Multi-band Panel

	698–894	1710–2170
Dual Polarization	X	X
Half-power Beam Width	85°	85°
Integrated replaceable Remote Control Unit	iRCU	iRCU
Adjustable Electrical Downtilt	0°–10°	0°–10°

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AISG Antenna Interface Standards Group
3GPP A GLOBAL INITIATIVE

XXPol Panel iRCU 698–894/1710–2170 85°/85° 15/17.5dBi 0°–10°/0°–10°T

Type No.	80010722V01			
A) Antenna specifications				
Frequency range	698–894		1710–2170	
	698 – 806 MHz	824 – 894 MHz	1710 – 1755 MHz 2110 – 2170 MHz	1850 – 1990 MHz
Polarization	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°
Gain	12.5 dBd / 14.65 dBi	13 dBd / 15.15 dBi	17 dBi	17.5 dBi
Horizontal Pattern:				
Half-power beam width	85°	85°	85°	85°
Front-to-back ratio	Copolar: > 28 dB Average: 31 dB	Copolar: > 27 dB Average: 29 dB	Copolar: > 25 dB Average: 28 dB	Copolar: > 25 dB Average: 28 dB
Cross polar ratio Maindirection 0° Sector ±60°	Typically: > 22 dB > 10 dB, Avg. 16 dB	Typically: > 24 dB > 10 dB, Avg. 16 dB	Typically: > 18 dB > 10 dB, Avg. 12 dB	Typically: > 18 dB > 8 dB, Avg. 12 dB
Tracking, Avg.	0.5 dB		0.5 dB	
Squint	±4.0°		±4.5°	
Vertical Pattern:				
Half-power beam width	12.1°	11°	5.5°	5.5°
Electrical tilt	0°–10°, continuously adjustable		0°–10°, continuously adjustable	
Min. sidelobe suppression for first sidelobe above main beam: Average:	0° ... 5° ... 10° T 16 ... 16 ... 18 dB 17 ... 19 ... 21 dB	0° ... 5° ... 10° T 15 ... 18 ... 18 dB 16 ... 19 ... 22 dB	0° ... 5° ... 10° T 16 ... 16 ... 16 dB 18 ... 18 ... 18 dB	0° ... 5° ... 10° T 16 ... 16 ... 16 dB 17 ... 17 ... 18 dB
Impedance	50 Ω			
VSWR	< 1.5			
Isolation, between ports	Intrasystem: > 30 dB, Intersystem: > 35 dB			
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)			
Max. power per input	500 W (at 50 °C ambient temperature)		300 W (at 50 °C ambient temperature)	

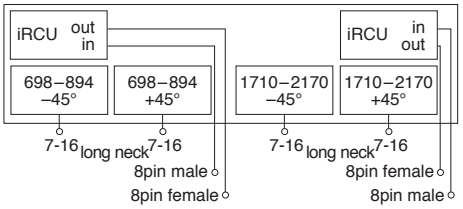
B) iRCU specifications (86010149)*	
Field replaceable without dismantling the antenna	
Logical interface ex factory[1)]	3GPP/AISG 2.0
Protocols	Compliant to AISG 1.1 and 3GPP/AISG 2.0
Hardware interface[2)]	2 x 8pin connector acc. IEC 60130-9; according to AISG: – iRCU in (male): Control / Daisy chain in – iRCU out (female): Daisy chain out
Power supply	10 ... 30 V
Power consumption	< 1 W (stand by) < 8.5 W (motor activated)
Adjustment time (full range)	40 sec.
Adjustement cycles	> 50,000
Certification	CE, FC[3)]

* See mounting instructions and warnings.

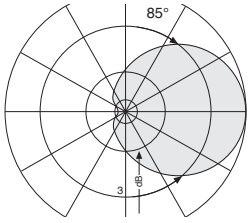
[1)] The protocol of the logical interface can be switched from 3GPP/AISG 2.0 to AISG 1.1 and vice versa with a vendor specific command. Start-up operation of the iRCU 86010149 is possible in a RET system supporting AISG 1.1 or supporting 3GPP/AISG 2.0 after performing a layer 2 reset before address assignment. The protocol can also be changed as follows: *AISG 1.1 to 3GPP:* Enter „3GPP“ into the additional data filed „Installer's ID“ and perform a layer 7 reset or a power reset. *3GPP to AISG 1.1:* Enter „AISG 1“ into the additional data field „Installer's ID“ and perform a layer 2 reset or a power reset. After switching the protocol any other information can be entered into the „Installer's ID“ field.

