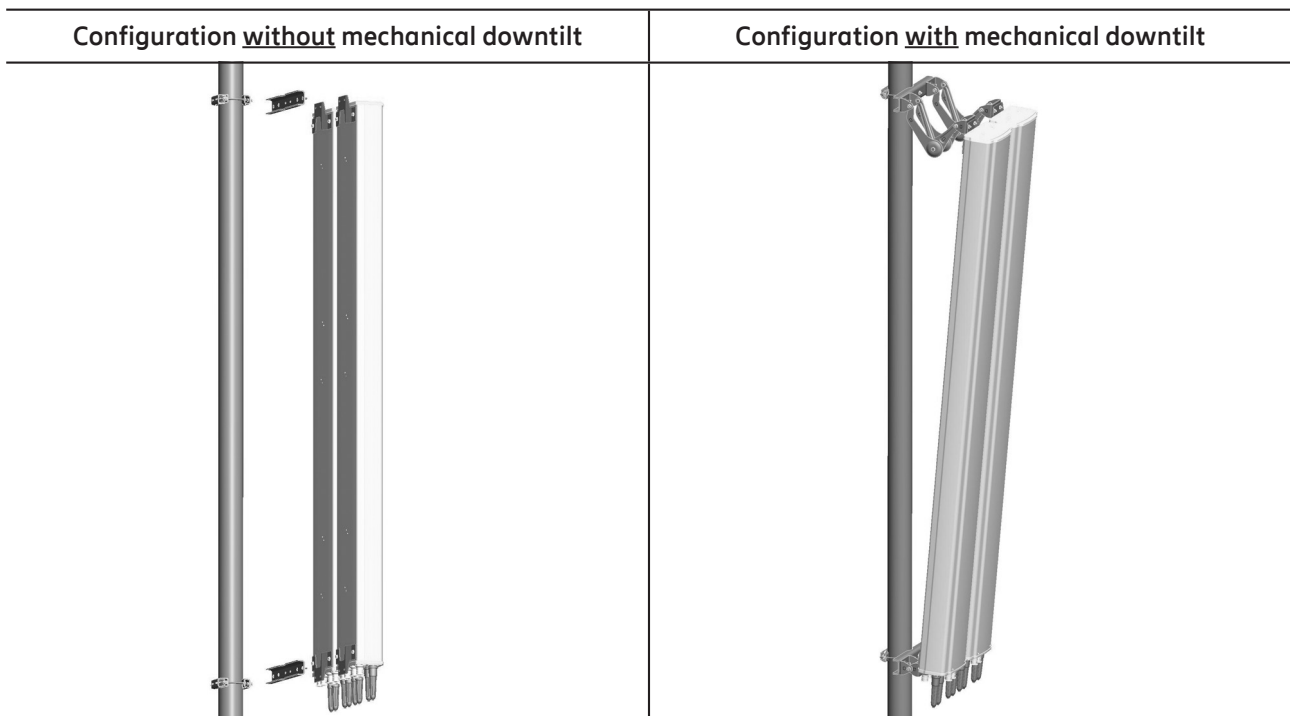
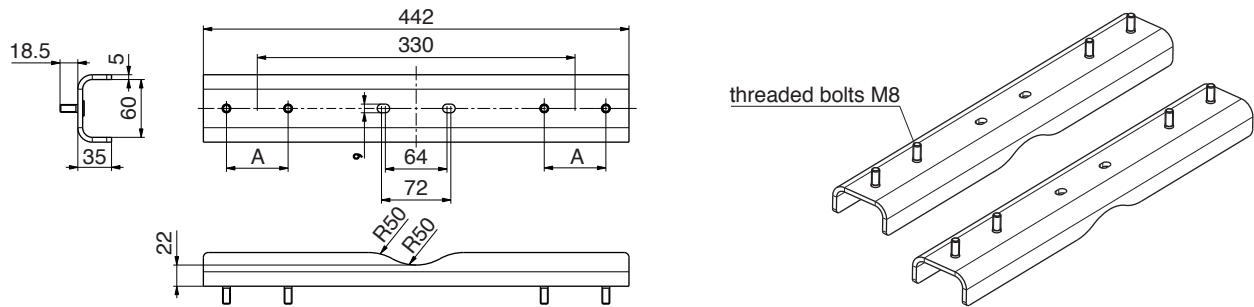
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<b>Product No.</b>		<b>85010075</b>	
<b>Contents</b>		2 x brackets and mounting accessories	
<b>Material:</b> – Clamp and screws – Nuts and washers		Hot-dip galvanized steel Stainless steel	
<b>Weight</b>	kg   lb	3.3   7.3	
<b>Hole distance "A"</b>	mm   in	64   2.5	
<b>Windload category (Antenna)</b>		L/M	

