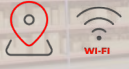


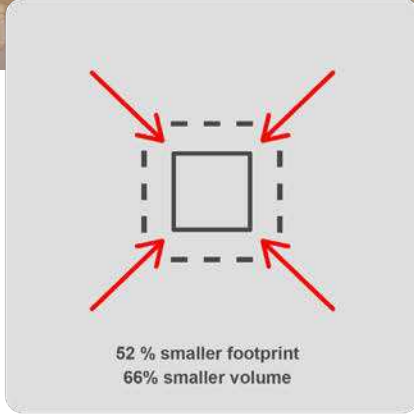

















**ARU 3500 - Gen 4**  
ETSI 52010681 / FCC 52010685

**ARU 3560 - Gen 4**  
ETSI 52010686 / FCC 52010687 

**ARU 3570 - Gen 4**  
ETSI 52010688 / FCC 52010689 

|   |   |  |   |   |
|---|---|--|---|---|
| <b>10x</b><br>higher<br>RX sensitivity  | <b>1100</b><br>tags / second  | <br>USB-C           | <br>52 % smaller footprint<br>66% smaller volume | <br>Cyber Security   |
| <br>Smart Reader Mode                                     | <b>40%</b><br>Lower power<br>consumption than<br>Gen3 Reader  |  |   | <br>IP68  |
| <br>Multi port   | <b>©KRAI</b><br>10x higher<br>switching speed   | <br>Web Interface | <br>Linux  | <br>Scalable RFID performance based on<br>the Impinj Ex 10 chip family |
| <br>3 Port Antenna Reader Unit<br>with steerable Antenna | <br>Wi-Fi  | <br>Bluetooth SPP | <br>5G   | <br>GNSS   |

The 4th generation of Kathrein RFID readers builds on experience and innovation. The well-known flexibility of the previous reader families is paired with the latest technology and innovative power to solve the upcoming requirements for IoT applications.

Our customers and partners can rely on the fact that the 4th generation of Kathrein readers is also software compatible. At the same time new features and functions have been added that were previously missing on the market.

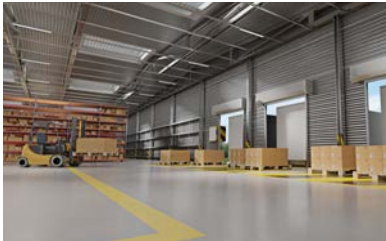
Based on the Impinj Ex10 chipset, the Kathrein RFID readers are the most versatile and high performance units for all IoT applications and harmonize with Kathreins's RFID antenna series.

## > Features

- Ruggedized high-end RAIN RFID reader
- Powerful IoT gateway with wireless host functionality
- Enhanced RF design
- Reduced power consumption for green IT installation
- 3 external antennas (up to 24 antennas via ©KRAI)
- 1 internal steerable antenna - focused + L/R wide beam
- +33 dBm port power
- ©KRAI 1.0 / 2.0 antenna support
- GPIO
- PoE
- Basic computing module
- Embedded dual-core 800 MHz PC
- Open source Linux OS
- Advanced LED visualisation
- IP68 outdoor use
- Type approval for Europe, US and RoW

