# RFID UHF Products 2013



**KATHREIN**

*RFID*

# Contents

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 conformace 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 as of 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.

Antennas

Antenna-integrated readers

Readers

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 optimisation 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.

**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 simulation
• 3D application simulation
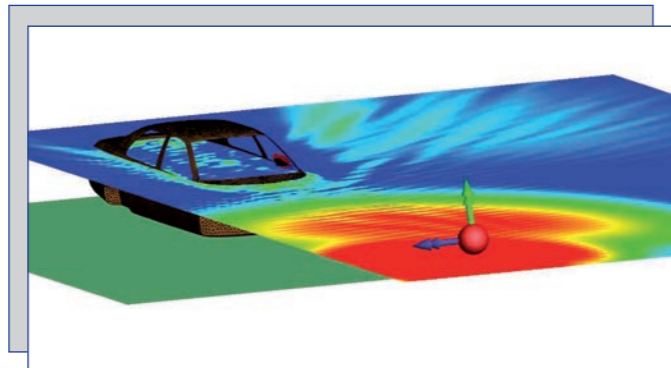


Since the establishment of Kathrein-RFID in Amerang, our customers can rely on a professional partner for the implementation of their projects.

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.
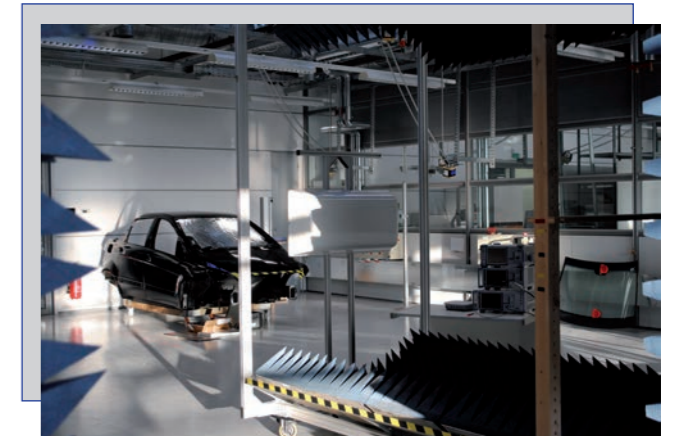
## RFID in Industrial Use

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 RFID systems. This makes very wide demands on an RFID system. A wide variety of antenna systems is available so as to achieve the desired read range at the various reading points.

The Kathrein RFID UHF technology allows even typically varied RFID HF applications to be satisfied with only one single medium. There is no longer any need to change the transponder within the production and internal logistics environment.
This opens up entirely new possibilities for design and layout of automatic ID processes, which mean the desired ROI is achieved more quickly.

## RFID in 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. For these requirements there are optimized process profiles available, which allow users to quickly parameterize their entire system.

Kathrein portal antennas are the world leaders in this field; they provide uninterrupted coverage of the field in the read range.

## RFID for AVI

RFID UHF is particularly well suited to the identification of vehicles, as its large range of up to 20 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.
The high protection class and the robust design ensure a long working life at extremely low operating costs.

## RFID-based Security Solution

RFID-UHF offers a multitude of solutions for security and surveillance technology. Special new cryptographic standards based on world-wide RFID-UHF technology allow highly-secure, cost-optimized security solutions for the identification of people, animals and objects. The new intelligent RRU4 series Kathrein-RFID readers provide an integrated high-capacity platform for this purpose.

Combined with sensitive directional antennas and software-based analysis tools, movement data can be collected and analyzed.
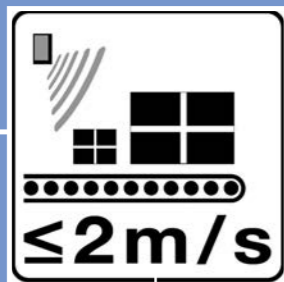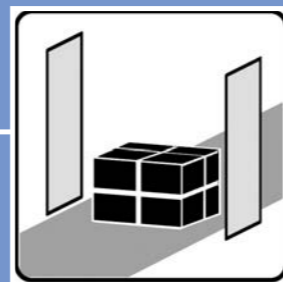
RFID in industrial use                RFID in logistics                RFID for vehicle identification                RFID-based security solution