Recommended torque for M8 bolted connections: 20 Nm



Mounting Accessories (order separately)

Clamps (only the listed clamps are allowed!)

Product No.	Description	Remarks mm   in	Weight kg   lb	Units per mounting kit
85010002	Clamp L/M/H	Mast diameter: 110–220   4.3–8.7	2.7   6.0	2
85010003	Clamp L/M/H	Mast diameter: 210–380   8.3–15.0	4.8   10.6	2
85010060	Offset L/M		1.3   2.9	4
85010061	Offset H		1.3   2.9	4

If a downtilt kit is used, please choose the fitting one from the antenna datasheet.



# 2-Panel Mounting Kit H

85010087

- For antennas with a maximum panel width of 377 mm | 14.8 inches



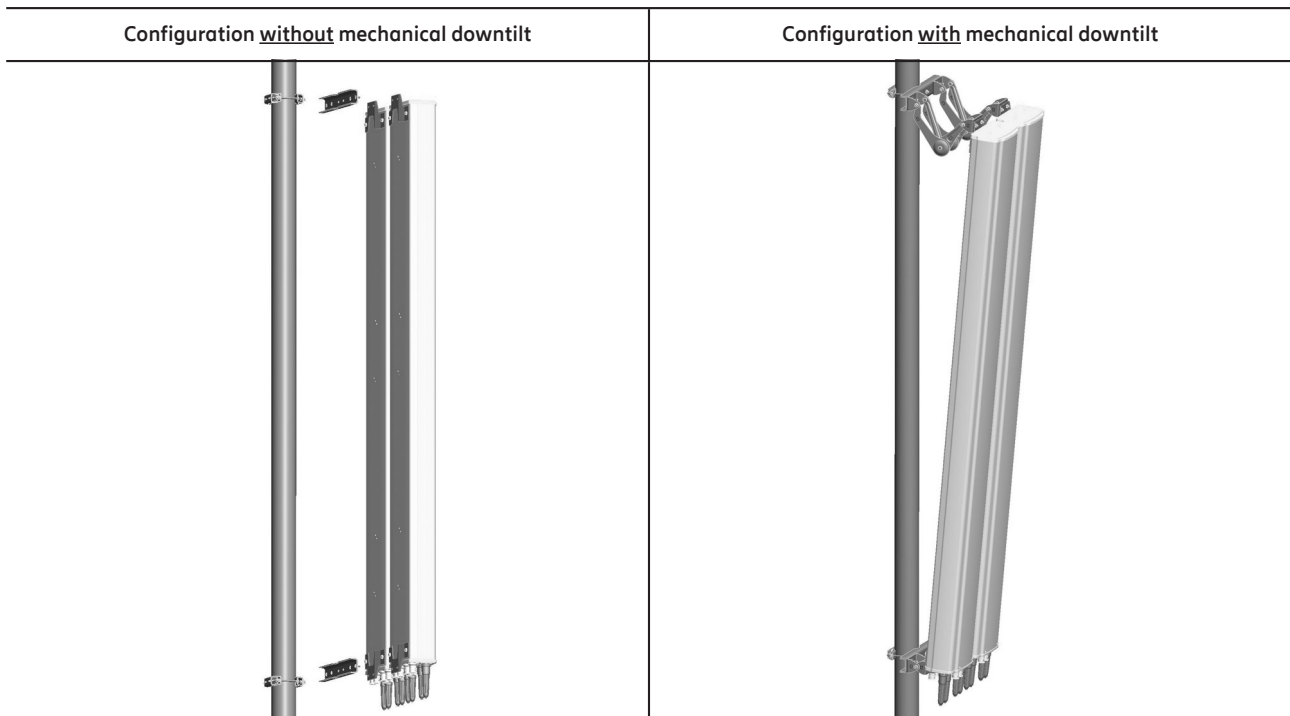
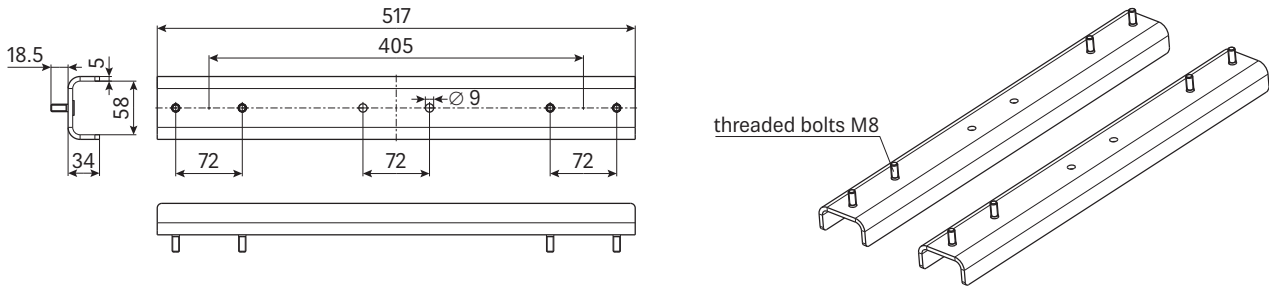
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<b>Product No.</b>		<b>85010087</b>
<b>Contents</b>		2x brackets and mounting accessories
<b>Material:</b> – Clamp and screws – Nuts and washers		Hot-dip galvanized steel Stainless steel
<b>Weight</b>	kg   lb	3.3   7.3
<b>Hole distance</b>	mm   in	72   2.8
<b>Windload category (Antenna)</b>		H

