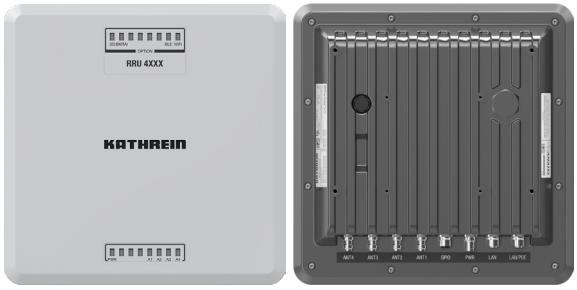
The Kathrein RRU 4000 reader family is the next generation of RAIN RFID readers and the leading IoT device for all professional AutoID solutions.
Its high-performance 33-dBm UHF RF unit, optional connectivity modules, e.g. PoE+, Wi-Fi, 3G mobile interface and the powerful scalable processing unit change the way identification works.
Based on the latest RFID standards, such as EPC Gen2v2 / ISO 18000-63, the Kathrein RRU 4000 series supports all market-leading transponder chip features for security, authentification and encoding.



Features

Type	RRU 4400	RRU 4500	RRU 4560	RRU 4570
ETSI, order number	52010287	52010288	52010289	52010290
FCC, order number	52010295	52010296	52010297	52010298
Basic computing module	✓			
Dual-core embedded PC		✓		
Ethernet ports	1	2		
GPIO	✓			
©KRAI	✓			
PoE+	✓			
LED visualisation	✓			
Wi-Fi			✓	
Bluetooth			✓	
2G/3G				✓

Accessories, optional

- RRU/ARU connecting cable DC 10 m or 3 m (order no. 52010358 or 52010359)
- RRU/ARU connecting cable Ethernet 10 m or 3 m (order no. 52010360 or 52010361)
- RRU/ARU connecting cable GPIO 10 m or 3 m (order no. 52010362 or 52010363)
- RRU/ARU connecting cable Ethernet bridge (order no. 52010373)
- RRU/ARU AC/DC Adapter 90 W or 30 W or 90 W (order no. 52010364 or 52010365 or 52010366)
- RRU/ARU power supply PoE+ Ethernet switch (order no. 52010369)
- RRU/ARU power supply PoE+ injector 30 W, 100 Mbit (order no. 52010370)
- Wall mount kit (order no. 52010351)
- Wall mount kit for RRU/ARU, WIRA 70 (order no. 52010261)
- Vandalism protective cover (order no. 52010367)
- RRU/ARU protective caps (order no. 52010376)
- For more information about accessories, go to https://www.kathrein-solutions.com/products/hardware/accessories.

936B05 /e/0319 | Subject to change.

KATHREIN Solutions GmbH, Kronstaudener Weg 1, 83071 Stephanskirchen, Germany
Phone +49 8036 90831-20 | Fax +49 8036 90831 69 | www.kathrein-solutions.com | iot-info@kathrein-solutions.com

General Specifications

RFID UHF Reader Overview		ETSI Version		FCC Version	
		RRU 44xx	RRU 45xx	RRU 44xx	RRU 45xx
RFID					
Frequency range	[MHz]	865–868		902–928	
Impedance antenna port	[Ohm]	50			
Max. TX power, conducted	[dBm]	30	33	30	30 (33 dBm with extended cable length)
Max. TX power, radiated	[dBm]	30	33	36	
Emitted output power (max.) int. antenna	[ERP (ETSI)/ EIRP (FCC)]	33		36	
RX sensitivity	[dBm]	typ. –80			
Number of antenna ports	[R-TNC]	4			
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	
Voltage					
Local supply	[VDC]	+10 to +30			
Connector		M12, A-coded, 4-pole			
Remote feed	[VDC]	PoE+ according to 802.3at (35–57) ▸ Make sure that the router/switch supports 30 W in the static mode. ▸ Make sure that the length of the used cable does not exceed 100 m. ▸ Make sure to use a Cat 6 cable or a higher level cable. ▸ Note that the internal supply of GPIO-VCC-pin is not possible with PoE+.			
Connector		M12, X-coded, 8-pole, port 1 only			
Power consumption					
Local supply	[W]	20	25.4	20	25.4
Remote feed	[W]	20	25.4	20	25.4
GPIO					
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			
RFID controller					
Processor		ARMv7-A based processor with 600 MHz			
Flash memory eMMC	[Gbyte]	4			
RAM DDR2	[Mbyte]	128			
Operating system		Linux			
Mechanical properties					
Weight	[kg]	4.00		4.00	
Degree of protection		IP67*			
Operating temperature range	[°C]	–20 to +55			
Storage temperature range	[°C]	–40 to +85			
Dimensions (L x W x H)	[mm]	300 x 300 x 71			

* If all sockets are connected via a Kathrein cable or have Kathrein protective caps.

