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TECHNICAL INFORMATION MANUAL

Revision 0 – 08/05/2025

R1353I

Slate³

RAIN RFID Desktop Reader

Visit the Slate³ R1353I 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 the Manual

The goal of this manual is to provide the basic information to work with the Slate³ R1353I RAIN RFID Desktop Reader.

This manual refers to:

- **Slate³ R1353I firmware revision ≥ 1.0.0**
- **SDK (Software Development Kit) revision ≥ 4.7.0**
- **R1353I Configuration Tool revision ≥ 1.0.0**

Change Document Record

Date	Revision	Changes	Pages
08 May 2025	00	Preliminary revision	-

Reference Document

[RD1] 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).

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1 INTRODUCTION

Description

The **Slate³** (**Model R1353I**) is a slim RAIN RFID desktop reader of the easy2read© product line with integrated antenna for short to medium range applications.

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

Thanks to its compact size, the Slate³ reader is the perfect choice for various applications such as points-of-sale, document tracking, tag programming stations, access control and so on. It can also be used as a building block for smart shelves and smart displays.

The Slate³ reader supports the HID profile (native keyboard emulation) allowing to interact directly with legacy applications, office automation SW or any other generic solution requiring manual input.

The reader has a physical trigger button that, if enabled, permits to start the reading process only when needed. The same trigger signal is available also via a jack connector to use an external trigger button.

The Slate³ can also be fixed with screws using the fixing holes available on the corners of the reader.

Being compliant with both European and US regulatory environments, the Slate³ reader allows installations in various countries worldwide as needed by retailers, forwarders, warehouses and other global organizations.

The core component of the Slate³ reader is the CAEN RFID Lepton³ module, an ultra-compact RAIN RFID module based on the Impinj E310 reader IC.

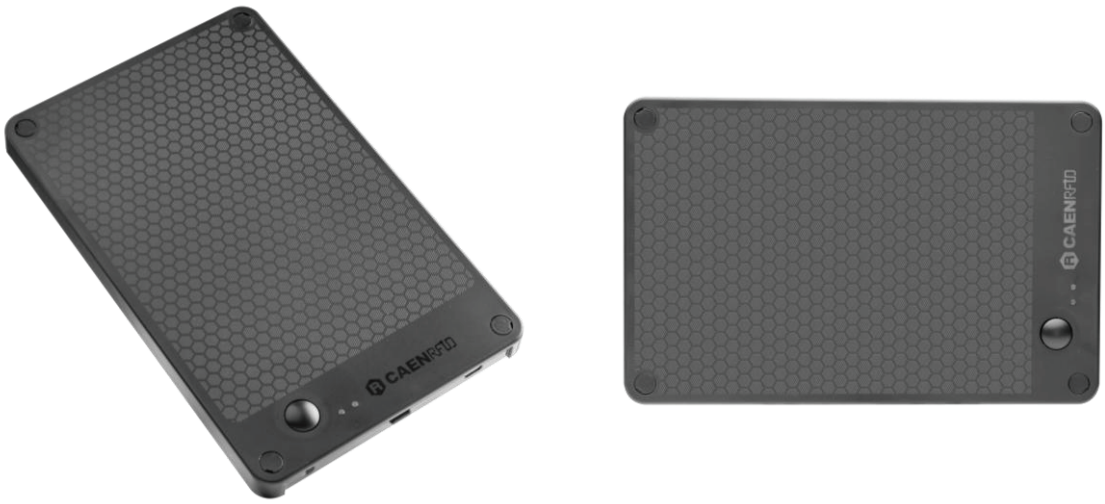


Fig. 1.1: Slate³ R1353I Reader

Front panel

The Slate[3] R1353I front panel houses the following buttons and LEDs (see figure below):

Fig. 1.2: Front Panel

No.	Name	Type	Description
1	Trigger	Button	Inventory mode: press to perform an inventory cycle (hold down the button to repeat inventory cycles)
2	Tag ID	LED	Indicates the inventory activity or configuration mode
3	Power	LED	Indicates the reader status ON/OFF

Tab. 1.1: Front Panel

Status	Description
Orange	Reader is ON
OFF	Reader is OFF

Tab. 1.2: Power LED Status

Status	Description
Green	Configuration mode or inventory activity
OFF	No connection established

Tab. 1.3: Tag ID LED status

Bottom panel

The Slate³ R1353I bottom panel houses the following connectors and buttons (see figure below):

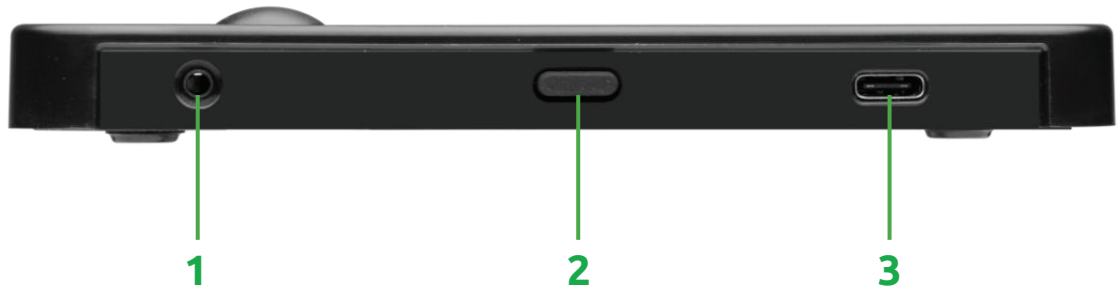


Fig. 1.3: Bottom Panel

No.	Name	Type	Description
1	Jack	Connector	2.5mm jack for optional external trigger
2	Power	Button	Press the power button to turn the reader on/off (with the reader connected to a PC via USB cable)
3	USB	Connector	USB Type C socket connector

Tab. 1.4: Bottom Panel

Accessories

The following accessories are supplied with the Slate³ R1353I reader:

No. 1 USB cable USB Type C

Fig. 1.4: Supplied Accessories

Ordering Options

The reader is available in **ETSI** or **FCC** version:

	Code	Description
Reader	WR1353IXEUAA	R1353I - Slate³ - RAIN RFID Desktop Reader ETSI
	WR1353IXUSAA	R1353I - Slate³ - RAIN RFID Desktop Reader FCC

2 GETTING STARTED

Introduction

This quickstart guide will help you to get started with your Slate^3 (Model R1353I) reader.

The reader can be configured in two different profiles:

- **EASY2READ** (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.
- **HID:** choosing this option you select the keyboard emulation protocol. For details on the use of the HID profile please refer to *§ HID Profile* chapter page 33.

The reader is sold with the factory profile set to *EASY2READ*. This guide helps you to get started with your reader using the EASY2READ profile.

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

Windows PCs

USB Communication Setup and the Easy Controller for Windows

Follow the steps below to connect your Windows PC to the Slate^3 reader using the USB connection and the Easy Controller Application. All the images below were generated using the Windows 10 Operating System.

1. Connect the Slate^3 R1353I reader to the PC using the provided USB cable (the reader is powered through the USB port). Verify that the provided USB cable is correctly plugged into the PC. The USB interface creates virtual COM port on the host PC that can be used to connect to the reader with the CAEN RFID Easy Controller application.

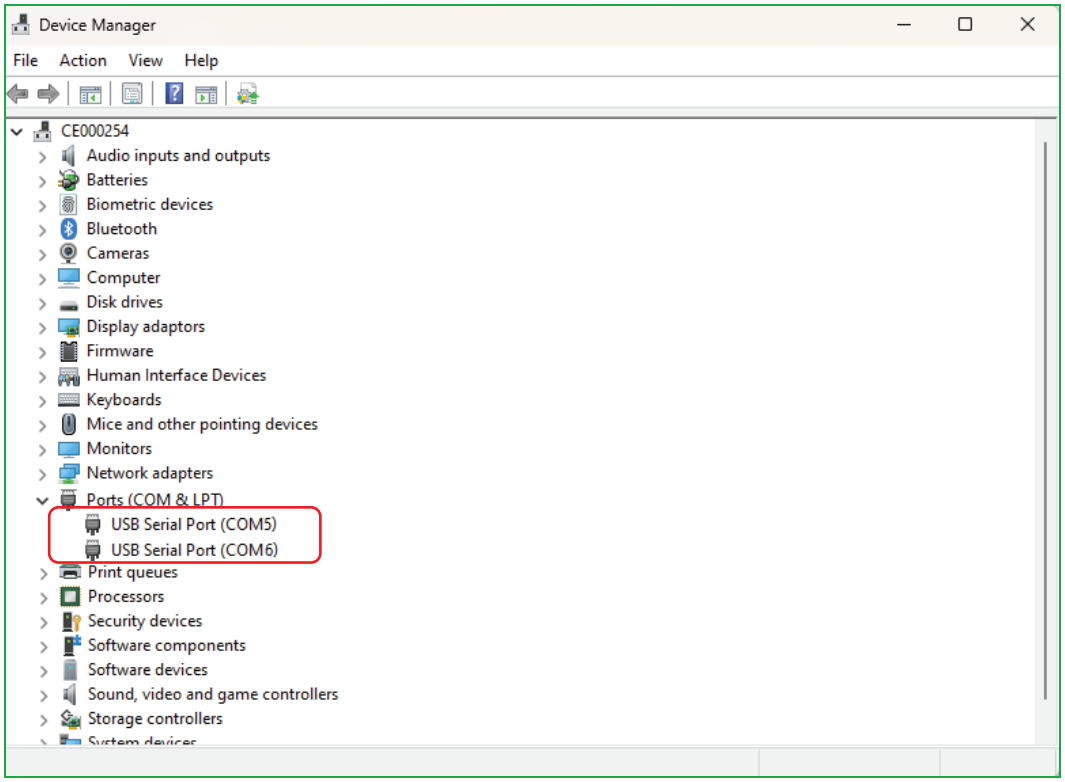
   Once the USB connection is established, a virtual COM port is created on the host PC. This COM port is used to connect to the reader with the CAEN RFID Easy Controller application.

