

Rosenheim, 01.05.2018

**KATHREIN-Werke KG ist jetzt KATHREIN SE  
KATHREIN-Werke KG is now KATHREIN SE**

Zum 1. Mai 2018 ist die KATHREIN-Werke KG auf die KATHREIN SE,  
einer Europäischen Aktiengesellschaft (Societas Europaea),  
übergegangen.

Die neuen Firmendaten lauten seither wie folgt:

**KATHREIN SE**  
**Anton-Kathrein-Str. 1-3**  
**83022 Rosenheim, Deutschland**  
**Steuer-Nr.: 156/117/30745**  
**UST-Ident-Nr.: DE 131 558 540**  
**Registergericht: Traunstein, HRB 24848**

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On 1<sup>st</sup> May 2018, KATHREIN-Werke KG has been transferred  
to KATHREIN SE, a European stock corporation (Societas Europaea).

Since then the company data is as follows:

**KATHREIN SE**  
**Anton-Kathrein-Str. 1-3**  
**83022 Rosenheim, Deutschland**  
**Tax ID No.: 156/117/30745**  
**VAT Reg. No.: DE 131 558 540**  
**Commercial Register: Traunstein, HRB 24848**

**KATHREIN SE**

Anton-Kathrein-Straße 1-3  
83022 Rosenheim  
Germany  
Phone: +49 8031 184-0  
Fax: +49 8031 184-306  
www.kathrein.com

Executive Board:  
Anton Kathrein (CEO),  
Joachim Döring, Elmar Geißinger,  
Jürgen Walter, Hans-Joachim Ziems  
Supervisory Board:  
Dr. Michael F. Keppel (Chairman)

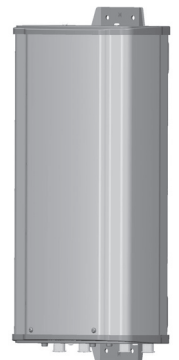
VAT Reg. No.: DE 131 558 540  
Tax ID No.: 156/117/30745  
WEEE Reg. No.: DE 38438502  
GLN: 40 21121 00000 3  
Registered Office: Rosenheim, DE  
Commercial Register: Traunstein, HRB 24848

Deutsche Bank AG  
IBAN: DE54 7007 0010 0833 7701 00  
BIC: DEUTDEMMXXX

<b>4-Port Antenna</b>	<b>R1</b>	<b>Y1</b>
<b>Frequency Range</b>	<b>698-960</b>	<b>1695-2690</b>
<b>Dual Polarization</b>	<b>X</b>	<b>X</b>
<b>HPBW</b>	<b>65°</b>	<b>65°</b>
<b>Fixed Electr. DT</b>	<b>2°</b>	<b>2°</b>

**4-Port Antenna 698-960/1695-2690 65°/65° 11/13.5dBi 2°/2°T**

<b>Type No.</b>		<b>80010715</b>		
<b>Lowband</b>		<b>R1, connector 1-2</b>		
		<b>698-960</b>		
Frequency range	MHz	698 - 824 MHz	824 - 894 MHz	880 - 960 MHz
Polarization	°	+45, -45	+45, -45	+45, -45
Average gain	dBi	10.5	11	11
<b>Horizontal Pattern:</b>				
Half-power beam width	°	70	68	68
Front-to-back ratio, copolar (180°±30°)	dB	> 23	> 25	> 27
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	34
Electrical tilt	°	2, 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	W	250 (at 50 °C ambient temperature)		
Max. effective power for the antenna		400 (at 50 °C ambient temperature)		



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Highband		Y1, connector 3-4				
		1695-2690				
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	13.5	14.0	14.0	14.0	13.8
<b>Horizontal Pattern:</b>						
Half-power beam width	°	60	55	55	55	65
Front-to-back ratio, copolar (180°±30°)	dB	> 26	> 27	> 27	> 27	> 27
Cross polar ratio						
Main direction	0°	Typically: 25	28	28	22	28
Sector	±60°	> 10	> 10	> 10	> 10	> 10
<b>Vertical Pattern:</b>						
Half-power beam width	°	17.5	16.5	15.5	14.5	12.7
Electrical tilt	°	2, fixed				
Impedance	Ω	50				
VSWR		< 1.55			< 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	W	200 (at 50 °C ambient temperature)				
Max. effective power for the antenna	W	400 (at 50 °C ambient temperature)				
Total power for the antenna	W	800 (at 50 °C ambient temperature)				



## Correlation Table

Frequency range	Array	Connector
698-960 MHz	R1	1-2
1695-2690 MHz	Y1	3-4

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		

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# Accessories

## General Information

### Accessories (order separately if required)

Type No.	Description	Remarks mm   inches	Weight approx. kg   lb	Units per antenna
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
737978	1 downtilt kit	Downtilt angle: 0° – 15°	2.3   5.1	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:

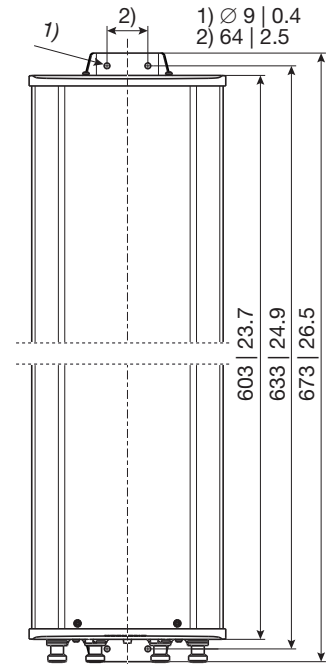
**Reflector screen:** Aluminum.

