



Kathrein Solutions

IoT Portfolio 2018-1



KATHREIN

KATHREIN

Who we are and **what** we stand for

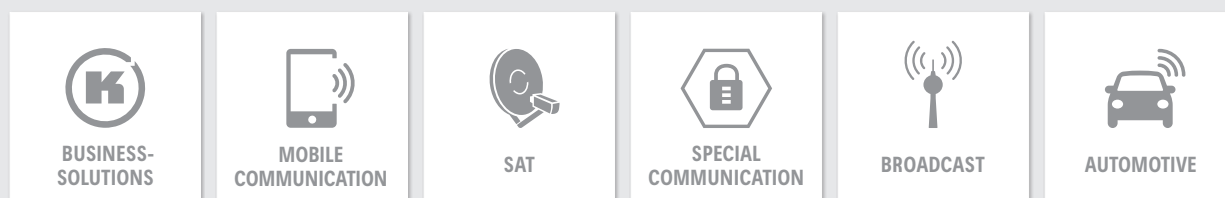
Kathrein is a specialist for reliable, high-quality communication technologies.

The company is driving innovation and technology in today's connected world. Its ability to provide solutions and services enables people all over the world to communicate, access information and use media, whether at home, at the office or on the road.

The business covers a broad spectrum: from mobile communication, RFID and special solutions, to satellite reception and broadcast technology, to transmission and reception systems in vehicles.

As a hidden champion and family-owned enterprise, Kathrein has been working on the technologies of tomorrow since 1919. The company takes pride in its dedicated employees and passion for customers and quality.

Our Solutions



Find out more about us at www.kathrein.com

>	Introduction	4
>	RFID Readers	5
	▪ Next Generation RFID/IoT Gateway	6
	▪ RRU 4000 Reader Series	8
	▪ ARU 3000 Antenna Reader Series	10
	▪ ARU-CSB Antenna Reader Units	12
	▪ M-ARU Antenna Reader Series	13
	▪ Mobile Terminals	14
>	RFID Antennas	16
	▪ Wide-Range Antennas	17
	▪ Mid-Range Antennas	21
	▪ Low-Range Antennas	22
	▪ Smart Shelf Antennas	23
>	Software	24
	▪ ReaderStart Software	25
	▪ CrossTalk IoT Suite	26
	▪ Interface Software	30
	▪ AccessManager	32
>	Transponders	33
>	Accessories	36
>	Service & Support	42
>	Reference	46

We Provide Solutions for Better Business

The Kathrein IoT Business Unit provides AutoID turnkey solutions including hardware, software, services and support. From the first proof of concept up to the go-live implementation, Kathrein supports customers in applications for logistics, industrial automation, retail and vehicle identification. The possibility of offering all necessary components and tools from one source enables us to give our customers the most powerful solutions. From track and trace visualisation to

seamlessly incorporating any kind of identification technology — including solutions such as barcode readers, active RFID systems and wide area network technologies — we combine the best suitable features and generate interfaces with all kinds of ERP systems. First-class service and customer-oriented support round off our portfolio. We provide RF simulation, application support, software integration and implementation as well as operation and maintenance — all from a single source.

> Hardware

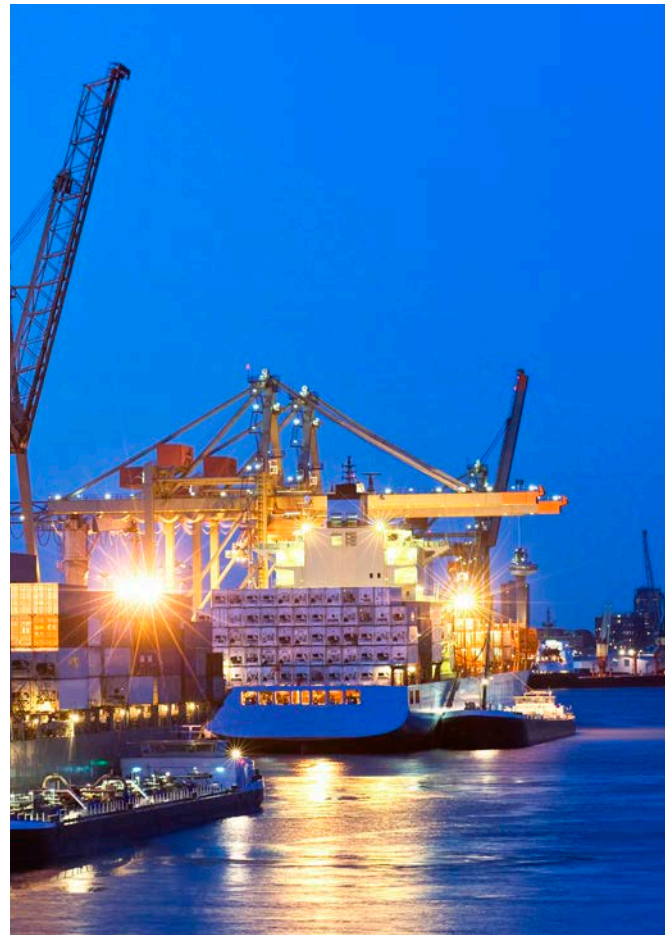
Kathrein's passive UHF RFID hardware includes stationary and mobile readers, antennas with a read range from a few centimetres up to several metres, and security transponders. Our high-end devices allow the realisation of logistics, industrial automation, retail and vehicle identification applications.

> Software

CrossTalk, Kathrein's integration software layer, is a modular IoT suite for different identification applications. Passive UHF RFID, barcode, GPS, RTLS, sensors and various other technologies can be handled with CrossTalk. We provide centrally controlled integration — from device management to customised back ends.

> Service & Support

At Kathrein, we can rely on our outstanding reputation when comparing the quality of our hardware and software components at an international level. Adhering to the highest standards, we offer you a high-quality portfolio of various services and support to bring you seamlessly throughout the entire life cycle of your project.





RFID Readers

Passive UHF ISO 18000-63C RFID fixed and mobile readers with best-in-class RF performance, intelligent antenna interface @KRAI, ruggedised mechanical IP67 design and unique connectivity features, such as integrated industrial controllers, 2G-4G, Wi-Fi, Bluetooth and PoE+.

> Next Generation RFID/IoT Gateway
Unique options in connectivity cut infrastructure costs dramatically



This new generation of RFID readers is ideal for industrial tracking & tracing applications, logistics-based material flow solutions or Smart-City-based solutions, such as intelligent parking or car sharing solutions to allow customers easy and smooth access to these services. The reader-integrated Linux operating system allows an easy software-based integration into existing parking infrastructure solutions.

In addition to offering logistics and supply chain solutions, Kathrein's RFID readers are known to significantly boost the safety and efficiency of traffic and freight management. Based on the full integration of NXP UCODE DNA security transponder chip sets, this solution has become an industrial standard also for toll plazas, free-flow access systems and for barrier/gate solutions.

Key Applications

- Logistics
- Industry automation
- Vehicle identification
- Smart City applications



> RRU 4000/ARU 3000 Series Key Features

The RRU 4000 series includes a flexible multiplexer to connect up to four external antennas. The ARU 3000 series includes an integrated 65° wide range antenna and the powerful reader unit in one housing. Three additional external antennas can be connected as well.

800 MHz Dual Core Linux Industrial PC

The integrated high-performance industrial PC with an 800 MHz dual-core processor allows the direct installation of standardised software, which enables the real-time evaluation and analysis of the RFID raw data and the direct communication with higher-level ERP software.

Wi-Fi – Bluetooth – 2G/3G

Network connections cannot always be installed at the desired read points at low costs. To reduce complex infrastructure measures, the new generation offers the possibility of using standardised wireless interfaces, such as Wi-Fi, Bluetooth BLE or 2G/3G (mobile communication).

PoE+ Interface

The power-over-Ethernet technology (PoE+) defines the transmission of data and power to networked devices via a standard Ethernet cable. Separate power supplies are, therefore, no longer required. The new IEEE 802.3at standard, also known as PoE+, which is designed for higher power levels, enables a conducted power of 2 W for the RFID system, without external power supply.

Ethernet Switch

The integration of a second network connection, which acts internally as a network switch, allows the integration and networking of additional external sensors, such as a camera system or a code reader.

IP67 Protection Class

Ruggedised die-cast aluminium housing with IP67 protection class, optional stainless steel vandalism protection cover and wall/pole mount kit.

Integrated HSM Module

RRU45xx/ARU 35xx are available with an integrated HSM (High Secure Memory) module for powerful end-to-end integration into high-security back-end solutions.

©KRAI Interface

The intelligent Kathrein RFID antenna interface enables the control of dynamic antenna features, such as polarisation or beam switching and cascading of up to 32 individual antennas. The antenna can be controlled by the reader with the existing antenna cable.

CrossTalk Agent Integrated

Kathrein Solutions readers allow the quick and easy installation in the CrossTalk IoT application layer and device management platform.

Profinet IO App

The Profinet IO app offers an excellent solution for integration into the PLC world. The functional module can be installed directly on the reader as an app.

TagBlower App

The TagBlower app enables the simple and unfiltered transmission of the RFID raw data to the network level. This feature can be installed directly on the reader as an app.

> RRU 4000 Reader Series

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, such as PoE+, Wi-Fi, 3G mobile interface and the powerful scalable processing unit will change the way identification works.



Type No.	RRU 4400	RRU 4500	RRU 4560	RRU 4570
Version ETSI Order No.	52010287	52010288	52010289	52010290
Version FCC Order No.	52010295	52010296	52010297	52010298
Basic computing module	✓	✓	✓	✓
Dual core embedded PC		✓	✓	✓
Number of Ethernet ports	1	2	2	2
GPIO	✓	✓	✓	✓
©KRAI	✓	✓	✓	✓
PoE+	✓	✓	✓	✓
LED visualisation	✓	✓	✓	✓
Wi-Fi			✓	
Bluetooth			✓	
2G/3G				✓

Accessories

Order No.	Description
52010358	10 m RRU/ARU DC power cable
52010359	3 m RRU/ARU DC power cable
52010360	10 m RRU/ARU Ethernet cable M12/RJ45
52010361	3 m RRU/ARU Ethernet cable M12/RJ45
52010362	10 m RRU/ARU GPIO cable M12
52010363	3 m RRU/ARU GPIO cable M12
52010373	10 m RRU/ARU Ethernet bridge cable

Order No.	Description
52010364	RRU/ARU AC/DC adapter 24 V/90 W
52010365	RRU/ARU AC/DC adapter 24 V/72 W DIN rail
52010366	RRU/ARU AC/DC adapter 24 V/90 W DIN rail
52010369	PoE+ Ethernet switch, 4-port
52010370	PoE+ injector 30 W, 100 Mbit for RRU, ARU, M-ARU
52010351	Wall/pole mount kit for RRU, ARU, WRA 6060, WRA 7070
52010261	Wall mount kit for RRU, ARU, WIRA 70
52010367	Vandalism protective cover for RRU, ARU, WRA 70
52010376	Protective caps for RRU, ARU



> RRU 4000 Reader Overview

RFID UHF Reader Overview	ETSI Version		FCC Version	
	RRU 44xx	RRU 45xx	RRU 44xx	RRU 45xx
Frequency range [MHz]	865–868		902–928	
Max. TX power conducted [dBm]	30	33	30	30 (+33 dBm with extended cable length)
Protocol	EPC Class1 Gen2/ISO 18000-6C			
Number of antenna ports [R-TNC]	4			
Operating system, reader	Kathrein firmware			
User platform	basic computing module	integrated IPC Dual Core @ 800 MHz/8 GB/Linux OS	basic computing module	integrated IPC Dual Core @ 800 MHz/8 GB/Linux OS
©KRAI	✓	✓	✓	✓
Interface				
Number of Ethernet ports	1	2	1	2
Wi-Fi	–	RRU 4560	–	RRU 4560
Bluetooth	–	RRU 4560	–	RRU 4560
2G/3G	–	RRU 4570	–	RRU 4570
PoE+	PoE according to 802.3at (10–57)			
GPIO	4 inputs/4 outputs			
4 LED visualisation, freely programmable	basic LED	high-end LED	basic LED	high-end LED
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			
Degree of protection	IP67			
Standards	EN302208-2 V2.1.1, EN301489-3, EN50364, EN62368-1, EN60529		FCC Part15, UL, IC, EPC Gen2v2	

> ARU 3000 Reader Series

The Kathrein ARU 3000 antenna reader family is the next generation of RAIN RFID readers with an integrated 65° wide range antenna and is the first choice for professional IoT solutions, such as industrial automation and vehicle identification in ruggedised environments. Its best-in-class 33 dBm UHF RF unit, optional connectivity modules such as PoE+, Wi-Fi, 3G mobile interface and the powerful scalable processing unit will change the way identification works.



