

The Kathrein RRU 1000 series is a basic RAIN RFID reader for indoor applications in logistics, manufacturing, supply chain and access control applications. Its best in class 30-dBm UHF RF unit and connectivity interface PoE and the basic level processing unit allow for a flexible integration into Industry 4.0 and IoT solutions. Based on the latest RFID standards, such as EPC Gen2v2/ISO 18000-63, Kathrein RRU 1000 series support all market leading transponder chip features. The ETSI version of the Kathrein RRU 1400 reader (52010551) supports both the ETSI lower band at 865 - 868 MHz and the ETSI upper band at 915 - 921 MHz.



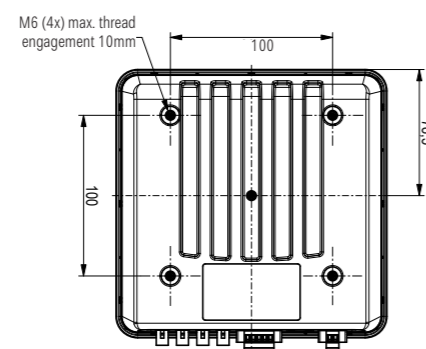
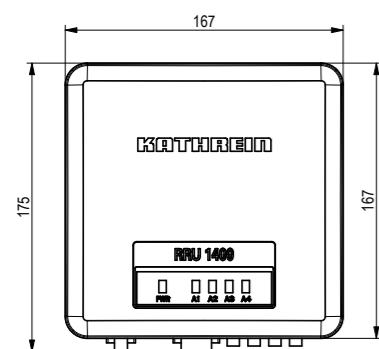
### > Features

- RAIN RFID reader with embedded computing module
- easy to install due to open connectors and FAKRA antenna sockets
- universally applicable with SW defined Radio for ETSI lower band and ETSI upper band
- 4 antenna ports
- +30 dBm port power
- @KRAI antenna support
- GPIO: 2 inputs, 2 outputs
- PoE
- basic LED visualisation
- IP40 indoor use
- type approval for Europe, US and RoW

### > Key Applications

- Manufacturing and Automotive
- Logistics
- Track & Trace
- ekanBan
- Healthcare

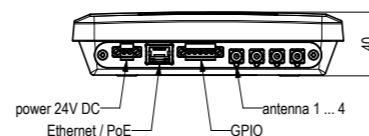
### > Dimensions [mm]



### > 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).



### > General Specifications

| Type                     |   | ETSI Version<br>RRU 1400  | FCC Version<br>RRU 1400 |
|--------------------------|---|---|-------------------------|
| Order number             |   | 52010551  | 52010552                |
| <b>RFID</b>              |   |   |                         |
| Frequency range          | [MHz]   | 865–868 ( ETSI lower band)<br>915–921 (ETSI upper band) <sup>1)</sup>         | 902–928                 |
| Impedance antenna port   | [Ohm]   | 50  |                         |
| Max. TX power conducted  | [dBm]   | 30  | 30                      |
| Max. TX power radiated   | [ERP (ETSI)/<br>ERP (ETSI) <sup>1)</sup><br>EIRP (FCC)] | 33<br>36 <sup>1)</sup>  | 36                      |
| RX sensitivity           | [dBm]   | typ. -70  |                         |
| Number of antenna ports  |   | 4, Fakra connector, Z-coded   |                         |
| Standards                |   | EN 302208-2 V2.1.1  | FCC Part15, UL          |
| <b>Voltage</b>           |   |   |                         |
| Local supply             | [VDC]   | +10 to +30  |                         |
| Connector                |   | printed circuit-board connector, 2-pole, screw connection with tension sleeve |                         |
| Remote feed              | [VDC]   | PPoE Class 0 according to 802.3af (10–57)                                     |                         |
| Connector                |   | RJ45, 8-pole  |                         |
| <b>Power consumption</b> |   |   |                         |
| Local supply             | [W]   | 10.5  |                         |
| Remote feed              | [W]   | 9 – PoE Class 0 (12,96 W)   |                         |
| <b>Ethernet</b>          |   |   |                         |
| Number of Ethernet ports |   | 1   |                         |
| Data rate                | [Mbit/s]  | 10/100  |                         |
| Connector                |   | RJ45, 8-pole  |                         |
| <b>©KRAI</b>             |   |   |                         |
| TX Frequency             | [kHz]   | 22  |                         |
| Supply voltage (output)  | [V]   | 5   |                         |
| Max. current per port    | [mA]  | 100   |                         |
| <b>LED visualisation</b> |   |   |                         |
| Freely programmable      |   | Basic LED   |                         |

<sup>1)</sup> Transmitting methode according to EU 2018 / 1538 Please follow the national guidelines in Europe!