   The orange light of the power LED indicates that the reader is ON.

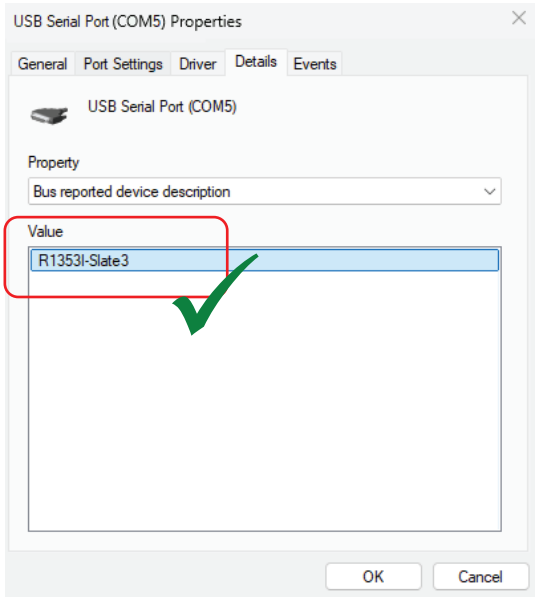
2. Download from the CAEN RFID web site the latest version of the CAEN RFID Easy Controller for Windows software and install it.

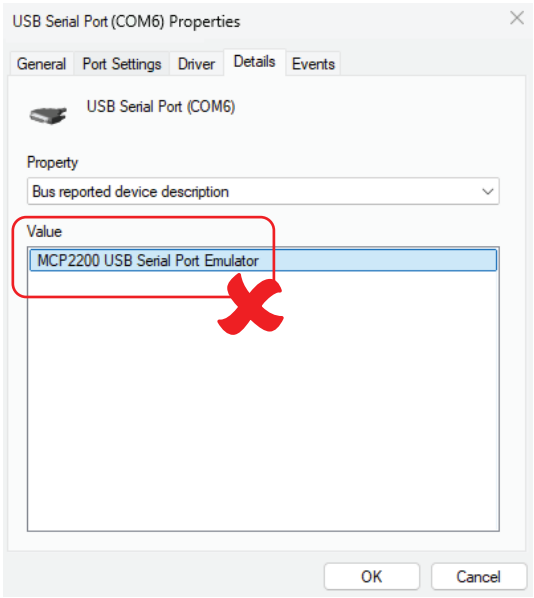
3. In your Windows Pc go to *Settings* → *System*. Open the *System properties* and click on *Device Manager*.

4. Look for the COM port in the *Device Manager* window:

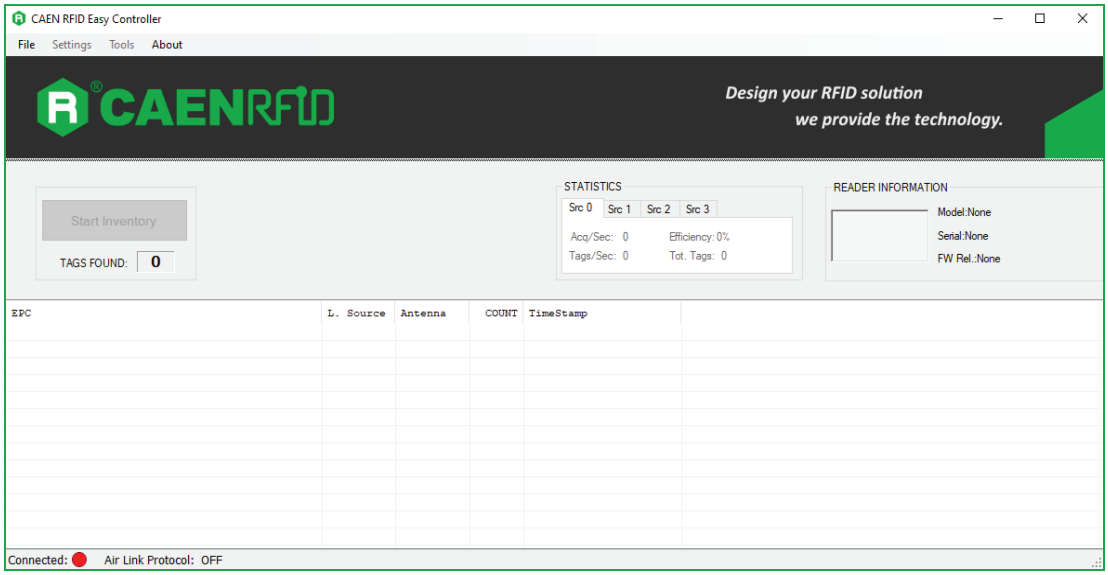


5. Right click each USB serial port, go to *Properties* → *Details* → *Bus reported device description* and look at the value. The correct USB serial port is the one with *Bus reported device description* value = *R1353I-Slate3*. In this example it is COM5:



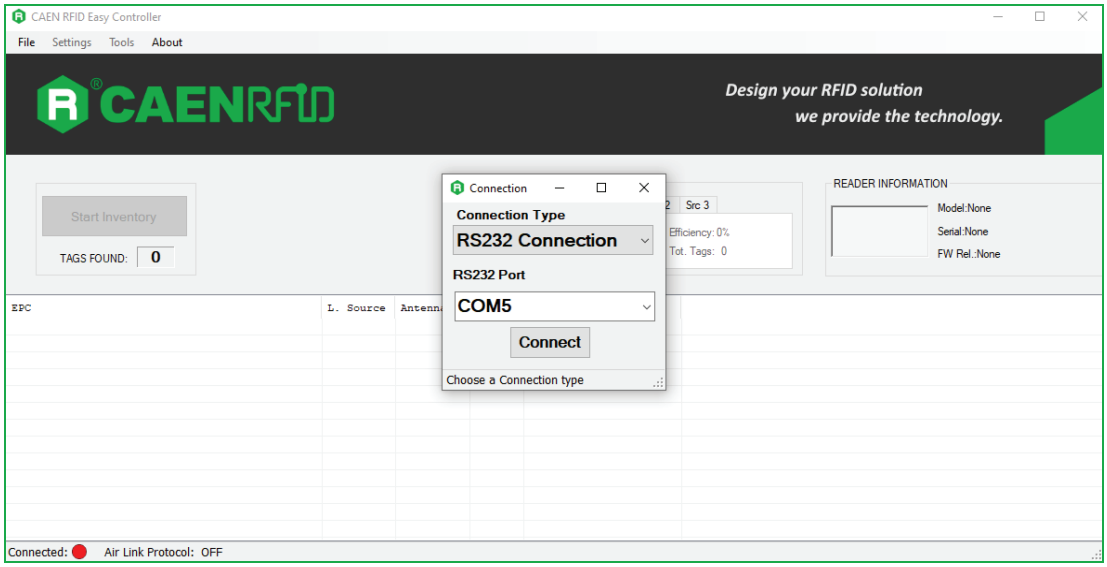


6. Launch the CAEN RFID Easy Controller application:



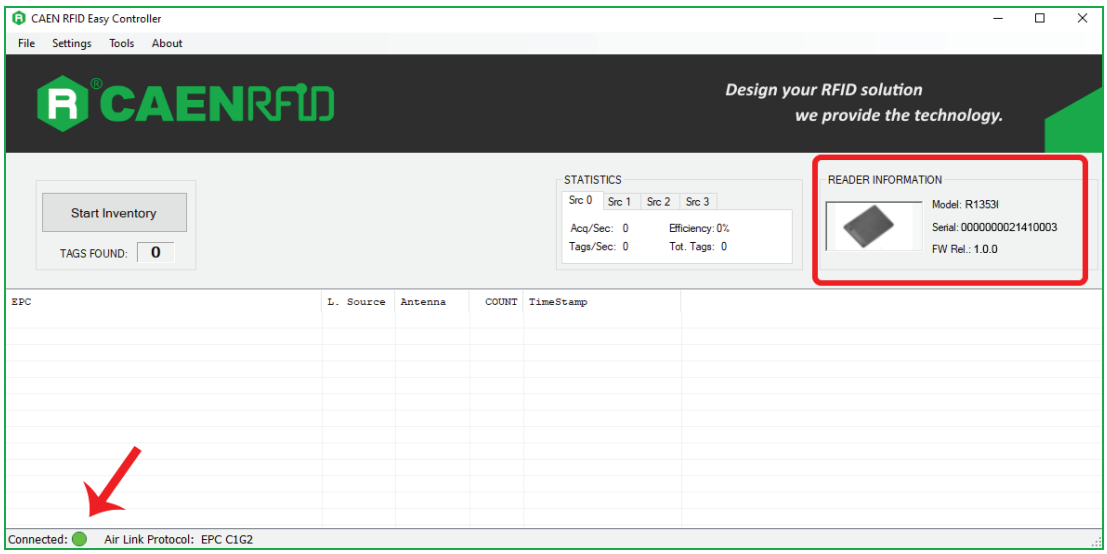
7. On the main application window click on *File → Connect;* the connection dialog box will appear.

