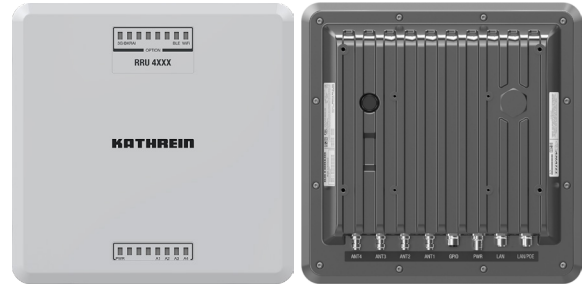


The Kathrein RRU 4000 reader family is the next generation of RAIN RFID readers and the leading IoT device for all professional AutoID solutions. Its high-performance 33-dBm UHF RF unit, optional connectivity modules, e.g. PoE+, Wi-Fi, 3G mobile interface and the powerful scalable processing unit change the way identification works.

Based on the latest RFID standards, such as EPC Gen2v2 / ISO 18000-63, Kathrein RRU 4000 series support all market-leading transponder chip features for security, authentication and encoding.



> Features

| Type | RRU 4400 | RRU 4500 | RRU 4560 | RRU 4570 |
|------------------------|----------|----------|----------|----------|
| ETSI, order number | 52010287 | 52010288 | 52010289 | 52010290 |
| FCC, order number | 52010295 | 52010296 | 52010297 | 52010298 |
| Basic computing module | | | ✓ | |
| Dual-core embedded PC | | | ✓ | |
| Ethernet ports | 1 | | 2 | |
| GPIO | | | ✓ | |
| ©KRAI | | | ✓ | |
| PoE+ | | | ✓ | |
| LED visualisation | | | ✓ | |
| Wi-Fi | | | ✓ | |
| Bluetooth | | | ✓ | |
| 2G/3G | | | | ✓ |

> Accessories, optional

- RRU/ARU connecting cable DC 10 m or 3 m (order no. 52010358 or 52010359)
- RRU/ARU connecting cable Ethernet 10 m or 3 m (order no. 52010360 or 52010361)
- RRU/ARU connecting cable GPIO 10 m or 3 m (order no. 52010362 or 52010363)
- RRU/ARU connecting cable Ethernet bridge (order no. 52010373)
- RRU/ARU AC/DC Adapter 90 W or 30 W or 90 W (order no. 52010364 or 52010365 or 52010366)
- RRU/ARU power supply PoE+ Ethernet switch (order no. 52010369)
- RRU/ARU power supply PoE+ injector 30 W, 100 Mbit (order no. 52010370)
- Wall mount kit (order no. 52010351)
- Wall mount kit for RRU/ARU, WIRA 70 (order no. 52010261)
- Vandalism protective cover (order no. 52010367)
- RRU/ARU protective caps (order no. 52010376)
- For more information about accessories, go to <https://www.kathrein-solutions.com/products/hardware/accessories>.