## RFID Reader Start

Kathrein now provides the new "Reader Start V2" 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.
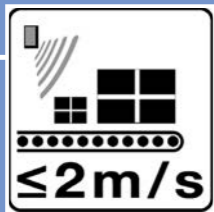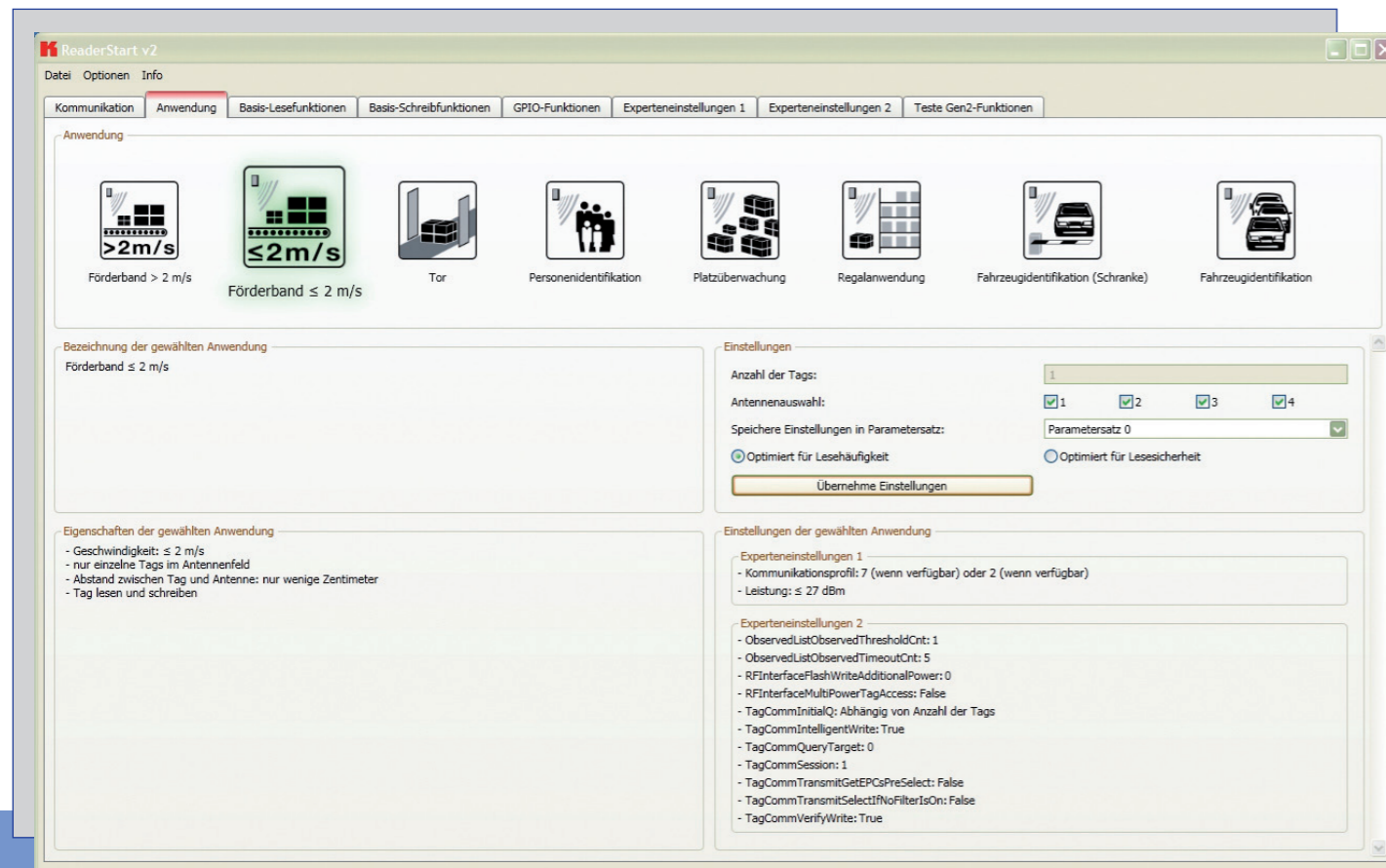
## RFID App Manager

"Tag Manager" is an efficient easy-use software solution for the configuration and processing of RFID transponder data. Through integration in the existent Kathrein-Reader Start v2 configuration software, the user can record and evaluate

large tag populations as well as activate the required inputs and outputs of the reader. All raw data is collected in an integrated database for analysis at a later time.




RFID in industrial use    RFID in logistics    RFID for vehicle identification    RFID-based security solution

