CAENRFID

CATALOG 2018

Design your
**RFID Solution**

We provide the
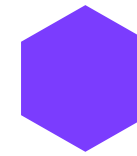**technology**

easy2read

The easy2read© product family constitutes a complete and reliable product line of RAIN RFID readers for any Auto-ID need.
A reading range from a few centimetres up to 7-8 metres distance makes the easy2read© family suitable for applications such as access control,RFID gates, desktop reading or OEM modules for integration into handheld or printer devices.

easy2log

The easy2log© product family is the ideal portfolio of RAIN RFID loggers to monitor temperature-sensitive products during shipment and storage. Especially indicated for food and pharmaceuticals, the easy2log© RAIN RFID loggers are well suited also for chemical and special industrial products.
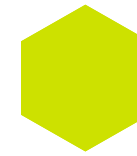
- Embedded Readers
- Mobile readers
- Integrated Readers
- Fixed Readers
- Temperature Loggers
- Electronic Seals
- Accessories

EMBEDDED READERS

Embedded Readers

RAIN RFID technology is widely used in devices like mobile computers, PDAs, handhelds, label printers and applicators, desktop readers, informative kiosks, industrial readers and smart shelves.

CAEN RFID embedded readers are the best choice for those companies wishing to integrate the RAIN RFID technology in their existing or new products.

Our embedded readers product line includes modules in different size, power consumption and read distance.
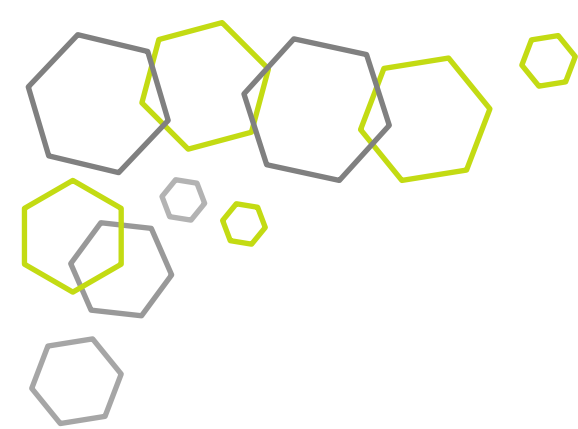
QuarkUp - R1270C
500mW RAIN RFID Ultra Compact Module

Features

- **RAIN (UHF EPC Class1 Gen2, ISO 18000-63) Compliant**
- Multi-regional Support
- Ultra Compact Size
- UART serial port and USB interface
- SW programmable output power up to 500mW (27dBm) conducted
- Low Power Consumption

Applications

- Handheld Device
- Multiregional Label Printers and Applicators
- Point of Sales Devices
- Voice Operated Gloves

General Info

The QuarkUp (Model R1270C), an embedded reader of the easy2read© product line, is a multiregional ultra compact reader for low power, high performance RAIN RFID applications.
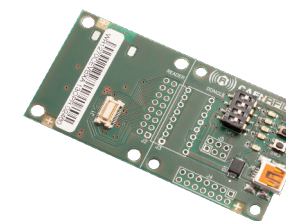
With programmable output power in 18 steps from 10dBm to 27dBm, the reader can detect tags at more than 3mt of distance (depending on antenna and tag dimensions).

Due to its low power consumption, the module is specifically designed to be easily integrated in battery powered devices.

The radio frequency core of the module permits to achieve fast reading and to be used in dense reader and dense tag environments for top-class rated performances.

The compactness of the device and the board-to-board connector allow to embed the R1270C inside the new small form factor industrial handhelds, smartphone accessories and other compact form factor devices.

The R1270C complies with and can operate in both European and US regulatory environments and due to its multiregional capabilities, it's ideal for integration in devices requiring compliance to different geographical regions.

Technical Specifications Table

Frequency Range	− 865.600÷867.600 (ETSI EN 302 208 v3.1.1) − 902÷928 MHz (FCC part 15.247)
RF Power	Programmable in 18 levels (1dB step) from 10dBm to 27dBm (from 10mW to 500mW) conducted
Output Power Accuracy	+/- 1dB
Antenna Connector	Nr.1 U.FL type
Frequency Tolerance	±10 ppm over the entire temperature range
Number of Channels	− 4 channels (compliant to ETSI EN 302 208 v3.1.1) − 50 hopping channels (compliant to FCC part 15.247)
Standard Compliance	EPC C1 G2 / ISO18000-63
Digital I/O	4 I/O lines (3.3V level; Iout=3mA max)
Connectivity	USB interface: One USB 2.0 Full Speed (12Mbit/s) device port UART Serial Port: − Baudrate: up to 115200 − Databits: 8 − Stopbits: 1 − Parity: none − Flow control: none − 3.3 V I/O Voltage Level
Dimensions	(W)25 x (L)25 x (H)6 mm³ (1.0 x 1.0 x 0.2 inch³)
Power Consumption	2.7W @ RF out = 27dBm 1.6W @ RF out = 23dBm 0.15W in idle mode
DC Power	5.0 VDC+/-5%
Operating Temperature	-10°C to +55°C
Weight	5 g

Ordering Options

Code	Description
WR1270CXAAAA	R1270C - Ultra Compact Embedded UHF RFID Reader
WR1270CXDKAA	R1270C - Development kit with reader, adapter, antennas, cable and demo tags

Accessories

Code	Description
WR1270CEVBXA	The R1270CEVB evaluation board allows to manage the R1270C Quark Up reader directly via USB interface. This board is particularly suited for Quark Up reader evaluation and SW development purposes.
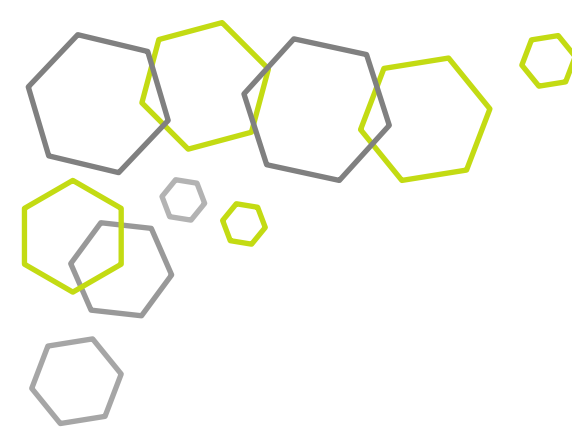
Quark - 1230CB
**Embedded Ultra Compact
RAIN RFID Reader**

Features

- **RAIN (UHF EPC Class1 Gen2, ISO 18000-63) Compliant**
- **Multi-regional Support**
- **Ultra Compact Size**
- **External Antenna Connector**
- **SW programmable output power up to 200mW (23dBm) conducted**
- **Low Power Consumption**

Applications

- **Handheld Device**
- **Multiregional Label Printers and Applicators**
- **Point of Sales Devices**
- **Voice Operated Gloves**

General Info

The Quark (Model R1230CB), an embedded reader of the easy2read© product line, is a multiregional ultra-compact reader for low-power, high performance RAIN RFID applications.
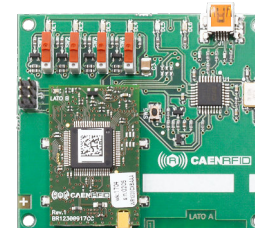
With programmable output power in 15 steps from 9dBm to 23dBm, the reader can detect tags at more than 1mt of distance (depending on antenna and tag dimensions).

Due to its low power consumption, the module is specifically designed to be easily integrated in battery powered devices as well as powered directly by a standard USB port.

The radio frequency core of the module permits to achieve fast reading and to be used in dense reader and dense tag environments for top-class rated performances.

The compactness of the device and the board-to-board connector allow to embed the R1230CB inside the new small form factor industrial handhelds, smartphone accessories, small USB dongles and other compact form factor devices.

The R1230CB complies with and can operate in both European and US regulatory environments and due to its multiregional capabilities, it is ideal for integration in devices requiring compliance to different geographical regions.

Technical Specifications Table

Frequency Range	−865.600÷867.600 (ETSI EN 302 208 v3.1.1) −902÷928 MHz (FCC part 15.247)
RF Power	Programmable in 15 levels (1dB step) from 9dBm to 23dBm (from 8mW to 200mW) conducted
Output Power Accuracy	+/- 1dB
Antenna VSWR Requirement	2:1 or better for optimum performances
Antenna Connector	Nr.1 MMCX type
Frequency Tolerance	±10 ppm over the entire temperature range
Number of Channels	−4 channels (compliant to ETSI EN 302 208 v3.1.1) −50 hopping channels (compliant to FCC part 15.247) All subsets of 902-928 MHz band are supported via FW upgrade
Standard Compliance	EPC C1 G2 / ISO18000-63
Digital I/O	4 I/O lines 3.3V out @ 3mA; 3.3V input level
Connectivity	UART Serial Port: − Baudrate: up to 115200 − Databits: 8 − Stopbits: 1 − Parity: none − Flow control: none − 3.3 V I/O Voltage Level
Dimensions	(W)25 x (L)40 x (H)6 mm³ (1.0 x 1.6 x 0.2 inch³)
Power Consumption	1.6W @ RF out = 23dBm 1.3W @ RF out = 17dBm 0.25W in idle mode
DC Power	2.5 VDC ÷ 5.5 VDC
Operating Temperature	-10 °C to +55 °C
Weight	8 g

Ordering Options

Code	Description
WR1230CXBAAA	R1230CB - Quark- Low-Power OEM UHF Compact RFID Reader
WR1230CBDKEU	R1230CBDK - Development kit with Quark reader, antenna, tags

Accessories

Code	Description
WR1230CBEVB	Quark Reader Evaluation Board allows to manage the R1230CB Quark Reader directly via USB Interface. This board particularly suited for Quark reader evaluation and SW development purposes.

Hadron - R4320C

High Performance 4-port Embedded RAIN RFID Reader

Features

- **RAIN (UHF EPC Class1 Gen 2 ISO 18000-63) Compliant**
- **Multiregional support**
- **Four 50 Ohm MMCX antenna connectors**
- **USB full speed and serial interface (TTL levels)**
- **Up to 31.5 dBm**

Applications

- **High performances handheld and sleds**
- **Point of sales readers**
- **Self-service kiosks**
- **Industrial automation readers**
- **Full portal readers**
- **Long range read points**

General Info

The Hadron (Model R4320C), embedded module of the easy2read© product line, is a RAIN RFID multiregional compact reader for high performances applications. With programmable output power from 17dBm to 31.5dBm, the reader reaches top reading performances being able to detect RAIN tags from a distance of 9 m. (30 feet) depending on the antenna and the tag used.

The radio frequency core of the module allows to achieve fast reading/writing operations and to work in dense reader and dense tag environments for top-class rated performances.

Due to its compact form factor, the module is specifically designed to be easily embedded in battery powered devices such as high performances handhelds and sleds. Thanks to the 4-antenna ports and the high power capability, the Hadron module is the perfect RAIN RFID core component to design full size readers for portals, industrial automation readers or any RFID device requiring long reading distances.

The Hadron reader complies with and can operate in both European and US regulatory environments and, thanks to its multiregional capabilities, it's ideal for integration in devices requiring compliance to different geographical regions.

Technical Specifications Table

Frequency Range	− 865.600÷867.600 MHz (ETSI EN 302 208 v3.1.1) − 902÷928 MHz (FCC part 15.247)
RF Power	Programmable from 17dBm to 31.5dBm (30dBm for FCC)
Output Power Accuracy	+/- 1dB
Antenna VSWR Requirement	< 2:1 for optimum performances
Antenna Connectors	Nr. 4 MMCX jacks
Frequency Tolerance	±10ppm over the entire temperature range
Number of Channels	−4 channels (compliant to ETSI EN 302 208 v3.1.1) −50 hopping channels (compliant to FCC part 15.247)
Standard Compliance	EPC C1G2 / ISO18000-63
Digital I/O	4 I/O lines 3.3V out @ 3mA; 5V tolerant
Forward Link Characteristics	PR-ASK 40kBit/s; DSB-ASK 160kBit/s (FCC only)
Return Link Characteristics	− Miller encoding (M=4; LF=250kHz) − Miller encoding (M=4; LF=300kHz) − FM0 400kbit/s (FCC only)
Connectivity	USB interface One USB 2.0 Full Speed (12 Mbit/s) device port UART Serial Port − Baudrate: up to 115200 − Databits: 8 − Stopbits:1 − Parity: none − Flow control: none − 3.3 V I/O voltage level
Dimensions	(L) 60 x (W) 42 x (H) 7,5 mm³
Power Consumption (max)	8.5W peak (TX/RX mode)
DC Power	3,5 VDC ÷ 5.5 VDC
Operating Temperature	-20°C to +60°C
Weight	35 g

Accessories

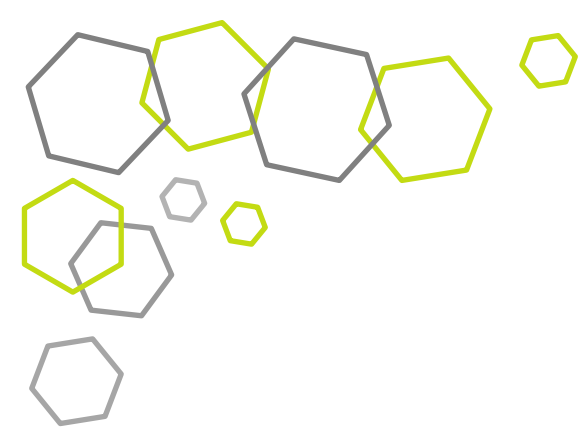| Code	Description
WR4320CXEVBX	The R4320CEVB evaluation board allows to manage the R4320C Hadron reader directly via RS232 interface. This board is particularly suited for Hadron reader evaluation and SW development purposes.

Mobile Readers

Reading RAIN RFID labels and tags in mobility is a need for a number of markets: retail, transport and logistics, healthcare, maintenance, event management just to mention a few.

Mobile workers normally use devices like tablets and smartphones and prefer to use them in their everyday activities.

CAEN RFID mobile readers connect easily to smartphones, tablets and PCs via the Bluetooth technology, providing mobile RAIN RFID technology to everyone.
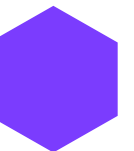
qIDmini - R1170I

Keyfob Bluetooth RAIN RFID Reader

Features

- **RAIN (UHF EPC Class1 Gen2, ISO 18000-63) Compliant**
- **USB and Bluetooth communication**
- **SPP and HID Bluetooth profiles**
- **Integrated linear polarized antenna**
- **Small, lightweight and ergonomic form factor**
- **Battery powered**
- **LCD Display**
- **Vibration feedback**
- **iPhone/iPad compatibility**
- **Also available with Near Field antenna, optimized for Murata MAGICSTRAP® and HITACHI USPT miniaturized**

Applications

- **UHF add-on to Bluetooth devices**
- **Point of Sales**
- **Field Sales Mobility**
- **People Access Control**
- **Inventory Management**
- **Service and Maintenance**

General Info

The qIDmini (Model R1170I) is a RAIN RFID handheld reader of the easy2read© product line, compliant with ISO 18000-63/EPC C1G2 standards.

