TECHNICAL INFORMATION MANUAL

Revision 4 – 08 January 2018

qIDmini R1170I

Keyfob Bluetooth UHF RFID Reader

Made for iPhone iPad

Authorized Reseller:
RFID4UStore
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CAENRFID

Visit qIDmini R1170I web page, 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 qIDmini R1170I Keyfob Bluetooth UHF RFID Reader.

This manual refers to:

- **qID mini firmware revision ≥ 2.8.0**
- **SDK (Software Development Kit) revision ≥ 4.7.0**

Change Document Record

Date	Revision	Changes	Pages
23 Jun 2014	00	Preliminary release	-
08 Jul 2014	01	Added note in the *Tab. 1.2: qIDmini R1170I Power LED Status Table*	9
		Added warning in the *Charging* paragraph	10
11 Dec 2015	02	Added *qIDmini Regulatory Compliance* chapter	66
		Modified *Product Description* paragraph	2
		Modified *Tab. 8.1: qIDmini R1170I Configuration Menu*	54
		Modified *Introduction* paragraph in the *qIDmini Configuration Menu* chapter	53
		Added *qIDmini OFFLINE profile* chapter	44
		Modified *PROFILE* paragraph	55
		Added *CLOCK* paragraph	57
		Added *RA0005 - qDock - qIDmini docking station* in *Accessories* and *Ordering Options* paragraph	11, 12
		Modified *Introduction* paragraph in the *Getting Started* chapter	13
		Modified *USB Communication Setup* paragraph in the *qIDmini HID profile, qIDmini EASY2RD Profile* and *qIDmini OFFLINE profile* chapter	26, 40, 44
		Added *HID profile options* paragraph	33
		Added *EASY2READ profile options* paragraph	18
24 Oct 2016	03	Added qIDmini NF in *Product Description* and *Ordering Options* paragraph	7, 12
		Added *Technical Specifications Table (Mod. R1170IENFHD and R1170IUNFHD)*	62
		Added *qIDmini BUFFER profile*	46, 53, 55
		Added new options in the *qIDmini Configuration Menu*: *OPTIONS* and *PINCODE*	53, 58
		Added new options in the *HID profile options*: *PREFIX*, *SUFFIX and KBOARD*	34, 35
		Added qIDmini NF certifications	66÷73
08 Jan 2018	04	Modified ISO18000-6C in ISO18000-63	7, 61, 62
		Removed Development kit	12
		Modified *DISPLAY* paragraph in *qIDmini EASY2RD Profile* chapter	18
		Modified *FORMAT, DISPLAY, APPLEKB, PREFIX, SUFFIX and KBOARD* paragraphs in *qIDmini HID profile* chapter	33÷35
		Modified *DISPLAY* paragraph in the *qIDmini OFFLINE profile* chapter	45
		Modify *Introduction, PROFILE, CLOCK, PINCODE paragraph* in the *qIDmini Configuration Menu* chapter	53,55,57,58
		Added *Tab. 8.2: Conducted power- radiated power* in the *POWER* paragraph of the *qIDmini Configuration Menu* chapter	57

		Modified *Tab. 8.1: qIDmini R1170I Configuration Menu*	54
		Modified *qIDmini Regulatory Compliance*	66
		Modified *RF Power* in the *Tab. 10.1: qIDmini R1170I Technical Specifications Table*	61

Reference Document

[RD1] G.S.D. s.r.l. - Report Federal Communication Commission (FCC) – R1170IU – qID mini Keyfob Bluetooth UHF RFID Reader. Test report n. FCC-17337 Rev. 00 – 17 May 2017

[RD2] G.S.D. s.r.l. - Report Federal Communication Commission (FCC) – R1170IU – qID mini Keyfob Bluetooth UHF RFID Reader. Test report n. FCC-17337B Rev. 00 – 17 May 2017

[RD3] EPCglobal: EPC Radio-Frequency Identity Protocols Class-1 Generation-2 UHF RFID Protocol for Communications at 860 MHz – 960 MHz, Version 2.0.1 (April, 2015).

[RD4] G.S.D. s.r.l. - Report Federal Communication Commission (FCC) – R1170IUNF – qID mini Keyfob Bluetooth UHF RFID Reader. Test report n. FCC-16601B Rev. 01 – 10 June 2016

[RD5] G.S.D. s.r.l. - Report Federal Communication Commission (FCC) – R1170IUNF – qID mini Keyfob Bluetooth UHF RFID Reader. Test report n. FCC-16601 Rev. 03 – 08 July 2016

[RD6] Shanghai Wu Wei Radio Testing Laboratory Corporation - Radio Transmission Equipment Type Approval (SRRC) – R1170IUNF – qID mini Keyfob Bluetooth UHF RFID Reader. Test report n. SRTL/BG-A20160150123– 23 September 2016

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Federal Communications Commission (FCC) Notice

This device was tested and found to comply with the limits set forth in Part 15 of the FCC Rules. Operation is subject to the following 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. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This device generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, the product may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case, the user is required to correct the interference at their own expense. The authority to operate this product is conditioned by the requirements that no modifications be made to the equipment unless the changes or modifications are expressly approved by CAEN RFID.

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

Product Description

The qIDmini (Model R1170I) is a handheld reader of the easy2read© product family, compliant with UHF RFID 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 UHF 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 application, 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 “Offline 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.

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

The reader is available in **ETSI**, **FCC** or **SRRC** version (see § *Ordering Options* page 12):

- 865.600÷867.600 MHz (ETSI EN 302 208 v. 1.4.1) (Mod. R1170IEHIDP, R1170IEAPLP and R1170IENFHP)
- 902÷928 MHz (FCC part 15.247) (Mod. R1170IUHIDP, R1170IUAPLP and R1170IUNFHP)
- 920.625÷924.375 MHz (SRRC RFID national standards) (Mod. R1170IUNFHD – OPT. WPE1170NFACN)

The reader is available in two models: **APPLE** or **HID** (see § *Ordering Options* page 12):

- APPLE model
  - EASY2RD profile: the reader can be connected to all the devices supporting the Bluetooth SPP profile and to iOS devices.
  - HID profile: not supported.
- HID model
  - EASY2RD profile: the reader can be connected to all the devices supporting the Bluetooth SPP profile but not to iOS devices.
  - HID profile: the reader can be connected to all the devices supporting the Bluetooth HID profile (keyboard emulation), including iOS devices.
  - OFFLINE profile: in case of no communication link available, the reader works in offline mode. The operator goes around collecting codes and then connects the reader to the cable or, better, to the docking station in order to download the data. Stored data can be downloaded to any device except for iOS devices.
  - BUFFER profile: the reader is Bluetooth connected to the host and executes inventories of tags on button press and stores the EPCs into the internal buffer, even in case of temporary missing of Bluetooth communication. When the Bluetooth link is up, the reader can send the buffered data if requested by the host. Stored data can be downloaded to any device except for iOS devices.

For more information about EASY2RD, HID, OFFLINE and BUFFER profiles, please refer to § *PROFILE* paragraph page 55.

Front panel

The qIDmini R1170I front panel houses the following LEDs and buttons (see figure below):

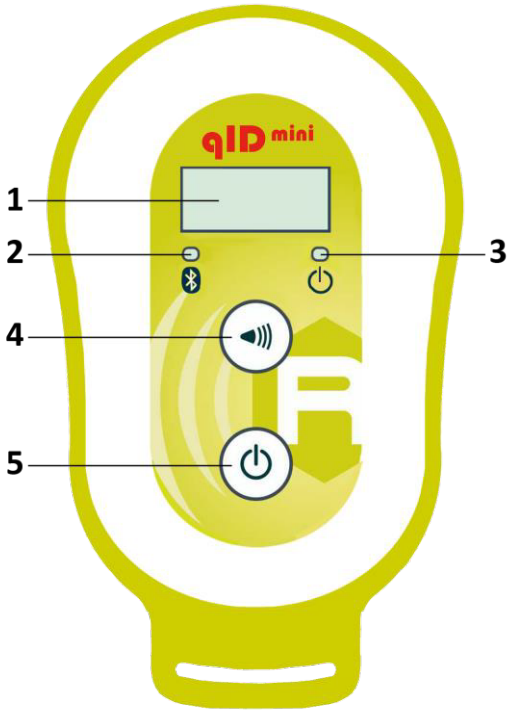


Fig. 1.1: qIDmini R1170I Front Panel

No.	Name	Description
1	Display	LCD Alphanumeric (8 chars x 2 lines)
2	Link LED	Indicates the Bluetooth and USB/charger connection (see § *Tab. 1.3: qIDmini R1170I Bluetooth LED status table)*
3	Power LED	Indicates the reader status and battery level (see § *Tab. 1.2: qIDmini R1170I Power LED Status Table*)
4	Trigger button	Inventory mode: press to perform an inventory cycle (hold down the button to repeat inventory cycles)
		Menu mode: quick press to scroll, hold down for a few seconds to activate an option
5	Power button	Press the button to switch on the reader, press for at least 2 seconds to switch it off
		Menu mode: press to return to the main menu

Tab. 1.1: qIDmini R1170I Front Panel LEDs and Buttons

Status	Description
Green	Reader is active and the battery charge is in the range 35÷100%
Orange	Reader is active and the battery charge is in the range 15÷35%
Red[1]	Reader is active and the battery charge is in the range 0÷15%

Tab. 1.2: qIDmini R1170I Power LED Status Table

Status	Description
OFF	No connection established
Orange	USB cable connected (both to a PC or to the AC power adapter)
Blue	Bluetooth connected

Tab. 1.3: qIDmini R1170I Bluetooth LED status table

[1] Blinking red LED at power on indicates that the battery is empty and a recharge shall be performed

Charging

The qIDmini R1170I is supplied with an USB cable and a power supply for charging (see § *Accessories* page 11).

When you put the reader in charge, the display powers up and shows the blinking charge indicator. The fixed indication "charge 100%" informs you that the charging is complete.

Warning*:* EMPTY BATTERY CONDITION
In case that the battery is fully discharged, the display may not turn on when the charger is connected. In this case you have to leave the reader connected to the charger for at least 5 minutes, then disconnect the USB cable, perform the reset procedure (see § *RESET THE QIDMINI READER* page 52), switch off the reader by pressing the power button and then connect the USB cable again.

USB connector

A micro USB Type B socket connector is located in the bottom side of qIDmini R1170I and can be used to connect the reader to an USB host port or to an AC/DC battery charger.

Accessories

Check for the supplied accessories below:

No. 1 USB cable	No. 1 Power supply
No. 1 Lanyard	No. 1 Retractable Roller

Fig. 1.2: qIDmini R1170I Accessories

Optional Accessories (not available for qIDminiNF version):

RA0005 qDock - qIDmini docking station

Ordering Options

	Code	Description
Reader	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
Customization	WPE1170NFACN	R1170IUNFHP - China - Customization
Accessories	WRA0005XAAAA	RA0005 - qDock - qIDmini docking station - White

In the following table it is shown the compatibility between the Apple/HID models and different Operating Systems (Android, PC and iOS):

APPLE MODEL[2]	PROFILES	
	EASY2RD	HID
ANDROID	√	-
PC	√	-
iOS	√	-

HID MODEL[3]	PROFILES			
	EASY2RD	HID	OFFLINE	BUFFER
ANDROID	√	√	√	√
PC	√	√	√	√
iOS	-	√	-	-

Tab. 1.4: Compatibility table between the Apple/HID models and different OS

[2] APPLE Model Ordering Options: WR1170IEAPLP, WR1170IUAPLP, WR1170IDKEAP, WR1170IDKUAP

[3] HID Model Ordering Options: WR1170IEHIDP, WR1170IUHIDP, WR1170IDKEHI, WR1170IDKUHI, WR1170IENFHP, WR1170IUNFHP

2 GETTING STARTED

Introduction

This quickstart guide will help you to get started with your qIDmini (Model R1170I) reader.

The qIDmini R1170I has two communication interfaces: USB and Bluetooth. The last one is the preferred communication interface 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.

In the § *QIDMINI CONFIGURATION MENU* page 53 you can choose between three different profile options:

- **EASY2RD** (factory default): choosing this option you select the CAEN RFID easy2read communication protocol. Select this option in order to control the reader using the CAEN RFID Easy Controller Application or the SDK (Software Development Kit) library. For details on the use with the EASY2RD profile please refer to § *QIDMINI EASY2RD PROFILE* chapter page 18.
- **HID**[4]: choosing this option you select the keyboard emulation protocol. For details on the use of the HID profile please refer to § *QIDMINI HID PROFILE* chapter page 33.
- **OFFLINE***:* choosing this option you select the *stand-alone mode*. For details on the use on the OFFLINE profile please refer to § *qIDmini OFFLINE PROFILE* chapter page 44.
- **BUFFER***:* choosing this option you select the *buffered read mode.* For details on the use on the BUFFER profile please refer to § *qIDmini BUFFER PROFILE* chapter page 46.

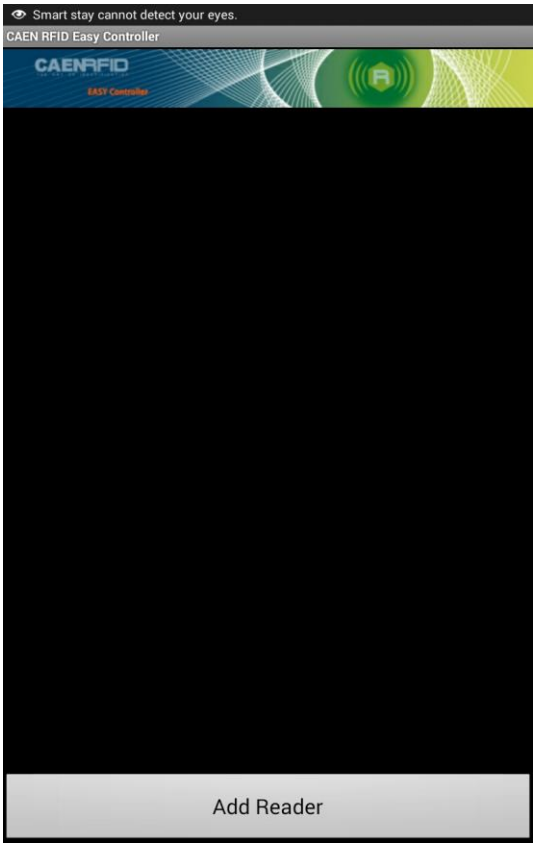
The reader is sold with the factory profile set to EASY2RD. This guide helps you to getting started with your reader using the EASY2RD profile.

Bluetooth Communication Setup using the Easy Controller for Android

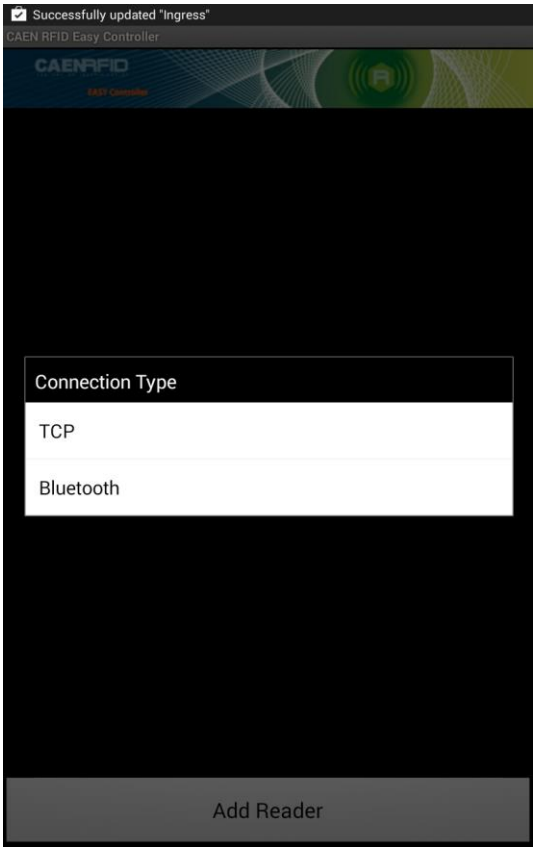
1. Download the *CAEN RFID Easy Controller for Android App* from the qIDmini R1170I web page, by clicking on the Android APP on Google Play icon.
2. Launch the *CAEN RFID Easy Controller for Android App.*

[4] HID profile is not available for qIDmini R1170I with APPLE profile (ordering options: WR1170IEAPLP, WR1170IUAPLP, WR1170IDKEAP, WR1170IDKUAP)

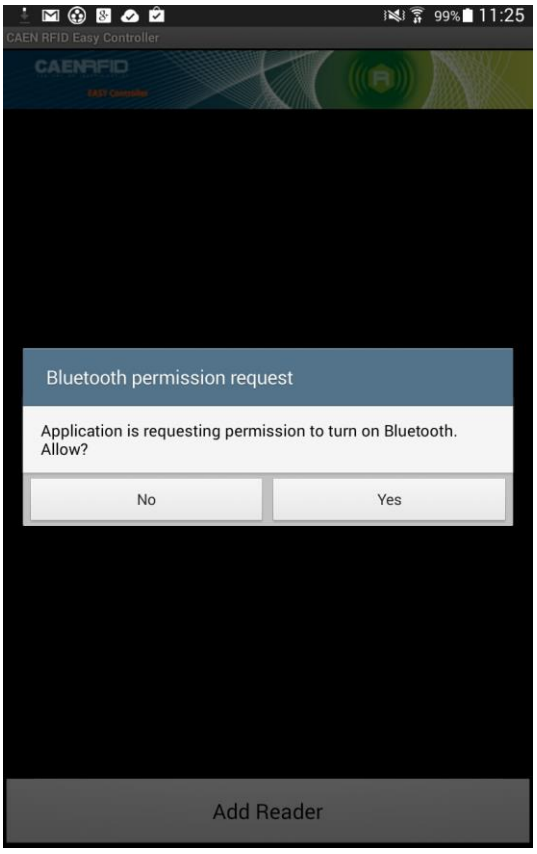
3. Click on "*Add reader*":



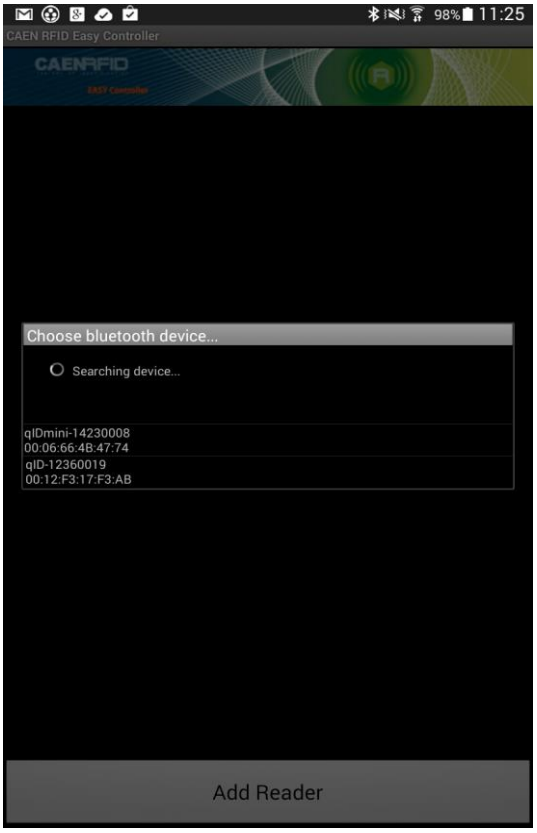
4. Click on "*Bluetooth"* in the *"Connection Type"* window:



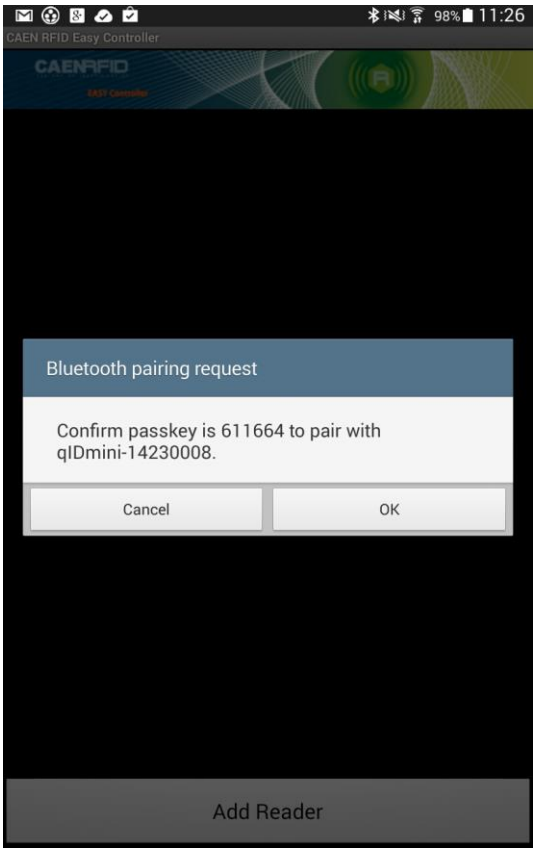
5. Click on *"yes"* to confirm the *Bluetooth permission request*:



6. Select the qIDmini R1170I reader from the list of Bluetooth devices:

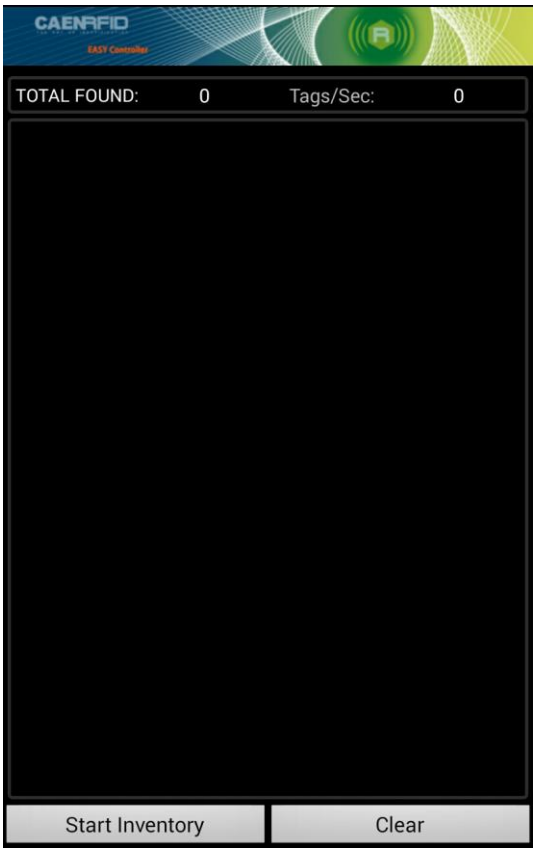


7. Confirm the passkey:

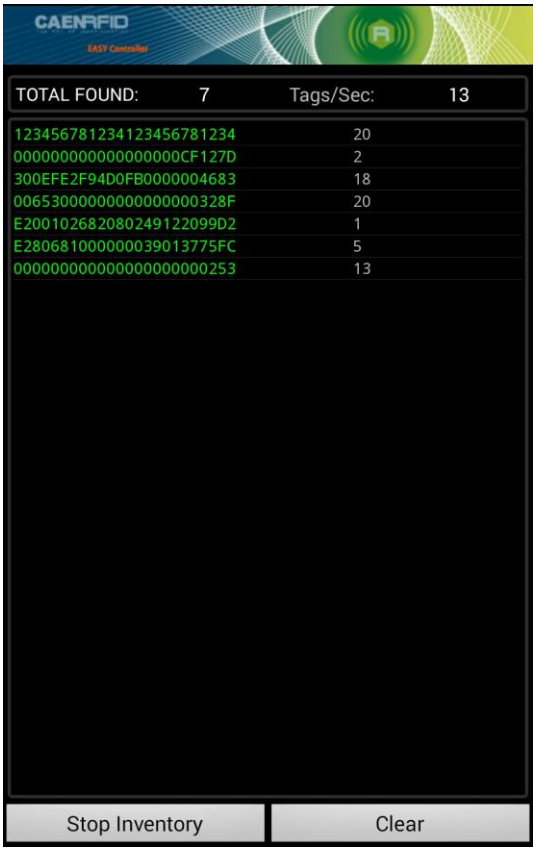


8. Once the connection is established the Bluetooth blue light turns on.
9. To start using your qIDmini R1170I, click on the reader line:

10. Click on "*Start Inventory*":



11. A list of the read tags is shown:



3 QIDMINI EASY2RD PROFILE

Introduction

Choosing the **EASY2RD** profile option you select the CAEN RFID easy2read communication protocol. Select this option in order to control the reader using the CAEN RFID Easy Controller Application or the SDK (Software Development Kit) library.

For details on the available profiles and on the activation method please refer to § *PROFILE* paragraph page 55.

Note that the **APPLE** model reader (see § *Ordering Options* page 12) can be connected to all devices using the EASY2RD profile, while the **HID** model reader can be connected through the EASY2RD profile to all devices except the iOS ones.

In the following table it is shown the compatibility between the Apple/HID models and different Operating Systems (Android, PC and iOS) in the EASY2RD profile:

	ANDROID	PC	iOS
APPLE MODEL[5]	√	√	√
HID MODEL[6]	√	√	-

Tab. 3.1: Compatibility table between the Apple/HID models and different OS in the EASY2RD profile

EASY2READ profile options

To enter the EASY2READ profile options, turn on the reader; the display shows information on the currently active profile (EASY2READ) and then the message "ready" informs you that the reader is operating. Press quickly the *power* button to enter the EASY2READ profile options:

- DISPLAY

DISPLAY

Hold down the trigger button to enter the *Display* Option:

- CONTROL. Hold down the trigger button to enter the CONTROL options:
  - LOCAL: the qIDmini display shows the number of the read tags.
  - REMOTE: the display is controlled by the SW running on the connected host (PC, smartphone or tablet). To customize the message shown on the display you can develop your own application and use the *PrintScreen* method to send the custom string to the reader. For example, the application can receive the EPC read by the reader, look for the code inside a list or a database and send the a corresponding string to the display (“correct tag”, “authorized”, “OK”, “denied”, or any other string that is meaningful for your solution)

    Use the function *PrintScreen* (for more information, visit the R1170I qIDmini web page, *Downloads* section and download the *CAEN RFID API Reference Manual*) to customize the information displayed by the reader:

[5] APPLE Model Ordering Options: WR1170IEAPLP, WR1170IUAPLP, WR1170IDKEAP, WR1170IDKUAP

[6] HID Model Ordering Options: WR1170IEHIDP, WR1170IUHIDP, WR1170IDKEHI, WR1170IDKUHI, WR1170IENFHP, WR1170IUNFHP

C# representation:

```
public void      PrintScreen(
                        string      Text,
                        string      TerminalType
                 )
```

Parameters:

Name	Description
Text	An arbitrary ASCII string.
TerminalType	The terminal type value. Allowed value is only 0 (VT100)

The currently active CONTROL is marked with an asterisk. By default the LOCAL CONTROL is enabled.

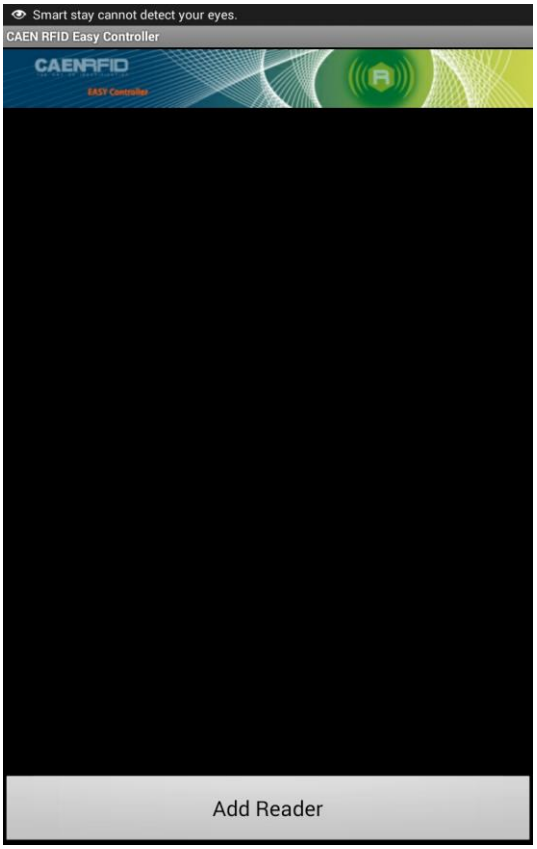
To activate a different CONTROL, scroll through the CONTROL options by pressing quickly the trigger button until LOCAL or REMOTE is displayed. Hold down the trigger button for a few seconds: the name of the chosen option will begin to flash. Once activated, the device returns to the main menu.

The currently active state is marked with an asterisk. By default the CONTROL is set to LOCAL.

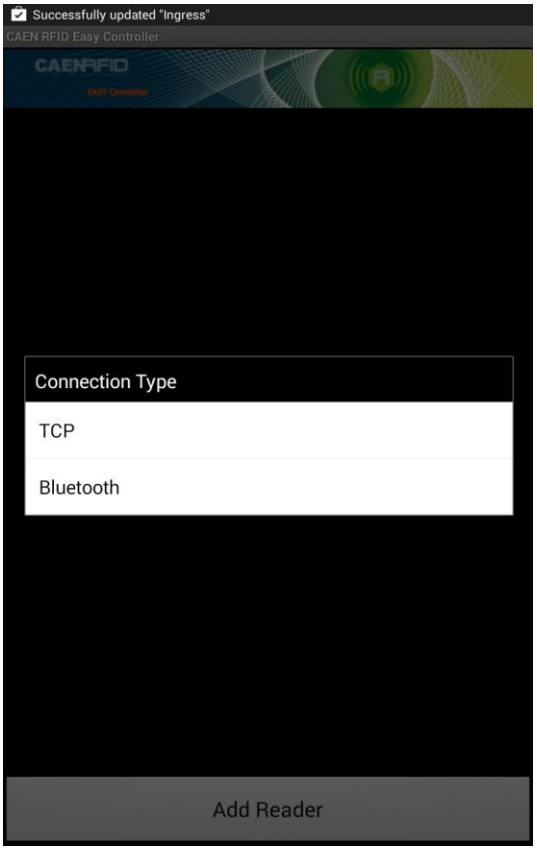
Android devices

Bluetooth Communication Setup using the Easy Controller for Android

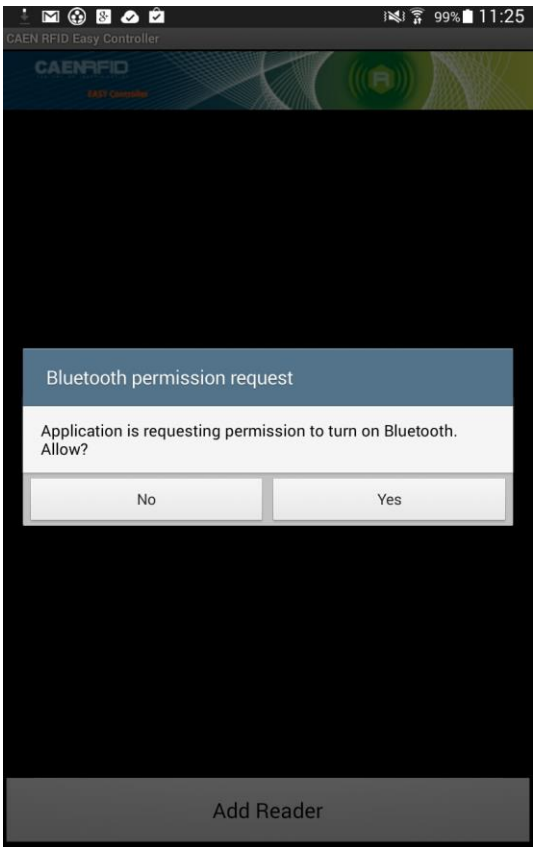
1. Download the *CAEN RFID Easy Controller for Android App* from the qIDmini R1170I web page, by clicking on the Android App on Google Play icon.
2. Launch the *CAEN RFID Easy Controller for Android App.*
3. Click on "*Add reader*":



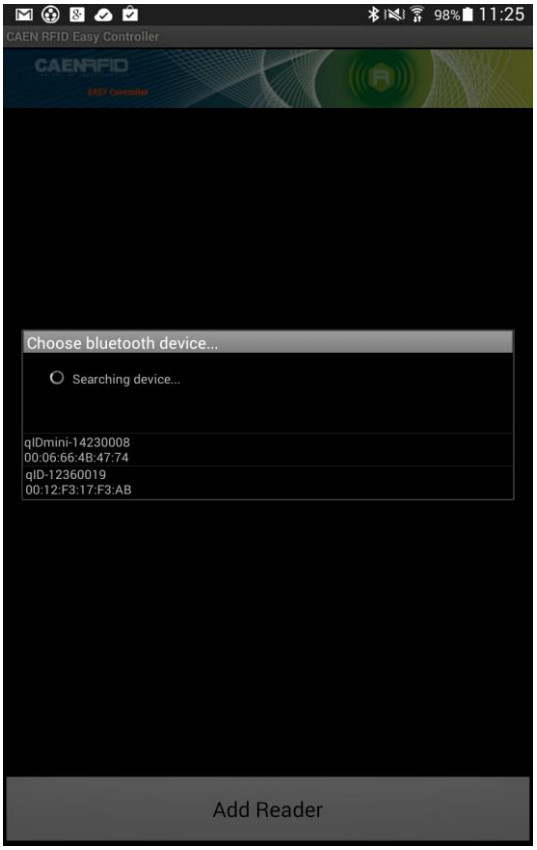
4. Click on "*Bluetooth"* in the *"Connection Type"* window:



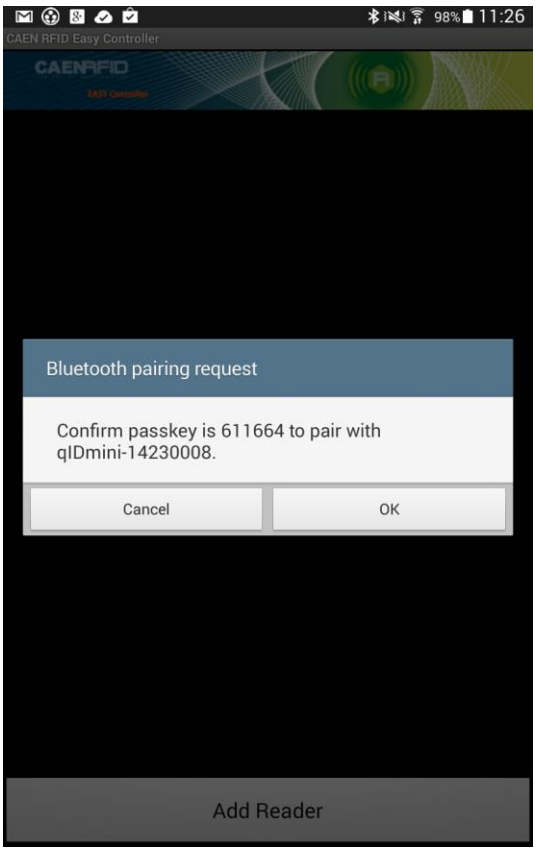
5. Click on *"yes"* to confirm the *Bluetooth permission request*:



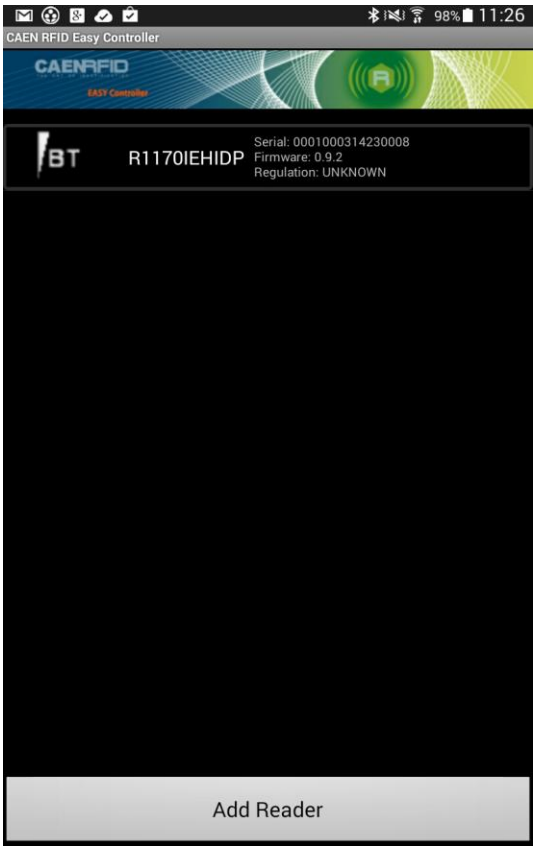
6. Select the qIDmini R1170I reader from the list of Bluetooth devices:



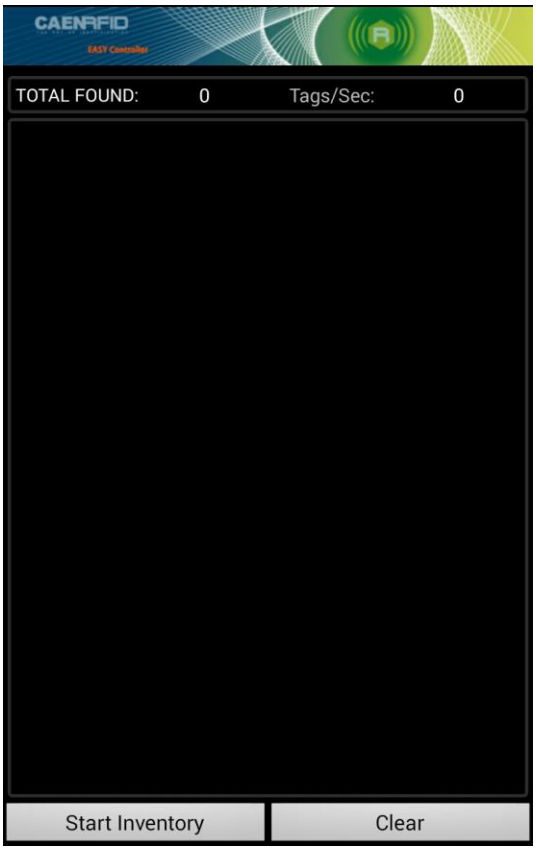
7. Confirm the passkey:



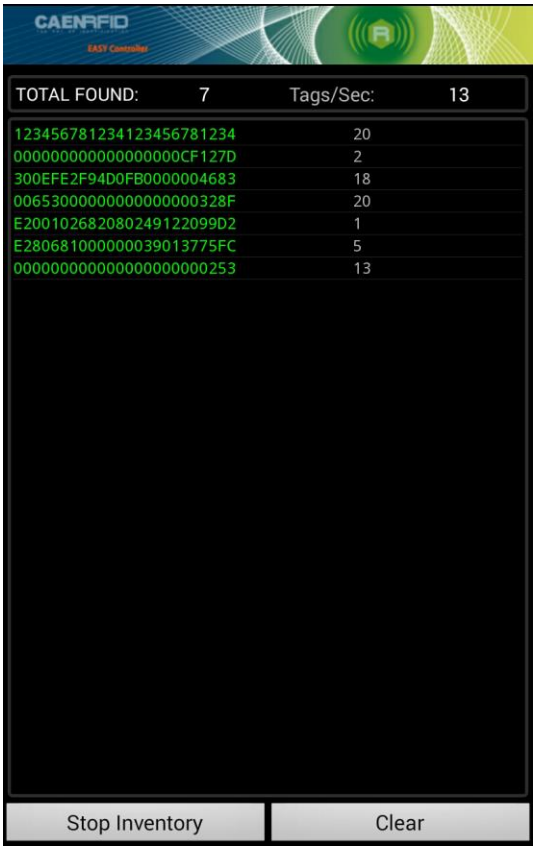
8. Once the connection is established the Bluetooth blue light turns on.
9. To start using your qIDmini R1170I, click on the reader line:



10. Click on "*Start Inventory*":



11. A list of the read tags is shown:

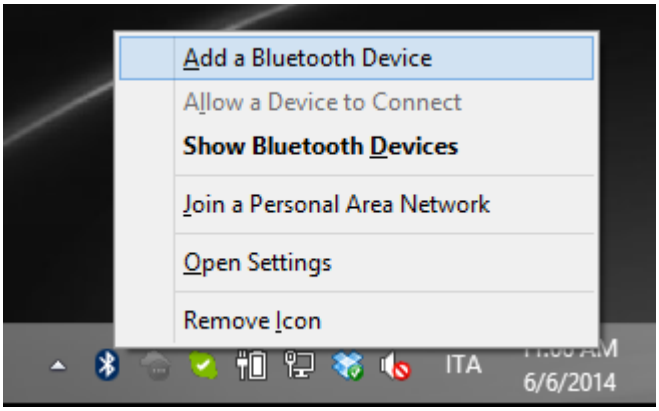


Windows PCs

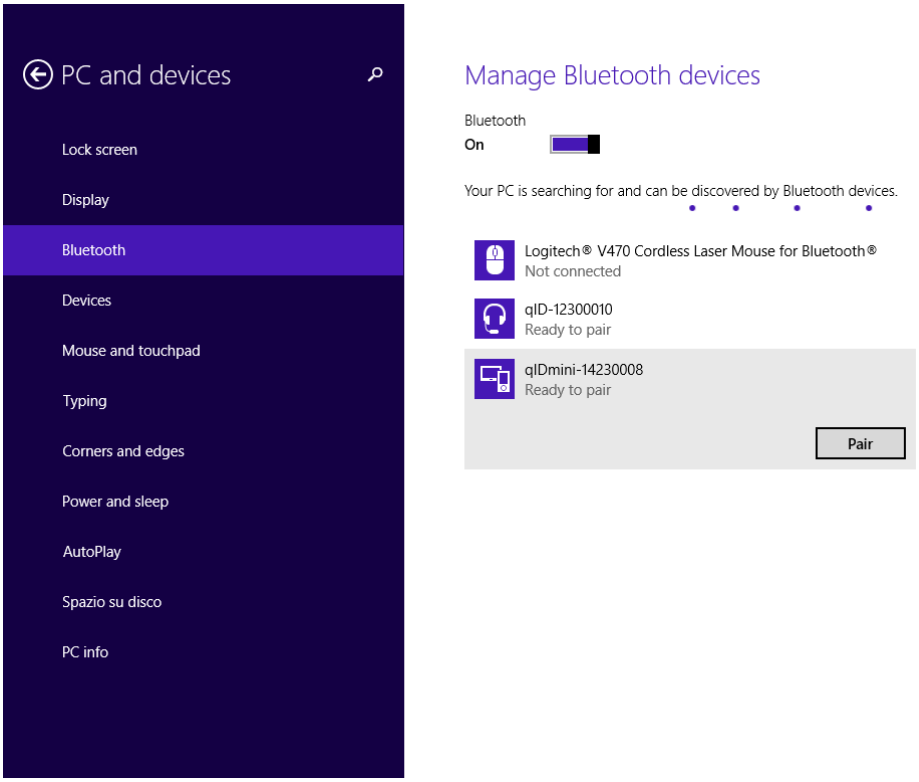
Bluetooth Communication Setup

1. **In case of Windows 8 Operating System**:

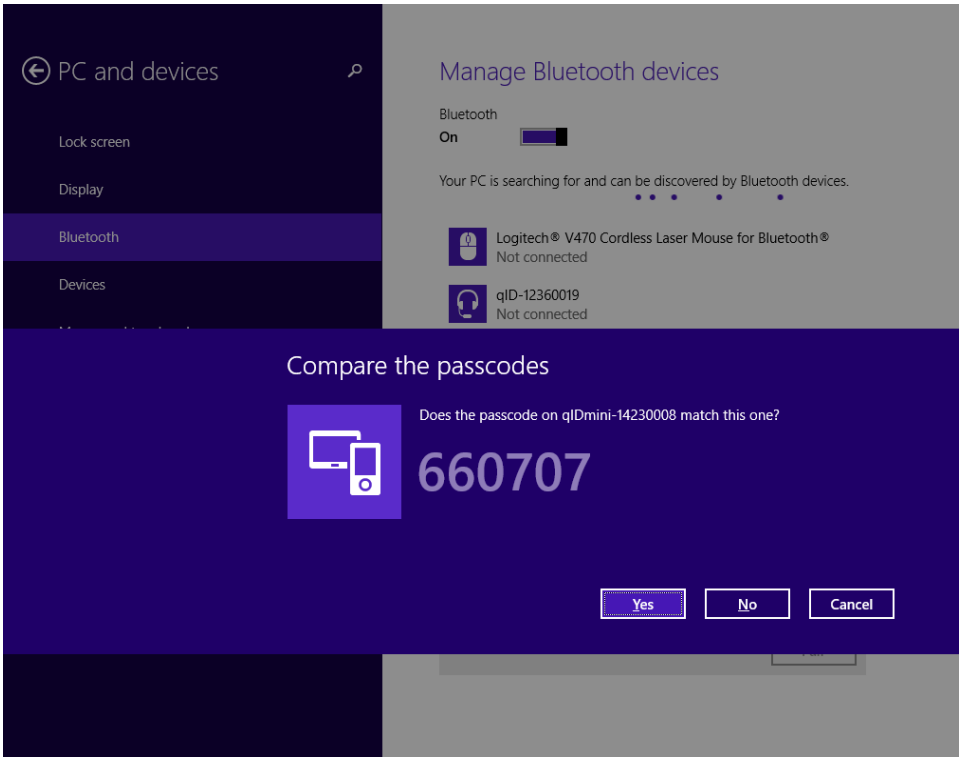
   Right click on the *Bluetooth* icon in the taskbar -> *Add a Bluetooth Device*:



   Select the qID mini R1170I reader and click on "*Pair*":



Click on "*yes*" to confirm the passcode:



In case of Windows XP Operating System, when discovered by the host, the qIDmini reader can be identified by its Bluetooth device name and paired using the pass-key; both parameters are provided below:

- Bluetooth device name: "qIDmini" + device serial number
- Pass-key: 1234

2. Once the connection is established the Bluetooth blue light turns on.

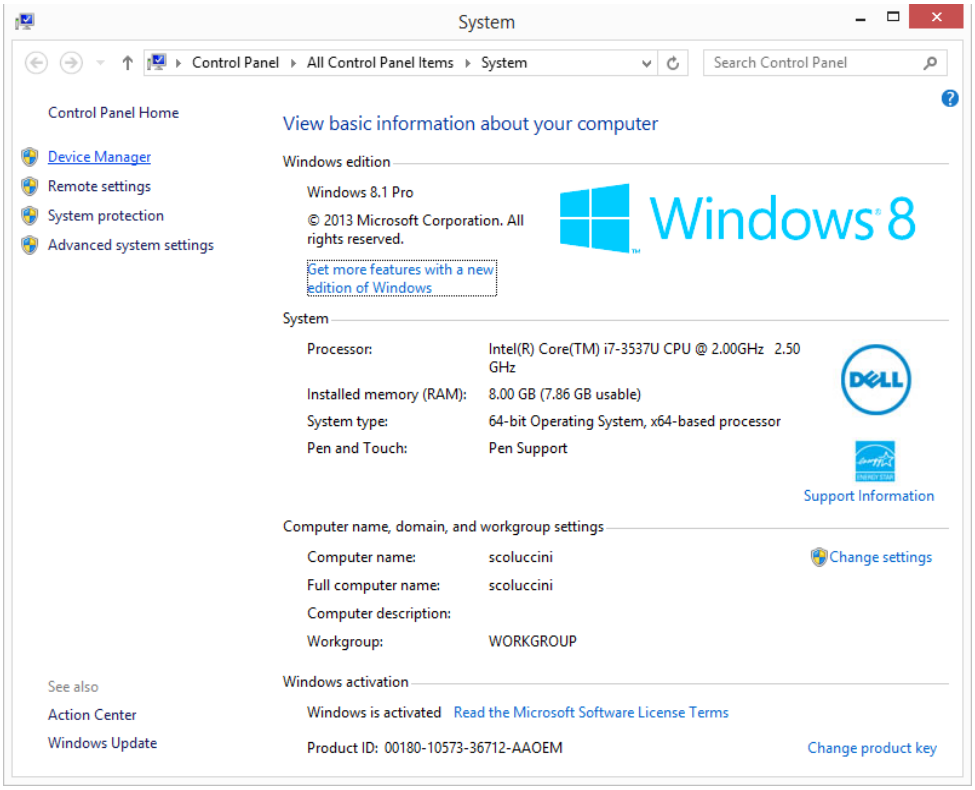
Now you can use the CAEN RFID Easy Controller Application to control the reader. For details refer to § *Connecting the qIDmini using the Easy Controller for Windows* page 28.

Warning: Note that in the EASY2RD profile holding down the *trigger* button activates the tag inventory only if the continuous mode is active (see the function *EventInventoryTag Method* in the *CAEN RFID API Reference Manual* that can be download from qIDmini R1170I web page, *Documents* section).

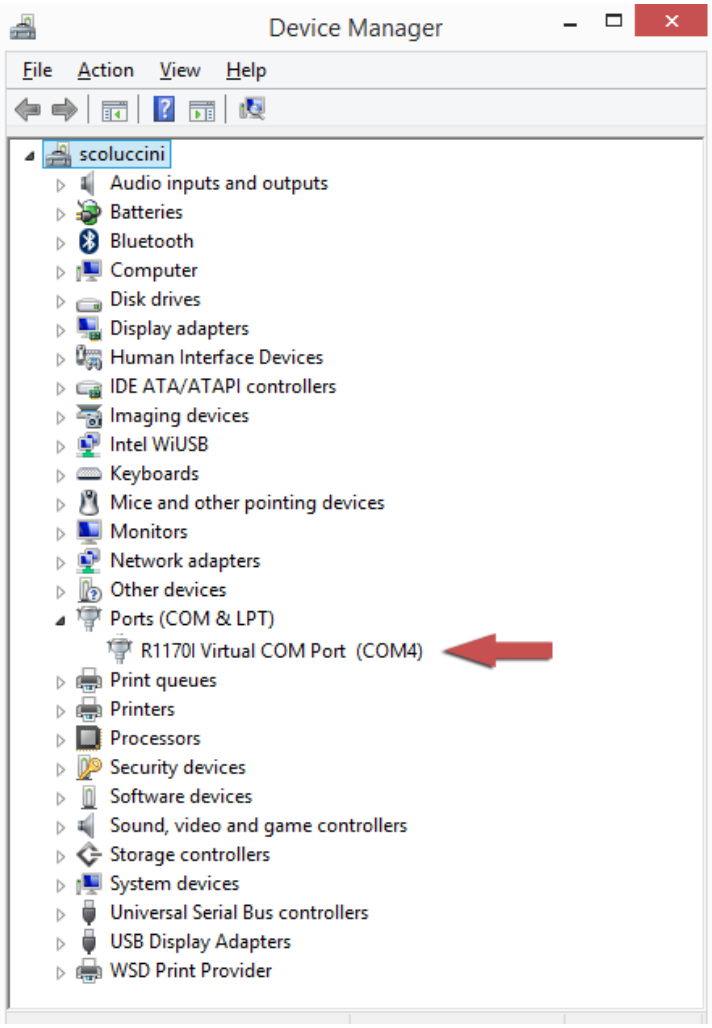
USB Communication Setup

The qIDmini 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 driver.

1. Power OFF the reader, plug the USB cable into the qIDmini USB port and then power ON the reader again.
2. In order to connect the qIDmini 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 from the qIDmini R1170I web page, *Downloads* section or from the Software and Firmware download area.
3. Open the System properties: go to *Control Panel* → *All Control Panel Items* → *System* and click on *Device Manager*.



4. After having installed the driver, the reader is detected by the PC as an emulated serial port (VCP):



Now you can use the CAEN RFID Easy Controller Application to control the reader. For details refer to § *Connecting the qIDmini using the Easy Controller for Windows* page 28.

Warning: Note that in the EASY2RD profile holding down the *trigger* button activates the tag inventory only if the continuous mode is active (see the function *EventInventoryTag Method* in the *CAEN RFID API Reference Manual* that can be download from qIDmini R1170I web page, *Documents* section).

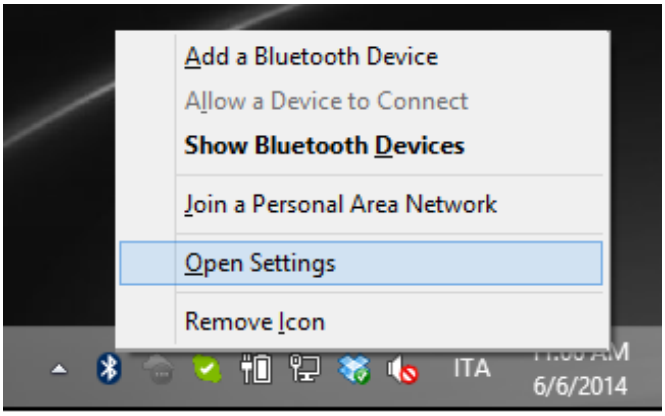
Connecting the qIDmini using the Easy Controller for Windows

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.

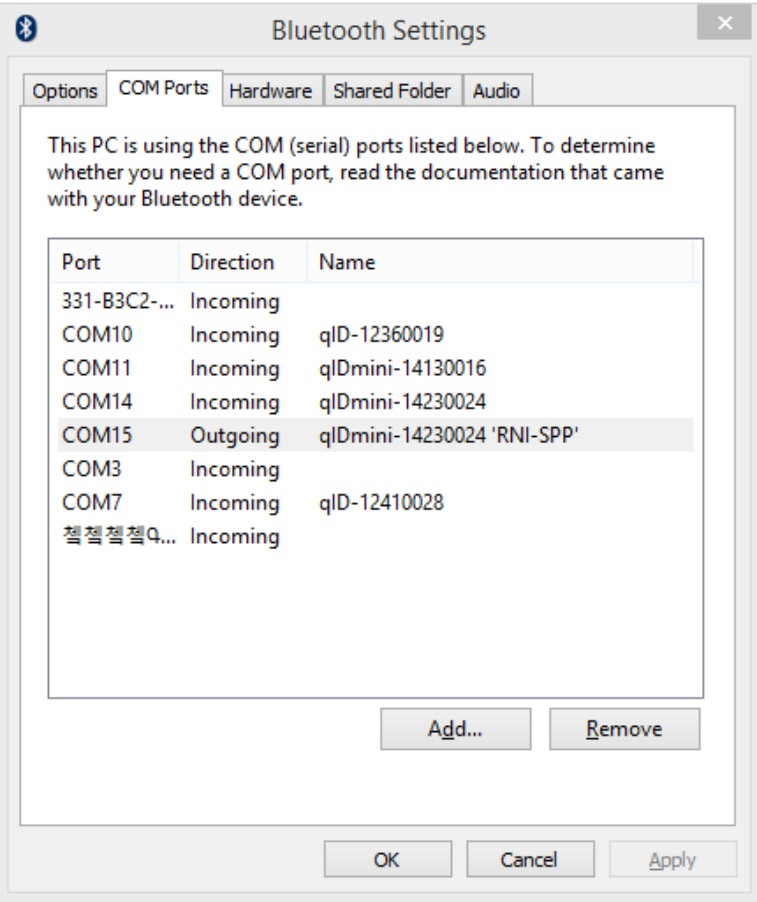
The activation of the EASY2RD profile is required to connect the qIDmini using the Easy Controller application for Windows.

Follow the steps below to connect the qIDmini reader using the Easy Controller for Windows via Bluetooth:

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 qIDmini reader to your PC using either the USB or the Bluetooth connection.
3. Right click on the *Bluetooth* icon in the taskbar -> *Open Settings*:



4. Look for the emulated serial port in the “Bluetooth Settings”:



5. Launch the CAEN RFID Easy Controller application.
6. On the main application window click on *File* → *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.

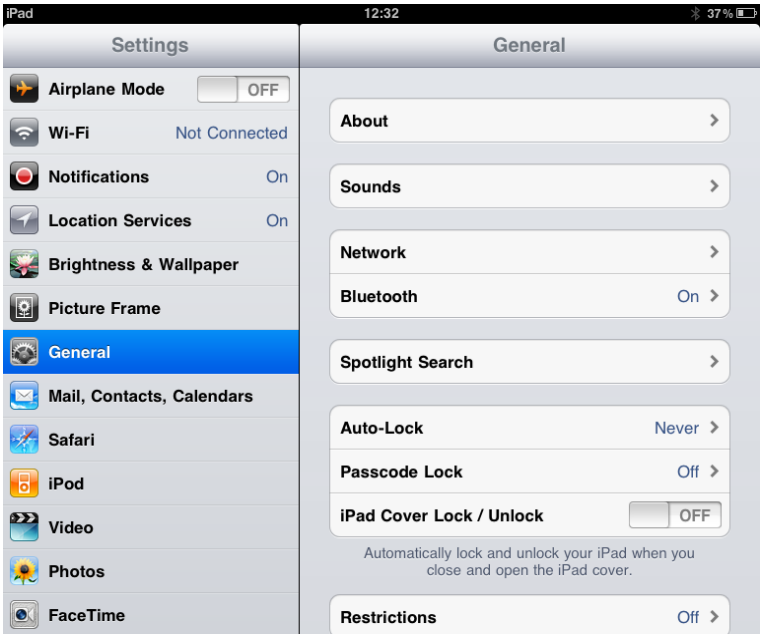
For more information on the CAEN RFID *Easy Controller for Windows* application usage, please refer to the relevant user manual: you can download it from the qIDmini R1170I web page, *Downloads* section or in the Manual and Documents web area.

A CAEN RFID *Easy Controller for Android* application is also available. For more information download the CAEN RFID Easy Controller for Android at software & firmware web page.

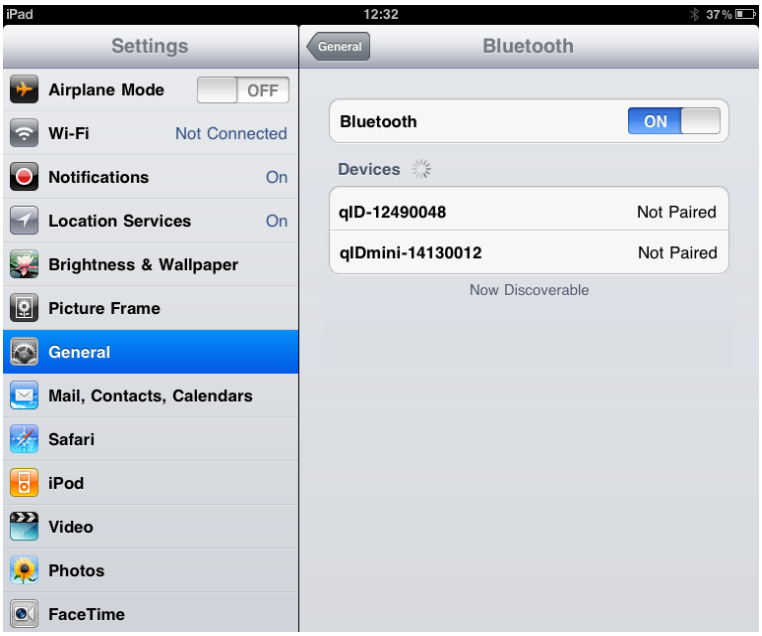
iOS devices

Bluetooth Communication Setup

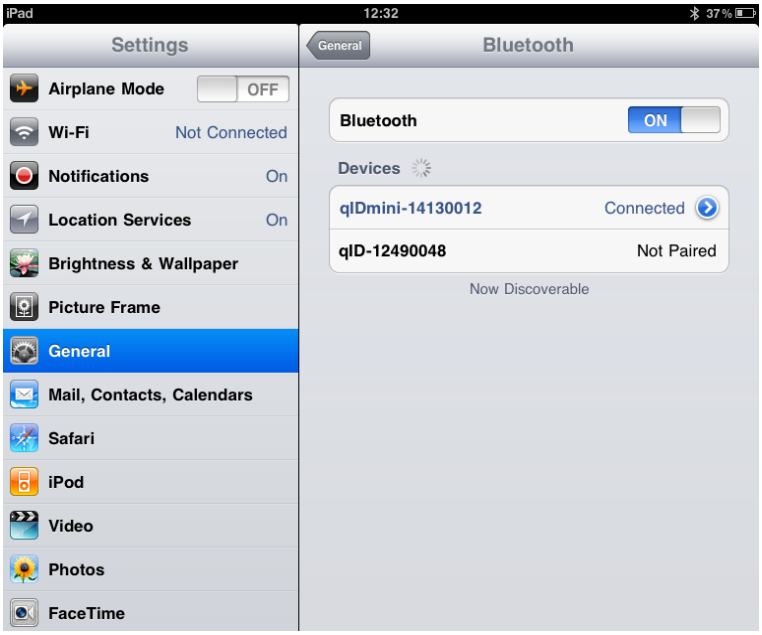
1. On your iOS device, go to Setting and enable the Bluetooth:



2. A list of the Bluetooth available devices is shown:



3. Click on the qIDmini R1170I reader and wait while the pairing is completed:



4. Once the connection is established the Bluetooth blue light turns on.

5. Download the *CAEN RFID qID Start App* from the qIDmini R1170I web page, by clicking on the App Store icon.

6. Launch the *qID Start App:*

7. Now you can start the tag inventory just clicking on button. You can see the EPC of the tags displayed on the screen:

4 QIDMINI HID PROFILE

Introduction

Choosing the **HID** profile option you select the keyboard emulation protocol.

