

# RFID UHF Products 2014

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**KATHREIN**  
RFID

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Kathrein-RFID is the leading manufacturer of professional identification solutions in the field of UHF technology. Building on our many years of expertise in high-frequency technology, Kathrein-RFID creates innovative, high-capacity system components for professional use.

As component manufacturers for RFID readers and antennas, we work closely with system integrators and resellers. OEM-specific solutions can be delivered as complete or branch solutions.

Kathrein-RFID products are developed and manufactured in conformance with the directives of the stringent automotive standard ISO TS 16949 and DIN EN ISO 9001.

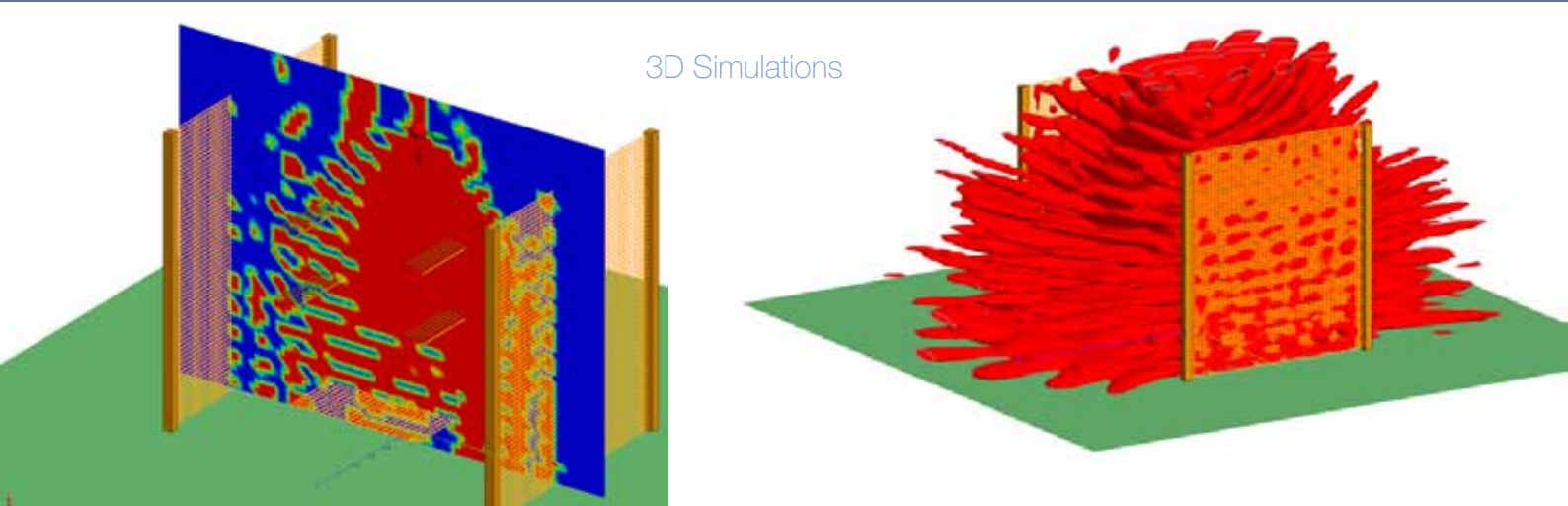
This ensures our customers an excellent degree of quality and a very long working life.

Due to optimized circuit technology und intelligent software solutions, Kathrein RFID systems can be operated with substantially lower use of energy than that of comparable systems.

Thanks to innovations such as the Kathrein-RFID Antenna Interface © KRAI, available since 2013, and the new RRU-ELC-E6 series intelligent Kathrein Linux reader, our customers can take advantage of new tools which enable innovative approaches to problem solving.







## Core competencies

- Development and manufacturing of UHF antennas and reader systems
- Customized UHF antenna systems
- Customized stationary readers and reader modules
- 3D antenna simulation
- 3D transponder measurement
- 3D application simulation

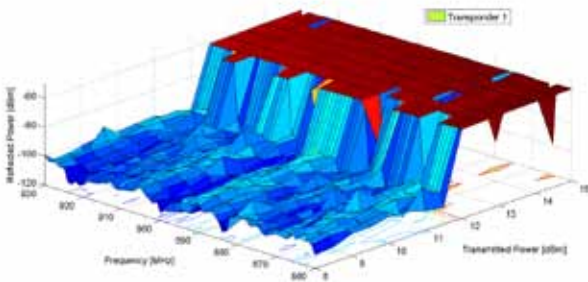
Kathrein have applied their comprehensive know-how gained in the field of automobile and mobile communications technology for quick and efficient development of OEM-specific RFID antennas and reader solutions.

A 3D field simulation enables calculation and optimization of complex antenna alignments with their respective tags.

Thus, it is possible to make a precise prediction on the system's capability.

Time-consuming, at times unsuccessful testing is therefore practically unnecessary, simplifying the development of customised products to a high degree.

3D transponder measurement



Since the establishment of Kathrein-RFID in Amerang, our customers can rely on a professional partner for the implementation of their projects. Kathrein-RFID's field of activity includes assistance in the design and analysis of RFID UHF-based applications.

The main fields of application are industrial automation and RFID in vehicle registration systems. The company features a modern trial and testing laboratory for this purpose.

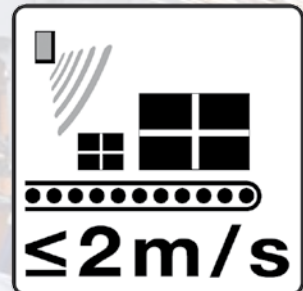
The laboratory is equipped with modern antenna measuring stations and a high-speed conveyor, enabling testing of applications that are critical in terms of time and speed.

In order to ensure customer-oriented support, on-site assistance is also provided.





# RFID Applications

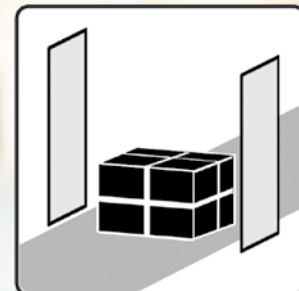


## Industrial

RFID is particularly suitable for use in industrial automation, to control and optimize manufacturing processes. An extension of its use into internal logistics is a further step for successful introduction of next-generation RFID systems.