The qIDmini has an integrated antenna suited for short to medium range applications and, thanks to the Bluetooth® communication interface, it is a perfect RAIN RFID add-on for any Bluetooth® enabled host such as a PC, a smartphone, a PDA or a tablet. The reader is compatible with Windows XP/7, Windows CE/Mobile, Android, iPhone and iPad.

The HID version supports native keyboard emulation allowing to interact directly with legacy applications, office automation SW or any other generic solution requiring manual input.
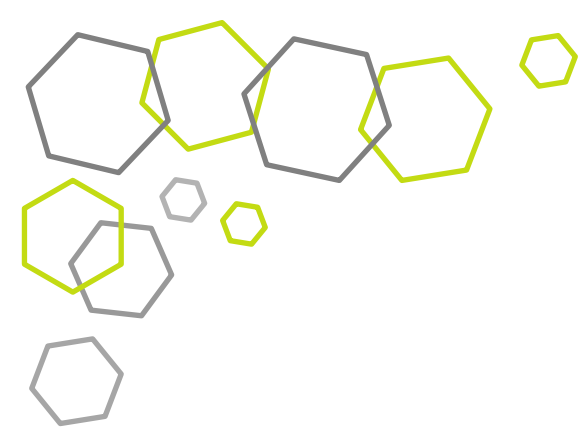
The qIDminiNF version is specifically designed to optimize the reading performances with near field miniaturized tags like the Murata Magicstrap and Hitachi USPT. The near field antenna of the qIDminiNF reader permits to read those small tags even when embedded in small parts like watches, jewels or mechanic parts. For this reason, the combination of the miniaturized near field tags and the qIDminiNF reader is a great tool to retrieve the serial numbers in small objects and check the originality of parts. The reader can also operate in "Batch Mode", allowing to store EPC codes into the internal memory when the communication links (USB or Bluetooth®) are not available.

When paired to a smartphone or a tablet, the qIDmini is a cost effective alternative to more expensive handheld devices.

Technical Specifications Table

Frequency Range	– 865.600÷867.600 MHz (ETSI EN 302 208 v. 3.1.1) (Mod. R1170IEHIDP, R1170IEAPLP and R1170IENFHD) – 902÷928 MHz (FCC part 15.247) (Mod. R1170IUHIDP,R1170IUAPLP and R1170IUNFHD) – 920.625÷924.375 MHz (SRRC RFID national standards)(Mod. R1170IUNFHD with OPT.WPE1170NFACN)
RF Power	– Programmable in 18 levels from 5 dBm ERP (3mW ERP) to 22 dBm ERP (150mW ERP) (Mod. R1170IEHIDP and R1170IEAPLP) – Programmable in 13 levels from 5dBm ERP (3mW ERP) to 18dBm ERP (60mW ERP)(Mod. R1170IUHIDP and R1170IUAPLP) – Programmable in 18 levels from -8 dBm ERP (0,16mW ERP) to 9 dBm ERP (8mW ERP)(Mod. R1170IENFHD and R1170IUNFHD)
Antenna	Integrated linear (horizontal) (Mod. R1170IEHIDP, R1170IEAPLP, R1170IUHIDP and R1170IUAPLP) Integrated UHF Near Field Antenna (Mod. R1170IENFHD and R1170IUNFHD)
Number of Channels	– 4 channels (compliant to ETSI EN 302 208 v. 3.1.1) (Mod. R1170IEHIDP, R1170IEAPLP and R1170IENFHD) – 50 hopping channels (compliant to FCC part 15.247) (Mod. R1170IUHIDP, R1170IUAPLP and R1170IUNFHD) – 16 hopping channels (compliant to SRRC RFID national standards) (Mod. R1170IUNFHD with OPT. WPE1170NFACN)
Standard Compliance	EPC C1G2 / ISO 18000-63
Read Range	Up to 90 cm (typical)(Mod. R1170IEHIDP, R1170IEAPLP and R1170IUHIDP,R1170IUAPLP)
Connectivity	USB Interface: USB 2.0 Full Speed (12 Mbit/s) device port Bluetooth: Interface: Class 2 with output power 4dBm EIRP Virtual COM port parameters: – Baudrate: up to 230.400kbps – Databits: 8 – Stopbits: 1 – Parity: none – Flow control: none HID profile available (Mod. R1170IEHIDP and R1170IUHIDP) Apple compatibility available (Mod. R1170IEAPLP and R1170IUAPLP)
User Interface	Button #1: ON/OFF Button #2: Trigger Led #1: power indication and battery status (green: high; red: low) Led #2: communication activity (blue: Bluetooth; orange: USB) Buzzer: bi tonal for events signalling Vibration: for events signalling Display: LCD Alphanumeric (8 chars x 2 lines)
Internal Buffer Size	48kByte (equivalent to 4096 EPC codes@96bit)
Battery Type	Li-Ion 3.7V, 570mAh
Battery Life	Operating: > 12h with 40.000 tag readings Standby: > 15 days
Battery Charging Time	2h (typical)
IP Rating	IP 32 (Mod. R1170IEHIDP, R1170IEAPLP, R1170IUHIDP and R1170IUAPLP) IP 30 (Mod. R1170IENFHD and R1170IUNFHD)
Dimensions	(W)99 x (L)54 x (H)20 mm³ max. (3.9 x 2.1 x 0.8 inch³)
Length of USB Cable	1.5 m
Operating Temperature	-10°C to +55°C
Weight	57 g (Mod. R1170IEHIDP, R1170IEAPLP, R1170IUHIDP and R1170IUAPLP) 58 g (Mod. R1170IENFHD and R1170IUNFHD)

Ordering Options

Code	Description
WR1170IEAPLP	R1170IEAPLP - qIDmini Keyfob Bluetooth UHF RFID Reader (ETSI) with Apple profile
WR1170IEHIDP	R1170IEHIDP - qIDmini Keyfob Bluetooth UHF RFID Reader (ETSI) with HID profile
WR1170IUAPLP	R1170IUAPLP - qIDmini Keyfob Bluetooth UHF RFID Reader (FCC) with Apple profile
WR1170IUHIDP	R1170IUHIDP - qIDmini Keyfob Bluetooth UHF RFID Reader (FCC) with HID profile
WR1170IENFHP	R1170IENFHP - qIDmini Keyfob Bluetooth UHF NF RFID Reader (ETSI) with HID profile
WR1170IUNFHP	R1170IUNFHP - qIDmini Keyfob Bluetooth UHF NF RFID Reader (FCC) with HID profile

qID - R1240IE/IU

Wearable Bluetooth RAIN RFID/BARCODE Reader

Features

- **RAIN (UHF EPC Class1 Gen2, ISO 18000-63) Compliant**
- **Multi-Regional Support**
- **USB and Bluetooth Communication**
- **Integrated circular polarized antenna**
- **Ergonomic form factor**
- **Battery powered**
- **iPhone/iPad compatibility**
- **Internet scripting engine**

Applications

- **UHF add-on to Bluetooth devices**
- **Point of Sales**
- **Field Sales Mobility**
- **People Access Control**
- **Inventory Management**

General Info

The qID (Model R1240IE, R1240IU) is a wearable RAIN RFID reader of the easy2read© product line with integrated antenna for medium to long range applications.

The reader hosts an internal rechargeable battery and can operate both in wired mode, using a USB cable, or in wireless mode through the Bluetooth® interface.

Thanks to the Bluetooth® communication interface, the qID is a perfect add-on for any Bluetooth® enabled host such as a PC, a smartphone, a PDA or a tablet for RAIN RFID readings. The reader is compatible with Windows XP/7/8/10, Windows CE/Mobile, Android and iOS operating systems.

The reader can also operate in "Batch Mode", allowing to store up to 500.000 EPC codes into the internal memory when the communication links (USB or Bluetooth®) are not available.

The qID can work autonomously thanks to its internal scripting engine: the user can upload a script to be executed when the trigger button is pressed. The scripting language is very powerful and, in addition to the standard programming language constructs, it permits to access to all the Gen2 commands and to drive the optional barcode scanner, the LEDs and the internal memory.
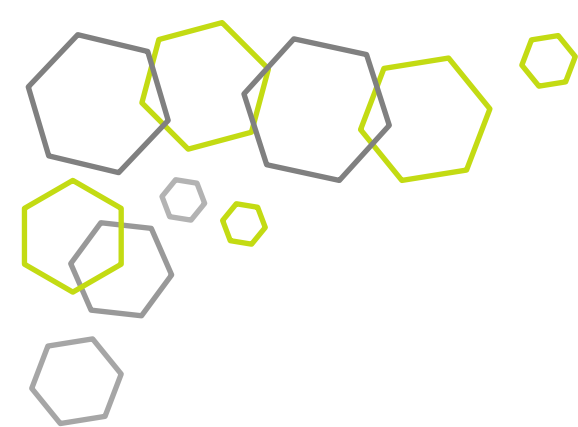
An optional 1D/2D barcode imager enables the qID to read most barcode standards. This enables the qID to be the perfect identification device in mixed barcode/RFID labels environment.

When paired to a smartphone or a tablet, the qID is a cost effective alternative to more expensive handheld devices.

Technical Specifications Table

Frequency Range	− 865.600÷867.600 MHz (ETSI EN 302 208 v3.1.1) (Mod. R1240IE – R1240IEB) − 902÷928 MHz (FCC part 15.247) (Mod. R1240IU – R1240IUB)
RF Power	− Programmable in 18 levels from 8 dBm ERP to 25dBm ERP (Mod. R1240IE – R1240IEB) − Programmable in 18 levels from 8,5 dBm ERP to 25,5dBm ERP (Mod. R1240IU – R1240IUB)
Antenna Gain	− 0,2 dBi (typical) (Mod. R1240IE – R1240IEB) − 0,7 dBi (typical) (Mod. R1240IU – R1240IUB)
Antenna Polarization	Integrated Circular Polarized Antenna
Number of Channels	− 4 channels (compliant to ETSI EN 302 208 v3.1.1) (Mod. R1240IE – R1240IEB) − 50 hopping channels (compliant to FCC part 15.247) (Mod. R1240IU – R1240IUB)
Standard Compliance	EPC C1G2 / ISO 18000-63
Read Range	up to 1.5 m (typical; depending on tag; tag in free air)
USB Interface	USB 2.0 Full Speed (12 Mbit/s) device port
Bluetooth Interface	Class 1 with output power 5dBm e.i.r.p. Virtual COM port parameters: – Baudrate: up to 921.600kbps – Databits: 8 – Stopbits: 1 – Parity: none – Flow control: none
User Interface	Button #1:ON/OFF Button #2: Trigger Led #1: power indication and battery status (green: high; red: low) Led #2: communication activity (blue: Bluetooth; orange: USB) Led #3: operation result (green: OK; red: not OK) Buzzer: bi tonal for events signalling
Internal Buffer Size	5MByte (equivalent to 400'000 EPC codes@96bit)
Barcode Reader	1D and 2D imager (only in Mod. R1240IEB – R1240IUB)
Battery Type	Li-Ion 3.7V, 2100mAh
Battery Life	Operating: > 8h (2'000 acquisitions of a single tag, triggered mode) Standby: > 7 days (powered off; no led blinking)
Battery Charging Time	7h from USB port 3h with AC/DC adapter
IP Rating	IP30
Dimensions	(L) 140 x (W) 90 x (H) 35 mm³ max. (5.5 x 3.6 x 1.4 inch³)
Length of USB Cable	1,5 m
Operating Temperature	-10°C to +55°C
Weight	230 g max (Mod. R1240IE/IU) 250 g max. (Mod. R1240IEB/IUB)

Ordering Options

Code	Description
WR1240IXEAAA	R1240IE - qID Wearable Bluetooth UHF RFID Reader (ETSI)
WR1240IXEBAA	R1240IEB - qID Wearable Bluetooth UHF RFID/BARCODE Reader (ETSI)
WR1240IXUAAA	R1240IU - qID Wearable Bluetooth UHF RFID Reader (FCC)
WR1240IXUBAA	R1240IUB - qID Wearable Bluetooth UHF RFID/BARCODE Reader (FCC)

Accessories

EACCESCDRF06	R1240I - Silicone Cover

iRFID500

Zone 1 & 2 Intrinsically Safe Bluetooth RAIN RFID Reader

Features

- **RAIN (UHF EPC Class1 Gen2, ISO 18000-63) Compliant**
- **USB and Bluetooth communication**
- **SPP and HID Bluetooth profiles**
- **Integrated linear polarized antenna**
- **Small, lightweight and ergonomic form factor**
- **Battery powered**
- **LCD Display**
- **Vibration feedback**
- **Intrinsically safe Zone 1 and 2**
- **Ex II 2 GD, Ex ia IIC T4 Ga, Ex ia IIIC T4 Ga**
- **Ex I M1 Ex ia Ma**
- **Class 1, Division 1, Groups A, B, C, D**
- **IP65 Fully ruggedized**

Applications

- **Oil & Gas**
- **Asset tracking**
- **Marine**
- **Energy**
- **Chemical**
- **Offshore**

General Info

The iRFID500 is an intrinsically safe handheld RAIN RFID Reader, designed for use in hazardous areas and harsh environments such as offshore, marine, chemical and industrial environments. The device is certified for use in ATEX and IECEx Zones 1, 2, 21 and 22.

Developed in partnership with Extronics, the iRFID500 has been created to work seamlessly with smartphones, tablets, and other Windows/Android devices to give a greater range of functionality. The iRFID500 is invaluable for supporting operations such as inventory management, tracking and tracing, maintenance planning and regulatory compliance.

Lightweight and ergonomic, iRFID500 is easy to use with one hand. The stylus nib means you can even operate a connected tablet whilst wearing gloves, avoiding unnecessary time wasting and helping you work more productively.

Large internal memory means the iRFID500 can be used in conjunction with smartphone or as a standalone device giving you greater efficiency and flexibility of usage.

Successful tag reading is indicated on the LCD display as well as by vibration and a buzzer sound ensuring accurate reads.

Battery life of 12 hours whilst being used for thousands of tag reads means that IR500 is a viable accompaniment for workers during long shift.

