TECHNICAL INFORMATION MANUAL

Revision 01 - 08 July 2014

qIDmini R1170I

Keyfob Bluetooth UHF RFID Reader

Made for iPhone iPad

easy2read©

PRELIMINARY

THE ART OF IDENTIFICATION

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.

Change Document Record

Date	Revision	Changes	Pages
23 June 2014	00	Preliminary release	-
08 July 2014	01	Added note in the *Tab. 1.2: qIDmini R1170I Power LED Status Table*	8
		Added warning in the *Charging* paragraph	8

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).

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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.

Index

List of Figures

List of Tables

1 INTRODUCTION

Product Description

The qIDmini (Model R1170I) is a handheld reader of the easy2read© product family, compliant with UHF RFID ISO 18000-6C/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.

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.

Fig. 1.1: qIDmini R1170I Keyfob Bluetooth UHF RFID Reader

The reader is available either in **ETSI** or **FCC** version (see § *Ordering Options* page 11):

- 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)

The reader is available in two models: **APPLE** or **HID** (see § *Ordering Options* page 11):

- 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.

For more information about EASY2RD and HID profiles, please refer to § *PROFILE* paragraph page 44.

Front panel

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

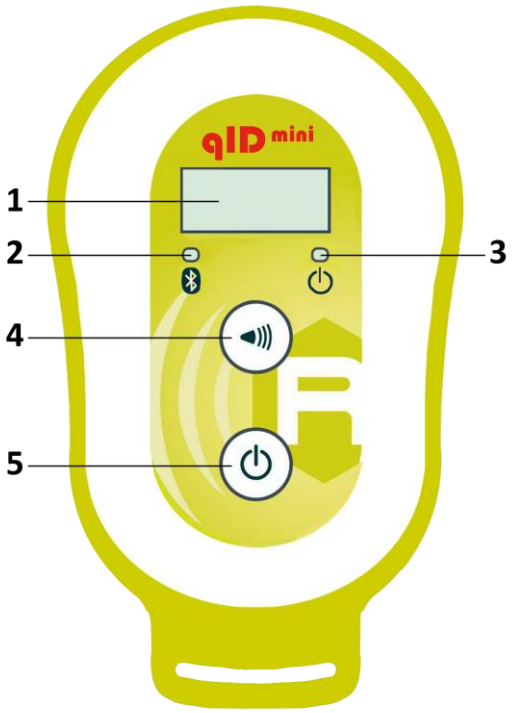


Fig. 1.2: qIDmini R1170I Front Panel

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

Charging

The qIDmini R1170I is supplied with an USB cable and a power supply for charging (see § *Accessories* page 9).

When you put the reader in charge, the display lights 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 41), 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.

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

Accessories

Check for the supplied accessories below:

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

Fig. 1.3: qIDmini R1170I Accessories

Development Kit

R1170IDK – Keyfob Bluetooth UHF RFID Reader Development Kit is available:

Fig. 1.4: R1170IDK – qIDmini Keyfob Bluetooth UHF RFID Reader Development Kit

The qIDmini R1170IDK development kit is a complete RFID set up, for a quick implementation of RFID solutions. It includes:

- n. 1 R1170I qIDmini Keyfob Bluetooth UHF RFID Reader
- n. 1 Set of Labels
- n. 1 A927Z Temperature Logger Tag
- n. 1 RT0005 Temperature Logger Tag
- n. 1 Lanyard
- n. 1 Retractable Roller
- n. 1 Power supply
- n. 1 USB cable

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
Development kit	WR1170IDKEAP	R1170IDKEAP - Development kit with qIDmini - R1170I Reader (ETSI with Apple profile) and demo tags
	WR1170IDKEHI	R1170IDKEHI - Development kit with qIDmini - R1170I Reader (ETSI with HID profile) and demo tags
	WR1170IDKUAP	R1170IDKUA - Development kit with qIDmini - R1170I Reader (FCC with Apple profile) and demo tags
	WR1170IDKUHI	R1170IDKUA - Development kit with qIDmini - R1170I Reader (FCC with HID profile) and demo tags

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
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

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* you can choose between two 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 Kits) library. For details on the use with the EASY2RD profile please refer to § *QIDMINI EASY2RD PROFILE* chapter page 17.
- **HID**[4]: 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 32.

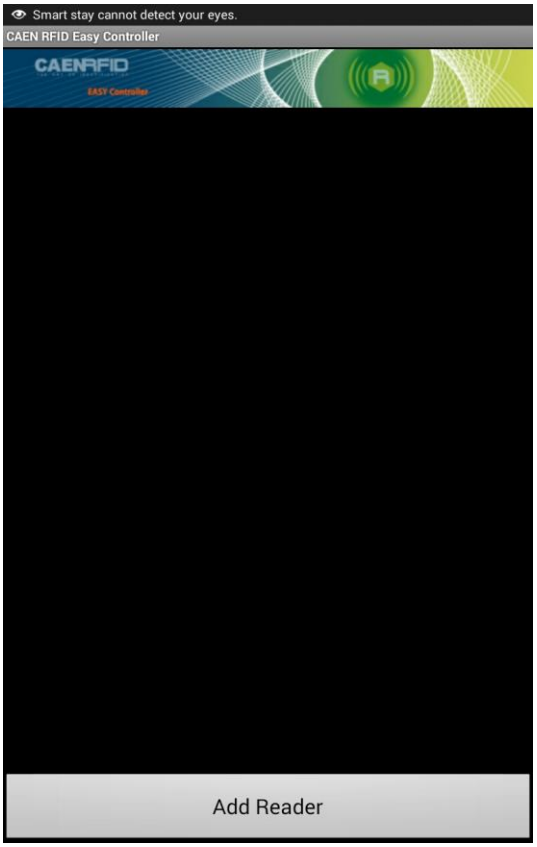
The reader is sold with the factory profile set to EASY2RD. This guide helps you to getting started with your reader using the EASY2RD profile.

Bluetooth Communication Setup using the Easy Controller for Android

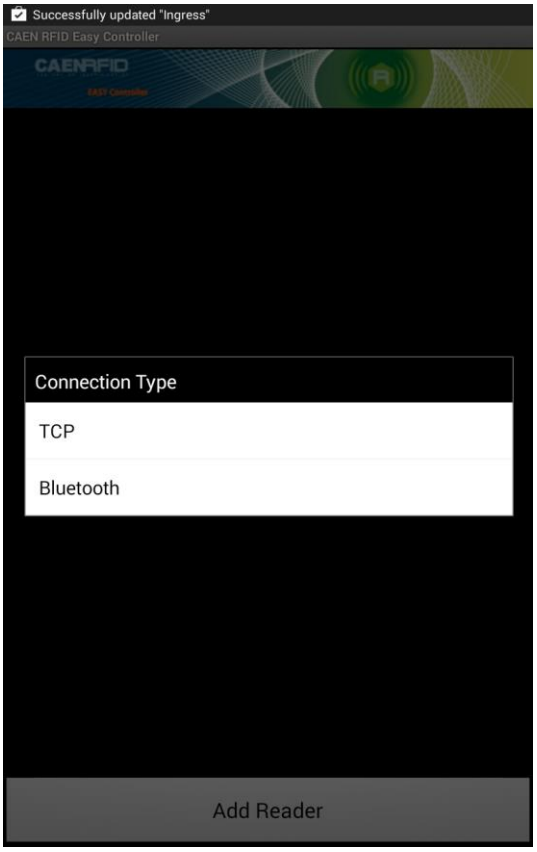
1. Download the *CAEN RFID Easy Controller for Android App* from the qIDmini R1170I web page, by clicking on the Android APP on Google Play icon.
2. Launch the *CAEN RFID Easy Controller for Android App.*

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

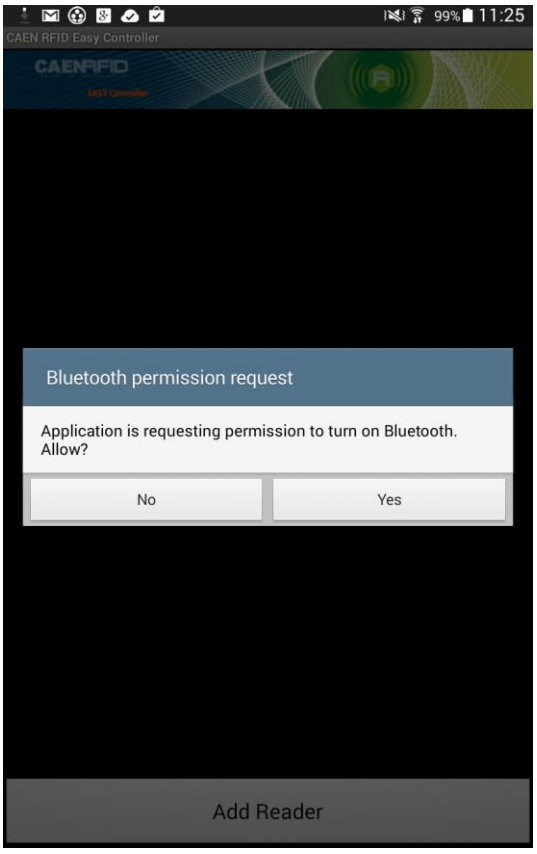
3. Click on "*Add reader*":



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

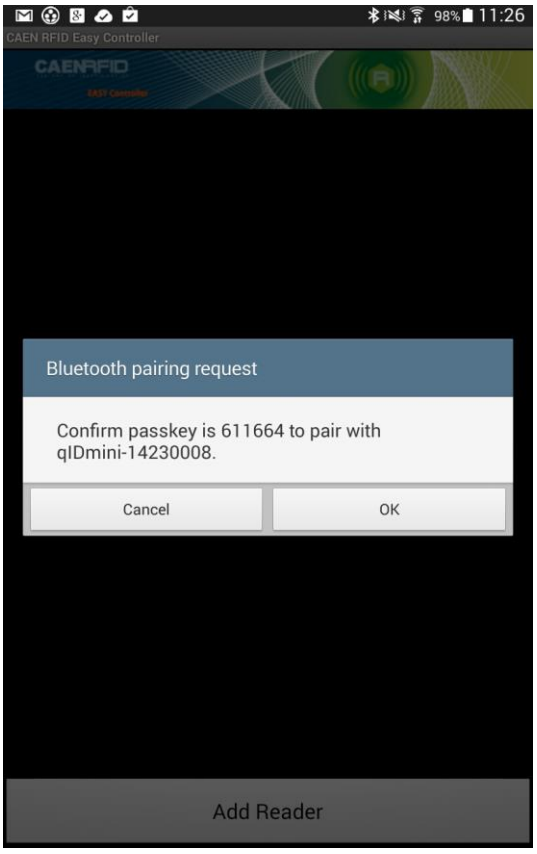


5. Click on *"yes"* to confirm the *Bluetooth permission request*:



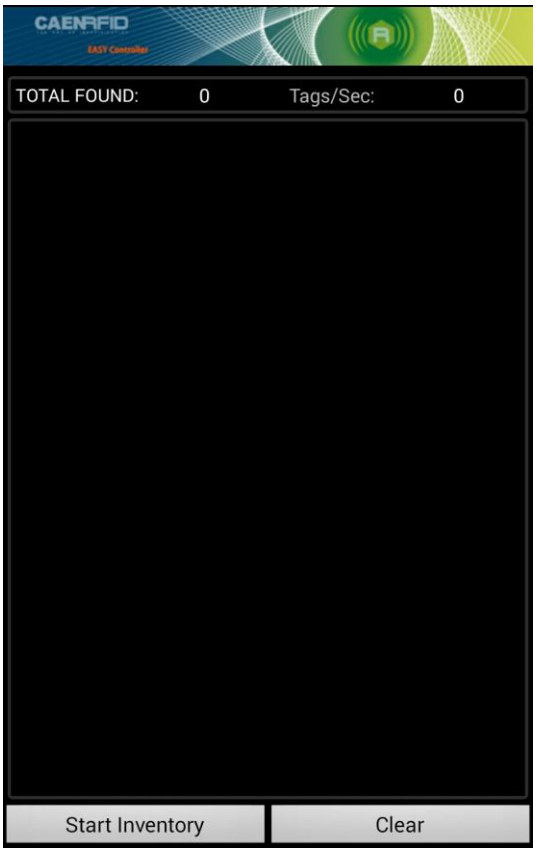
6. Select the qIDmini R1170I reader from the list of Bluetooth devices:

7. Confirm the passkey:

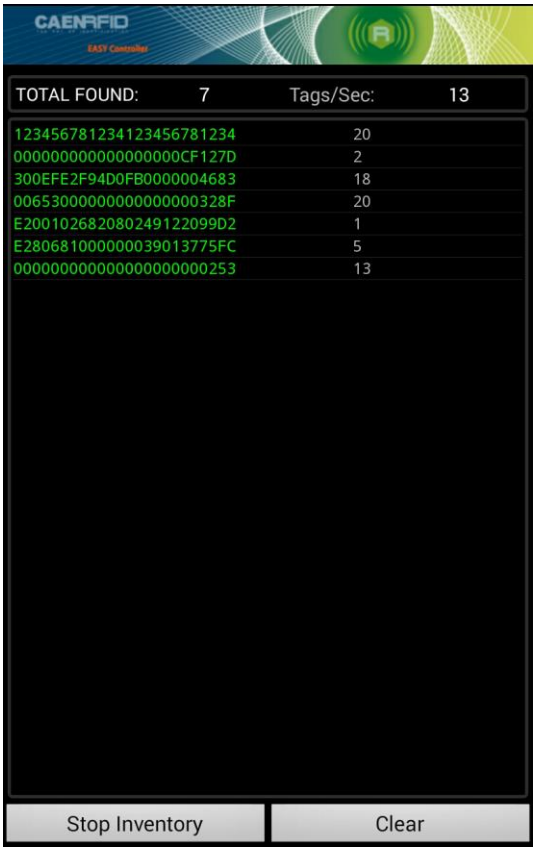


8. Once the connection is established the Bluetooth blue light turns on.
9. To start using your qIDmini R1170I, click on the reader line:

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 Kits) library.

For details on the available profiles and on the activation method please refer to § *PROFILE* paragraph page 44.

Note that the **APPLE** model reader (see § *Ordering Options* page 11) 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

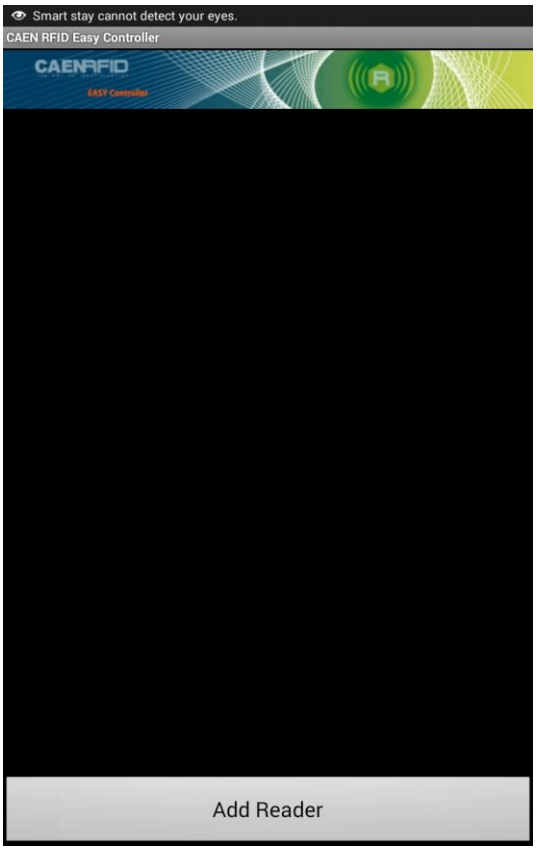
[5] APPLE Model Ordering Options: WR1170IEAPLP, WR1170IUAPLP, WR1170IDKEAP, WR1170IDKUAP

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

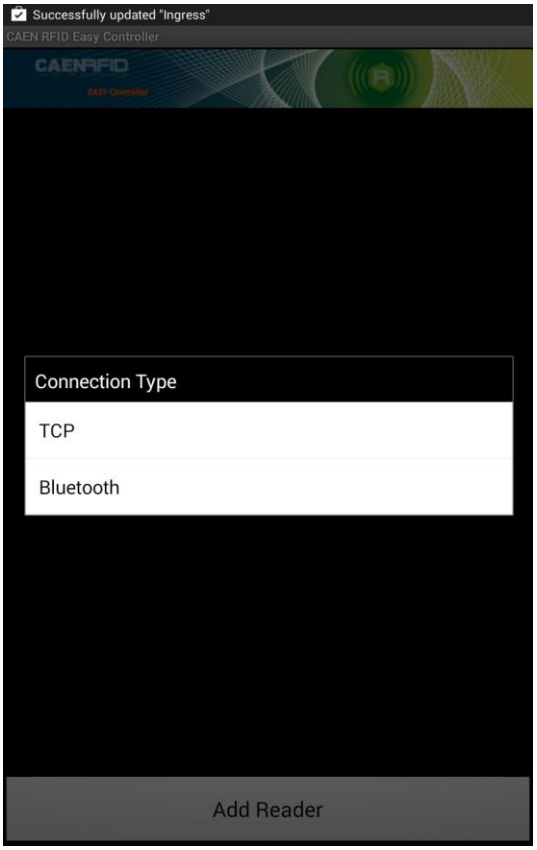
Android devices

Bluetooth Communication Setup using the Easy Controller for Android

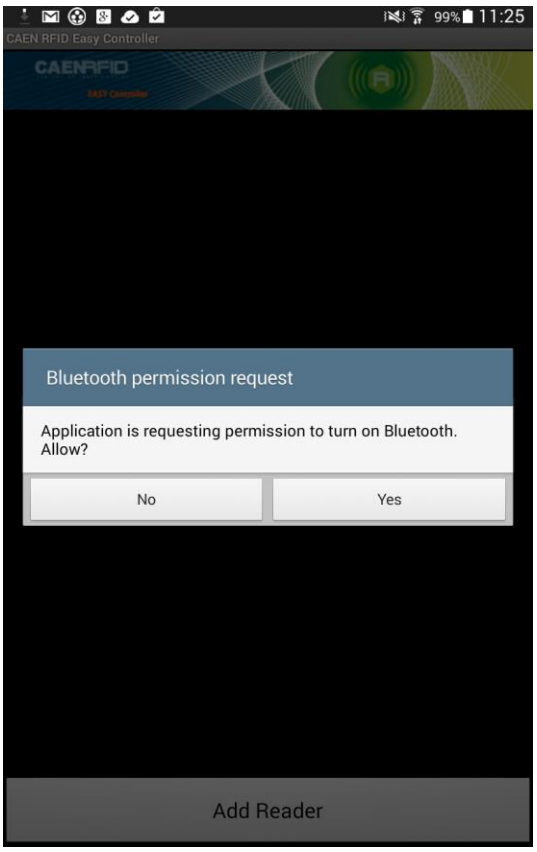
1. Download the *CAEN RFID Easy Controller for Android App* from the qIDmini R1170I web page, by clicking on the Android App on Google Play icon.
2. Launch the *CAEN RFID Easy Controller for Android App.*
3. Click on "*Add reader*":



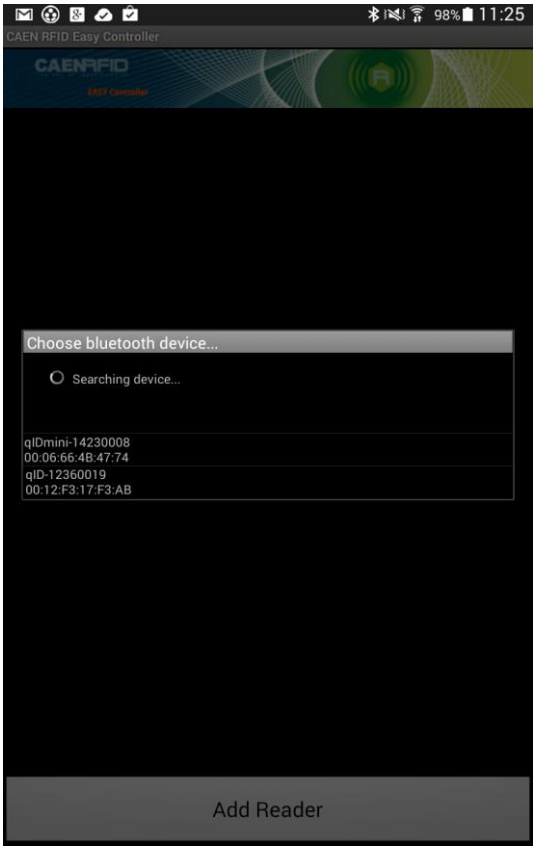
4. Click on "*Bluetooth"* in the *"Connection Type"* window:



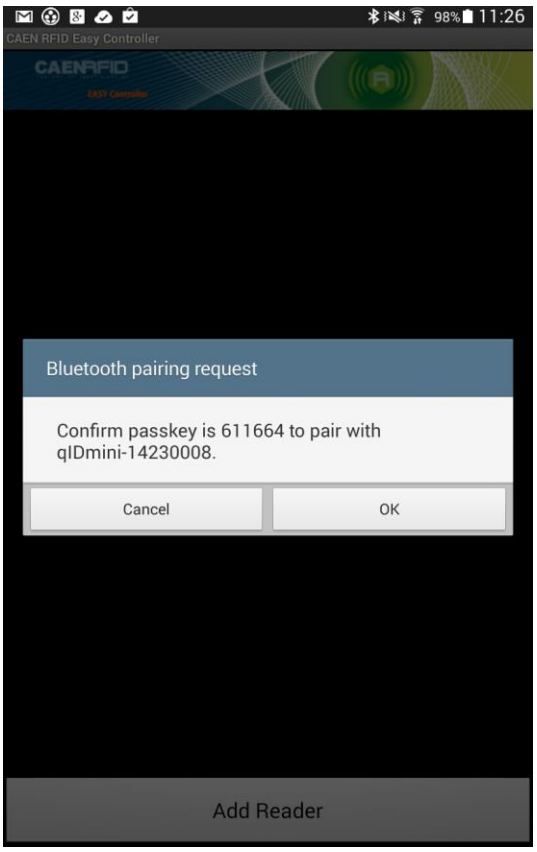
5. Click on *"yes"* to confirm the *Bluetooth permission request*:



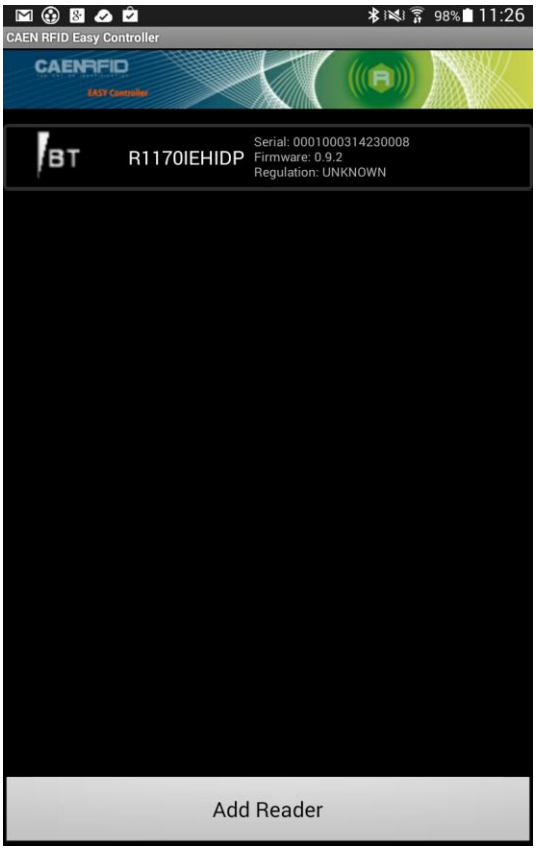
6. Select the qIDmini R1170I reader from the list of Bluetooth devices:



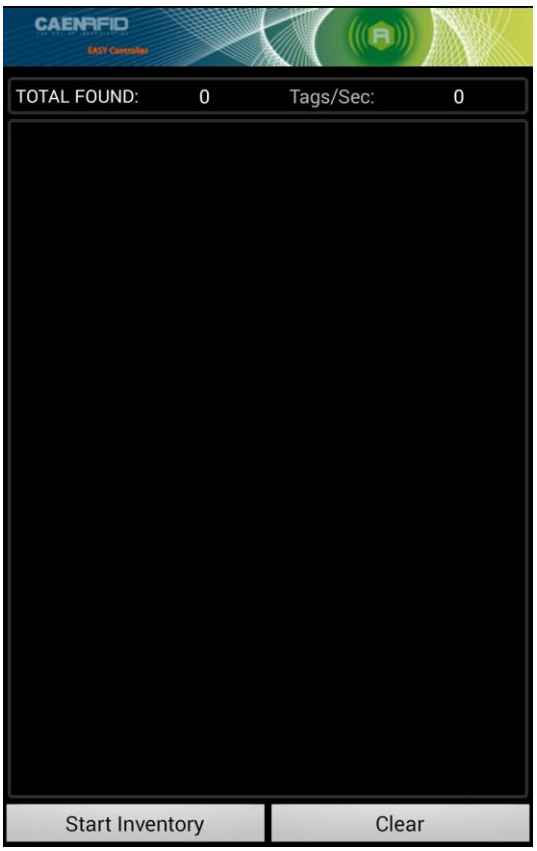
7. Confirm the passkey:



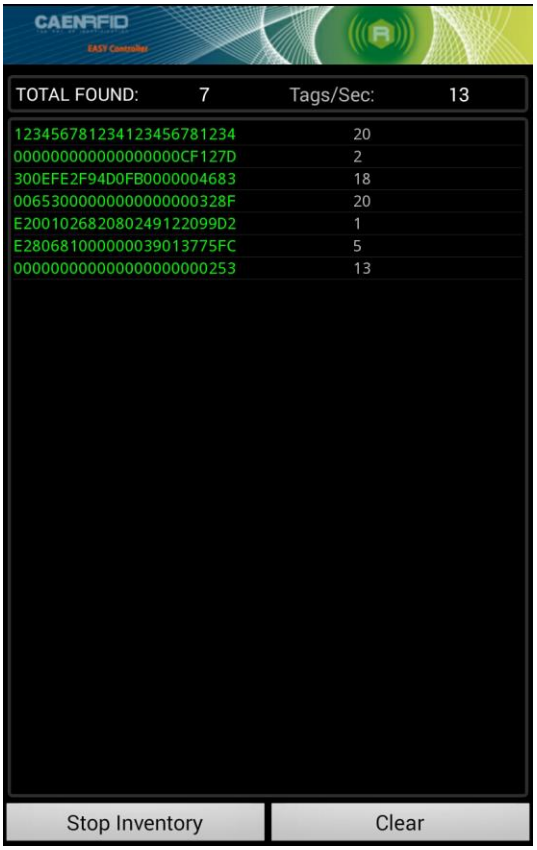
8. Once the connection is established the Bluetooth blue light turns on.
9. To start using your qIDmini R1170I, click on the reader line:



10. Click on "*Start Inventory*":



11. A list of the read tags is shown:

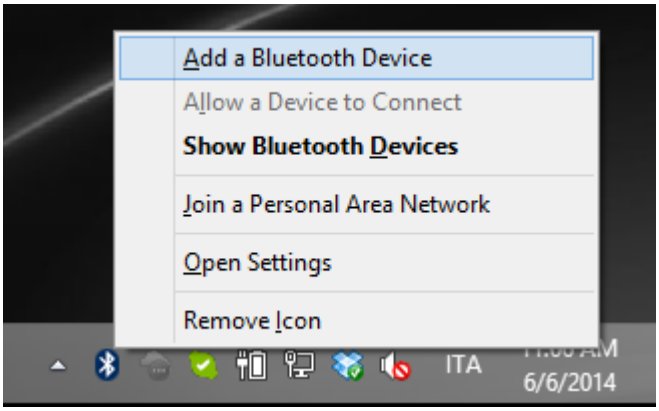


Windows PCs

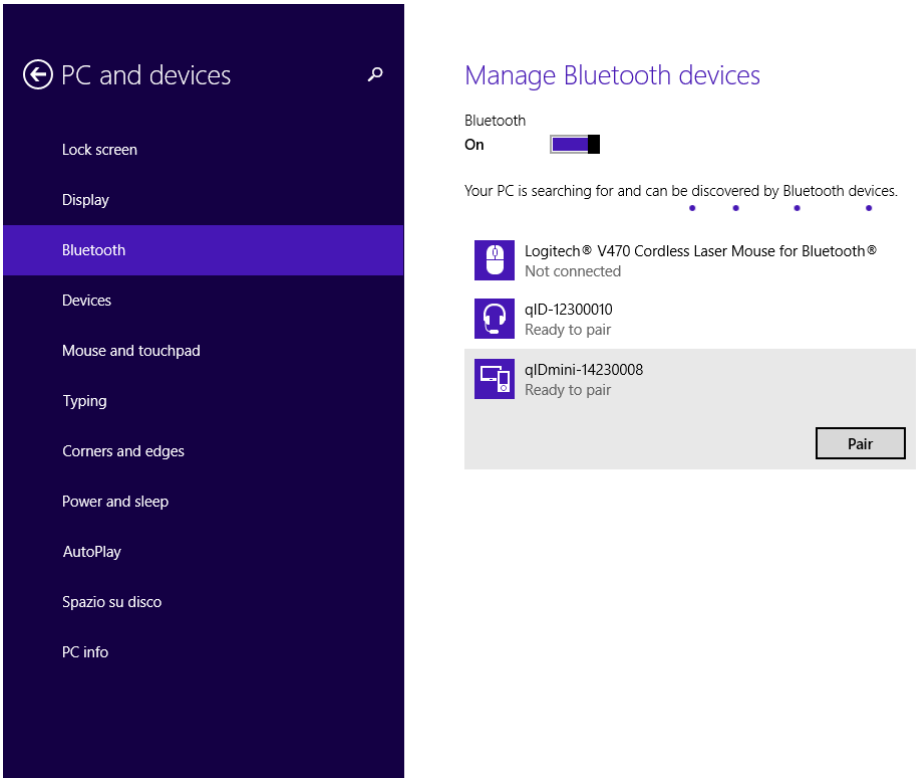
Bluetooth Communication Setup

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

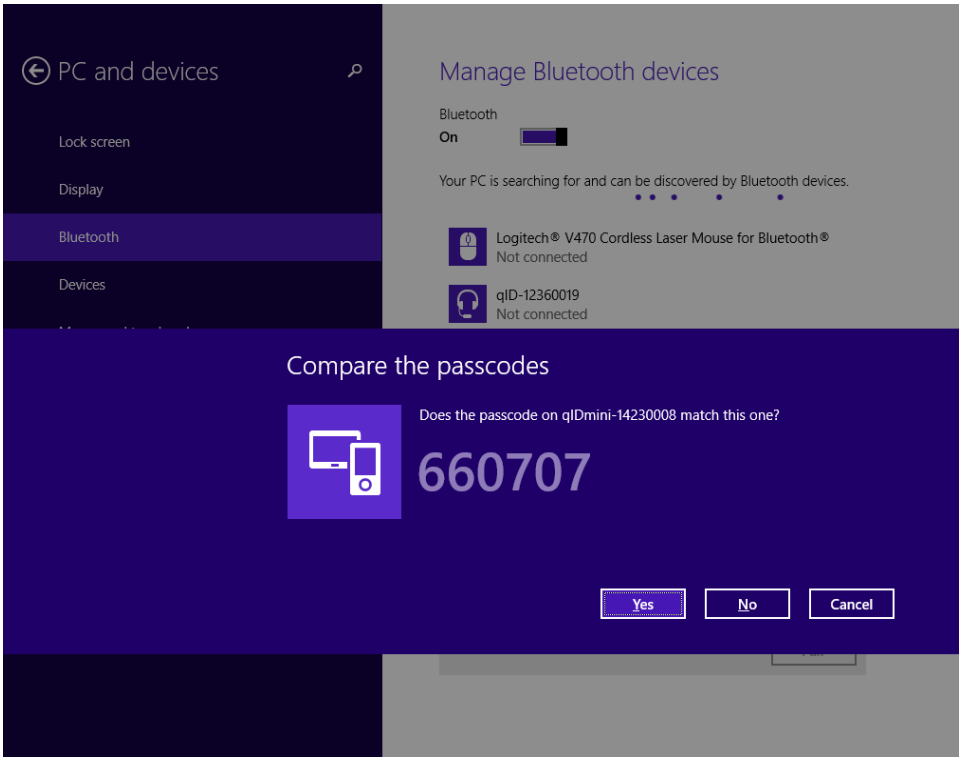
   Right click on the *Bluetooth* icon in the taskbar -> *Add a Bluetooth Device*:



   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.