For details on the available profiles and on the activation method please refer to § *PROFILE* paragraph page 55.

Note that the **APPLE** model reader (see § *Ordering Options* page 12) does not implement the Bluetooth *HID profile,* while the **HID** model reader can be connected through the *HID profile* to all the devices, including the iOS ones.

In the following table it is shown the compatibility between the Apple/HID models and different Operating Systems (Android, PC and iOS) in the HID profile:

	ANDROID	PC	iOS
APPLE MODEL[7]	-	-	-
HID MODEL[8]	√	√	√

Tab. 4.1: Compatibility table between the Apple/HID models and different OS in the HID profile

HID profile options

To enter the HID profile options, turn on the reader, the display shows information on the currently active profile (HID) and then the message "ready" informs you that the reader is operating. Press quickly the *power* button to enter the HID profile options:

- FORMAT
- DISPLAY
- APPLEKB
- PREFIX
- SUFFIX
- KBOARD

FORMAT

In the HID profile you can set different EPC format:

- **HEX:** The EPC code (96 bits long) is represented as a hexadecimal number, that is 24 hexadecimal digits (96/4=24).
- **ASCII:** The EPC code (96 bits long) is interpreted as 8 bits at a time, each byte being represented as ASCII character. As a result, there is a string of 12 ASCII characters (96/8 = 12).

The currently active format is marked with an asterisk. By default the EPC HID format is set to “HEX”.

To activate a different format, scroll through the FORMAT options by pressing quickly the *trigger* button until HEX or ASCII is displayed. Hold down the *trigger* button for a few seconds, the chosen option will begin to flash. Once activated, the device returns to the main menu.

[7] APPLE Model Ordering Options: WR1170IEAPLP, WR1170IUAPLP, WR1170IDKEAP, WR1170IDKUAP

[8] HID Model Ordering Options: WR1170IEHIDP, WR1170IUHIDP, WR1170IDKEHI, WR1170IDKUHI, WR1170IENFHP, WR1170IUNFHP

DISPLAY

Hold down the trigger button to enter the Display Option:

1. SCROLL: The EPC code is shown on the display and, if longer than the maximum display length, the flowing text permits to show the entire code. To enable/disable the display scroll, hold down the *trigger* button for a few seconds. The chosen option will begin to flash. Once activated, the device returns to the main menu.

   The currently active state is marked with an asterisk. By default the display scroll is disabled.

   If the display scroll is disabled, the display shows the last 8 characters of the tag EPC.

APPLEKB

Hold down the trigger button to send a request to the connected iOS device to open the virtual keyboard (on the iOS device).

PREFIX

The PREFIX option permits to specify a string of maximum 7 characters to add before the EPC when a tag is read.

The following list shows the accepted characters for the prefix:

```
'a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n', 'o', 'p', 'q',
'r', 's', 't', 'u', 'v', 'w', 'x', 'y', 'z', 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I',
'J', 'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R', 'S', 'T', 'U', 'V', 'W', 'X', 'Y', 'Z', '0',
'1', '2', '3', '4', '5', '6', '7', '8', '9', '{', '|', '}', '!', '"', '#', '$', '&', '(',
')', '*', '+', ',', '.', '/', ':', ';', '<', '=', '>', '?', '@', '[', ']', '^', '_', '-'
```

By default the prefix string is empty. To set the prefix, hold down the *trigger* button for a few seconds. The empty prefix string is shown. Press quickly the *trigger* button to change the *first* character. Then hold down the *trigger* button to save the first character. Press quickly the *trigger* button to change the *second* character. Then hold down the *trigger* button to save the second character and so on until the seventh character. Then press quickly the power button to fix the prefix string and then hold down the trigger button to save it. The prefix begins to flash and the reader returns to the main menu. It is possible to insert a prefix string shorter than 7 characters.

To return to the main menu, quickly press the *power* button.

To restore the empty string, go to PREFIX option and hold down the trigger button. The current active prefix is shown. Press quickly the trigger button to restore the empty string. Then press quickly the power button to fix the prefix string and then hold down the trigger button to save it.

SUFFIX

The SUFFIX option permits to specify a string of maximum 7 characters to add after the EPC when a tag is read.

The following list shows the accepted characters for the suffix:

```
'a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n', 'o', 'p', 'q',
'r', 's', 't', 'u', 'v', 'w', 'x', 'y', 'z', 'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I',
'J', 'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R', 'S', 'T', 'U', 'V', 'W', 'X', 'Y', 'Z', '0',
'1', '2', '3', '4', '5', '6', '7', '8', '9', '{', '|', '}', '!', '"', '#', '$', '&', '(',
')', '*', '+', ',', '.', '/', ':', ';', '<', '=', '>', '?', '@', '[', ']', '^', '_', '-'
```

By default the suffix string is empty. To set the suffix, hold down the *trigger* button for a few seconds. The empty suffix string is shown. Press quickly the *trigger* button to change the *first* character. Then hold down the *trigger* button to save the first character. Press quickly the *trigger* button to change the *second* character. Then hold down the *trigger* button to save the second character and so on until the seventh character. Then press quickly the power button to fix the suffix string and then hold down the trigger button to save it. The suffix begins to flash and the reader returns to the main menu. It is possible to insert a suffix string shorter than 7 characters.

To return to the main menu, quickly press the *power* button.

To restore the empty string, go to SUFFIX option and hold down the trigger button. The current active suffix is shown. Press quickly the trigger button to restore the empty string. Then press quickly the power button to fix the suffix string and then hold down the trigger button to save it.

KBOARD

The *KBOARD* options are the following:

- **QWERTY**: standard keyboard.
- **AZERTY**: French keyboard

The currently active keyboard is marked with an asterisk. By default the KBOARD is set to “QWERTY”.

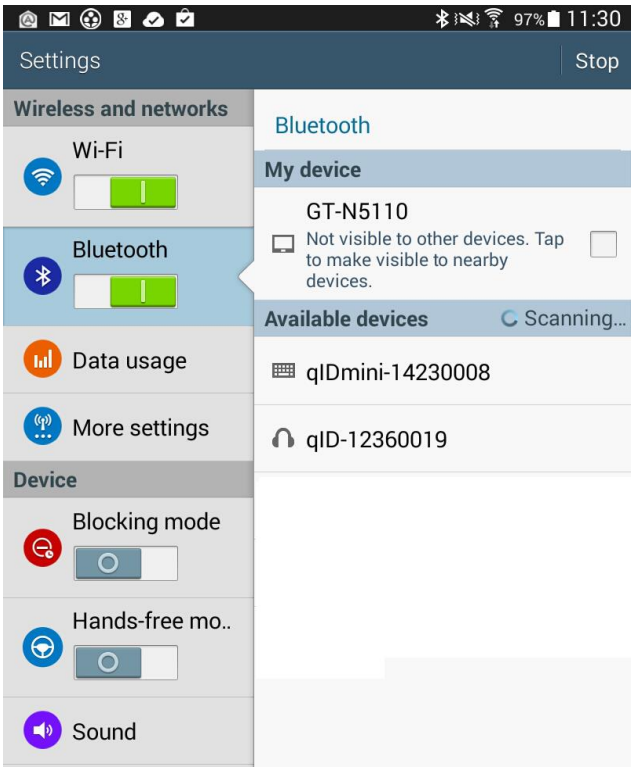
To set a different keyboard layout, press quickly the trigger button until the desired value and then hold down the trigger button.

To activate a different keyboard layout, scroll through the KBOARD options by pressing quickly the *trigger* button until QWERTY or AZERTY is displayed. Hold down the *trigger* button for a few seconds, the chosen option will begin to flash. Once activated, the device returns to the main menu.

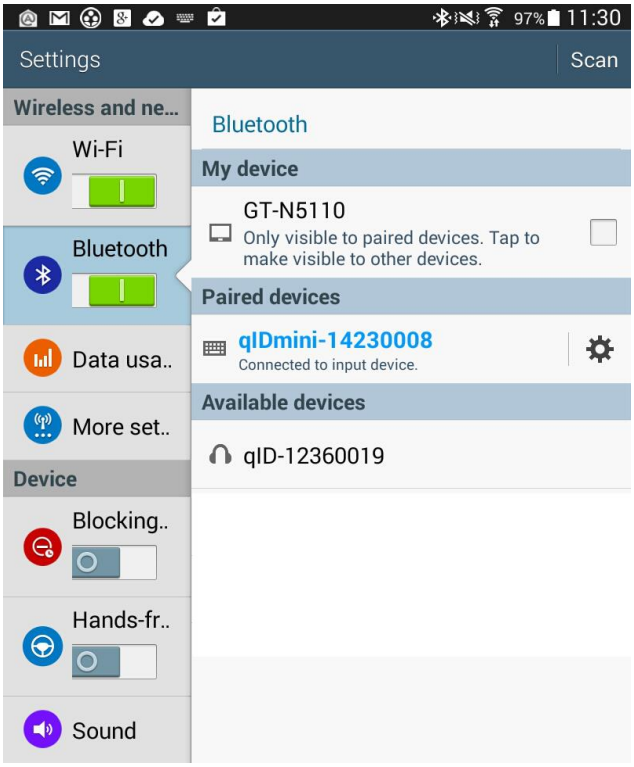
Android devices

Bluetooth Communication Setup

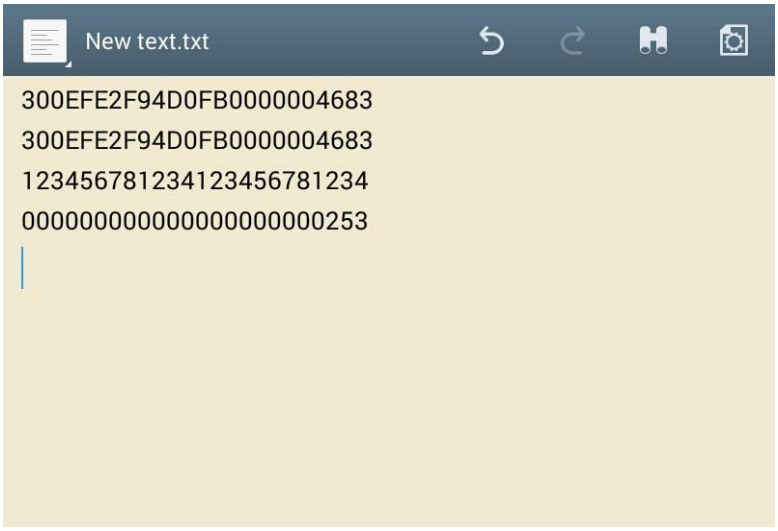
1. On your Android device, go to *Setting* and enable the Bluetooth. A list of the Bluetooth available devices is shown:



2. Click on the qIDmini R1170I reader and wait while the pairing is completed:



3. Once the connection is established the Bluetooth blue light turns on.
4. Launch a text editing App (or any other App accepting keyboard input).
5. Start an inventory cycle by pressing the *trigger* button.
6. On the text editing App window you will see the EPCs of the tags:



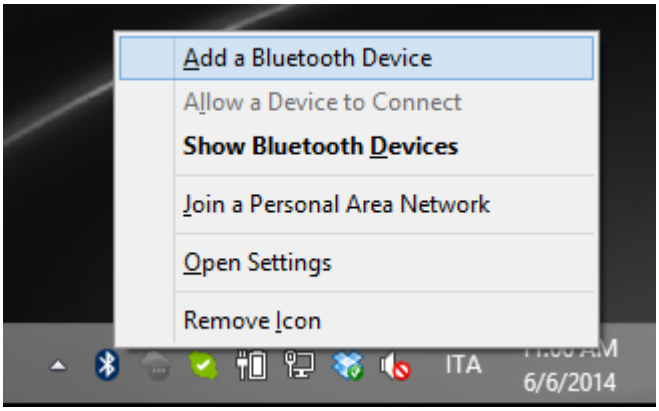
Note that, when configured in HID profile and paired to a device, the qIDmini will automatically reconnect to the same device every time the Bluetooth link is active (qIDmini switched ON and Bluetooth activated on the host). You can verify this behaviour looking at the blue LED that, in this case, turns ON automatically as soon as you switch on the qIDmini.

Windows PCs

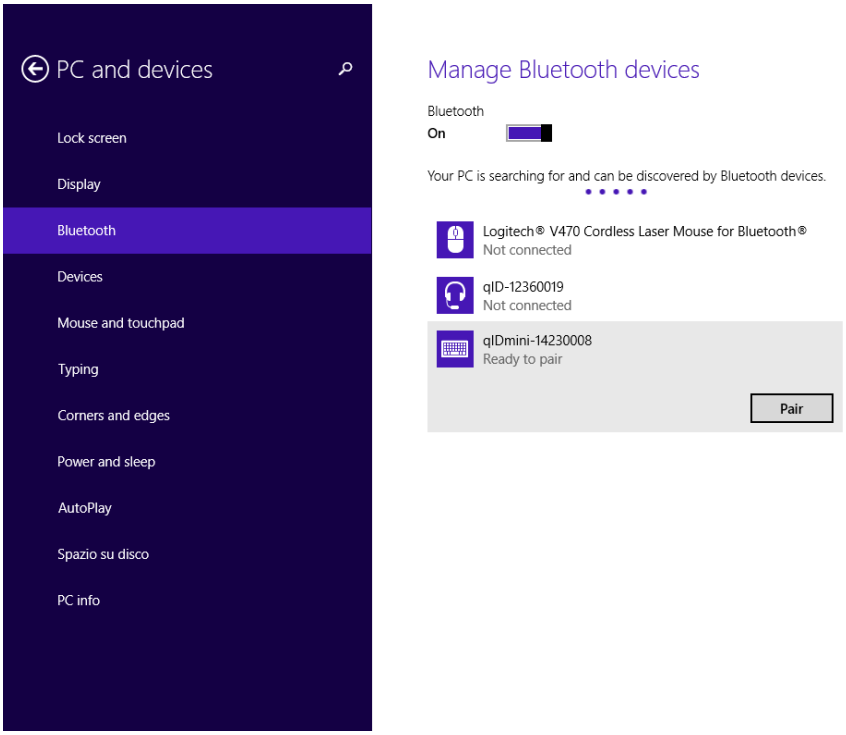
Bluetooth Communication Setup

1. **In case of Windows 8 Operating System**:

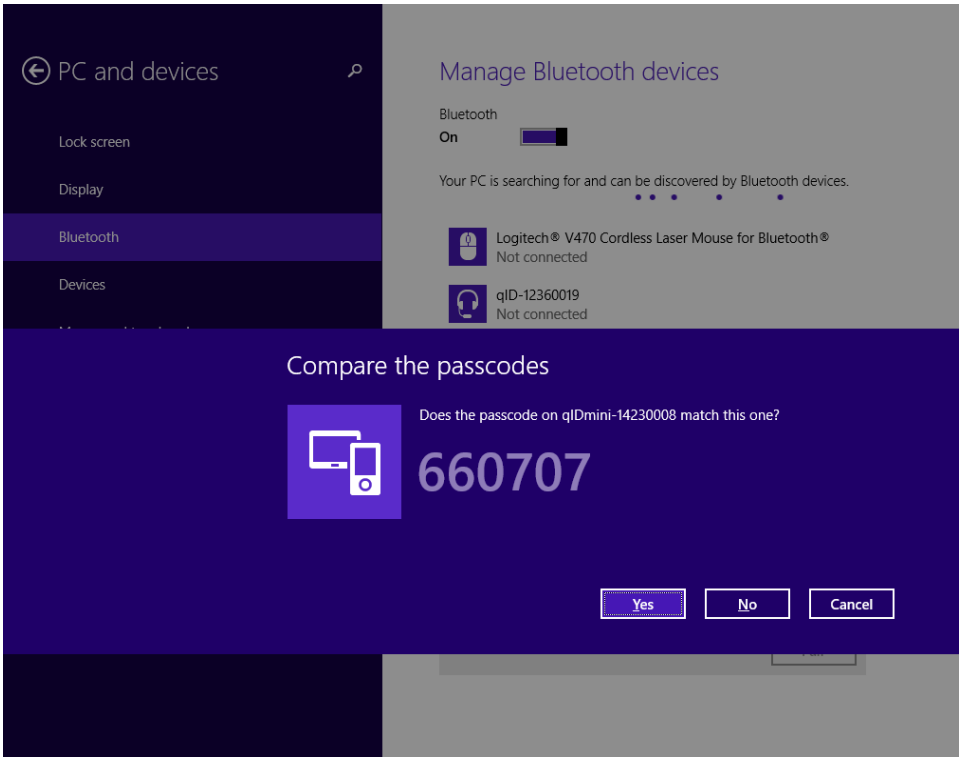
   Right click on the Bluetooth icon in the taskbar -> *Add a Bluetooth Device*:



   Select the qID mini R1170I reader and click on “Pair”:



Click on “yes” to confirm the passcode:

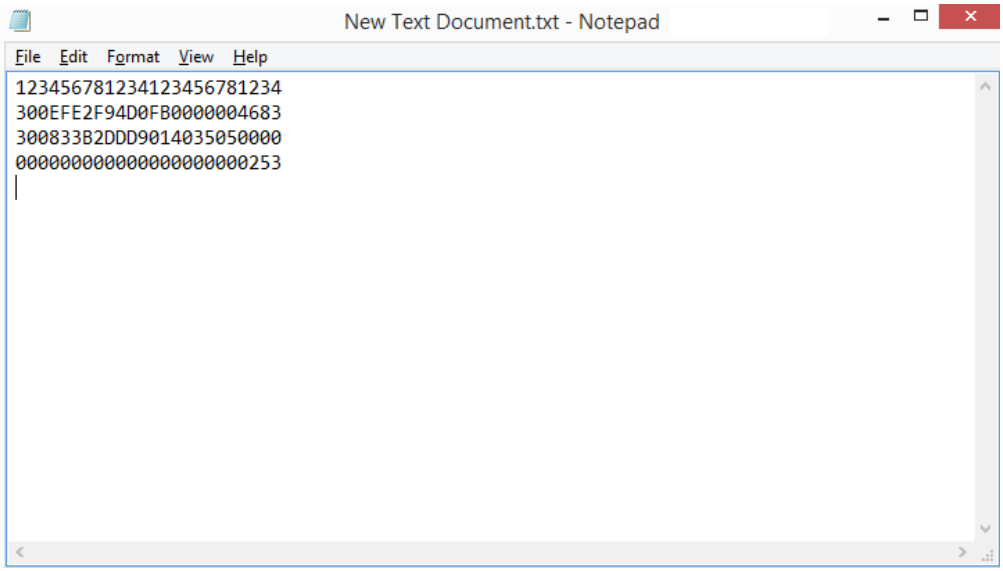


In case of Windows XP Operating System, when discovered by the host, the qIDmini reader can be identified by its Bluetooth device name and paired using the pass-key; both parameters are provided below:

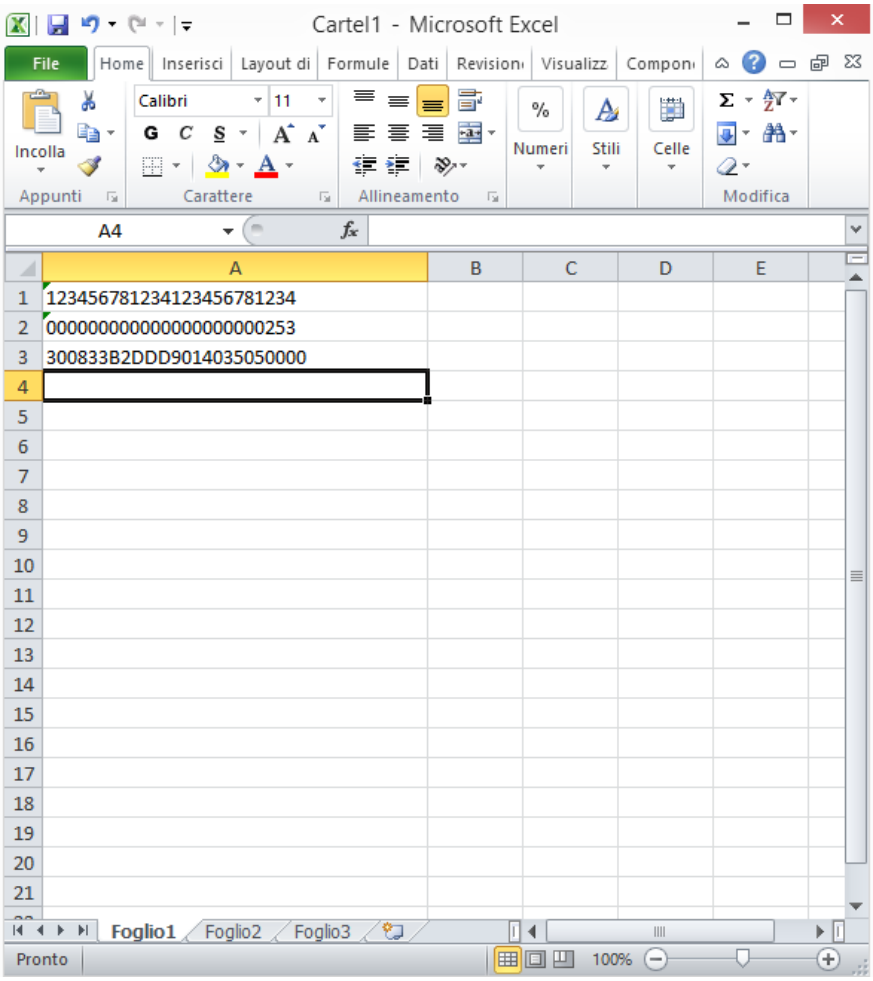
- Bluetooth device name: “qIDmini“ + device serial number
- Pass-key: 1234

2. Once the connection is established the Bluetooth blue light turns on.
3. Launch a text editing App (or any other App accepting keyboard input).
4. Start an inventory cycle by pressing the *trigger* button.
5. On the text editing window you will see the EPCs of the tags:

   Example with a .txt file:



Example with Microsoft Excel:

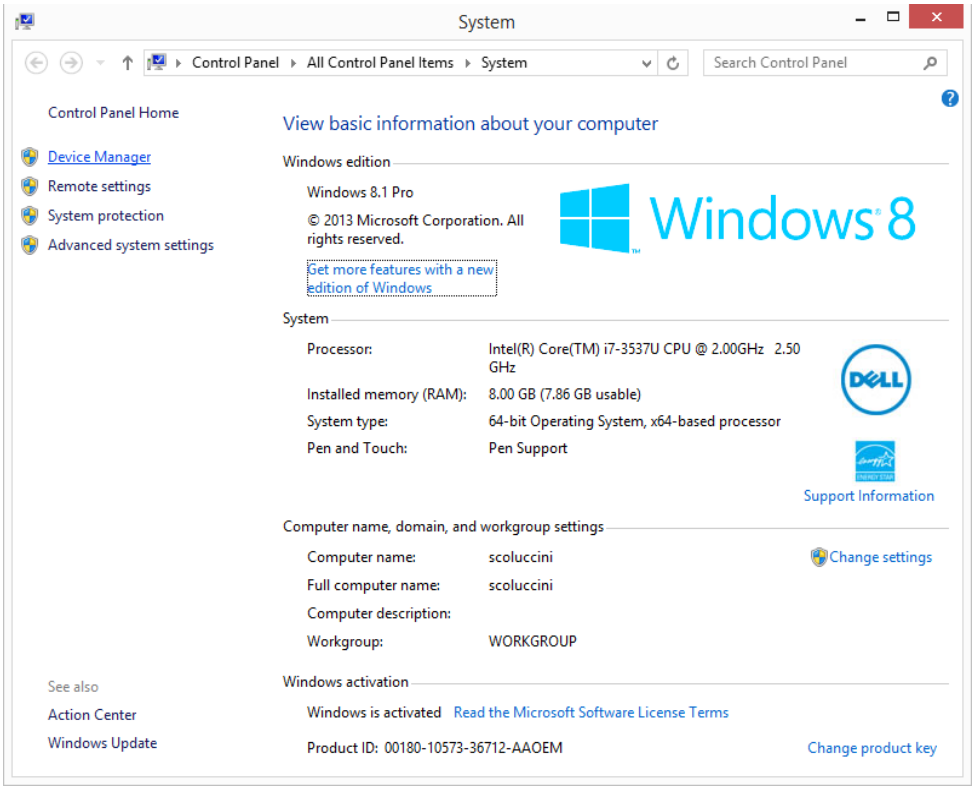


Note that, when configured in HID profile and paired to a device, the qIDmini will automatically reconnect to the same device every time the Bluetooth link is active (qIDmini switched ON and Bluetooth activated on the host). You can verify this behaviour looking at the blue LED that, in this case, turns ON automatically as soon as you switch on the qIDmini.

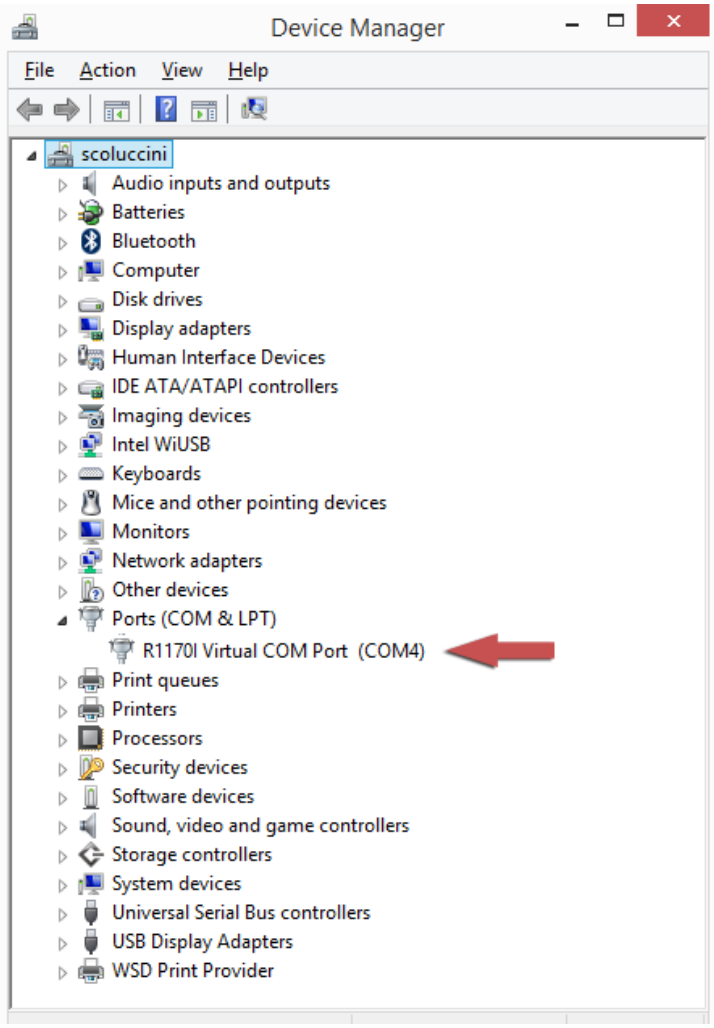
USB Communication Setup

The qIDmini 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 driver.

1. Power OFF the reader, plug the USB cable into the qIDmini USB port and then power ON the reader again.
2. In order to connect the qIDmini 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 from the qIDmini R1170I web page, *SW/FW* section or from the Software and Firmware download area.
3. Open the System properties (right click on *My computer* icon) → *All Control Panel Items* → *System* and click on *Device Manager*.



4. After having installed the driver, the reader is detected by the PC as an emulated serial port (VCP):



Warning: Note that, when configured in the HID profile, the qIDmini reader cannot be controlled using the *CAEN RFID Easy Controller Application*.

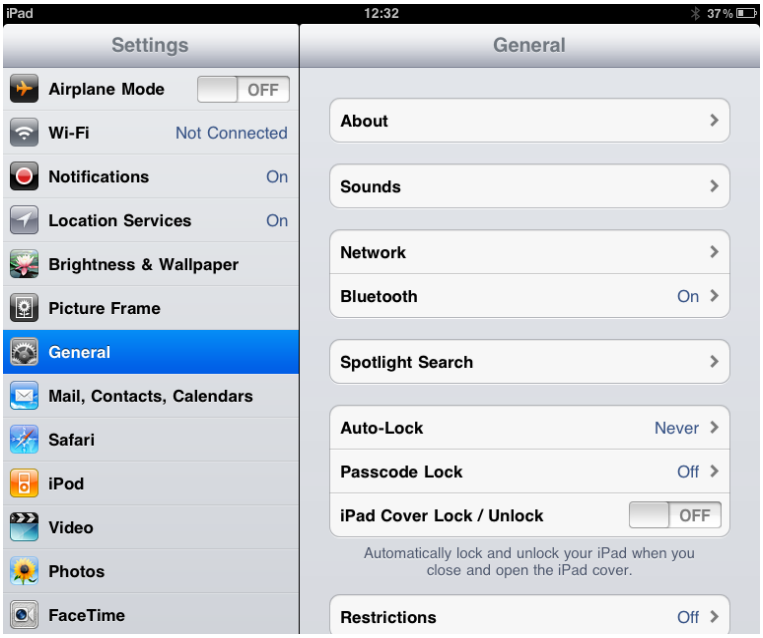
The qIDmini reader, when configured in the HID profile and connected via USB to a PC, sends the EPCs of the detected tags on the serial port as ASCII characters. So, in order to operate with the reader in this configuration, follow these steps:

1. Launch a terminal emulator application (e.g Hyperterminal)
2. Connect the terminal emulator application to the virtual COM port assigned to the qIDmini reader
3. Press the *trigger* button to perform an inventory cycle (hold down the button to repeat inventory cycles)
4. The EPCs are displayed on the terminal emulator window

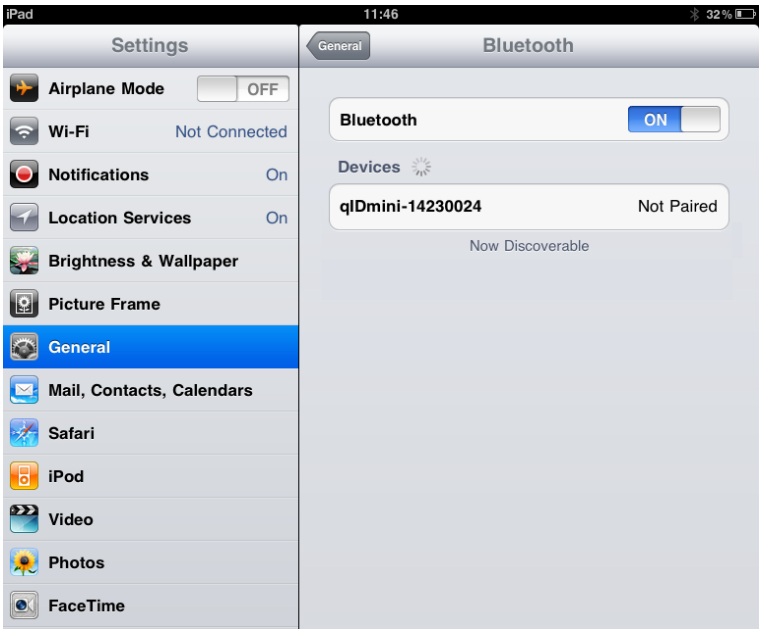
iOS devices

Bluetooth Communication Setup

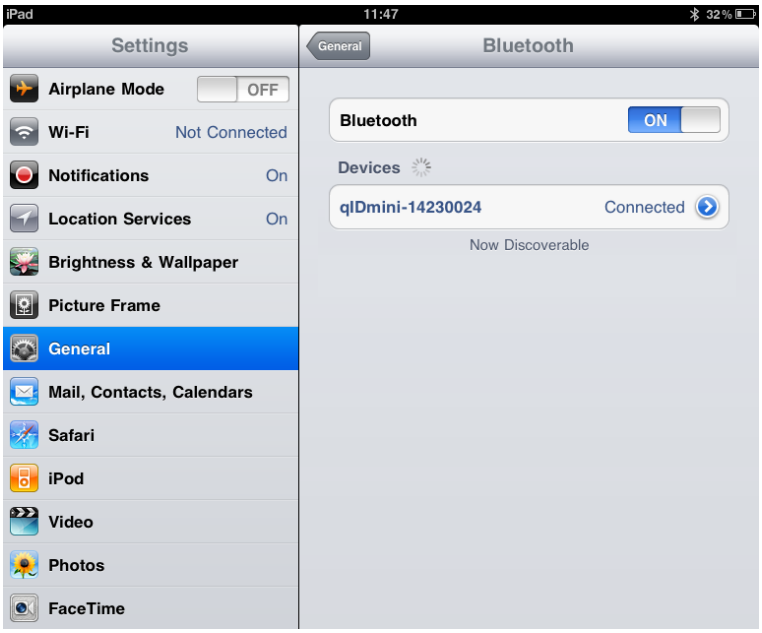
1. On your iOS device, go to *Setting* and enable the Bluetooth:



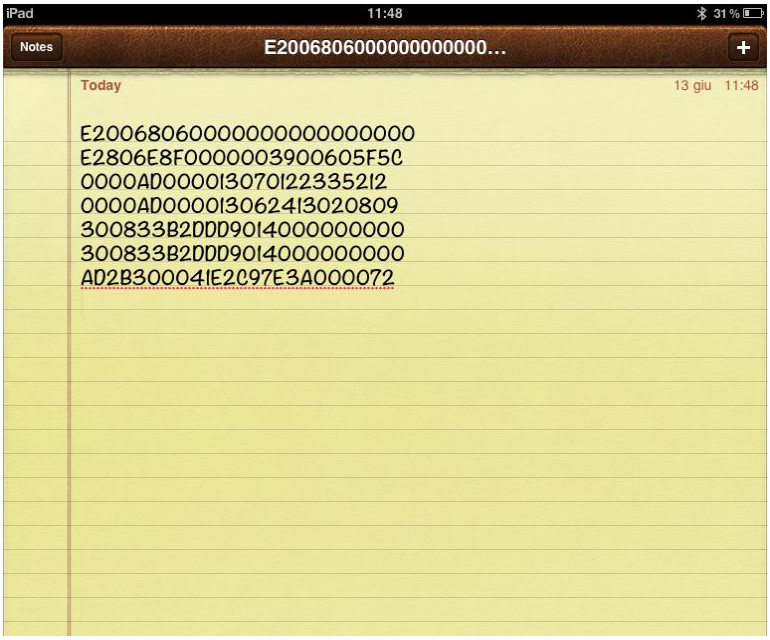
2. A list of the Bluetooth available devices is shown:



3. Click on the qIDmini R1170I reader and wait while the pairing is completed:



4. Once the connection is established the Bluetooth blue light turns on.
5. Launch a text editing App (or any other App accepting keyboard input).
6. Start an inventory cycle by pressing the trigger button.
7. On the text editing App window you will see the EPCs of the tags:



5 QIDMINI OFFLINE PROFILE

Introduction

In case of missing communication link, the reader can work in offline mode. The operator goes around collecting codes and then connects the reader to the cable or, better, to the docking station in order to download the data. Stored data can be downloaded to any device except for iOS devices.

For details on the available profiles and on the activation method please refer to § *PROFILE* paragraph page 55.

To perform the tag inventory just hold down the *trigger* button for the desired time.

If the reader reads only a tag, the display shows the EPC code of the tag (if the display scroll is enabled, the flowing text on the display shows the whole EPC of the tag, while if the display scroll is disabled, the display shows the last 8 characters of the tag EPC. See § *DISPLAY paragraph* page 45). If the reader reads more than one tag, the display shows the number of read tags.

The OFFLINE mode is supported only by the HID version of the reader (mod. WR1170IEHIDP, WR1170IUHIDP WR1170IENFHP, WR1170IUNFHP) and not by the Apple version (mod. WR1170IUAPLP, WR1170IEAPLP).

OFFLINE profile options

In the OFFLINE profile the reader works in stand-alone mode. You can download data or see the stored tags list by entering the OFFLINE profile options:

1. Turn on the reader, the display shows information on the currently active profile (OFFLINE) and then the message "ready" informs you that the reader is operating.
2. Press quickly the *power* button to enter the OFFLINE profile options, that are:
   - DWNLOAD
   - ERASE
   - VIEWTAG
   - BTSCAN
   - LOGOPT
   - DISPLAY

DWNLOAD

Hold down the trigger button to enter this option and to download data. Then press quickly the trigger button, a message “send?” will appear on the display. Launch a terminal emulator (e.g. Hyperteminal), connect the reader via Bluetooth (the Bluetooth device is the one identified through the BTSCAN menu option) or USB and then press again quickly the trigger button to start the download process.

Warning: Note that the data stored in the reader using the OFFLINE mode cannot be downloaded if you activate a different profile (EASY2RD or HID). However data are maintained in memory and, returning to the OFFLINE profile, you can download the information.

ERASE

Hold down the trigger button to enter this option and to delete the stored data. The text "*Erase*" on the display starts blinking. Once the data is deleted, the device returns to the main menu.

VIEWTAG

This option shows the list of the read tags during the last scan. Hold down the trigger button to enter this option. Then press quickly the trigger button to scroll the EPC code of the read tags.

BTSCAN

The BTSCAN option is used to identify the Bluetooth device for the download of stored data.

The BTSCAN searches for the active Bluetooth devices within the read range of the reader.

To activate the discovery of active Bluetooth devices, hold down the trigger button. After about 5 seconds, the reader shows the list of active Bluetooth devices.

To scroll through the active Bluetooth devices list, press quickly (1 time) the trigger button.

To return to the main menu, quickly press the power button.

The currently Bluetooth device is marked with an asterisk.

You can activate only one Bluetooth device at a time.

To activate a different Bluetooth device, scroll through the list by pressing quickly the trigger button until the desired Bluetooth device and then hold down the trigger button for a few seconds: the name of the Bluetooth device will begin to flash. Once activated, the device returns to the main menu.

LOGOPT

Hold down the trigger button to enter the Log Option:

1. TIMESTP: Time Stamp permits to associate date and time to the EPC of the read tags. The associated timestamp is downloaded with the EPC list. To enable/disable the TimeStp, hold down the trigger button for a few seconds. The enable (or disable) option will begin to flash. Once activated, the device returns to the main menu.

   The currently active state is marked with an asterisk. By default the TimeStp option is disabled.

DISPLAY

Hold down the trigger button to enter the Display Option:

1. SCROLL: The EPC code is shown on the display and, if longer than the maximum display length, the flowing text permits to show the entire code. To enable/disable the display scroll, hold down the trigger button for a few seconds. The chosen option will begin to flash. Once activated, the device returns to the main menu.

   The currently active state is marked with an asterisk. By default the display scroll is disabled.

   If the display scroll is disabled, the display shows the last 8 characters of the tag EPC.