## > Key Applications

- Logistics & Supply Chain



- Manufacturing & Automotive



- Intelligent Transportation Systems



- Healthcare



**➤ General Specification RFID Reader Unit ARU Reader Family**

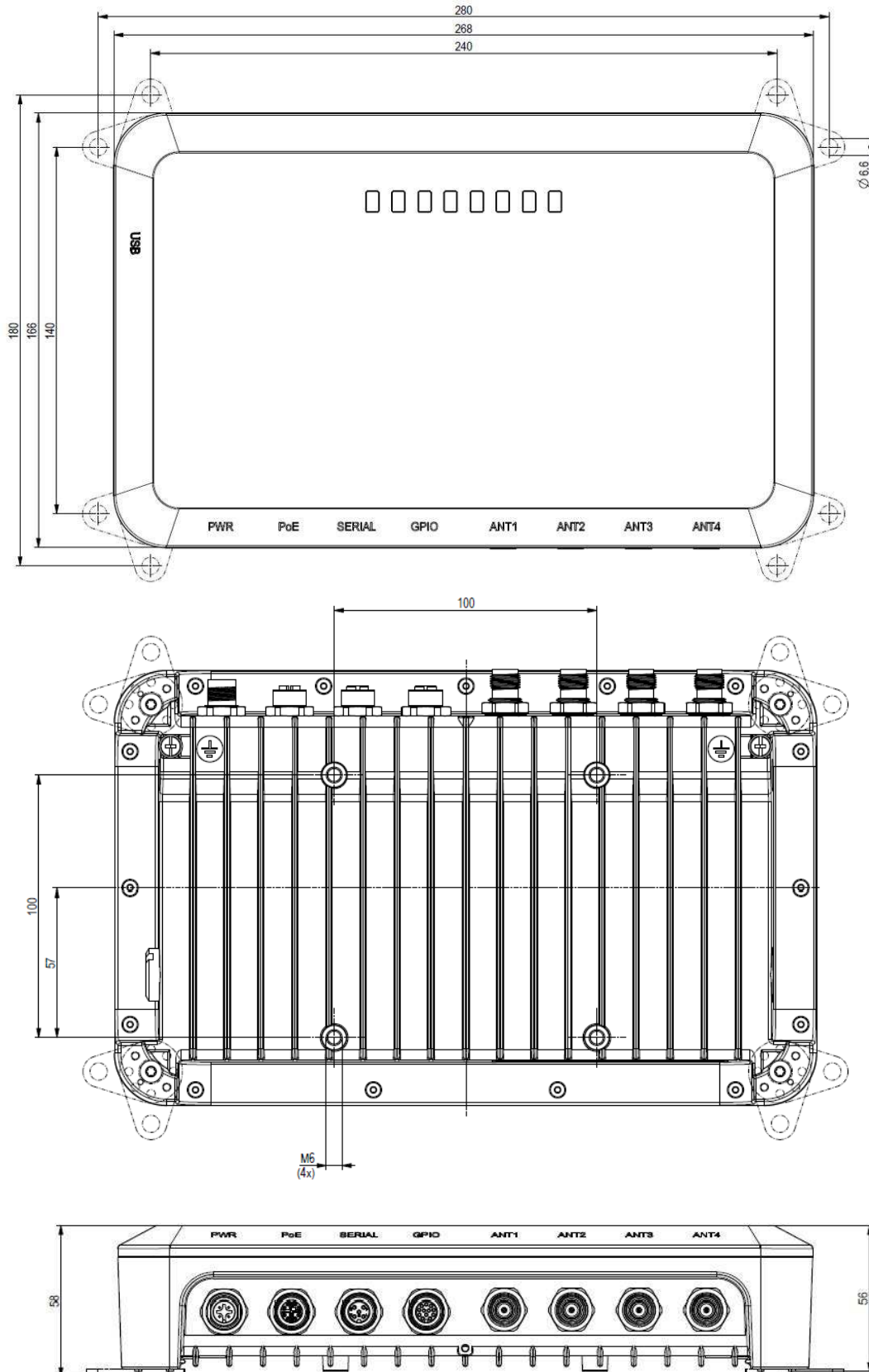
| Type   | ETSI Version    |  |                 | FCC Version                          |                 |                 |
|--|-----------------|--|-----------------|--------------------------------------|-----------------|-----------------|
|  | ARU 3500        | ARU 3560   | ARU 3570        | ARU 3500                             | ARU 3560        | ARU 3570        |
| <b>Order number</b>                          | <b>52010681</b> | <b>52010686</b>                                      | <b>52010688</b> | <b>52010685</b>                      | <b>52010687</b> | <b>52010689</b> |
| <b>RFID</b>                                  |                 |  |                 |                                      |                 |                 |
| Frequency range<br>SW defined ratio          | [MHz]           | 865 – 868  |                 | 902 – 928<br>915 – 921 <sup>1)</sup> |                 |                 |
| Impedance antenna port                       | [Ohm]           | 50   |                 |                                      |                 |                 |
| Max. TX power conducted                      | [dBm]           | +33  |                 |                                      |                 |                 |
| Max. TX power radiated                       | [dBm EIRP]      | +33 e.r.p.   |                 | +36 EIRP<br>+36 e.r.p. <sup>1)</sup> |                 |                 |
| Max. RX sensitivity                          | [dBm]           | -93  |                 |                                      |                 |                 |
| Max. read range <sup>2)</sup>                | [m]             | 32   |                 |                                      |                 |                 |
| Max. write range <sup>2)</sup>               | [m]             | 22   |                 |                                      |                 |                 |
| Max. read rate <sup>2)</sup>                 | [tags/s]        | 1100   |                 |                                      |                 |                 |
| Number of antenna ports                      |                 | 3, TNC-R   |                 |                                      |                 |                 |
| <b>Internal Antenna <sup>3)</sup></b>        |                 |  |                 |                                      |                 |                 |
| Number of read zones                         |                 | 3  |                 |                                      |                 |                 |
| Half-power beam width                        |                 |  |                 |                                      |                 |                 |
| Horizontal                                   | [°]             | 65   |                 |                                      |                 |                 |
| Vertical                                     | [°]             | 85   |                 |                                      |                 |                 |
| Beam steering angle<br>Left   Middle   Right | [°]             | -20   0   +20  |                 |                                      |                 |                 |
| Gain circular                                | [dBiC]          | 6.0   7.0   6.0                                      |                 |                                      |                 |                 |
| Polarisation                                 |                 | RHCP   |                 |                                      |                 |                 |
| <b>Power supply</b>                          |                 |  |                 |                                      |                 |                 |
| Local supply                                 | [VDC]           | +10 to +30   |                 |                                      |                 |                 |
| Power connector                              |                 | M12, A-coded, 4-pole                                 |                 |                                      |                 |                 |
| Remote feed <sup>4)</sup>                    | [VDC]           | Power over Ethernet PoE according to 802.3af (36–57) |                 |                                      |                 |                 |
| Ethernet connector                           |                 | M12, X-coded, 8-pole                                 |                 |                                      |                 |                 |
| <b>Power consumption</b>                     |                 |  |                 |                                      |                 |                 |
| Local supply @ 33 dBm                        | [W]             | < 15   |                 |                                      |                 |                 |
| Remote feed with<br>PoE @ 31.5 dBm           | [W]             | < 12.5   |                 |                                      |                 |                 |
| <b>Ethernet</b>                              |                 |  |                 |                                      |                 |                 |
| Number of ethernet ports                     |                 | 1  |                 |                                      |                 |                 |
| Data rate                                    | [Mbit/s]        | 10/100   |                 |                                      |                 |                 |
| Ethernet connector <sup>5)</sup>             |                 | M12, X-coded, 8-pole                                 |                 |                                      |                 |                 |
| <b>Multi-Protocol Port</b>                   |                 |  |                 |                                      |                 |                 |
| Protocol type                                |                 | RS 232 / RS 485 / customized                         |                 |                                      |                 |                 |
| Data rate                                    | [Mbit/s]        | up to 12   |                 |                                      |                 |                 |
| MPP connector                                |                 | M12, A-coded, 5-pole                                 |                 |                                      |                 |                 |

