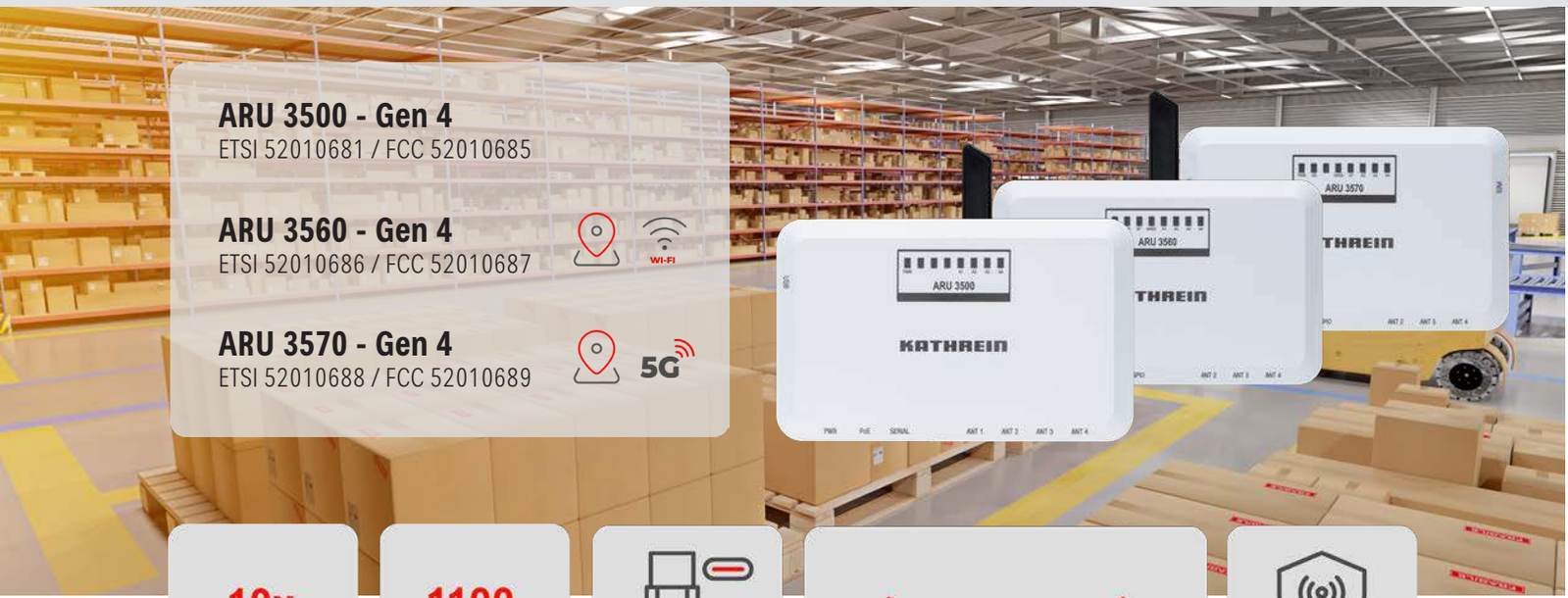
KATHREIN



10x higher RX sensitivity

1100 tags / second

USB-C

52 % smaller footprint
66% smaller volume

RFID
Cyber Security

Smart Reader Mode

40% Lower power consumption than Gen3 Reader

IP68

Multi port

©KRAI
10x higher switching speed

Web Interface

Linux

Scalable RFID performance based on the Impinj Ex 10 chip family

ARU
3 Port Antenna Reader Unit with steerable Antenna

Wi-Fi

Bluetooth SPP

5G

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.

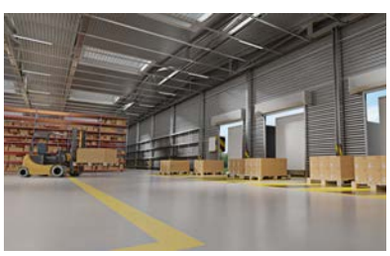
936B351/C/0325 | Subject to changes.

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

Type		**ETSI Version** **ARU 3500 | ARU 3560 | ARU 3570**	**FCC Version** **ARU 3500 | ARU 3560 | ARU 3570**
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Service Port			
USB mode [6)]		Full speed, Data only, USB 2.0; USB on the go, customized	
USB type		USB C (w/o power supply)	
Wifi		**only with ARU 3560 ***	
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	
Bluetooth		**only with ARU 3560 ***	
Frequency range	[GHz]	2.402 – 2.480	
Operating mode		BT serial port profile	
Antenna connector		SMA	
External antenna alignment	[°]	0 ... 90	
Mobile communication		**only with ARU 3570**	
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	
©KRAI			
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	
LED visualization			
Freely programmable		7	
Status LED power on		1	