6 QIDMINI BUFFER PROFILE

Introduction

For details on the available profiles and on the activation method please refer to § *PROFILE* paragraph page 55.

In the BUFFER mode the reader is connected via Bluetooth to the host, executes inventories of tags by pressing the trigger button and stores the EPCs into the internal buffer, even in case of temporary missing of Bluetooth communication. When the Bluetooth link is up, the reader can send the buffered data if requested by the host. Stored data can be downloaded to any device except for iOS devices.

The buffer size is 64KB.

To perform the tag inventory just hold down the *trigger* button for the desired time.

The display shows the number of read tags and information on the memory usage (used/total), for example:

```
TAGS 012
01K/64K
```

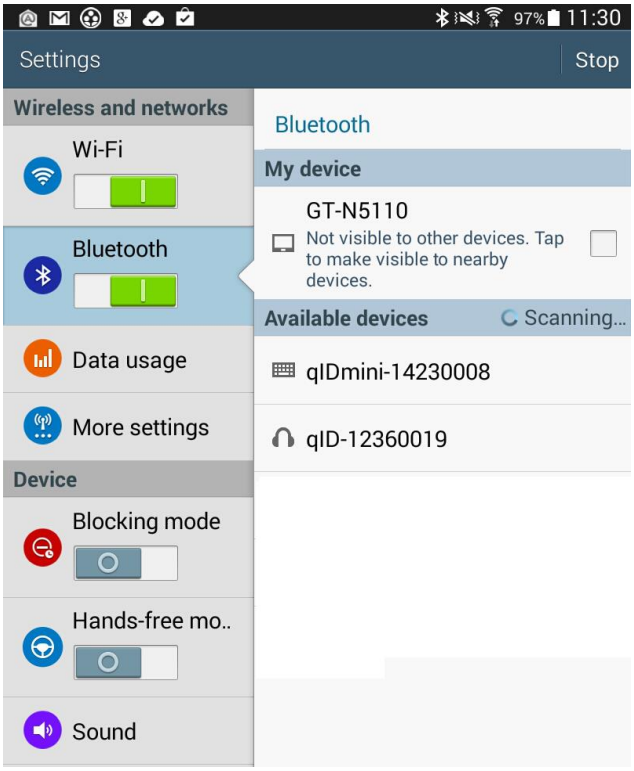
The BUFFER mode is supported only by the HID version of the reader (mod. WR1170IEHIDP, WR1170IUHIDP WR1170IENFHP, WR1170IUNFHP) and not by the Apple version (mod. WR1170IUAPLP, WR1170IEAPLP).

Communication Setup

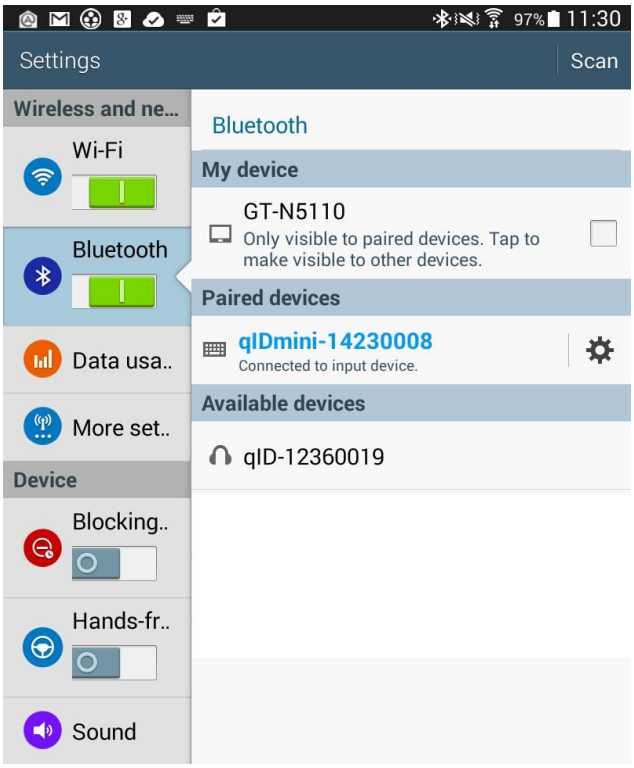
The reader can be connected to the USB or Bluetooth to a PC or Android devices.

Android devices

1. On your Android device, go to *Setting* and enable the Bluetooth. A list of the available Bluetooth devices is shown:



2. Click on the qIDmini R1170I reader and wait while the pairing process is completed:



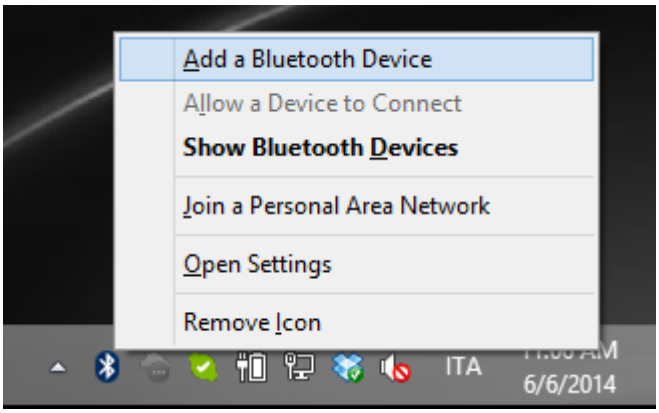
3. Once the connection is established the Bluetooth blue light turns on.

Windows PCs

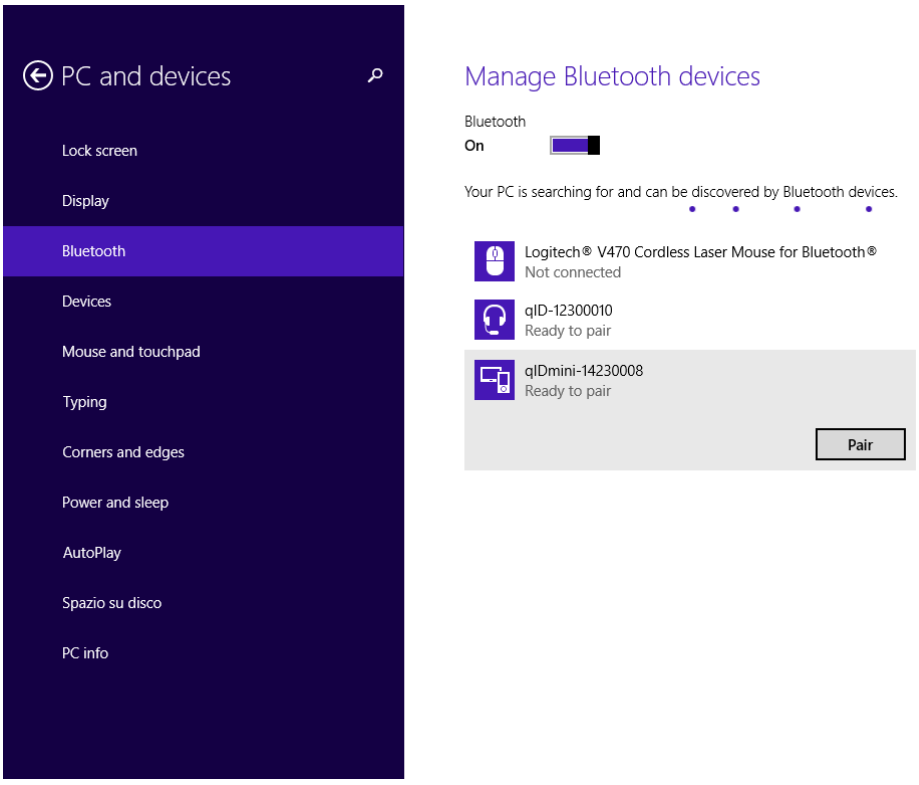
Bluetooth Communication Setup

In case of Windows 8 Operating System:

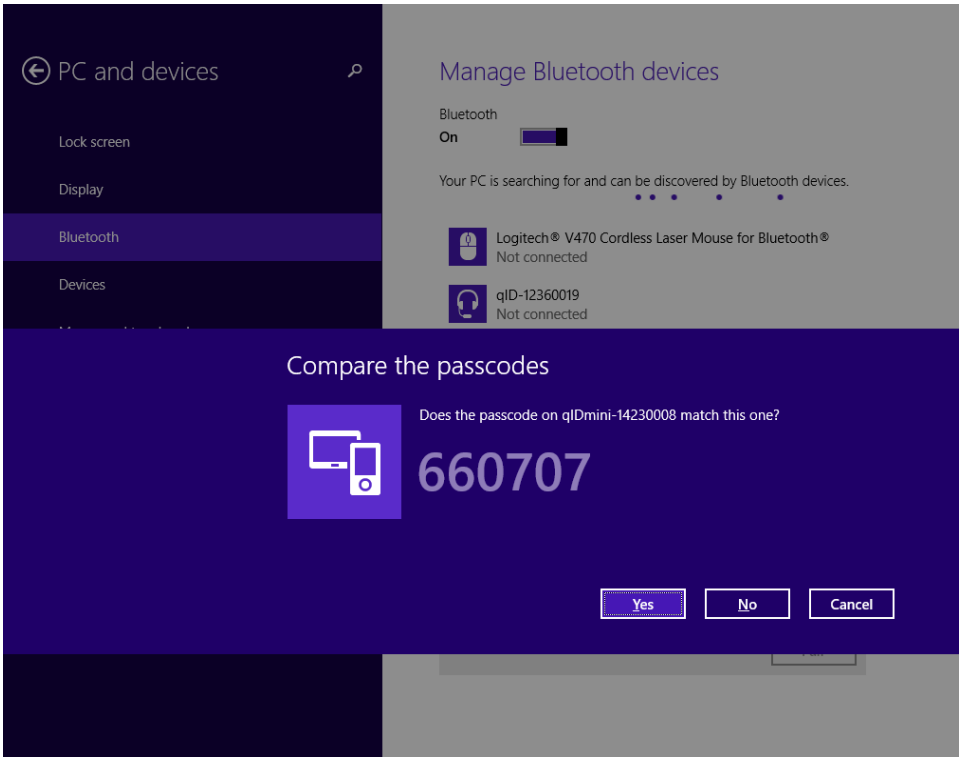
1. **Right** click on the *Bluetooth* icon in the taskbar -> *Add a Bluetooth Device*:



2. Select the qID mini R1170I reader and click on "*Pair*":



3. Click on "*yes*" to confirm the passcode:



In case of Windows XP Operating System, when discovered by the host, the qIDmini reader can be identified by its Bluetooth device name and paired using the pass-key; both parameters are provided below:

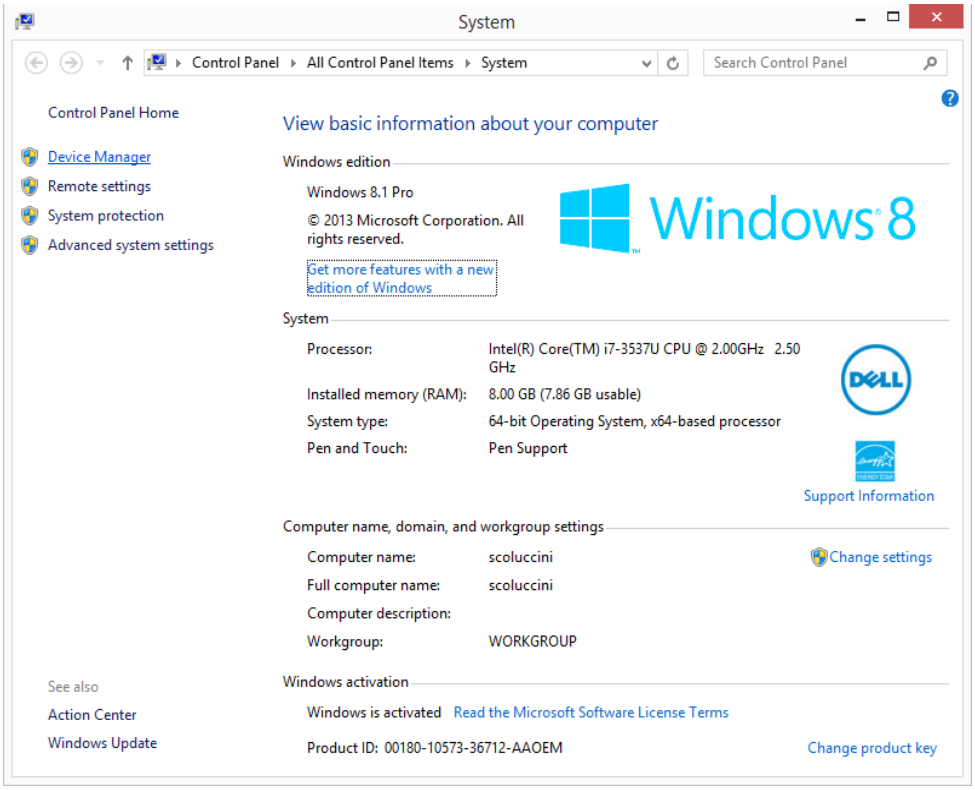
- Bluetooth device name: "qIDmini" + device serial number
- Pass-key: 1234

4. Once the connection is established the Bluetooth blue light turns on.

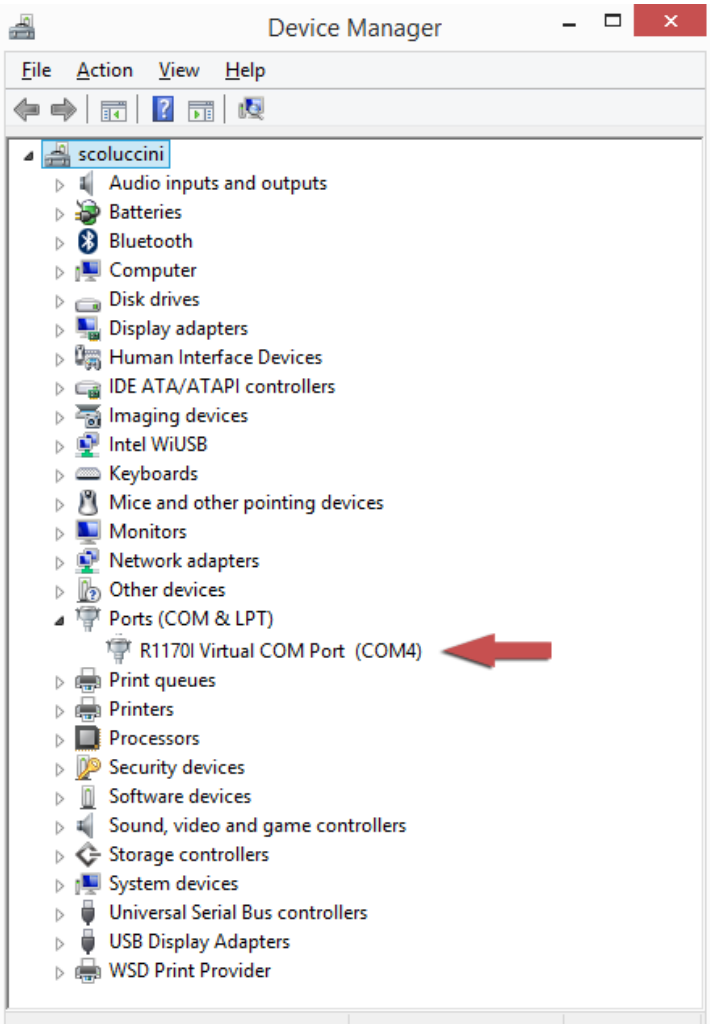
USB Communication Setup

The qIDmini 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 driver.

1. Power OFF the reader, plug the USB cable into the qIDmini USB port and then power ON the reader again.
2. In order to connect the qIDmini 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 from the qIDmini R1170I web page, *SW/FW* section or from the Software and Firmware download area.
3. Open the System properties: go to *Control Panel* → *All Control Panel Items* → *System* and click on *Device Manager*.



4. After having installed the driver, the reader is detected by the PC as an emulated serial port (VCP):



Download

When the reader is connected to the USB or Bluetooth to a PC or Android devices, it is possible to download buffered data using the CAEN RFID SDK (Software Development Kit).

In detail, it is possible to download data and manage the reader buffer using the following methods:

- *Get Buffered Data*: this method returns all the tags stored in reader's buffer without deleting the memory
- *Clear Buffer*: this method delete all the data stored in reader's buffer.
- *Get Buffer Size*: this method returns the number of tags stored in reader's buffer.

7 RESET THE QIDMINI READER

To reset the reader, press the *power* and the *trigger* buttons (see § *Fig. 1.1: qIDmini R1170I Front Panel* page 9) simultaneously for about six seconds and then release the buttons. The reader restarts by itself.

Warning: Note that the reader SHALL NOT be connected to the USB port or to the battery charger during the reset, otherwise the reader enters in the firmware upgrade state. If, by mistake, you entered in the firmware upgrade state, in order to restore the normal reader operation, disconnect the USB cable and repeat the reset procedure.

8 QIDMINI CONFIGURATION MENU

Introduction

To access the main configuration menu, turn on the device and hold down the *trigger* button within two second.

Insert the PINCODE if requested (the PINCODE is a personal identification number (PIN) of 4 digits length used to authenticate the user who accesses the main configuration menu, see § *PINCODE* paragraph page 58 for more information).

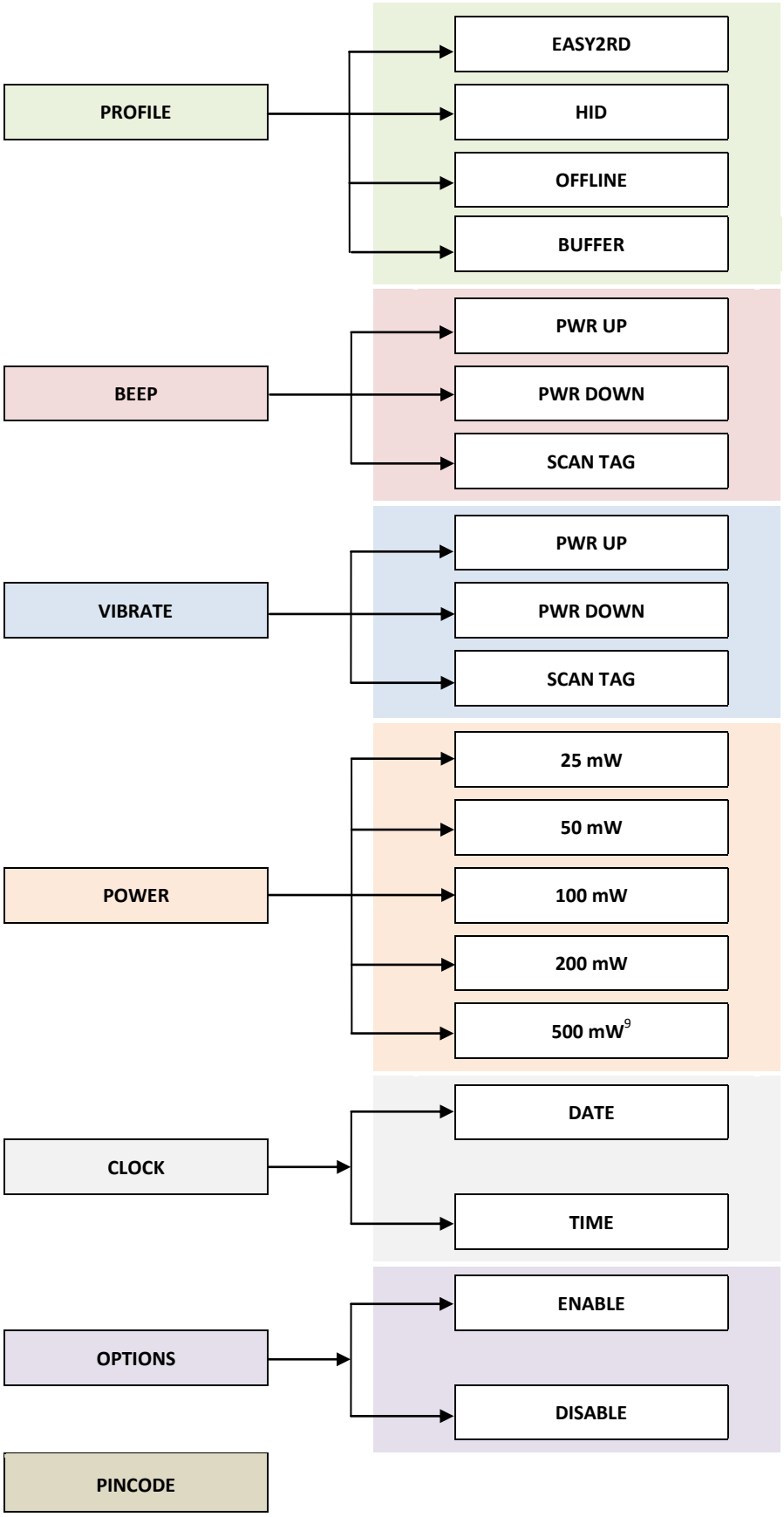
To scroll through the main menu, press quickly the *trigger* button.