| Type                                 | ETSI Version    |                 |                           | FCC Version  |                 |                 |
|--------------------------------------|-----------------|-----------------|---------------------------|--|-----------------|-----------------|
|                                      | ARU 3500        | ARU 3560        | ARU 3570                  | ARU 3500   | ARU 3560        | ARU 3570        |
| <b>Order number</b>                  | <b>52010681</b> | <b>52010686</b> | <b>52010688</b>           | <b>52010685</b>  | <b>52010687</b> | <b>52010689</b> |
| <b>Service Port</b>                  |                 |                 |                           |  |                 |                 |
| USB mode <sup>6)</sup>               |                 |                 |                           | Full speed, Data only,<br>USB 2.0; USB on the go, customized |                 |                 |
| USB type                             |                 |                 |                           | USB C (w/o power supply)                                     |                 |                 |
| <b>Wifi</b>                          |                 |                 |                           |  |                 |                 |
|                                      |                 |                 | <b>only with ARU 3560</b> |  |                 |                 |
| Supported standards                  |                 |                 |                           | 802.11 a, b, g, n  |                 |                 |
| 2.5 GHz band                         | [GHz]           |                 |                           | 2.412 – 2.484  |                 |                 |
| Max TX power<br>(depends on country) | [dBm]           |                 |                           | max. 17.3  |                 |                 |
| 5 GHz band                           | [GHz]           |                 |                           | 4.910 – 5.825  |                 |                 |
| Max TX power<br>(depends on country) | [dBm]           |                 |                           | max. 18  |                 |                 |
| Max. channel bandwidth               | [MHz]           |                 |                           | max. 40  |                 |                 |
| Antenna connector                    |                 |                 |                           | SMA  |                 |                 |
| External antenna alignment           | [°]             |                 |                           | 0 ... 90   |                 |                 |
| <b>Bluetooth</b>                     |                 |                 |                           |  |                 |                 |
|                                      |                 |                 | <b>only with ARU 3560</b> |  |                 |                 |
| Frequency range                      | [GHz]           |                 |                           | 2.402 – 2.480  |                 |                 |
| Operating mode                       |                 |                 |                           | BT serial port profile                                       |                 |                 |
| Antenna connector                    |                 |                 |                           | SMA  |                 |                 |
| External antenna alignment           | [°]             |                 |                           | 0 ... 90   |                 |                 |
| <b>Mobile communication</b>          |                 |                 |                           |  |                 |                 |
|                                      |                 |                 | <b>only with ARU 3570</b> |  |                 |                 |
| Supported standards                  |                 |                 |                           | 2G / 3G / 4G / 5G-ready                                      |                 |                 |
| Frequency range GPRS/EDGE            | [MHz]           |                 |                           | 900/1800   |                 |                 |
| Frequency range UMTS/HSPA            | [MHz]           |                 |                           | 800/1800/2100  |                 |                 |
| Frequency range 4G                   | [MHz]           |                 |                           | 800/900/1800/2100/2600                                       |                 |                 |
| Frequency range 5G                   | [MHz]           |                 |                           | 700/800/900/1800/1900/2100/2600                              |                 |                 |
| Max TX power<br>(depends on country) | [dBm]           |                 |                           | max. 33  |                 |                 |
| <b>Global localization</b>           |                 |                 |                           |  |                 |                 |
| Localization systems                 |                 |                 |                           | GPS, GLONASS, Galileo  |                 |                 |
| <b>©KRAI</b>                         |                 |                 |                           |  |                 |                 |
| Cmd duration Gen3 mode               | [ms]            |                 |                           | 100  |                 |                 |
| Cmd duration Gen4 mode               | [ms]            |                 |                           | 10   |                 |                 |
| Frequency                            | [kHz]           |                 |                           | 22   |                 |                 |
| Supply voltage (output)              | [V]             |                 |                           | 5  |                 |                 |
| Max. current per port                | [mA]            |                 |                           | 100  |                 |                 |
| <b>LED visualization</b>             |                 |                 |                           |  |                 |                 |
| Freely programmable                  |                 |                 |                           | 7  |                 |                 |
| Status LED power on                  |                 |                 |                           | 1  |                 |                 |