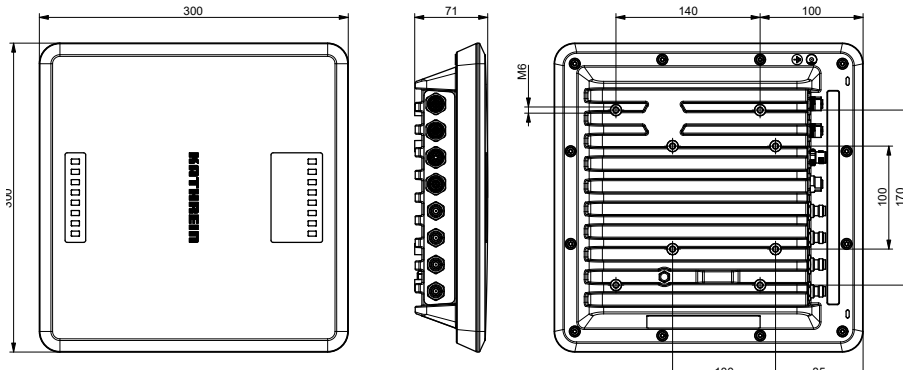
> General Specifications

| RFID UHF Reader Overview | | ETSI Version | | FCC Version | |
|--|--------------------------|---|----------|--|---|
| | | RRU 44xx | RRU 45xx | RRU 44xx | RRU 45xx |
| RFID | | | | | |
| Frequency range | [MHz] | 865–868 | | 902–928 | |
| Impedance antenna port | [Ohm] | 50 | | | |
| Max. TX power, conducted | [dBm] | 30 | 33 | 30 | 30 (33 dBm with extended cable length) |
| Max. TX power, adiated | [ERP (ETSI/ EIRP (FCC))] | 30 | 33 | 36 | |
| Emitted output power (max.) int. antenna | [dBm] | 33 e.r.p. | | 36 EIRP | |
| RX sensitivity | [dBm] | typ. –80 | | | |
| Number of antenna ports | [R-TNC] | 4 | | | |
| Voltage | | | | | |
| In situ | [VDC] | +10 to +30 | | | |
| Connector | | M12, A-coded, 4-pole | | | |
| Remote-fed | [VDC] | PoE+ according to 802.3at (10–57) (internal supply of GPIO-VCC-Pin not possible with PoE+) | | | |
| Connector | | M12, X-coded, 8-pole, port 1 only | | | |
| Power consumption | | | | | |
| In situ | [W] | 11 | 25.4 | 11 | 25.4 |
| Remote-fed | [W] | 12 | 25.4 | 12 | 25.4 |
| GPIO | | | | | |
| Max. input voltage | [V] | 30 | | | |
| Max. output voltage | [V] | 30 | | | |
| Max. current per output port | [mA] | 500 | | | |
| Max. current over all outputs | [mA] | 1500 | | | |
| Connector | | M12, A-coded, 12-pole | | | |
| RFID controller | | | | | |
| Processor | | ARMv7-A based processor with 600 MHz | | | |
| Flash memory eMMC | [Gbyte] | 4 | | | |
| RAM DDR2 | [Mbyte] | 128 | | | |
| Operating system | | Linux | | | |
| Weight | [kg] | 4.00 | | 4.00 | |
| Degree of protection | | IP67 | | | |
| Operating temperature range | [°C] | –20 to +55 | | | |
| Storage temperature range | [°C] | –40 to +85 | | | |
| Dimensions (L x W x H) | [mm] | 300 x 300 x 71 | | | |
| Standards | | EN302208-2 V2.1.1, EN301489-3, EN50364, EN62368-1, EN60529, EPC Gen2 V2, UCODE DNA | | FCC Part15, UL, IC, EPC Gen2 V2, UCODE DNA | |

