



🗍 iPhone 🔲 iPad





Technical Information Manual

Revision n. 02

10/12/2013

Visit <u>gID R12401</u> web page and you will find the latest revision of data sheets, manuals, certifications, technical drawings, software and firmware. All you need to start using your reader in a few clicks!

Scope of Manual

The goal of this manual is to provide the basic information to work with the qID R1240I UHF RFID USB/Bluetooth Reader.



Because of two discontinuous firmware versions, pay attention if your reader has a firmware revision < 2.0.0. For more information please refer to § *Installing the USB Virtual COM port driver* pag.13, *Configuration file (only for firmware revision* \geq 2.0.0) pag. 14, *Scripting capability (only for firmware revision* \geq 2.0.0) pag. 14 and *Firmware Upgrade* pag. 19.

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| | | Modified Ordering Options | 11 |
| | | Added R1240I Development Kit | 11 |
| | | Modified ETSI version in the Technical Specifications Table | 24 |
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| | | Modified Installing the USB Virtual COM port driver paragraph | 13 |
| | | Added Reset the Reader paragraph | 17 |
| | | Modified IP rating in the Technical Specifications Table | 24 |
| | | Modified Fig. 1.3: qID R1240I Front Panel | 8 |
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| | | Modified Fig. 1.6: R1240IDK – qID Fully integrated UHF RFID | 11 |
| | | USB/Bluetooth Reader Development Kit | |
| | | Added Configuration file (only for firmware revision \geq 2.0.0) | 14 |
| | | paragraph | 14 |
| | | Added Scripting capability (only for firmware revision \geq 2.0.0) | 14 |
| | | paragraph | 1. |
| | | Modified <i>Firmware Upgrade</i> paragraph | 19 |

Reference Document

| [RD1] | EPCglobal: EPC Radio-Frequency Identity Protocols Class-1 Generation-2 UHF RFID Protocol for Communications at 860 MHz – 960 MHz, Version 1.1.0 (December 17, 2005). |
|-------|--|
| [RD2] | G.S.D. s.r.l Report CE mark – R1240IB / R1240I. Test report n. 13200, Rev.01 - 08 Oct 2013. |
| [RD3] | G.S.D. s.r.l Report FCC mark – R1240IB. Test report n. FCC-13200B, Rev.01 - 08 Oct 2013. |

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Disposal of the product

Do not dispose the product in municipal or household waste. Please check your local regulations for disposal/recycle of electronic products.





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1 Introduction

This Chapter gives general information about the **qID R1240I Reader**. It contains these topics:

- Product Description
- Accessories
- Installation Notice
- Development Kit
- Ordering Options

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Product Description

The qID (Model R1240I), mobile reader of the easy2read[©] Family, is an UHF multiregional RFID reader with integrated antenna for short to medium range applications. It is compliant with ISO 18000-6C/EPC C1G2 standards.

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 R1240I is a perfect add-on for any Bluetooth[®] enabled host such as a PC, a smartphone, a PDA or a tablet for UHF RFID readings. The reader is compatible with Windows XP/7, Windows CE/Mobile, Android, iPhone and iPad.

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.

An optional 1D/2D barcode imager enables the qID to read most of the 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.

Designed for mobile operators in indoor or outdoor areas, the qID is ideal for inventory management, field sales mobility, service and maintenance applications.



Fig. 1.1: qID R1240I UHF RFID USB/Bluetooth Reader



Fig. 1.2: qID R1240I UHF RFID USB/Bluetooth Reader with silicone cover



Front panel

The qID R1240I front panel houses the following LEDs and buttons (see figure below):