8. Select *RS232* from the *Connection Type* combo box and the right COM port number from the *RS232 Port* combo box (COM5 in this example):

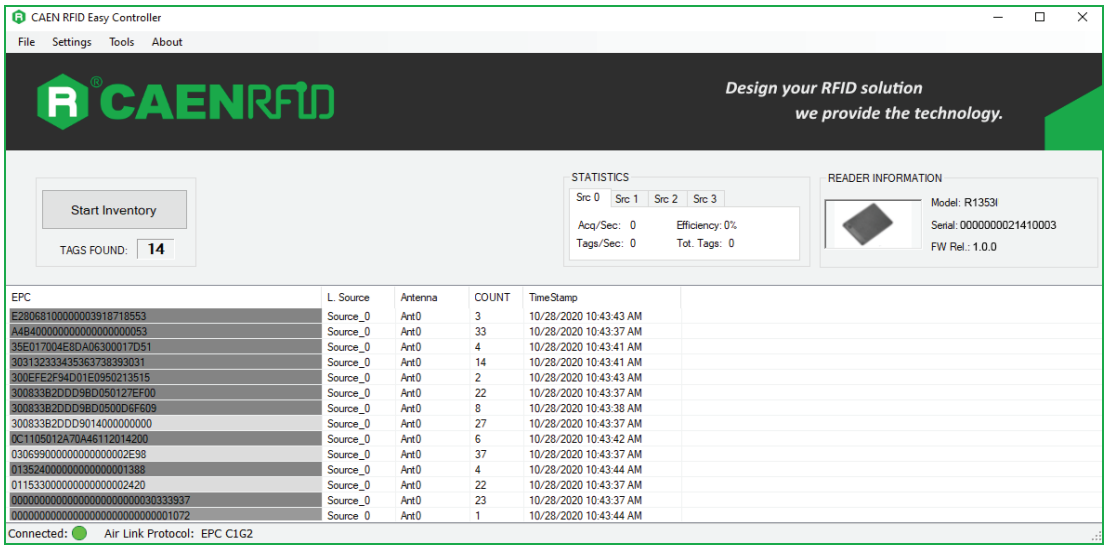


9. Click on *Connect*.

10. To verify if the connection with the reader has been established, check the green dot on the bottom left side of the sidebar. Into the *READER INFORMATION* box you can find information on reader model, serial number and firmware release:



11. Place tags 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 Slate[3] R1353I web page, *Downloads* section or in the Manual and Documents web area.

Warning: Note that in the EASY2READ profile holding down the *trigger* button activates the tag inventory only if the event-based continuous mode is active (see the function *EventInventoryTag Method* in the *CAEN RFID API Reference Manual* that can be download from Slate[3] R1353I web page, *Documents* section).

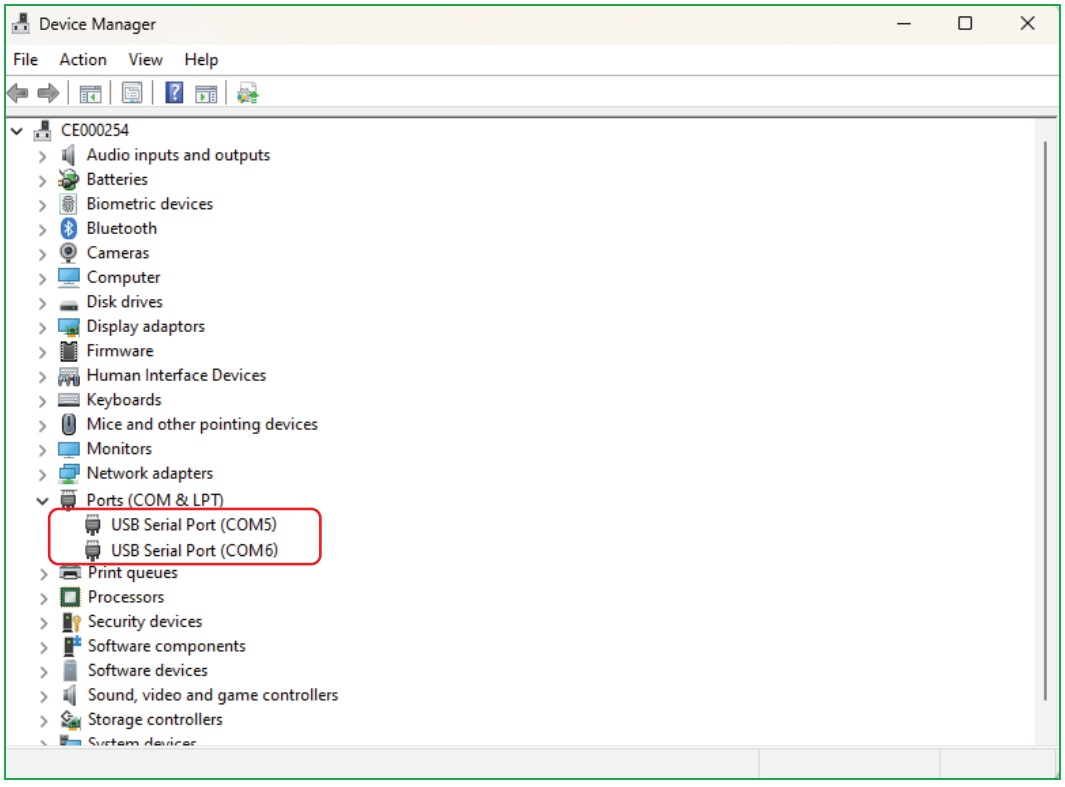
3 CONFIGURATION MENU

Introduction

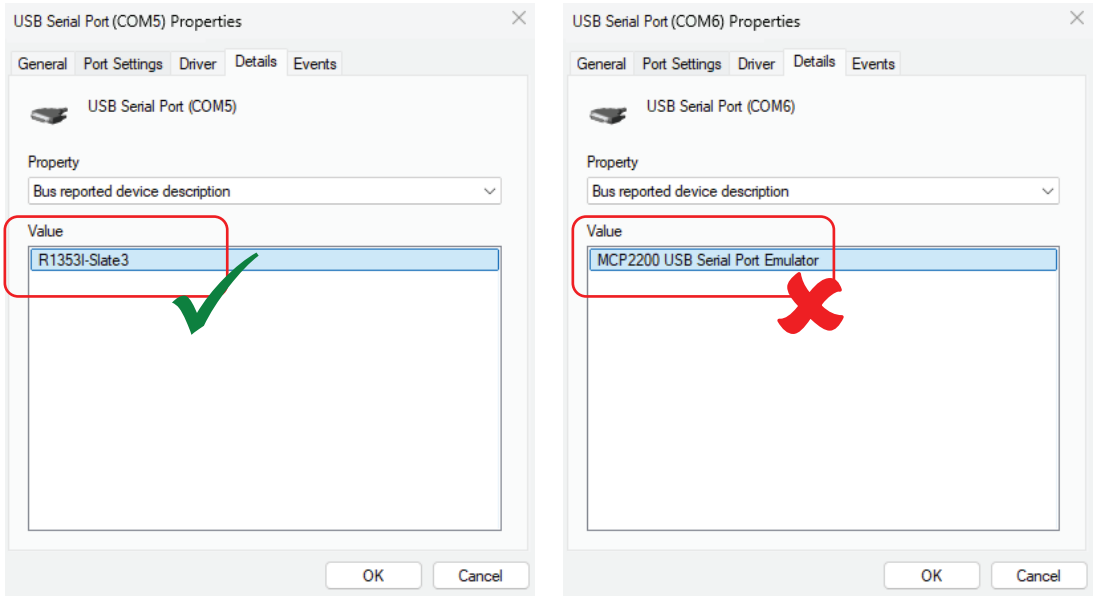
The Slate³ R1353I configuration can be performed via USB using the *R1353I Configuration Tool*.