*) ARU 3560 coming soon

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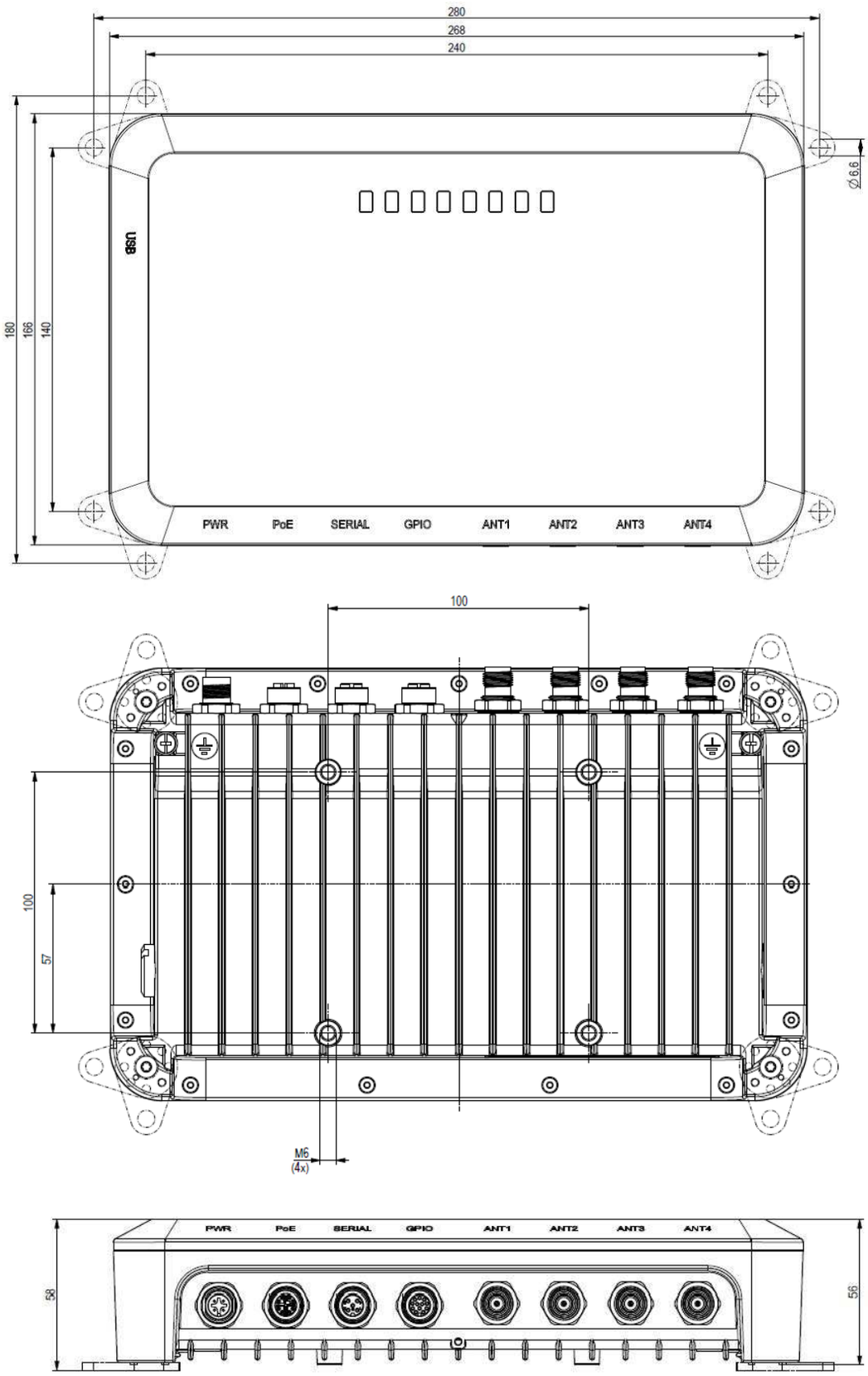
Order number		**52010681 | 52010686 | 52010688**	**52010685 | 52010687 | 52010689**
GPIO			
Digital inputs		4	
Digital outputs		4	
Operating mode 1		DC-isolate	
Operating mode 2		not DC-isolate	
Max. input voltage	[V]	30	
Max. output voltage	[V]	30	
Max. current per output port	[mA]	500	
Max. current over all outputs	[mA]	1500	
Connector		M12, A-coded, 12-pole	
Embedded PC			
Processor		iMX8 Cortex A35 dual core @800 MHz	
Flash memory eMMC	[GByte]	8	
RAM DDR3	[GByte]	1	
Operating system		Linux	
Mechanical properties			
Shock Total shock response spectrum		ETSI EN 300 019-2-3 V2.1.2 IEC 60068-2-27 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		GS1 EPC Gen2V2, GS1 EPC Gen2V3, UCODE DNA, EN 29167-10, ISO 18000-63	
		EN302208-2 V2.1.1, EN301489-3, 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

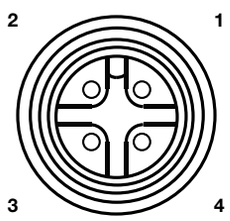
Dimensions [mm]



Connectivity

Power supply

M12, A-coded, 4-pin, male

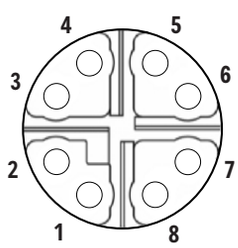


Pinout power supply

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

Ethernet

M12, X-coded, 8-pin, female

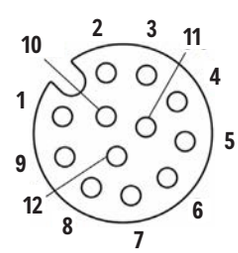


Pinout communication PoE+

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

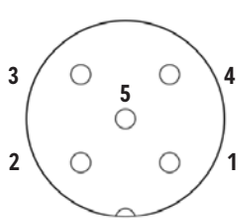


Pinout general purpose input output

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

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