

2-Port Antenna B1

Frequency Range 1710-2200

Dual Polarization X

HPBW 65°

Adjust. Electr. DT 0°-10°

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



**2-Port Antenna 1710-2200 65° 18dBi 0°-10°T**

Type No.		<b>742215v01</b>	
Highband		<b>B1</b>	
		<span style="border: 1px solid black; padding: 2px;">1710-2200</span>	
Frequency Range	MHz	1710 – 1880	1920 – 2200
Gain at mid Tilt	dBi	17.5	18.2
Gain over all Tilts	dBi	17.5 ± 0.4	18.1 ± 0.3
<b>Horizontal Pattern:</b>			
Azimuth Beamwidth	°	68 ± 2.0	63 ± 3.4
Front-to-Back Ratio, Total Power, ± 30°	dB	> 26	> 25
Cross Polar Discrimination at Boresight	dB	> 25	> 28
Cross Polar Discrimination over Sector	dB	> 13.0	> 10.5
Azimuth Beam Squint	°	0.5 ± 1.5	0.5 ± 1.2
Azimuth Beam Port-to-Port Tracking	dB	< 1.0	< 1.0
<b>Vertical Pattern:</b>			
Elevation Beamwidth	°	7.1 ± 0.3	6.4 ± 0.4
Electrical Downtilt continuously adjustable	°	0.0 – 10.0	
Tilt Accuracy	°	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 21	> 20
Cross Polar Isolation	dB	> 30	
Max. Effective Power per Port	W	250 (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	$^{\circ}$	+45, -45
Max. Effective Power for the Antenna	W	500 (at 50 °C ambient temperature)

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

Mechanical specifications		
Input	2 x 7-16 female	
Connector Position	bottom	
Adjustment Mechanism	1x, Position bottom continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h)	N   lbf	Frontal: 225   51 Maximal: 250   56
Max. Wind Velocity	km/h mph	200 124
Height / Width / Depth	mm inches	1314 / 155 / 70 51.7 / 6.1 / 2.8
Category of Mounting Hardware	L (Light)	
Weight	kg lb	6.5 / 8.7 (clamps incl.) 14.3 / 19.2 (clamps incl.)
Packing Size	mm inches	1595 / 172 / 92 62.8 / 6.8 / 3.6
Scope of Supply	Panel 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	Weight approx. kg   lb	Units per antenna
731651	1 clamp	Mast diameter: 28 – 60   1.1 – 2.4	0.8   1.8	2
85010002	1 clamp	Mast diameter: 110 – 220   4.3 – 8.7	2.7   6.0	2
85010003	1 clamp	Mast diameter: 210 – 380   8.3 – 15.0	4.8   10.6	2
732327	1 downtilt kit	Downtilt angle: 0° – 10°	1.0   2.2	1

## Accessories (included in the scope of supply)

738546	1 clamp	Mast diameter: 42 – 115   1.7 – 4.5	1.1   2.4	2
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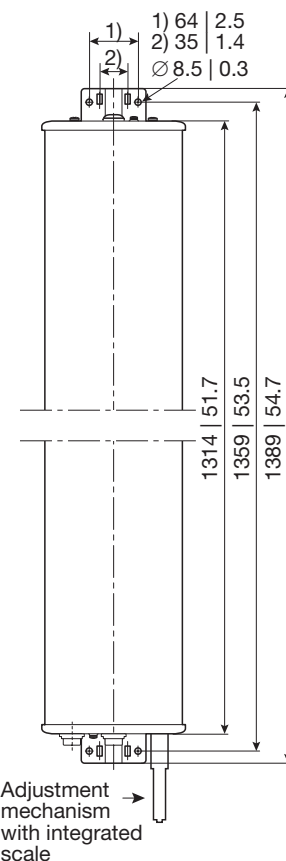
For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit.  
Wall mounting: No additional mounting kit needed.

### Material:

**Reflector screen:** Aluminum. **Radiator:** Tin-plated zinc.  
**Flat fiberglass radome:** The max. radome depth is only 70 mm | 2.8 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:

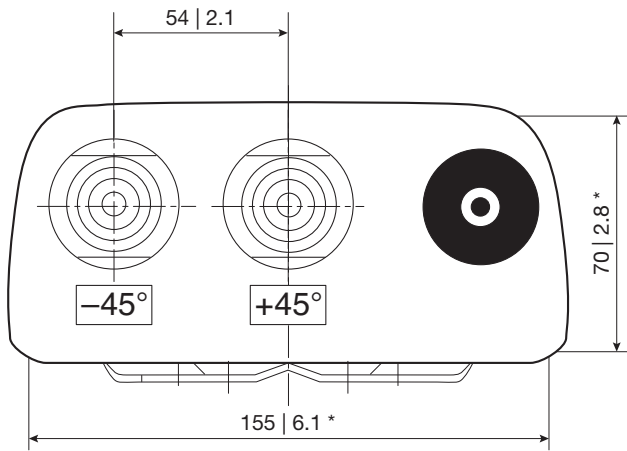
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.