Type No.	ARU 3400	ARU 3500	ARU 3560	ARU 3570
Version ETSI Order No.	52010291	52010292	52010293	52010294
Version FCC Order No.	52010299	52010300	52010301	52010302
Basic computing module	✓	✓	✓	✓
Dual core embedded PC		✓	✓	✓
Number of Ethernet ports	1	2	2	2
GPIO	✓	✓	✓	✓
LED visualisation	✓	✓	✓	✓
PoE+	✓	✓	✓	✓
Wi-Fi			✓	
Bluetooth			✓	
2G/3G				✓
Polarisation switch antenna			✓	

Accessories

Order No.	Description	Order No.	Description
52010358	10 m RRU/ARU DC power cable	52010364	RRU/ARU AC/DC adapter 24 V/90 W
52010359	3 m RRU/ARU DC power cable	52010365	RRU/ARU AC/DC adapter 24 V/72 W DIN rail
52010360	10 m RRU/ARU Ethernet cable M12/RJ45	52010366	RRU/ARU AC/DC adapter 24 V/90 W DIN rail
52010361	3 m RRU/ARU Ethernet cable M12/RJ45	52010369	PoE+ Ethernet switch, 4-port
52010362	10 m RRU/ARU GPIO cable M12	52010370	PoE+ injector 30 W, 100 Mbit for RRU, ARU, M-ARU
52010363	3 m RRU/ARU GPIO cable M12	52010351	Wall/pole mount kit for RRU, ARU, WRA 6060, WRA 7070
52010373	10 m RRU/ARU Ethernet bridge cable	52010261	Wall mount kit for RRU, ARU, WIRA 70
		52010367	Vandalism protective cover for RRU, ARU, WRA 70
		52010376	Protective caps for RRU, ARU



> ARU 3000 Reader Overview

RFID UHF Reader Overview	ETSI Version		FCC Version	
	ARU 34xx	ARU 35xx	ARU 34xx	ARU 35xx
Frequency range [MHz]	865–868		902–928	
Max. TX power conducted [dBm]	30	33	30	30 (+33 dBm with extended cable length)
Max. emitted output power [dBm] int. antenna	33 ERP		+36 EIRP	
Protocol	EPC Class1 Gen2/ISO 18000-6C			
Number of antenna ports [R-TNC]	3			
Operating system, reader	Kathrein firmware			
User platform	basic computing module	integrated IPC Dual Core @ 800 MHz/8 GB/Linux OS	basic computing module	integrated IPC Dual Core @ 800 MHz/8 GB/Linux OS
Antenna integration				
Half-power beam width [°]	65			
Gain, linear [dBi]	–	ARU 3560 = 7.0	–	ARU 3560 = 7.0
Gain, circular [dBic]	ARU 3400 = 8.3	ARU 3500 = 8.5 ARU 3560 = 6.5 ARU 3570 = 7.0	ARU 3400 = 8.3	ARU 3500 = 8.5 ARU 3560 = 6.5 ARU 3570 = 7.0
Interface				
Ethernet	1	2	1	2
Wi-Fi	–	ARU 3560	–	ARU 3560
Bluetooth	–	ARU 3560	–	ARU 3560
2G/3G	–	ARU 3570	–	ARU 3570
PoE+	PoE according to 802.3at (10-57)			
GPIO	4 inputs/4 outputs			
4 LED visualisation, freely programmable	basic LED	high-end LED	basic LED	high-end LED
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			
Degree of protection	IP67			
Standards	EN302208-2 V2.1.1, EN301489-3, EN50364, EN62368-1, EN60529		FCC Part15, UL, IC, EPC Gen2v2	

> ARU-CSB Antenna Reader Units

The Kathrein RFID reader ARU-CSB-ELC offers an Ethernet communication interface and an integrated 30° wide-range antenna with three selectable read zones. It is possible to read out active and passive RFID tags in the frequency range from 865 to 868 MHz and from 902 to 928 MHz. The three well-defined read zones of the integrated 30° wide-range antenna can be controlled by the reader to offer optimised solutions for logistics, intralogistics and retail applications.



Order No.	52010263	52010264
Type	ARU-CSB-ELC-ETSI	ARU-CSB-ELC-FCC
Frequency range [MHz]	865–868	902–928
Max. emitted output power [dBm]	33 ERP	+36 EIRP
Protocol	EPC Class1 Gen2/ISO 18000-6C	
Half-power beam width [°]	35/80 Circular Switch Beam Swivel range +30; 0; -30	
Operating system, reader	Kathrein firmware	
User platform	Integrated IPC 800 MHz/4GB/Linux OS	
Interface	Ethernet	
GPIO	4 inputs/4 outputs	
Operating temperature range [°C]	–20 to +55	
Storage temperature range [°C]	–40 to +85	
Dimensions (without brackets) (L x W x H) [mm]	620 x 386 x 112	
Degree of protection	IP65	
Conform to	EN 60529, EN301489-1, EN 302208-1, EN 302208-2, EN 60950-1:2006, EN 50364	FCC part 15, UL pending, IC-FCB

Accessories

Order No.	Description
52010238	10 m Ethernet cable
52010239	10 m GPIO cable
52010240	10 m power supply cable
52010358	10 m RRU/ARU DC power cable
52010359	3 m RRU/ARU DC power cable

Order No.	Description
52010365	RRU/ARU AC/DC adapter 24 V/72 W DIN rail
52010366	RRU/ARU AC/DC adapter 24 V/90 W DIN rail
52010179	Power supply for RRU4, ARU4 and ARU-CSB
52010005	Pole mount kit for ARU-CSB, WIRA 30
52010127	Protective caps for ARU-CSB
52010126	Connecting kit for ARU-CSB



> M-ARU Antenna Reader Overview

The Kathrein M-ARU-ETH-E6 is a highly integrated RFID UHF sensor based on the Kathrein mid-range antenna series and the Kathrein industrial reader platform. The device has a PoE and a serial communication interface plus digital GPIOs (inputs/outputs). The voltage can optionally be supplied over PoE or locally.



Order No.	52010198
Type	M-ARU-ETH-E6
Frequency range [MHz]	865–868
Max. emitted output power [dBm]	+22.75 ERP
Protocol	EPC Class1 Gen2/ISO 18000-6C
Half-power beam width [°]	100/100 circular
Operating system, reader	Kathrein firmware
Interface	PoE and RS232/USB
GPIO	3 inputs/3 outputs
Operating temperature range [°C]	–20 to +55
Storage temperature range [°C]	–40 to +85
Dimensions (L x W x H) [mm]	156 x 139.3 x 63
Degree of protection	IP65
Conform to	EN 60529, EN301489-1, EN 302208-1, EN 302208-2, EN 60950-1:2006, EN 50364, IEEE 802.3af class 3

Accessories

Order No.	Description
52010189	1.5 m M12 cable for M-ARU RS232
52010209	1.5 m M12 cable for M-ARU PoE
52010238	10 m RRU4/ARU4/M-ARU Ethernet cable
52010241	10 m RS cable for M-ARU RS232
52010370	PoE+ injector 30 W, 100 Mbit for RRU, ARU, M-ARU

> Mobile Terminal M260

Ruggedised RFID-UHF terminal for mobile data collection in Windows CE 6.0 with an alphanumeric fast-input keyboard and colour touch screen.



Order No.	52010229	52010230	52010231	52010286
Type	RUH-ACD-M260-WLAN-ETSI	RUH-ACD-M260-WLAN-SR-ETSI	RUH-ACD-M260-WLAN-2D-ETSI	RUH-ACD-M260-WLAN-2D-3G-GPS-ETSI
Scanner	–	Mobile Terminal Barcode laser scanner (short range)	Mobile Terminal Imager (1D and 2D barcode scanner)	Mobile Terminal 3G, GPS Imager (1D and 2D barcode scanner)
Operating system	Windows® CE 6.0			
Memory	512 MB Flash/256 MB SDRAM expandable with µSD card			
Display	Colour touch display 3.5", resolution 240 x 320 pixels			
Power supply	Quick-change Li-ion battery 7.5 V/2200 mAh			
Operating temperature range [°C]	–20 to +45			
Degree of protection	IP54			
Communication				
WLAN	IEEE® 802.11b/g			
UMTS	–	–	–	Quad band: EGSM 850/900/1800/1900 MHz Data band: UMTS/HSDPA 2100 MHz
GPS	–	–	–	NMEA protocol
UHF RFID properties				
Frequency range [MHz]	865– 868			
Antenna	Kathrein patented X Pol linear			
Read range [m] *	7			
Output power reader module [W]	0.5			
Conform to	EN 60529, EN301489-1, EN 302208-1, EN 302208-2, EN 60950-1:2006, EN 50364			

* depending on transponder type and environment

Accessories

Order No.	Description
52010233	Docking station for RUH-ACD-M260
52010234	Replacement battery RUH-ACD-M260



> Mobile Terminal M160

Basic RFID-UHF short range terminal for mobile data collection in Windows CE 6.0 with a colour touch screen and illuminated silicone keypad with alphanumerical function.