| Type                          | ETSI Version    |                 |                 | FCC Version   |                 |                    |
|-------------------------------|-----------------|-----------------|-----------------|---|-----------------|--------------------|
|                               | ARU 3500        | ARU 3560        | ARU 3570        | ARU 3500  | ARU 3560        | ARU 3570           |
| <b>Order number</b>           | <b>52010681</b> | <b>52010686</b> | <b>52010688</b> | <b>52010685</b>   | <b>52010687</b> | <b>52010689</b>    |
| <b>GPIO</b>                   |                 |                 |                 |   |                 |                    |
| Digital inputs                |                 |                 |                 | 4   |                 |                    |
| Digital outputs               |                 |                 |                 | 4   |                 |                    |
| Operating mode 1              |                 |                 |                 | DC-isolate  |                 |                    |
| Operating mode 2              |                 |                 |                 | not DC-isolate  |                 |                    |
| 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   |                 |                    |
| <b>Embedded PC</b>            |                 |                 |                 |   |                 |                    |
| Processor                     |                 |                 |                 | iMX8 Cortex A35 dual core @800 MHz                                      |                 |                    |
| Flash memory eMMC             | [GByte]         |                 |                 | 8   |                 |                    |
| RAM DDR3                      | [GByte]         |                 |                 | 1   |                 |                    |
| Operating system              |                 |                 |                 | Linux   |                 |                    |
| <b>Mechanical properties</b>  |                 |                 |                 |   |                 |                    |
| Shock                         |                 |                 |                 | ETSI EN 300 019-2-3 V2.1.2<br>IEC 60068-2-27                            |                 |                    |
| Total shock response spectrum |                 |                 |                 | Type 3.3  |                 |                    |
| Vibration                     |                 |                 |                 | ETSI EN 300 019-2-3 V2.1.2<br>IEC 60068-2-64                            |                 |                    |
| Weight                        | [kg]            |                 |                 | 1.7   |                 |                    |
| Degree of protection          |                 |                 |                 | IP68  |                 |                    |
| Temperature range             |                 |                 |                 |   |                 |                    |
| Operating                     | [°C]            |                 |                 | -40 to +60  |                 |                    |
| Storage                       | [°C]            |                 |                 | -40 to +85  |                 |                    |
| Dimensions (L x W x H)        | [mm]            |                 |                 | 160 x 270 x 50  |                 |                    |
| Standards                     |                 |                 |                 | GS1 EPC Gen2V2, GS1 EPC Gen2V3, UCODE DNA,<br>EN 29167-10, ISO 18000-63 |                 |                    |
|                               |                 |                 |                 | EN302208-2 V2.1.1, EN301489-3,<br>EN50364, EN62368-1, EN60529           |                 | FCC Part15, UL, IC |