Fig. 1.3: qID R1240I Front Panel

| No. | Name | Description |
|-----|----------------|---|
| 1 | Power LED | Indicates the reader status and battery level (see § Tab. 1.2: qID R1240I Power LED Status Table) |
| 2 | Link LED | Indicates the USB/Bluetooth communication status (see § Tab. 1.3: qID R1240I USB/Bluetooth LED status table) |
| 3 | Trigger LED | A green blink indicates a successfully executed operation, a red blink a failure |
| 4 | Power button | Press the button to switch on the reader, press for at least 2 seconds to switch it off |
| 5 | Trigger button | A single press of the trigger button executes an inventory cycle, pressing for more than 1 second starts a continuous inventory process |

Tab. 1.1: qID R1240I Front Panel LEDs and Buttons

| Status | Description |
|-----------------|--|
| Steady green | Reader is active and battery if fully charged |
| Blinking green | Reader is in std-by and battery is fully charged |
| Steady orange | Reader is active and battery is discharging |
| Blinking orange | Reader is in std-by and battery is discharging |
| Steady red | Reader is active and battery is almost empty |
| Blinking red | Reader is in std-by and battery is almost empty |

Tab. 1.2: qID R1240I Power LED Status Table

| Status | Description |
|-----------------|---|
| OFF | No connection established |
| Steady orange | USB cable connected (both to a PC or to the AC power adapter) |
| Blinking orange | USB communication on going |
| Steady blue | Bluetooth connected |
| Blinking blue | Bluetooth communication on going |

Tab. 1.3: qID R1240I USB/Bluetooth LED status table



USB connector

A micro USB Type B socket connector is located in the bottom side of qID R1240I and can be used to connect the reader to an USB host port or to an AC/DC battery charger.

In case the reader is connected to a standard USB port the battery charge is performed at 500mA max. (slow charge mode), in case it is connected to the AC/DC adapter charge current is 1A max. (fast charge mode).

Please consider that when the reader is attached to a PC via USB cable, the battery recharge is active only with device in stand-by mode (power LED blinking orange).

Accessories

Check for the supplied accessories below:



Fig. 1.4: qID R1240I Accessories



Installation Notice



To insert the strap in the qID, please follow the instructions shown in the figures:

Fig. 1.5: qID R1240I – Inserting the strap



Development Kit

<u>R1240IDK – qID Fully integrated UHF RFID USB/Bluetooth Reader Development Kit</u> is available:



Fig. 1.6: R1240IDK – qID Fully integrated UHF RFID USB/Bluetooth Reader Development Kit

The R1240I qID reader development kit is a complete RFID set up, for a quick implementation of RFID solutions. It includes:

- n. 1 R1240I (qID) Fully integrated UHF RFID USB/Bluetooth Reader
- n. 1 Set of Labels
- n. 1 A927Z Temperature Logger Tag
- n. 1 <u>RT0005 Temperature Logger Tag</u>
- n. 1 Silicone Cover
- n. 1 Power supply
- n. 1 USB cable

Ordering Options

| | Code | Description | |
|-----------------|---------------------|---|--|
| Boodor | WR1240IXAAAA | R1240I - qID – Wearable Bluetooth UHF RFID Reader | |
| Reduel | WR1240IXBAAA | R1240IB - qID – Wearable Bluetooth UHF RFID/BARCODE Reader | |
| Accessories | EACCESCDRF06 | R1240I Silicone Cover | |
| | | R1240IDK - Development kit with R1240I reader, silicone cover | |
| Development kit | <u>WK1240IDKAAA</u> | and demo tags | |
| Development kit | | R1240IDKB - Development kit with R1240I Barcode reader, | |
| | | silicone cover and demo tags | |

Note: If you are interested on FCC module, please contact our sales office (e-mail: <u>info@caenrfid.com</u>, phone number: +39.0584.388.398).



2 Getting Started

This chapter provides simple steps to quickly start using the **qID R1240I Reader**. It contains these topics:

- Introduction
- Installing the USB Virtual COM port driver
- Configuration file (only for firmware revision ≥ 2.0.0)
- Scripting capability (only for firmware revision ≥ 2.0.0)
- Bluetooth Communication Setup
- Connecting the qID Reader
- Barcode Reader
- Reset the Reader

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Introduction

This quickstart guide will help you to get started with your qID (Model R1240I/R1240IB) reader.