All dimensions in mm | inches

936.4875/e ngmn 04.18.02.01 Subject to alteration.

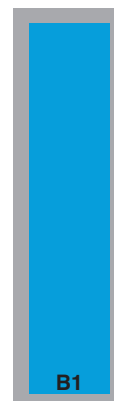
Layout of interface:



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

Correlation Table

Frequency range	Array	Connector
1710–2200 MHz	B1	1–2



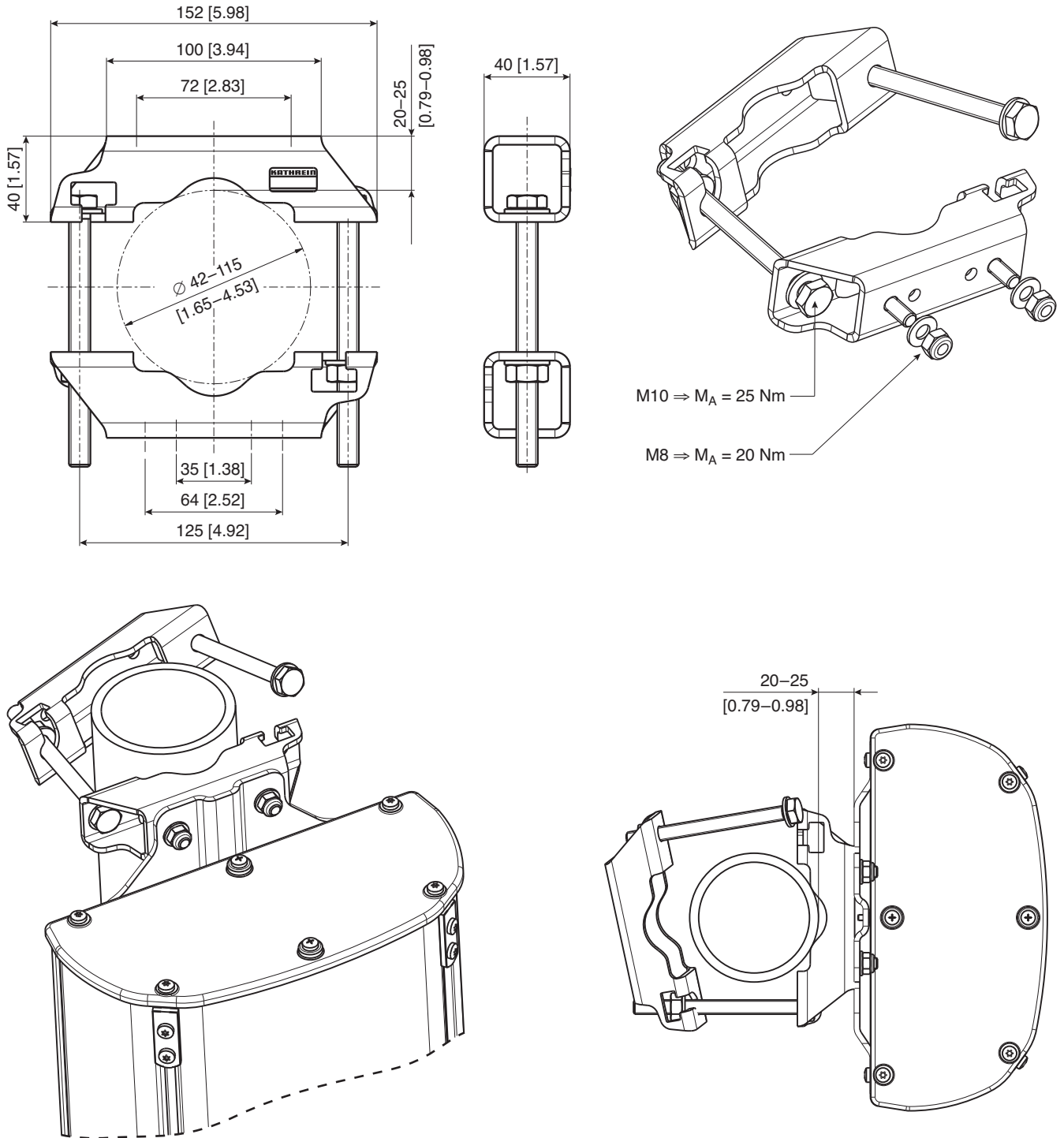
936.4875/e ngmn 04.18.02.01 Subject to alteration.