Modern, high-performance RFID systems must meet a multitude of demands. One of the most important ones is being able to narrow the detection field down to the desired detection range so that only a certain transponder is identified.

The new Kathrein-RFID © KRAI technology allows one to use the reader software control to directly influence the antenna's physical characteristics to optimally and dynamically adapt these to the application's individual environment and block reflections. The high-performance Kathrein RFID systems provide you with all the necessary components for successful RFID application development.

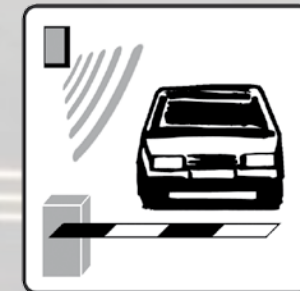


## Logistics

Kathrein offers products and solutions specially designed for efficient delivery of RFID systems in the field of intra-logistics.

The very large number of transponders already in use for logistics demand very high-performance evaluation electronics, capable of recording as many as several hundred transponders quickly and reliably. The new, intelligent RRU-ELC series readers meet these requirements. Due to an integrated industrial PC (1 GHz/4 GB) system integrators are provided with a Linux platform which allows them to install their own software products directly on the reader.

The newest RFID antennas can be controlled through the integrated © KRAI interface. In conjunction with the new © KRAI CSB Circular Switch Beam Antenna, the direction of a moving transponder can also be identified. Using the Tag Phase Information, applications for position determination can be implemented.



## AVI

RFID UHF is particularly well suited to the identification of vehicles, as its large range of up to 18 meters allows a multitude of possible applications.

Due to Kathrein's many years of experience in the field of integrated vehicle antennas, the business has the necessary know-how to make effective use of systems to identify transponders in the vehicle environment. The ARU4 read/write device has been specially developed for this application field. It provides an efficient and cost-effective solution for integration of RFID technology into safety and access systems.

With the new variant ARU4-ELK-E6, the new © KRAI technology is now also available in this product segment. Thanks to intelligent antenna polarization switch-over, substantially better read results can also be achieved for metallized windshields. The integrated application software Accessmanager and the new UHF Windshield Label WSL allow the creation of simple stand-alone solutions with and without direct network access.



## Retail

RFID-UHF technology can substantially cut costs in the retail and fashion sectors.

A continuous and transparent value-added chain in combination with the RFID-UHF-based retail security system EAS in the shop allows a considerable reduction of stock and optimizes the logistics process over great distances and across different countries.

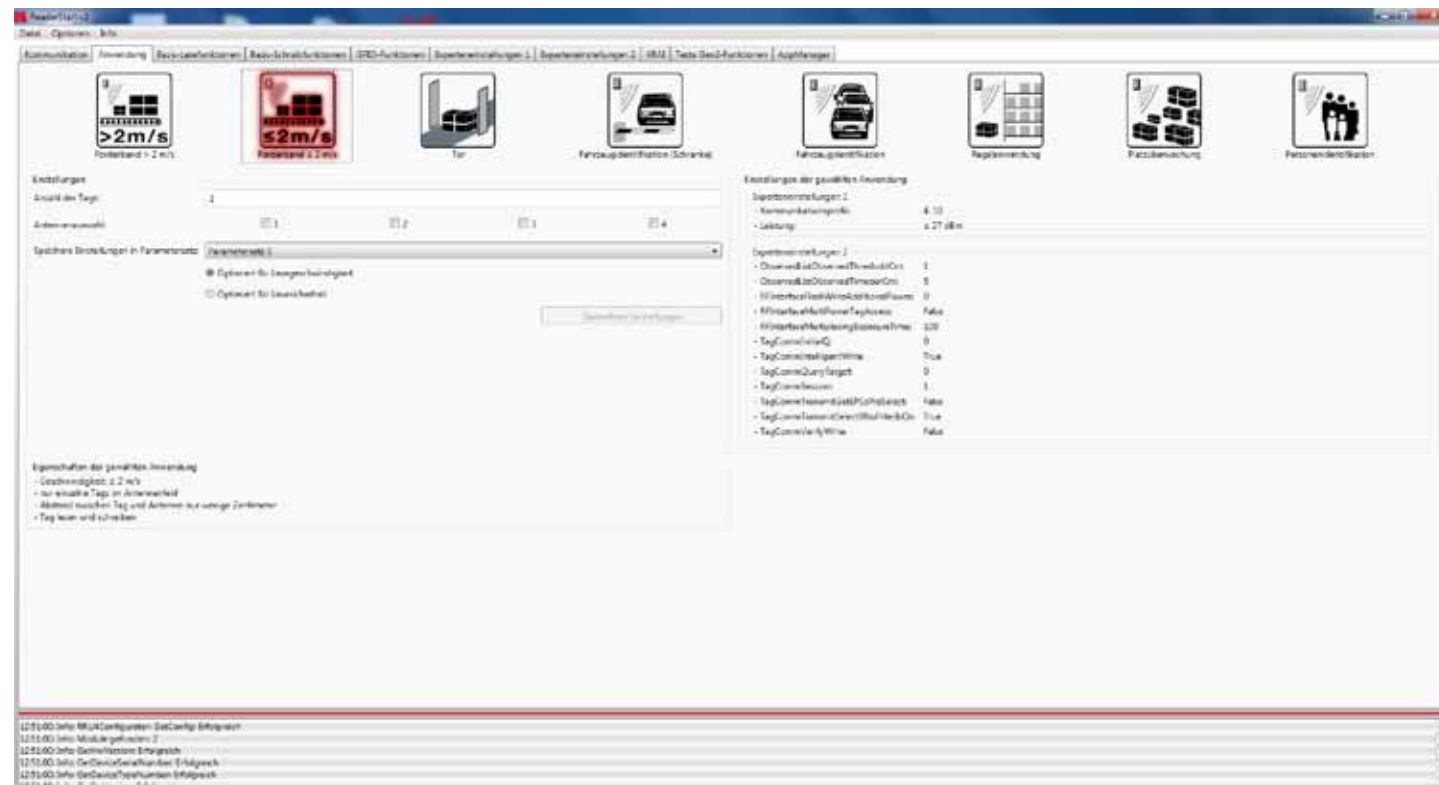
Kathrein RFID is the only manufacturer to offer a complete product range for these applications.