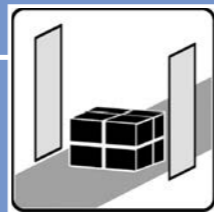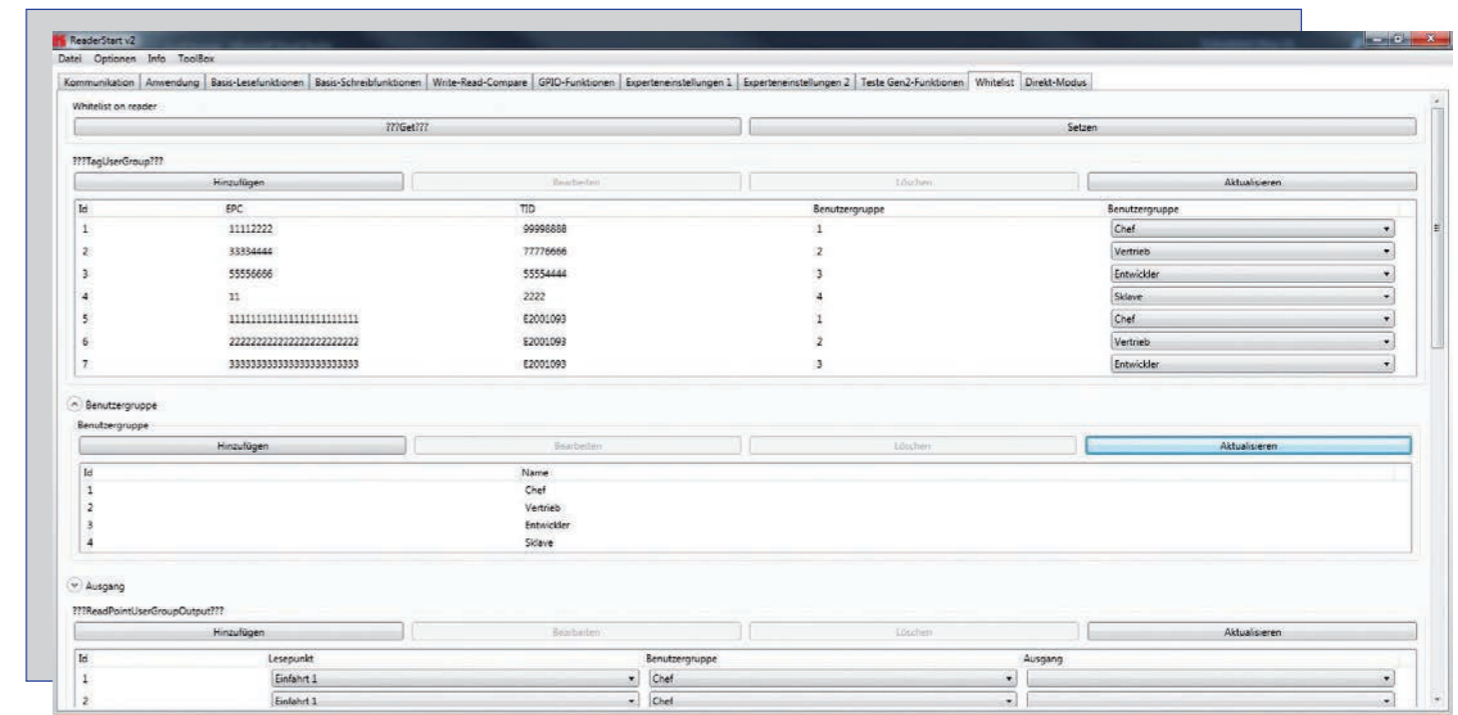**With the new © KRAI product series Kathrein has introduced a revolutionary RFID system.**

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-ETSI): RHCP/LHCP/horizontal linear/vertical linear

One can choose between static polarization and automatic switch-over. 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.

The following products are equipped with the © KRAI-Interface as of 2013:

**Antennas:**
52010193 WiRa-70-KRAI-ETSI
52010194 WiRa-70-KRAI-FCC
52010197 SMSH-30-30-KRAI-Slave

**Readers:**
52010180 RRU4-ELC-E6 ETSI
52010181 RRU4-ELC-U6 FCC

Kathrein RRU4-ELC series Kathrein reader with © KRAI Interface to control up to 32 antennas (max. 8 SMSH per reader port) of the type SMSH KRAI Smart Shelf SLAVE.
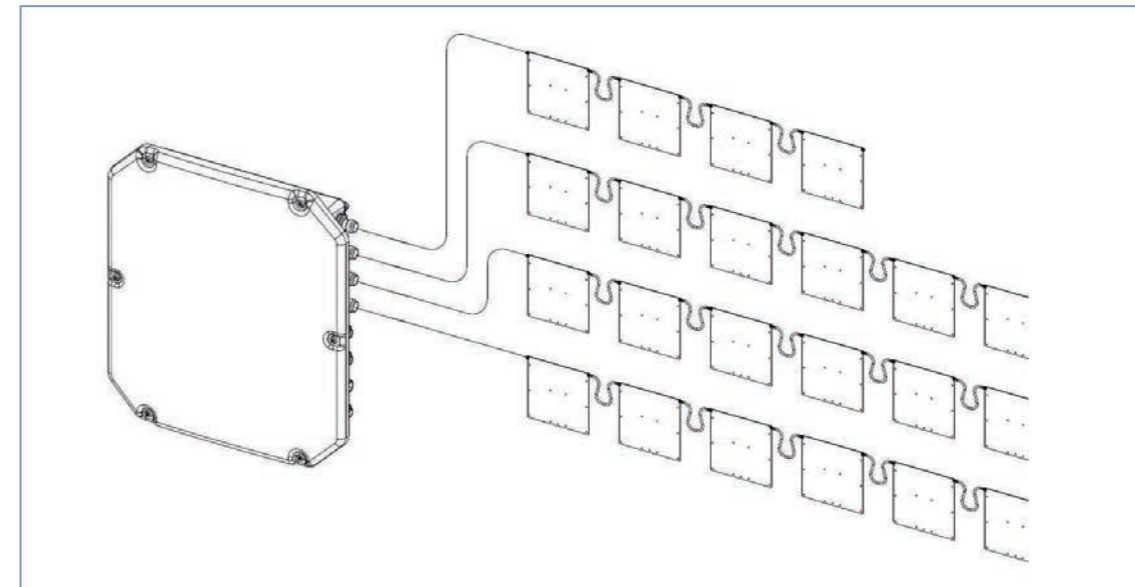