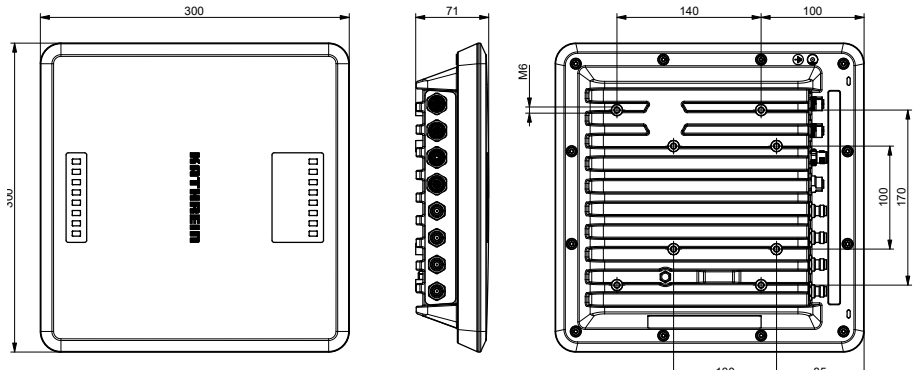
KATHREIN Solutions GmbH, Kronstaudener Weg 1, 83071 Stephanskirchen, Germany
Phone +49 8036 90831-20 | Fax +49 8036 90831 69 | www.kathrein-solutions.com | iot-info@kathrein-solutions.com

Optional Specifications

RFID UHF Reader Overview		ETSI Version				FCC Version			
		RRU 4400	RRU 4500	RRU 4560	RRU 4570	RRU 4400	RRU 4500	RRU 4560	RRU 4570
Order number		52010287	52010288	52010289	52010290	52010295	52010296	52010297	52010298
Embedded PC									
Processor	ARMv7-A based processor, 2 cores @ 800 MHz								
Flash memory (eMMC)	8 [Gbyte]			✓				✓	
RAM DDR3	1 [Gbyte]								
Operating system	Linux								
Ethernet									
Number of Ethernet ports		1	2			1	2		
Data rate	10/100 [Mbit/s]	✓				✓			
Connector		M12, X-coded, 8-pole							
©KRAI									
TX frequency	22 [kHz]								
Supply voltage (output)	5 [V]			✓				✓	
Max. current per port	100 [mA]								
4 LED visualisation									
Freely programmable		basic LED	high-end LED			basic LED	high-end LED		
Wi-Fi									
Supported standards	a, b, g, n								
2.5 GHz band	2.412–2.484 [GHz]								
Max. TX power (dependent on country)	max. 17.3 [dBm]								
5 GHz band	4.910–5.825 [GHz]			✓				✓	
Max. TX power (dependent on country)	max. 18 [dBm]								
Max. channel bandwidth	max. 40 [MHz]								
Bluetooth									
Frequency range	2.402–2.480 [GHz]			✓				✓	
Max. TX power	[dBm]			11.7				11.7	
2G/3G									
Frequency range GSM/GPRS/EDGE	850/ 900/1800/ 1900 [MHz]								
Frequency range UMTS/HSPA	800/850/900/ 1900/2100 [MHz]				✓				✓
Max.TX power (dependent on class and modulation)	33 [dBm]								

KATHREIN Solutions GmbH, Kronstaudener Weg 1, 83071 Stephanskirchen, Germany
Phone +49 8036 90831-20 | Fax +49 8036 90831 69 | www.kathrein-solutions.com | iot-info@kathrein-solutions.com

Dimensions [mm]



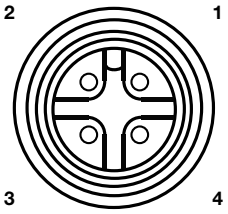
Note

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).

Power Supply

M12, A-coded, 4-pin, male

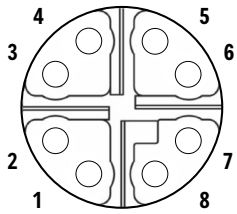


Pinout Power Supply

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

Ethernet

M12, X-coded, 8-pin, female



Pinout communication PoE+

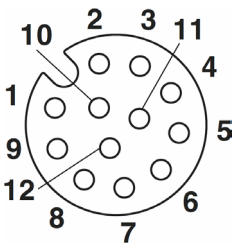
Pin	Allocation
1	TX+ / PoE+1
2	TX- / PoE+1
3	RX+ / PoE+2
4	RX- / PoE+2
5	PoE+1
6	PoE+1
7	PoE+2
8	PoE+2

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

KATHREIN Solutions GmbH, Kronstaudener Weg 1, 83071 Stephanskirchen, Germany
Phone +49 8036 90831-20 | Fax +49 8036 90831 69 | www.kathrein-solutions.com | iot-info@kathrein-solutions.com