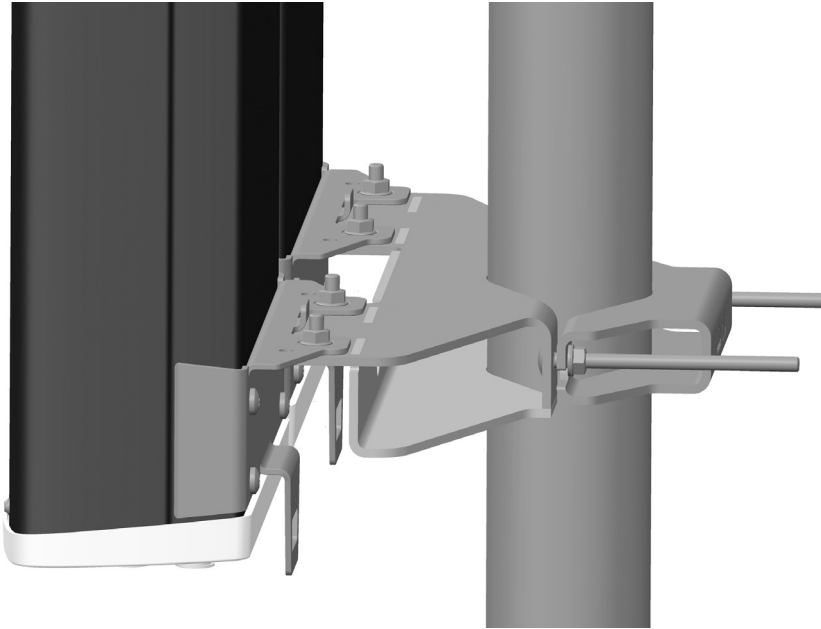
Recommended torque for M8 bolted connections: 20 Nm



**Mounting Accessories (order separately)**  
Clamps (only the listed clamps are allowed!)

Product No.	Description	Remarks mm   in	Weight kg   lb	Units per mounting kit
85010002	Clamp L/M/H	Mast diameter: 110–220   4.3–8.7	2.7   6.0	2
85010003	Clamp L/M/H	Mast diameter: 210–380   8.3–15.0	4.8   10.6	2
85010009	Downtilt Kit H		4.3   9.5	2

The downtilt kit can not be used in combination with any offset (85010060 and 85010061).