Technical Specifications Table

Frequency Range	− 865.600÷867.600 MHz (ETSI EN 302 208 v3.1.1) − 902÷928 MHz (FCC part 15.247)
RF Power	Programmable in 14 levels from 5 dBm ERP (3mW ERP) to 22 dBm ERP (150mW ERP)
Antenna	Integrated linear (horizontal)
Standard Compliance	EPC C1 G2 / ISO18000-63
Read Range	Up to 90 cm /tag dependent
Bluetooth	Class 2- 10 metre range
Memory Capacity	48K − 4096 EPC Codes
User Interface	Button #1: ON/OFF Button #2: Trigger Led #1: power indication and battery status (green : high; red:low) Led #2: communication activity (blue: Bluetooth; orange: USB) Buzzer: bi tonal for events signalling Vibration: for events signalling Display: LCD Alphanumeric (8 chars x 2 lines)
OS Compatibility	Windows, Android, HID Profile and SPP, Virtual Com Port
Battery Life Operating	> 12h with 40'000 tag readings; Standby: > 15 days
Battery Charging Time	2h (typical)
IP Rating	IP65
Dimensions	(W)59 x (L)128 x (H)22 mm^3
Operating Temp.	-10 °C to +55°C
Weight	150g

Ordering Options

Code	Description
1MIRFID50EHP	iRFID500 IP65 HID Keyfob UHF RFID Reader (ETSI)
1MIRFID50EHT	iRFID500 ATEX HID Keyfob UHF RFID Reader (ETSI)
1MIRFID50UHP	iRFID500 IP65 HID Keyfob UHF RFID Reader (FCC)
1MIRFID50UHT	iRFID500 ATEX HID Keyfob UHF RFID Reader (FCC)

Accessories

1MIRFID500UC	iRFID500 ATEX USB Charger and Data Cable

INTEGRATED READERS

Integrated Readers

Integrated readers are RAIN RFID readers with an integrated antenna so they are ready-to-use and do not require so much effort for the installation. They are typically used for simple reading points, points of sales, encoding stations, document tracking and many other applications where you do not need very long reading distances.

CAEN RFID offering of integrated readers includes very simple USB readers as well as advanced integrated readers with multiple communication interfaces and scripting capabilities.

NEW

Hex - R1290I
Multipurpose RAIN RFID Reader with PoE

Features

- **RAIN (UHF - EPC Class1 Gen2, ISO 18000-63) Compliant**
- **USB and Ethernet communication**
- **HID on USB**
- **Integrated circular polarized antenna and external antenna connector**
- **Versatile form factor**
- **PoE or external power supply**
- **USB host port**
- **OLED display and keypad**

Applications

- **Point of Sales**
- **Encoding Stations**
- **Access Control**
- **Inventory Management**
- **Document Tracking**

General Info

The Hex (Model R1290I), multipurpose reader of the easy2read© product line, is a RAIN RFID reader with integrated circular polarized antenna for short to medium range applications.

Thanks to its versatile form factor, the Hex is well suited for both desktop/counter top applications and for fixed reading point installations. It offers Ethernet (PoE) and USB communication interface in order to simplify the installation on both large and single installations. The Power over Ethernet capability permits to provide power and to communicate with the reader with a single cable when the PoE infrastructure is available.

In addition to the internal circular polarized antenna, the Hex provides a connector for an external antenna in order to extend the reading area of the reader and a set of GPIO lines that permits to control external devices like lights or alarms or to get triggers via external sensors (buttons, light barriers).

The USB host port, combined with the internal computing architecture, permits to connect USB peripherals like barcode scanners, keyboards, printers and many other devices transforming the Hex reader in a powerful and versatile identification platform.

The reader has an easy to use display and keypad interface for local configuration; the behaviour of the keypad and display can be customized using the internal scripting engine to accomplish customer needs.

The Hex is available both for European and US regions allowing installations in various countries worldwide as needed by retailers, forwarders, warehouses and other global organizations.

Technical Specifications Table

Frequency Range	− 865.600÷867.600 MHz (ETSI EN 302 208 v3.1.1) (Mod. R1290IE) − 902÷928 MHz (FCC part 15.247) (Mod. R1290IU)
RF Power	− Programmable in 18 levels (1dB step) from 8 dBm ERP to 25 dBm ERP (Mod. R1290IE) − Programmable in 18 levels (1dB step) from 8,5 dBm ERP to 25,5 dBm ERP (Mod. R1290IU)
Internal Antenna Gain	− 0,2dBi typ. (Mod. R1290IE) − 0,7dBi typ. (Mod. R1290IU)
Internal Antenna Polarization	Circular
Number of Channels	− 4 channels (compliant to ETSI EN 302 208 v3.1.1) (Mod. R1290IE) − 50 hopping channels (compliant to FCC part 15.247) (Mod. R1290IU)
Standard Compliance	EPC C1 G2 / ISO18000-63
USB Device Interface	USB 2.0 Hi-Speed (480 Mbit/s) device port Virtual COM port parameters: −Baudrate: up to 115200 kbps −Databits: 8 −Stopbits: 1 −Parity: none −Flow control: none
Ethernet Interface	Ethernet 10/100/1000BASE-T (RJ45) PoE standard IEEE 802.3af
User Interface	Button ✓: OK Arrow up: scroll up Arrow down: scroll down Led #1: power indication (green: ON) Led #2: RF activity (yellow blinking: RF) Led #3: Tag-Identification (red blinking: TAG-ID) Led #Antenna: Tag-Identification (white blinking: TAG-ID) Buzzer: bi tonal for events signalling Proximity sensor: trigger OLED display 2.42" monochromatic (white)
USB Host Interface	USB 2.0 High Speed Host Port (500mA max)
I/O Interface	Push in PCB terminals 1 digital Input 1 solid state photorelay output (500mA max)
Electrical Power	5V ± 5% - DC power supply (10W) PoE standard IEEE 802.3af (12,95W)
IP Rating	IP30
Dimensions	(W)220 x (L)170 x (H)25mm^3 (8.66 x 6.69 x 0.98 inch^3)
Operating Temperature	-10°C to +55°C
Weight	475g

Ordering Options

Code	Description
WR1290IXEAAA	R1290I Hex - Multipurpose UHF RFID Reader with PoE (ETSI)
WR1290IXUAAA	R1290I Hex - Multipurpose UHF RFID Reader with PoE (FCC)

Accessories

WALIM0000005	ALIM.AC-DC 5V 2A Center Negative Auxiliary Power Supply

Slate E/U - R1260
USB Desktop RAIN RFID Reader

Features

- **RAIN (UHF EPC Class1 Gen2, ISO 18000-63) Compliant**
- **Multi-regional Support**
- **USB power and communication**
- **Integrated circular polarized antenna**
- **Low Profile**

Applications

- **Point of Sales**
- **Document Tracking**
- **Access Control**
- **Tag Programming Stations**
- **Inventory Management**

General Info

The Slate (model R1260E, R1260EB, R1260U, R1260UB), desktop reader of the easy2read© product line, is a RAIN RFID reader with integrated antenna for short to medium range applications.

The reader is powered and controlled directly by an USB cable, thus allowing to read RAIN RFID tags in an easy desktop environment.

Thanks to its low profile (15mm) and its size (approximately an A4 page), the Slate reader is the perfect choice for various applications such as point-of-sales, document tracking, tag programming stations, access control and so on. It can also be used as a building block for smart shelves and smart displays.

Being compliant with both European and US regulatory environments, the Slate reader allows installations in various countries worldwide as needed by retailers, forwarders, warehouses and other global organizations.

The core component of the Slate reader is the CAEN RFID Quark module, the lowest power consuming module available on the market.

Technical Specifications Table

Frequency Range	− 865.6÷867.6 MHz (ETSI EN 302 208 v3.1.1) − 902÷928 MHz (FCC part 15.247) − 920.625÷924.375 MHz (SRRC RFID national standards)
RF Power	− Programmable in 15 levels (1dB step) from 12dBm ERP to 26dBm ERP (from 16mW ERP to 400mW ERP) (Mod. R1260E) − Programmable in 15 levels (1dB step) from 4dBm ERP to 18dBm ERP (from 2.5mW ERP to 67mW ERP)(Model R1260U)
Antenna	Integrated Circular Polarized Antenna
Number of Channels	− 4 channels (compliant to ETSI EN 302 208 v3.1.1) − 50 hopping channels (compliant to FCC part 15.247) − 16 hopping channels (compliant to SRRC RFID national standards) All subsets of FCC band are supported via FW upgrade
Standard Compliance	EPC C1 G2/ISO 18000-63
User Interface	Green LED: Power Blinking red LED: Tag detection Blinking yellow LED: USB communication activity Buzzer: user programmable event signalling
Connectivity	USB Type A plug connector Bus powered USB 2.0 device Must be connected to High-power Port (500 mA @ VBUS) It appears as USB serial port Virtual Com Port (VCP) drivers for Windows XP/Vista /Seven (7), Windows CE 4.2, Linux 2.40 and greater − Baudrate: up to 115.200kbps − Databits: 8 − Stopbits: 1 − Parity: none − Flow control: none
Dimensions	(W)297 x (L)205 x (H)15 mm³ (11.7 x 8 x 0.6 inch³)
Length of USB Cable	1.5 m
DC Power	5 VDC bus powered (USB) Max 400 mA
Operating Temperature	-10°C to +55°C
Weight	525 g

Ordering Options

Code	Description
WR1260EZAAAA	R1260E - RFID UHF Desktop Reader (ETSI)
WR1260EZBAAA	R1260EB - RFID UHF Desktop Reader (ETSI) - Black
WR1260UYAAAA	R1260U - RFID UHF Desktop Reader (FCC)
WR1260UYBAAA	R1260UB - RFID UHF Desktop Reader (FCC) Black
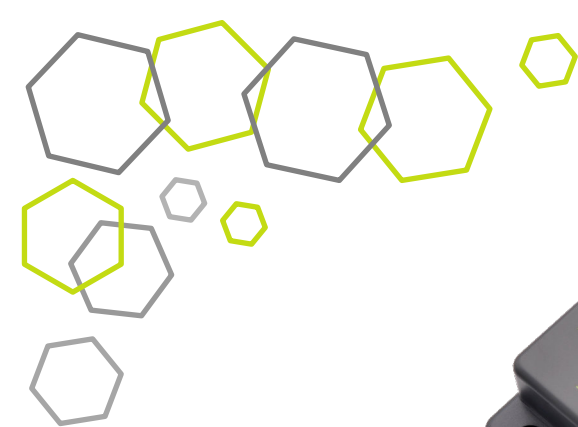
Tile - R1250I
Compact RAIN RFID Desktop Reader

Features

- **RAIN (UHF EPC Class1 Gen2, ISO 18000-63) Compliant**
- **Multi-regional Support**
- **USB power and communication**
- **Integrated circular polarized antenna**
- **Compact size**
- **USB HID profile support**

Applications

- **Point of Sales**
- **Document Tracking**
- **Access Control**
- **Tag Programming Stations**
- **Inventory Management**

General Info

The Tile (model R1250I), desktop reader of the easy2read© product line, is a RAIN RFID reader with integrated antenna for short to medium range applications.

The reader is powered and controlled directly by an USB cable, thus allowing to read RAIN RFID tags in an easy desktop environment.

Thanks to its compact size, the Tile reader is the perfect choice for various applications such as point-of-sales, document tracking, tag programming stations, access control and so on. It can also be used as a building block for smart shelves and smart displays.

The Tile reader supports the HID profile (native keyboard emulation) allowing to interact directly with legacy application, office automation SW or any other generic solution requiring manual input.

Being compliant with both European and US regulatory environments, the Tile reader allows installations in various countries worldwide as needed by retailers, forwarders, warehouses and other global organizations.

The core components of the Tile reader are the CAEN RFID QuarkUp module, a top performing ultra-compact RAIN RFID module, and the Quad, a compact circular polarized antenna designed by CAEN RFID.

Technical Specifications Table

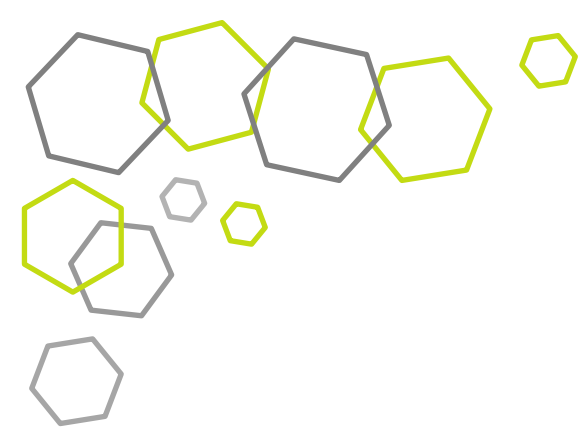|	
Frequency Range	− 865.600÷867.600 MHz (ETSI EN 302 208 v3.1.1) (Mod. R1250IE) − 902÷928 MHz (FCC part 15) (Mod. R1250IU)
RF Power	− Programmable in 18 levels (1dB step) from 8 dBm ERP to 25 dBm ERP (Mod. R1250IE) − Programmable in 18 levels (1dB step) from 8,5 dBm ERP to 25,5 dBm ERP (Mod. R1250IU)
Output Power Accuracy	+/- 1dB
Antenna	Integrated Circular Polarized Antenna
Frequency Tolerance	±10 ppm over the entire temperature range
Number of Channels	−4 channels (compliant to ETSI EN 302 208 v3.1.1) (Mod. R1250IE) −50 hopping channels (compliant to FCC part 15.247) (Mod. R1250IU)
Standard Compliance	EPC C1 G2 / ISO18000-63
User Interface	Red LED: Power Blinking Green LED: Tag detection
Connectivity	Mini USB type B plug connector - USB 2.0 Full Speed (12Mbit/s) device port Must be connected to two High-power USB Type A ports (500 mA @ VBUS) Virtual COM port parameters: − Baudrate: up to 115.200kbps − Databits: 8 − Stopbits: 1 − Parity: none − Flow control: none HID profile available
Dimensions	(W)125 x (L)125 x (H)25 mm³ (4,92 x 4,92 x 0.98 inch³)
Electrical Power	- 5 V ± 5% – DC bus powered (USB) Max 650 mA
Operating Temperature	-10°C to +55°C
Weight	220 g max.
Length of USB cable	1 m

Ordering Options

Code	Description
WR1250IEXAAA	R1250IE - Tile - Compact UHF RFID Desktop Reader (ETSI)
WR1250IEXAFL	R1250IE - Tile - Flanged - Compact UHF RFID Desktop Reader (ETSI)
WR1250IEXBAA	R1250IE - Tile - Black - Compact UHF RFID DesktopReader (ETSI)
WR1250IEXBFL	R1250IE - Tile - Black Flanged - Compact UHF RFIDDesktop Reader (ETSI)
WR1250IUXAAA	R1250IU - Tile - Compact UHF RFID Desktop Reader (FCC)
WR1250IUXAFL	R1250IU - Tile - Flanged - Compact UHF RFID Desktop Reader (FCC)
WR1250IUXBAA	R1250IU - Tile - Black - Compact UHF RFID DesktopReader (FCC)
WR1250IUXBFL	R1250IU - Tile - Black Flanged - Compact UHF RFIDDesktop Reader (FCC)

FIXED READERS

Fixed Readers

The typical and most frequent installation of RAIN RFID technology is the so-called portal or gate. It consists of a fixed reader (interrogator) placed around an area of entrance/exit from a distribution center or a manufacturing plant. Sometimes fixed readers are used outdoors for vehicles or for people identification, at the entrance of parking lots or any other entry point in buildings and boundaries of enterprise premises. RAIN RFID is also used during sport events, especially on check points to verify timings and performances in amateur and professional races. Other applications include RFID tunnels used for the identification of tags inside boxes in manufacturing processes and on-vehicle installation (forklifts, trucks) for asset management and inventory.

ion - R4301P

UHF Long Range Reader with GPRS/WiFi

Features

- **RAIN (UHF EPC Class1 Gen2, ISO 18000-63) Compliant**
- **Multi-regional Support**
- **Embedded intelligence**
- **Ethernet port**
- **USB 2.0 High Speed Host Port**
- **Internal MicroSD slot**
- **Integrated GPRS modem or WIFI interface module (optional)**
- **Easily deployable & scalable**

Applications

- **RFID Tunnels**
- **Portal Applications**
- **On Vehicle Installations**
- **Industrial Control**
- **Access Control Systems**
- **Point of Sales Devices (smart shelves, smart displays)**

General Info

The Ion (Model R4301P) is the top-of-the-range portal reader of the easy2read© product line. It's a unique combination of outstanding RFID reading performances, computing power and communication capabilities.