> Optional Specifications

| RFID UHF Reader Overview | | ETSI Version | | | | FCC Version | | | |
|--|--|----------------------|----------|--------------|----------|-------------|----------|--------------|----------|
| | | RRU 4400 | RRU 4500 | RRU 4560 | RRU 4570 | RRU 4400 | RRU 4500 | RRU 4560 | RRU 4570 |
| Order number | | 52010287 | 52010288 | 52010289 | 52010290 | 52010295 | 52010296 | 52010297 | 52010298 |
| Embedded PC | | | | | | | | | |
| Processor | ARMv7-A based processor, 2 cores @ 800 MHz | | | | | | | | |
| Flash memory (eMMC) | 8 [Gbyte] | | | ✓ | | | | ✓ | |
| RAM DDR3 | 1 [Gbyte] | | | | | | | | |
| Operating system | Linux | | | | | | | | |
| Ethernet | | | | | | | | | |
| Number of Ethernet ports | | 1 | | 2 | | 1 | | 2 | |
| Data rate | 10/100 [Mbit/s] | | | ✓ | | | | ✓ | |
| Connector | | M12, X-coded, 8-pole | | | | | | | |
| ©KRAI | | | | | | | | | |
| TX frequency | 22 [kHz] | | | | | | | | |
| Supply voltage (output) | 5 [V] | | | ✓ | | | | ✓ | |
| Max. current per port | 100 [mA] | | | | | | | | |
| 4 LED visualisation | | | | | | | | | |
| Freely programmable | | basic LED | | high-end LED | | basic LED | | high-end LED | |
| Wi-Fi | | | | | | | | | |
| Supported standards | a, b, g, n | | | | | | | | |
| 2.5 GHz band | 2.412–2.484 [GHz] | | | | | | | | |
| Max. TX power (dependent on country) | max. 17.3 [dBm] | | | | | | | | |
| 5 GHz band | 4.910–5.825 [GHz] | | | ✓ | | | | ✓ | |
| Max. TX power (dependent on country) | max. 18 [dBm] | | | | | | | | |
| Max. channel bandwidth | max. 40 [MHz] | | | | | | | | |
| Bluetooth | | | | | | | | | |
| Frequency range | 2.402–2.480 [GHz] | | | ✓ | | | | ✓ | |
| Max. TX power | 11.7 [dBm] | | | | | | | | |
| 2G/3G | | | | | | | | | |
| Frequency range GSM/GPRS/EDGE | 850/ 900/1800/ 1900 [MHz] | | | | | | | | |
| Frequency range UMTS/HSPA | 800/850/900/ 1900/2100 [MHz] | | | | ✓ | | | | ✓ |
| Max.TX power (dependent on class and modulation) | 33 [dBm] | | | | | | | | |

> **Dimensions [mm]**

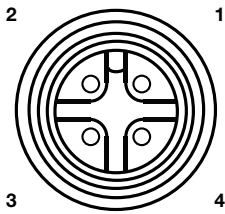


> **Note**

Risk of material damage!
 ▶ Make sure that the depth at which the screws are put into the housing of the reader does not exceed 10 mm (the tightening torque is 5 Nm).

> **Power Supply**

M12, A-coded, 4-pin, male

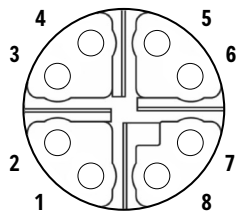


Pinout Power Supply

| Pin | Allocation |
|-----|------------|
| 1 | +24 V DC |
| 2 | GND |
| 3 | GND |
| 4 | +24 V DC |

> **Ethernet**

M12, X-coded, 8-pin, female



Pinout communication PoE+

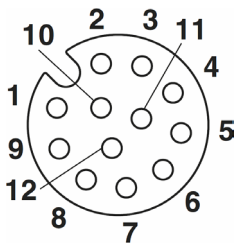
| Pin | Allocation |
|-----|-------------|
| 1 | TX+ / PoE+1 |
| 2 | TX- / PoE+1 |
| 3 | RX+ / PoE+2 |
| 4 | RX- / PoE+2 |
| 5 | PoE+1 |
| 6 | PoE+1 |
| 7 | PoE+2 |
| 8 | PoE+2 |

Pinout communication LAN

| Pin | Allocation |
|-----|------------|
| 1 | TX+ |
| 2 | TX- |
| 3 | RX+ |
| 4 | RX- |
| 5 | |
| 6 | |
| 7 | |
| 8 | |

> **GPIO**

M12, A-coded, 12-pin, female



Pinout general purpose input output

| Pin | Allocation |
|-----|------------|
| 1 | OUT_CMN |
| 2 | OUTPUT_1 |
| 3 | INPUT_3 |
| 4 | INPUT_CMN |
| 5 | INPUT_1 |
| 6 | GND |
| 7 | UB |
| 8 | OUTPUT_4 |
| 9 | OUTPUT_3 |
| 10 | OUTPUT_2 |
| 11 | INPUT_2 |
| 12 | INPUT_4 |