To access the configuration menu, follow the steps described below:

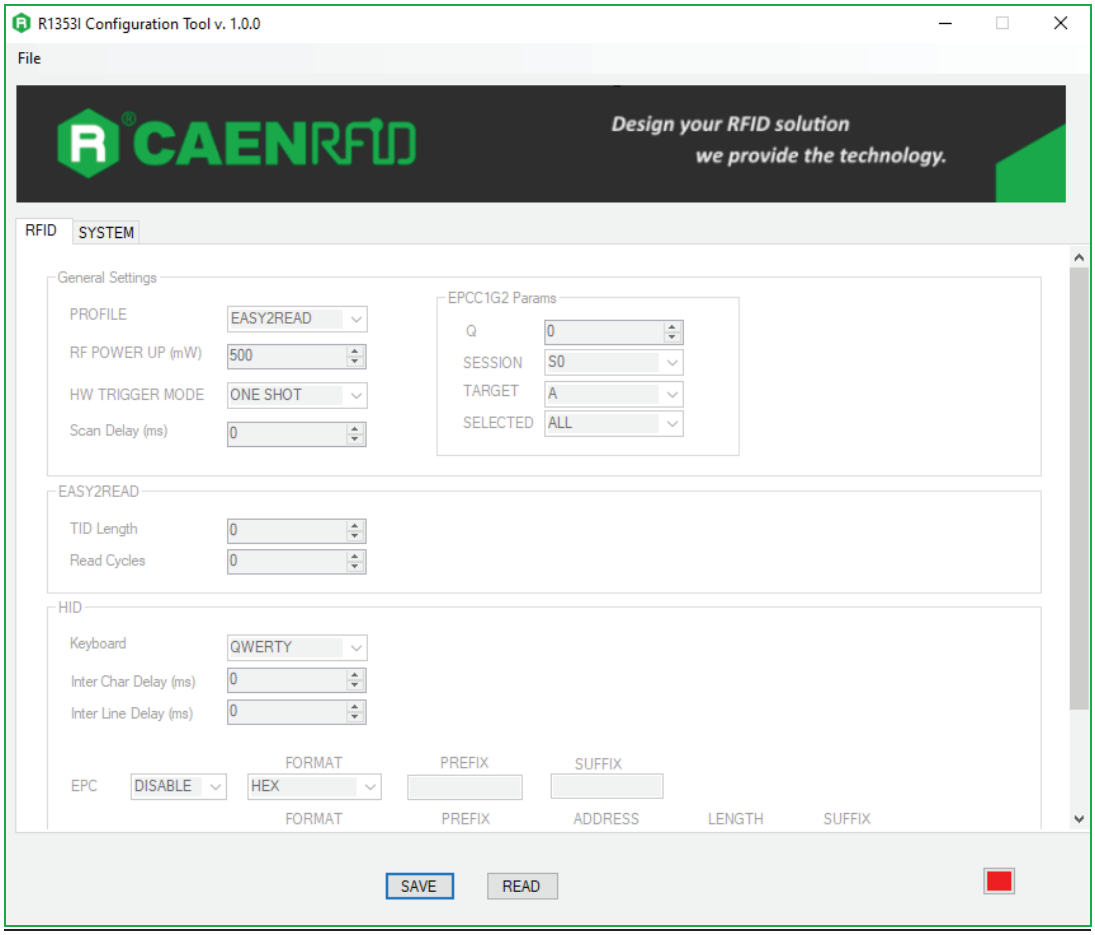
1. Download from the Slate³ R1353I web page the latest version of the *Slate³ R1353I Configuration Tool*.
2. With the reader switched off, hold down the trigger button and connect the Slate³ R1353I reader to the PC using the provided USB cable. Release the trigger button. The orange light of the power LED indicates that the reader is ON. The green light of the tag ID LED indicates that the reader is in the configuration mode.
3. Look for the COM port in the *Device Manager* window:



4. Right click each USB serial port, go to *Properties* → *Details* → *Bus reported device description* and look at the value. The correct USB serial port is the one with *Bus reported device description* value = *R1353I-Slate3*. In this example it is COM5:

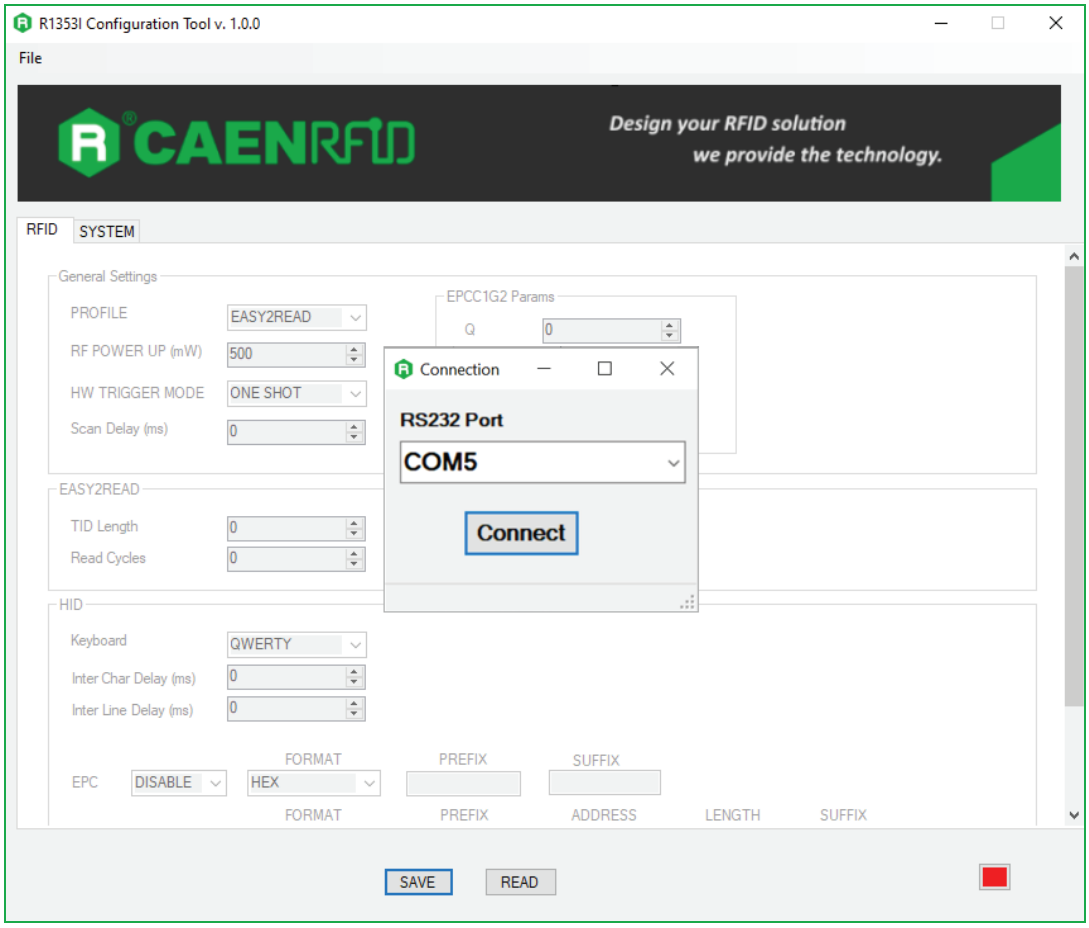


5. Open the *Slate³ R1353I Configuration Tool*:



6. On the main application window click on *File* → *Connect*; the connection dialog box will appear.

7. Select the right COM port number from the RS232 Port combo box (COM5 in the example):



8. Click on *Connect*. To verify if the connection with the reader has been established, check the green square on the bottom right side of the sidebar. If the connection is not successful, the message "connection error" appears.

To disconnect the reader, on the main application window click on *File* → *Disconnect*.

The Slate[3] R1353I menu options are the following:

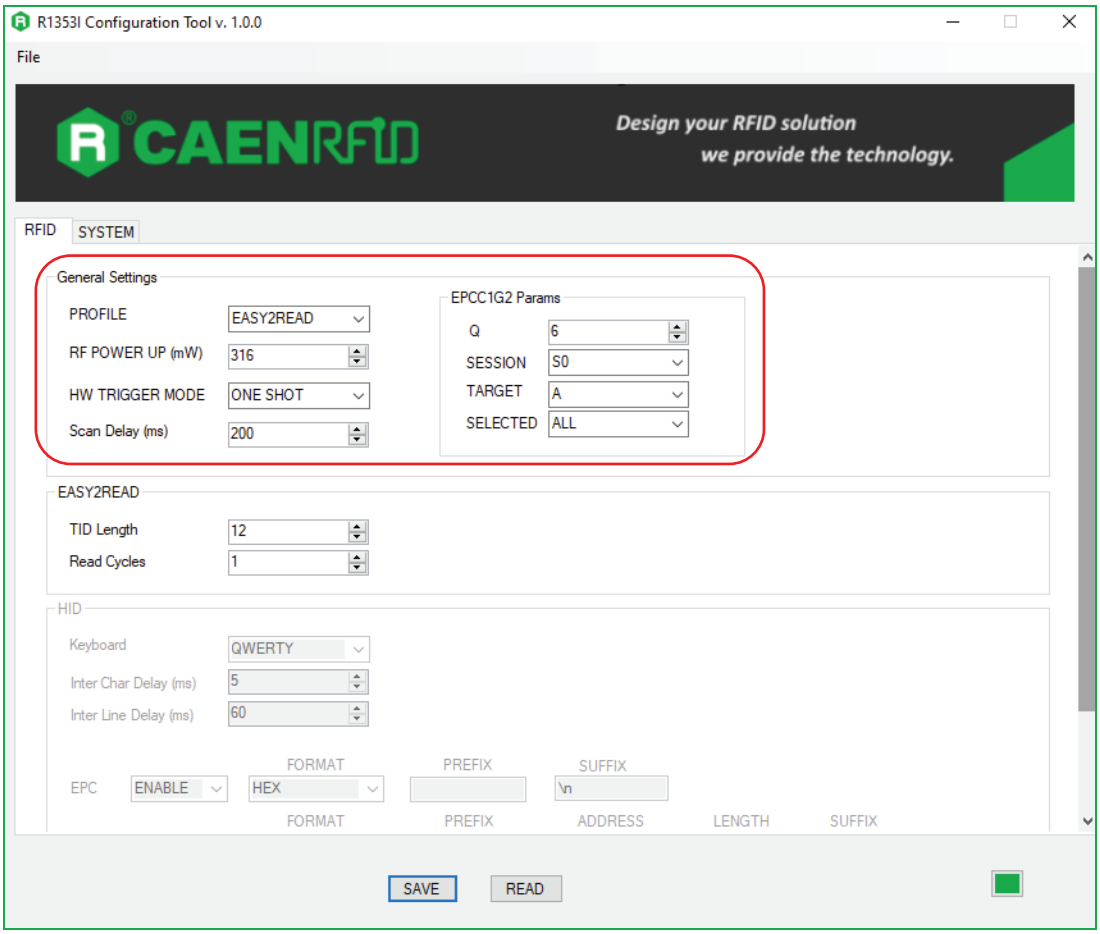
- **RFID**
- **SYSTEM**

RFID

Access the configuration menu as explained in the *Introduction* paragraph page 12.

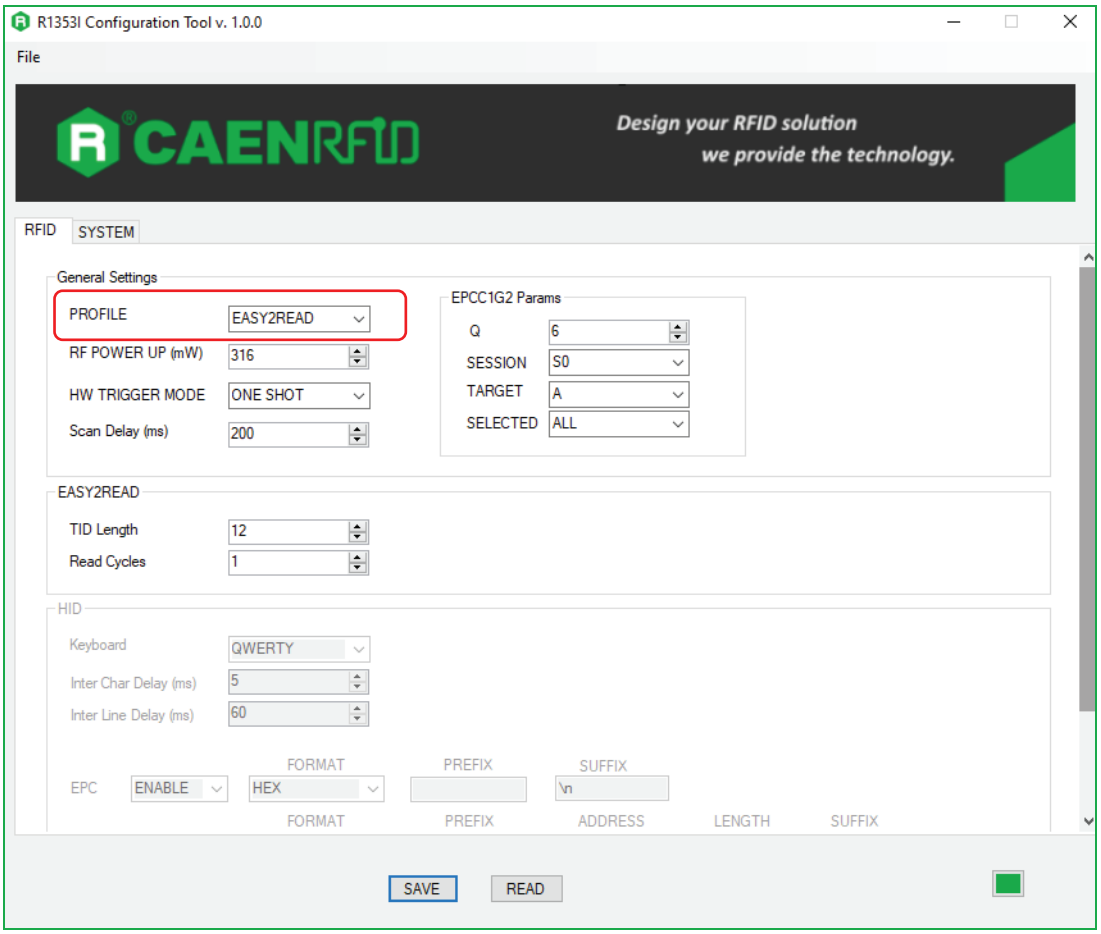
Use this section to set the desired profile and then the related configuration options.

General Settings



Profile

You can change the profile value using the drop-down menu:



The available profiles are:

- **EASY2READ (factory default)** is the CAEN RFID easy2read communication protocol that permits to control the reader using the CAEN RFID Easy Controller Application or the SDK (Software Development Kit) library. For details on the use of the EASY2READ profile please refer to *§ EASY2READ Profile* chapter page 29.

  For details on the EASY2READ configuration options, refer to § *EASY2READ Parameters* page 19.

- **HID:** choosing this option you select the keyboard emulation protocol.

  For details on the use of the HID profile please refer to *§ HID Profile* chapter page 33.

  For details on the HID configuration options, refer to § *HID Parameters* page 20.

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File → Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

RF Power Up (mW)

Through the *RF Power Up* you can set the power level emitted by the reader. The *RF Power Up* is an editable field and the default value is 316 mW. Accepted values are included in the range 0÷1000. The *RF Power Up* is expressed in mW.

When the reader is configured in the EASY2READ profile, to set the *RF Power* you can also use the *CAEN RFID Easy Controller Application* or the *SetPower* function of the SDK (Software Development Kit) library. Note that using the SDK or the Easy Controller only the current value of the *RF Power* is set, the *RF Power Up* is not changed and when the reader is turned off, the parameter assumes the value set via the configuration interface again.

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

HW Trigger Mode

This option selects the type of trigger button event which triggers the inventory. The *HW Trigger Mode* options are the following:

- ONE-SHOT: inventory cycles will be performed as long as the trigger button is kept pressed.
- START/STOP: to start the inventory cycles press once the trigger button. Press the button again when you want to stop the inventory cycles.

By default, the *HW Trigger Mode* is set to "ONE SHOT".

You can change the default value using the drop-down menu.

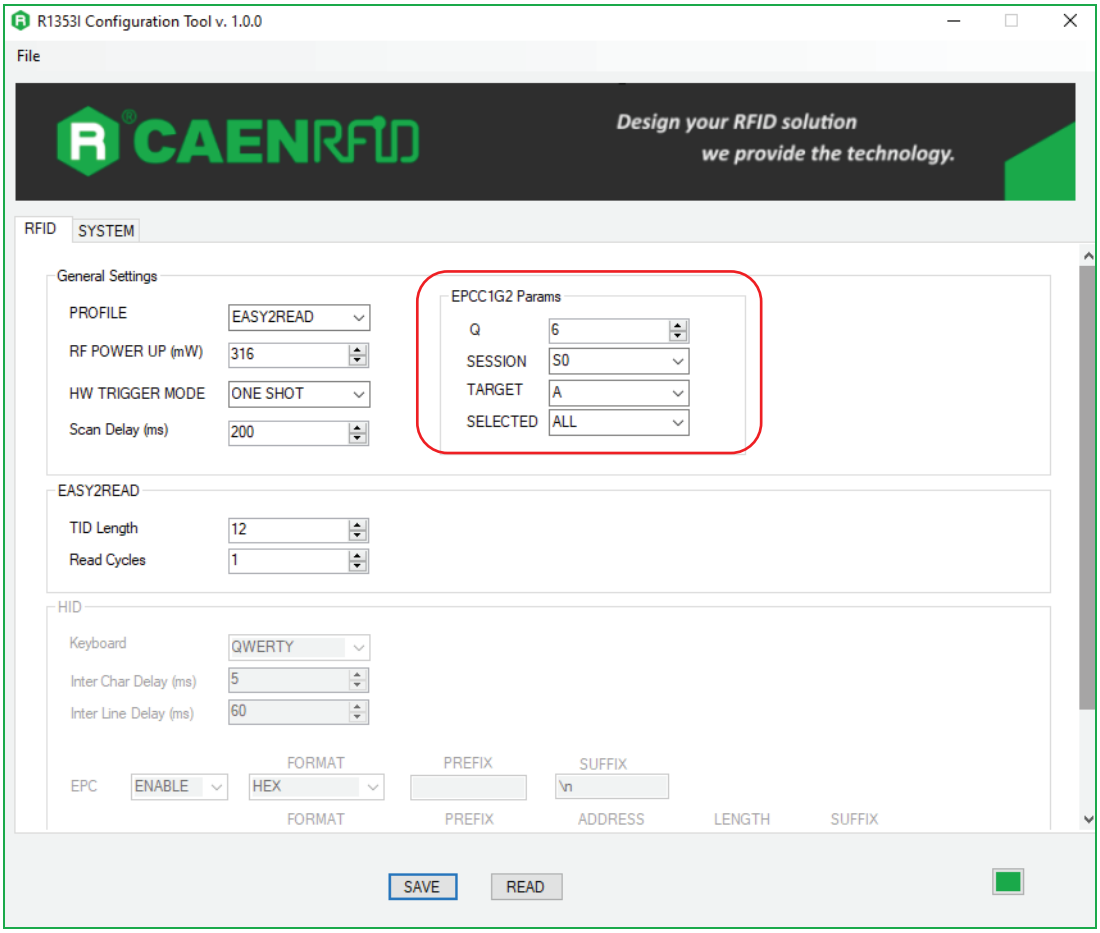
Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

Scan Delay (ms)

Scan Delay is an editable field and the value is expressed in ms. By default, the *Scan Delay* is 200 ms. The scan delay is the time between two inventories when the inventory is performed in HW trigger START/STOP mode.