The qIDmini R1170I menu options are the following:

- **PROFILE**
- **BEEP**
- **VIBRATE**
- **POWER**
- **CLOCK**
- **OPTIONS**
- **PINCODE**

To select a menu option, hold down the *trigger* button.

The complete structure of the qIDmini R1170I menu is the following:



Tab. 8.1: qIDmini R1170I Configuration Menu

[9] 500mW is not available for R1170IUAPLP and R1170IUHIDP models

PROFILE

Access the configuration menu as explained in the *Introduction* paragraph page 53.

The PROFILE menu is the first option of the main menu. To select it, hold down the *trigger* button.

To scroll through the PROFILE options, press quickly the *trigger* button. The currently active profile is marked with an asterisk.

The PROFILE submenu options are the following:

- **EASY2RD** (factory default): choosing this option you select the CAEN RFID easy2read communication protocol. Select this option in order to control the reader using the CAEN RFID Easy Controller Application or the SDK (Software Development Kit) library. For details on the use with the EASY2RD profile please refer to § *QIDMINI EASY2RD PROFILE* chapter page 18.
- **HID**[10]: choosing this option you select the keyboard emulation protocol. For details on the use on the HID profile please refer to § *QIDMINI HID PROFILE* chapter page 33.
- **OFFLINE:** in case of missing communication link, the reader works in offline mode. The operator goes around collecting codes and then connects the reader to the cable or, better, to the docking station in order to download the data. Stored data can be downloaded to any device except for iOS devices. For details on the use on the OFFLINE profile please refer to § *QIDMINI OFFLINE PROFILE* chapter page 44.
- **BUFFER**: the reader is connected via Bluetooth to the host, executes inventories of tags on button press and stores the EPCs into the internal buffer, even in case of temporary missing of Bluetooth communication. When the Bluetooth link is up, the reader can send the buffered data if requested by the host. Stored data can be downloaded to any device except for iOS devices. For details on the use on the BUFFER profile please refer to § *QIDMINI BUFFER PROFILE* chapter page 46.

The *EASY2RD* and *HID* profiles require the presence of a nearby host that controls the reader (pc, tablet…), while in the *OFFLINE* and *BUFFER* profile the reader can work in stand-alone mode.

To return to the main menu, quickly press the *power* button.

You can activate only one profile at a time.

To activate a different profile, scroll through the PROFILE options by pressing quickly the *trigger* button until the desired profile is displayed. Hold down the *trigger* button for a few seconds: the name of the profile will begin to flash. Once activated, the device returns to the main menu.

When you turn on the reader, the display shows the currently active profile and then the message "ready" to inform you that the reader is ready to operate.

Warning: Note that if the reader is in the HID profile you must disconnect it from any connected device before to select another profile.

[10] HID profile is not available for qIDmini R1170I with APPLE profile (ordering options: WR1170IEAPLP, WR1170IUAPLP, WR1170IDKEAP, WR1170IDKUAP)

BEEP

Access the configuration menu as explained in the *Introduction* paragraph page 53.

To scroll through the menu options, press quickly the *trigger* button.

The BEEP menu is the second option of the configuration menu. To select it, hold down the *trigger* button.

The BEEP submenu options are the following:

- **PWRUP:** beep at the power on of the reader
- **PWRDOWN:** beep at the power off of the reader
- **SCANTAG:** beep at the identification of a tag

To enable/disable the submenu options, scroll through the BEEP options menu by pressing quickly the *trigger* button until the desired BEEP option and then hold down the *trigger* button for a few seconds.

Scroll through *enable* and *disable* options by pressing quickly the *trigger* button and hold down the *trigger* button for a few seconds to activate one of them. The *enable* (or *disable*) option will begin to flash. Once activated, the device returns to the main menu.

The currently active state is marked with an asterisk. By default, all the BEEP options are disabled.

Note that you can *enable* or *disable* the beeper for any option independently so that the beeper can be active on more than one option simultaneously.

To return to the main menu, quickly press the *power* button.

VIBRATE

Access the configuration menu as explained in the *Introduction* paragraph page 53.

To scroll through the menu options, press quickly the *trigger* button.

The VIBRATE menu is the third option of the configuration menu. To select it, hold down the *trigger* button.

The VIBRATE submenu options are the following:

- **PWRUP:** vibration at the power on of the reader
- **PWRDOWN:** vibration at the power off of the reader
- **SCANTAG:** vibration at the identification of a tag

To enable/disable the submenu options, scroll through the VIBRATE options menu by pressing quickly the *trigger* button until the desired VIBRATE option and then hold down the *trigger* button for a few seconds.

Scroll through *enable* and *disable* options by pressing quickly the *trigger* button and hold down the *trigger* button for a few seconds for the activation of one of them. The *enable* (or *disable*) option will begin to flash. Once activated, the device returns to the main menu.

The currently active state is marked with an asterisk. By default, all the VIBRATE options are disabled.

Note that you can *enable* or *disable* the vibration for any option independently so that the vibration can be active on more than one option simultaneously.

To return to the main menu, quickly press the *power* button.

POWER

Through the POWER menu you can set the power level emitted by the reader.

Note that, when the reader is configured in the EASY2RD profile, to set the power you can also use the CAEN RFID Easy Controller Application or the *SetPower* function of the SDK (Software Development Kit) library.

Access the configuration menu as explained in the *Introduction* paragraph page 53.

To scroll through the menu options, press quickly the *trigger* button.

The POWER menu is the fourth option of the configuration menu. To select it, hold down the *trigger* button.

The POWER submenu options are the following (conducted power from RF section):

- **25 mW**
- **50 mW**
- **100 mW**
- **200 mW**
- **500 mW**

The correspondent radiated values are:

Mod. R1170IEHIDP, R1170IEAPLP, R1170IUHIDP, R1170IUAPLP		Mod. R1170IENFHD, R1170IUNFHD	
Conducted Power (mW)	**Radiated Power (mW e.r.p.)**	**Conducted Power (mW)**	**Radiated Power (mW e.r.p.)**
25	7.7	25	2.4
50	15.3	50	4.8
100	30.6	100	9.7
200	61.2	200	19.4
500[11]	153.1	500[12]	48.4

Tab. 8.2: Conducted power- radiated power

To scroll through the POWER options, press quickly the *trigger* button.

To return to the main menu, quickly press the *power* button.

The currently active power is marked with an asterisk. By default, the 200 mW power level is active.

You can activate only one power level at a time.

To activate a different power level, scroll through the POWER options by pressing quickly the *trigger* button until the desired power level is displayed. Hold down the *trigger* button for a few seconds: the power level option will begin to flash. Once activated, the device returns to the main menu.

CLOCK

The clock is not enabled by default, so the reader does not consider date and time until the first setting by the user.

Access the configuration menu as explained in the *Introduction* paragraph page 53.

To scroll through the menu options, press quickly (1 time) the *trigger* button.

The CLOCK menu is the last option of the configuration menu. To select it, hold down the *trigger* button: in this way you will enter its sub-menu.

The CLOCK submenu options are the following:

- **Date:** the date is the first option of the clock submenu. To set the date hold down the *trigger* button for a few seconds. The date is shown in the format **dd mmm yy** (e.g. 28 Oct 15). Press quickly the *trigger* button to change the *day* value. Then hold down the *trigger* button to save the *day* and pass to the *month* value. Press quickly the *trigger* button to change the *month* value. Then hold down the *trigger* button to save the *month* and pass to the *year* value. Press quickly the *trigger* button to change the *year* value. Then hold down the

[11] Maximum power setting for R1170IUAPLP and R1170IUHIDP is internally limited via FW to 200mW

[12] Maximum power setting for R1170IUAPLP and R1170IUHIDP is internally limited via FW to 200mW

trigger button to save the *year* and hold down again to save the complete date. The date begins to flash and the reader returns to the main menu.

- **Time:** is displayed in the 24-hour format **hh:mm** (e.g. 12:51) the time is the second option of the clock submenu. Scroll through the CLOCK options menu by pressing quickly the *trigger* button until the *Time* option is displayed and then hold down the *trigger* button for a few seconds to set the time. The time is shown in the 24-hour format **hh:mm** (e.g. 12:51). Press quickly the *trigger* button to change the *hh* value. Then hold down the *trigger* button to save the *hour value* and pass to the *minutes* value. Press quickly the *trigger* button to change the *"mm"* value. Then hold down the *trigger* button to save the *minutes value* and hold down again to save the complete time. The time begins to flash and the reader returns to the main menu.

To return to the main menu, quickly press the *power* button.

In the OFFLINE profile, if you are interested in showing the date and time information of the read tags, you need to set the *clock* and enable the *Time Stamp* (see § *LOGOPT* pag. *45*). The timestamp is not shown on the reader display but only associated with the EPCs in memory and displayed on the PC when the data is downloaded.

OPTIONS

Through this option, you can enable/disabled the correspondent profile options.

By default this value is enabled and the user can access the profile options (for more info on the available profile options, please refer to § *EASY2READ profile options* page 18, *HID profile options* page 33, *OFFLINE profile options* page 44).

Set the value to disabled in order to denied the access to the profile options.

PINCODE

The PINCODE is a personal identification number (PIN) of 4 digits length used to authenticate the user who accesses the main configuration menu

The following list shows the accepted characters for the PINCODE:

```
'0','1', '2', '3', '4', '5', '6', '7', '8', '9'
```

By default the PINCODE string is empty, so anyone can access the configuration menu. To set the PINCODE, hold down the *trigger* button for a few seconds. The PINCODE string empty is shown. Press quickly the *trigger* button to change the *first* value. Then hold down the *trigger* button to save the first value. Press quickly the *trigger* button to change the *second* value. Then hold down the *trigger* button to save the second value and so on until the fourth digit. Then press quickly the power button to fix the PINCODE string and then hold down the trigger button to save it. The PINCODE begins to flash and the reader returns to the main menu. It is possible to insert a shorter PINCODE string.

To return to the main menu, quickly press the *power* button.

To restore the empty string, go to PINCODE option and hold down the trigger button. The current active PINCODE is shown. Press quickly the trigger button to restore the empty string. Then press quickly the power button to fix the PINCODE string and then hold down the trigger button to save it.

***Warning**: Note that it is not possible to retrieve a forgotten PIN. In this case the user have to send the reader to CAEN RFID Return&Repair service.*

9 QIDMINI FIRMWARE UPGRADE

Firmware Upgrade

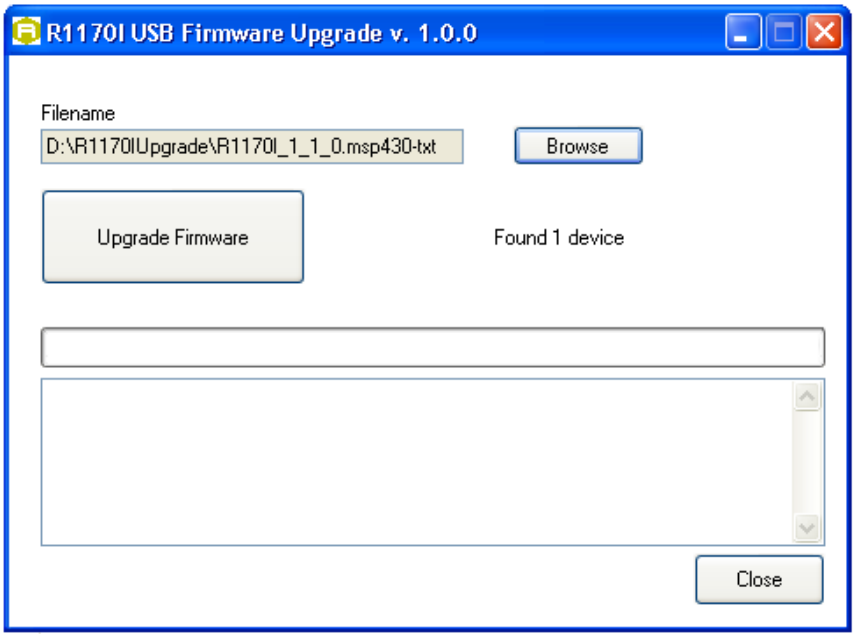
The qIDmini R1170I firmware upgrade can be performed via USB by using the SW upgrade application. The qIDmini Upgrade Tool is available for free at the qIDmini R1170I web page of the CAEN RFID Web Site, *SW/FW* section.

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

1. Connect the qIDmini reader to the USB port of the PC.
2. Press simultaneously the *trigger* and the *power* button for about six seconds.
3. Open the FW upgrade program.
4. Click on *Next* button:

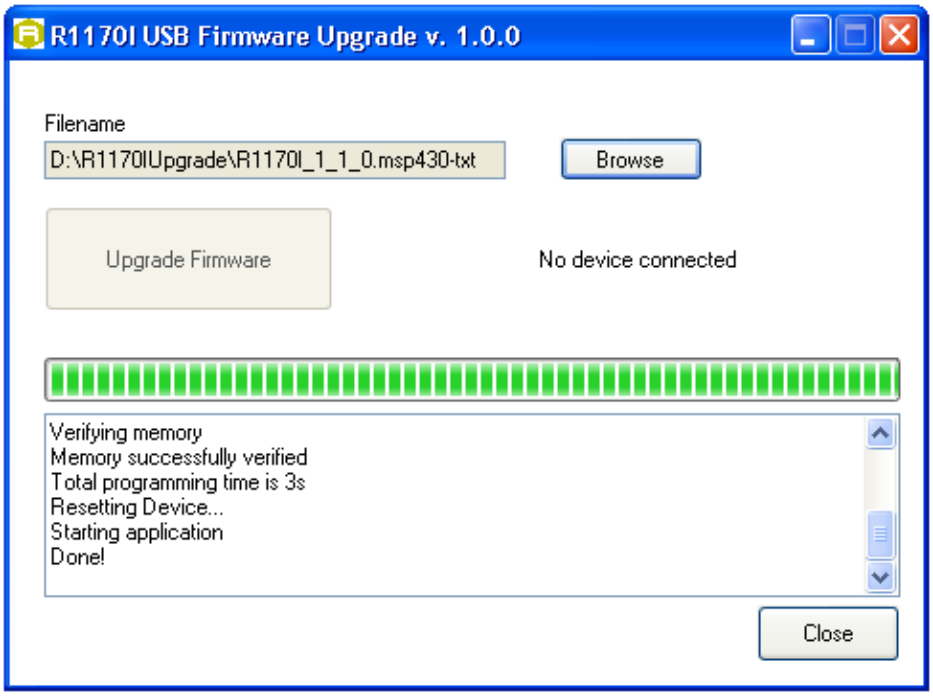
5. In the window you will see the message “Found 1 device” (if the message is “No device connected” repeat the points 2,3, 4 and 5).

6. Select the FW image file by clicking on the “Browse” button:



7. Click on the “Upgrade Firmware” button and wait for the upgrade process to be completed.

8. At the end of procedure, if the upgrade has been successfully performed, you will see the messages reported in the image below and the module is ready for normal operation.



10 QIDMINI TECHNICAL SPECIFICATIONS

Technical Specifications Table

(Mod. R1170IEHIDP, R1170IEAPLP, R1170IUHIDP and R1170IUAPLP)

Frequency Band	865.600÷867.600 MHz (ETSI EN 302 208 v. 1.4.1) (Mod. R1170IEHIDP and R1170IEAPLP) 902÷928 MHz (FCC part 15.247) (Mod. R1170IUHIDP and R1170IUAPLP)
RF Power	Programmable in 18 levels from 5dBm e.r.p. (3mW e.r.p.) to 22dBm e.r.p. (150mW e.r.p.); (Mod. R1170IEHIDP and R1170IEAPLP) Programmable in 13 levels from 5dBm e.r.p. (3mW e.r.p.) to 18dBm e.r.p. (60mW e.r.p.); (Mod. R1170IUHIDP and R1170IUAPLP)
Antenna	Integrated linear (horizontal)
Number of Channels	4 channels (compliant to ETSI EN 302 208 v. 1.4.1.)(Mod. R1170IEHIDP and R1170IEAPLP) 50 hopping channels (compliant to FCC part 15.247)(Mod. R1170IUHIDP and R1170IUAPLP)
Standard Compliance	ISO 18000-63/EPC C1G2
Read Range	up to 90cm (typical)
Connectivity	USB Interface: USB 2.0 Full Speed (12 Mbit/s) device port Bluetooth Interface: Class 2 with output power 4dBm e.i.r.p. 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: bitonal 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) (TBC)
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
Dimensions	(W)99 x (L)54 x (H)20 mm^3 max. (3.9 x 2.1 x 0.8 in^3)
Length of USB cable	1.5 m
Operating Temperature	-10 °C to +55 °C
Weight	57 g

Tab. 10.1: qIDmini R1170I Technical Specifications Table

***Warning**: The RF settings must match the country/region of operating to comply with local laws and regulations.*

The usage of the reader in different countries/regions from the one in which the device has been sold is not allowed.

Technical Specifications Table
(Mod. R1170IENFHD and R1170IUNFHD)

Frequency Band	865.600÷867.600 MHz (ETSI EN 302 208 v. 2.1.1) (Mod. R1170IENFHD) 902÷928 MHz (FCC part 15.247) (Mod. R1170IUNFHD) 920.625÷924.375 MHz (SRRC RFID national standards) (Mod. R1170IUNFHD – OPT. WPE1170NFACN)
RF Power	Programmable in 18 levels from 0dBm e.r.p. (1mW e.r.p.) to 17dBm e.r.p. (50mW e.r.p.)
Antenna	Integrated UHF Near Field Antenna
Number of Channels	4 channels (compliant to ETSI EN 302 208 v. 2.1.1)(Mod. R1170IENFHD) 50 hopping channels (compliant to FCC part 15.247)(Mod. R1170IUNFHD) 16 hopping channels (compliant to SRRC RFID national standards) (Mod. R1170IUNFHD – OPT. WPE1170NFACN).
Standard Compliance	ISO 18000-63/EPC C1G2
Connectivity	USB Interface: USB 2.0 Full Speed (12 Mbit/s) device port Bluetooth Interface: Class 2 with output power 4dBm e.i.r.p. Virtual COM port parameters: - Baudrate: up to 230.400kbps - 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) Buzzer: bitonal 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) (TBC)
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 30
Dimensions	(W)106 x (L)58 x (H)20 mm^3 max. (4.2 x 2.3 x 0.8 in3)
Length of USB cable	1.5 m
Operating Temperature	-10 °C to +55 °C
Weight	58 g

Tab. 10.2: qIDminiNF R1170INF Technical Specifications Table

***Warning**: The RF settings must match the country/region of operating to comply with local laws and regulations.*

The usage of the reader in different countries/regions from the one in which the device has been sold is not allowed.

Reader – Tag Link Profiles

The qIDmini R1170I reader supports different modulations and return link profiles according to EPC Class1 Gen2 protocol [RD1].

All profiles that have been tested for the compliance with ETSI and FCC regulations are reported in the following table:

Link profile #	Regulation	Modulation	Return Link
0	ETSI - FCC	PR–ASK; f=40kHz	FM0; f = 40kHz
1	ETSI - FCC	PR–ASK; f=40kHz	Miller (M=4); f = 256kHz[13]
2	ETSI - FCC	PR–ASK; f=40kHz	Miller (M=4); f = 320kHz

Tab. 10.3: qIDmini R1170I Reader to tag link profiles

[13] Default value.