From stationary RFID systems for logistics to the ultra high-performance Long Range UHF handheld scanner RUH-ACD-M260-ECE for inventory applications in warehouses and in shops, up to intelligent planar antennas for cost-efficient and innovative storage rack applications. The new Phased Array Antenna type: 52010227 WIRA-30-CSB-KRAI ETSI enables you to implement high-performance yet cost-efficient overhead mountable EAS systems which can be adapted to different shop environments using the integrated © KRAI control unit.

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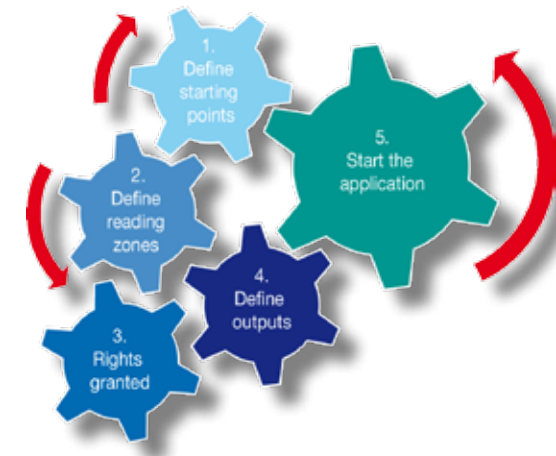
# RFID Configuration Software



## RFID Reader Start

Kathrein now provides the new “Reader Start V2” software for quick and efficient configuration and parameterization of Kathrein RFID systems. A large number of optimized and tested RFID applications are pre-selected, allowing the RFID system to be customized and optimized very easily for a wide variety of applications.

# RFID App Manager



KATHREIN RFID AVI solutions are characterized by simple handling and intuitive operation. At the same time, they are equipped with a wealth of functions for fast and secure identification of all kinds of vehicles. The application software "Access Manager V 1.0" allows user-controlled entry and configuration of the transponder data that is to be registered. No programming knowledge required!

The transponders registered in the system can be compiled and assigned to certain procedures. Individual transponders and vehicles receive certain permits. Depending on these decisions, up to four digital outputs can be operated to allow access through a barrier or gate.

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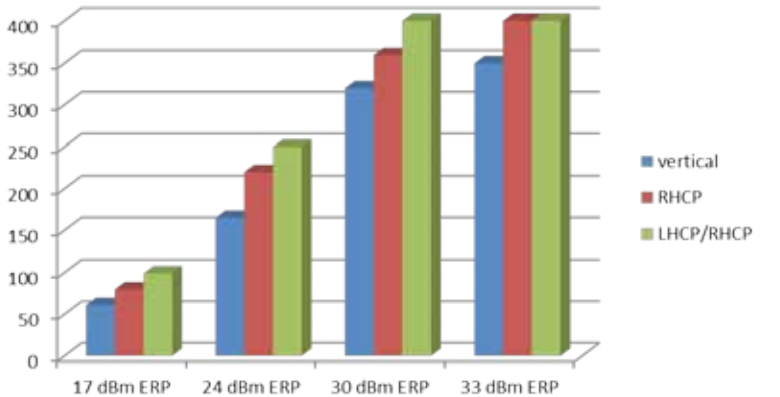
## With the new © KRAI product series Kathrein has introduced a revolutionary RFID system

By using Kathrein © KRAI antennas, reading rates can be increased by 33% compared to simple circular antennas. The Kathrein-RFID Antenna Interface © KRAI consists of a digital control bus, which enables connection between the RFID reader and the RFID antennas in order to allow control and regulation tasks in remote antennas.

The phase control elements integrated in the © KRAI antennas enable static or dynamic adjustment of antenna characteristics. Due to this, four different polarizations can be selected for the new 70° Wide Range antenna (type 52010193 WiRa-70-KRAI-ET-SI), either static or dynamic.

As the Kathrein-RFID Antenna Interface © KRAI is transmitted over the standard antenna cable, no additional lead or connection is required to control the new antenna types.

A further innovation is the new Phased Array Antenna (type: 52010227 WIRA-30-CSB-KRAI ETSI) which for the first time allows the antenna swivel to be slewed in two directions; this enables three different detection ranges to be covered with just one antenna, for example to adjust the detection range of an antenna to the local conditions or to precisely identify the direction a transponder is moving in.



### RFID Readers RRU4 and ARU4 Series

- High End Long Range Reader with an integrated 1 GHz Linux based industrial PC
- Integrated © KRAI interface to control all © KRAI antennas over the antenna cable
- Integrated tag phase measurement

### Planar antenna SSMH-30-30-KRAI-Slave

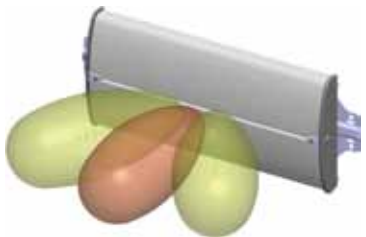
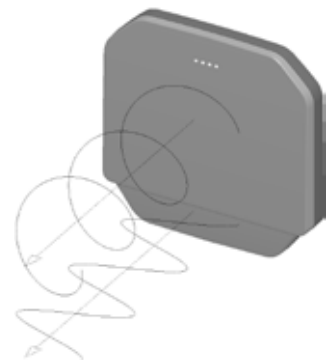
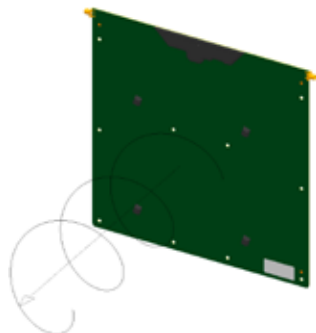
- Intelligent planar antenna with an integrated © KRAI Interface
- Cascade function for up to 32 antennas per reader
- Highly defined registration field