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

EPCC1G2 Parameters



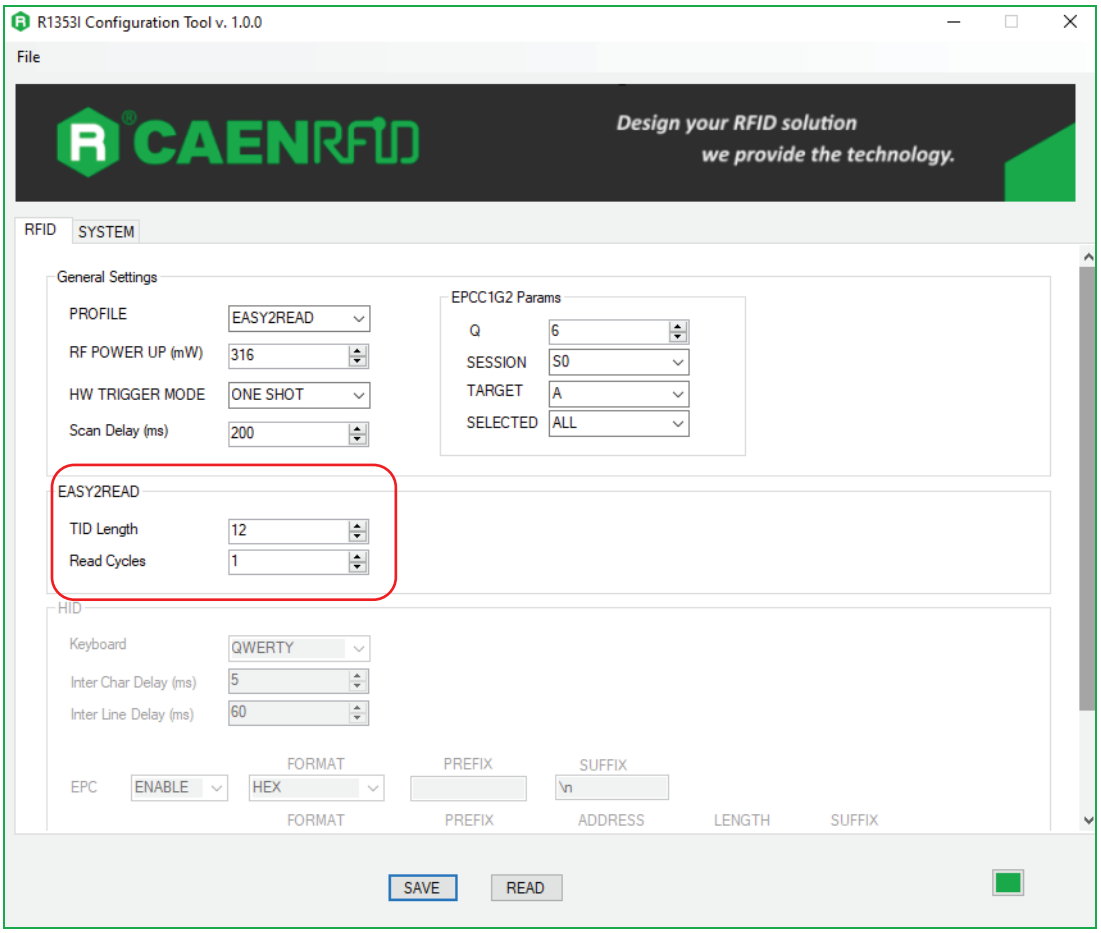
- **Q:** *Q* parameter is useful for the optimization of the inventory efficiency. As a rule of thumb, if you have to read a huge population of tags you need to select a high value for the Q parameter, otherwise you can select a lower value. For more information on *Q* parameter refer to *EPC Class1 Gen2 protocol specification* [RD1]. The Q default value is 6, accepted values are included in the range 0÷15. *Q* parameter is an editable field.
- **SESSION:** the *SESSION* used by the anticollision algorithm. The reader chooses one of four sessions available (S0/S1/S2/S3) and inventories tags within that session. For more information on *SESSION* parameter refer to *EPC Class1 Gen2 protocol specification* [RD1]. Default value is *SESSION* = S0. You can change the default value using the drop-down menu.
- **TARGET:** two options available, A or B. For more information on *TARGET* parameter refer to *EPC Class1 Gen2 protocol specification* [RD1]. Default value is *TARGET* = A. You can change the default value using the drop-down menu.
- **SELECTED:** three options available, ALL/NOT selected/selected. For more information on *SELECTED* parameter refer to *EPC Class1 Gen2 protocol specification* [RD1]. Default value is *SELECTED* = ALL. You can change the default value using the drop-down menu.

When the reader is configured in the EASY2READ profile, to set the *EPCC1G2 Parameters* you can also use the CAEN RFID Easy Controller Application or the SDK (Software Development Kit) library. Note that using the SDK or the Easy Controller only the current values are set, therefore when the reader is turned off, the parameters assume the values set via the configuration interface again.

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

EASY2READ Parameters

Choosing the EASY2READ profile, the EASY2READ parameters available are:

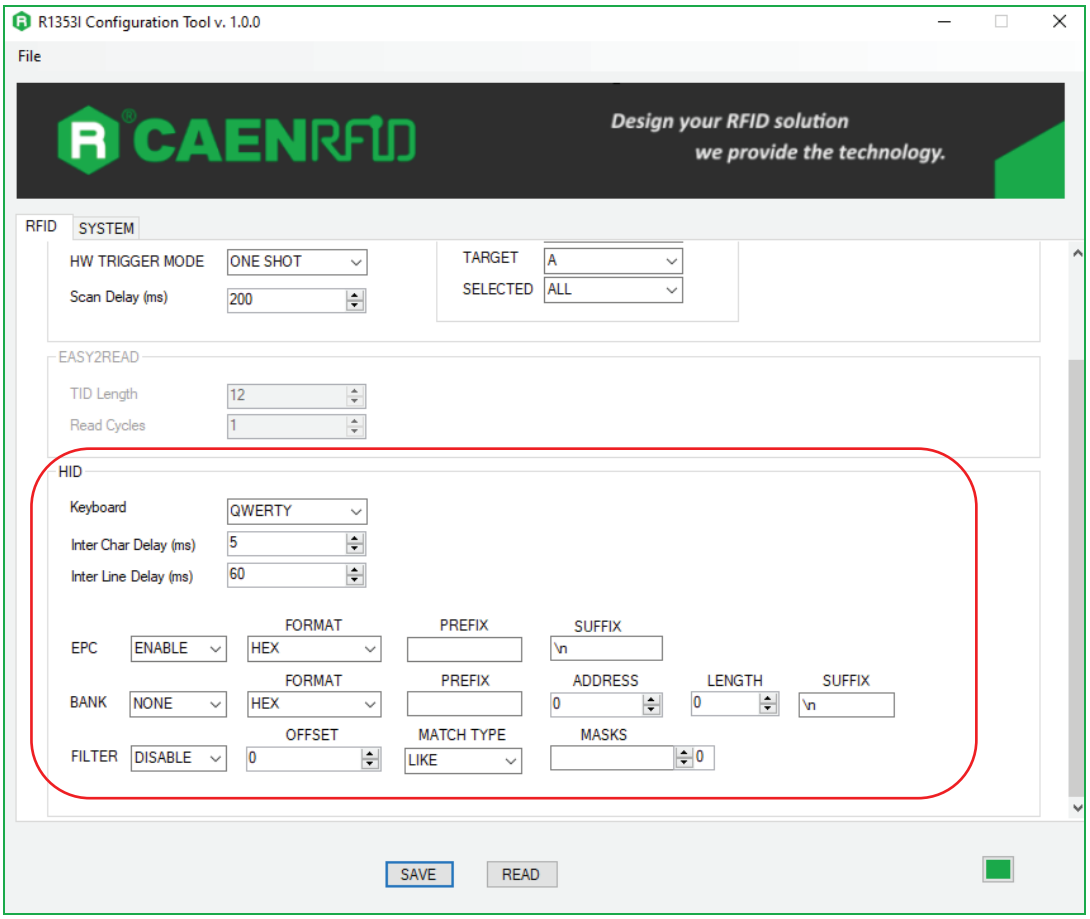


- **TID Length:** *TID Length* is an editable field and represents the length of the TID memory to be read during the inventory, expressed in bytes. The default value is 12, accepted values are included in the range 0÷64.
- **Read Cycles:** *Read cycles* is an editable field and represents the number of read cycles performed by the logical source during the inventory algorithm execution. The default value is 1. *Read cycles* = 0 means no stop in the continuous inventory mode. Note that *Read Cycles* affects only inventory performed with continuous mode.