# 2-Panel Mounting Kit XH

85010103

- For antennas with a maximum panel width of 378 mm | 14.9 inches



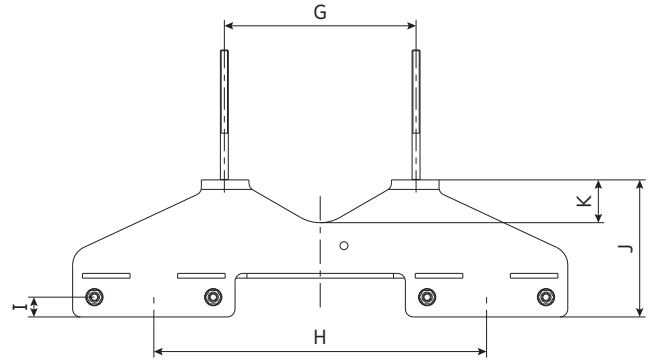
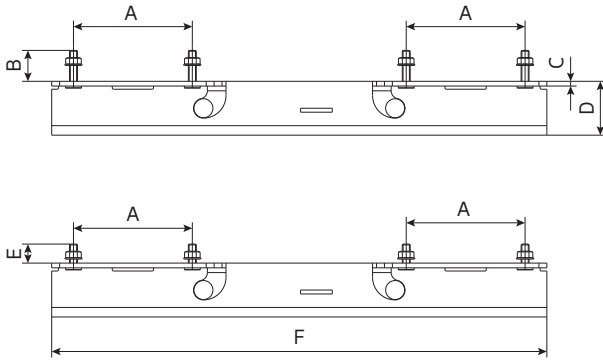
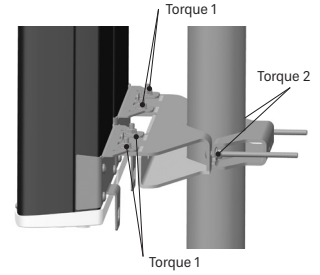
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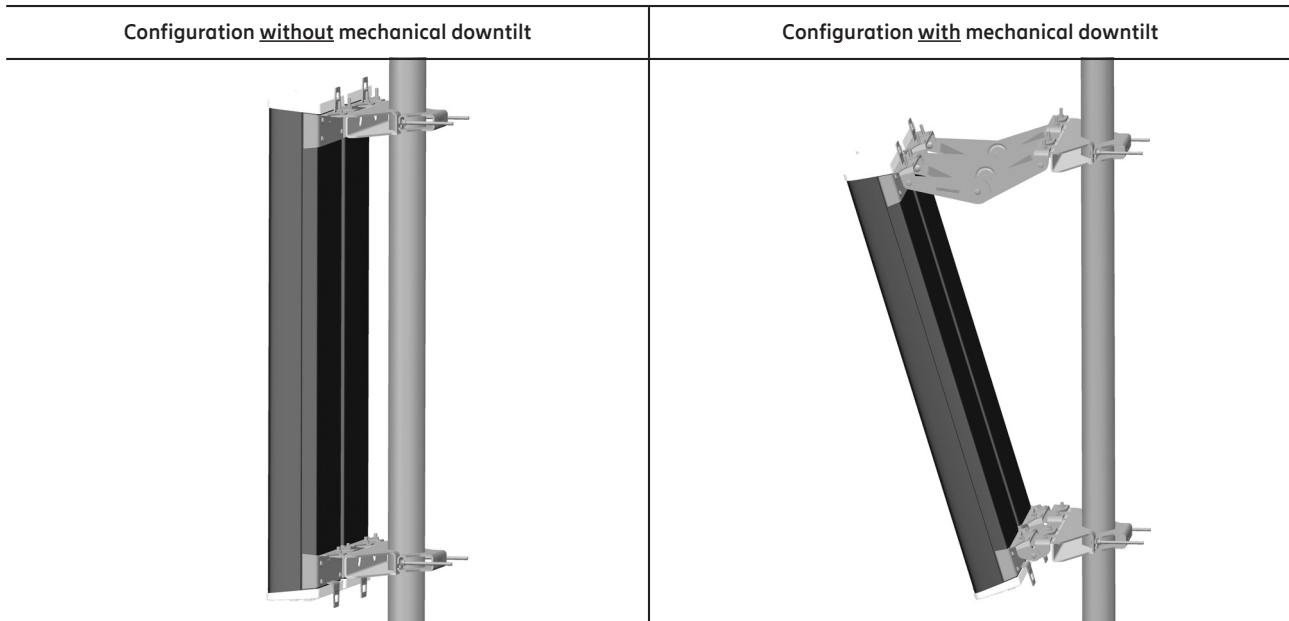