Order No.	52010377	52010378	52010383	52010384
Type	RUH-ACD-M160-SR-WLAN ETSI	RUH-ACD-M160-SR-WLAN FCC	RUH-ACD-M160-2D-WLAN-ETSI	RUH-ACD-M160-2D-WLAN-FCC
Scanner	Mobile Terminal Barcode laser scanner (short range)		Mobile Terminal Imager (2D barcode scanner)	
Operating system	Windows® CE 6.0			
Memory	512 MB Flash/256 MB SDRAM expandable with µSD card			
Display	Colour touch display 3.5" with LED backlight, resolution 240 x 320 pixels			
Power supply	Quick-change Li-ion battery 7.2 V/2200 mAh			
Operating temperature range [°C]	-20 to +45			
Degree of protection	IP54			
Communication				
WLAN	IEEE® 802.11b/g			
UHF RFID properties				
Frequency range [MHz]	865–868			
Antenna	Kathrein dipole			
Read range [m] *	2			
Output power reader module [W]	0.2			

* depending on transponder type and environment

Accessories

Order No.	Description
52010379	Docking station for RUH-ACD-M160
52010380	Replacement battery RUH-ACD-M160

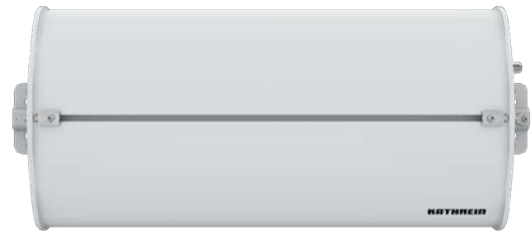


RFID Antennas

Passive UHF RFID high-performance antennas. Suitable for a variety of different read ranges by low-range (LORA), mid-range (MIRA) and wide-range (WIRA) antennas. ©KRAI enables different intelligent features, such as beam switch, polarisation switch or antenna cascading for multiple use cases.

> Wide-Range 30 Antenna Overview

- ruggedised industrial design
- IP65 outdoor protection class
- different beamwidth in azimuth and elevation plane
- optimised for dock door applications
- linear versions optimised for free flow toll collect applications



Order No.	52010086	52010248	52010087	52010249
Type	WIRA-30-circular-ETSI	WIRA-30-linear-ETSI	WIRA-30-circular-FCC	WIRA-30-linear-FCC
Frequency range [MHz]	865–868		902–928	
©KRAI	–	–	–	–
Beamwidth [°]	30/70	30/70	30/70	30/70
Polarisation	circular	linear	circular	linear
Antenna gain [dBi]	typ. 11.5	typ. 11	typ. 11	typ. 11
VSWR	< 1.2:1	< 1.3:1	< 1.2:1	< 1.3:1
Connection	N female			
Operating temperature range [°C]	–20 to +55			
Degree of protection	IP65			
Dimensions (L x W x H) [mm]	557 x 270 x 58.5			

Accessories

Order No.	Description
52010174	3 m low-loss 240 antenna cable TNC/TNCR *
52010175	6 m low-loss 240 antenna cable TNC/TNCR *
52010176	10 m low-loss 240 antenna cable TNC/TNCR *
52010177	15 m low-loss 240 antenna cable TNC/TNCR *
52010250	15 m low-loss antenna cable N/TNCR
52010178	Antenna adapter TNC-N(f-m)
52010005	Pole mount kit for ARU-CSB, WIRA 30

* To connect the antenna cable, the TNC/N adapter 52010178 is needed



> Wide-Range 40 Antenna Overview

- compact industrial design
- IP67 outdoor protection class
- read range up to 14 m
- symmetric beamwidth in azimuth and elevation plane
- optimised for vehicle identification (AVI) applications
- optimised for tolling applications



Order No.	52020251	52010252
Type	WIRA-40-linear-ETS	WIRA-40-linear-FCC
Frequency range [MHz]	865–868	902–928
Beamwidth [°]	42/42	40/40
Polarisation	linear	
Antenna gain [dBi]	typ. 12.5	typ. 13
VSWR	< 1.3:1	< 1.8:1
Connection	N female	
Operating temperature range [°C]	–40 to +70	
Degree of protection	IP65	
Dimensions (L x W x H) [mm]	460 x 460 x 24	

Accessories

Order No.	Description
52010174	3 m low-loss 240 antenna cable TNC/TNCR *
52010175	6 m low-loss 240 antenna cable TNC/TNCR *
52010176	10 m low-loss 240 antenna cable TNC/TNCR *
52010177	15 m low-loss 240 antenna cable TNC/TNCR *
52010250	15 m low-loss 400 antenna cable N/TNCR
52010178	Antenna adaptor TNC-N(f-m)
52010262	Wall/pole mount kit WIRA 40 Outdoor

* To connect the antenna cable, the TNC/N adapter 52010178 is needed





> Wide-Range 60 Antenna Overview

- compact industrial design
- read range up to 5 m
- very homogenous reading field
- extremely high front-to-back ratio
- Kathrein smart-shelf technology in a robust housing
- for applications in radiated near field, suitable for static tag identification



Order No.	52010423	52010424
Type	WRA 6060 Antenna Unit	WRA 6060 Antenna Unit
Frequency range [MHz]	865–868	902–928
Polarisation		–
LED visualisation		–
Far field half-power beam width		60
Polarisation, circular		RHCP **
Antenna gain [dBIC]	typ. 6 (at 866 MHz)	typ. 6 (at 915 MHz)
Axial ratio [dB]		typ. 1
VSWR		typ. 1.2:1
Connection		TNC female
Operating temperature range [°C]		–20 to +55
Degree of protection		IP67
Dimensions (L x W x H) [mm]		350 x 350 x 80

* Left-/right-hand circular polarisation, ** Right-hand circular polarisation

Accessories

Order No.	Description
52010174	3 m low-loss 240 antenna cable TNC/TNCR
52010175	6 m low-loss 240 antenna cable TNC/TNCR
52010176	10 m low-loss 240 antenna cable TNC/TNCR
52010177	15 m low-loss 240 antenna cable TNC/TNCR
52010261	Wall mount kit WIRA 70, RRU, ARU indoor
52010351	Wall/pole mount kit WRA 6060, WRA 7070, RRU, ARU outdoor



Wide-Range 70 Antenna Overview

- compact industrial design
- IP67 outdoor protection class
- read range up to 14 m
- symmetric beamwidth in azimuth and elevation plane
- ©KRAI Interface
- dynamic polarisation switch (LHCP/RHCP/Hor./Ver.)
- LED visualisation
- optimised for logistics applications
- optimised for parking applications



Order No.	52010333	52010335	52010334	52010336
Type	WRA 7070 Antenna Unit	WRA 7070 ©KRAI Antenna Unit	WRA 7070 Antenna Unit	WRA 7070 ©KRAI Antenna Unit
Frequency range [MHz]	865–868		902–928	
©KRAI	–	✓	–	✓
4 LED visualisation, freely programmable	–	high-end LED	–	high-end LED
Far field half-power beam width	65			
Polarisation, circular	RHCP **	LHCP/RHCP *	RHCP **	LHCP/RHCP *
Antenna gain [dBiC]	typ. 8.5 (at 866 MHz)	typ. 6.5	typ. 8.5 (at 915 MHz)	typ. 6.5
Axial ratio [dB]	typ. 1	typ. 2	typ. 1	typ. 2
Polarisation linear	–	horizontal/vertical	–	horizontal/vertical
Antenna gain [dBi]	–	7.0	–	7.0
VSWR	typ. 1.2:1	typ. 1.4:1	typ. 1.2:1	typ. 1.8:1
Connection	TNC female			
Operating temperature range [°C]	–20 to +55			
Degree of protection	IP67			
Dimensions (L x W x H) [mm]	271 x 271 x 45			

* Left-/right-hand circular polarisation, ** Right-hand circular polarisation

Accessories

Order No.	Description
52010174	3 m low-loss 240 antenna cable TNC/TNCR
52010175	6 m low-loss 240 antenna cable TNC/TNCR
52010176	10 m low-loss 240 antenna cable TNC/TNCR
52010177	15 m low-loss 240 antenna cable TNC/TNCR
52010261	Wall mount kit WIRA 70, RRU, ARU indoor
52010351	Wall/pole mount kit WRA 6060, WRA 7070, RRU, ARU outdoor



> Mid-Range Antenna Overview

- compact design
- small dimensions
- typical read range up to 2 m
- various transponder types
- suitable for use in industrial environments
- suitable for bulk and single tag applications
- high IP67 degree of protection; suitable for outdoor use



Order No.	52010082	52010083	52010172
Type	MIRA-100-circular-ETSI	MIRA-100-circular-FCC	S-MIRA-100-circular-ETSI-FCC
Frequency range [MHz]	865–868	902–928	865–928
Far-field half-power beamwidth [°]	100		
Read range	typ. 0.2–2 metres		typ. 0.1–1 metres
Polarisation	circular		
Antenna gain [dBiC]	2.5 (@ 866 MHz)	2.5 (@ 915 MHz)	-12 (@ 866 MHz) -10 (@ 915 MHz)
Axial ratio [dB]	typ. 1.5	typ. 2.5	typ. 2
VSWR	typ. 1.3:1	typ. 1.5:1	typ. 1.4:1
Connection	TNC female		
Operating temperature range [°C]	-20 to +55		
Degree of protection	IP67		
Dimensions (L x W x H) [mm]	156 x 143.8 x 36		

Accessories

Order No.	Description
52010174	3 m low-loss 240 antenna cable TNC/TNCR
52010175	6 m low-loss 240 antenna cable TNC/TNCR
52010176	10 m low-loss 240 antenna cable TNC/TNCR
52010177	15 m low-loss 240 antenna cable TNC/TNCR

> Low-Range Antenna Overview

- minimal dimensions
- extremely high selectivity
- read range < 20 cm
- suitable for use in industrial environments
- optimised for near-field applications
- high IP67 degree of protection
- suitable for outdoor use



Order No.	52010084	52010085	52010092
Type	LORA-ETSI	LORA-FCC	U-LORA-ETSI-FCC
Frequency range [MHz]	865–868	902–928	865–928
Range of near field tags [cm]	typ. 7 @ NF-Tags		typ. 3 @ NF-Tags
Selectivity of near field tags [cm]	typ. 5 @ NF-Tags		typ. 5 @ NF-Tags
Range of far field tags [cm]	–	–	typ. 8 @ FF-Tags
Selectivity of far field tags [cm]	–	–	typ. 10 @ FF-Tags
EIFF [dB]	20		15
Antenna gain [dBiC]	–15		–30
VSWR	< 1.3:1	< 1.8:1	< 1.2:1
Connection	TNC female		
Operating temperature range [°C]	–20 to +55		
Degree of protection	IP67		
Dimensions (L x W x H) [mm]	79.5 x 90 x 31		

Accessories

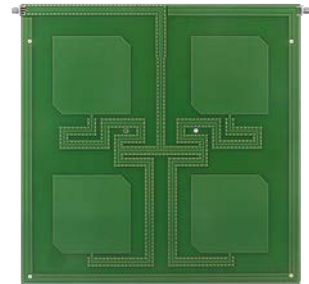
Order No.	Description
52010174	3 m low-loss 240 antenna cable TNC/TNCR
52010175	6 m low-loss 240 antenna cable TNC/TNCR
52010176	10 m low-loss 240 antenna cable TNC/TNCR
52010177	15 m low-loss 240 antenna cable TNC/TNCR
52010250	15 m low-loss 440 antenna cable N/TNCR





> SmartShelf Antenna Overview

- extremely slim design
- near-field applications
- read range 0–3 m
- very high, homogeneous detection field
- optional cascade function for up to 32 antennas
- cascade function optional
- optional antenna protection cover