The reader is optimized for portal installations, featuring full power to up to 4 antennas, Gen2 Dense Reader Mode management and high speed read rates. Based on an embedded HW architecture (x86) and standard operating system (Linux), the Ion eases the development of custom software and solutions.

The on-board computing power and connectivity remove the need for an external PC and related cabling. This results in deployment and operation cost savings, thus reducing the total cost of ownership of installed devices.

The Ion is best suited for complex AutoID scenarios, where the information can be collected and fed directly to the reader from multiple sources such as Smart Card readers, Barcode readers, GPS and other in-field sensors.

All data can be handled locally through data buffering, filtering and aggregation, in order to directly provide decision-making data to higher level Business Intelligence processes. The same data can also trigger local actuators and screen displays for in-field real-time processes in a standalone mode.

The presence on board of an optional integrated GPRS modem or WIFI interface module, together with its compact and versatile form factor, allow to use it in any worldwide installation requiring RFID usage in remote areas.

Technical Specifications Table

Frequency Range	− 865.600÷867.600 MHz (ETSI EN 302 208 v3.1.1) − 902÷928 MHz (FCC part 15.247)
RF Power	− Up to 32 dBm (1,6W) conducted (ETSI) − Up to 30 dBm (1W) conducted (FCC)
CPU	Intel Atom E3815 CPU @ 1,46Ghz
Memory	2Gbytes RAM, 8 Gbytes MicroSD
Operating System	Linux (Debian)
Scripting	Java Virtual Machine
Host Interface Protocols	−EPCglobal LLRP RFID host-to-reader protocol −CAEN RFID host-to-reader protocol
Receiving Capability	4 TNC Reverse Polarity Gen 2 Dense Reader Mode Management Data rate up to 400 Kbits/s
Standard Compliance	EPC C1 G2/ISO 18000-63
Digital I/O	13 GPIO pins, TTL level
Connectivity	RS232 Serial Communication (DB9); USB 2.0 High Speed Host Port; Ethernet 10/100/1000BASE-T (RJ45)
Wireless Communication	GSM/GPRS (SMA) (optional) WiFi (SMA) (optional)
Internal Interfaces	MicroSD slot SIM card housing (optional)
IP Rating	IP42
MTBF	135.000 hours
Dimensions	(W)275 x (L)155 x (H)39 mm³ (10.8 x 6.1 x 1.5 inch³)
DC Power	9÷36 Vdc (30W)
Operating Temperature	-20°C to +55°C
Weight	1.3 kg

Ordering Options

Code	Description
	Description
WR4301PXAAAA	R4301P – ION - RFID UHF Portal Reader
WR4301PXGPRS	R4301P – ION - RFID UHF Portal Reader with GPRS
WR4301PXWIFI	R4301P – ION - RFID UHF Portal Reader with WiFi Interface
WR4301PDKAAA	R4301PDK - Development kit with R4301P reader, antenna, cable, power supply and demo tags
WR4301PDKGPR	R4301PDKG - Development kit with R4301P GPRS reader, antenna, cable, power supply and demo tags
WR4301PDKWFI	R4301PDKW - Development kit with R4301P WiFi reader, antenna, cable, power supply and demo tags

COMING SOON

Proton - R4320P

**Compact 4-port
Long Range
RAIN RFID Reader**

Features

- **RAIN (UHF EPC Class1 Gen 2 ISO 18000-63) Compliant**
- **Multiregional support**
- **Four 50 Ohm TNC-RP antenna connectors**
- **Power over Ethernet interface**
- **Up to 31.5 dBm (1.4 W) output power**
- **Internal scripting engine**
- **IP65 in compact form factor**
- **M12 industrial connectors**

Applications

- **RAIN RFID portal for logistic**
- **Industrial automation reading points**
- **RAIN RFID tunnels**
- **Access control reading points**

General Info

The Proton (Model R4320P) is a rugged long range RAIN RFID reader of the easy2read© product line, well suited for industrial environment installations.

The Proton reader has 4 antenna ports capable of a 31.5 dBm maximum power enabling to build RAIN RFID portals for logistic. Its compact form factor makes it easy to install and the IP65 protection permits outdoor or harsh environment installations. Featuring Power Over Ethernet, RS232 and GPIOs via industry standard M12 connectors the Proton is an ideal choice for industrial automation and Industry 4.0 solutions.

The Proton is based upon an embedded Linux platform and it's easily configurable using an internal web interface. System integrators can customize the behavior of the reader installing Java code that, having access to all the RFID features and interfaces, permits a full customization.

The Proton reader complies with and can operate in both European and US regulatory environments and, due to its multiregional capabilities, it's ideal for integration in devices requiring compliance to different geographical regions.

Technical Specifications Table

Frequency Range	− 865.600÷867.600 MHz (ETSI EN 302 208 v3.1.1) − 902÷928 MHz (FCC part 15.247)
RF Power	− Up to 31 dBm (1.25W) conducted (ETSI) − Up to 30 dBm (1W) conducted (FCC)
Number of Channels	−4 channels (compliant to ETSI EN 302 208 v3.1.1) −50 hopping channels (compliant to FCC part 15.247)
Standard Compliance	EPC C1 G2 / ISO18000-63
CPU	ARM9 @ 400Mhz on Atmel AT91SAM9G25
Operating system	Linux
Receiving Capability	Gen 2 Dense Reader Mode Management Data rate up to 400 Kb/s
Connectivity	RS232 Serial Communication (M12 connector) Ethernet 10/100/1000BASE-T (M12 connector) PoE standard IEEE 802.3af
I/O Interface	M12 connector 2 digital inputs optically isolated 2 solid state photorelay outputs optically isolated (500mA max)
Antenna Connectors	4 TNC Reverse Polarity
Electrical Power	9÷36 DC power supply (12W) PoE standard IEEE 802 3af (12,95W)
Visual Status Indicators	Multicolor LEDs: Power, Activity, Status and Applications
Operating Temperature	-10°C to +55°C
IP Rating	IP65
Dimensions	(W)131 x(L)106 x (H)50 mm³ 5.15 x 4.17 x 1.96 inch³
Weight	500 g

TEMPERATURE LOGGERS

The easy2log© product line is the ideal portfolio of RAIN RFID loggers to monitor temperature-sensitive products during shipment and storage. Especially indicated for food and pharmaceuticals, the easy2log© RAIN RFID loggers are well suited also for chemicals and special industrial products.

easy2log© products enable a new era of Cold Chain Management Solutions. Track & Trace solutions based on RAIN RFID technology can be combined with environmental monitoring and shelf life prediction capabilities.

easy2log© loggers can be read and configured using a standard RAIN RFID reader without the needs of special commands or devices. Tests performed demonstrate that combined RFID and sensor technology applied to the cold chain results in an optimization of quality, an increase in supply chain management efficiency as well as increased savings due to less waste production.

Temperature Loggers

Vaccines, drugs and clinical trial products need to be shipped within a prescribed temperature range to maintain their efficacy as well as food to maintain freshness.

The benefits of applying RFID and sensors to perishable goods include improved food and drugs safety, longer vaccines and drugs efficacy, more efficient product recalls, reduced costs due to less spoilage, lower inventories, more efficient logistics, and improved customer service.

easy2log© products allow to have a complete history of the temperature exposure of your perishable goods thus allowing a complete control of the Cold Chain and to predict the remaining shelf life.
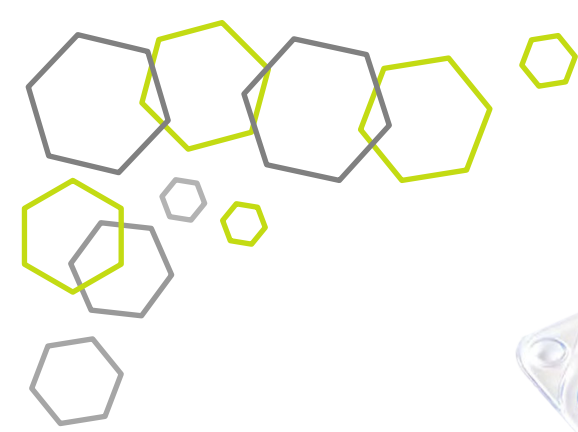
RT0005
Semi-Passive RAIN RFID Temperature Logger

Features

- **RAIN (UHF EPC Class1 Gen2 ISO 18000-63) Interface**
- **High temperature accuracy**
- **Fast download samples**
- **Button and LED for fast inspection**
- **Long monitoring time span**

Applications

- **Fresh Food**
- **Seafood**
- **Meat and Poultry**
- **Milk Based Products**
- **Frozen Food**
- **Chemical/Pharmaceutical Products**

General Info

CAEN RFID easy2log© RT0005 is a low cost, semi-passive RAIN RFID logger tag that allows to monitor temperature sensitive products like perishable foods and pharmaceuticals during transportation and storage. The combination of the high resolution sensor, the large memory size and the standard RAIN RFID interface permits to realize effective track and trace solutions for the cold-chain.

The RT0005 can be used with standard RAIN RFID readers available on the market without requiring any additional equipment.

The tag can be configured to store temperature samples in intervals from 1 second to 18 hours in the internal memory that can contain up to 3,958 samples. The user can define up to 16 temperature ranges with independent threshold alarms for a very accurate control of the temperature excursions. The tag can be started either using a button or via standard RFID commands.

The tag is also able to calculate the Mean Kinetic Temperature and user configurable remaining shelf life time as well as generate alarms in case these parameters exceeded user defined thresholds.

The RT0005 RAIN RFID logger can be used for multiple shipments thanks to the long battery life and the reset function thus allowing to reduce the total cost of the solution and anticipate the ROI.
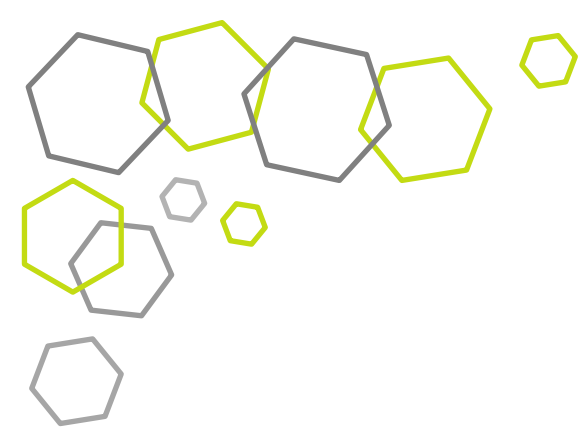
Technical Specifications Table

Tag Type	Semipassive
Data Points	3.958
Temperature Operating Range	-20°C to +70°C
Temperature Accuracy	±0.5°C typical
Monitoring Time Span	Up to 5 years
Time Accuracy	<0.01% error
Standard Compliance	EPC C1G2 / ISO18000-63
Frequency Range	860 MHz÷928 MHz
Read Range	approx. 10m in air @ 2W ERP
Memory Capacity	4k samples (8 Kbyte)
Available Memory	Up to 512 bits in EPC bank, up to 512 bits in User Memory bank
Monitoring Delay Option	Up to 18 hours
Battery Type	Li / MnO2 Model Renata CR 2450N
Battery Life	1 year (typical) (depending on usage and operating temperature)
Alarms	Multiple user-configurable high temperature and low temperature alarms, ETA alarm, MKT alarm, shelf life alarm, low battery alarm
Shelf Life Prediction	Calculations based on Arrhenius kinetic model with customer designation of time-temperature dependency
Shelf Life Monitoring	Provides Remaining Shelf Life information at check points with RFID reader or manual interface
IP Rating	IP67
Dimensions	(L)107 x (W)107 x (H)8.7 mm^3
Enclosure material	PVC Tecnovil code: 21TV306TRS00000
Weight	31 g

Ordering Options

Code	Description
WRT0005XAAAA	RT0005 - Temperature logger UHF semi-passive tag(EPC C1G2) Blistered

A927Z
Rugged
Semi-Passive RAIN RFID
Temperature Logger

Features

- **RAIN (UHF EPC Class1 Gen2 ISO 18000-63) Interface**
- **High temperature accuracy**
- **Fast download samples**
- **Long monitoring time span**

Applications

- **Fresh Food**
- **Seafood**
- **Meat and Poultry**
- **Milk Based Products**
- **Frozen Food**
- **Chemical/Pharmaceutical Products**

General Info

CAEN RFID easy2log© A927Z is a low cost, ruggedized, semipassive RAIN RFID logger tag that allows to monitor temperature sensitive products like perishable foods and pharmaceuticals during transportation and storage. The combination of the high resolution sensor, the large memory size and the standard RFID interface permits to realize effective track and trace solutions for the cold-chain.

The A927Z can be used with standard RAIN RFID readers available on the market without requiring any additional equipment.

The tag can be configured to store temperature samples in intervals from 8 second to 18 hours in the internal memory that can contain up to 8,000 samples. The user can define alarms for high and low temperature thresholds for an accurate control of the temperature excursions.

The rugged enclosure of this logger make it the perfect choice for the cold-chain monitoring in harsh environment or in presence of strong vibration.

The A927Z RFID logger can be used for multiple shipments thanks to the long battery life and the reset function thus allowing to reduce the total cost of the solution and anticipate the ROI.