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

HID Parameters

Choosing the HID profile, the HID parameters available are:



- **Keyboard:** The Keyboard options are the following:
  - QWERTY: standard keyboard.
  - AZERTY: French keyboard.

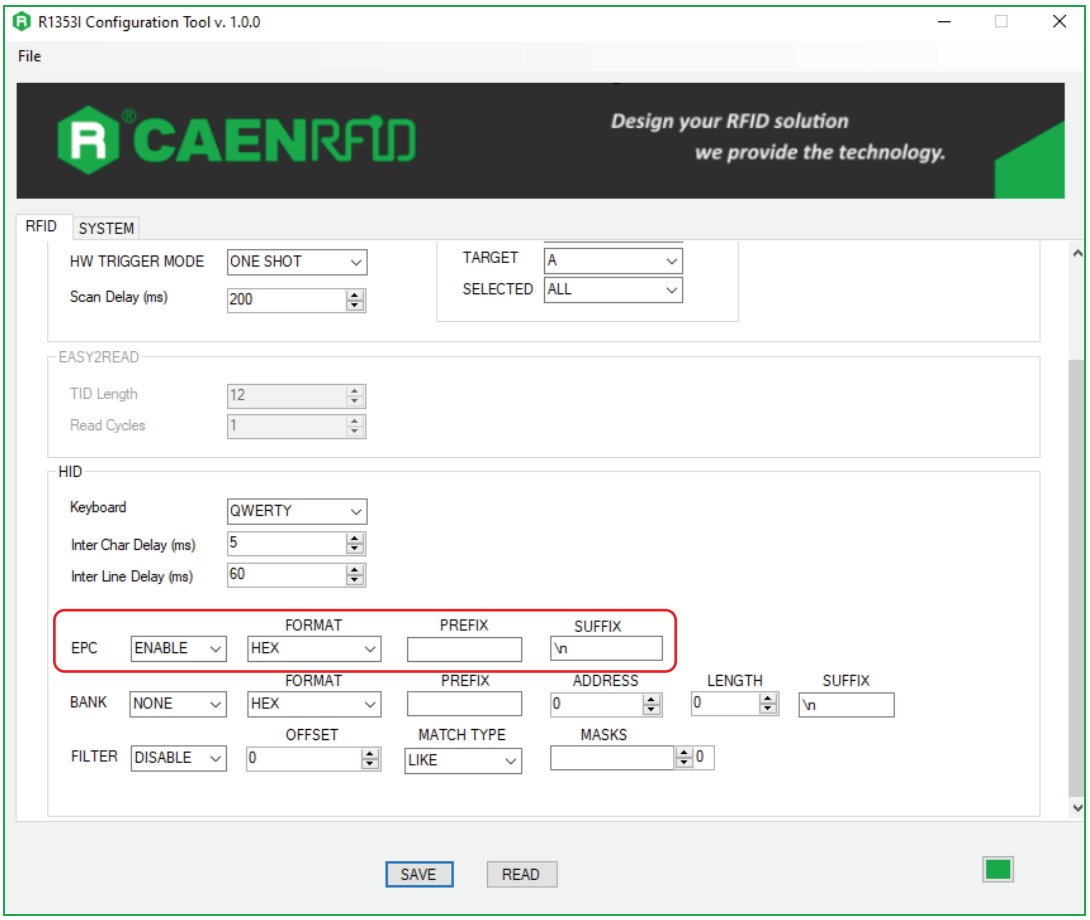
  By default, the *Keyboard* is set to "QWERTY".

  You can change the default value using the drop-down menu.
- **Inter Char Delay (ms):** The *Inter Char Delay* is the delay between printing one character and the next. It is expressed in ms. The default value is 5. If set to 0, the reader does not introduce delay. The use of the *Inter Char Delay* is recommended to slow down the sending of characters from the reader to host devices.
- **Inter Line Delay (ms):** The *Inter Line Delay* is the delay between printing one last character of a line and the first character of the next line. It is expressed in ms. The default value is 60. If set to 0, the reader does not introduce delay. The use of the *Inter Line Delay* is recommended to slow down the sending of characters from the reader to host devices.

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

EPC code parameters

Using the table below you can customize the text of the code displayed on the screen:



Tab. 3.1: EPC Code parameters

- **EPC Code:** enable or disable. By default, the *EPC Code* is enabled and the EPC code is displayed on the screen. You can change the default value using the drop-down menu.
- **FORMAT:** In the HID profile you can set different EPC formats:
  - HEX: The EPC code is represented as a hexadecimal number. For example, an EPC Code of 96 bits long corresponds to 24 hexadecimal digits (96/4=24).
  - ASCII: The EPC code is interpreted as 8 bits at a time, each byte being represented as ASCII character. For example, an EPC Code of 96 bits corresponds to a string of 12 ASCII characters (96/8 = 12).
  - GTIN + SERIAL: if the tag is properly encoded, the reader returns the GTIN + Serial string associated to the tag EPC code

  By default, the EPC HID *Format* is set to "HEX". You can change the default value using the drop-down menu.
- **PREFIX:** The *PREFIX* option permits to specify a string 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. The maximum allowed length of the string is 7 characters.

> **Warning:** if you are using a qwerty keyboard, pay attention that it is a **standard** qwerty keyboard because if not the conversion of symbols could create display problems.

- **SUFFIX:** The *SUFFIX* option permits to specify a string to add after the EPC when a tag is read.

  The following list shows the accepted characters for the postfix:

  '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 \n (see the following table Tab. 3.2: Escape Sequences supported page 22). The maximum allowed length of the string is 7 characters.

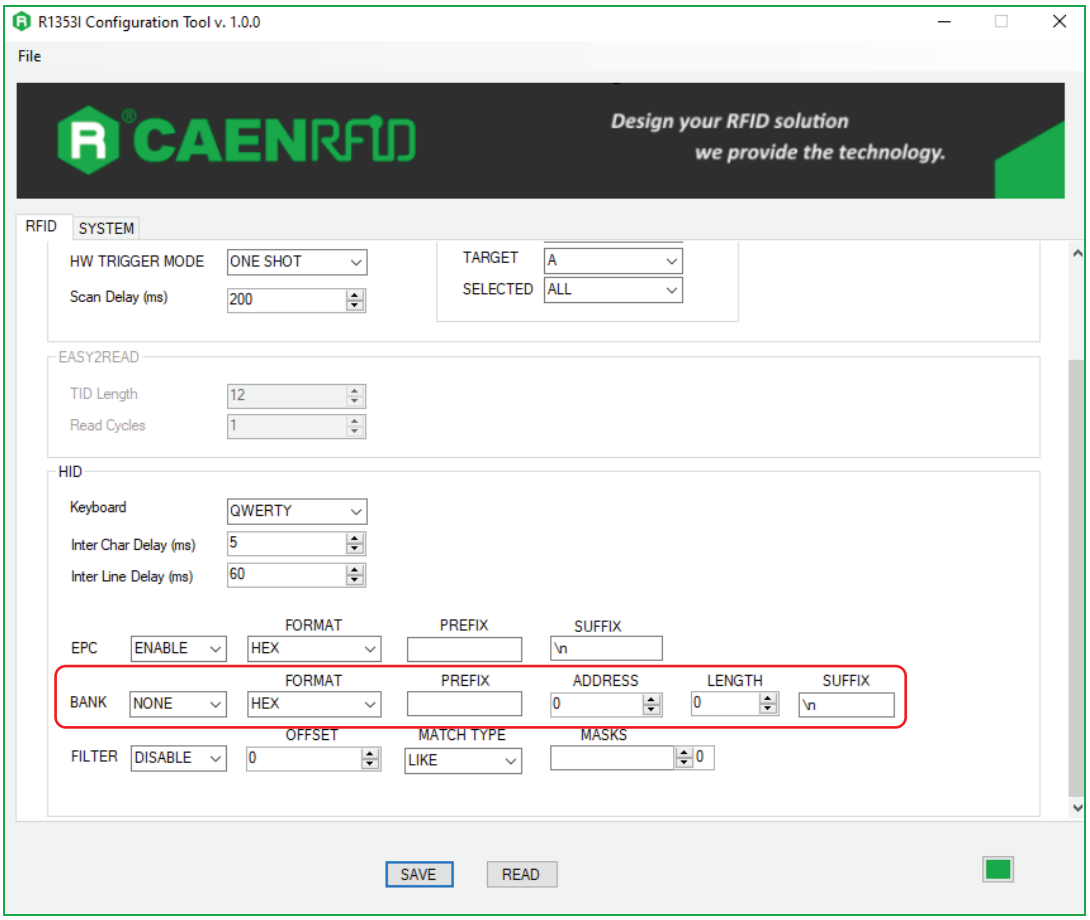
> **Warning:** if you are using a qwerty keyboard, pay attention that it is a **standard** qwerty keyboard because if not the conversion of symbols could create display problems.