# Mounting Hardware

## Clamp Included in the Scope of Supply

**KATHREIN**

Suitable for mast diameter	(mm) [inches]	42 – 115 [1.65 – 4.53]
Antenna – mast distance	(mm) [inches]	20 – 25 [0.79 – 0.98]
Material of clamp and screws		Hot-dip galvanized steel / stainless steel
Weight	(kg) [lb]	1.1 [2.43]



936.3920/c Subject to alteration.

**Please note: Kathrein does not recommend to use counter nuts.  
The additional nuts supplied are only meant as spares.**

All dimensions in mm and [inches]

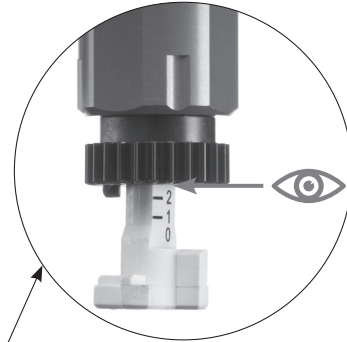
## Description of the adjustment mechanism (protective cap removed):



- ① Twist protection.
- ② Downtilt spindle with integrated scale.

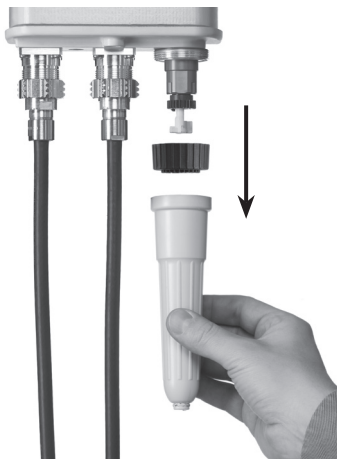


- ① Thread for fixing the protective cap or the RCU (Remote Control Unit).
- ② Gearwheel for RCU power drive.

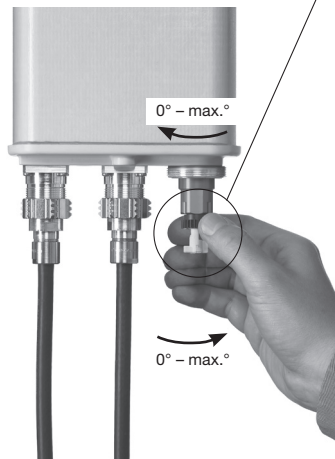


To set the downtilt angle exactly, you must look horizontally at the scale. The lower edge of the gear-wheel must be used for alignment.

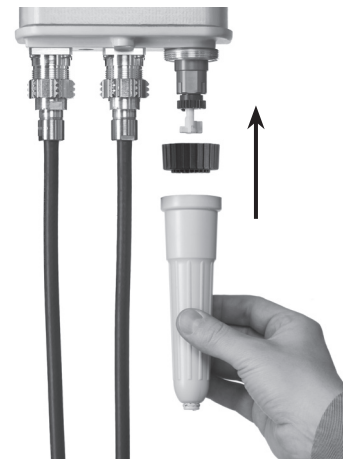
## Manual adjustment procedure:



Remove the protective cap and the twist protection completely.



Set downtilt angle by rotating the gearwheel.



Screw on the twist protection and the protective cap again.

## Optional: RCU (Remote Control Unit) for remote-controlled downtilt adjustment:

936.4037/a Subject to alteration.



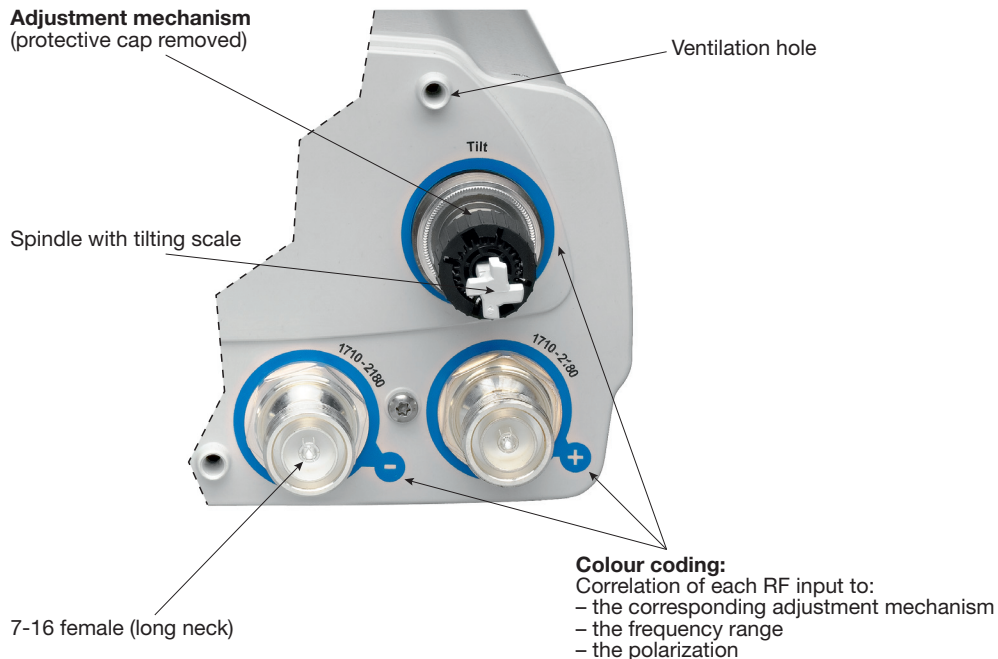
For a description of RCU installation please refer to the respective data sheet.