### RFID Wide Range Antennas ETSI

- Wide Range 70° antenna with an integrated © KRAI Interface
- Polarization switch-over to improve reading rates in highly reflective environments
- Integrated Status LED display to visualize the read results

### RFID Wide Range Antennas CSB-KRAI

- Wide range antenna with a built-in Phased Array antenna system
- Switchable read range in +/- 35° steps via © KRAI Interface
- Highest selectivity between individual read ranges



# RFID Antenna Overview

## WiRa 30°/35° Antenna



- Far-field applications
- Wide read range up to 18 m
- High selectivity
- Slewable detection field

## WiRa 70° Antennas



- Far-field applications
- Wide read range up to 12 m
- RHCP/LHCP/horizontally/vertically polarized
- Selectable polarization static/dynamic
- Four LEDs for visualization

## MiRa Antennas



- Applications in radiating near field or far field up to 2 m
- Small dimensions
- High selectivity

## LoRa Antennas



- Applications in reactive near field
- Extremely small dimensions
- Reading range: < 20 cm
- Extremely high selectivity
- Not influenced by metal

## SMSH Antennas



- Near-field applications
- Extremely slim design
- Reading range: 0-1 m
- Homogeneous detection field very high front-to-back ratio
- Up to 32 antennas can be cascaded
- Optional antenna protection cover

# RFID Antenna Overview

## Wide Range 30°/35° Antennas

Order no.	Type	©KRAI	Frequency range	Beamwidth	Polarization	Protection class
52010086	WiRa 30° ETSI		865-868 MHz	30°/70°	circular	IP65 ruggedized
52010087	WiRa 30° FCC		902-928 MHz	30°/70°	circular	IP65 ruggedized
52010227	WiRa-30-CSB-KRAI-ETSI	X	865-868 MHz	35°/80°	circular	IP65 ruggedized <b>NEW</b>

## Wide Range 70° Antennas

Order no.	Type	©KRAI	Frequency range	Beamwidth	Polarization	Protection class
52010078	WiRa 70° ETSI		865-868 MHz	70°/70°	circular	IP65
52010079	WiRa 70° FCC		902-928 MHz	70°/70°	circular	IP65
52010193	WIRA-70-KRAI-ETSI	X	865-868 MHz	70°/70°	RHCP/LHCP/ horizontal/ vertical	IP65
52010194	WIRA-70-KRAI-FCC	X	902-928 MHz	70°/70°	RHCP/LHCP/ horizontal/ vertical	IP65

## Mid Range 100° Antennas

Order no.	Type	©KRAI	Frequency range	Beamwidth	Polarization	Protection class
52010082	MiRa ETSI		865-868 MHz	100°	circular	IP67
52010083	MiRa FCC		902-928 MHz	100°	circular	IP67
52010172	S-MiRa		865-928 MHz	100°	circular	IP67

## Low Range Antennas

Order no.	Type	©KRAI	Frequency range	Beamwidth	Polarization	Protection class
52010084	LoRa ETSI		865-868 MHz	Near field	Magnetic	IP67
52010085	LoRa FCC		902-928 MHz	Near field	Magnetic	IP67
52010092	U-LoRa		865-928 MHz	Near field	Magnetic	IP67

## Smart Shelf Antennas

Order no.	Type	©KRAI	Frequency range	Beamwidth	Polarization	Protection class
52010197	SMSH-30-30-KRAI-Slave	X	865-928 MHz	60°/60°	circular	Indoor

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# RFID Wide Range Antennas 30°/35°

# RFID Wide Range Antennas 30°/35°



Order no.: 52010086 WiRa 30 ETSI

Frequency range	865-868 MHz
Beamwidth	30°/70°
Antenna gain	11 dBic
Axial ratio	1 dB
Polarization	circular
Connection	Type N connector (female) *
Protection class	IP65 ruggedized
Dimensions	555 x 262 x 59 mm

\* Please also order the adapter TCN-N (f-m) 52010178 with this antenna.



Order no.: 52010087 WiRa 30 FCC

Frequency range	902-928 MHz
Beamwidth	30°/70°
Antenna gain	10.5 dBic
Axial ratio	1 dB
Polarization	circular
Connection	Type N connector (female) *
Protection class	IP65 ruggedized
Dimensions	555 x 262 x 59 mm

\* Please also order the adapter TCN-N (f-m) 52010178 with this antenna.

Order no.: 52010227 WIRA-30-CSB-KRAI-ETSI

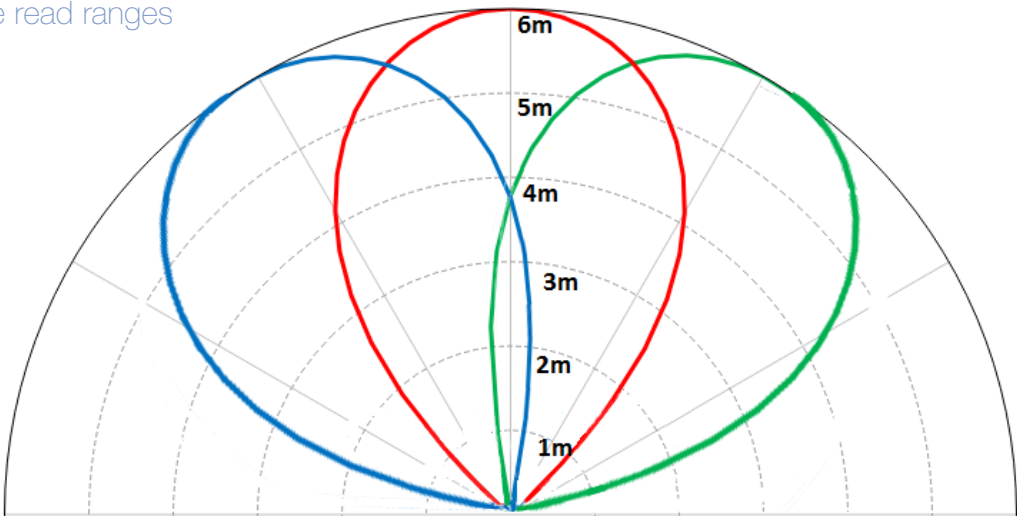
Frequency range	865-870 MHz
Beamwidth	35° vertical; 80° horizontal
Slewing range	+/- 35°
Antenna gain	6 dBic
Polarization	circular
Connection	Type N connector (female) *
Protection class	IP65 ruggedized
Dimensions	555 x 262 x 59 mm

Function only in conjunction with © KRAI Reader 52010180/52010181

\* Please also order the adapter TCN-N (f-m) 52010178 with this antenna.