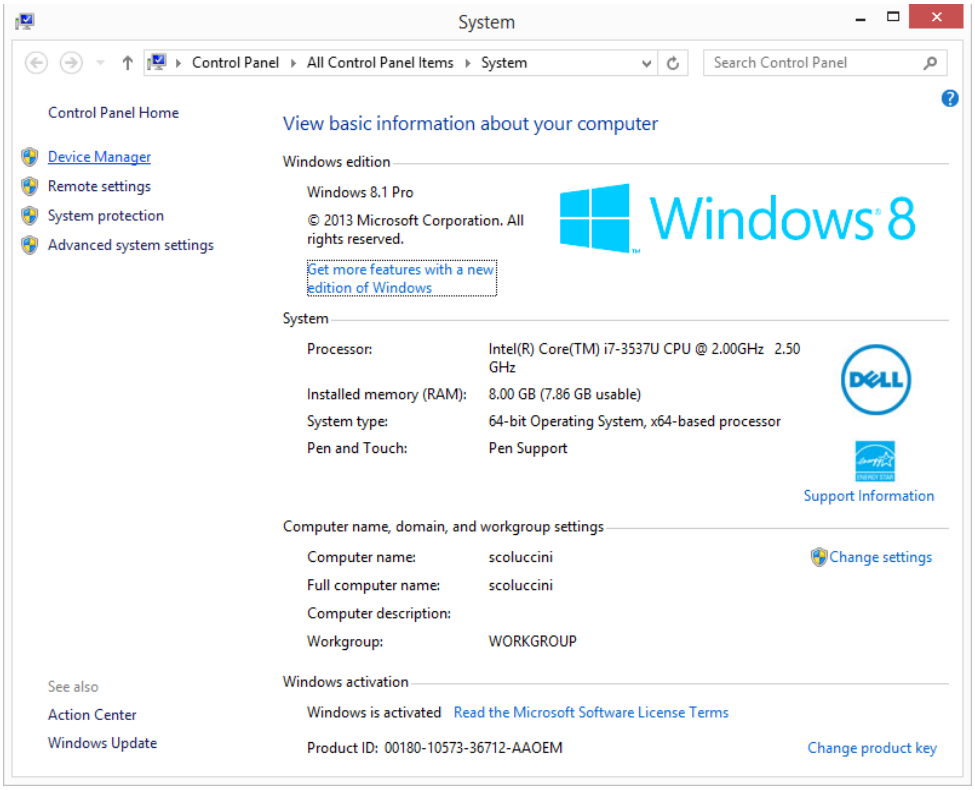
Now you can use the CAEN RFID Easy Controller Application to control the reader. For details refer to § *Connecting the qIDmini using the Easy Controller for Windows* page 27.

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).

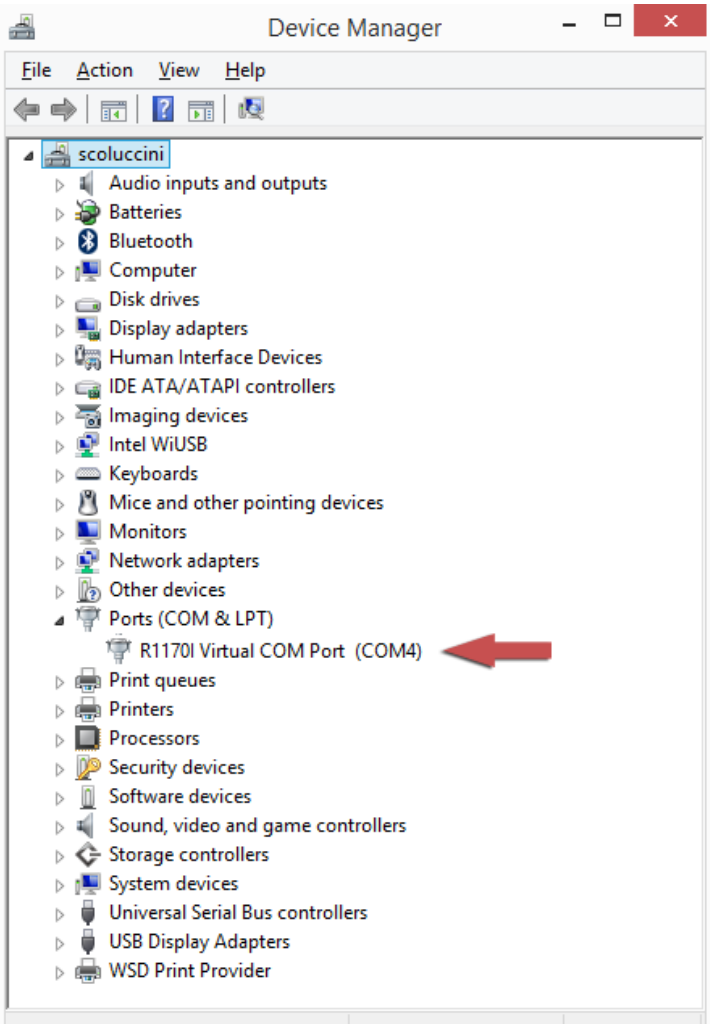
USB Communication Setup

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 ON the reader and plug the USB cable into the qIDmini USB port.
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):



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 27.

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).

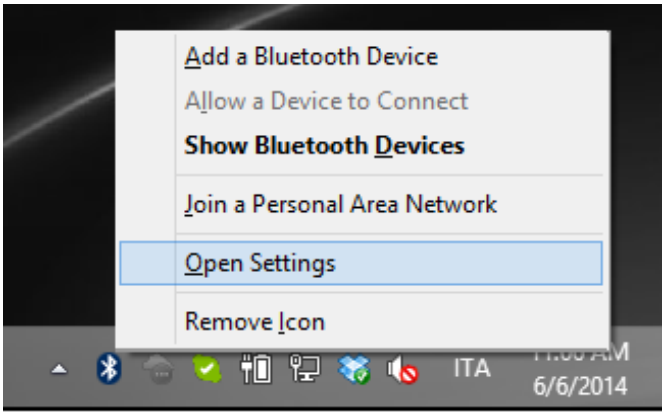
Connecting the qIDmini using the Easy Controller for Windows

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.

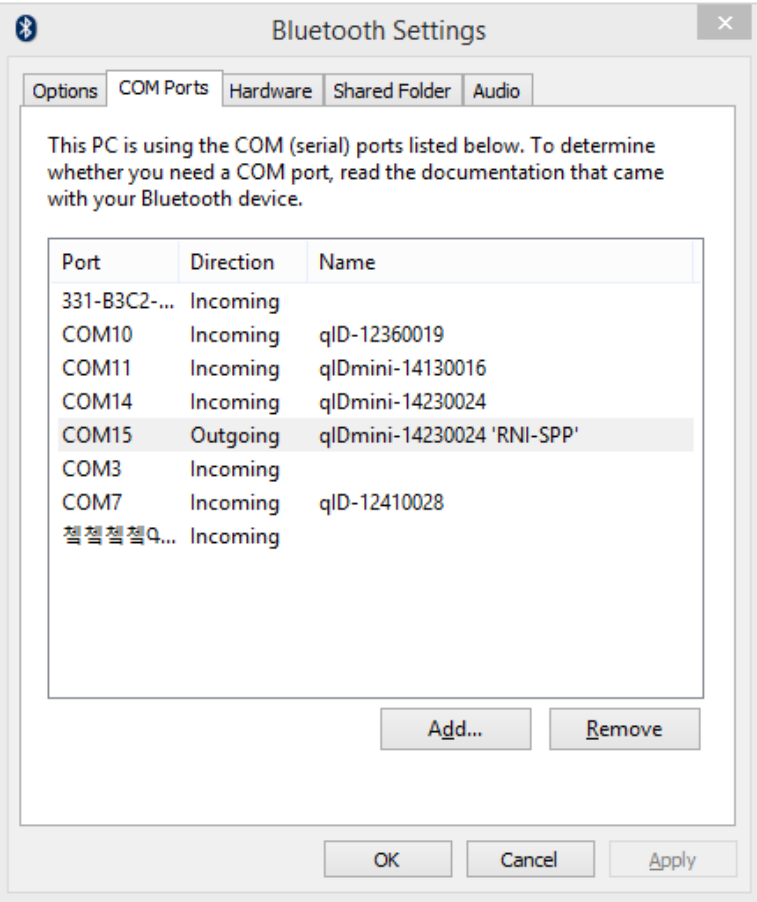
The activation of the EASY2RD profile is required to connect the qIDmini using the Easy Controller application for Windows.

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.

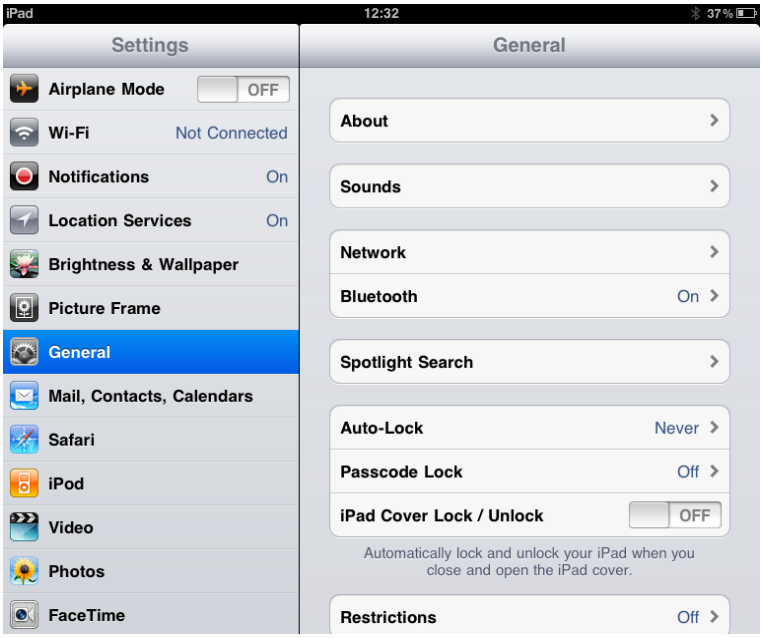
For more information on the CAEN RFID *Easy Controller for Windows* application usage, please refer to the relevant user manual: you can download it from the qIDmini R1170I web page, *Documents Section*, from the CAEN RFID Easy Controller for Windows web page or in the Manual and Documents web area.

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.

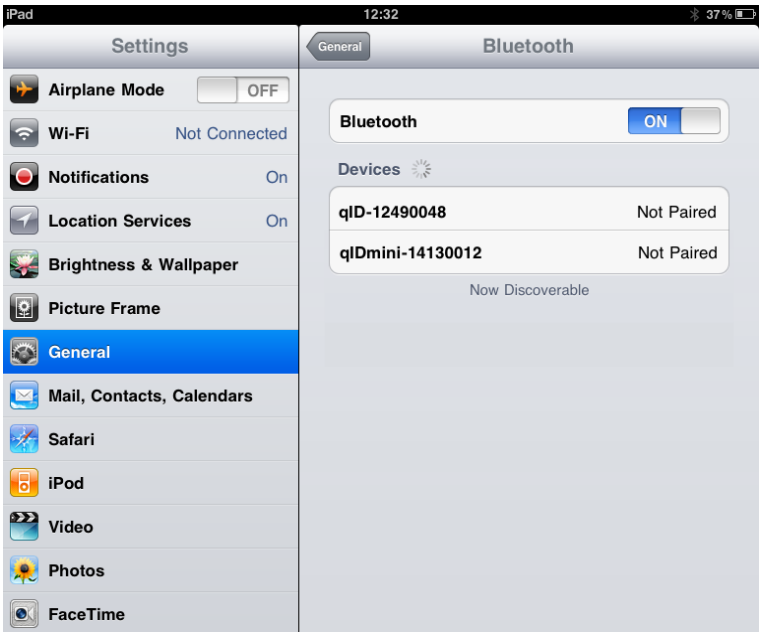
iOS devices

Bluetooth Communication Setup

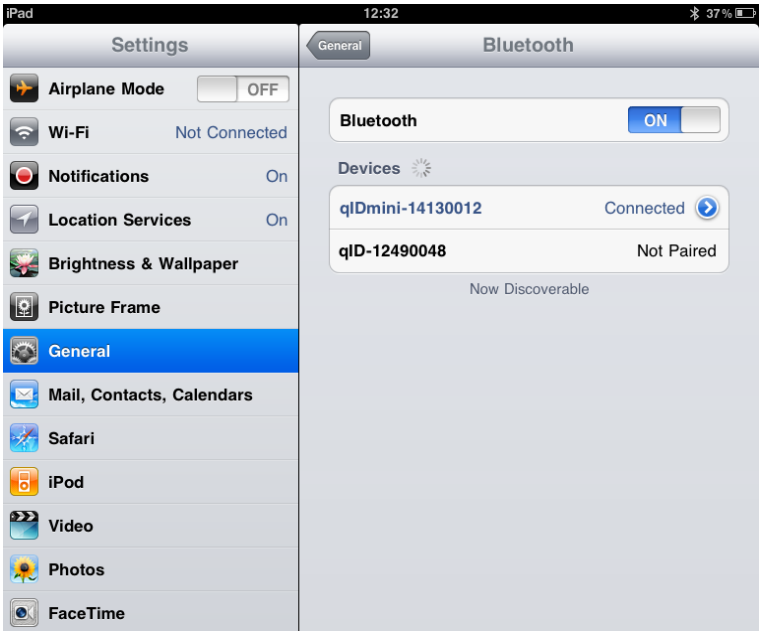
1. On your iOS device, go to Setting and enable the Bluetooth:



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 44.