Technical Specifications Table

Tag Type	Semipassive
Standard Compliance	EPC C1G2 / ISO18000-63
Reserved Memory Size	512 bit
EPC Memory Size	512 bit
TID Memory Size	208 bit
Reserved Memory Size	512 bit
User Memory Size	17484 byte
Access Control	yes
Memory Retention	100 years
Memory Endurance	10000 cycles
Read Range	10m in air (2.5m on metal) @ 2W ERP
Frequency Range	860 MHz ÷ 928 MHz
Write Range	10 m @ 2W ERP
Alarms	User-configurable high temperature and low temperature alarms
Battery Life	3 years typical (depending on usage and operating temperature)
Battery Type	Li / MnO2 Model Renata CR 2450N
Operating Temperature	-30°C to +70°C
Storage Temperature	-40°C to +85°C
Absolute Temperature Range	-40°C to +70°C
Temperature Resolution	±0.1°C
IP Rating	IP67
Dimensions	(L) 130.4 x (W) 23.4 x (H) 12.7 mm³
Weight	35 g

Ordering Options

Code	Description
WA927ZAAAAAA	A927Z - Temperature logger UHF semi-passive tag(EPC C1G2) Std

RT0005ET

Semi-Passive RAIN RFID Temperature Logger with external probe

Features

- **RAIN (UHF EPC Class1 Gen2 ISO 18000-63) Interface**
- **High temperature accuracy**
- **Fast download samples**
- **Button and LED for fast inspection**
- **Long monitoring time span**

Applications

- **Fresh Food**
- **Seafood**
- **Meat and Poultry**
- **Milk Based Products**
- **Frozen Food**
- **Chemical/Pharmaceutical Products**

General Info

CAEN RFID easy2log© RT0005ET is a low cost, semi-passive RAIN RFID logger tag that allows to monitor temperature sensitive products like perishable foods and pharmaceuticals during transportation and storage. The combination of the high resolution sensor, the large memory size and the standard RFID interface permits to realize effective track and trace solutions for the cold-chain.

The RT0005ET can be used with standard RAIN RFID readers available on the market without requiring any additional equipment.

The tag can be configured to store temperature samples in intervals from 1 second to 18 hours in the internal memory that can contain up to 3,958 samples. The user can define up to 16 temperature ranges with independent threshold alarms for a very accurate control of the temperature excursions. The tag can be started either using a button or via standard RFID commands.

The tag is also able to calculate the Mean Kinetic Temperature and user configurable remaining shelf life time as well as generate alarms in case these parameters exceeded user defined thresholds.

In the RT0005ET the sensor is placed on an external probe so it is possible to measure temperature even inside a shielded box where the RFID field cannot get through.

The RT0005ET RFID logger can be used for multiple shipments thanks to the long battery life and the reset function thus allowing to reduce the total cost of the solution and anticipate the ROI.

Technical Specifications Table

Tag Type	Semipassive
Data Points	3.958
Temperature Operating Range	-20°C to +70°C
Temperature Accuracy	±0.5°C typical
Monitoring Time Span	Up to 5 years
Time Accuracy	<0.01% error
Standard Compliance	EPC C1G2 / ISO18000-63
Frequency Range	860 MHz ÷ 928 MHz
Read Range	approx. 8m in air @ 2W ERP
Memory Capacity	4k samples (8 Kbyte)
Available Memory	Up to 512 bits in EPC bank, up to 512 bits in User Memory bank
Monitoring Delay Option	Up to 18 hours
Battery Type	Li / MnO2 Model Renata CR 2450N
Battery Life	1 year (typical) (depending on usage and operating temperature)
Alarms	Multiple user-configurable high temperature and low temperature alarms, ETA alarm, MKT alarm, shelf life alarm, low battery alarm
Shelf Life Prediction	Calculations based on Arrhenius kinetic model with customer designation of time-temperature dependency
Shelf Life Monitoring	Provides Remaining Shelf Life information at check points with RFID reader or manual interface
IP Rating	IP67
Dimensions	(L)107 x (W)107 x (H)8.7 mm³
Probe Dimensions	length 50.8mm (2.00 inches) diameter 6.35mm (0.250 inches)
Probe Cable Length	2m (6.56 feet)
Enclosure Material	PVC Tecnovil code: 21TV306TRS00000
Weight	85 g

Ordering Options

Code	Description
WRT0005ETAAA	RT0005 – UHF Temperature tag (EPC C1G2) with external probe
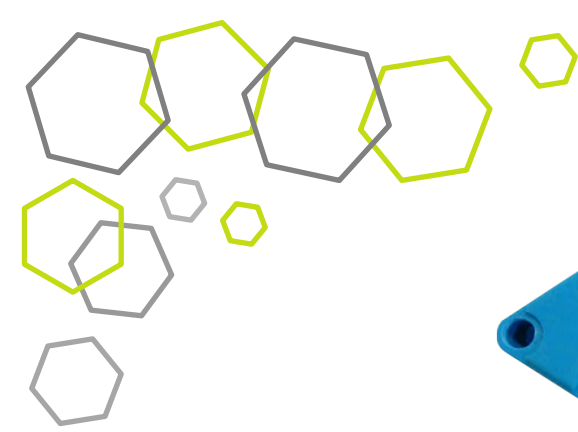
A927ZET
Rugged Semi-Passive RAIN RFID Temperature Logger with external probe

Features

- **RAIN (UHF EPC Class1 Gen2 ISO 18000-63) Interface**
- **High temperature accuracy**
- **Fast download samples**
- **Long monitoring time span**

Applications

- **Fresh Food**
- **Seafood**
- **Meat and Poultry**
- **Milk Based Products**
- **Frozen Food**
- **Chemical/Pharmaceutical Products**

General Info

CAEN RFID easy2log© A927ZET is a low cost, semi-passive RAIN RFID logger tag that allows to monitor temperature sensitive products like perishable foods and pharmaceuticals during transportation and storage. The combination of the high resolution sensor, the large memory size and the standard RFID interface permits to realize effective track and trace solutions for the cold-chain.

The A927ZET can be used with standard RAIN RFID readers available on the market without requiring any additional equipment.

The tag has both an internal and an external temperature sensor, each one can be configured to store temperature samples in intervals from 8 second to 18 hours in the internal memory that can contain up to 4,096 samples per sensor. For each sensor the user can define alarms for high and low temperature thresholds for an accurate control of the temperature excursions.

The rugged enclosure of this logger make it the perfect choice for the cold-chain monitoring in harsh environment or in presence of strong vibration while the external sensor probe allows to monitor the internal and the external temperature of a box.

The A927ZET RFID logger can be used for multiple shipments thanks to the long battery life and the reset function thus allowing to reduce the total cost of the solution and anticipate the ROI.

Technical Specifications Table

Tag Type	Semipassive
Standard Compliance	EPC C1G2/ISO 18000-63
Reserved Memory Size	512 bit
EPC Memory Size	512 bit
TID Memory Size	208 bit
Reserved Memory Size	512 bit
User Memory Size	17522 byte
Access Control	yes
Memory Retention	100 years
Memory Endurance	10000 cycles
Read Range	10m in air (2.5m on metal) @ 2W ERP
Frequency Range	860 MHz ÷ 928 MHz
Write Time	100 μsec
Alarms	User-configurable high temperature and low temperature alarms
Battery Life	3 years typical (depending on usage and operating temperature)
Battery Type	Li / MnO2 Model Renata CR 2450N
Operating Temperature (int)	-30°C to +70°C
Storage Temperature (int)	-40°C to +85°C
Absolute Temperature Range (int)	-40°C to +70°C
Operating Temperature (ext)	-20°C to +70°C
Storage Temperature (ext)	-40°C to +85°C
Absolute Temperature Range (int)	-20°C to +70°C
Temperature Resolution	±0.1°C
IP rating	IP67
Dimensions	(L) 130.4 x (W) 23.4 x (H) 12.7 mm³ (probe excluded)
Probe Length	50 cm
Weight	48 g

Ordering Options

Code	Description
WA927ZETAAAA	A927 - Temperature logger with external probe UHF semi-passive tag(EPC C1G2) Std
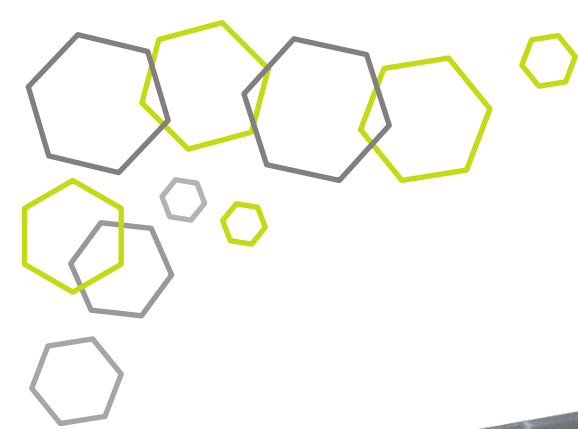
EELOG
Rugged
Semi-Passive RAIN RFID
Temperature Logger

Features

- **RAIN (UHF EPC Class1 Gen2 ISO 18000-63) Interface**
- **High temperature accuracy**
- **Extreme low operating temperature**
- **Fast download samples**
- **Long monitoring time span**
- **End to End tracking&tracing of temperature sensitive products**

Applications

- **Production and Logistics**
- **Quality Management**
- **Industrial applications**
- **Electronics**
- **Automotive**
- **FMCG**
- **Chemical/Pharmaceutical Products**

General Info

The EELOG is a ruggedized, semipassive RAIN RFID temperature logger tag that allows to monitor temperature sensitive products like pharmaceuticals, industrial chemical products and perishable foods during transportation and storage. The combination of the high resolution sensor, the large memory size and the standard RFID interface permits to realize effective track and trace solutions for the cold-chain.

The EELOG can be used with standard RAIN RFID readers available on the market without requiring any additional equipment.

The tag can be configured to store temperature samples in intervals from 8 second to 18 hours in the internal memory that can contain up to 8,000 samples. The user can define alarms for high and low temperature thresholds for an accurate control of the temperature excursions.

The rugged enclosure of this logger make it the perfect choice for the cold-chain monitoring in harsh environment with extreme temperatures or in presence of strong vibration.

The EELOG logger can be used for multiple shipments thanks to the long battery life and the reset function thus allowing to reduce the total cost of the solution and anticipate the ROI.

Technical Specifications Table

Tag Type	Semipassive
Standard Compliance	EPC C1G2/ISO 18000-63
Reserved Memory Size	512 bit
EPC Memory Size	512 bit
TID Memory Size	208 bit
Reserved Memory Size	512 bit
User Memory Size	17484 byte (for OE172ET model - 17522 byte)
Access Control	yes
Memory Retention	100 years
Memory Endurance	10000 cycles
Read Range	10m in air (2.5m on metal) @ 2W ERP
Frequency Range	860 MHz ÷ 928 MHz
Write Time	100 µsec
Alarms	User-configurable high temperature and low temperature alarms
Battery Life	3 years typical (depending on usage and operating temperature)
Battery Type	LITIO-THION-CLOR 3,6V 500mA TL-2450 TADIRAN
Operating Temperature	OE172NT -40°C to +70°C OE172ET -80°C to +70°C
Storage Temperature	-40°C to +85°C
Absolute Temperature Range	-40°C to +70°C
Temperature Resolution	±0.1°C
IP rating	IP67
Dimensions	(L) 130 x (W) 30 x (H) 15 mm³

Ordering Options

Code	Description
	Description
OE172NT	EELOG - Temperature logger UHF semi-passive tag(EPC C1G2) Std
OE172ET	EELOG - Temperature logger UHF semi-passive tag(EPC C1G2) Std with external probe

ELECTRONIC SEALS

Electronic Seals

The e-seal is a radio frequency device that transmits container information when interrogated by an RAIN RFID portal or a mobile reader. It combines the mechanical security of standard seals with the electronic security offered by RAIN RFID technology.

The e-seal has a unique ID code and read/write user memory capabilities. It provides automatic identification of trucks, trailers and containers. It is available in tamper evidence version where the status of the seal (TAMPERED / NOT TAMPERED) is immediately detected when it pass through a gate or by manual expection with a mobile reader.

Any tampering event is permanently stored in the e-seal chip's memory .

Electronic Bolt Seal
RAIN RFID Seal

Tag Type	Passive
Standard Compliance	EPC C1G2 / ISO18000-63
EPC Memory Size	128 bit up to 448 bit
TID Memory Size	96 bit, including 48-bit factory locked unique serial number; 112 bit User TID memory
User Memory Size	640 bit
Access Control	yes
Memory Retention	20 years
Memory Endurance	10000 cycles
Read Range by Handheld Reader	3m in air @ 1W ERP
Read Range by Gate Reader	8m in air @ 2W ERP
Frequency	860 MHz ÷ 960 MHz
Integrated Circuit	NXP G2iM+
Tamper Detection	yes
Operative Temperature	-20°C to +55°C
Storage Temperature	-30°C to +80°C
IP Rating	IP66
ISO 17712:2013	yes
Electronic Part Size(Flag)	(L) 42 x (W) 115 x (H) 4 mm³
Metallic Pin Diameter	8 mm
Metallic Pin Length	74 mm
Bolt Diameter	22mm
Weight	70 g
Material	Carbonitrured steel + shock-proof polystyrene in accordance with RoHS, European Directive 2002/EC

RAIN RFID Seal

- **ISO17712:2013 High Security Seal for Containers**
- **RFID provides automatic identification of the vehicle and/or container**
- **It can be read quickly and accurately by static gateway reading systems or by handheld devices operated by check point personnel**
- **The RFID chip can also be used to store further information. The chip can be easily written by using RFID reader/writer device. Further information added at the chip itself can be password protected**

RAIN RFID Tamper Evidence

- **Any tampering event to the seal is permanently stored in chip's memory. This activates the TAG TAMPER ALARM, which immediately provides the status of the seal either TAMPER or NOT TAMPERED**

General Info

RAIN RFID Electronic Seal with unique serial number.

Can be automatically detected when trucks/trailers/containers are on-the- go at gateways by using RFID Gates: this makes gate in/gate out operations faster and more reliable and secure.

The seal is available in tamper evidence version: the status of the seal (TAMPERED/NOT TAMPERED) is immediately detected and read at time of passing through the gate or by manual inspection.
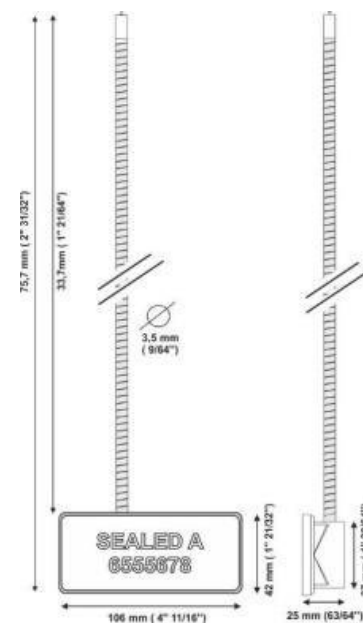
CAEN RFID Bolt Seal RFID combines high mechanical security as required ISO 17712:2013 technical standard with the electronic security offered by RFID.

The outer shock-proof polystyrene plastic housing of the seal - customizable with mark and numbering on request – embeds an unique electronic chip that has its own unique code which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to containers.

