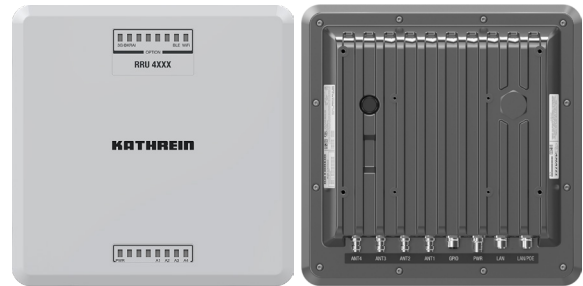


The Kathrein RRU 4000 reader family is the next generation of RAIN RFID readers and the leading IoT device for all professional AutoID solutions. Its high-performance 33-dBm UHF RF unit, optional connectivity modules, e.g. PoE+, Wi-Fi, 3G mobile interface and the powerful scalable processing unit change 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, authentication 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>.

**> General Specifications**

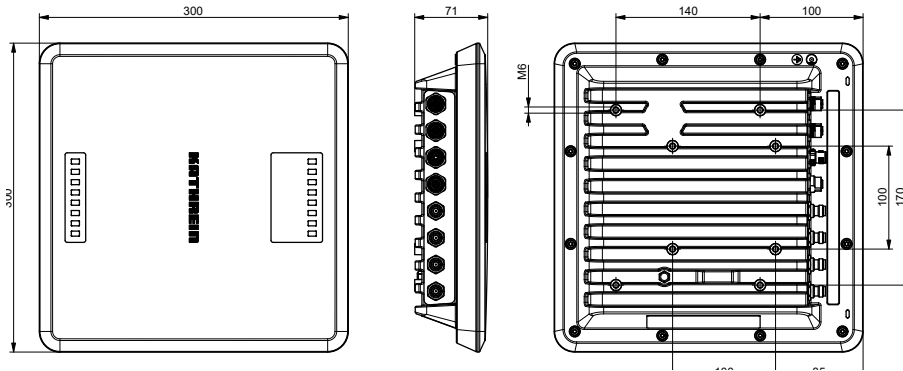
RFID UHF Reader Overview		ETSI Version		FCC Version	
		RRU 44xx	RRU 45xx	RRU 44xx	RRU 45xx
<b>RFID</b>					
Frequency range	[MHz]	865–868		902–928	
Impedance antenna port	[Ohm]	50			
Max. TX power, conducted	[dBm]	30	33	30	30 (33 dBm with extended cable length)
Max. TX power, radiated	[dBm]	30	33	36	
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	
<b>Voltage</b>					
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			
<b>Power consumption</b>					
Local supply	[W]	20	25.4	20	25.4
Remote feed	[W]	20	25.4	20	25.4
<b>GPIO</b>					
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>RFID controller</b>					
Processor		ARMv7-A based processor with 600 MHz			
Flash memory eMMC	[Gbyte]	4			
RAM DDR2	[Mbyte]	128			
Operating system		Linux			
<b>Mechanical properties</b>					
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.

**> 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
<b>Order number</b>		52010287	52010288	52010289	52010290	52010295	52010296	52010297	52010298
<b>Embedded PC</b>									
Processor	ARMv7-A based processor, 2 cores @ 800 MHz								
Flash memory (eMMC)	8 [Gbyte]			✓				✓	
RAM DDR3	1 [Gbyte]								
Operating system	Linux								
<b>Ethernet</b>									
Number of Ethernet ports		1		2		1		2	
Data rate	10/100 [Mbit/s]			✓				✓	
Connector		M12, X-coded, 8-pole							
<b>©KRAI</b>									
TX frequency	22 [kHz]								
Supply voltage (output)	5 [V]			✓				✓	
Max. current per port	100 [mA]								
<b>4 LED visualisation</b>									
Freely programmable		basic LED		high-end LED		basic LED		high-end LED	
<b>Wi-Fi</b>									
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]								
<b>Bluetooth</b>									
Frequency range	2.402–2.480 [GHz]			✓				✓	
Max. TX power	[dBm]			11.7				11.7	
<b>2G/3G</b>									
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]								

> **Dimensions [mm]**



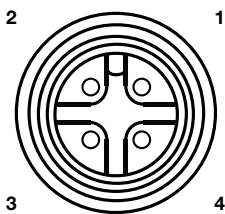
> **Note**

**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

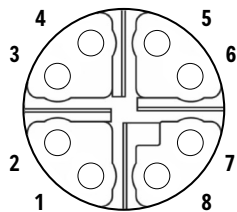


**Pinout Power Supply**

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

> **Ethernet**

M12, X-coded, 8-pin, female



**Pinout communication PoE+**

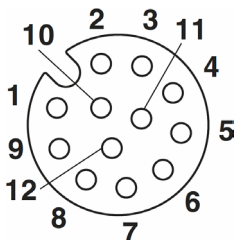
Pin	Allocation
1	TX+ / PoE+1
2	TX- / PoE+1
3	RX+ / PoE+2
4	RX- / PoE+2
5	PoE+1
6	PoE+1
7	PoE+2
8	PoE+2

**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