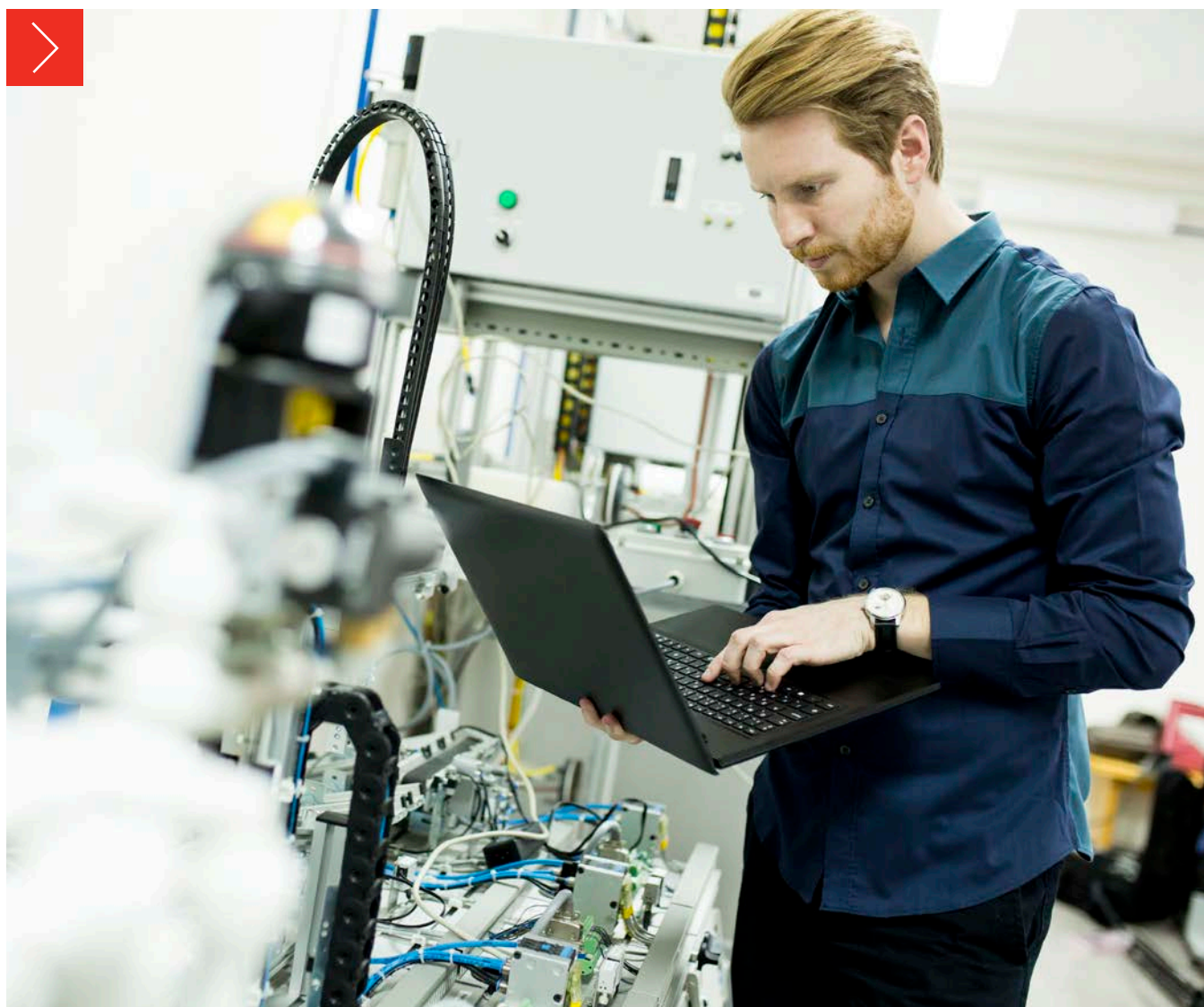


Order No.	52010258	52010219	52010259	52020260	52010318	52020319
Type	SMSH-30-30- ©KRAI-ETSI-FCC	SMSH-30-30- ETSI-FCC	SMSH-High- Gain-30-30- ©KRAI-ETSI	SMSH-High- Gain-30-30-ETSI	SMSH-High- Gain- ©KRAI-FCC	SMSH-High- Gain-FCC
Frequency range [MHz]	865–928		865–868		902–928	
©KRAI	cascading	–	cascading	–	cascading	–
Protection cover	✓	optional	✓	optional	✓	optional
Read range	0–1 metre		0–3 metres			
Polarisation	circular					
Antenna gain [dBiC]	typ. –7		typ. 5			
Axial ratio [dB]	typ. 1.5		typ. 2		typ. 3.5	
VSWR	typ. 1.3:1					
Connection	IN: SMA female OUT: SMA female	IN: SMA female	IN: SMA female OUT: SMA female	IN: SMA female	IN: SMA female OUT: SMA female	IN: SMA female
Operating temp. range [°C]	–20 to +55					
Degree of protection	Indoor					
Dimensions (L x W x H) [mm]	310 x 300 x 8.5				330 x 340 x 20	310 x 300 x 8.5
Dimensions with protective cover (L x W x H) [mm]	330 x 340 x 20				345 x 350 x 35	330 x 310 x 25

Accessories

Order No.	Description
52010174	3 m low-loss 240 antenna cable TNC/TNCR
52010175	6 m low-loss 240 antenna cable TNC/TNCR
52010176	10 m low-loss 240 antenna cable TNC/TNCR
52010177	15 m low-loss 240 antenna cable TNC/TNCR
52010090	3 m RG58 antenna cable SMA/TNCR
52010208	0.5 m RG58 antenna cable SMA/SMA
52010243	Adapter TNC/SMA
52010224	Protection cover (housing for SMSH)
52010356	Aluminium backplane for SMSH

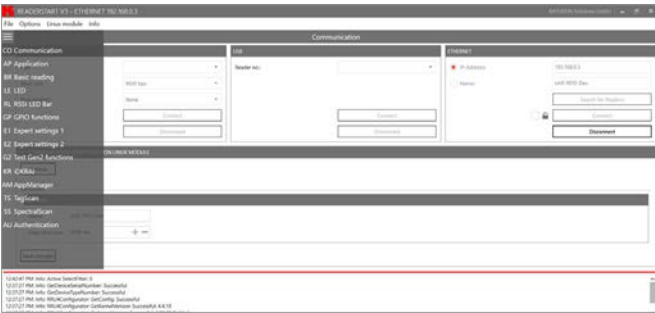




Software

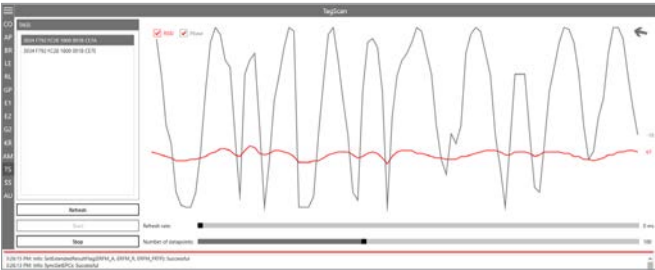
The highly configurable, modular and customisable AutoID software suite CrossTalk 3.0 allows a mix of technologies from major RFID, RTLS, barcode and sensor providers.

ReaderStart Software



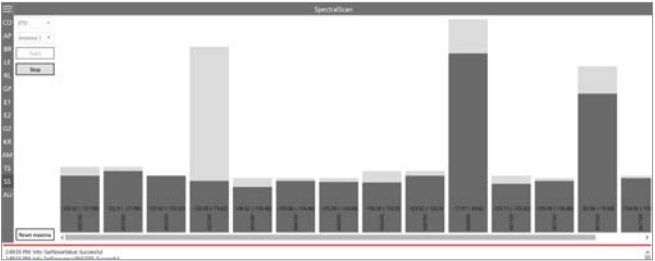
ReaderStart

By default, Kathrein provides a configuration and installation software called “ReaderStart” with every reader for easy-to-start application developments. By using predefined templates such as gate application or vehicle/people identification, only a few more configurations are necessary, depending on the final environment. The AppManager enables the installation and implementation of Kathrein or customer-built software.



Tag Scan

In addition to Tag RSSI, Linux-embedded readers can represent the RSSI value and the TAG phase at the same time. This makes it very easy to use the data for tag movement detection and positioning.



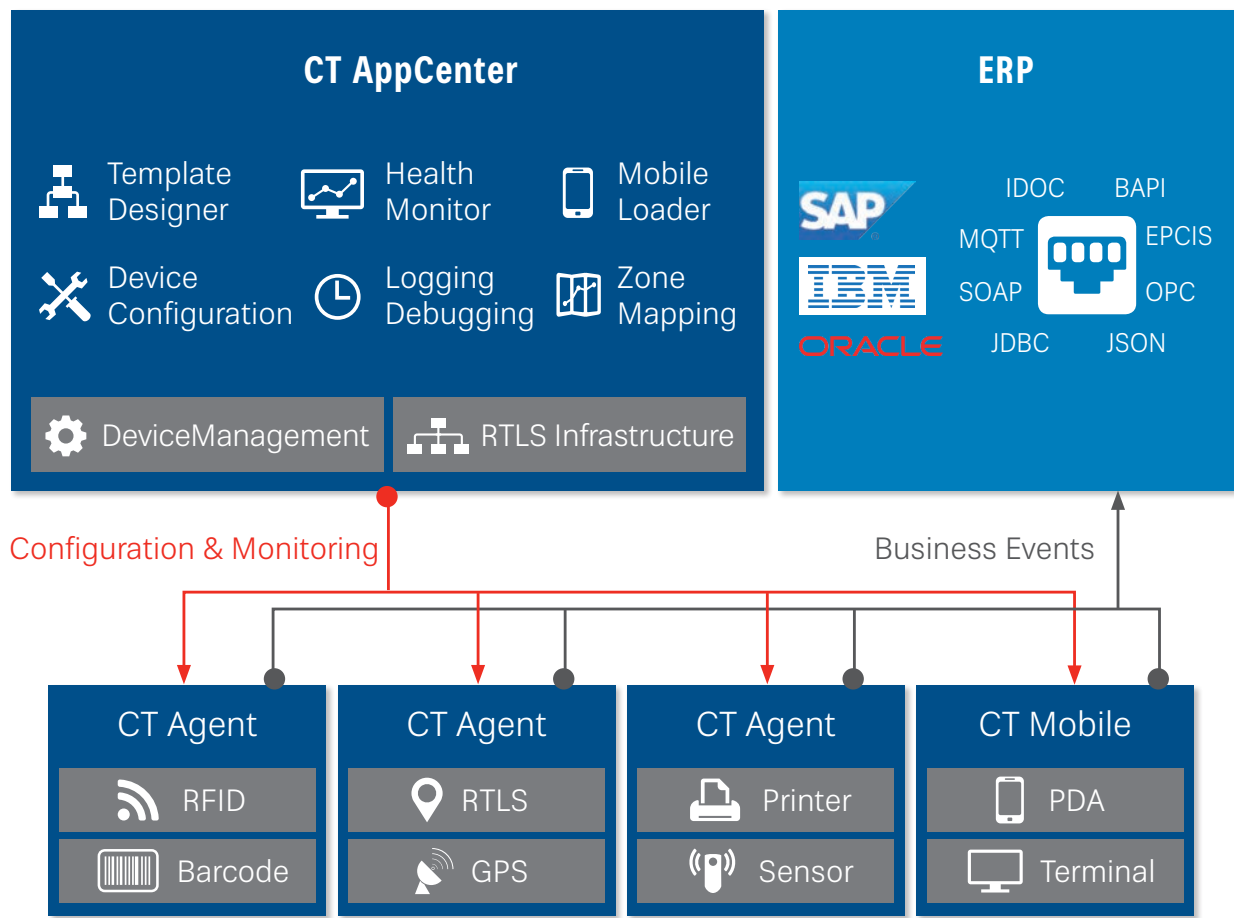
Spectral Scan

The “Spectral Scan” function enables the detection of high-frequency interferers which fall within the transmission range of UHF RFID readers. This interference may be caused by short-range devices (1st harmonic of 433 MHz) and other UHF RFID readers with insufficient decoupling. With the spectral scan function, the noise level of these parasitic interferers can be recorded directly by the connected antennas.