For more detailed information on reader configuration, connections and setup options please refer to the next chapters.

Installing the USB Virtual COM port driver

Reader with firmware version < 2.0.0

The qID reader can be connected to a PC using the provided USB cable and it is detected by the PC as an emulated serial port. In order to correctly operate with the reader you need to install a device driver.

In order to connect the qID reader to the PC you need to install the VCP (Virtual Com Port) drivers for your operating system. You can download VCP drivers for Windows based systems from the CAEN RFID Web Site at the <u>Software and</u> <u>Firmware download area</u>.

Please double click on the installation executable VCP_V1.3.1_Setup.exe or VCP_V1.3.1_Setup_x64.exe (only for 64-bit Windows systems) and follow the guided procedure.

Reader with firmware version $\ge 2.0.0$

The qID reader can be connected to a PC using the provided USB cable and it is detected by the PC as a composite USB, that is as an emulated serial port (VCP) and as an USB MSC.

Power ON the reader and plug the USB cable into the qID USB port.

After a while, from one side, a new storage device should appear under the computer directory and, from the other side, a dialog window appears informing you that the device is not recognized and you should be prompted for inserting the reader's USB VCP driver (*R12401.inf*, download the driver at <u>qID R12401 web page</u>, *SW/FW* section) in order to correctly operate with the reader.

After installing the driver, the reader is detected by the PC as an emulated serial port (VCP) and as an USB MSC:





Configuration file (only for firmware revision \geq 2.0.0)

The *qID.cfg* file (in the CONFIG directory) is the reader's main configuration file where are saved all the reader's configuration options included, among them, the name of the script to be executed when the SCAN button is pressed (in the last line, the value assigned to *tcl_script* variable represents the script to be executed, in the example below clg2inv.tcl).

The qID.cfg file:

```
# Auto shutdown.
# Enables or disables the reader's automatic shutdown.
# Allowed values : ON, OFF
# Default : ON
auto shutdown = ON
# Shutdown time.
# Set the number of seconds of inactivity required before
# starting the automatic shutdown procedure.
# Allowed values : [1..86400]
# Default value : 300
shutdown time = 300
# Power Led Blink
# Enables or disables power led blinking during stand-by
# Allowed values : ON, OFF
# Default value : OFF
power led blink = ON
# TCL script
# Select the TCL script to be executed among those stored in
# the SCRIPTS directory.
# Default value : default.tcl
tcl script = c1g2inv.tcl
```

Scripting capability (only for firmware revision \geq 2.0.0)

All available scripts provided by CAEN RFID are located in the SCRIPTS directory:

- bcdinv.tcl
- bcdtoepc.tcl
- c1g2inv.tcl
- hid_emu.tcl

A brief description of scripts and what they do can be found at the beginning of each file.

To execute the script, press the scan button (see § *Fig. 1.3: qID R1240I Front Panel* pag. 8) and for example, if the *tcl_script* = *c1g2inv.tcl* in the *qID.cfg* file, the reader will first perform an inventory cycle and then will save all the tags read into the *c1g2epc.txt* file located in the DATA directory.

If you want to test a different CAEN RFID script, simply assign its name to the *tcl_script* variable defined in the *qlD.cfg* file. To refresh the new script, unplug the cable, power off the reader and power it on again: the new *qlD.cfg* file is active.

You can create your own script in .tcl language, save it in the SCRIPT directory and simply assign its name to the *tcl_script* variable defined in the *qlD.cfg* file. To refresh the new script, unplug the cable, power off the reader and power it on again: the new *qlD.cfg* file is active.

Bluetooth Communication Setup

The preferred communication interface of the qID reader is the Bluetooth link using the SPP profile (Serial Port Profile).