Note that the **APPLE** model reader (see § *Ordering Options* page 11) 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:

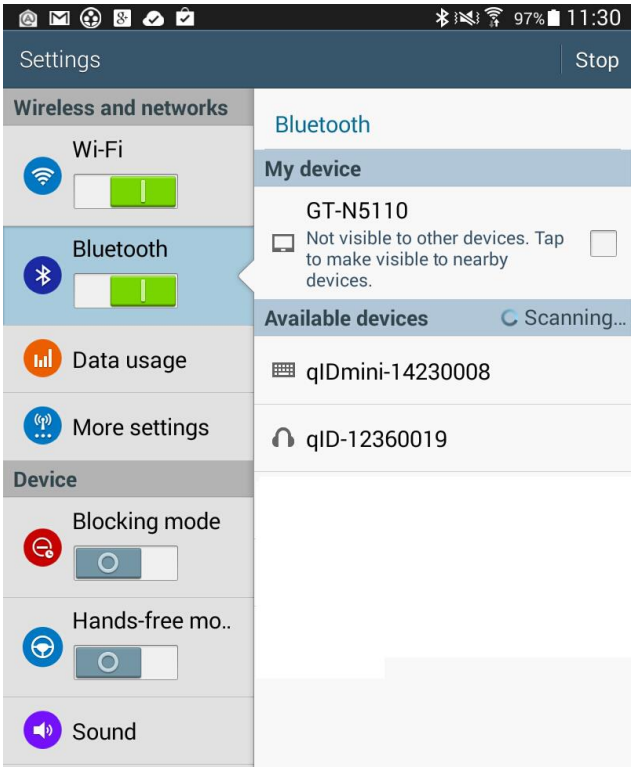
	ANDROID	PC	iOS
APPLE MODEL[7]	-	-	-
HID MODEL[8]	√	√	√

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

Android devices

Bluetooth Communication Setup

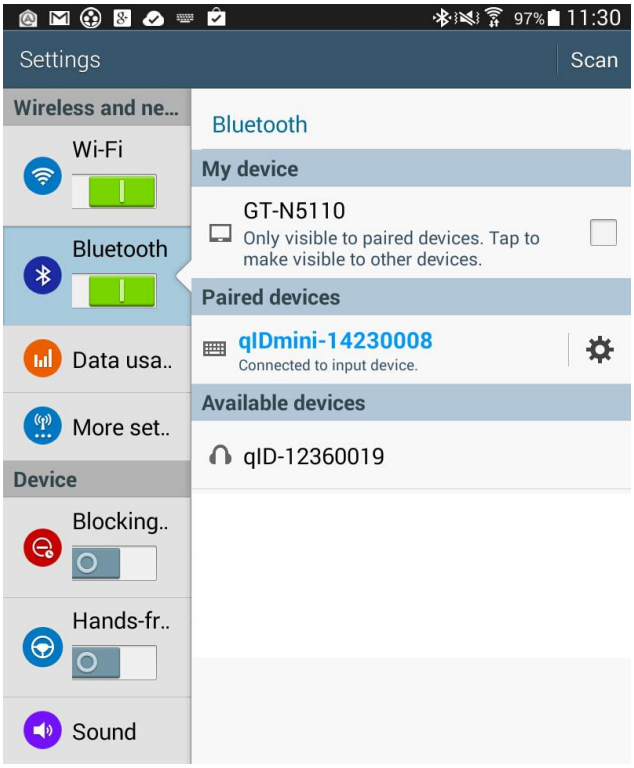
1. On your Android device, go to *Setting* and enable the Bluetooth. A list of the Bluetooth available devices is shown:



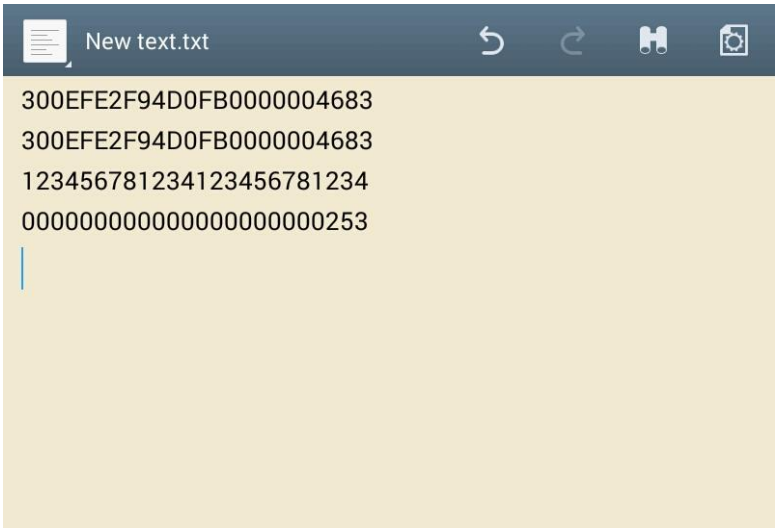
[7] APPLE Model Ordering Options: WR1170IEAPLP, WR1170IUAPLP, WR1170IDKEAP, WR1170IDKUAP

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

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:



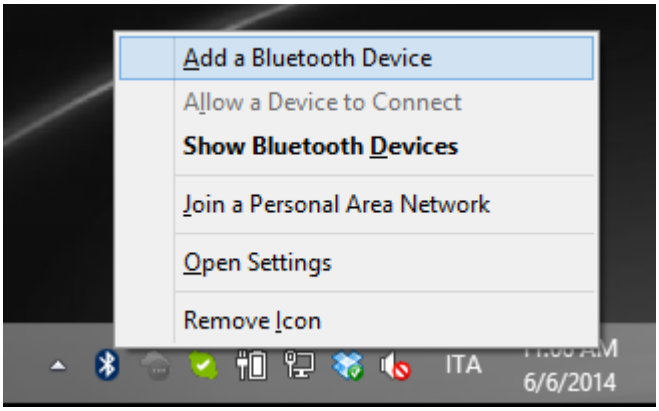
Note that, when configured in HID profile and paired to a device, the qIDmini will automatically reconnect to the same device every time the Bluetooth link is active (qIDmini switched ON and Bluetooth activated on the host). You can verify this behaviour looking at the blue LED that, in this case, turns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

Windows PCs

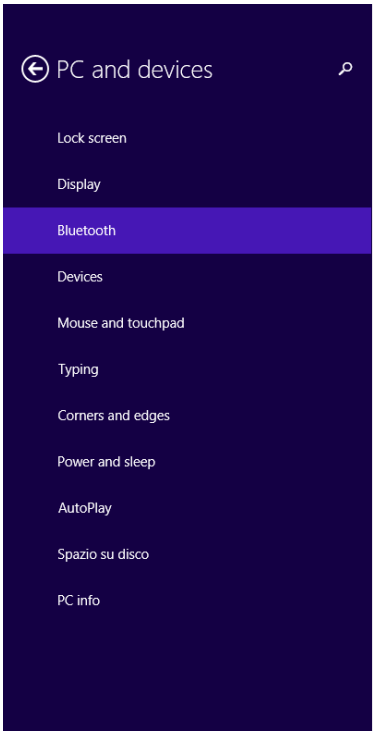
Bluetooth Communication Setup

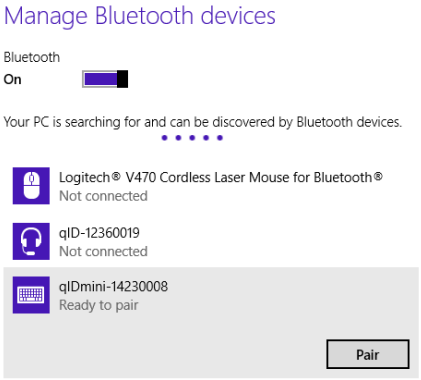
1. **In case of Windows 8 Operating System**:

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

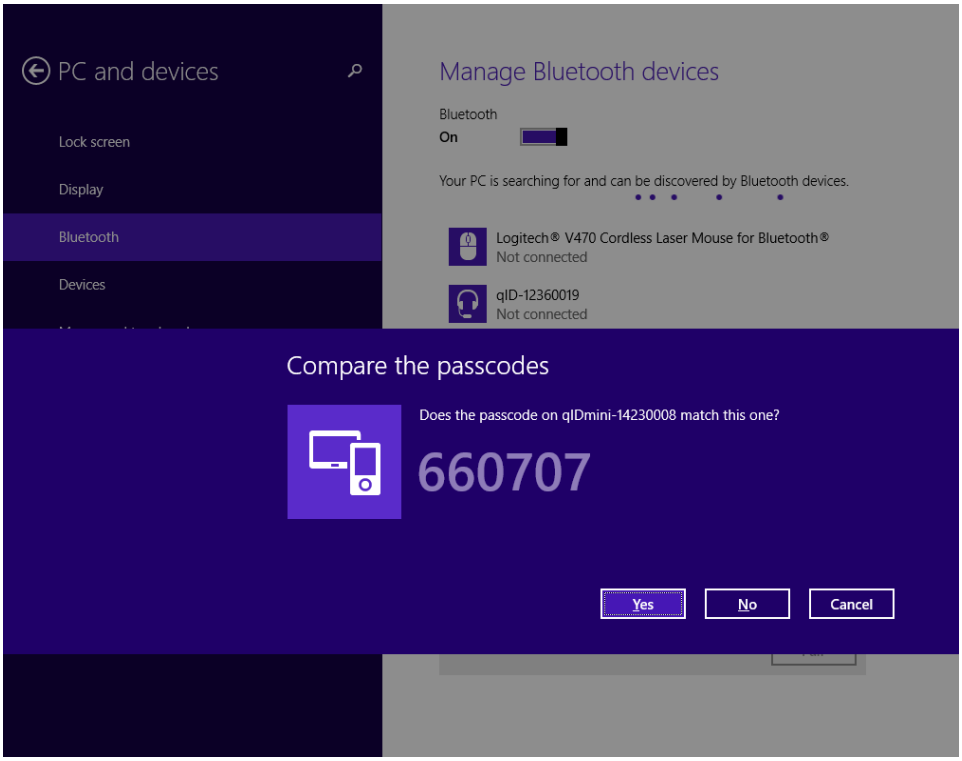


   Select the qID mini R1170I reader and click on “Pair”:





Click on “yes” to confirm the passcode:

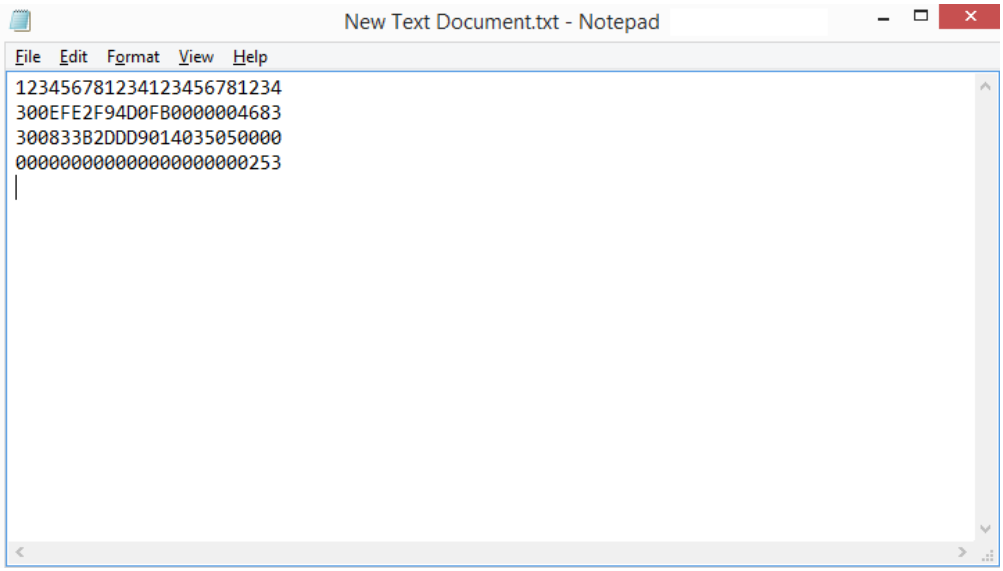


In case of Windows XP Operating System, when discovered by the host, the qIDmini reader can be identified by its Bluetooth device name and paired using the pass-key; both parameters are provided below:

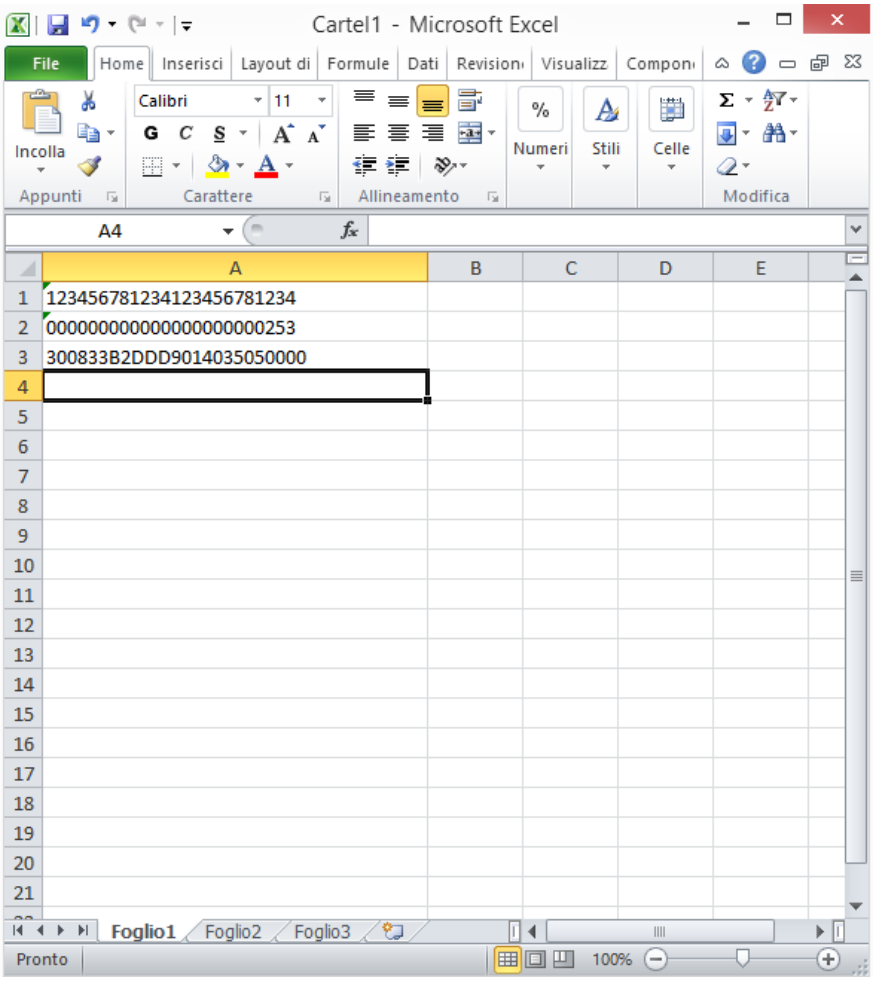
- Bluetooth device name: “qIDmini“ + device serial number
- Pass-key: 1234

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:

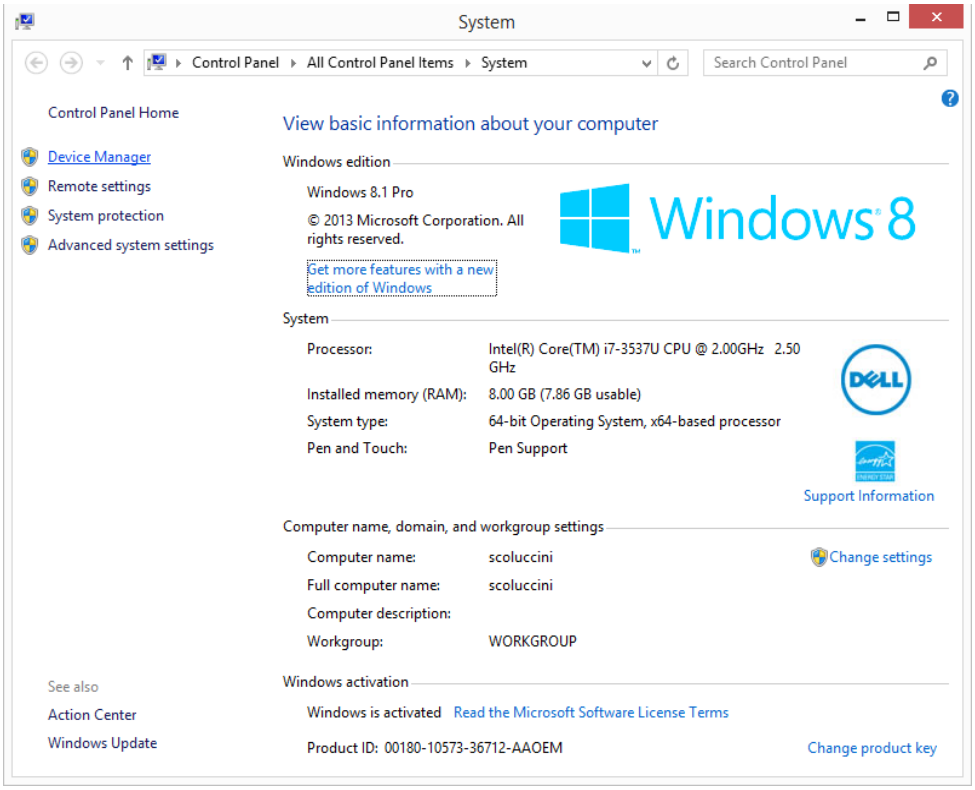


Note that, when configured in HID profile and paired to a device, the qIDmini will automatically reconnect to the same device every time the Bluetooth link is active (qIDmini switched ON and Bluetooth activated on the host). You can verify this behaviour looking at the blue LED that, in this case, turns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

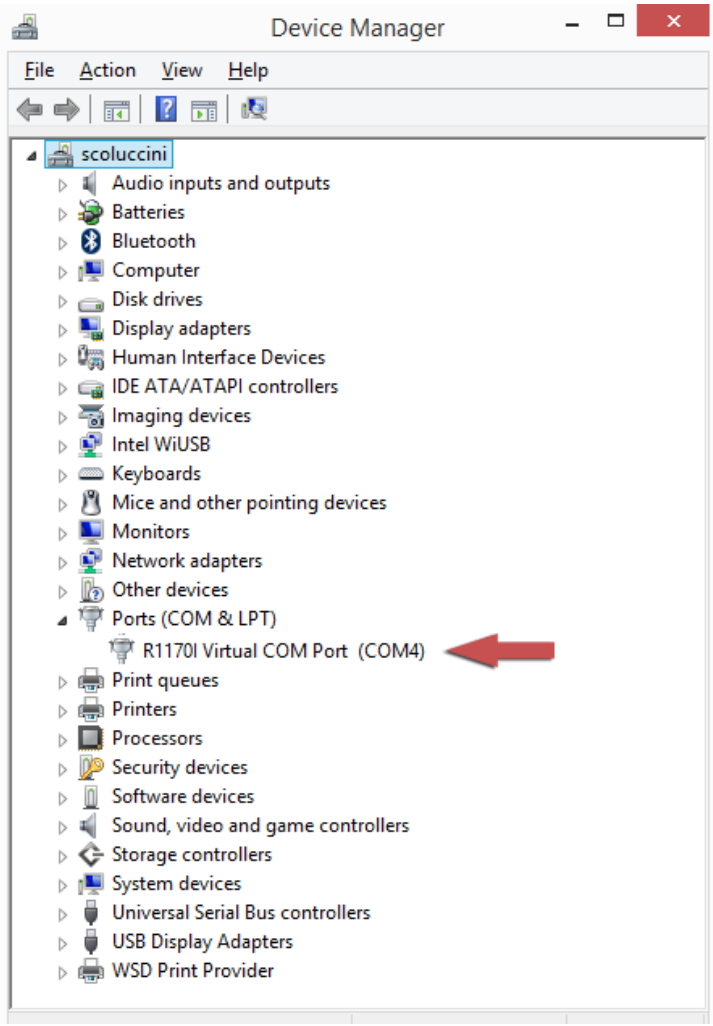
USB Communication Setup

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 ON the reader and plug the USB cable into the qIDmini USB port.
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*.