<b>Product No.</b>		<b>85010103</b>	
<b>Contents</b>		2x clamps and mounting accessories	
<b>Material:</b> – Clamp and screws – Nuts and washers		Hot-dip galvanized steel Stainless steel	
<b>Weight</b>	kg lb	20.5 45.2	
<b>Suitable for mast ø</b>	mm inches	110 – 220 4.3 – 8.7	
<b>Torque 1</b>	Nm	40	
<b>Torque 2</b>		25	
<b>Windload category (Antenna)</b>		XH	



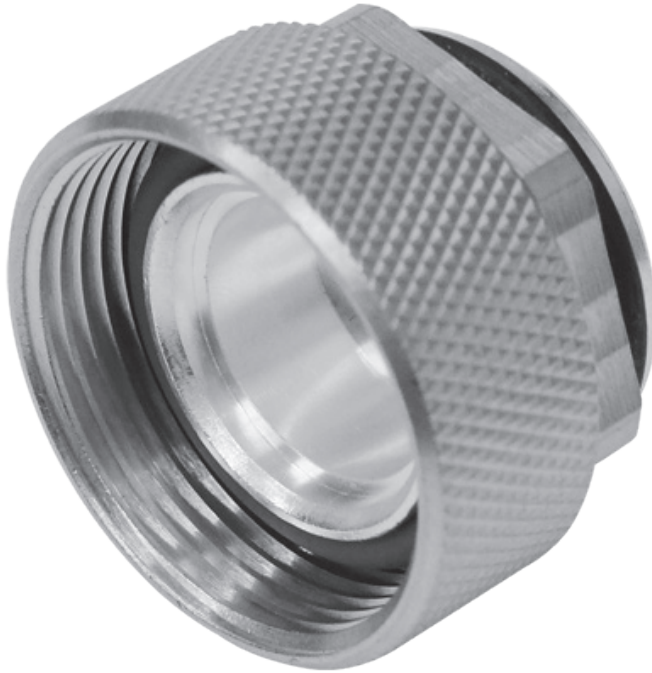
Product No.		A	B	C	D	E	F	G	H	I	J	K
<b>85010103</b>	mm	150	39	6	68	24	625	242	420	25	173	54
	inches	5.91	1.54	0.24	2.68	0.84	24.61	9.53	16.54	0.98	6.81	2.13

Please note: Ericsson does not recommend to use counter nuts.



Mounting accessories (order separately)

Product No.	Description	Weight kg   lb	Units per mounting kit
85010099	Downtilt Kit XH	10.6   23.4	2
85010104	Offset XH	2.9   6.4	4



# Protection Cap

78211293

- Protection cap IP68 for 7-16 female connectors



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Product No.		78211293
Material		Brass, silver -plated
Application		Indoor or outdoor (IP68)
Temperature range	°C   °F	-65 ... +165   -85 ... +329
Weight	g   lb	60   0.132
Diameter	mm   in	32   1.26
Height	mm   in	22   0.87



# Protection Cap

78211297

- Protection cap IP 68 for 4.3-10 female connectors



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Product No.		78211297
Material		metal
Application		Indoor or outdoor (IP 68)
Temperature range	°C   °F	-55 ... +90   -67 ... +194
Weight	g   lb	27.9   0.062
Diameter	mm   in	24.8   0.97
Height	mm   in	17.3   0.68
Max. torque tightening	Nm	5



# Protection Cap for RET Spindle

85010004

- Packing unit: 5 pieces



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## List of all products

The products are listed by product number in numerical order.