After powering on the reader, the Bluetooth interface is available to accept incoming connection requests (discoverable) from Bluetooth enabled hosts like PCs, PDAs, Tablets, Smartphones and so on.

When discovered by the host, the qID reader can be identified by its Bluetooth device name and paired using the passkey; both parameters are provided below:

- Bluetooth device name: "qID-" + device serial number
- Pass-key: 0000



Connecting the qID Reader

Both USB and Bluetooth interface creates virtual COM ports on the host PC that can be used to connect to the reader with the CAEN RFID Easy Controller application.

Connecting the qID using the Easy Controller for Windows

- 1. Download from the CAEN RFID web site the latest version of the CAEN RFID *Easy Controller for Windows* software and install it.
- 2. Connect the qID reader to your pc using the either the USB or Bluetooth connection.
- 3. Open the System properties (right click on *My computer* icon) \rightarrow *Hardware* \rightarrow *Device Manager*.

| -, | Restore | Autom | Automatic Updates | |
|---------------|---|---|--|----------------------------------|
| General Compu | | Computer Name | iter Name Hardware | |
| Device M | anager — | | | |
| Ż | The Dev on your o propertie | ice Manager lists al computer. Use the E s of any device. | l the hardware device Device Manager to ch | es installed hange the |
| | | | Device Ma | anager |
| Drivers | | | | |
| | Driver Sig compatib | gning lets you make Ile with Windows M | e sure that installed dr | ivers are |
| | how Win | dows connects to \ | Windows Update for | you set up drivers. |
| (| how Win D | dows connects to \ river Signing | Windows Update for Windows Update for | you set up drivers. Jpdate |
| (Hardware | how Win D Profiles | dows connects to \ river Signing | Windows Update for | drivers. |
| [Hardware | how Win D Profiles Hardward different | dows connects to \ river Signing e profiles provide a hardware configura | Windows Update for Windows Update for Windows L Windows L | Jpdate |
| (Hardware | how Win D Profiles Hardward different | dows connects to \ river Signing e profiles provide a hardware configura | Windows Update for Windows L Windows L way for you to set up tions. | Jpdate |

4. Look for the emulated serial port in the "Ports (COM & LPT)": it can be "USB serial port (COM X)" or "BT Port (COMX)" depending on the interface used.

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- 5. Launch the CAEN RFID Easy Controller application.
- 6. On the main application window click on $File \rightarrow Connect$; the connection dialog box will appear.
- 7. Select *RS232* from the *Connection Type* combo box and the right COM port number from the *RS232 Port* combo box.
- 8. Click on Connect.
- 9. Place a tag in front of the reader and click on *Start Inventory* to see the tag information displayed on the main window.

For more information on the CAEN RFID *Easy Controller for Windows* application usage, please refer to the relevant user manual: you can download it from the CAEN RFID *Easy Controller for Windows* web page or in the *Manual and Documents* web area.

A CAEN RFID *Easy Controller for Android* application is also available. For more information please refer to the CAEN RFID *Easy Controller for Android* web page.



Barcode Reader

In the qID R1240I device the barcode reader and the UHF antennas are seen, from the logical and programming point of view, in the same way.

All of them are considered as readpoint (antennas in the CAEN RFID terminology) which, associated to a Logical Source, provide the basic source of information generated by the reader.

In particular, the barcode reader is mapped to Ant2, while Ant0 and Ant1 are dedicated to the UHF antennas.

It is possible to add or remove readpoint to/from a logical source by the use of the AddReadPoint and RemoveReadPoint methods.

By default, the association between readpoint and sources in the qID reader is as follows:

Source 0 -> Ant0 and Ant1 Source 1 -> Ant2 Source 2 -> Ant0 Source 3 -> Ant1

For getting information from a logical source containing the barcode reader you can use, again, the standard *InventoryTag* function.