Kathrein © KRAI WiRa-70-KRAI type antenna with up to 4 statically or dynamically settable polarization levels (RHCP/LHCP/horizontal linear/vertical linear).
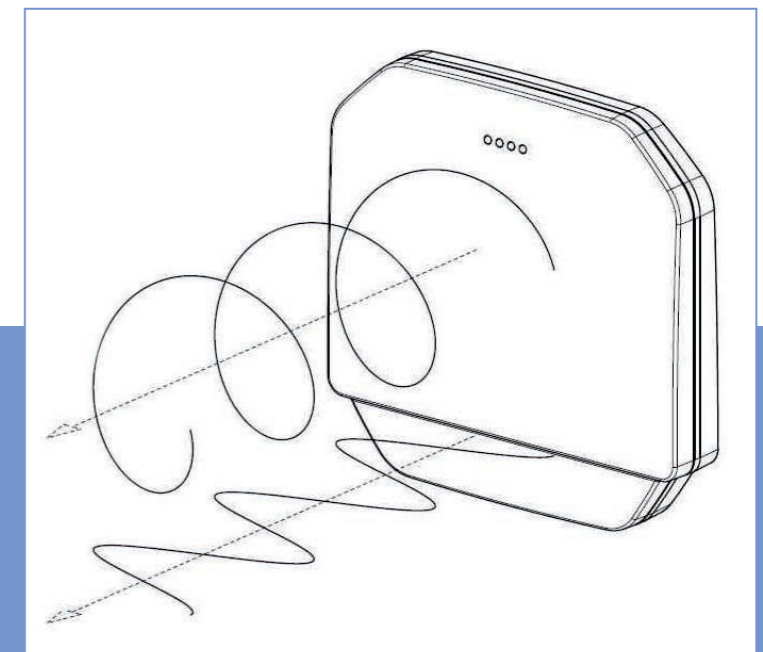
**WiRa Antenna**

- Far-field applications
- Versions with 30° or 70° beamwidth
- Wide read range up to 10 m
- Selectivity dependent upon reading distance

**WiRa Antenna**

© KRAI

- Far-field applications
- applications with 70° beamwidth
- Wide read range up to 10 m
- RHCP/LHCP/horizontally/vertically polarized
- Selectable polarization static/dynamic
- Four LEDs for visualization

**MiRa Antenna**

- Applications in radiating near field or far field
- Version with 100° beamwidth
- Small dimensions
- Typ. reading range: 20 cm to 2 m
- Selectivity dependent upon reading distance

**LoRa Antenna**

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

**SMSH Antenna**

© KRAI
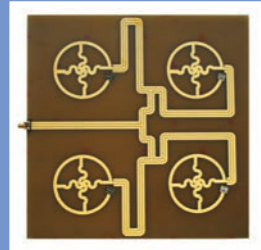
- Applications in radiating near field or far field
- Extremely slim designs
- Reading range: 0-50 cm
- Homogeneous detection field
- Very high front-to-back ratio
- Up to 8 antennas in a row can be cascaded

**Mid Range Antennas:**

| Order no. | Type | Frequency range | Beamwidth | Polarization | Protection class |
|---|---|---|---|---|---|
| 52010086 | WiRa 30° ETSI | 865-868 MHz | 30°/70° | Circular | IP 65 ruggedized |
| 52010087 | WiRa 30° FCC | 902-928 MHz | 30°/70° | Circular | IP 65 ruggedized |
| 52010078 | WiRa 70° ETSI | 865-868 MHz | 70°/70° | Circular | IP 65 |
| 52010079 | WiRa 70° FCC | 902-928 MHz | 70°/70° | Circular | IP 65 |

**Wide Range Antennas with KRAI interface:**

| Order no. | Type | Frequency range | Beamwidth | Polarization | Protection class | |
|---|---|---|---|---|---|---|
| 52010193 | WIRA-70-KRAI-ETSI | 865-868 MHz | 70°/70° | RHCP/LHCP/horizontal/vertical | IP 65 | NEW! |
| 52010194 | WIRA-70-KRAI-FCC | 902-928 MHz | 70°/70° | RHCP/LHCP/horizontal/vertical | IP 65 | NEW! |

**Mid Range Antennas:**

| Order no. | Type | Frequency range | Beamwidth | Polarization | Protection class |
|---|---|---|---|---|---|
| 52010082 | MiRa ETSI | 865-868 MHz | 100° | circular | IP 67 |
| 52010083 | MiRa FCC | 902-928 MHz | 100° | circular | IP 67 |
| 52010172 | S-MiRa | 865-928 MHz | 100° | circular | IP 67 |

