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Remote Control Unit (RCU) for Kathrein 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



Type No.		86010148v01
Protocols		compliant to AISG 1.1 and 3GPP/AISG 2.0
Logical interface ex factory ¹⁾		3GPP/AISG 2.0
Input voltage range	V	10 ... 30 (pin 1, pin 6)
Power consumption	W	< 1 (stand by); < 10 (motor activated)
Connectors ²⁾³⁾		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	0.5
	lbs	0.99
Packing size	mm	245 x 93 x 102
	inches	9.6 x 3.6 x 4
Dimensions (H x W x D)	mm	177.5 x 59.5 x 49.5
	inches	7.0 x 2.3 x 1.9

¹⁾ 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 Kathrein for further information.

²⁾ 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 (85010080) as described in the connecting cable data sheet (85010007, ...)

³⁾ 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; 1st edition

Certification:

CE, FCC

Scope of supply:

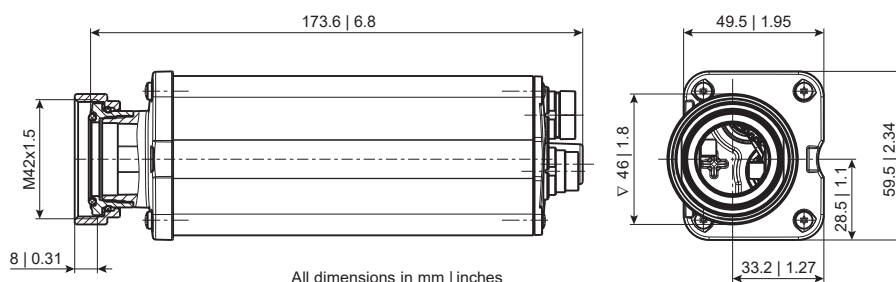
Remote Control Unit
Assembly paste



Daisy chain in (male) Daisy chain out (female)



Bottom view of RCU



All specifications are subject to change without notice.

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Please note:

In general, the addressing of the RCU is automatically performed. Only in case the RCU is manually addressed, the serial number written on the product label has to be extended by the corresponding colour coding extension (e.g. CSG351234-**R1**). If the connected antenna has no RFID spindles, the serial number has to be extended by "-XX" instead of the colour coding extension (e.g. CSG351234-**XX**)

Please note:

Additional grounding of the RCU is not required if the RCU is fixed to an antenna with proper grounding. Please assure that grounding of the antenna has been carried out according to all relevant local regulations.

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.

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.

Description of the adjustment mechanism (protective cap removed):



- ① Adjustment wheel with twist-lock function.
- ② Downtilt spindle with integrated scale.



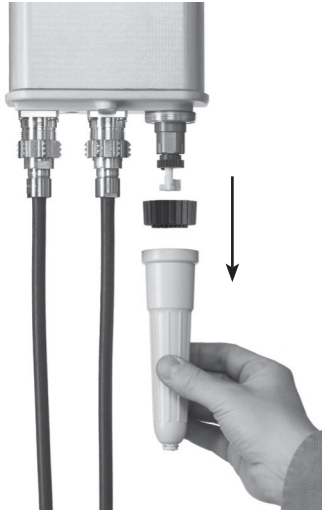
- ① Thread for fixing the protective cap or the RCU (Remote Control Unit).
- ② Gearwheel for RCU power drive.



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.

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Attaching the RCU (Remote Control Unit) for remote-controlled downtilt adjustment:

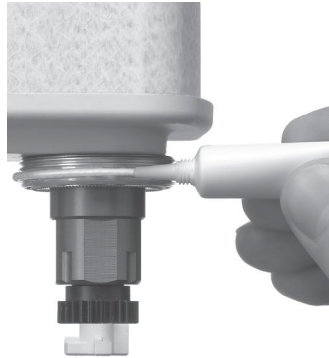


Twist off the protective cap completely from the antenna.

Check the proper function of the phase shifter over the entire adjustment range by twisting the adjustment wheel in such a way, that the spindle moves completely in and out.

Reset the downtilt to min. degree.

Completely remove the black adjustment wheel by simply pulling it downwards.



Clean the thread surface.

Apply the assembly-paste evenly onto the full circumference of the thread as illustrated in the figure.

Note!

Avoid ingestion and contact with eyes.

In case of contact with eyes rinse thoroughly with plenty of water. In case of irritation seek medical advice.

Avoid long-term contact with skin.

In case of contact with skin wash off with soap and water.

For further information please read the safety data-sheet 'Klüberplex AG 11-461' by company Klüber Lubrication München KG Geisenhausenerstraße 7 D-81379 München <http://www.klueber.com>



Push the attachment nut of the RCU down towards the housing.

Place the RCU carefully over the adjustment spindle, observing the correct alignment of the RCU with regards to the antenna, i.e. the flat surfaces of the attachment fixture on the antenna side and those inside the RCU housing must lie flat against each other.

Push-up the RCU carefully to the stop at the antenna.

Please note!

Do not twist the RCU during attaching to the antenna, as this may damage the adjustment spindle.



Tighten the RCU attachment nut using a torque-wrench; wrench width = 41 mm, min. torque = 15 Nm, max. torque = 18 Nm.

Connect the RCU control cable immediately after attachment of the RCU. The tightening torque for fixing the control cable connector must be 0.5 – 1.0 Nm ('hand-tightened') or using the torque screwdriver (85010080) as described.

Please note!

In cases where a mechanical downtilt unit is installed, this must not be set for a downtilt of more than 14 degrees.



936.4624/d Subject to alteration.

For daisy chain operation, remove the protection cap and attach a control cable to interconnect with the daisy chain input of the subsequent RCU.

Please note: Do not remove the protection cap on the daisy chain output of the last RCU device.

If an antenna with RFID-Tag is used:

- Adjust the tilt (spindle on the antenna) to min. degree
- Connect the RCU onto the antenna
- Connect an AISG-Control-Cable on the input (daisy chain in) of the RCU
- After power is switched on, the RCU reads out all information (such as antenna type, serial number, tilt range, ...) automatically
- Perform an ALD-Scan (Antenna Line Device)
- Fill in all site specific information (such as sector-ID, install-ID, ...) in the detail view of the RCU
- After the first set-tilt-command, the RCU will calibrate the system automatically – no separate calibration command is necessary!

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FCC– Statements

FCC§ 15.19

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.

FCC§ 15.105

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Canada CNR-GenSection 7.1.3

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ICES-003

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

FCC§15.21 (Warning Statement)

[Any] changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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Compliance Information Statement (Declaration of Conformity Procedure)

Responsible Party: Kathrein USA

Address: Greenway Plaza II, 2400 Lakeside Blvd. Suite 650, 75082 Richardson, Texas

Telephone: (+01)214 238 88 00

Type of Equipment:



Model Name: Remote Control Unit (RCU)
FCC ID: SP3-86010148V01