> CrossTalk Application: CrossTalk IoT Suite

- CrossTalk is the most advanced software suite for AutoID and IoT device management and Track & Trace visualisation
- CrossTalk DeviceManagement delivers plug-and-play integration for most of the AutoID devices and back-end systems on the market. It allows a mix of technologies from major RFID/AutoID, RTLS, barcode and sensor providers
- CrossTalk AppCenter provides many visual Track & Trace applications out of the box. CrossTalk's highly configurable, modular and customisable approach fits into any customer scenario

BASE PLATFORM FEATURES
▪ DeviceManagement
▪ RTLS Infrastructure
▪ Back-end integration
▪ CrossTalk agents
▪ Plug-and-play device integration
▪ Real-time data capturing
▪ Event processing
▪ Intelligent filtering

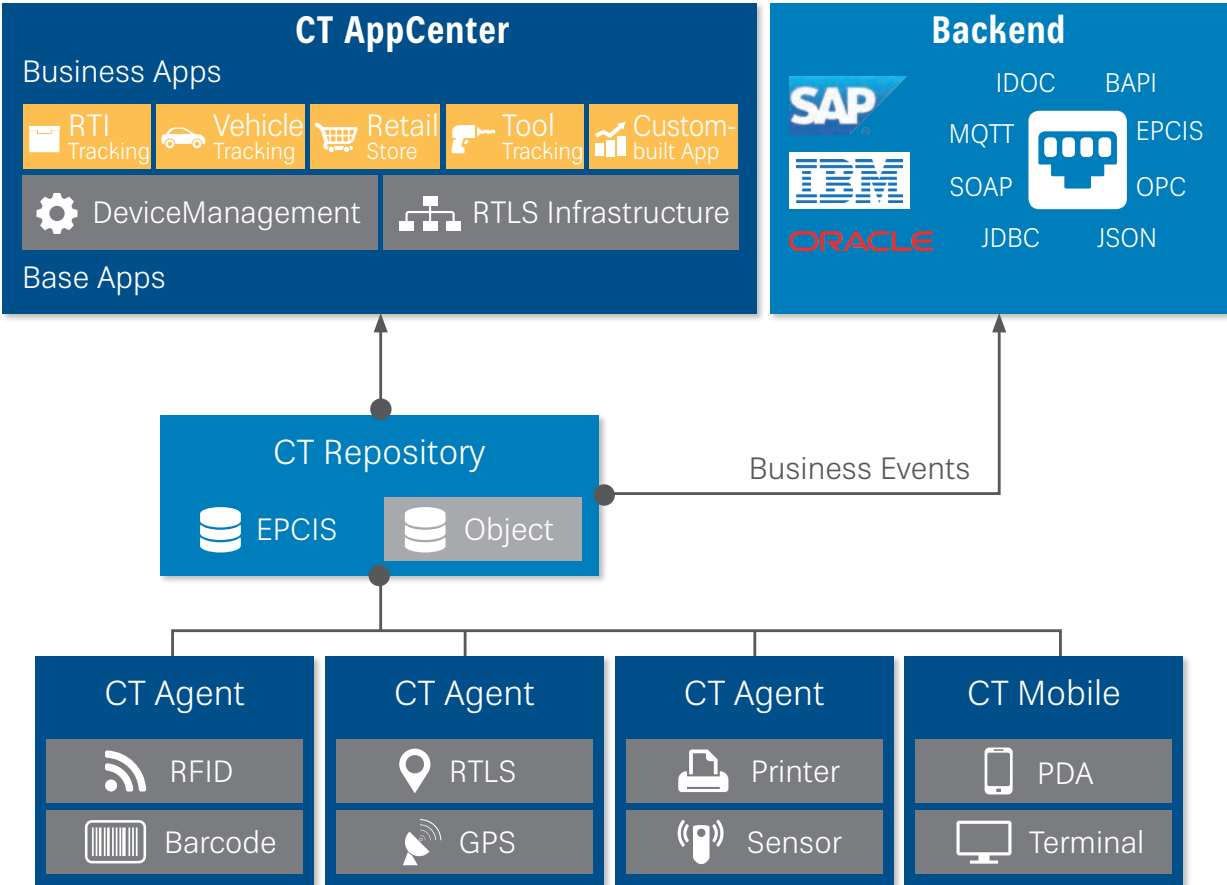


> **CrossTalk IoT Suite: Order Overview**

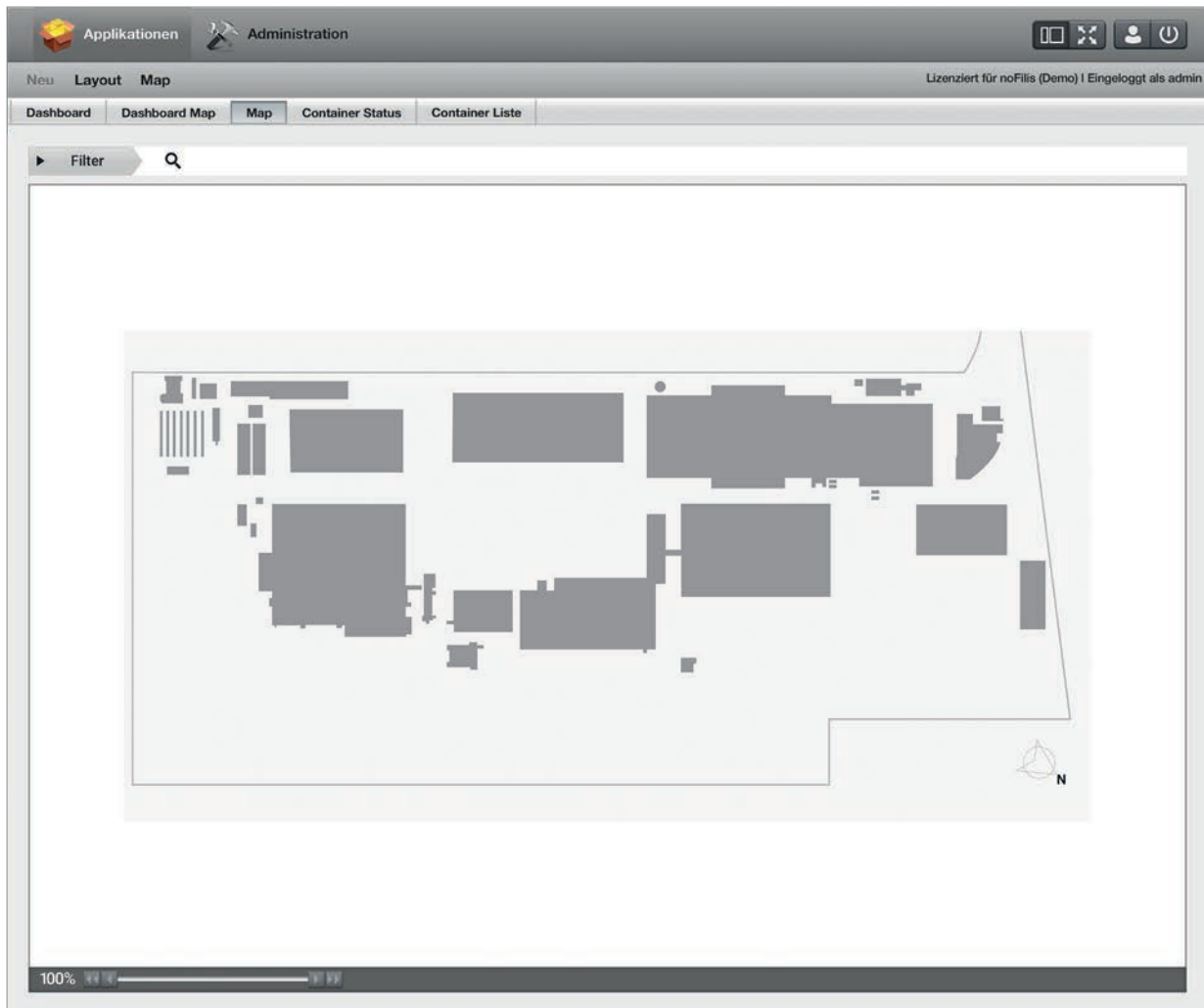
Order No.	Type	Description
52010313	CrossTalk Base AppCenter Licence	Application SW, AutoID Drivers, Services and Device Management platform
52010314	CrossTalk Full AppCenter Licence	Application SW, AutoID Drivers, Services and Device Management platform

FULL PLATFORM FEATURES

- CrossTalk Base functions
- CrossTalk AppCenter
- Custom apps
- Business apps
- Highly scalable data storage
- Distribution platform
- EPCIS compatible
- Event Distribution Platform