Switchable read ranges





# RFID Wide Range Antennas 70°

## Order no.: 52010078 WiRa 70 ETSI

Frequency range	865-868 MHz
Beamwidth	70°/70°
Antenna gain	8.5 dBic
Axial ratio	1 dB
Polarization	circular
Connection	TNC connector (female)
Protection class	IP65
Dimensions	270 x 270 x 45 mm



## Order no.: 52010079 WiRa 70 FCC

Frequency range	902-928 MHz
Beamwidth	70°/70°
Antenna gain	8.3 dBic
Axial ratio	1 dB
Polarization	circular
Connection	TNC connector (female)
Protection class	IP65
Dimensions	270 x 270 x 45 mm

# RFID © KRAI Wide Range Antennas 70°



## Order no.: 52010193 WiRa-70-KRAI-ETSI

Frequency range	865-868 MHz
Beamwidth	70°/70°
Polarization <b>circular</b>	LHCP/RHCP *
- Gain for LHCP/RHCP *	6.5 dBic
- Axial ratio	Typ. 1.5 dB
Polarization <b>linear</b>	Linear (horizontal/vertical)
- Gain	7.5 dBi
Connection	TNC connector (female)
Protection class	IP65
Dimensions	270 x 270 x 45 mm

Function only in conjunction with © KRAI Reader 52010180/52010181  
\* (Left/Right/Hand Circular Polarization)

## Order no.: 52010194 WiRa-70-KRAI-FCC

Frequency range	902-928 MHz
Beamwidth	70°/70°
Polarization <b>circular</b>	LHCP/RHCP *
- Gain for LHCP/RHCP *	6.5 dBic
- Axial ratio	Typ. 1.5 dB
Polarization <b>linear</b>	Linear (horizontal/vertical)
- Gain	7.5 dBi
Connection	TNC connector (female)
Protection class	IP65
Dimensions	270 x 270 x 45 mm

Function only in conjunction with © KRAI Reader 52010180/52010181  
\* (Left/Right/Hand Circular Polarization)



# RFID Mid Range Antennas

## Order no.: 52010082 MiRa ETSI

Frequency range	865-868 MHz
Beamwidth	100°/100°
Read range	Typ. 0.2-2 meters
Antenna gain	2.5 dBic
Axial ratio	Typ. 1.5 dB
Polarization	circular
Connection	TNC connector (female)
Protection class	IP67
Dimensions	154 x 126 x 36 mm

## Order no.: 52010083 MiRa FCC

Frequency range	902-928 MHz
Beamwidth	100°/100°
Read range	Typ. 0.2-2 meters
Antenna gain	2.5 dBic
Axial ratio	Typ. 1.5 dB
Polarization	circular
Connection	TNC connector (female)
Protection class	IP67
Dimensions	154 x 126 x 36 mm

## Order no.: 52010172 S-MiRa ETSI/FCC

Frequency range	865-928 MHz
Beamwidth	100°/100°
Read range	Typ. 0-1 meter
Antenna gain	-13 dBic
Axial ratio	Typ. 1.5 dB
Polarization	circular
Connection	TNC connector (female)
Protection class	IP67
Dimensions	154 x 126 x 36 mm



# RFID Low Range Antennas

## Order no.: 52010084 LoRa ETSI

Frequency range	865-868 MHz
Read range	Typ. 7 cm @ NF tags *
Selectivity	Typ. 5 cm @ NF tags *
EIFF	> 20 dB
Antenna gain	< -15 dBi
Connection	TNC connector (female)
Protection class	IP67
Dimensions	90 x 63 x 31 mm

## Order no.: 52010085 LoRa FCC

Frequency range	902-928 MHz
Read range	Typ. 7 cm @ NF tags *
Selectivity	Typ. 5 cm @ NF tags *
EIFF	> 20 dB
Antenna gain	< -15 dBi
Connection	TNC connector (female)
Protection class	IP67
Dimensions	90 x 63 x 31 mm

## Order no.: 52010092 U-LoRa ETSI/FCC

Frequency range	865-928 MHz
Read range	Typ. 3 cm @ NF tags *
Selectivity	Typ. 5 cm @ NF tags *
Read range	Typ. 8 cm @ FF tags **
Selectivity	Typ. 10 cm @ FF tags **
EIFF	> 15 dB
Antenna gain	< -30 dBi
Connection	TNC connector (female)
Protection class	IP67
Dimensions	90 x 63 x 31 mm

\* Near-field Tags  
\*\* Far-field Tags



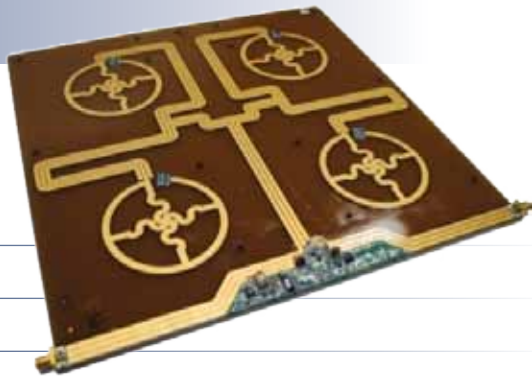


# RFID Smart Shelf Antennas

Order no.: 52010197 SSMH-30-30-KRAI-SLAVE

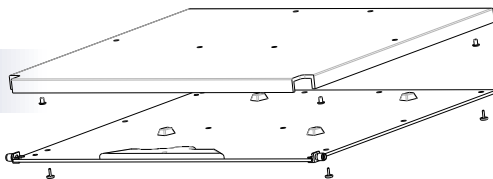


Frequency range	865-928 MHz
Beamwidth	60°/60°
Read range	0-100 cm
Antenna gain	-7 dBic
Connection	Input: SMA connector (female) Output: SMA connector (female)
Protection class	Indoor
Dimensions	300 x 300 x 5 mm



Function only in conjunction with © KRAI Reader 52010180/52010181

Order no.: 52010224 SSMH-30-30-Housing



Mechanical protecting housing for the top side to retrofit the SSMH 30-30-KRAI-SLAVE (Order no.: 52010197)

Cover	Plastic
Screws	Zinc coated steel (4 screws)
Dimensions	306 x 306 x 12 mm
The delivery scope additionally includes	4 plastic feet

# RFID-UHF Mobile Terminal

Order no.: 52010229 RUH-ACD-M260-ECE

RFID-UHF mobile terminal for mobile data capturing using Windows CE 6.0, a alphanumeric keypad and a color touch screen.