**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.

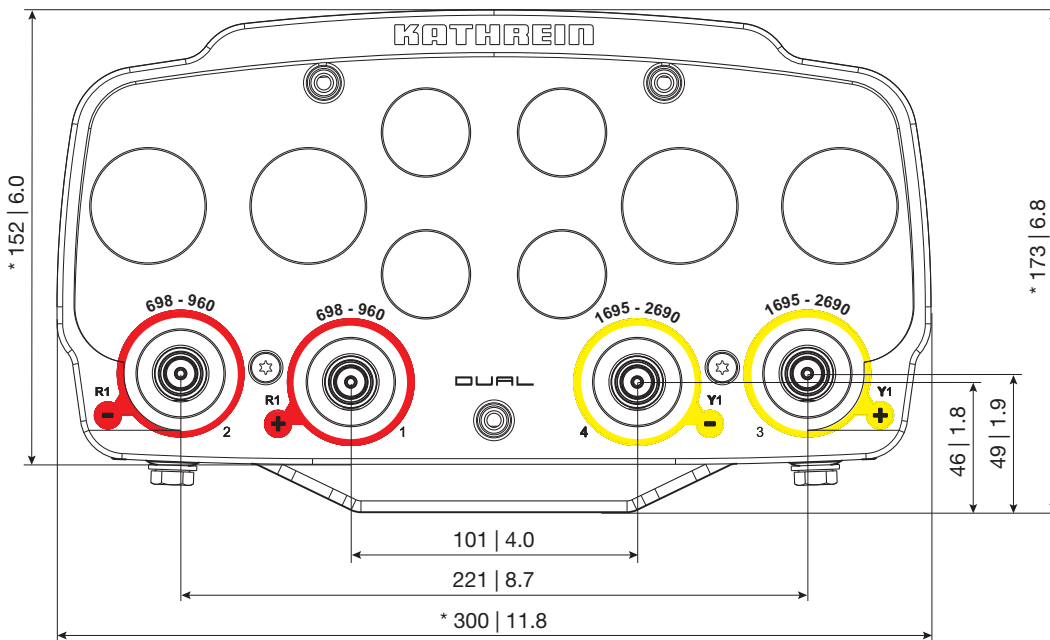
#### Grounding:

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

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## 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.

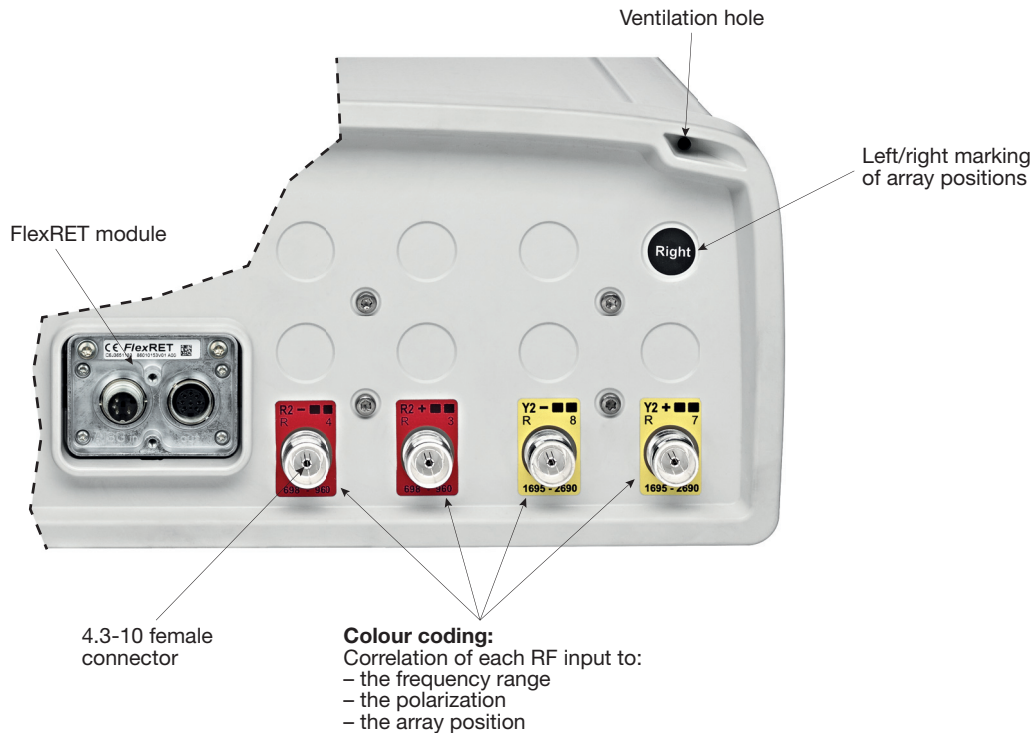


Our products are compliant to the EU Directive RoHS as well as to other environmentally relevant regulations (e.g. REACH).

# General Instructions for Feeder Line Installation for Antennas with 4.3-10 Connectors

**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 feeder line cables:

Tighten the 4.3-10 cable connectors within a torque range of max. 15 Nm depending on connector manufacturers' specifications. The recommended tightening torque of 4.3-10 connectors is 5–8 Nm. For the FlexRET installation, please follow the FlexRET installation instruction on the data sheet.

## Installation of Smart Bias Tees:

If directly mounted on the antenna, the weight of one Smart Bias Tee must not exceed 440 g | 0.96 lb per antenna connector. It is recommended to only use Kathrein Smart Bias Tees with 4.3-10 connector (type no. 78211590, ..., -597).

Hold the Smart Bias Tee housing securely while mounting and tightening the cables. No lateral pressure shall be applied on the Smart Bias Tee when mounting it directly on an antenna neither during the mounting process nor in operational mode.