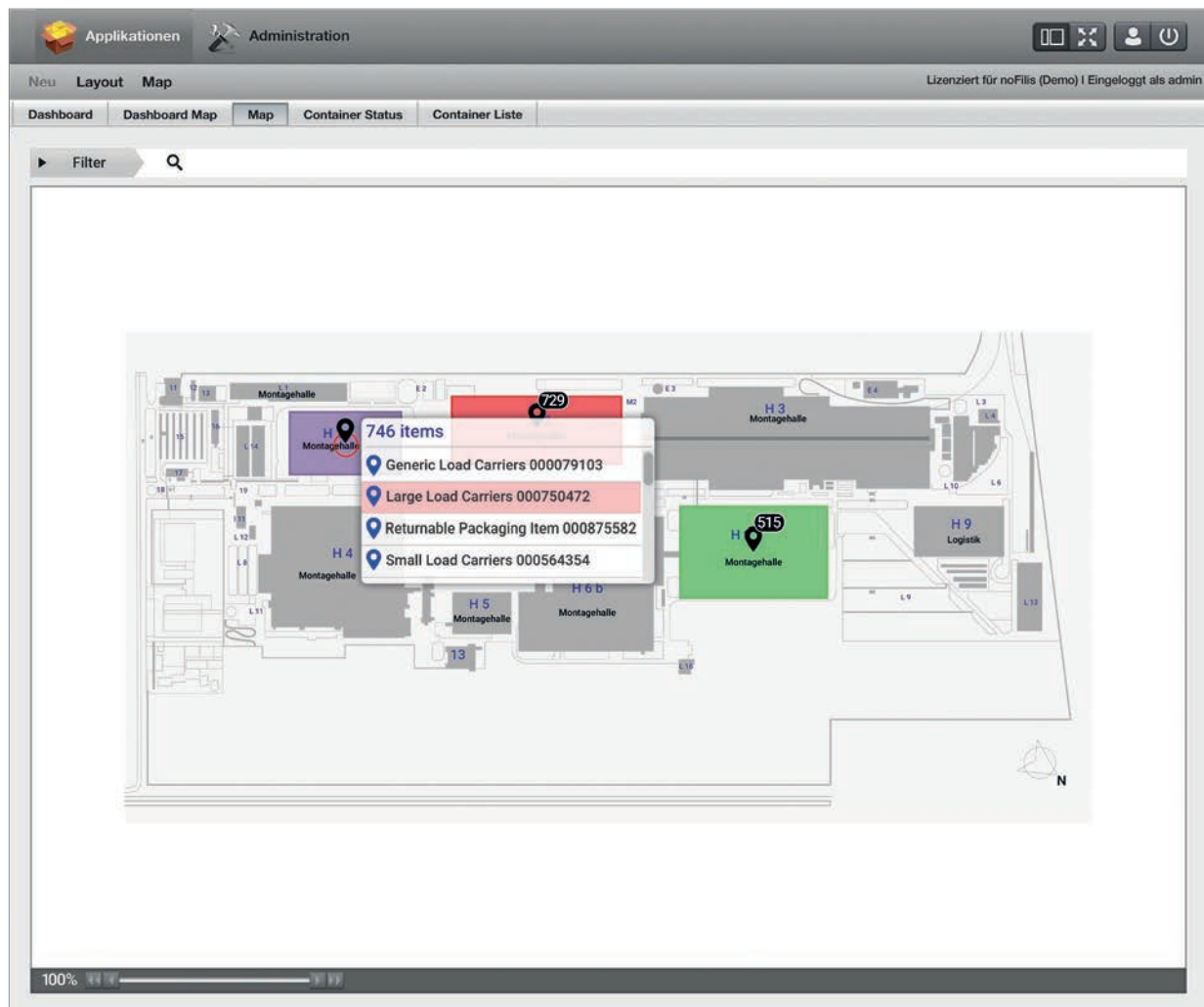


> CrossTalk – RTLS Infrastructure



VISUAL DESIGNER

- Build any location hierarchy using plant, site, area and zone elements
- Visualise objects in geo-based and layout-based maps
- Binding link between physical devices and business logic



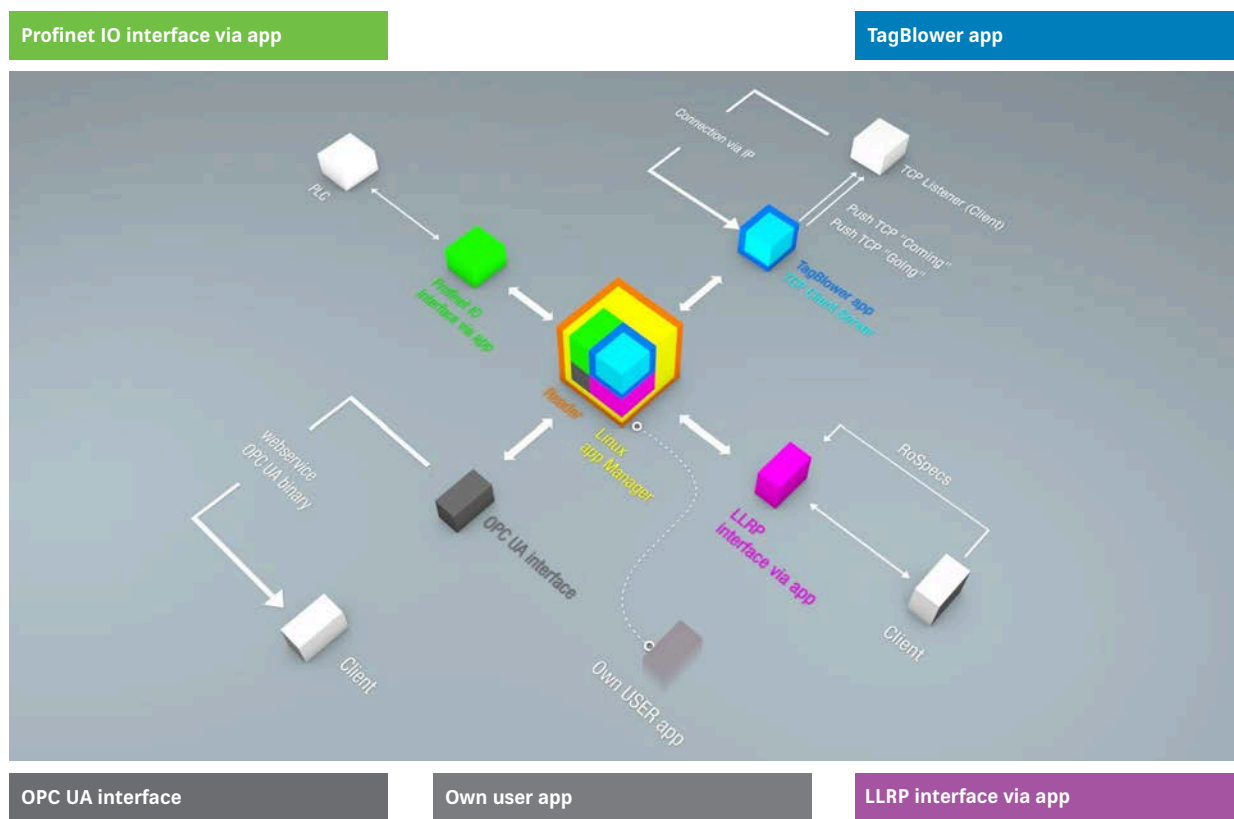
LAYOUT MAP VIEW

- Define zone border tolerance and fencing to prevent zone swapping
- Determination of sequences (A → B → C)
- Track & Trace
- Visual location editor to load and calibrate maps, draw and move zones
- Handle localisation events from active/passive RFID and RTLS systems, barcodes, GPS tags and vehicle positioning
- Define fixed read points as positioning markers and gate movements
- Forward logical localisation results as business events to other apps or back-end systems

> Interface Software

Based on the embedded Linux OS, every RRU/ARU reader offers the possibility for different interfaces. Profinet IO, TagBlower and LLRP modules are available in the Kathrein

download area. OPC UA is part of the CrossTalk integration layer. In addition, Kathrein offers full access for custom applications that can also be installed directly on the reader.



Software: Order Overview

Order No.	Type	Description
52010375	SW-ProfiNet-App	for RRU4xxx/ARU3xxx reader with Linux OS
52010381	SW-Tag-Blower-App	for RRU4xxx/ARU3xxx reader with Linux OS
52010382	SW-Skidata-App	for RRU4xxx/ARU3xxx reader with Linux OS

Profinet IO

The Profinet IO app allows the integration of a reader into a Profinet IO environment; the reader acts as an IO device. To run the app, a valid licence key is needed. Licence keys (either a full licence or a time limited demo licence) are bound to the specific reader the app is running on. For obtaining a licence key, the hardware key provided by the app is needed.

Features

- Industrial Ethernet standard
- Fast IO communication
- High data rate



TagBlower

The TagBlower app can read tags asynchronously and generate messages when a tag is coming or going. The app provides a server on a configurable port where TCP clients can connect to receive those messages. The message format can be specified by the user by setting a coming and/or going datagram. A datagram consists of normal text and keywords.

Features

- Multi listener
- Push principle
- Configurable



LLRP

Kathrein RFID readers are available with an optional LLRP (Low Level Reader Protocol) stack installable as an LLRP app. All readers with an integrated embedded Linux OS can be controlled via LLRP 1.0.1 port 5084 for easier integration. To specify air interface commands between readers and clients, LLRP is a ratified standard protocol from EPCglobal (www.gs1.org/epcrfid/epc-rfid-llrp/latest)

Features

- 32 reader operators selectable
- Version 1.0.1 (13.08.2007)
- Port 5084



APIs

- C/C++ (Windows x 86/x64, Linux x86/x64, ARMv7a-sf x86, ARMv7a-hf x86)
- .NET (Windows x86/x64)
- Java

OPC UA

OPC UA (Unified Architecture) is an M2M-Communication Protocol for industrial applications. It is a standard to interconnect IoT systems. Based on Kathrein's embedded Linux operating system, it enables transport via web service or OPC UA Binary to Clients.

Features

- M2M Communication Protocol
- Transport via web service
- Transport via OPC UA Binary

User App

Kathrein devices allow their users full access to the embedded Linux operating system for building their own apps.