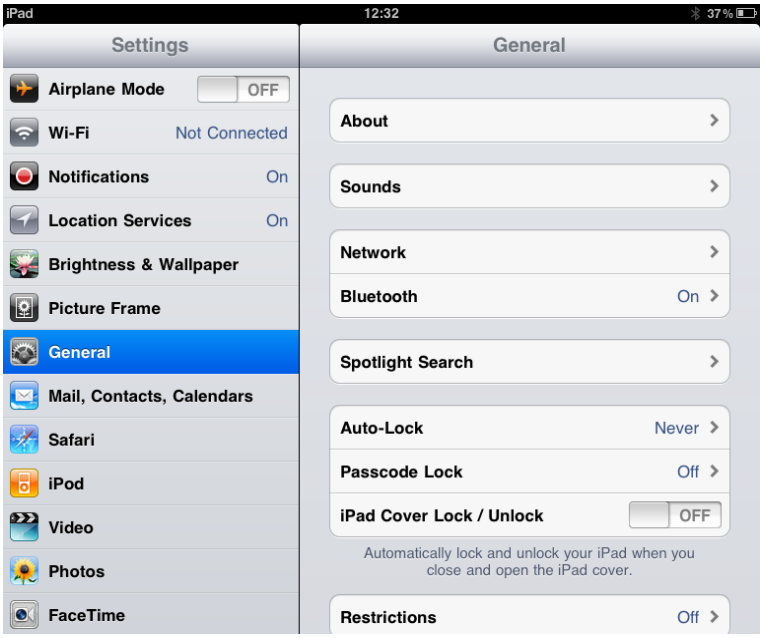
The qIDmini reader, when configured in the HID profile and connected via USB to a PC, sends the EPCs of the detected tags on the serial port as ASCII characters. So, in order to operate with the reader in this configuration, follow these steps:

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

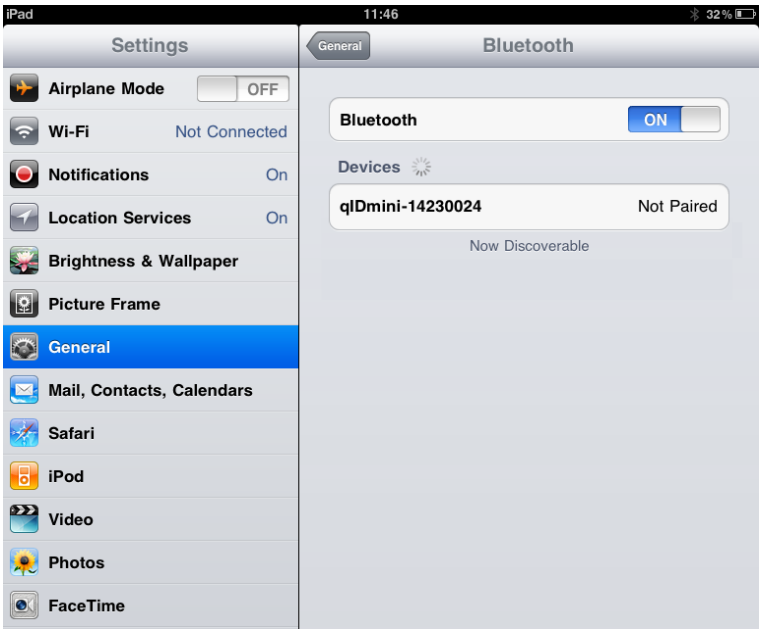
iOS devices

Bluetooth Communication Setup

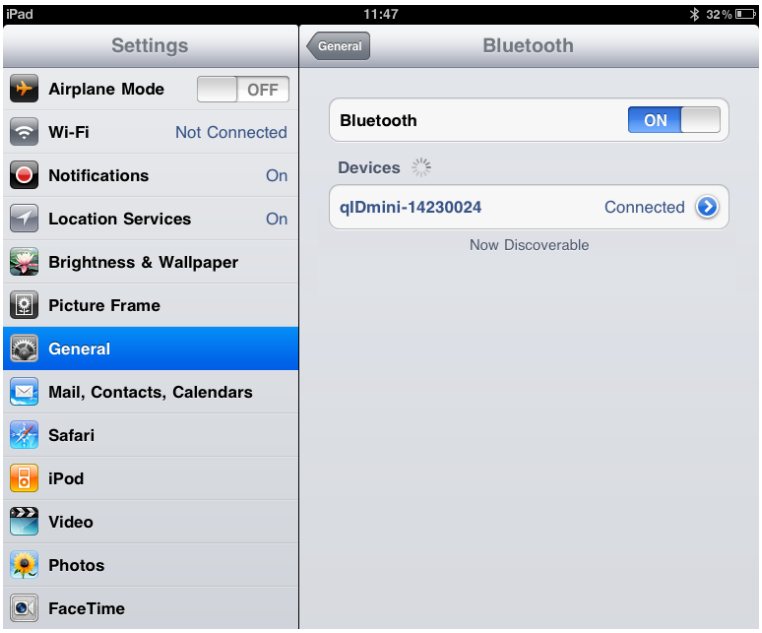
1. On your iOS device, go to *Setting* and enable the Bluetooth:



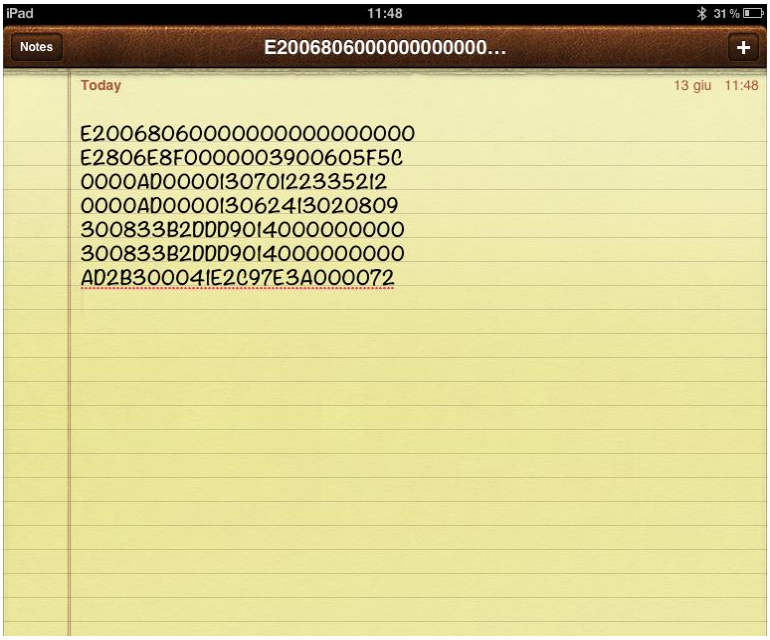
2. A list of the Bluetooth available devices is shown:



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 RESET THE QIDMINI READER

To reset the reader, press the *power* and the *trigger* buttons (see § *Fig. 1.2: qIDmini R1170I Front Panel* page 7) 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.

6 QIDMINI CONFIGURATION MENU

Introduction

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

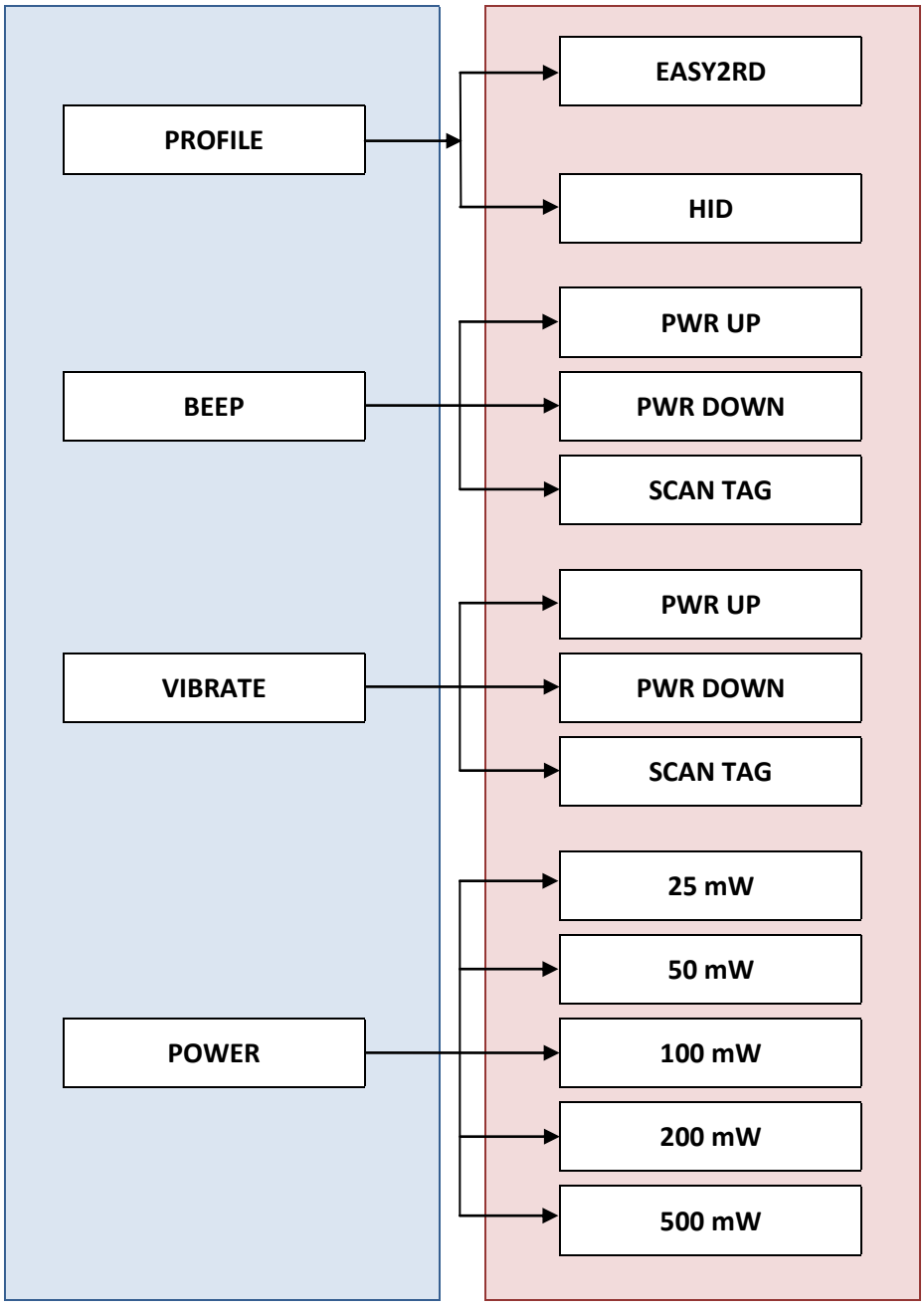
To scroll through the main menu, press quickly the *trigger* button.

The qIDmini R1170I menu options are the following:

- **PROFILE**
- **BEEP**
- **VIBRATE**
- **POWER**

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

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



PROFILE

Access the configuration menu as explained in the *Introduction* paragraph page 42.

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 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 Kits) library. For details on the use with the EASY2RD profile please refer to § *QIDMINI EASY2RD PROFILE* chapter page 17.
- **HID**[9]: 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 32.

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

The currently active profile is marked with an asterisk.

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.

BEEP

Access the configuration menu as explained in the *Introduction* paragraph page 42.

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

The BEEP menu is the second option of the 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.

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

VIBRATE

Access the configuration menu as explained in the *Introduction* paragraph page 42.

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

The VIBRATE menu is the third option of the 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 Kits) library.

Access the configuration menu as explained in the *Introduction* paragraph page 42.

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

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

The POWER submenu options are the following:

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

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.

7 QIDMINI FIRMWARE UPGRADE

Firmware Upgrade

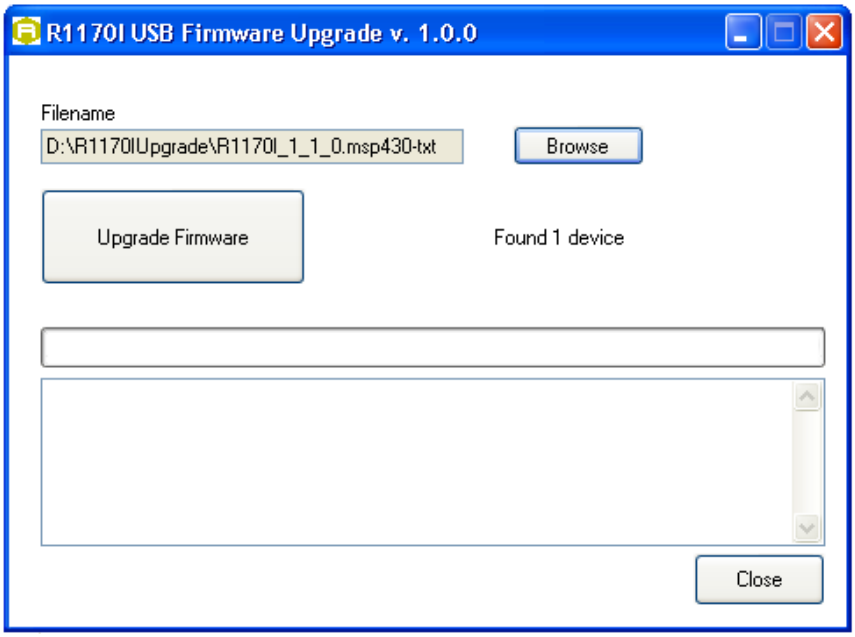
The qIDmini R1170I firmware upgrade can be managed via USB by using the SW upgrade program. The qIDmini Upgrade Tool is available for free at the qIDmini R1170I web page of the CAEN RFID Web Site, *SW/FW* section.