Product No.	Page	Product No.	Page	Product No.	Page	Product No.	Page
1/TSR48421/1000	858	78210628V43	602	78211330V43	710	78211473	552
1/TSR48421/10M	858	78210628V44	602	78211340	678	78211476	555
1/TSR48421/15M	858	78210660	579	78211341	678	78211478	558
1/TSR48421/500	858	78210660V43	585	78211348	681	78211478V01	558
1/TSR48422/500	858	78210661	579	78211348V01	681	78211530	605
1/TSR48421/2000	858	78210661V43	585	78211400V43	664	78211531	605
1/TSR48421/3000	858	78210662	579	78211401V43	664	78211532	605
1/TSR48421/5000	858	78210662V43	585	78211402V43	664	78211533	605
1/TSR48422/1000	858	78210663	579	78211403V43	664	78211536	608
1/TSR48422/15M	858	78210663V43	585	78211404V43	664	78211538	611
1/TSR48422/2000	858	78210669	582	78211405V43	664	78211538V01	611
1/TSR48422/3000	858	78210669V43	588	78211408V43	667	78211560	643
731651	866	78210850V01	789	78211408V44	667	78211561	643
732327	878	78210970V43	561	78211430V43	544	78211562	643
737978	880	78210971V43	561	78211431V43	544	78211563	643
738546	866	78210972V43	561	78211438V43	547	78211568	646
742192V02	492	78210973V43	561	78211438V44	547	78211568V01	646
78210430V43	692	78210974V43	561	78211450	637	78211570	649
78210473	818	78210975V43	561	78211451	637	78211571	649
78210475	821	78210978V43	564	78211452	637	78211574	649
78210484	813	78210978V44	564	78211453	637	78211575	649
78210506	775	78210979V43	567	78211458	640	78211578	652
78210507	778	78211000	791	78211458V01	640	78211578V01	652
78210526	783	78211055	793	78211460	570	78211580	672
78210527	781	78211056	793	78211461	570	78211581	672
78210536	784	78211107V02	716	78211462	570	78211584	672
78210583V43	699	78211180V43	534	78211463	570	78211585	672
78210587V02	738	78211181V43	534	78211466	573	78211588	675
78210620V43	596	78211275V43	689	78211468	576	78211588V01	675
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# Phase-out information



We continuously check the validity of our portfolio and compare it with the needs of our customers. Products that are no longer needed are phased out. We want to always provide you with the latest status.

Therefore, you will find the corresponding information on the product page in [Portfolio & Commerce](#).

On the details page, a discontinuation is displayed in the status. In addition, detailed information can be found in the "Downloads" section.

And as always: Your sales contact will inform you first and discuss alternatives.

For further questions please reach out to your direct sales contact or [here](#).

## Antenna 2300 0L 4M 1.5m

80010728

8-Port Antenna 4HB 1.5m 65°, 2x1710-2170 MHz, 17.5dBi; 2x2490-2690 MHz, 18dBi

STATUS ⓘ

Orderable, phase out ongoing

CHOOSE QUANTITY

1

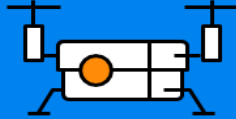
Specifications

Downloads

TITLE	DOWNLOAD	DATE	REVISION	SIZE(MB)
<b>Antenna Pattern</b>				
Pattern file 80010728	ZIP	Nov 10, 2020	A	1.35
Pattern file 80010728 planet	ZIP	Sep 4, 2020	A	1.40
Pattern file 80010728 tems	ZIP	Sep 17, 2020	A	1.19
<b>Commercial Data Sheet</b>				
Datasheet Antenna 80010728 <span style="color: green; font-weight: bold;">Updated</span>	PDF	Oct 27, 2022	B	0.51
<b>Product Information</b>				
2022-06 Product phase-outs until June 2023	PDF	Jun 30, 2022	B	0.07

# Ease antenna installation

Availability of required information during installation and maintenance of our products is an essential issue.



We want to ensure you have it immediately and easily available on site.

That is why we provide ALL related product information via just one QR-code. Whether on the label of your next Ericsson Antenna System product or right here in the catalog – just one scan away\*.

\*Recommended is the current version of the Ericsson Product Information Assistant from your Play Store or Apple Store.



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Catalog 2023 Rev. C  
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