**Low Range Antennas:**

| Order no. | Type | Frequency range | Beamwidth | Polarization | Protection class |
|---|---|---|---|---|---|
| 52010084 | LoRa ETSI | 865-868 MHz | Near field | Magnetic | IP 67 |
| 52010085 | LoRa FCC | 902-928 MHz | Near field | Magnetic | IP 67 |
| 52010092 | U-LoRa | 865-928 MHz | Near field | Magnetic | IP 67 |

**Smart Shelf Antennas:**

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

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## RFID Wide Range Antennas

**Order no.**                **52010086 WiRa 30 ETSI**

General Data

| 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 | IP 65 |
| Dimensions | 555 x 262 x 59 mm |

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

## RFID Wide Range Antennas

**Order no.**                **52010078 WiRa 70 ETSI**

General Data

| 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 | IP 65 |
| Dimensions | 270 x 270 x 45 mm |

**Order no.**                **52010087 WiRa 30 FCC**

General Data

| 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 | IP 65 |
| Dimensions | 555 x 262 x 59 mm |

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

**Order no.**                **52010079 WiRa 70 FCC**

General data

| 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 | IP 65 |
| Dimensions | 270 x 270 x 45 mm |

## RFID Wide Range Antennas

**Order no.**          **52010193 WiRa-70-KRAI-ETSI**

© KRAI

General Data

| | |
|---|---|
| Frequency range | 865-868 MHz |
| Beamwidth | 70°/70° |
| Polarization **circular** | LHCP/RHCP * |
| - Gain for LHCP/RHCP * | 6.5 dBic |
| - Axial ratio | Typ. 1.5 dB |
| Polarization **linear** | Linear (horizontal/vertical) |
| - Gain | 7.5 dBi |
| Connection | TNC connector (female) |
| Protection class | IP 65 |
| 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**

© KRAI

General Data

| | |
|---|---|
| Frequency range | 902-928 MHz |
| Beamwidth | 70°/70° |
| Polarization **circular** | LHCP/RHCP * |
| - Gain for LHCP/RHCP * | 6.5 dBic |
| - Axial ratio | Typ. 1.5 dB |
| Polarization **linear** | Linear (horizontal/vertical) |
| - Gain | 7.5 dBi |
| Connection | TNC connector (female) |
| Protection class | IP 65 |
| 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**

General Data

| | |
|---|---|
| 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 | IP 67 |
| Dimensions | 154 x 126 x 36 mm |

**Order no.**          **52010083 MiRa FCC**

General Data

| | |
|---|---|
| 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 | IP 67 |
| Dimensions | 154 x 126 x 36 mm |

**Order no.**          **52010172 S-MiRa ETSI/FCC**

General Data

| | |
|---|---|
| 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 | IP 67 |
| Dimensions | 154 x 126 x 36 mm |

## RFID Low Range Antennas

**Order no.**             **52010084 LoRa ETSI**

General Data

| 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 | IP 67 |
| Dimensions | 90 x 63 x 31 mm |

**Order no.**             **52010085 LoRa FCC**

General Data

| 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 | IP 67 |
| Dimensions | 90 x 63 x 31 mm |

**Order no.**             **52010092 U-LoRa ETSI/FCC**

General Data

| 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 | IP 67 |
| Dimensions | 90 x 63 x 31 mm |

## RFID Smart Shelf Antennas

© KRAI

**Order no.**             **52010197 SMSH-30-30-KRAI Slave**

General Data

| Frequency range | 865-928 MHz |
|---|---|
| Beamwidth | 60°/60° |
| Read range | 0-50 cm |
| Antenna gain | -7 dBic |
| Connection | Input: SMA connector (female) Output: SMA connector (female) |
| Protection class | Indoor |
| Dimensions | 300 x 300 x 5 mm |
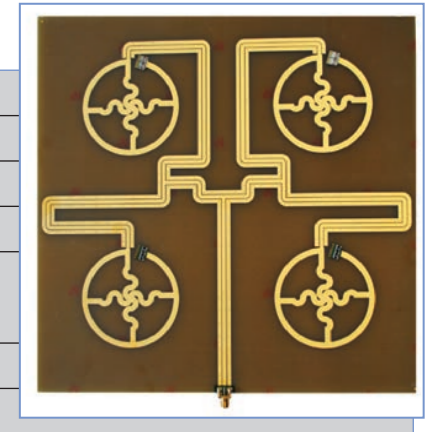
Function only in conjunction with © KRAI Reader 52010180/52010181

* Nearfield Tags
** Far-field Tags

## RFID Reader System Overview

**RRU4**

- Far-field applications
- Robust design
- Flexible antenna configuration
- Read distance: up to 10 m
- Max. radiated power 2 W ERP or 4 W EIRP
- Protection class: IP 65