Radiation Patterns

The radiation patterns of qIDmini R1170I are shown in the following figures.

Model R1170IEHIDP and R1170IEAPLP (ETSI version)

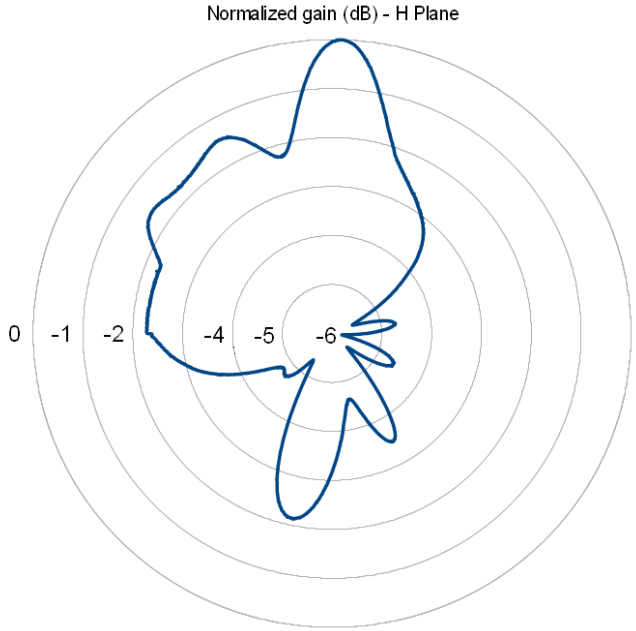
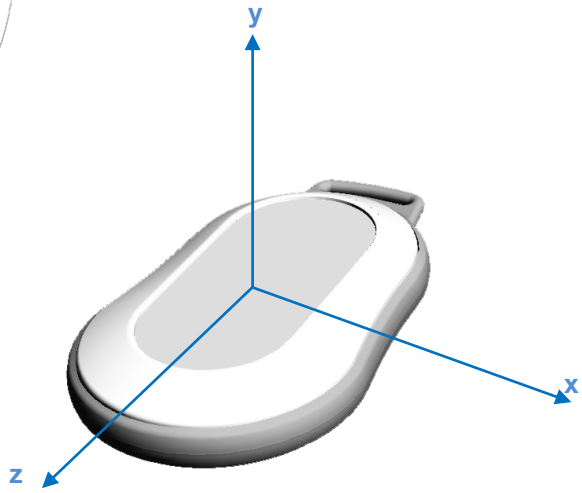


Fig. 10.1: qIDmini R1170IE Radiation pattern H plane



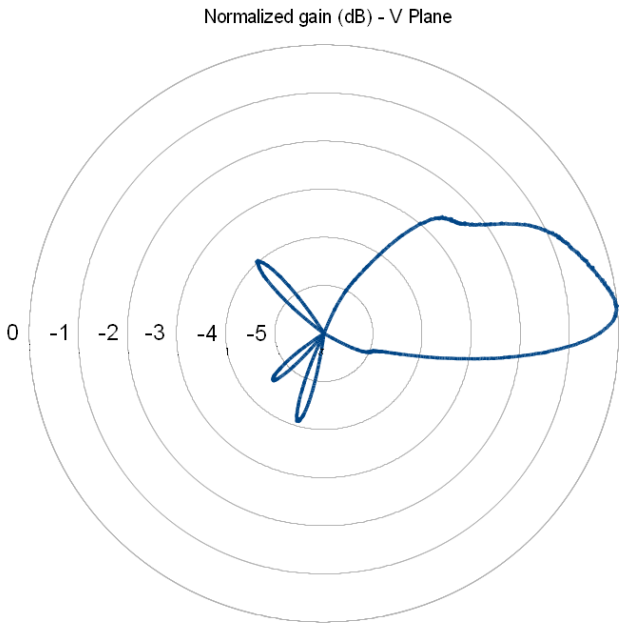
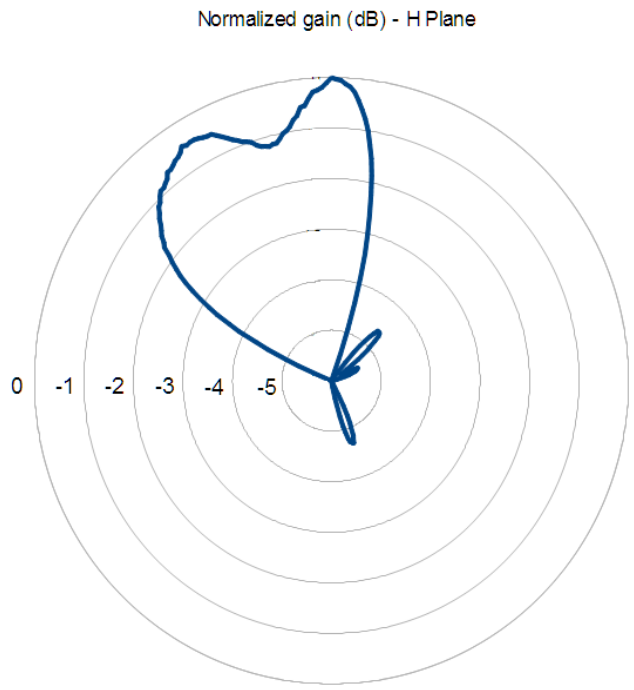


Fig. 10.2: qIDmini R1170IE Radiation pattern V plane



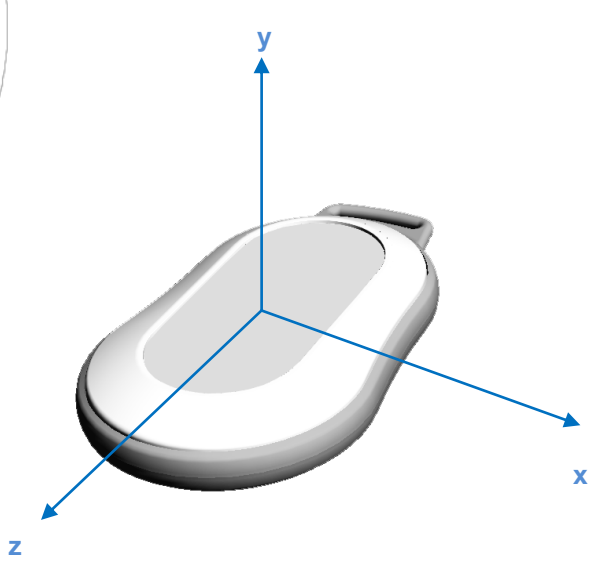


Fig. 10.3: qIDmini R1170IU Radiation pattern H plane

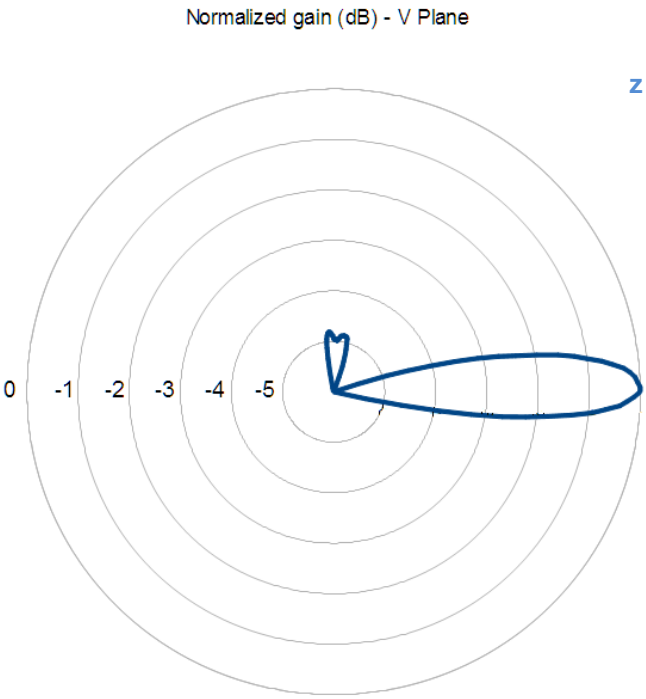


Fig. 10.4: qIDmini R1170IU Radiation pattern V plane

11 QIDMINI REGULATORY COMPLIANCE

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.

Mod. R1170IUHIDP and R1170IUAPLP:

Reference document:

Test report n. FCC-17337 [RD1]and n. FCC-17337B [RD2]

See § *qIDmini FCC Grant part B* and *qIDmini FCC Grant part C* page 69 and 70 for the qID mini R1170I FCC Compliance Certificate.

Mod. R1170IUNFHD:

Reference document:

Test report n. FCC-16601B [RD4] and n. FCC-16601 [RD5]

See § *qIDminiNF FCC Grant part B* and *qIDminiNF FCC Grant part C* page 72 and 73 for the qID mini NF R1170I FCC Compliance Certificate.

CE Compliance

Mod. R1170IEHIDP, R1170IEAPLP, R1170IENFHD:

Reference standard:

ETSI EN 301 489-1 V. 1.9.2:2011

ETSI EN 300 328 V2.1.1:2017

EN 55032:2012

CEI EN 55024:2013

ETSI EN 302 208 V3.1.1:2017

CEI EN 60950-1:2007 +/A11:2010 +/A1:2012 +/A12:2012

CEI EN 50364:2011

EN 50581:2012

See § *qIDmini CE Declaration of Conformity* page 68 for the qID mini R1170I CE Compliance Certificate.

See § *qIDminiNF CE Declaration of Conformity* page 71 for the qID mini NF R1170I CE Compliance Certificate.

SRRC Compliance

Mod. qIDmini NF with customization WPE1170NFACNR1170IENFHD:

Reference standard:

Test report n. SRTL/BG-A20160150123 [RD6].

See § *qIDminiNF SRRC Type Approval Certificate* page 74 for the qID mini NF R1170I SRRC Certificate.

RoHS EU Directive

qIDmini R1170I Reader is compliant with the EU Directive 2011/65/EU on the Restriction of the Use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS2).

qIDmini R1170I
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:	**WR1170IEAPLP**
Description:	**R1170IEAPLP - qIDmi Keyfob Bluetooth UHF RFID Reader (ETSI) with Apple profile**

and

Code:	**WR1170IEHIDP**
Description:	**R1170IEHIDP - qIDmini Keyfob Bluetooth UHF RFID Reader (ETSI) with HID profile**

correspond in the submitted version to the following standards:

ETSI EN 301 489-1 V. 1.9.2:2011

ETSI EN 300 328 V2.1.1:2017

EN 55032:2012

CEI EN 55024:2013

ETSI EN 302 208 V3.1.1:2017

CEI EN 60950-1:2007 +/A11:2010 +/A1:2012 +/A12:2012

CEI EN 50364:2011

EN 50581:2012

and declare under our sole responsibility that the specified products meet the principle requirements and other applicable regulations of directives 2014/53/EU (RED) and 2011/65/EU (RoHS2)

Date: 08/01/2018

CAEN RFID srl
Via Vetraia, 11
55049 VIAREGGIO - ITALY
VAT IT 02032050466

Adriano Bigongiari (Chief Executive Officer)

On the basis of this declaration, these products will bear the following mark: CE

qIDmini R1170I
FCC GRANT PART B

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: 07/13/2017

Application Dated: 07/13/2017

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: UVECAENRFID017
Name of Grantee: CAEN RFID srl
Equipment Class: Part 15 Class B Computing Device Peripheral
Notes: R1170I - qIDmini Keyfob Bluetooth UHF RFID Reader

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
CC	15B	-			

CC: This device is certified pursuant to two different Part 15 rules sections.

qIDmini R1170I
FCC GRANT PART C

TCB

GRANT OF EQUIPMENT AUTHORIZATION

Certification
Issued Under the Authority of the
Federal Communications Commission
By:

TCB

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

Date of Grant: 07/13/2017

Application Dated: 07/13/2017

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: UVECAENRFID017
Name of Grantee: CAEN RFID srl
Equipment Class: Part 15 Spread Spectrum Transmitter
Notes: R1170I - qIDmini Keyfob Bluetooth UHF RFID Reader

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
CC	15C	902.75 - 927.25	0.062		

Power output listed is ERP. The highest reported SAR values for body-worn is 0.76 W/kg.
The device must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC accepted multi-transmitter procedures.

CC: This device is certified pursuant to two different Part 15 rules sections.

qIDminiNF R1170INF
CE DECLARATION OF CONFORMITY

We

CAEN RFID Srl
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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 product:

Code: **R1170IENFHD**

Description: **qIDmini - Keyfob Bluetooth UHF NF RFID Reader (ETSI) with HID profile**

corresponds in the submitted version to the following standards:

ETSI EN 301 489-1 V. 1.9.2:2011

ETSI EN 300 328 V2.1.1:2017

EN 55032:2012

CEI EN 55024:2013

ETSI EN 302 208 V3.1.1:2017

CEI EN 60950-1:2007 +/A11:2010 +/A1:2012 +/A12:2012

CEI EN 50364:2011

EN 50581:2012

and declare under our sole responsibility that the specified product meets the principle requirements and other applicable regulations of directives 2014/53/EU (RED) and 2011/65/EU (RoHS2)

Date: 08/01/2018

CAEN RFID srl
Via Vetraia, 11
55049 VIAREGGIO ITALY
VAT IT 02032050466

Adriano Bigongiari (Chief Executive Officer)

On the basis of this declaration, these products will bear the following mark: CE

qIDminiNF R1170INF
FCC GRANT PART B

TCB

GRANT OF EQUIPMENT AUTHORIZATION

Certification

Issued Under the Authority of the

Federal Communications Commission

By:

TCB

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

Date of Grant: 07/26/2016

Application Dated: 07/26/2016

CAEN RFID srl
via Vetrala, 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: UVECAENRFID023
Name of Grantee: CAEN RFID srl
Equipment Class: Part 15 Class B Computing Device Peripheral
Notes: R1170IUNFHP - qIDmini Keyfob UHF NF RFID Reader

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
CC	15B	-			

CC: This device is certified pursuant to two different Part 15 rules sections.

qIDminiNF R1170INF
FCC GRANT PART C

TCB

GRANT OF EQUIPMENT AUTHORIZATION

Certification

Issued Under the Authority of the

Federal Communications Commission

By:

TCB

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

Date of Grant: 07/26/2016

Application Dated: 07/26/2016

CAEN RFID srl
via Vetrala, 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.

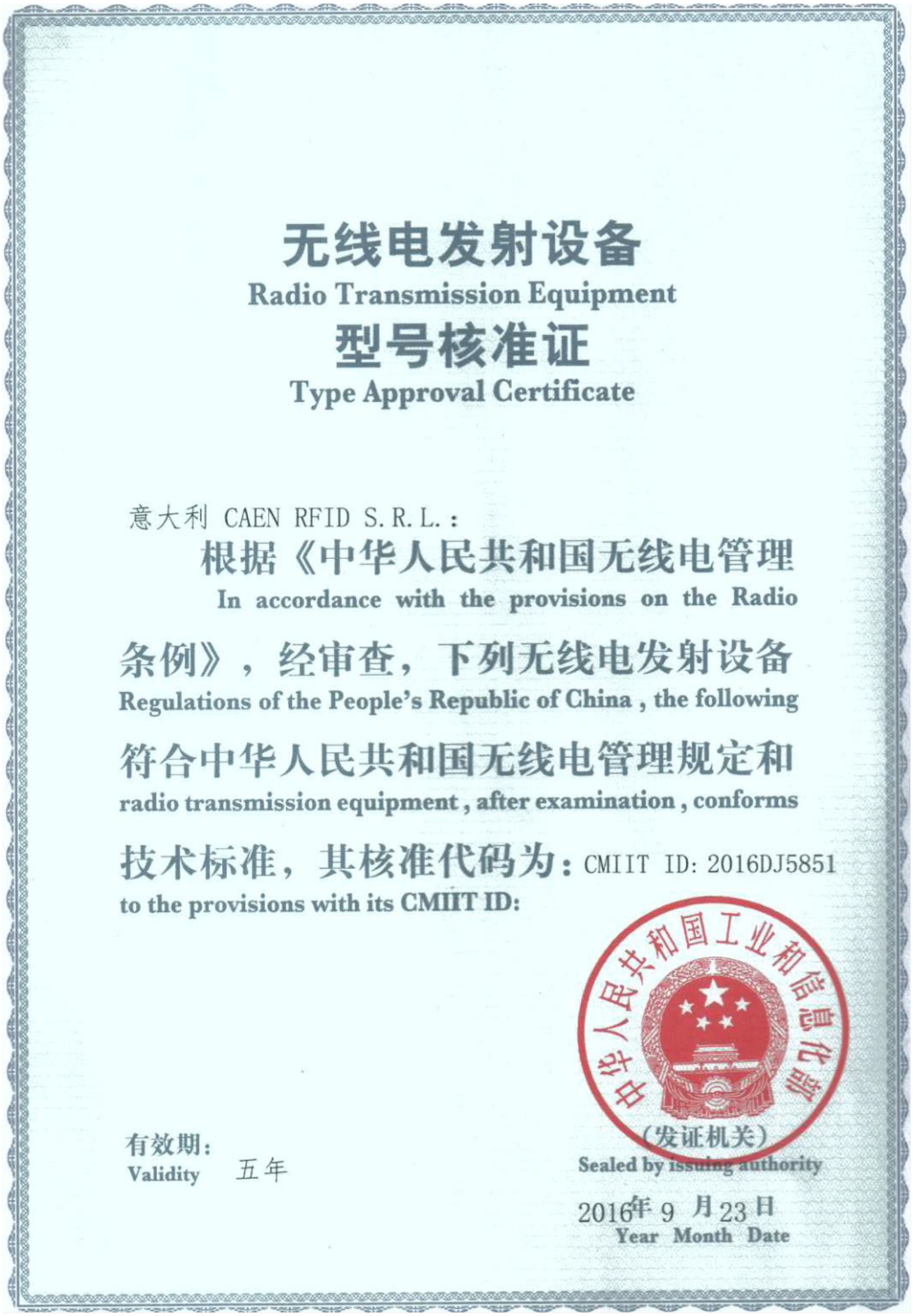
FCC IDENTIFIER: UVECAENRFID023
Name of Grantee: CAEN RFID srl
Equipment Class: Part 15 Spread Spectrum Transmitter
Notes: R1170IUNFHP - qIDmini Keyfob UHF NF RFID Reader

Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Tolerance	Emission Designator
CC	15C	902.75 - 927.25	0.047		

Power output listed is ERP. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 15 mm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC accepted multi-transmitter procedures. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

CC: This device is certified pursuant to two different Part 15 rules sections.

qIDminiNF R1170INF
SRRC TYPE APPROVAL CERTIFICATE



无线电发射设备
Radio Transmission Equipment

型号核准证
Type Approval Certificate

意大利 CAEN RFID S.R.L.：

根据《中华人民共和国无线电管理
In accordance with the provisions on the Radio

条例》，经审查，下列无线电发射设备
Regulations of the People's Republic of China , the following

符合中华人民共和国无线电管理规定和
radio transmission equipment , after examination , conforms

技术标准，其核准代码为：CMIIT ID: 2016DJ5851
to the provisions with its CMIIT ID:

中华人民共和国工业和信息化部
（发证机关）

有效期：
Validity 五年

Sealed by issuing authority

2016年 9 月 23 日
Year Month Date

编号：2016-5851
Number

设备名称：射频识别(RFID)/蓝牙设备
Equipment Name

设备型号：WPE1170NFACN
Equipment Type

主要功能：数据传输
Main Functions

调制方式：ASK GFSK/ π/4DQPSK/8DPSK
Modulation Mode

主要技术参数及其指标值：
Main Technical Parameters

频率范围：920.5-924.5MHz 2400-2483.5 MHz
Frequency Range

频率容限：≤20ppm
Frequency Tolerance

发射功率：≤2W（e.r.p） ≤ 20dBm（EIRP
Transmitting Power

占用带宽：≤250kHz ≤1MHz
Occupied Bandwidth

杂散发射限值≤-30dBm
Spurious Emission Limits

（核发单位章）
Sealed by issuing authority

2016 年 9 月 23 日
Year Month Date