Reset the Reader

It is possible to reset the reader in two different modes:

- 1. First method: press the *power* and the *trigger* buttons (see § *Fig. 1.3: qID R1240I Front Panel* pag. 8) simultaneously for about twenty seconds until you hear two beeps.
- 2. Second method:
 - a. Power ON the qID R1240I reader. Establish a Bluetooth connection between the PC and the reader (enter 0000 as passkey).
 - b. Check on the control panel the address of the COM port associated.
 - c. Launch the *R1240I qid Suite Upgrade Tool* (download it from the <u>qID R1240I</u> web page, *SW/FW* section) and select the relative COM port.
 - d. Click on "Reset Micro".
 - e. Wait for about ten seconds, if the operation is successfully completed the reader will beep twice.

Then check the connection with the *Easy Controller Software*.

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3 qID R1240I Firmware Upgrade

This Chapter describes the **qID R1240I Reader** firmware upgrade procedure.





Firmware Upgrade

The qID R1240I Upgrade Tool is available for free at <u>*aID R1240I page*</u> or in the <u>Software and Firmware Area</u> of the CAEN RFID Web Site (download the *R1240I Suite* zip file).

The qID R1240I firmware upgrade can be managed via Bluetooth.

In order to upgrade the firmware, follow the steps below:

- 1. Download the *R1240I Suite* zip file from the <u>*qID R1240I page*</u> or in the <u>Software and Firmware Area</u> from CAEN RFID Web Site and unzip it. The zip file contents: the *Flash Loader Demonstrator*, the *R1240I_Upgrade* tool and the .bin firmware upgrade image.
- 2. Install the Flash Loader Demonstrator.
- 3. Run the program R1240I_Upgrade, select the reader port to be updated (COM Bluetooth) and press Upgrade *Micro*. Wait a few seconds for the appearance of the dialog box as in Figure STM32Fupdate. Please pay attention to the fact that *OK* at this stage must not be pressed (it is pressed only at the end of the entire procedure in step 8).

| 💀 STM32F update utility | |
|-------------------------|---|
| COM Port: COM18 👻 | |
| Reset Micro | |
| Upgrade Micro | Update STM32F firwmare with ST flash downloader, press OK when upload is completed |
| | |



4. Launch the program *Flash Loader Demonstrator*; select once again the reader port to be updated, and press the *Next* button:

| 🥔 Flash Load | ler Demonstrat | or | | |
|-------------------------------|-------------------------------------|----------------|--------------------|-----------|
| STI | /licroeled | ctroni | cs | |
| Select the con connection. | nmunication port ar all families | nd set setting | gs, then click new | (to open |
| UART | | | | |
| Port Name | COM18 | Parity | Even | <u> </u> |
| Baud Rate | 115200 | Echo | Disable | ed 💽 |
| Data Bits | 8 | Time Time | out(s) 10 | • |
| | | | | |
| | Back | Next | Cancel | Close |

- 5. At the next screen, press on the *Next* button again.
- 6. Select as target the STM32F2_256K item and press the *Next* button:

| Target PID (h) | STM32F2_256K | | | • |
|-----------------------------------|---------------|-------------|--------------|---|
| BID (h) Version lash mappir | 3.2 3.0 | | | |
| Name | Start address | End address | Size | - |
| Page0 | 0x 8000000 | 0x 8003FFF | 0x4000 (16K) | |
| Page1 | 0x 8004000 | 0x 8007FFF | 0x4000 (16K) | |
| Page2 | 0x 8008000 | 0x 800BFFF | 0x4000 (16K) | |
| Page3 | 0x 800C000 | 0x 800FFFF | 0x4000 (16K) | |
| Page4 | 0x 8010000 | 0x 801FFFF | 0x10000 (64 | |
| Page5 | 0x 8020000 | 0x 803FFFF | 0x20000 (12 | |
| | | | | |