**ARU4**

- Far field AVI applications
- Compact construction
- Integrated circular wide range antenna
- Up to 3 additional external antennas can be connected
- Read distance: up to 10 m
- Max. radiated power 2 W ERP or 4 W EIRP
- Protection class: IP 65

**M-ARU**

- Mid-range applications
- Small construction
- Integrated MIRA antenna
- Read distance: up to 1.5 m
- Max. radiated power
  0.3 W ERP or 0.45 W EIRP
- Protection class: IP 65

**ERU4**

- Far-field applications
- Compact construction
- Flexible antenna configuration
- Read distance: up to 6 m
- Max. output power: 1 W
- IP 40 Indoor

**RDR**

- Desktop applications
- Kanban applications with an internal antenna
- Reading distance: up to 0.5 m
- LEDs for visualization
- Ethernet/PoE interface

## RFID Reader System Overview

**RRU4 Series:**

| Order no. | Type | Frequency range | Performance class | Interface | Protection class | |
|---|---|---|---|---|---|---|
| 52010094 | RRU4-ETG-E6 | 865-868 MHz | Max. 2 W ERP | Ethernet/GPIO | IP 65 | |
| 52010095 | RRU4-ETL-E6 | 865-868 MHz | Max. 2 W ERP | Ethernet/GPIO/ LINUX V1 | IP 65 | |
| 52010097 | RRU4-ETG-U6 | 902-928 MHz | Max. 4 W EIRP | Ethernet/GPIO | IP 65 | |
| 52010098 | RRU4-ETL-U6 | 902-928 MHz | Max. 4 W EIRP | Ethernet/GPIO/ LINUX V1 | IP 65 | |
| 52010180 | RRU4-ELC-E6 | 865-868 MHz | Max. 2 W ERP | Ethernet/GPIO/ LINUX V2 | IP 65 | **NEW!** |
| 52010181 | RRU4-ELC-U6 | 902-928 MHz | Max. 4 W EIRP | Ethernet/GPIO/ LINUX V2 | IP 65 | **NEW!** |

**ARU4 Series:**

| Order no. | Type | Frequency range | Performance class | Interface | Protection class |
|---|---|---|---|---|---|
| 52010100 | ARU4-ETG-E6 | 865-868 MHz | Max. 2 W ERP | Ethernet/GPIO | IP 65 |
| 52010101 | ARU4-ETL-E6 | 865-868 MHz | Max. 2 W ERP | Ethernet/GPIO/ LINUX V1 | IP 65 |
| 52010103 | ARU4-ETG-U6 | 902-928 MHz | Max. 4 W EIRP | Ethernet/GPIO | IP 65 |
| 52010104 | ARU4-ETL-U6 | 902-928 MHz | Max. 4 W EIRP | Ethernet/GPIO/ LINUX V1 | IP 65 |

**M-ARU Series:**

| Order no. | Type | Frequency range | Performance class | Interface | Protection class | |
|---|---|---|---|---|---|---|
| 52010135 | M-ARU RS232 ETSI | 865-868 MHz | Max. 0.3 W ERP | RS 232 | IP 65 | **NEW!** |
| 52010136 | M-ARU RS232 FCC | 902-928 MHz | Max. 0.45 W EIRP | RS 232 | IP 65 | **NEW!** |
| 52010198 | M-ARU-ETH-EG | 865-868 MHz | Max. 0.3 W ERP | PoE | IP 65 | **NEW!** |
| 52010199 | M-ARU-ETH-UG | 902-928 MHz | Max. 0.45 W EIRP | PoE | IP 65 | **NEW!** |

**ERU4 Series:**

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

**RDR Series:**

| Order no. | Type | Frequency range | Performance class | Interface | Protection class | |
|---|---|---|---|---|---|---|
| 52010200 | RDR-ETH-E4 | 865-868 MHz | Max. 0.5 W | PoE | Indoor | **NEW!** |
| 52010201 | RDR-ETH-U4 | 902-928 MHz | Max. 0.5 W | PoE | Indoor | **NEW!** |

## RRU4 Series

General Data

| 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/4outputs optional |
| Operating temperature | -20 °C to +55 °C |
| Storage temperature | -20 °C to +85 °C |
| Protection class | IP 65 |
| Dimensions | 252 x 216 x 66 mm |
| Conforms to | CE, FCC, CCC |

**Key Features**
- Intra-Logistics
- Industrial Automation
- High Speed Applications up to 250 km/h
- Vehicle Identification
- Protection class: IP 65
- Integrated 1 GHz ARM controller optional
- © KRAI integrated optional

## ARU4 Series

General Data

| Frequency range | ETSI/FCC |
|---|---|
| Output power | 33 dBm |
| Standards | EPC Global Gen2/ ISO 18000-6C |
| Antenna interface | 3-port RX/TX, TNC-reverse |
| Antenna integration | 69°/69° circular |
| Operating system | Kathrein firmware |
| User platform | Linux Platform |
| Interfaces | Ethernet |
| Digital I/O | 4 inputs/4outputs optional |
| Indicators | 4 LEDs, freely programmable |
| Operating temperature | -20 °C to +55 °C |
| Storage temperature | -20 °C to +85 °C |
| Protection class | IP 65 |
| Dimensions | 270 x 270 x 80 mm |
| Conforms to | CE, FCC, CCC |