> **General Specifications**

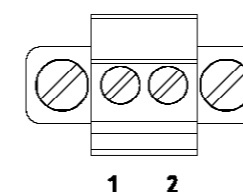
| Type                                     | ETSI Version<br>RRU 1400  | FCC Version<br>RRU 1400 |
|--|---|-------------------------|
| Order number                             | 52010551  | 52010552                |
| <b>GPIO</b>                              |   |                         |
| Type                                     | 2 inputs, 2 outputs   |                         |
| Max. input voltage                       | [V]   | 30                      |
| Max. output voltage                      | [V]   | 30                      |
| Max. current per output port, open drain | [mA]  | 190                     |
| Connector                                | printed circuit-board connector, 5-pole, screw connection with tension sleeve |                         |
| <b>RFID controller</b>                   |   |                         |
| Processor                                | ARMv7-A based processor with 600 MHz  |                         |
| Flash memory eMMC                        | [Gbyte]   | 4                       |
| RAM DDR2                                 | [Mbyte]   | 256                     |
| Operating system                         | Linux   |                         |
| <b>Mechanical properties</b>             |   |                         |
| Weight                                   | [kg]  | 0.72                    |
| Degree of protection                     | IP40  |                         |
| Operating temperature range              | [°C]  | -20 to +55              |
| Storage temperature range                | [°C]  | -40 to +85              |
| Dimensions (L x W x H)                   | [mm]  | 167 x 167 x 40          |

> **Accessories (optional)**

| Order number | Type                 | Description  |
|--------------|----------------------|--|
| 52010451     | R-AC 1 SMA-FAKRA     | RFID antenna cable L=1 m, IP40, FAKRA Z-coded to SMA (m); right angle antenna plug |
| 52010452     | R-AC 3 SMA-FAKRA     | RFID antenna cable L=3 m, IP40, FAKRA Z-coded to SMA (m); right angle antenna plug |
| 52010453     | R-AC 5 SMA-FAKRA     | RFID antenna cable L=5 m, IP40, FAKRA Z-coded to SMA (m); right angle antenna plug |
| 52010461     | R-AC 1 TNC-FAKRA     | RFID antenna cable L=1 m, IP40, FAKRA Z-coded to TNC (m); right angle antenna plug |
| 52010462     | R-AC 3 TNC-FAKRA     | RFID antenna cable L=3 m, IP40, FAKRA Z-coded to TNC (m); right angle antenna plug |
| 52010463     | R-AC 5 TNC-FAKRA     | RFID antenna cable L=5 m, IP40, FAKRA Z-coded to TNC (m); right angle antenna plug |
| 52010474     | R-RPA 24VDC-18W      | AC/DC adapter 24V/18 W AC 110-230 V-plug   |
| 52010485     | R-AC 0.5 FAKRA-FAKRA | RFID-antenna-cable, L=0.5 m, IP40, FAKRA Z-coded to FAKRA Z-coded                  |
| 52010486     | R-AC 1 FAKRA-FAKRA   | RFID-antenna-cable, L=1 m, IP40, FAKRA Z-coded to FAKRA Z-coded                    |
| 52010487     | R-AC 3 FAKRA-FAKRA   | RFID-antenna-cable, L=3 m, IP40, FAKRA Z-coded to FAKRA Z-coded                    |
| 52010488     | R-AC 5 FAKRA-FAKRA   | RFID-antenna-cable, L=5 m, IP40, FAKRA Z-coded to FAKRA Z-coded                    |

> **Power Supply**

Printed circuit board connector 2-pole, screw connection with tension sleeve

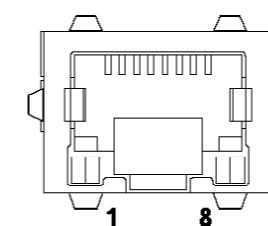


Pinout Power Supply

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

> **Ethernet**

RJ45, 8-pole

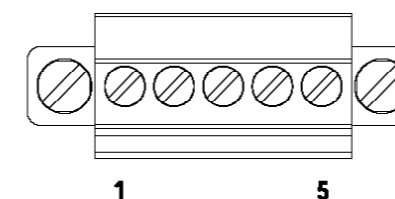


Pinout communication PoE

| Pin | Data | PoE        |
|-----|------|------------|
| 1   | TX+  | PoE Mode A |
| 2   | TX-  | PoE Mode A |
| 3   | RX+  | PoE Mode A |
| 4   |      | PoE Mode B |
| 5   |      | PoE Mode B |
| 6   | RX-  | PoE Mode A |
| 7   |      | PoE Mode B |
| 8   |      | PoE Mode B |

> **GPIO**

Printed circuit board connector, 5-pole, screw connection with tension sleeve



Pinout general purpose input output

| Pin | Allocation            |
|-----|-----------------------|
| 1   | GND OUT_CMN           |
| 2   | INPUT_1               |
| 3   | INPUT_2               |
| 4   | OUTPUT_1 (open drain) |
| 5   | OUTPUT_2 (open drain) |