This high security seal is available in two product versions:

LOGISTIC BOLT SEAL – only identification with unique ID

ANTI TAMPER BOLT SEAL – identification with unique ID and read/write User Memories capabilities. It offers at the same time the immediate and accurate seal identification and the status of the seal (TAMPERED/NOT TAMPERED)

Electronic Cable Seal
RAIN RFID Seal

RAIN RFID Seal

- Security Seal for trucks, trailers and containers
- RFID provides automatic identification of the vehicle and/or container
- It can be read quickly and accurately by static gateway reading systems or by handheld devices operated by check point personnel
- The RFID chip can also be used to store further information. The chip can be easily written by using RFID reader/writer device. Further information added at the chip itself can be password protected

RAIN RFID Tamper Evidence

- Any tampering event to the seal is permanently stored in chip's memory. This activates the TAG TAMPER ALARM, which immediately provides the status of the seal either TAMPER or NOT TAMPERED

General Info

RAIN RFID Electronic Seal with unique serial number.

Can be automatically detected when trucks/trailers/containers are on-the- go at gateways, by using RFID Gates: this makes gate in/gate out operations faster and more reliable and secure.

The Seal is available in tamper evidence version: the status of the seal (TAMPERED/NOT TAMPERED) is immediately detected and read at time of passing through the gate or by manual inspection.

CAEN RFID Cable Seal RFID combines mechanical security of standard seals with the electronic security offered by RFID.

The outer shock-proof polystyrene plastic housing of the seal - customizable with mark and numbering on request – embeds an unique electronic chip that has its own unique code which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to containers.

This high security seal is available in two product versions:

LOGISTIC CABLE SEAL – only identification with unique ID

ANTI TAMPER CABLE SEAL– identification with unique ID and read/write User Memories capabilities. It offers at the same time the immediate and accurate seal identification and the status of the seal (TAMPERED/NOT TAMPERED)

Technical Specifications Table	
Tag Type	Passive
Standard Compliance	EPC C1G2 / ISO18000-63
EPC Memory Size	128 bit up to 448 bit
TID Memory Size	96 bit, including 48-bit factory locked unique serial number; 112 bit User TID memory
User Memory Size	640 bit
Access Control	yes
Memory Retention	20 years
Memory Endurance	10000 cycles
Read Range by Handheld Reader	3m in air @ 1W ERP
Read Range by Gate Reader	8m in air @ 2W ERP
Frequency	860 MHz ÷ 960 MHz
Integrated Circuit	NXP G2iM+
Tamper Detection	yes
Operative Temperature	-20°C to +55°C
Storage Temperature	-30°C to +80°C
IP Rating	IP65
ISO 17712:2013	yes
Electronic Part Size(Flag)	(L) 42 x (W) 115 x (H) 4 mm^3
Standard Wire Length	337 mm
Wire Diameter	3,5mm
Weight	61 g
Material	Carbonitrured steel + shock-proof polystyrene in accordance with RoHS, European Directive 2002/EC
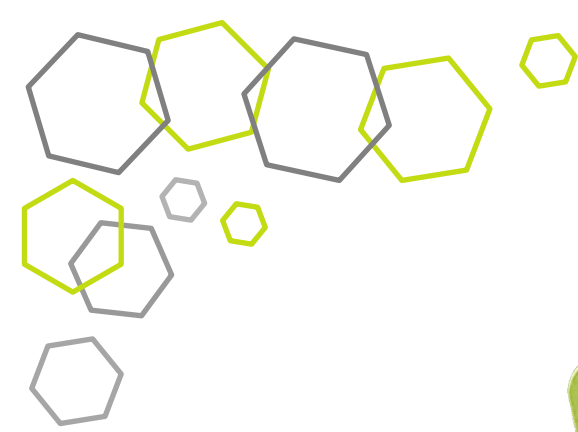
RT1000
Plastic RAIN RFID Security Seal

- **T**rucks
- **Trailers**
- **Containers**
- **Sacks**
- **Bags**

General Info

RT1000 Seal is an adjustable plastic pull–tight security seal with RFID.

The added RFID electronic component turns it into a product that can store the information for logistics and traceability purposes. The polypropylene plastic housing of the seal – highly resistant in harsh environments and customizable with mark and numbering on request – embeds an unique electronic chip with own coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal.

RT1000 is ideal for track logistics of goods, to seal truck locks or tanker inlets-outlets and for closing large sacks and bags.

RFID RT1000 Seal can be read quickly and accurately by handheld devices operated by check point personnel and can be automatically detected when goods or vehicles (trucks/trailers/containers) are on-the-go at gateways, by using RFID gates/portals. This makes in/out operations faster, more reliable and secure.

You can choose from tear-off possibility or standard version.
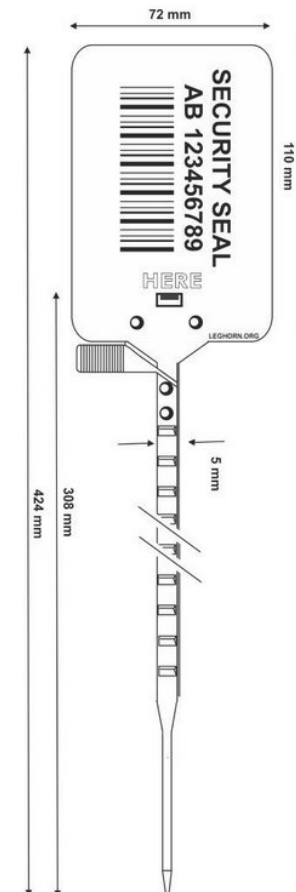
Technical Specifications Table

Tag Type	Passive
Standard Compliance	EPC C1G2 / ISO18000-63
EPC Memory Size	128 bits
TID Memory Size	48 bit
User Memory Size	32 bit
Access Control	yes
Memory Retention	50 years
Memory Endurance	10000 cycles
Read Range	50 – 80 cm @ 500mW ERP
Frequency Range	860 MHz ÷ 960 MHz
Integrated circuit	IMPINJ Monza 5 Read/Write
Tamper Detection	no
Operative Temperature	- 20°C to +80°C
Storage Temperature	- 20°C to +80°C
IP Rating	IP66
Electronic Part Size (Flag)	72 x 110 mm^2
Total Length	424 mm
Working Length	308 mm
Weight	11 g
Material	Co-polymer polypropylene plastic housing. PET RFID label with adhesive for special use
Marking Options	− Ink transfer printing − Laser etching marking − 15 digits sequential numbering − Barcoding − Up to 20 alphanumeric characters per line − Customer's logo − Special customisation on quantities with embossed logo

ACCESSORIES

Circular Polarized
Quadrifilar Antennas

Long Range
Antennas

Multiplexer

GPI/O

Power Supply

Antenna Gain

Axial Ratio
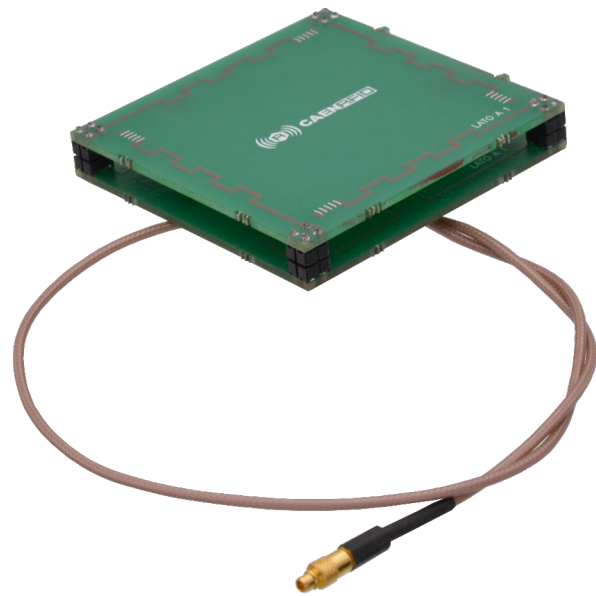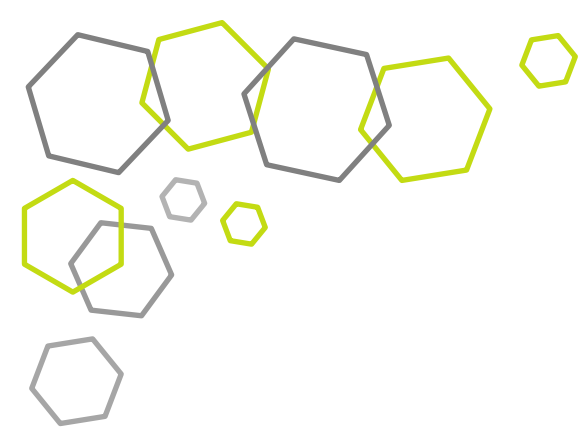
QUAD - WANT020
Circular Polarized
Quadrifilar Antenna ETSI

Radiation Patterns

phi = 0

phi = 90

Features

- **Designed for RAIN RFID portable applications**
- **865.6 ÷ 867.6 MHz**
- **0.2 dBi gain**
- **Circular polarization**

General Info

High performing Quadrifilar, circular polarized RAIN RFID antenna in compact size. The Quad antenna is well suited to be integrated in long reading range portable devices.

The Quad antenna can be also used to implement compact fixed reading point with medium reading range capability.

Thanks to the circular polarization, the reading range is not affected by the tag orientation.

Technical Specifications Table

Frequency Range	865.6÷867.6 MHz (ETSI EN 302-208 v3.1.1)
Polarization	Circular (RHCP)
Gain	0.2dBi typ.
Axial Ratio	1dB typ.
Dimensions	(W) 60 x (L) 60 x (H) 9 mm^3 (2.36 x 2.36 x 0.35 inch^3)
Impendance	50 Ohm
VSWR	<1.5:1
RF Cable	– Diameter: 2.6 mm; Length: 50 cm (Mod. WANT020XASMA) – Diameter: 1.8 mm; Length: 40 cm (Mod. WANT020XMMCX) – Diameter: 1.4 mm; Length: 20 cm (Mod. WANT020XAUFL) – Diameter: 2.5 mm; Length: 100 cm (Mod. WANT020XTNCR)
RF Connector	– SMA Plug Male, Straight (Mod. WANT020XASMA) – MMCX Plug Male, Straight (Mod. WANT020XMMCX) – U.FL Plug Female Socket, Right Angle (Mod. WANT020XAUFL) – RP-TNC Plug Male, Straight (Mod. WANT020XTNCR)

Mechanical Dimensions

Ordering Options

| Code	Description
WANT020XASMA	ANT020/SMA Quad Circular polarized quadrifilarantenna (ETSI) - SMA
WANT020XAUFL	ANT020/UFL - Quad - Circular polarized quadrifilarantenna (ETSI) – U.FL
WANT020XMMCX	ANT020/MMCX - Quad - Circular polarized quadrifilar antenna (ETSI) - MMCX
WANT020XTNCR	ANT020/TNCRP - Quad - Circular polarized quadrifilar antenna (ETSI) - TNC/RP
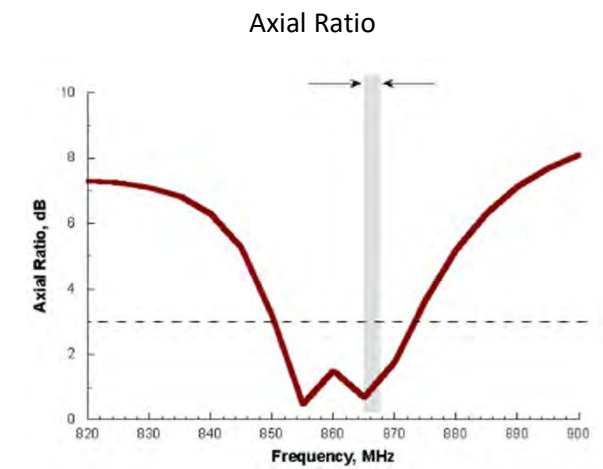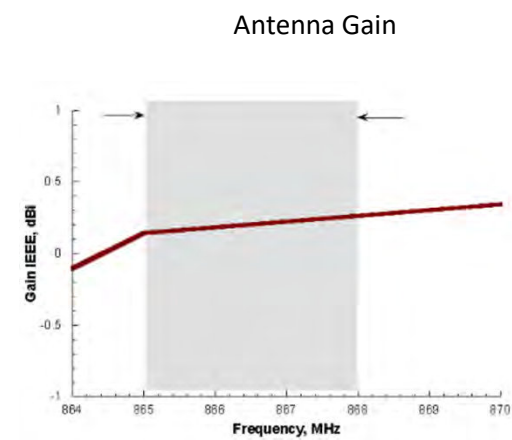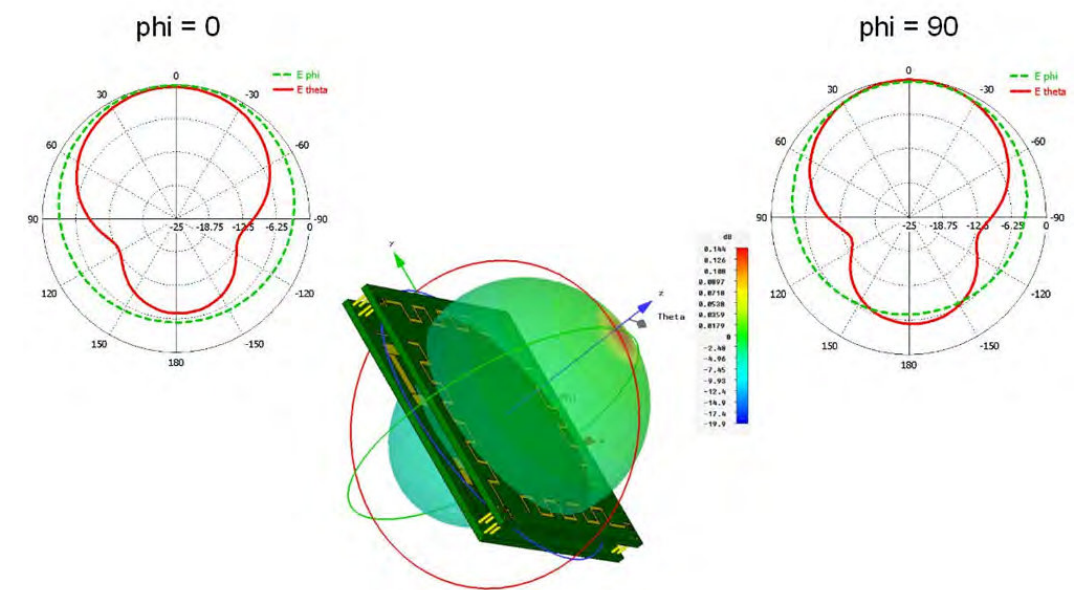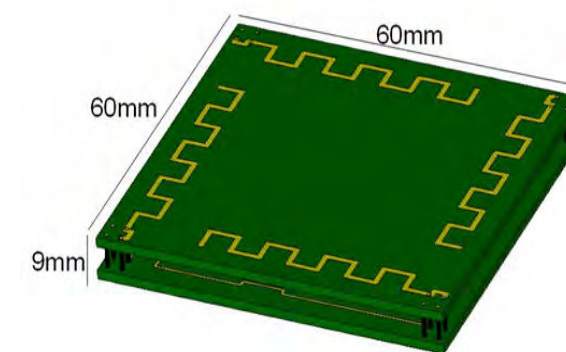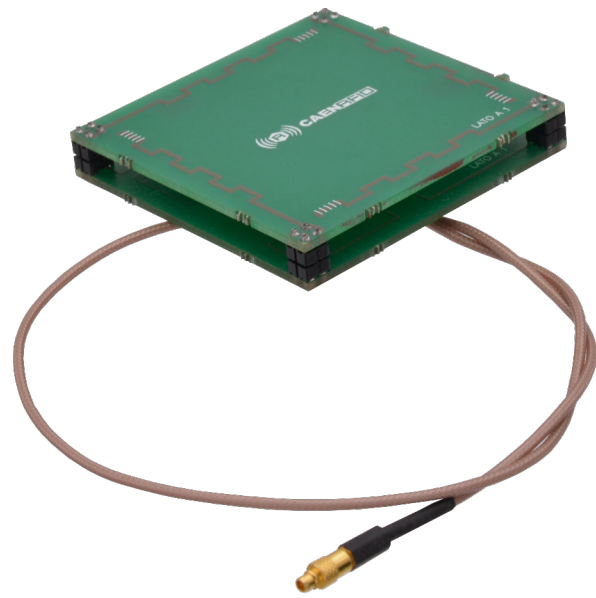
QUAD - WANT021
**Circular Polarized
Quadrifilar Antenna FCC**

Features

- **Designed for RAIN RFID portable applications**
- **902 ÷ 928 MHz**
- **0.7 dBi gain**
- **Circular Polarization**

General Info

High performing Quadrifilar, circular polarized RAIN RFID antenna in compact size. The Quad antenna is well suited to be integrated in long reading range portable devices.