**Key Features**
- Intra-Logistics
- Industrial Automation
- High Speed Applications up to 250 km/h
- Vehicle Identification
- Protection class: IP 65

## M-ARU Series

General Data

| Frequency range | ETSI/FCC |
|---|---|
| Output power | 22 dBm |
| Standards | EPC Global Gen2/ ISO 18000-6C |
| Antenna interface | 100°/100° circular |
| Operating system | Kathrein firmware |
| Interface | RS 232 or Ethernet-PoE |
| Digital I/O | 3 inputs/3 outputs |
| Operating temperature | -20 °C to +55 °C |
| Storage temperature | -20 °C to +85 °C |
| Protection class | IP 65 |
| Dimensions | 154 x 126 x 76 mm |
| Conforms to | CE, FCC, UL, CCC |

**Key Features**

- Fork Lift Application
- Industrial Automation
- Storage Systems
- Protection class: IP 65

## ERU4 series

General Data

| 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/4 outputs optional |
| Operating temperature | -20 °C to + 50 °C |
| Storage temperature | -20 °C to + 85 °C |
| Protection class | Indoor IP 40 |
| Dimensions | 250 x 225 x 45 mm |
| Conforms to | CE, FCC, UL |

**Key Features**

- Far-field applications
- Compact construction
- Flexible antenna configuration
- Read distance: up to 6 m
- Max. radiated power 1W ERP
- Indoor IP 40

## RDR Series

General Data

| Frequency range | ETSI |
|---|---|
| Output power | 22 dBm |
| Standards | EPC Global Gen2/ISO 18000-6C |
| Antenna interface | internal antenna |
| Operating system | Kathrein firmware |
| Interface | Ethernet/PoE |
| Digital I/O | - |
| Operating temperature | 0 °C to + 55 °C |
| Storage temperature | 0 °C to + 85 °C |
| Protection class | Indoor |
| Dimensions | 218 x 186 x 35 mm |
| Conforms to | CE, FCC |



## Key Features

- Desktop applications
- KanBan applications with integrated antenna
- Read distance: up to 0.5 m
- Ethernet/PoE interface
- Access control

## 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

## RFID Reader Power Supply



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

\*\* ERU Reader

## RFID Antenna Cables

| Order no. | Type | Product type |
|-----------|------|--------------|
| 52010174 | R-AC 3 TNC-TNCR | LL240 flex, L = 3 m, IP 65 |
| 52010175 | R-AC 6 TNC-TNCR | LL240 flex, L = 6 m, IP 65 |
| 52010176 | R-AC 10 TNC-TNCR | LL240 flex, L = 10 m, IP 65 |
| 52010177 | R-AC 15 TNC-TNCR | LL240 flex, L = 15 m, IP 65 |
| 52010090 | R-AC 3 SMA-TNCR | RG 58; L = 3 m |
| 52010208 | R-AC 05 SMA-SMA | RG 58; L = 0.5 m |

TNC (m)/TNC (f)-rev

\* 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) |

Adapter TNC-N (f-m)

## RFID Protective Covers

| 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 Cables

| Order no. | Type | Product type |
|-----------|------|--------------|
| 52010125 | CK-RRU RS4 | RRU4-RS4 cable set (cable set including 1 x DC cable M12/open, 1.5 meters in length, 1 x RS interface cable M12/open, 1.5 meters in length, 2 x GPIO cable M12/open, 1.5 meters in length) |
| 52010126 | CK-RRU ETG | RRU4-ETG/ETL cable set (cable set including 1 x DC cable M12/open, 1.5 meters in length, 1 x Ethernet interface cable M12/RJ45 socket, 1.5 meters in length, 2 x GPIO cables M12/open, 1.5 meters in length) |

| Order no. | Type | Product type |
|-----------|------|--------------|
| 52010189 | CK-M-ARU RS | M12 cable for M-ARU RS232; 12-pin connector (m), A-coded; 1.5 meters in length |
| 52010209 | CK-M-ARU PoE | M12 cable for M-ARU PoE; 4-pin connector (m); RG 45, 1.5 m in length |