- 1) European Upper Band; selectable by customer for external antennas only, check whether operation is permitted in your country
- 2) Depends on the environment and the transponder properties
- 3) Integrated antenna has three options:
  - a) Focused beam 65° x 85° in the center
  - b) Left beam with 65° x 85° steering angle -20°
  - c) Right beam with 65° x 85° steering angle +20°
- 4) In PoE mode, the transmission power is reduced to 31.5 dBm.  
Use cable length < 100 m.  
Make sure to use a Cat 6 cable or higher.  
Note that the internal supply of GPIO-VCC-pin is not possible with PoE
- 5) PoE and Ethernet connection via one socket
- 6) USB-C is a separate interface for service purposes

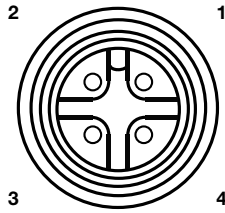
> **Dimensions [mm]**



**> Connectivity**

**Power supply**

M12, A-coded, 4-pin, male

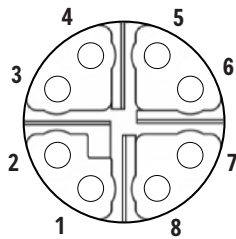


**Pinout power supply**

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

**Ethernet**

M12, X-coded, 8-pin, female

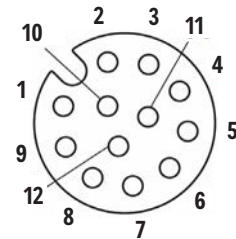


**Pinout communication PoE+**

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

**GPIO**

M12, A-coded, 12-pin, female

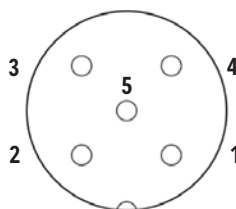


**Pinout general purpose input output**

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

**Multi protocol port connector**

M12, A-coded, 5-pin, male



**Pinout power supply**

| Pin | Allocation |
|-----|------------|
| 1   | RS 232 /TX |
| 2   | RS 232 /RX |
| 3   | RS 485 /A  |
| 4   | RS 485 /B  |
| 5   | GND        |