NEW

Scanner	Without an integrated bar code laser scanner
Operating system	Windows® CE 6.0
Memory	64 MB Flash / 128 MB SDRAM
Display	Colour touch screen, 3.5", resolution 240 x 320 pixels
Radio data transmission	IEEE 802.11b/g
Power supply	Rechargeable battery 7.4 V / 2200 mAh, lithium ion
Housing	Impact-resistant ABS plastic (grey)
Dimensions	224 x 85 x 47 mm (LxWxH)
Weight	500 g with battery
Temperatures	0°C - 45°C
Protection class	IP54

## RFID-UHF characteristics

Frequency range	865-868 MHz
Antenna	Kathrein patented X Pol linear
Read range	7m *
Output line Reader module	0.5W
Guidelines and standards	EN 60529, EN 301489-1, EN 302208-1, EN 302208-2, EN 60950-1:2006, EN 50364



\*dependent on transponder type and environment



\* Copyright by Microsoft Windows \*\* Copyright by Intel GmbH

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NEW

RFID-UHF Mobile Terminal Options

Order no.	Scanner	Option
52010230 *	2D-Imager-RUH-M260	Imager (1 and 2D bar code scanner)
52010231 *	SR-Scanner-RUH-M260	Bar code laser scanner (short range)

\* Can only be ordered together with base unit 52010229



RFID-UHF Mobile Terminal Accessories

Order no.	Type	Description
52010233	DS-RUH-ACD-260	Docking station, housing with LED display to transmit the registered data as well as to charge the M260. Equipped with USB and Ethernet ports. Delivery including power supply unit and network connection cable.
52010234	AKKU-RUH-ACD-260	Spare rechargeable battery: 7.4 V / 2200 mAh lithium-ion rechargeable battery

RRU4



- High End stationäry reader
- Integrated 1GHz/4GB intelligence module
- © KRAI Interface
- Read distance up to 18 m



ARU4



- High end antenna-integrated reader
- Integrated 180 MHz/1 GMB intelligence module
- © KRAI Interface
- Read distance up to 12 m



M-ARU



- Mid-range antenna-integrated reader
- Power over Ethernet (PoE)
- Read distance up to 2 m
- Optimized for vehicle integration

ERU4



- Stationary standard reader
- Compact construction
- Read distance up to 6 m



RRU4 Series

Order no.	Type	©KRAI	Frequency range	Performance class	Interface	Protection class
52010095	RRU4-ETL-E6		865-868 MHz	Max. 2 W ERP	Ethernet/Linux/IPC 180 MHz	IP65 ruggedized
52010098	RRU4-ETL-U6		902-928 MHz	Max. 4 W EIRP	Ethernet/Linux/IPC 180 MHz	IP65 ruggedized
52010180	RRU4-ELC-E6	X	865-868 MHz	Max. 2 W ERP	Ethernet/Linux/IPC 1 GHz	IP65 ruggedized
52010181	RRU4-ELC-U6	X	902-928 MHz	Max. 4 W EIRP	Ethernet/Linux/IPC 1 GHz	IP65 ruggedized

ARU4 Series

Order no.	Type	©KRAI	Frequency range	Performance class	Interface	Protection class
52010101	ARU4-ETL-E6		865-868 MHz	Max. 2 W ERP	Ethernet/Linux/IPC 180 MHz	IP65 ruggedized
52010104	ARU4-ETL-U6		902-928 MHz	Max. 4 W EIRP	Ethernet/Linux/IPC 180 MHz	IP65 ruggedized
NEW 52010225	ARU4-ELK-E6	X	865-868 MHz	Max. 2 W ERP	Ethernet/Linux/IPC 180 MHz	IP65 ruggedized
NEW 52010226	ARU4-ELK-U6	X	902-928 MHz	Max. 4 W EIRP	Ethernet/Linux/IPC 180 MHz	IP65 ruggedized

M-ARU Series

Order no.	Type	©KRAI	Frequency range	Performance class	Interface	Protection class
52010198	M-ARU-ETH-E6		865-868 MHz	Max. 0.3 W ERP	PoE+RS232	IP65 ruggedized

ERU4 series

Order no.	Type	©KRAI	Frequency range	Performance class	Interface	Protection class
52010190	ERU4-ETG-E4		865-868 MHz	Max. 1 W	Ethernet/USB	Indoor IP40
52010191	ERU4-ETG-U4		902-928 MHz	Max. 1 W	Ethernet/USB	Indoor IP40

Core applications

- Intra-Logistics
- Industrial Automation
- Vehicle Identification up to 250 km/h
- Protection class: IP 65
- Integrated industrial PC 1GHz/4GB
- © KRAI integrated SSH connection

Frequency range	ETSI/FCC
Output power	33 dBm
Standards	EPC Global Gen2/ISO 18000-6C
Antenna interface	4-port RX/TX, TNC-reverse
Operating system	Kathrein firmware
User platform	Linux platform V1 or V2 optional
Interfaces	Ethernet
Digital I/O	4 inputs/outputs optional
Operating temperature	-20 °C to +55 °C
Storage temperature	-40 °C to +85 °C
Protection class	IP65
Dimensions	252 x 216 x 66 mm
Conforms to	CE, FCC, CCC, Anatel





Core applications

- Intra-Logistics
- Industrial Automation
- Vehicle Identification up to 250 km/h
- Protection class: IP 65
- Integrated industrial PC 180 MHz/1 GB
- © KRAI integrated