**RFID Mounting Accessories**

| 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
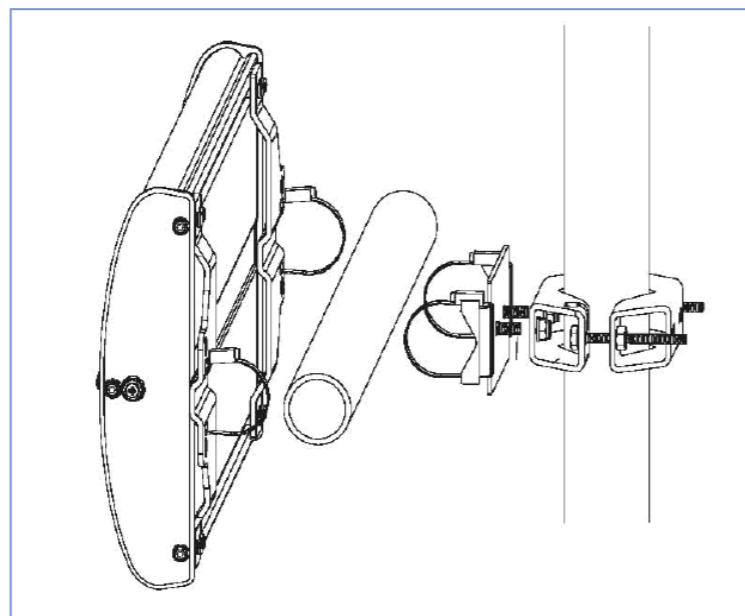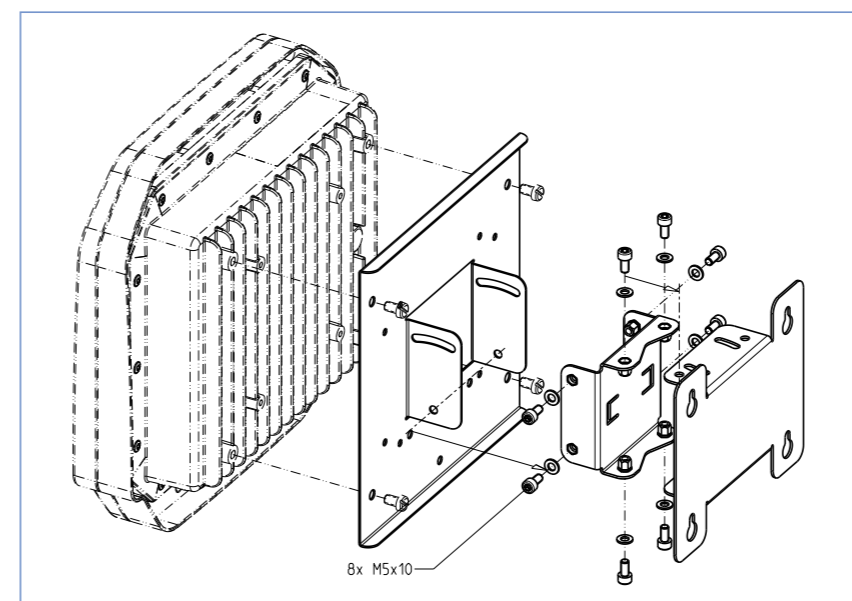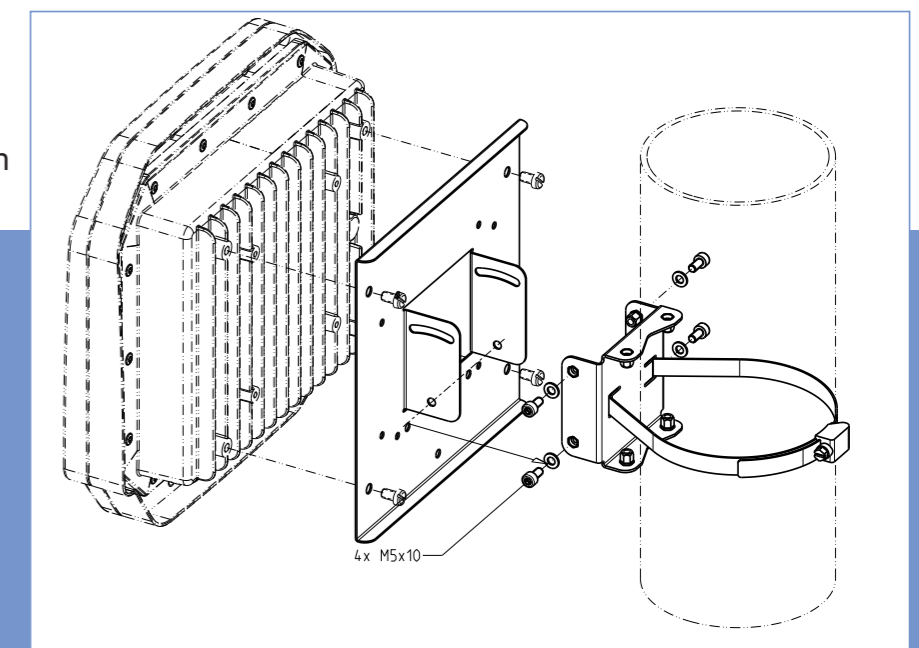


Mast mounting set

**RFID Mounting Accessories**

| 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



Wall mounting

Mast installation

You will find an updated list of KATHREIN-RFID representatives on our website "www.kathrein-rfid.de"

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