7. Select the firmware upgrade *image* and press on the *Next* button:

| Erase | | | |
|--|--------------------|--------------------|-----------|
| G AI | C Sele | ction | |
| Download to device | | | |
| Uxx_STM32F207 | VC\PRODUCTION\R | 12401-1.0.1.bin | |
| Erase necess | ary pages 🦷 🔘 No E | Erase 🦳 Glo | bal Erase |
| @ (h) 8000000 | • Γ | Jump to the use | r program |
| Dptimize (Rem | ove some FFs) 🛛 🖡 | ✓ Verify after dow | nload |
| Apply option b | ytes 🛛 | | |
| Upload from device | | | |
| Upload to hie | | | - |
| 1 | | | |
| | | | |
| procession and a second s | | | |
| DISABLE | THE AD FIN | | |

Wait until the programming and verification phases are complete.

- 8. Press the Close button.
- 9. Return to the R1240I Upgrade program and press the OK button.
- 10. Wait a few tens of seconds. A beep emitted by the reader notifies the reset of the device as a result that the upgrade process is successfully complete.



Warning: if your reader had a starting firmware revision < 2.0.0, download the CONFIG.zip and SCRIPTS.zip files from the <u>*gID R1240I page*</u> (SW/FW sections) and unzip the into the reader's flash memory and create a new directory (at the root level) called DATA (see *Fig. 3.1: qID R1240I directory structure* pag. 22).



| Organizza 👻 Condividi con 👻 🛛 | Masterizza Nuova cartella | | |
|---------------------------------|---------------------------|------------------|------------------|
| 🚖 Preferiti | Nome | Ultima modifica | Tipo |
| Tesktop | 🔒 CONFIG | 21/06/2013 11:00 | Cartella di file |
| 📕 Download | DATA | 21/06/2013 11:01 | Cartella di file |
| 归 Risorse recenti | SCRIPTS | 21/06/2013 11:01 | Cartella di file |
| 詞 Raccolte | | | |
| 📑 Documenti | | | |
| 🔚 Immagini | | | |
| 👌 Musica | | | |
| Video | | | |
| 톶 Computer | | | |
| 🏭 Disco locale (C:) | | | |
| 🛃 Unità DVD RW (D:) 050503_1603 | | | |
| 👝 Dati (E:) | | | |
| 👝 Disco rimovibile (F:) | | | |
| 👝 Disco rimovibile (G:) | | | |
| 📕 CONFIG | id directory | | |
| 🔰 DATA 🛛 📿 st | ructure | | |
| SCRIPTS | | | |

Fig. 3.1: qID R1240I directory structure



4 qID R1240I Technical Specifications

This Chapter introduces the technical specifications of the **qID R1240I Reader**. It contains these topics:

- Technical Specifications Table
- Readable Barcodes
- Reader Tag Link Profiles
- Radiation Patterns

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Technical Specifications Table