# General Instructions for Feederline and RCU Installation for Antennas

**KATHREIN**

**Please note:** In order not to damage the interfaces, please make sure that only the right tools are used. Tighten the feederline connector interfaces solely by using a common torque-wrench with a suitable wrench width.

## Description of bottom end cap (exemplary picture):



## Installation of the feederline connector and RCU (optional):

In order to protect the adjustment mechanism, the protective caps have to be attached during feederline installation!



Carefully place the connector and fix the nut using a torque-wrench (according to the manufacturers guidelines).

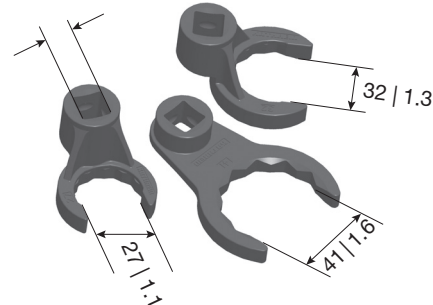


After feederline installation, the optional remote control units (RCUs) can be mounted.

### Kathrein installation set: Type No. 85010077 Set has to be ordered separately!

Set consists of three spanners of divers width 27, 32 and 41 mm | 1.1, 1.3 and 1.6 inches

1/2" square actuation  
according to  
DIN 3120 Form C



All dimensions in mm | inches

These tools are suitable for 7-16 connectors with a wrench size of 27 or 32 mm | 1.1 or 1.3 inches, and the RCU attachment nut with a wrench size of 41 mm | 1.6 inches.

Tighten nuts within a torque range of 25 – 33 Nm depending on connector manufacturers' specifications, respectively the RCU nut with a torque range of 15 – 18 Nm.

## Environmental conditions:

Kathrein 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 with regard to the following items:

- Low temperature: –55 °C
- High temperature (dry): +60 °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.

## Environmental tests:

Kathrein antennas fulfil the stated specifications after completion of the environmental tests as defined in ETS 300 019-2-4. The homogenous design of Kathrein's antenna families uses identical modules and materials.

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.

## Please note:

**As a result of more stringent legal regulations and judgements regarding product liability, we are obliged to point out certain risks that may arise when products are used under extraordinary operating conditions.**

The mechanical design is based on the environmental conditions as stipulated in ETS 300 019-1-4. Wind loads are calculated according to DIN 1055-4.

The antennas may be used at locations where the anticipated peak wind velocity or gust wind speed lies within the maximum wind speed listed in the data sheet. We warrant the mechanical safety and electrical functionality under such conditions. The wind speeds are defined in accordance with the DIN, EN or TIA standards. This warranty makes allowance for the partial safety factors specified in those standards. Extraordinary operating conditions, such as heavy icing or exceptional dynamic stress (e.g. strain caused by oscillating support structures), may result in the breakage of an antenna or even cause it to fall to the ground. These facts must be considered during the site planning process.

**The details given in our data sheets have to be followed carefully when installing the antennas and accessories.**

**Site planning and installation must be carried out by qualified and experienced staff. All relevant national safety regulations must be upheld and respected. Incorrect site planning, faulty installation, as well as interfering surroundings on site, may lead to deviations in the electrical parameters compared to those specified in the respective data sheets.**

**The connectors on this product are only suitable for connecting to the compatible counterpart. Please ensure that the connected cable has been fitted with a connector of the same standard, otherwise damage may occur.**

**The tilt values will be set to any arbitrary value in the given tilt range. These values are independent from the frequency band or antenna type and can vary between antennas and bands.**

## EU-RED

Hereby, Kathrein Werke KG declares that the radio equipment is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: <http://www.kathrein.com>



Our quality assurance system and our environmental management system apply to the entire company and are certified by TÜV according to EN ISO 9001 and EN ISO 14001.



Our products are compliant to the EU Directive RoHS as well as to other environmentally relevant regulations (e.g. REACH).