Frequency range	ETSI/FCC
Output power	33 dBm
Standards	EPC Global Gen2/ ISO 18000-6C
Antenna interface	70°/70° circular
Antenna integration	69°/69° circular
Operating system	Kathrein firmware
User platform	Linux Platform
Interfaces	Ethernet
Digital I/O	4 inputs/outputs optional
Indicators	4 LEDs, freely programmable
Operating temperature	-20 °C to +55 °C
Storage temperature	-40 °C to +85 °C
Protection class	IP65
Dimensions	270 x 270 x 80 mm
Conforms to	CE, FCC, CCC, Anatel

Core applications

- Fork Lift Application
- Industrial Automation
- Storage Systems
- Protection class: IP65



Frequency range	ETSI/FCC
Output power	27dBm
Standards	EPC Global Gen2/ISO 18000-6C
Antenna interface	100°/100° circular
Operating system	Kathrein firmware
Interface	Ethernet PoE and RS232
Digital I/O	3 inputs/3 outputs
Indicator	Status LED
Operating temperature	-20 °C to +55 °C
Storage temperature	-40 °C to +85 °C
Protection class	IP65
Dimensions	154 x 126 x 76 mm
Conforms to	CE, FCC, UL, CCC, Anatel



NEW

Core applications

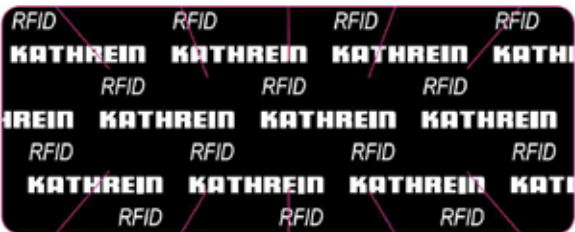
- Standard applications
- Compact construction
- Flexible antenna configurations
- Read distance up to 6 m
- Max. radiated power 1W ERP
- Indoor IP40

Frequency range	ETSI/FCC
Output power	30 dBm
Standards	EPC Global Gen2/ISO 18000-6C
Antenna interface	4-port RX/TX, TNC-reverse
Operating system	Kathrein firmware
Interface	Ethernet/USB
Digital I/O	4 inputs/outputs optional
Operating temperature	-20 °C to + 50 °C
Storage temperature	-40 °C to + 85 °C
Protection class	Indoor IP40
Dimensions	250 x 225 x 45 mm
Conforms to	CE, FCC



Core applications

- Barrier control for car parks
- Toll pre-pay systems
- Fleet management companies and authorities



Order no.: 52010220 WSL-T P-K-S

Frequency range	Optimized for 868 MHz
Protocol	ISO 18000-6 EPC Class 1 Gen 2
Typ. range	4 m
Max. range	8 m
Ambient temperature for operation	-50 °C to 85 °C
Dimensions (standard)	64 x 25.4 mm

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RFID Reader Power Supply

Order no.	Type	Product type
52010179 *	R-RPA 115-230V/24V	RFID Reader Power Adapter 115-230 V/24 V

\* RRU/ARU Reader



Order no.	Type	Product type
52010192 **	R-ERPA115-230V/24V	RFID Reader Power Adapter 115-230 V/24 V

\*\* ERU Reader



RFID Reader Protective Caps

Order no.	Type	Product type
52010127	Protective cover set for the RRU and ARU reader series	To cover unused M12 sockets or antenna sockets

RFID Antenna Cables

Order no.	Type	Product type
52010174	R-AC 3 TNC-TNCR	LL240 flex, L = 3 m, IP65 ruggedized
52010175	R-AC 6 TNC-TNCR	LL240 flex, L = 6 m, IP65 ruggedized
52010176	R-AC 10 TNC-TNCR	LL240 flex, L = 10 m, IP65 ruggedized
52010177	R-AC 15 TNC-TNCR	LL240 flex, L = 15 m, IP65 ruggedized
52010090	R-AC 3 SMA-TNCR	RG58; L = 3 m
52010208	R-AC 05 SMA-SMA	RG58; L = 0.5 m

\* Cable TNC-TNCR in combination with the antenna adapter TNC-N (Order no. 52010178) also fit for antennas: 52010086/52010087

RFID antenna adapter

Order no.	Type	Product type
52010178	R-AA TNC-N (f-m)	Adapter TCN-N (f-m)
52010243	R-AA TNC-SMA (f-m)	Adapter SMA (f-m)

\* Cable TNC-TNCR in combination with the antenna adapter TNC-N (Order no. 52010178) also fit for antennas: 52010086/52010087/52010227



52010243



52010178



RFID Cables



Order no.	Type	Product type
52010125	CK-RRU RS4	Cable set RRU4-RS4
52010126	CK-RRU ETG	RRU4-ETG/ETL cable set

RFID single cable

Order no.	Type	Length	Product type
52010189	CK-M-ARU RS	1.5 m	M12 cable for M-ARU RS232; 12-pin connector (m), A-coded
52010209	CK-M-ARU PoE	1.5 m	M12 cable for M-ARU PoE; 4-pin connector (m); RJ45

NEW

Order no.	Type	Length	Product type
52010238	R-CC 10 ETH	10 m	RRU4/ARU4/M-ARU Ethernet cable
52010239	R-CC 10 GPIO	10 m	RRU4/ARU4 ribbon cable
52010240	R-CC 10 DC	10 m	RRU4/ARU4 power supply connection cable
52010241	R-CC 10 RS	10 m	M-ARU connector cable RS