| Fraguana, Pand | 865.600÷867.600 MHz (ETSI EN 302 208 v. 1.4.1.) | | |
|-----------------------|---|--|--|
| Frequency Band | 902÷928 MHz (FCC part 15.247) | | |
| Number of Channels | 4 channels (compliant to ETSI EN 302 208 v. 1.4.1.) | | |
| Number of channels | 50 hopping channels (compliant to FCC part 15.247) | | |
| BE Bower | Programmable in 8 levels from 10dBm (10mW) e.r.p. to 27dBm (500mW) | | |
| RF FOWEI | e.r.p. | | |
| Antenna Gain | 2dBi (typical) | | |
| Antenna Polarization | Dual linear (horizontal and vertical) | | |
| Standard Compliance | ISO 18000-6C/EPC C1G2 | | |
| Read Range | up to 1.5m. (typical) | | |
| USB Interface | USB 2.0 Full Speed (12 Mbit/s) device port | | |
| | Class 1 with output power 5dBm e.i.r.p. | | |
| | Virtual COM port parameters: | | |
| | - Baudrate: up to 921'600kbps | | |
| Bluetooth Interface | - Databits: 8 | | |
| | - Stopbits: 1 | | |
| | - Parity: none | | |
| | - Flow control: none | | |
| | Button #1:ON/OFF | | |
| | Button #2: Trigger | | |
| Licor Interface | Led #1: power indication and battery status (green: high; red: low) | | |
| Oser interface | Led #2: communication activity (blue: Bluetooth; orange: USB) | | |
| | Led #3: operation result (green: OK; red: not OK) | | |
| | Buzzer: bitonal for events signalling | | |
| Internal Buffer Size | 5MByte (equivalent to 400000 EPC codes@96bit) (TBC) | | |
| Remarka Reader | 1D and 2D imager (only in Mod. WR1240IXBAAA). For more details, see § | | |
| Barcoue Reader | Readable Barcodes pag. 25. | | |
| Battery Type | Type Li-Ion 3.7V, 2100mAh | | |
| Pottony Life | Operating: > 8h | | |
| Dattery Life | Standby: > 7 days | | |
| Batton Charging Time | 7h from USB port | | |
| Battery Charging Time | 3h with AC/DC adapter | | |
| Operating Temperature | -10 °C to +55 °C | | |
| IP Rating | IP32 | | |
| Dimensions | 140 x 90 x 35 mm ³ max. (5.5 x 3.6 x 1.4 in ³) | | |
| Weight | 180g max. (without barcode module installed) | | |
| weight | 191g max. (with barcode module installed) | | |
| Length of USB cable | 1,5 m | | |

Tab. 4.1: qID R1240I Technical Specifications Table



Readable Barcodes

| | Symbologies | |
|----------|-------------------------------------|--|
| | UPC | |
| | UPC Add-on 2 | |
| | UPC Add-on 5 | |
| | EAN | |
| | EAN Add-on 2 | |
| | EAN Add-on 5 | |
| | EAN-13 | |
| | EAN-13 Add-on 2 | |
| | EAN-13 Add-on 5 | |
| | EAN-8 | |
| | EAN-8 Add-on 2 | |
| | EAN-8 Add-on 5 | |
| | Code 39 | |
| | Tri-Optic | |
| | Codabar | |
| 1D Codes | Industrial 2 of 5 | |
| | Interleaved 2 of 5 | |
| | S-Code | |
| | ΙΑΤΑ | |
| | MSI/Plessey | |
| | Telepen | |
| | UK/Plessey | |
| | Code 128 | |
| | Code 93 | |
| | GS1 DataBar Omnidirectional | |
| | GS1 DataBar Truncated | |
| | GS1 DataBar Stacked | |
| | GS1 DataBar Stacked Omnidirectional | |
| | GS1 DataBar Limited | |
| | GS1 DataBar Expanded | |
| | GS1 DataBar Expanded Stacked | |
| | Data Matrix (ECC 200) | |
| | Aztec Code | |
| | QR Code | |
| 2D Codes | Micro QR | |
| | Maxi Code | |
| | PDF417 | |
| | Micro PDF417 | |

The following table shows the supported symbologies (only in Mod. WR1240IXBAAA):

For other symbologies, please contact our support team at support@caenrfid.it.

Reader – Tag Link Profiles

qID R1240I reader supports different modulations and return link profiles according to EPC Class1 Gen2 protocol [RD1].

In the following table are reported all profiles that have been tested for the compliance with ETSI and FCC regulations.

| Link profile # | Regulation | Modulation | Return Link |
|----------------|------------|-------------------|--------------------------|
| 0 | ETSI - FCC | DSB–ASK; f=40kHz | FM0; f = 40kHz |
| 1 | ETSI - FCC | PR-ASK; f=40kHz | Miller (M=4); f = 250kHz |
| 2 | ETSI | PR-ASK; f=40kHz | Miller (M=4); f = 300kHz |
| 3 | FCC | DSB–ASK; f=160kHz | FM0; f = 400kHz |
| 4 | FCC | PR-ASK; f=40kHz | Miller (M=2); f = 250kHz |

Tab. 4.2: qID R1240I Reader to tag link profiles



Radiation Patterns

The radiation patterns of qID R1240I are shown in the following figures.