The Quad antenna can be also used to implement compact fixed reading point with medium reading range capability.

Thanks to the circular polarization, the reading range is not affected by the tag orientation.

Technical Specifications Table

Frequency Range	902÷928 MHz (FCC part 15.247)
Polarization	Circular (RHCP)
Gain	0.7dBi typ.
Axial Ratio	1dB typ.
Dimensions	(W) 60 x (L) 60 x (H) 9 mm³ (2.36 x 2.36 x 0.35 inch³)
Standard Compliance	EPC C1 G2 / ISO18000-63
Impendance	50 Ohm
VSWR	<1.5:1
RF Cable	– Diameter: 2.6 mm; Length: 50 cm (Mod. WANT021XASMA) – Diameter: 1.8 mm; Length: 40 cm (Mod. WANT021XMMCX) – Diameter: 1.4 mm; Length: 20 cm (Mod. WANT021XAUFL) – Diameter: 2.5 mm; Length: 100 cm (Mod. WANT021XTNCR)

Ordering Options

Code	Description
WANT021XASMA	ANT021/SMA Quad Circular polarized quadrifilarantenna (FCC) - SMA
WANT021XAUFL	ANT021/UFL - Quad - Circular polarized quadrifilarantenna (FCC) - U.FL
WANT021XMMCX	ANT021/MMCX - Quad - Circular polarized quadrifilar antenna (FCC) - MMCX
WANT021XTNCR	ANT021/TNCRP - Quad - Circular polarized quadrifilar antenna (FCC) - TNC/RP
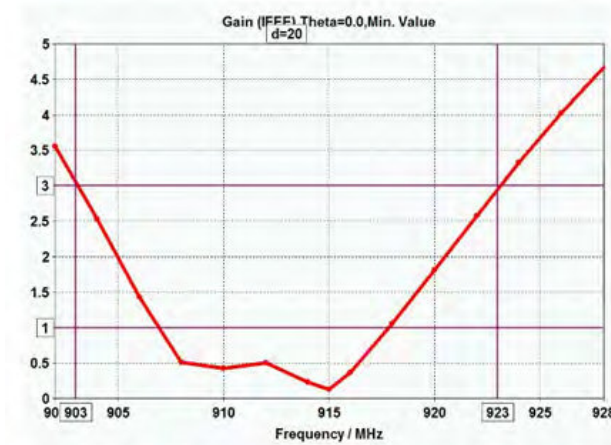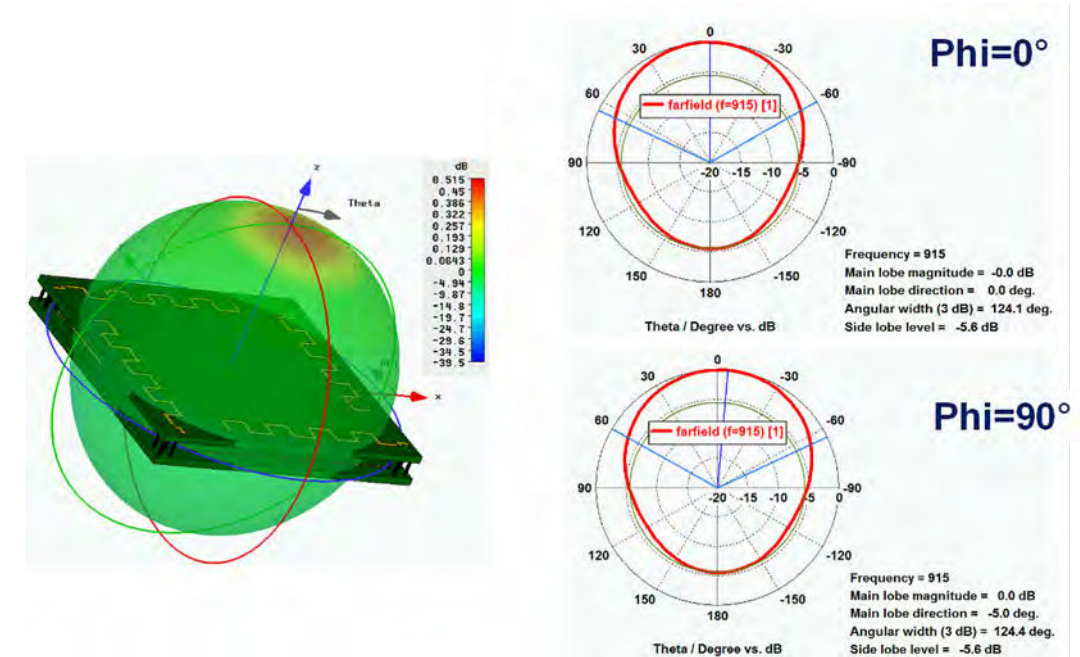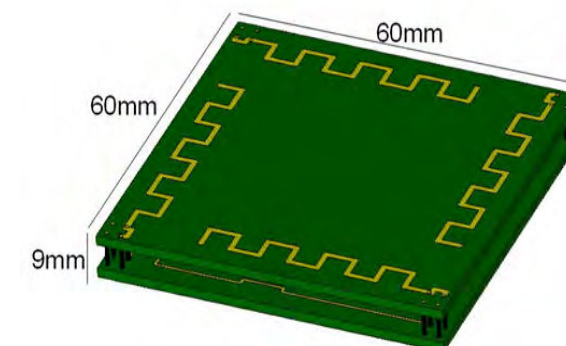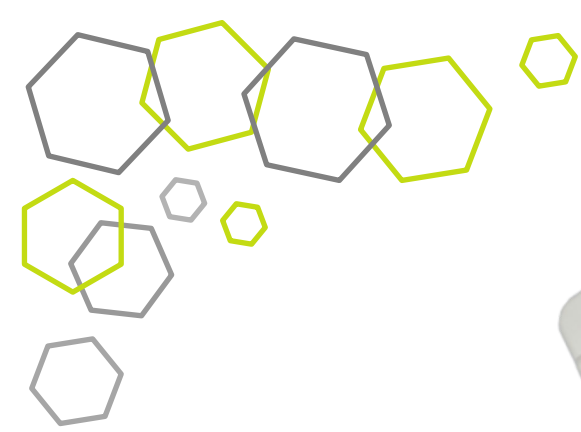
WANTENNAX019
Circular polarized antenna 8.5dBc - ETSI

Total Gain - Azimuth

Total Gain - Elevation

VSWR vs Frequency
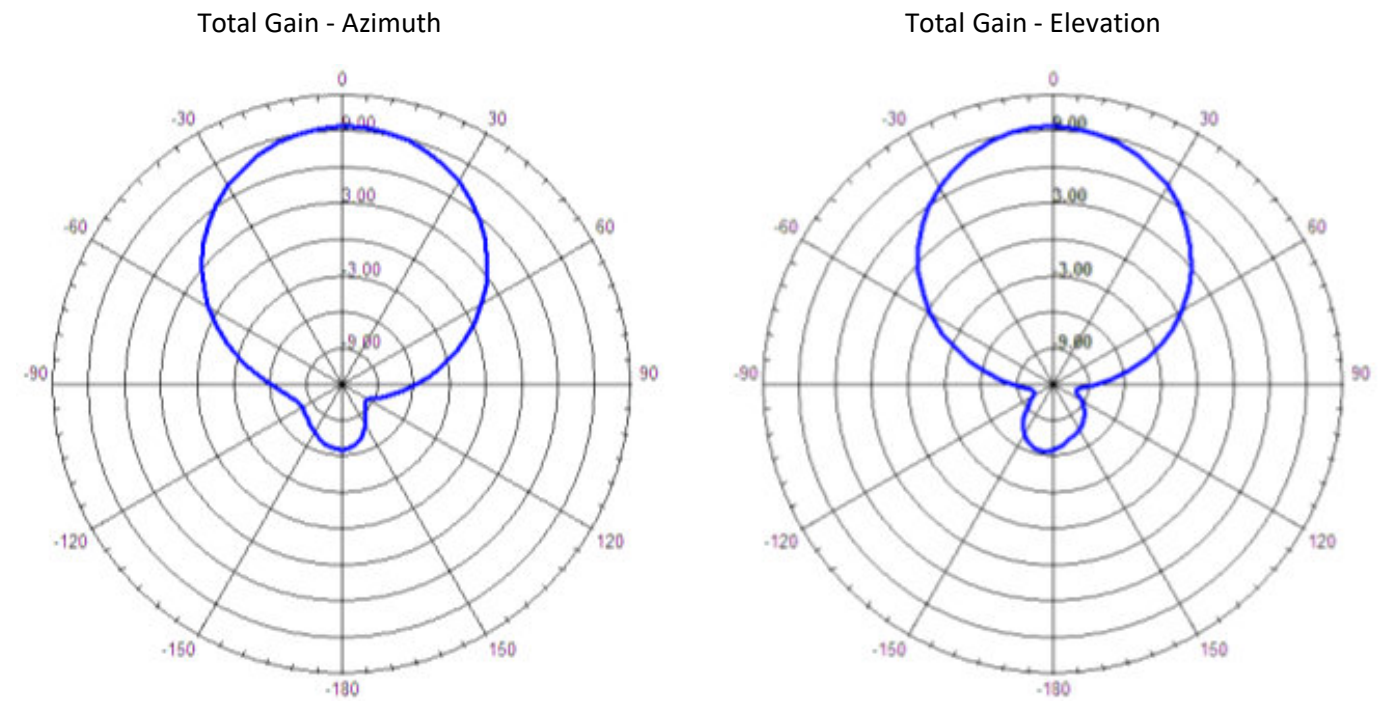
Features

- **Designed for RAIN RFID long range applications**
- **Frequency Range 865 ÷868 MHz**
- **Gain 8.5 dBc**
- **Right Hand Circularly Polarized (RHCP)**

General Info

This antenna is designed for RAIN RFID long range application like portals, vehicles identification, access control or waste management. Thanks to the circular polarization, the tag read range is independent from the relative tag – antenna orientation.
The enclosure is IP65 rated for outdoor installation.

### Technical Specifications Table

Frequency Range	865 ÷ 868 MHz (ETSI EN 302 208 v3.1.1)
Polarization	Right Hand Circularly Polarized (RHCP)
Gain	8.5 dBc
Half-Power Beamwidth (3dB)	65° (Elevation) 65° (Azimuth)
Front-to-Back Ratio	17 dB
Axial Ratio at Boresight	2 dB
VSWR	1.1:1
Nominal Impedance	50 ohm
Power	2 W e.i.r.p. (ETSI EN 302 208 v3.1.1) 5W (max)
Lightning Protection	Capacitor feed system
Dimensions	(L) 270 x (W) 270 x (D) 75 mm³
Weight	1.2 kg
Connector	N-m with 30cm RG58 cable
Radome	Polystyrene plastic (UV rating)
Mounting Kit	Aluminium (for pole)
IP Rating	IP65
Operating Temperature	-30 to +60 °C
Storage Temperature	-30 to +60 °C
Wind Speed	160 km/h
Wind Surface	0.066 m²

Ordering Options

Code	Description
WANTENNAX019	ETSI Circular polarized antenna 8.5dBc
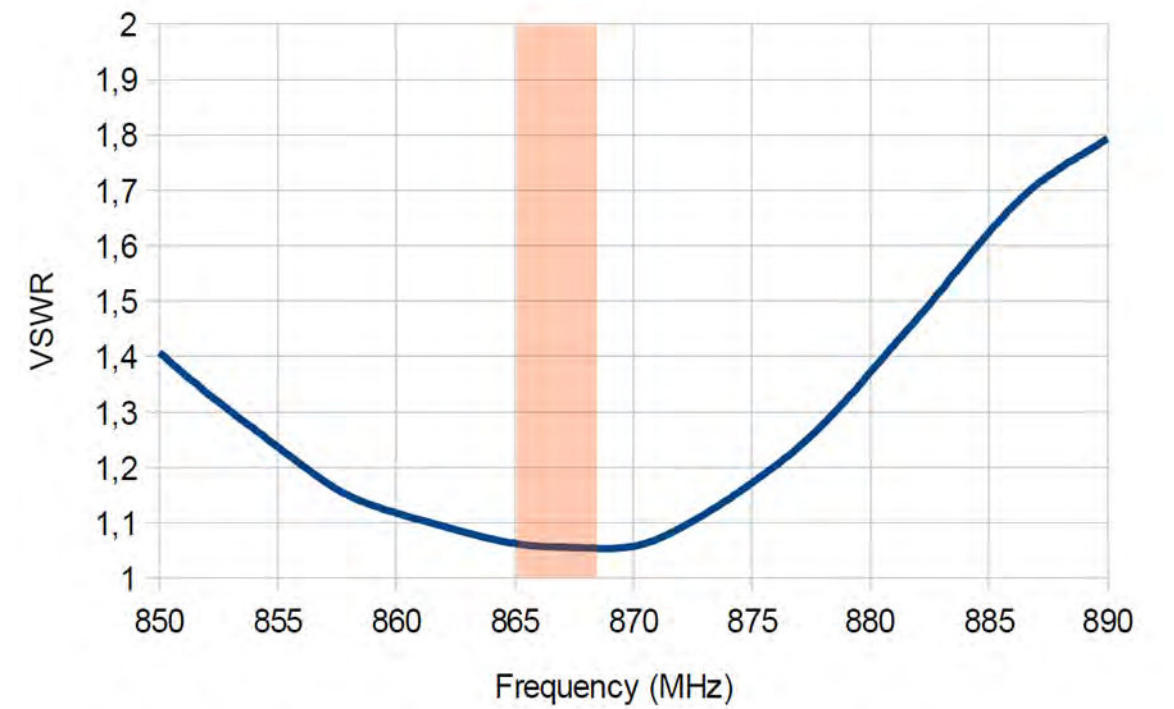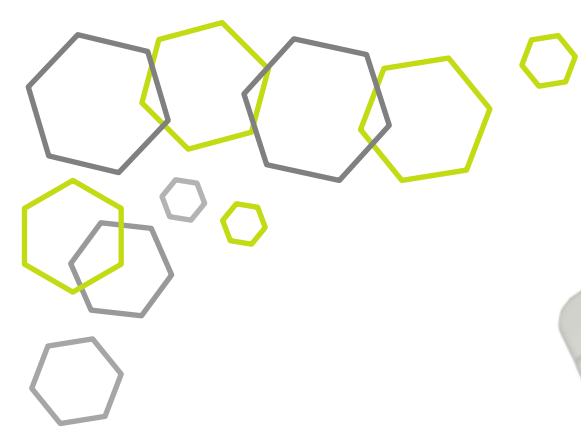
WANTENNAX020
Circular polarized antenna 8.5dBc - FCC