52010189, 52010241



52010209, 52010238



52010240

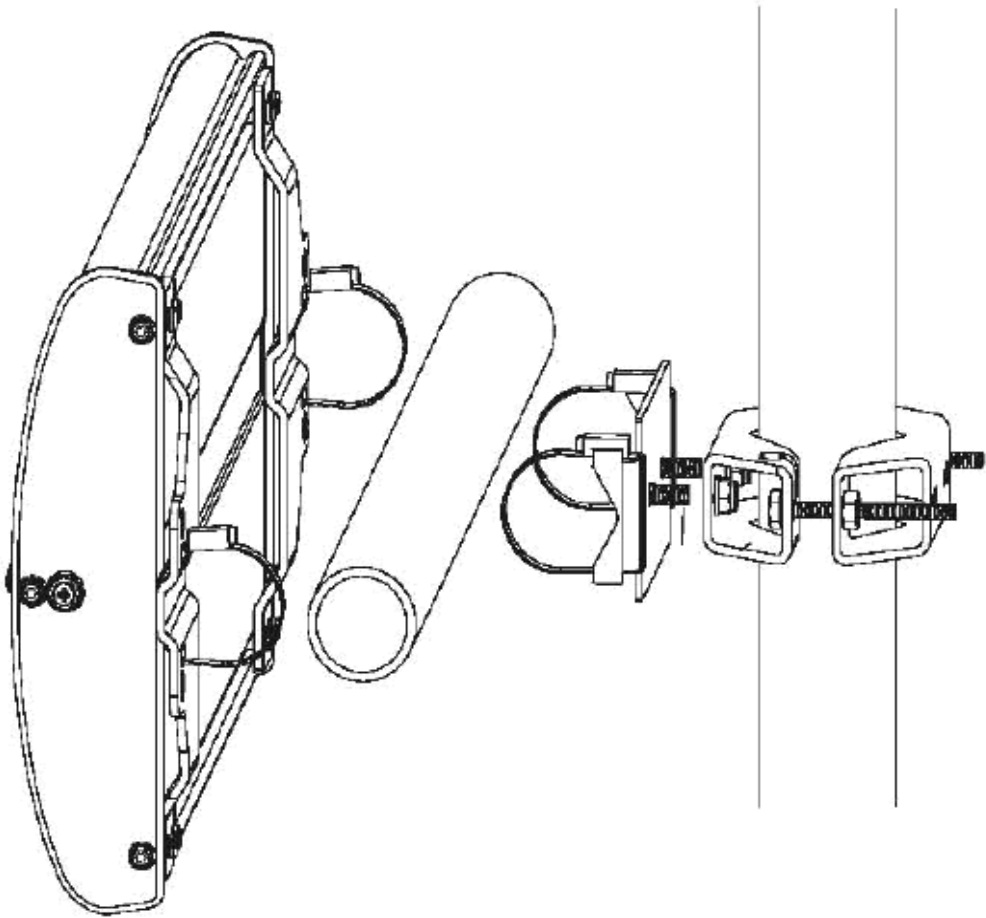


52010239

Mast mounting set

Order no.	Description	Interface	Material
52010005	Mast mounting set	Mast installation	Steel

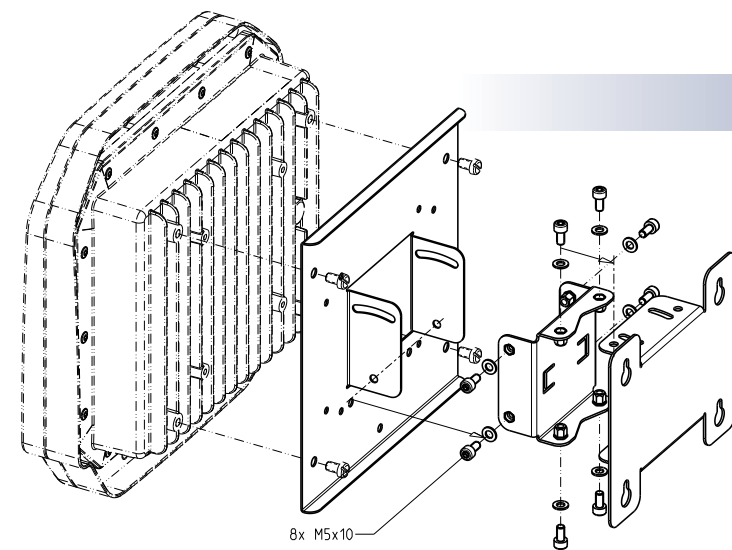
Mast mounting set 52010005 is suitable for the following antennas:  
52010003/52010004/52010086/52010087/52010227



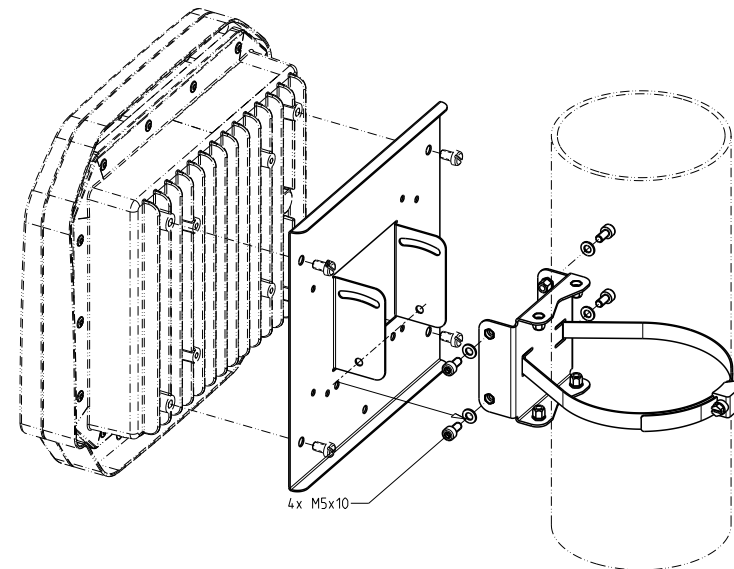
## Wall mount/mast

Order no.	Description	Interface	Material
52010128	Wall mount/mast mounting set	Wall/mast installation	Steel

Mast mounting set 52010128 is suitable for the following antennas:  
52010078/52010079/52010060/52010073/52010193/52010194 and all RRU4 and ARU4 readers



## Mast installation



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You will find an updated list of KATHREIN-RFID sales partners on our website "[www.kathrein-rfid.de](http://www.kathrein-rfid.de)"

**Contact:**

Sales RFID

Phone: +49 8075 914 933 20  
E-mail: [rfid-sales@kathrein-sachsen.de](mailto:rfid-sales@kathrein-sachsen.de)  
Internet: [www.kathrein-rfid.de](http://www.kathrein-rfid.de)

KATHREIN-RFID  
Am Kroit 25-27  
D-83123 Amerang