Fig. 4.2: qID R1240I Radiation pattern V plane



5 qID R1240I Regulatory Compliance

This Chapter gives information on the **qID R1240I Reader** Regulatory Compliance. It contains these topics:

- FCC Compliance
- CE Compliance
- RoHS EU Directive
- CE Declaration of Conformity
- FCC GRANT

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FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- a. Reorient or relocate the receiving antenna.
- b. Increase the separation between the equipment and receiver.
- c. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- d. Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modification not approved by CAEN RFID could void the user's authority to operate the equipment.

The device shall be used such that a minimum separation distance of 20cm is maintained between the reader and user's/nearby people's body.

Reference document: Test report n. FCC-13200 [RD3].

See § FCC GRANT pag. 30 for the qID R1240I FCC Compliance Certificate.

Download the *qID R1240I FCC Grant* and the *qID R1240I FCC Test Report* at the <u>qID R1240I web page</u>, (Documents section).

CE Compliance

Reference standard:

CEI EN 60950-1:2007

ETSI EN 301 489-1 V. 1.9.2:2011

ETSI EN 301 489-3 V. 1.4.1:2002

ETSI EN 302 208-2 V. 1.4.1:2011

CEI EN 50364:2011

Reference document: Test report n. 13200 [RD2].

See § CE Declaration of Conformity pag. 29 for the qID R1240I CE Compliance Certificate.

Download the *qID R1240I CE Declaration of Conformity* and the *qID R1240I CE Test Report* at the <u>qID R1240I web page</u>, (*Documents* section).

RoHS EU Directive

qID R1240I Reader is compliant with the EU Directive 2002/95/EC on the Restriction of the Use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).



ECAENRFID CE Declaration of Conformity

We

CAEN RFID Srl Via Vetraia, 11 55049 Viareggio (LU) Italy Tel.: +39.0584.388.398 Fax: +39.0584.388.959 Mail: info@caenrfid.com Web site: www.caenrfid.com

herewith declare under our own responsibility that the products:

| Code: | WR1240IXAAAA |
|--------------|--|
| Description: | R1240I - qID – Wearable Bluetooth UHF RFID Reader |
| and | |
| Code: | WR1240IXBAAA |
| Description: | R1240IB - qID – Wearable Bluetooth UHF RFID/BARCODE Reader |

correspond in the submitted version to the following standards:

CEI EN 60950-1:2007 ETSI EN 301 489-1 V. 1.9.2:2011 ETSI EN 301 489-3 V. 1.4.1:2002 ETSI EN 302 208-2 V. 1.4.1:2011 CEI EN 50364:2011

The present document declares that the specified product complies with the reported standards and satisfies the essential requirements of the European regulation R&TTE Directive 99/5/EC.

Date: 28/10/2013

v etraia. 1 Via 5049 VIAREGGIO TALY VAT IT 02032050466

Adriano Bigongiari (Chief Executive Officer)

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On the basis of this declaration, this product will bear the following mark:

FCC Grant

TCB

TCB

GRANT OF EQUIPMENT AUTHORIZATION Certification Issued Under the Authority of the

Federal Communications Commission By:

> EMCCert Dr. Rasek GmbH Stoernhofer Berg 15 91364 Unterleinleiter, Germany

Date of Grant: 10/18/2013 Application Dated: 10/18/2013

CAEN RFID srl via Vetraia, 11 - 55049 Viareggio (LU) - ITALY Viareggio, 55049 Italy

Attention: Adriano Bigongiari, CEO

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER: Name of Grantee: CAEN RFID srl Notes:

UVECAENRFID014

Equipment Class: Part 15 Class B Computing Device Peripheral R1240I/R1240IB -qID- RFID / RFID+Barcode Reader



Emission <u>Designator</u>

Grant Notes