[2)] The tightning torque for fixing the connector must be 0.5 – 1.0 Nm ('hand-tightened'). The connector should be tightened by hand only!

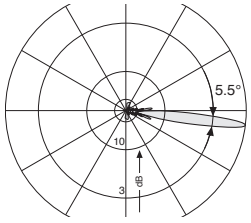
[3)] Tested to comply with FCC Standards. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



698 – 894 MHz: +45°/–45° Polarization

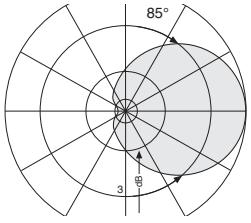


Horizontal Pattern

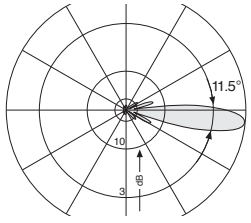


Vertical Pattern
0°–10° electrical downtilt

1710 – 2170 MHz: +45°/–45° Polarization



Horizontal Pattern



Vertical Pattern
0°–10° electrical downtilt

936.4270 Subject to alteration.

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Accessories
General Information

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C) Mechanical specifications	
Input	4 x 7-16 female (long neck) iRCU in: 2 x 8pin male iRCU out: 2 x 8pin female
Connector position	Bottom
Wind load	Frontal: 900 N (at 150 km/h) 2260 N (at 150 mph) Lateral: 330 N (at 150 km/h) 830 N (at 150 mph) Rearside: 940 N (at 150 km/h) 2350 N (at 150 mph)
Max. wind velocity	241 km/h (150 mph)
Height/width/depth	1828 / 300 / 152 mm (71.9 / 11.8 / 6.0 inches)
Category of mounting hardware	H (Heavy)
Weight	26 kg (57.3 lbs) / 28 kg (61.7 lbs) (clamps incl.)
Packing size	2050 x 322 x 190 mm (80.7 x 12.6 x 7.5 inches)
Scope of supply	**Panel and 2 units of clamps 42 – 115 mm diameter**

Material:
Reflector screen: Aluminum. **Radiator:** Tin-plated zinc.
iRCU housing: Coated 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.

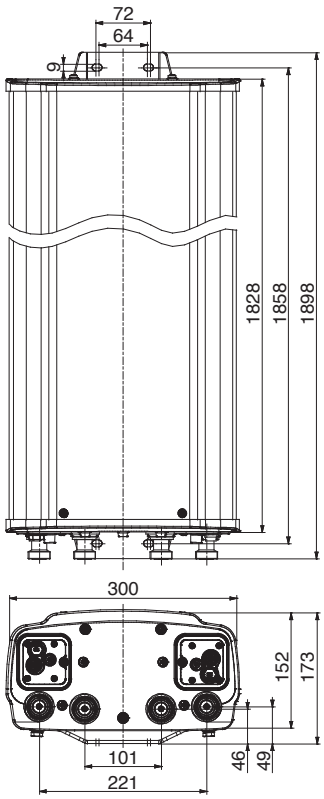
Grounding:
The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

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

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.

iRCU additionally fulfil the standards:
EN 60950-1 (Safety), EN 55022 (Emission) and EN 55024 (Immunity)



Bottom view
Dimensions refer to radome.

All dimensions in mm.

Accessories

Type No.	Description	Remarks	Weight approx. kg	Weight approx. lbs	Units per antenna
738546	**1 clamp**	**Mast: 42 – 115 mm diameter**	**1.1**	**2.4**	**2 (included in the scope of supply)**
85010002	1 clamp	Mast: 110 – 220 mm diameter	2.7	6.0	2 (order separately if required)
85010003	1 clamp	Mast: 210 – 380 mm diameter	4.8	10.6	2 (order separately if required)
85010008	1 downtilt kit	Downtilt angle: 0° – 10°	6.5	14.3	1 (order separately if required)

Wall mounting: No additional mounting kit needed.

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 and thereby respects the static mechanical load imposed on an antenna by wind at maximum velocity. Wind loads are calculated according to DIN 1055-4. 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 installation team must be properly qualified and also be familiar with the relevant national safety regulations.
Commissioning or electrical operation of the antenna without inserted iRCU's is not permitted.
The details given in our data sheets have to be followed carefully when installing the antennas and accessories.
The limits for the coupling torque of RF-connectors, recommended by the connector manufacturers must be obeyed.

Any previous datasheet issues have now become invalid.
Valid subject to chance.

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