Total Gain - Azimuth

Total Gain - Elevation

VSWR vs Frequency

Features

- Designed for RAIN RFID long range applications
- Frequency Range 902 ÷ 928 MHz
- Gain 8.5 dBc
- Right Hand Circularly Polarized (RHCP)

General Info

This antenna is designed for RAIN RFID long range application like portals, vehicles identification, access control or waste management. Thanks to the circular polarization, the tag read range is independent from the relative tag – antenna orientation.
The enclosure is IP65 rated for outdoor installation.

Technical Specifications Table

Frequency Range	902 ÷ 928 MHz (FCC part 15.247)
Polarization	Right Hand Circularly Polarized (RHCP)
Gain	8.5 dBc
Half-Power Beamwidth (3dB)	65° (Elevation) 65° (Azimuth)
Front-to-Back Ratio	15 dB
Axial Ratio at Boresight	<2.5 dB
VSWR	1.3:1
Nominal Impedance	50 ohm
Power	4 W e.i.r.p. (FCC Part 15.247) 5W (max)
Lightning Protection	Capacitor feed system
Dimensions	(L) 270 x (W) 270 x (H) 75 mm³
Weight	1.2 kg
Connector	N-m with 30cm RG58 cable
Radome	Polystyrene plastic (UV rating)
Mounting Kit	Aluminium (for pole)
IP Rating	IP65
Operating Temperature	-30 to +60 °C
Storage Temperature	-30 to +60 °C
Wind Speed 160 km/h	160 km/h
Wind Surface	0.066 m²

Ordering Options

Code	Description
WANTENNAX020	FCC Circular polarized antenna 8.5dBc
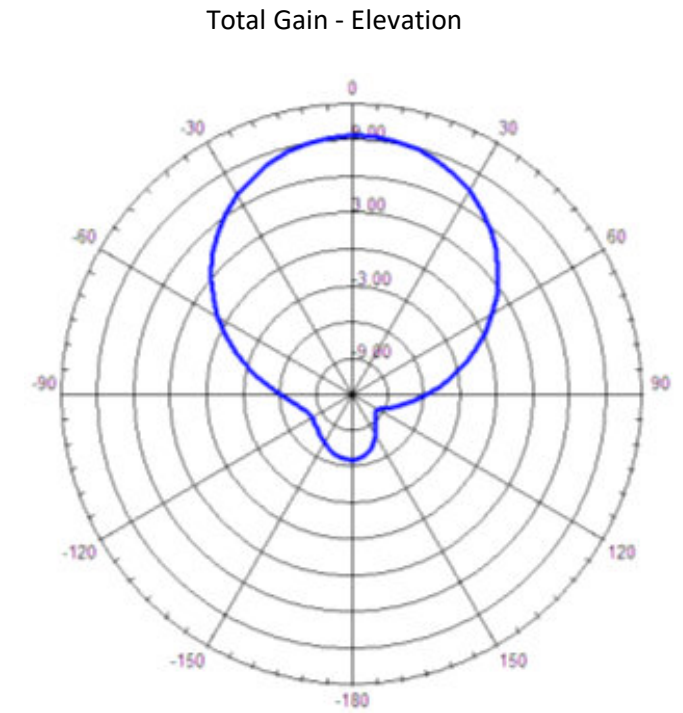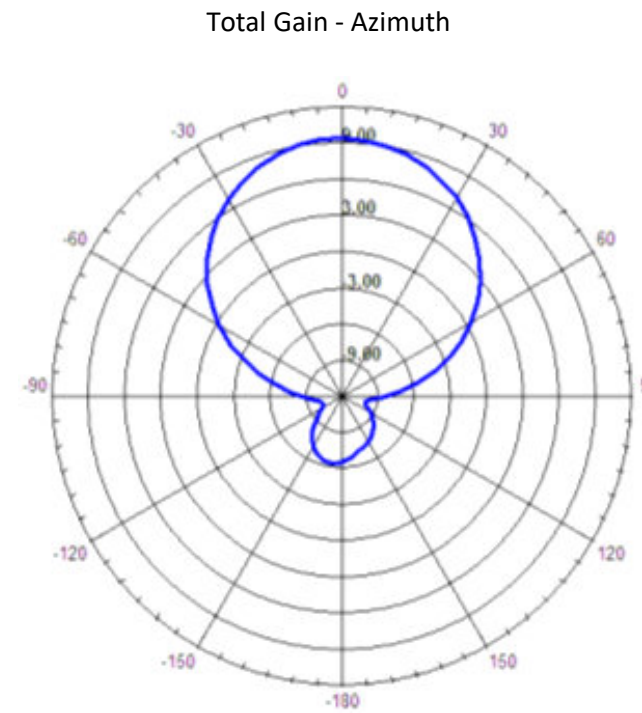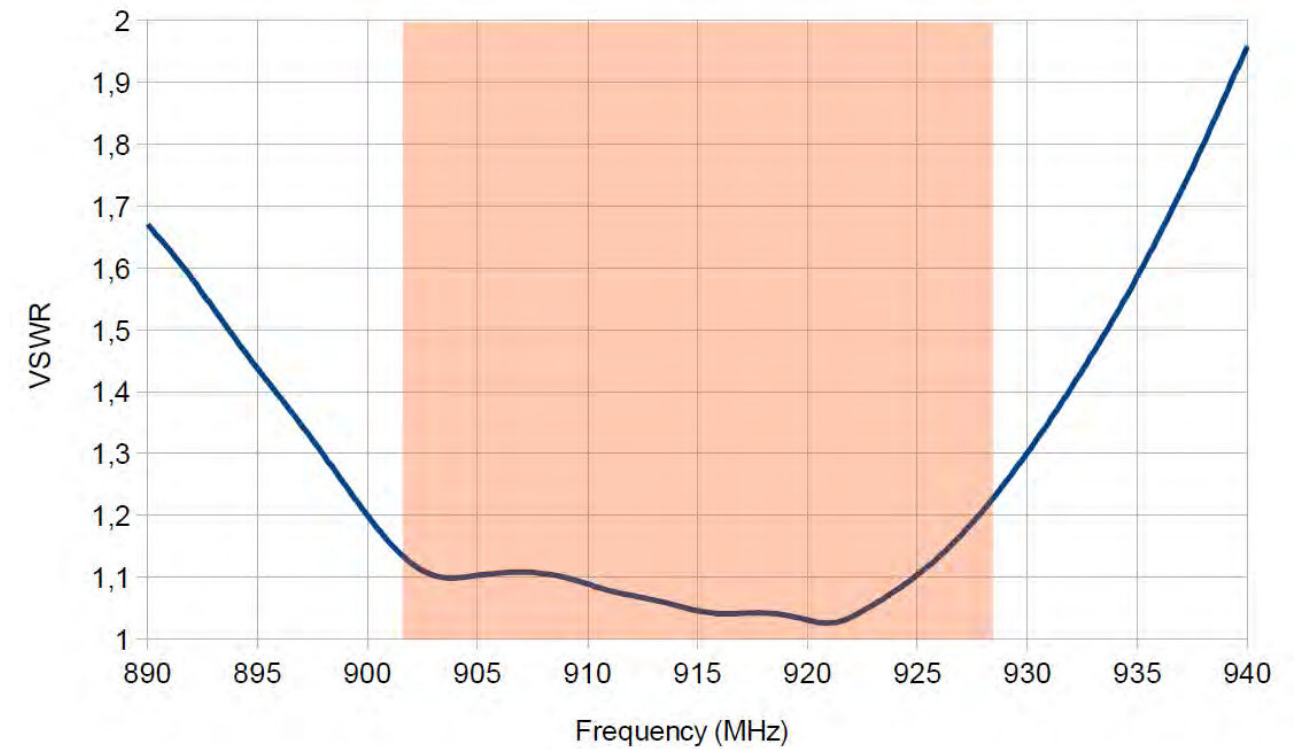
RA0003
Antenna Multiplexer

Features

- 1 to 4 antenna multiplexer
- Covers the 860 -960 MHz Range
- 9Vdc to 36Vdc Supply Voltage Range
- SMA RF connectors
- TTL level address signal

General Info

The RA0003 module is a 1 to 4 UHF antenna multiplexer that allows to expand read points management of CAEN RFID easy2read product line.
Typical usages of the device are the following:

- Extension of number of read points of single antenna readers (i.e. QuarkUp R1270C or Quark R1230CB) for low/medium range portal applications, access control and all others low cost installations requiring up to 4 antenna management.
- Extension of number of read points of multiantenna readers (i.e. Proton R4320P or Ion R4301P) for smart shelves installations, manufacturing lines and all others applications requiring a large number of antennas to be connected.

RA0003 has SMA RF connectors, is able to manage up to 2W RF power and can be used in the whole range of UHF RFID worldwide band.
The module has a extended supply voltage range (9Vdc – 36Vdc) and TTL level address signal.
Five LEDs provide the user with information about module operation.

Technical Specifications Table

Function	1 to 4 antenna multiplexer
RF Ports Impedance	50 Ohm
Operating Frequency	860÷960 MHz
RF Power Handling	up to 2W
Insertion Loss	1.5dB typ.
Return Loss	22dB typ.
Isolation	27dB typ
RF Connectors Type	SMA jack
Supply Voltage Range	9Vdc ÷ 36Vdc
Power Consumption	< 350mW
Control Voltage Range	0V ÷ 6V
User Interface	Green LED: Power Yellow LEDs: Selected antenna information
Operating Temperature	-20°C to +70°C
IP Rating	IP30
Dimensions	(W)65 x (L)93 x (H)35 mm³ (2.6 x 3.7 x 1.4 inch³)
Weight	155 g

Ordering Options

Code	Description
WRA0003XAAAA	RA0003 –UHF Antenna Multiplexer

RA0002
Digital I/O Interface Unit

Features

- 4 input - 4 output – 1 relay SPDT
- 9Vdc to 36Vdc Supply Voltage Range
- DB 15 serial interface
- Push in pcb terminals
- Safety output current

General Info

The CAEN RFID RA0002 Digital I/O Interface Unit provides an easily accessible interface to the CAEN RFID readers' digital inputs and outputs in order to connect external devices such as motion sensors, lightstacks and audible alarms.

The RA0002 KIT includes a dedicated cable for the Ion reader (R4301P)

Technical Specifications Table

Function	Digital I/O intarface unit
Reader Connector	DB15 (Connection to Ion R4301P Reader)
Terminals	Push in pcb terminals
Supply Voltage Range	9 Vdc ÷ 36 Vdc , 24 Vdc (Typ)
Input Terminal Ratings	5 Vdc ÷ 48 Vdc
Input Resistance for GPIs	3 kOhm(Typ)
Output Terminal Ratings	0 ÷ 500 mA overall for all external loads
Output Breakdown Voltage	60 Vdc
Input/Output Isolation	750Vrms
Relay Nominal	5A , 240 VAC
Relay Max Switching Voltage	400 VAC
Relay Expected Life, Mechanical	15×10⁶ cycles
Relay Expected Life, Electrical	1×10⁴ cycles (at 5A, 250 VAC , 6 cycles/min)
Safety Output Current	- Multifuse Polyswitch RKEF075
User Interface	Green LED: power Yellow LED: selected GPI/O information
IP Rating	IP30
Operating Temperature	-20 °C to +60 °C
Humidity	5 to 95% (on-condensing)
Dimensions	(W)100,5 x (L)131 x (H)34,4 mm³
Weight	200 g

Ordering Options

Code	Description
WRA0002XKITA	RA0002 –Digital I/O Interface Unit and DB15 cable (1.8m)

qDock - RA0005
qIDmini Docking Station

Features

- **USB 2.0 Full Speed**
- **Up to 3 reader charging points**
- **Data and firmware upgrade**

General Info

The qDock (RA0005) is a recharging docking station for the R1170I – qIDmini reader that can host up to three(3) readers and recharge them simultaneously.

The qDock is recommended as a recharging station when more than one reader is used in the same premise to reduce the number of micro USB charging cables around. Its ergonomic form factor is designed to make the plug/unplug operation easy and safe.

The docking station is provided together with its external power supply to be connected to a power socket for recharging.

A USB device port permits to connect the docking station to a PC to upgrade the firmware of the readers when needed.

The docking station can be also wall mounted using the provided hooks.

Technical Specifications Table

Function	Docking station
USB Interface	USB 2.0 Full Speed (12Mbit/s) device port
USB Connector to Reader	Micro type B
USB Connector to PC - Cable	Type B
User Interface	— Green LED ON: External power supply active — Orange LED ON: USB communication ON.
Power Supply Input	5Vdc ± 5%.@ 2Amax
Power Supply Connector	Power Jack – Negative Central Pin
Battery Charging Time	2h (typical)
Operating Temperature	-10 °C to +55 °C
IP Rating	IP40
Dimensions	(W)288 x (L)140 x (H)34 mm^3 11,3 x 5,5 x 1.3 inch^3
Enclosue	ABS
Weight	300 g

Ordering Options

Code	Description
WRA0005XAASS	RA0005 – qDock – qIDmini docking station - White
WRA0005XGASS	RA0005 – qDock – qIDmini docking station - Grey