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:

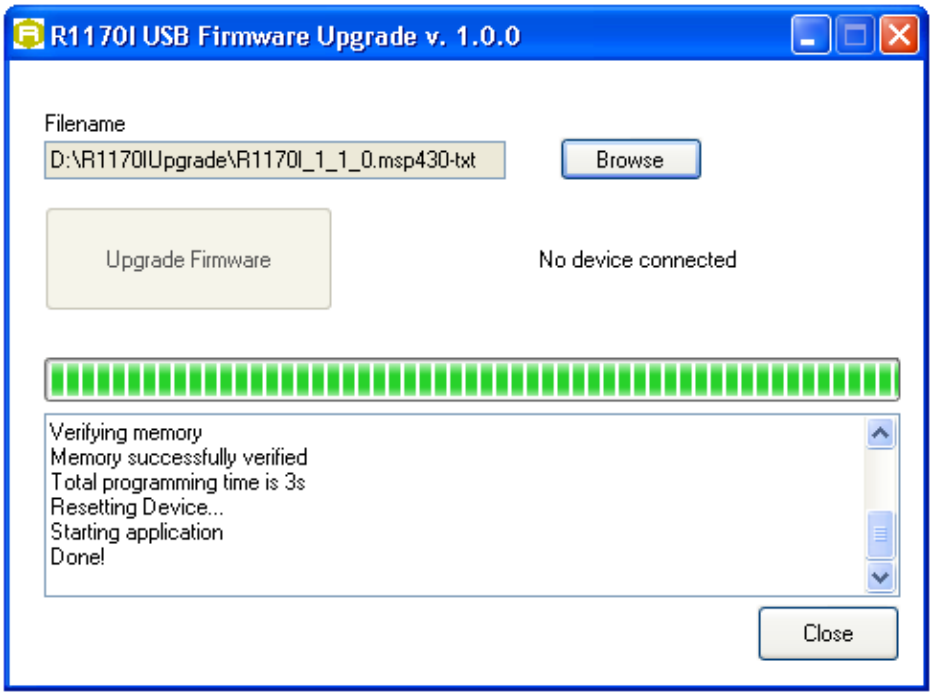
5. In the window you will see the message “Found 1 device” (if the message is “No device connected” repeat the points 2,3, 4 and 5).

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.



8 QIDMINI TECHNICAL SPECIFICATIONS

Technical Specifications Table

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.)
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 18000-6C/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. 8.1: 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.

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[10]
2	ETSI - FCC	PR–ASK; f=40kHz	Miller (M=4); f = 320kHz

Tab. 8.2: qIDmini R1170I Reader to tag link profiles

[10] Default value.

Radiation Patterns

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

Model R1170IE (ETSI version)

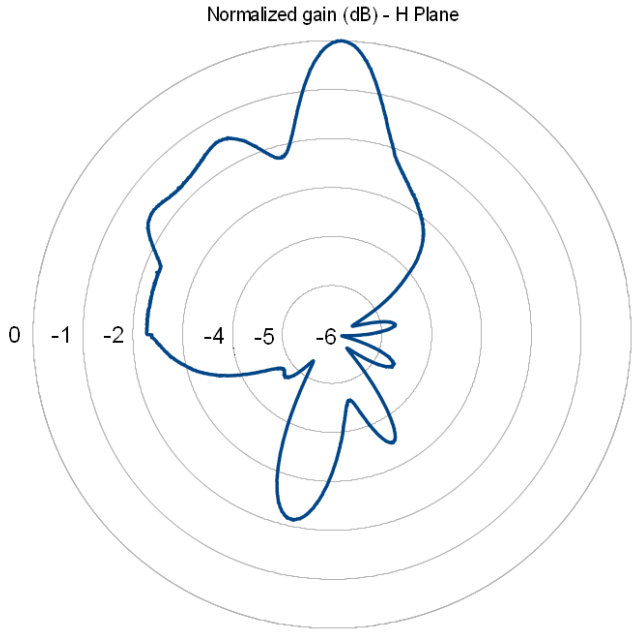
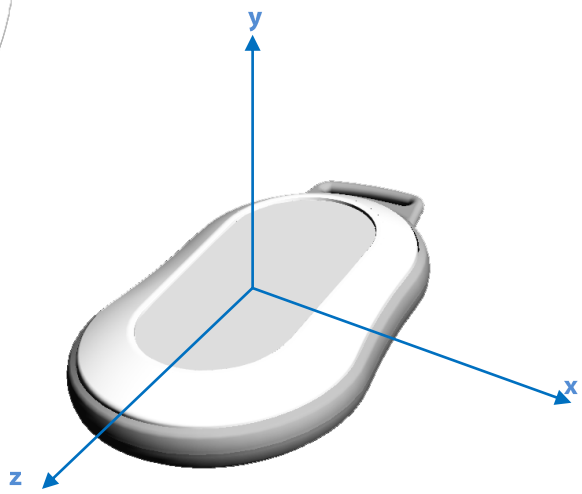


Fig. 8.1: qIDmini R1170IE Radiation pattern H plane



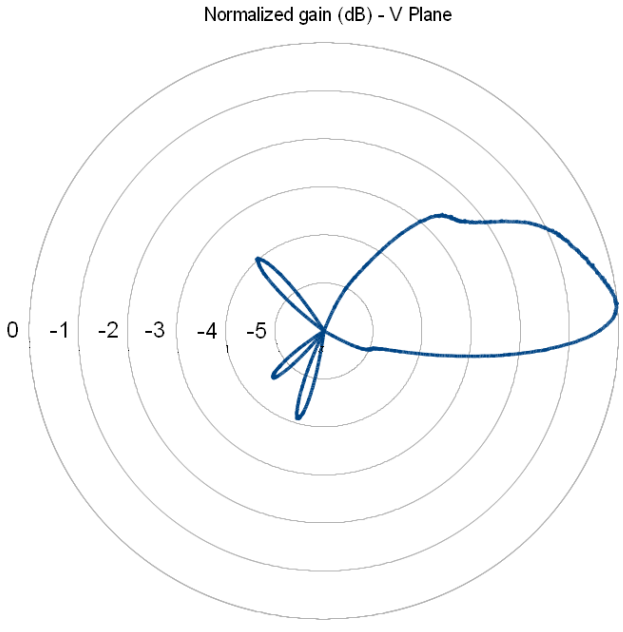
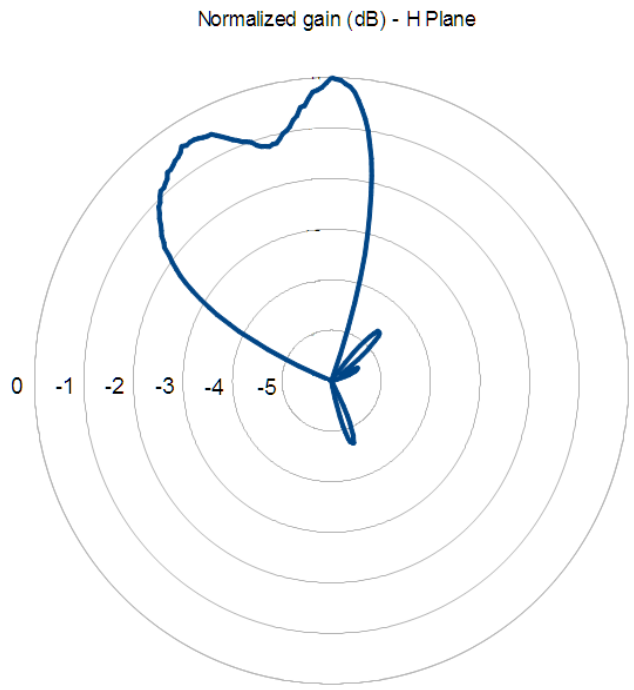


Fig. 8.2: qIDmini R1170IE Radiation pattern V plane

Model R1170IU (FCC version)



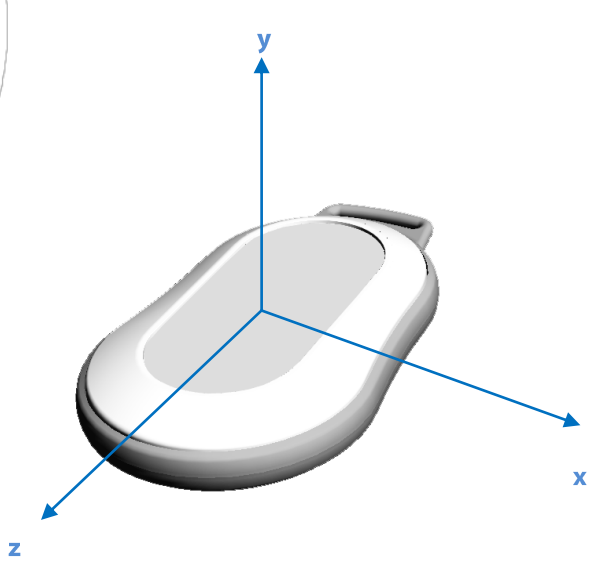


Fig. 8.3: qIDmini R1170IU Radiation pattern H plane

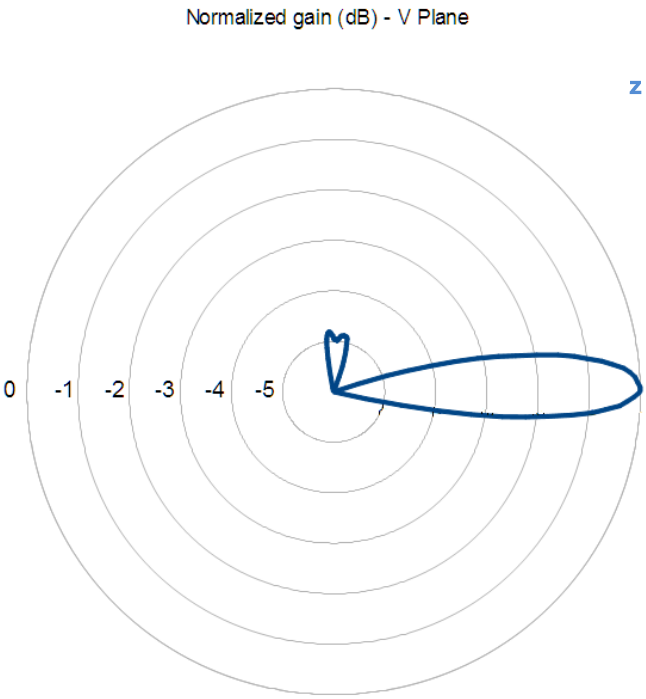


Fig. 8.4: qIDmini R1170IU Radiation pattern V plane