

The Kathrein Reader ARU 8500 is the perfect device for identification and direction detection. Based on an Ethernet communication interface and a circular switch-beam antenna, the reader detects the direction of movement of goods and containers. It is possible to read out active and passive RFID tags in the frequency range from 865 to 868 MHz (865 to 867 MHz for India) and from 902 to 928 MHz (916 to 928 MHz for Peru). The device can read and write tags conforming to the EPC Gen2v2 standard (ISO 18000-6C).

The three well-defined read zones of the integrated 30° wide-range antenna, steered by the reader, offer optimised solutions for the seamless detection of the movement and are used in logistics, intralogistics, retail and EAS (anti-theft protection) applications. Due to an embedded Linux-based module, it is possible to use the reader as a stand-alone system, thus running applications and parameterisation is possible directly on the reader without the need for a remote PC. The reader offers the best performance when linked with Kathrein CrossTalk Software.



> Features

- enhanced RF design
- integrated phased array antenna for direction detection
- 3 independent beams (inside/middle/outside)
- 3 additional external antenna ports available
- highly selective transition between the beams
- 3 x 7 m typical detection area for gate solutions
- easy to install overhead
- delivery combined data for the RFID transponder and location in one shot
- captures the direction and provides a decision accuracy with CrossTalk

> Key Applications

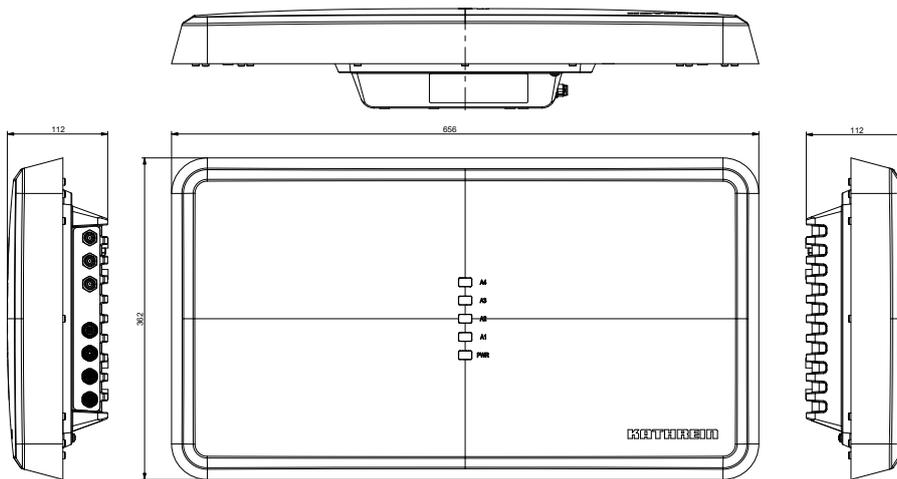
- Shipment Verification
- Dock Door applications
- EAS Retail applications
- Vehicle Logistics
- People tracking
- Asset tracking, e. g. pallets and forklifts in a warehouse or hospital beds in a healthcare facility

> General Specifications

Type		ETSI Version ARU 8500	FCC Version ARU 8500
Order number		52010340	52010341
RFID			
Frequency range	[MHz]	865–868 (865–867 for India)	902–928 (916–928 for Peru)
Impedance antenna port	[Ohm]	50	
Max. TX power conducted	[dBm]	33	30 (33 dBm with extended cable length)
Max. TX power radiated	[ERP (ETSI)/ EIRP (FCC)]	+33 ERP	+36 EIRP
RX sensitivity	[dBm]	typ. –80	
Number of antenna ports	[R-TNC]	6 (3 = inside/middle/outside + 3 external ones)	
Protocols		EPC Class1 Gen2/ISO 18000-6C	
Antenna			
Far-field half-power beam width	[°]	30 vertical/80 horizontal	
Switchable read field	[°]	+35/0/–35	
Polarisation		circular	
Antenna gain left/ straight/right	[dBiC]	7.0/8.0/7.0	7.0/8.0/7.0
Axial ratio	[dB]	typ. 2	
Communication interface	[MBit/s]	Ethernet 10/100	
Voltage			
Local supply	[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			
Local supply	[W]	25.4	
Remote-fed	[W]	25.4	
GPIO			
Type		4 inputs, 4 outputs (double insulation possible)	
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		ARMv7-A based processor, 2 cores @ 800 MHz	
Flash memory (eMMC)	[Gbyte]	8	
RAM DDR3	[Gbyte]	1	
Operating system		Linux	
Ethernet			
Number of Ethernet ports		2	
Data rate	[Mbit/s]	10/100	
Connector		M12, X-coded, 8-pole	
LED visualisation			
Freely programmable		high-end LED	

RFID controller			
Processor		ARMv7-A based processor with 600 MHz	
Flash memory eMMC	[Gbyte]	4	
RAM DDR2	[Mbyte]	128	
Operating system		Linux	
Weight	[kg]	ca. 8	
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]	656 x 362 x 112	
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

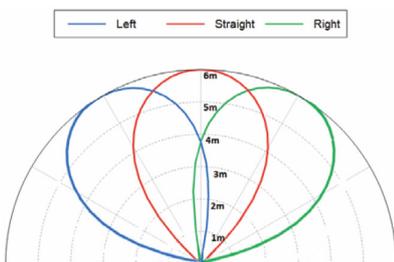
> Dimensions [mm]



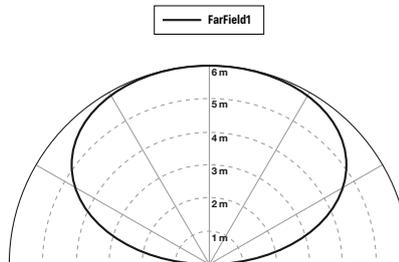
> Note

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).

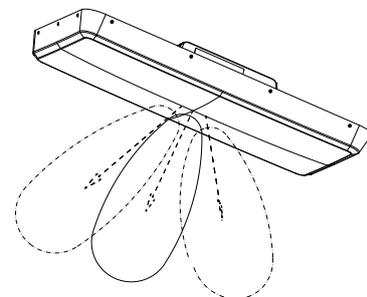
Read range vertical cut



Read range horizontal cut (if mounted like picture)

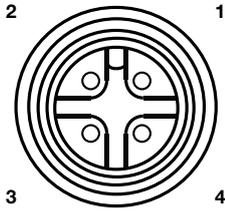


Directions of the switched beam



> Power Supply

M12, A-coded, 4-pin, male

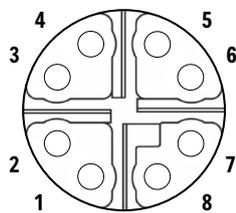


Pinout Power Supply

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

> Ethernet

M12, X-coded, 8-pin, female



Pinout communication PoE+

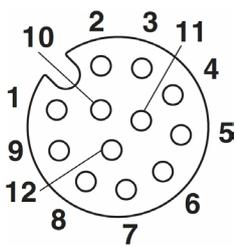
Pin	Allocation
1	TX+ / PoE+1
2	TX- / PoE+1
3	RX+ / PoE+2
4	RX- / PoE+2
5	PoE+1
6	PoE+1
7	PoE+2
8	PoE+2

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