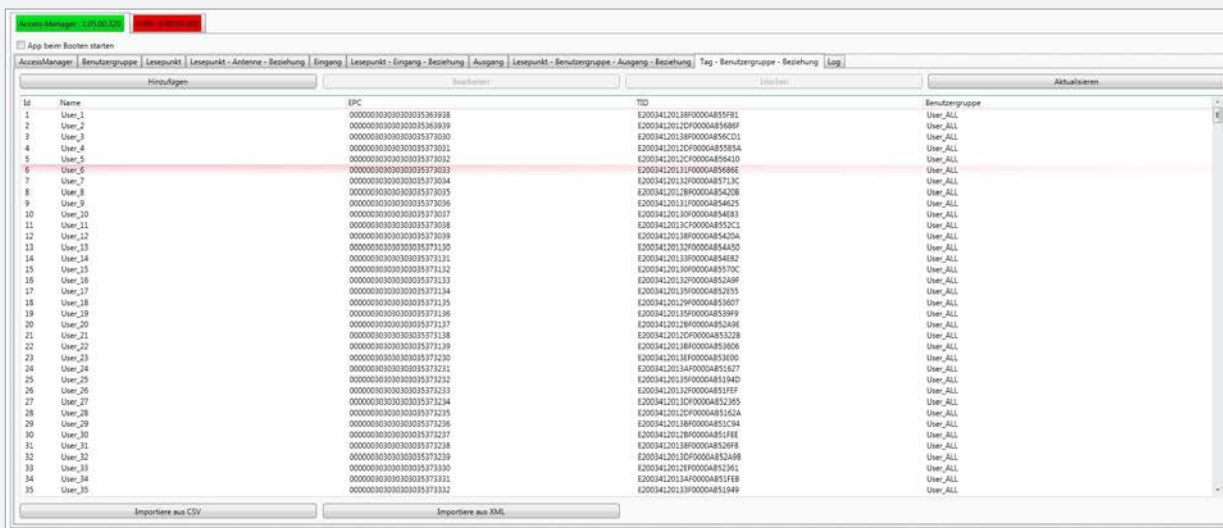
Features

- Full access to build own user apps directly on the reader

AccessManager

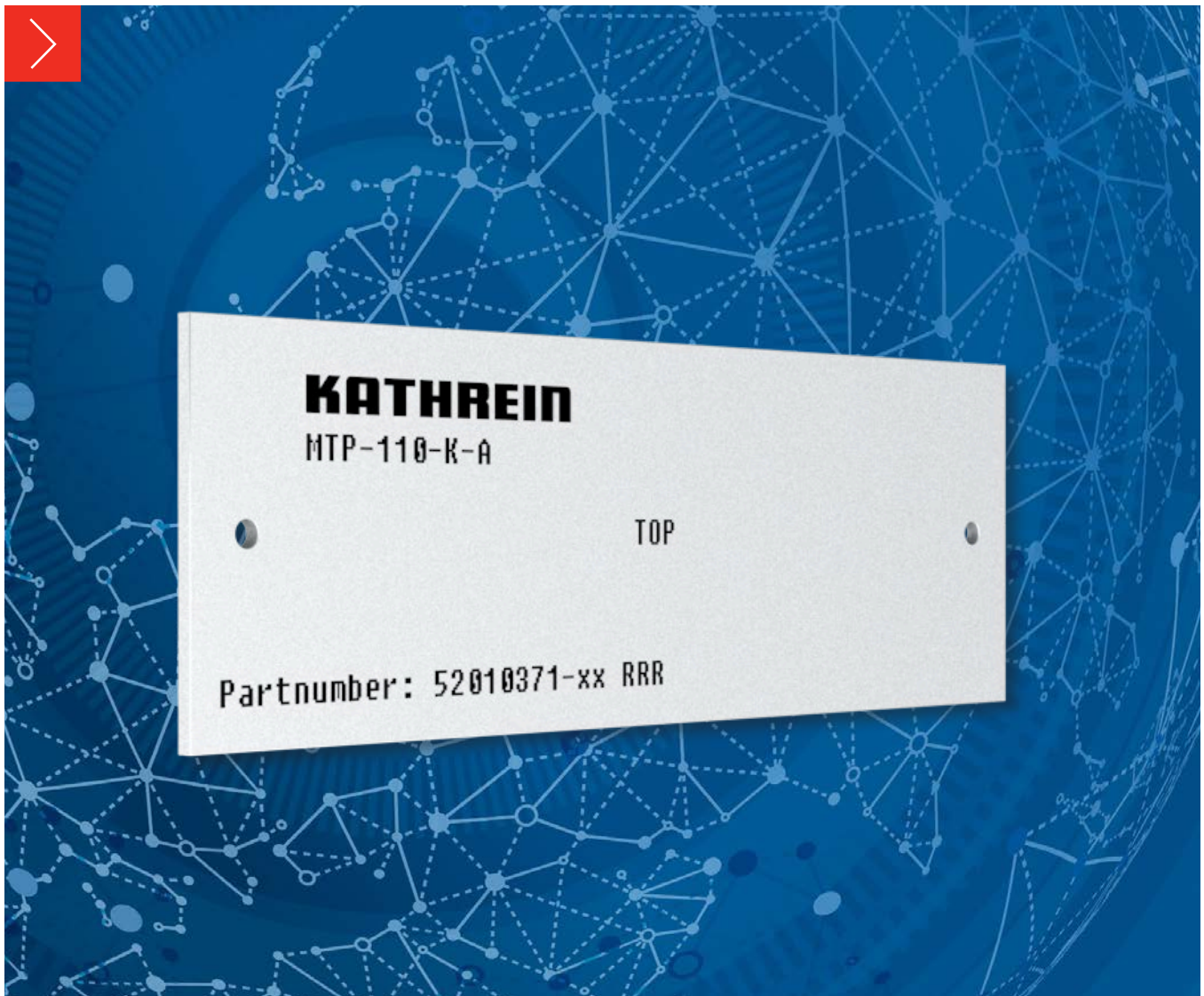
Automated vehicle identification (AVI) is one of the key markets that Kathrein Solutions is focussing on. AVI includes free flow identification, plaza and parking applications. For parking applications, Kathrein provides a specially configured software for access control named AccessManager. Based on the Kathrein-reader embedded Linux operating system, AccessManager allows to create easy access solutions without any programming skills — only four steps are needed to manage authorisation: assigning rights to create user groups, defining reading zones and starting points and determining outputs.

In combination with digital inputs and outputs (GPIO), AccessManager allows any upstream and downstream of mechanical peripherals, such as barriers or gates. In addition to the recorded permissions, each read event can be stored in a log file. The subscriber identifier or name and the exact time will be recorded in an SQLite database. This information can be retrieved for a desired duration. In this case, the access is realised via a remote connection or locally as an CSV or XML file. The duration or parking time can then be analysed.



AccessManager: Order Overview

Order No.	Type	Description
52010217	SW-AC-Manager 1000+	Application software, single licence AccessManager
52010242	SW-AC-Manager 5000+	Application software, single licence AccessManager
52010265	SW-AC-Manager 1000+ Pool Licence	Application software, pool licence 20 readers
52010266	SW-AC-Manager 5000+ Pool Licence	Application software, pool licence 20 readers



Transponders

Kathrein offers a wide range of high-performance transponders for automated vehicle identification and industrial use.



> Windshield Label

The RFID windshield label serves for Automatic Vehicle Identification (AVI), Intelligent Transportation Systems (ITS), Electronic Toll Collection (ETC), Electronic Vehicle Registration (EVR) and smart city applications. The label is adhered to the inside of the windshield. The development of the RFID windshield label was focused on a very high read range due to a special antenna behind glass and a passive function without battery. Tag authentication takes place using an AES co-processor and a 128-bit AES unique crypto key. Privacy protection is achieved via an untraceable command and a 128-bit AES group crypto key.

The label material is a combination of PP and PET layer. Extra security pre-cuts and special void adhesive improve security against removal and re-use.

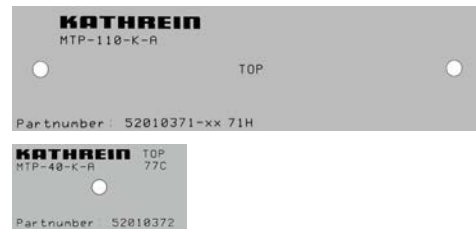
Custom-specific artwork printing, personalisation and key insertion available upon request.



Order No.	52010397	52010396
Type	WSL-TP-DNA25-K-C	WSL-TP-U725-K-C
Delivery lot [pcs]	500	
Operating ambient temperature range [°C]	-35 to +85	
Frequency range [MHz]	865-928	
Protocol	EPC Class1 Gen2 v2.0/ISO 18000-63C/IEC 29167-10	
Chip	UCODE DNA	UCODE 7
Memory		
EPC-serialised	224 bit	128 bit
User memory	3072 bit	-
Unique TID	96 bit	
Read range (on non-metalised glass in centre position) [m]	typ. 12; max. 16	
IT security	tag authentication uses AES co-processor and 128-bit crypto key, privacy protection via untraceable command and 128-bit AES unique crypto key, AES group crypto key, ISO/IEC 29167-10	32-bit kill password to permanently disable the tag 32-bit access password
Programming	9-digit consecutive numbers in ASCII	
Serialisation	9 numeric characters in clear text; barcode	
Dimensions (L x W x H) [mm]	100 x 25	

Multi-surface Transponders

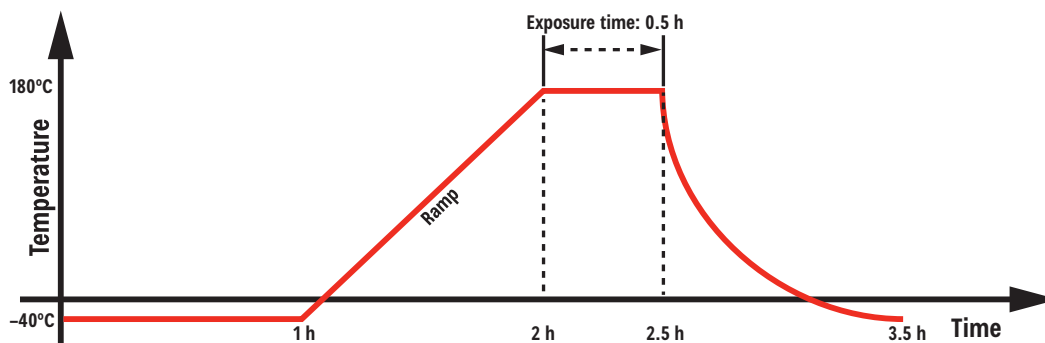
The universal multi-surface transponders from Kathrein are designed to be insensitive to the materials which they are attached to. Equally good performance is expected on both metal and non-metal items. With their robust structure, they can be used in harsh environments and have a high class of destruction resistance. With the UCODE DNA, the transponders offer a combination of long-range UHF RFID performance coupled with cryptographic security functionality for tag authentication.



Order No.	52010371	52010372
Type	MTP-110-K-A	MTP-40-K-A
Operating ambient temperature range [°C]	-40 to +85	
Temperature shock [°C]	-40 to +180 (see Max. Temperature Range)	
Frequency range [MHz]	860-960	
Protocol	EPC Class1 Gen2/ISO 18000-63C	
Chip	UCODE DNA	
Memory		
EPC max.	224 bit	
User memory	up to 3 kbit user memory (3072 bits) with BlockPermalock (depending on IC version and configuration)	
Unique TID	96 bit	
Serialisation	96-bit EPC	
Range [m]	typ. 7 m on all surfaces	typ. 4 m on metal surfaces* typ. 1 m on non-metal surfaces
IT security	32-bit access password, 32-bit kill password	
AES authentication	128-bit AES authentication keys	
Dimensions (L x W x H) [mm]	110 x 30 x 3	40 x 20 x 3

* A metal mounting screw can influence the performance

Max. Temperature Range





Accessories

Power supplies, connecting cables and mounting sets for Kathrein reader and antenna systems.



> Reader AC/DC Adapter for RRU 4000 and ARU 3000

Order No.	Type	Description
52010364	R-RPA3 24VDC-90 W	RRU/ARU AC/DC adapter 24 V/90 W
52010365	R-RPA 24VDC-72 W	RRU/ARU AC/DC adapter 24 V/72 W
52010366	R-RPA 24VDC-90 W	RRU/ARU AC/DC adapter 24 V/90 W
52020369	R-ETH-SW-100	PoE+ Ethernet switch, 4-port
52010370	R-POE-INJ-30	PoE+ injector, 30 W, 100 Mbit for RRU, ARU, M-ARU
52010376	PCS-G3-IP67	Protective caps for RRU 4000 and ARU 3000 reader series IP67



> Reader Connecting Cable for RRU 4000 and ARU 3000

Order No.	Type	Length	Description
52010358	R-CC3-10-DC	10 m	RRU/ARU DC power cable
52010359	R-CC3-03-DC	3 m	RRU/ARU DC power cable
52010360	R-CC3 10 ETH	10 m	RRU/ARU Ethernet cable M12/RJ45
52010361	R-CC3-03-ETH	3 m	RRU/ARU Ethernet cable M12/RJ45
52010362	R-CC3 10 GPIO	10 m	RRU/ARU GPIO cable M12
52010363	R-CC3-03-GPIO	3 m	RRU/ARU GPIO cable M12
52010373	R-BC3-10-ETH	10 m	RRU/ARU Ethernet bridge cable
52010431	R-AC3	0.5 m	RRU/ARU adapter cable GPIO, IP65, M12 male 12-pole, A-coded, 2x M12 female 8-pole, A-coded
52010432	R-AC3	0.5 m	RRU/ARU adapter cable Ethernet, IP65, M12 female 4-pole, D-coded, M12 male 8-pole, X-coded



> Reader Connecting Cable for ARU-CSB and M-ARU

Order No.	Type	Description
52010364	R-RPA3 24VDC-90 W	RRU/ARU AC/DC adapter 24 V/90 W
52010126	CK-RRU-ETG	Connecting kit ETG/ETL for ARU-CSB
52010189	CK-M-ARU RS	1.5 m M12 cable for M-ARU RS232
52010209	CK-M-ARU PoE	1.5 m M12 cable for M-ARU PoE
52010241	R-CC 10 RS	10 m DC, RS and GPIO cable for M-ARU RS232
52010238	R-CC 10 ETH	10 m Ethernet cable for ARU-CSB and M-ARU
52010239	R-CC 10 GPIO	10 m GPIO cable for ARU-CSB
52010240	R-CC 10 DC	10 m DC cable ARU-CSB
52010127	Protective Caps	Protective caps for ARU-CSB or antenna sockets IP65



