



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

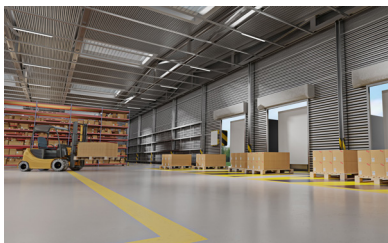
Our customers and partners can rely on the fact that the 4th generation of Kathrein readers is also SW-compatible, but at the same time new features and functions have been added that were previously missing on the market. Based on the impinj Ex10 chipset, the Kathrein RFID readers are the most versatile 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 + 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**

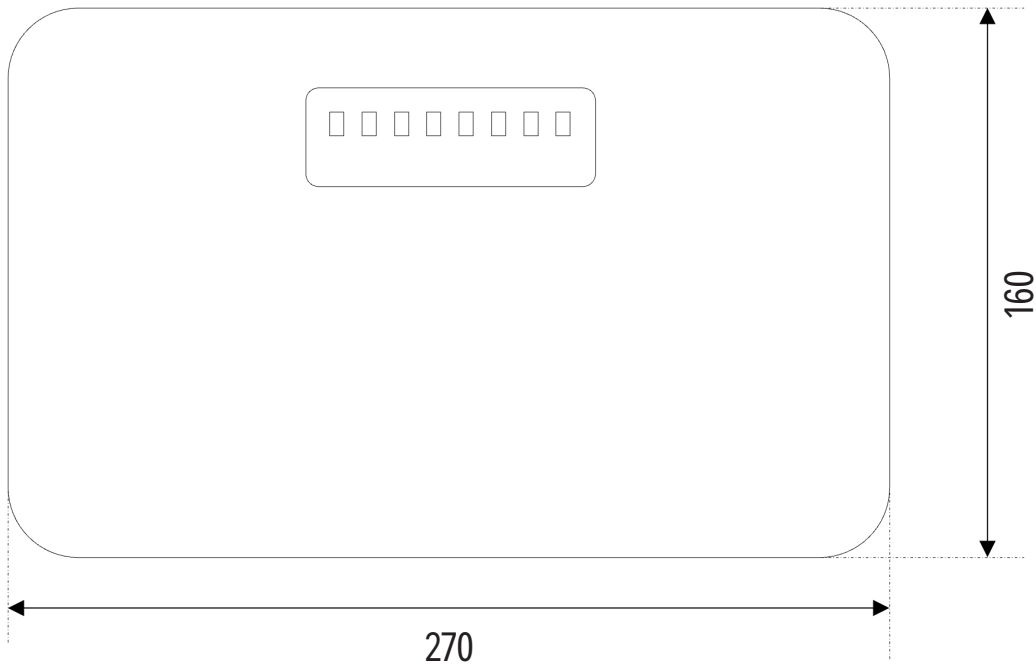
Type	ETSI Version			FCC Version		
	ARU 3500	ARU 3560	ARU 3570	ARU 3500	ARU 3560	ARU 3570
<b>Order number</b>	<b>52010681</b>	<b>52010686</b>	<b>52010688</b>	<b>52010685</b>	<b>52010687</b>	<b>52010689</b>
<b>RFID</b>						
Frequency range SW defined ratio	[MHz]	865 – 868 915 – 921 <sup>1)</sup>		902 – 928		
Impedance antenna port	[Ohm]	50				
Max. TX power conducted	[dBm]	+33				
Max. TX power radiated	[dBm EIRP]	+33 e.r.p. +36 e.r.p. <sup>1)</sup>		+ 36 EIRP		
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 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 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				

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<b>Service Port</b>						
USB mode <sup>6)</sup>				Full speed, Data only, USB 2.0; USB on the go, customized		
USB type				USB C (w/o power supply)		
<b>Wifi</b> <span style="float: right;"><b>only with ARU 3560</b></span>						
Supported standards				802.11 a, b, g, n		
2.5 GHz band	[GHz]			2.412 – 2.484		
Max TX power (depends on country)	[dBm]			max. 17.3		
5 GHz band	[GHz]			4.910 – 5.825		
Max TX power (depends on country)	[dBm]			max. 18		
Max. channel bandwidth	[MHz]			max. 40		
Antenna connector				SMA		
External antenna alignment	[°]			0 ... 90		
<b>Bluetooth</b> <span style="float: right;"><b>only with ARU 3560</b></span>						
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> <span style="float: right;"><b>only with ARU 3570</b></span>						
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 (depends on country)	[dBm]			max. 33		
Global localization						
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		

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<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				iMX7 ARM Cortex-A7 dual core @ 1200 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 IEC 60068-2-27		
Total shock response spectrum				Type 3.3		
Vibration				ETSI EN 300 019-2-3 V2.1.2 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				ISO 18000-6C EPC Gen2 V2 UCODE DNA EN 29167-10 ETSI reader: EN302208-2 V2.1.1, EN301489-3, EN50364, EN62368-1, EN60529, FCC reader: 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

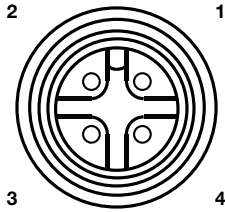
**> Dimensions [mm]**



**Connectivity**

**Power supply**

M12, A-coded, 4-pin, male

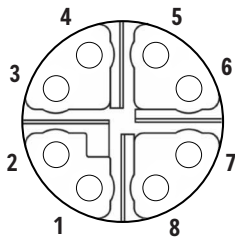


**Pinout power supply**

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

**Ethernet**

M12, X-coded, 8-pin, female

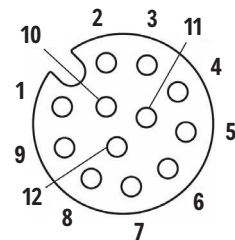


**Pinout communication PoE+**

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

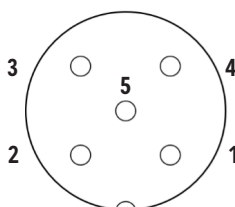


**Pinout general purpose input output**

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