52010364



52010126



52010189



52010209



52010241



52010238



52010239



52010240



52010127

> Mobile Terminal for M260 and M160

Order No.	Type	Description
52010233	DS-RUH-ACD-260	Docking station M260 with LED display incl. power supply and power cord
52010234	AKKU-RUH-ACD-260	Replacement battery 7.4 V/2200 mAh, quick-change Li-ion battery
52010379	DS-RUH-ACD-160	Docking station M160 with LED display incl. power supply
52010380	AKKU-RUH-ACD-160	Replacement battery 7.2 V/3400 mAh, quick-change Li-ion battery



52010233



52010234



52010379



52010380



> Antenna Cables & Adapters

Order No.	Type	Description
52010174	R-AC 3 TNC-TNCR	LL 240 flex, L = 3 m, IP65 ruggedised
52010175	R-AC 6 TNC-TNCR	LL 240 flex, L = 6 m, IP65 ruggedised
52010176	R-AC 10 TNC-TNCR	LL 240 flex, L = 10 m, IP65 ruggedised
52010177	R-AC 15 TNC-TNCR	LL 240 flex, L = 15 m, IP65 ruggedised
52010250	R-AC 15 N-TNCR	LL 400 flex, L = 15 m, IP65 ruggedised
52010090	R-AC 3 SMA-TNCR	RG58, L = 3 m
52010208	R-AC 05 SMA-SMA	RG58, L = 0.5 m
52010178	R-AA TNC-N (f-m)	Antenna adapter TNC-N (f-m)
52010243	R-AA TNC-SMA (f-m)	Antenna adapter TNC-SMA (f-m)



> Connection Box

Order No.	Type	Description
52010439	CB-A	Connection box advanced; IP65, 230 V/90 W, Ethernet, GPIO, FI circuit breaker
52010440	CB-B	Connection box basic, IP65, 230 V/90 W, Ethernet, FI circuit breaker

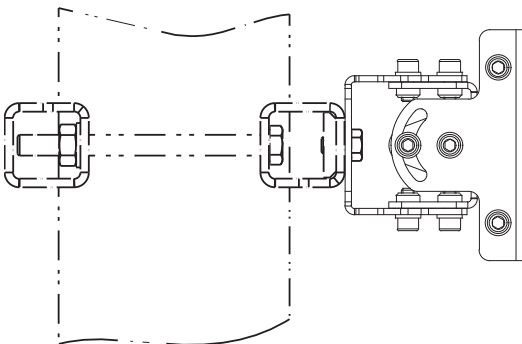
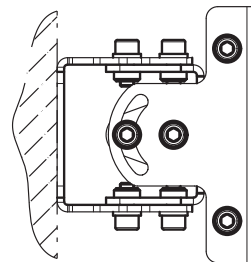
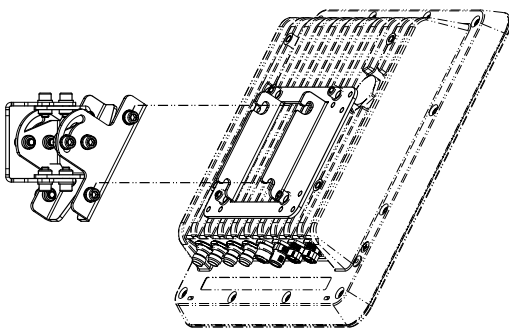
> Cover and Backplate for SMSH

Order No.	Type	Description
52010224	SMSH-30-30PC	Protective cover for SMSH
52010356	SMSH-BP-ALU	Aluminium backplate for SMSH



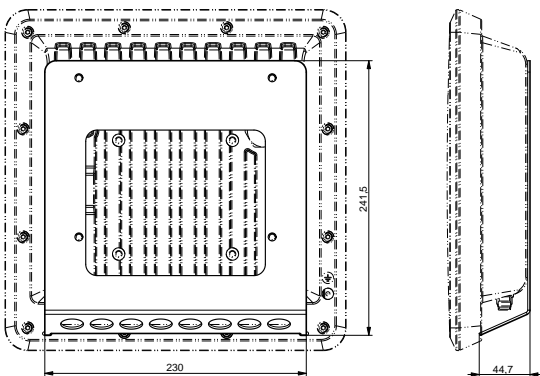
> Wall/Pole Mounting Set for RRU 4000, ARU 3000 and WRA 7070

Order No.	Type	Description
52010351	MK-WPM3-OSS Outdoor	Wall/pole mount kit for RRU 4000, ARU 3000, WRA 6060, WRA 7070
52010368	MK-PMA-OGV	Pole mount adapter for 52010351



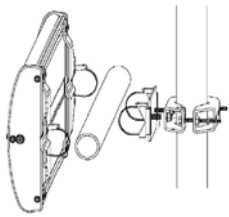
> Vandalism Protective Cover for RRU 4000 and ARU 3000

Order No.	Type	Description
52010367	R-RVP3-VPP-SS	Vandalism protective cover for RRU 4000, ARU 3000



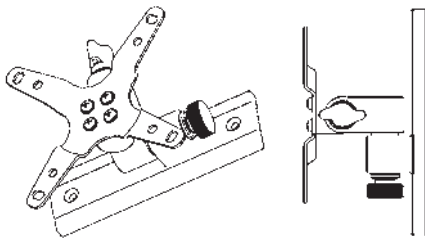
> Pole Mounting

Order No.	Type	Description
52010005	MK-AMB-100-Outdoor	Pole mount kit for ARU-CSB, WIRA 30



> Wall Mounting

Order No.	Type	Description
52010261	MK-WM-100-100-Indoor	Wall mount kit for RRU 4000, ARU 3000, WRA 6060/7070, SMSH-BP-ALU



> Wall/Pole Mounting Set

Order No.	Type	Description
52010262	MK-WPGM-100-100-Outdoor	Wall/pole mount kit for WIRA 40





Service & Support

Our services and support reflect the profound expertise of an innovative technology leader acquired over a whole century. Our experts and highly motivated teams work on excellent solutions to coordinate all relevant project activities and implementation

tasks, and provide our customers with up-to-date information and direct visibility of the implementation status and progress. We provide you with reliable support in implementing your project according to the very highest quality standards.

> Make Use of Our Support for

Planning

Our planning service helps you with the conception and implementation of your system as well as with all subsequent upgrades and improvements. For this purpose, we provide carefully conceived, reliable planning services — from the first blueprints and surveys to the finalised plans.

- Feasibility Study
- Survey
- Process Design
- Implementation Planning

Implementation

Implementing high-quality, comprehensive solutions requires specialist expertise and precisely tailored project management. We support you with a network of Kathrein-certified implementation partners and an experienced project management team. What is more, we are always available to provide rapid assistance — worldwide, round the clock, 365 days a year.

- Installation
- Start-Up
- Project Approval
- Project Management
- Integration
- System Approval

Material Provisioning

Just-in-time availability of the required materials is the key to successful implementation. Our material service supplies all the parts and tools required for setting up and operating Kathrein systems. We provide everything for a turnkey solution — accessories and consumables made by Kathrein itself as well as products supplied by other providers and partners, including additional spare parts — all this from a single source.

Training

Kathrein is committed to the very highest quality standards. We offer a thoroughly conceived portfolio of excellent training programmes so that customers and partners can benefit from our expertise on a lasting basis. These programmes can be booked individually or as part of an overall certification. With a state-of-the-art training infrastructure, our customers enjoy the advantages of an excellent worldwide set-up. Based on your needs, we provide programmes in the form of face-to-face training, virtual classrooms and online study, and we can provide an individualised combination of these various types, if necessary.

Maintenance

Our maintenance service ensures that our solutions are available throughout their entire life cycle. For this purpose, we provide an international team of professionals with comprehensive expertise and experience. Kathrein has developed a series of modular services, so as to support customers both globally and locally. A widespread network of certified Kathrein service partners and local Kathrein units takes care of on-site service.

- Technical Hotline
- On-Site Service
- Software Service
- Hardware Service
- Spare Parts Management
- Repair Service

Operation

Customers and users expect error-free operation of their system solutions — round the clock. With our 24/7 Service Control Centre we offer convenient and seamless system monitoring, so as to be able to act fast in the event of failure. You can book the following service modules, either individually or as a complete set.

- Fault Management
- Configuration Management
- Performance Management
- Security Management

Logistics

Our logistics service enables reliable and precise supply of everything required for your project — in the right place at the right time. It is up to you to decide whether we supply ex-works or on-site. Whether standard or individual delivery — we take care of packaging, customs clearance and all other matters to ensure smooth, streamlined and cost-efficient handling.

Services and support for complete end-to-end solutions



> Innovation Needs Space

More space for new challenges and solutions for specific customer requirements: our new, state-of-the-art test and application centre in Stephanskirchen/Germany. The laboratory is equipped with modern antenna and high-frequency measurement units and a high-speed conveyor, enabling the testing of applications that are critical in terms of time and speed. We carry out all professional testing on the customer's behalf, which considerably simplifies the development of customised standard products.

Core competencies

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

High-end hardware and customer-oriented service round off our portfolio. We provide RF simulation, application support, software integration and implementation as well as operation and maintenance — all from a single source.

Solutions

- Automatic Vehicle Identification — Solutions for mobile transport systems & individual transport
- Industry Automation — Solutions for Industry 4.0
- Logistics — RFID solutions for logistics processes
- Retail — RFID solutions for the retail trade



Reference

> Frost & Sullivan Award 2016

The winner in the category “2016 European RFID in Logistics Product Line Strategy Leadership Award”.

Based on its recent analysis of the radio-frequency identification (RFID) market for logistics, Frost & Sullivan recognised Kathrein RFID with the 2016 European RFID Award for Product Line Strategy. Kathrein’s ultra-high frequency (UHF) RFID technology product portfolio, targeted at end users ranging from commercial to industrial, enables end-to-end tracking in the logistics market. With the strategic acquisition of the software vendor noFilis, Kathrein RFID evolved from a hardware vendor to a complete solutions provider.

Kathrein RFID’s comprehensive product range is based on the unique Kathrein RFID antenna interface ©KRAI. The company introduced ©KRAI with the aim of enhancing the read range in dense transponder and reflective environments, facilitating the integration of RFID systems and reducing costs.



Pictures

Title, Page 5, 16, 33, 36, 42
iStock.com | Anni_Ka

Page 4
shutterstock.com | Corepics VOF

Page 6
iStock.com | BNW_Liufuyu

Page 24
iStock.com | boggy22

Page 42
iStock.com | Squaredpixels

Page 44
fotolia.com | Rawpixel.com,
iStock.com | BraunS,
iStock.com | tuachanwatthana,
iStock.com | Baloncici,
depositphotos.com | dmbaker,
iStock.com | galdzer

KATHREIN Solutions GmbH
Kronstaudener Weg 1
83071 Stephanskirchen, Germany
Phone +49 8036 90831 0
Fax +49 8036 90831 69
www.kathrein-solutions.com | iot-sales@kathrein-solutions.com

KATHREIN