Escape Sequences	Description
\n	Newline (Line Feed)
\r	Carriage Return
\t	Horizontal Tab
\v	Vertical Tab
\\	Backslash

Tab. 3.2: Escape Sequences supported

Bank parameters

These options allow the printing of the words contained in a bank of the tag EPCC1G2 memory:



- **BANK:**
  - NONE: printing disabled.
  - RESERVED/EPC/TID/USER: the bank to be read.

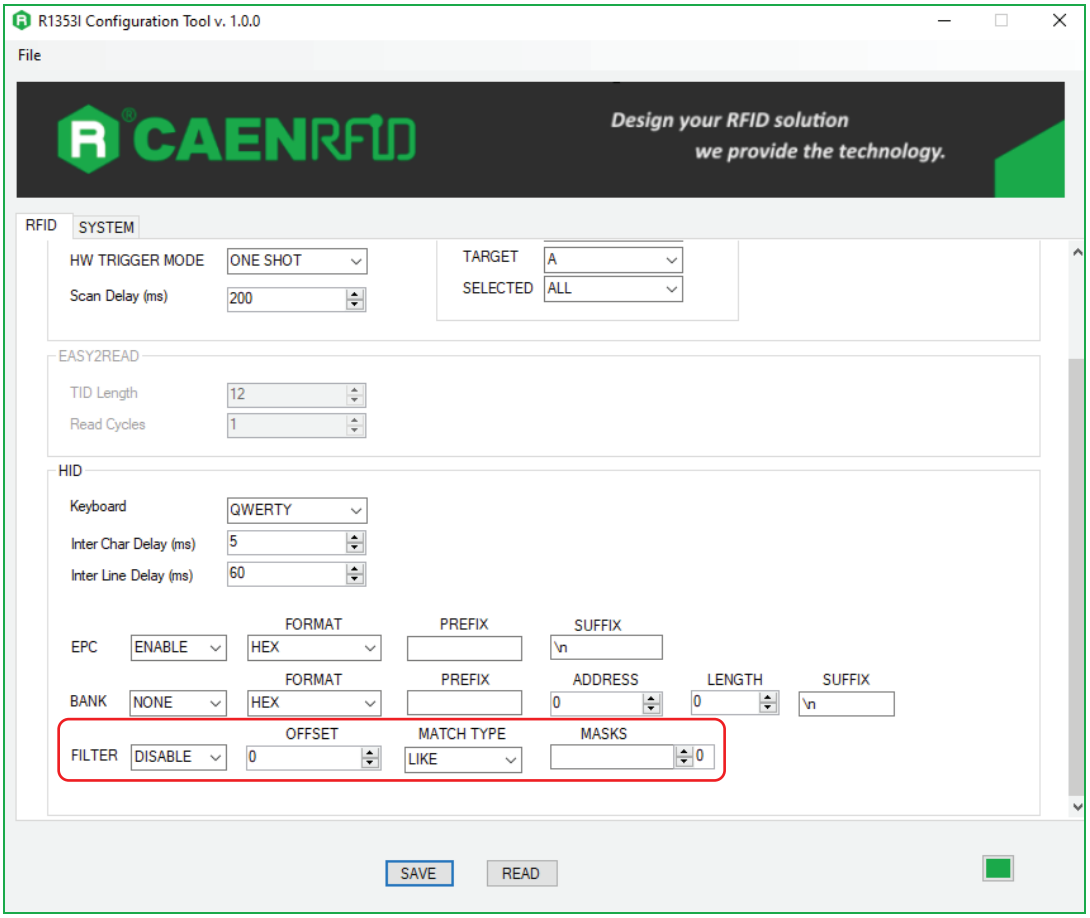
- **FORMAT:**
  - HEX: The bank code is represented as a hexadecimal number. For example, a bank code of 96 bits long corresponds to 24 hexadecimal digits (96/4=24).
  - ASCII: The bank code is interpreted as 8 bits at a time, each byte being represented as ASCII character. For example, a bank code of 96 bits corresponds to a string of 12 ASCII characters (96/8 = 12).

  By default, the *Format* is set to "HEX". You can change the default value using the drop-down menu.
- **PREFIX:** see *Prefix* definition in the previous paragraph (EPC code parameters).
- **ADDRESS:** the starting word address of the string to be displayed. By default, the *address* value is 0.
- **LENGTH:** number of words of the selected BANK that must be displayed. If set to 0 no words will be displayed. By default, the *length* value is 0.
- **SUFFIX:** see *Suffix* definition in the previous paragraph (EPC code parameters).

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

Filter parameters

These options allow you to filter the read tags by sending only those with the conditions specified in the following fields:



- **FILTER:** enable/disable. By default, the *Filter* is disable. You can change the default value using the drop-down menu. If enable, it allows to filter the read tags by sending only those satisfying the conditions in the next fields.

- **OFFSET:** optional. The "offset" indicates after how many EPC code characters to start filtering. By default, the offset is set to 0 and the filter considers the entire EPC code string.
- **MATCH TYPE:** like/not like. By default, the *Match Type* is set to “like”. You can change the default value using the drop-down menu. The *mask type* indicates the link between the various masks: if set to “like”, the masks are linked by the "or" function, if set to "not like", the masks are linked to the "and" function.
- **MASKS:** Mask is an editable field. By default, the field is empty. It allows to filter read tags by sending only those with the specified mask. It is possible to insert a maximum of 4 masks linked by the “match type”.

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

SYSTEM

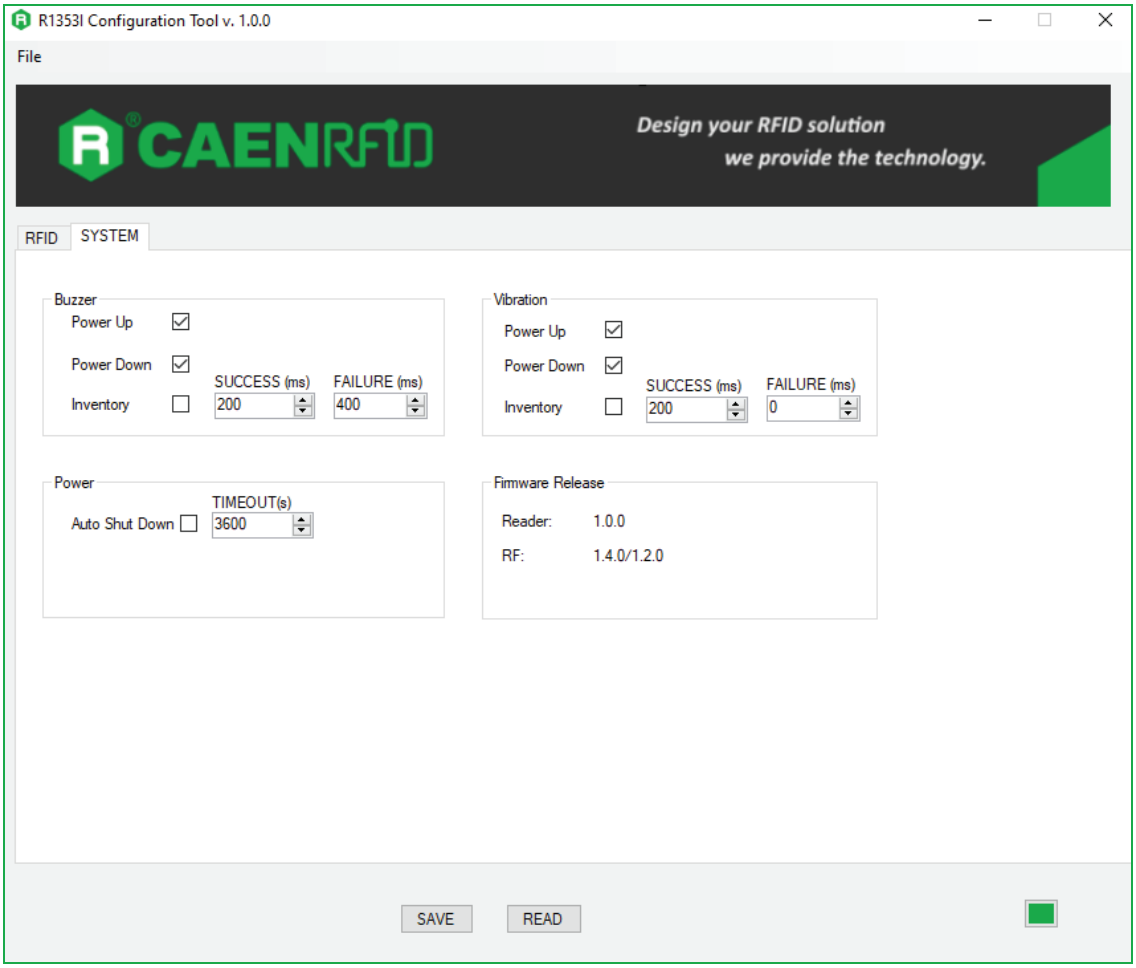
USB communication

Access the configuration menu as explained in the *Introduction* paragraph page 12.

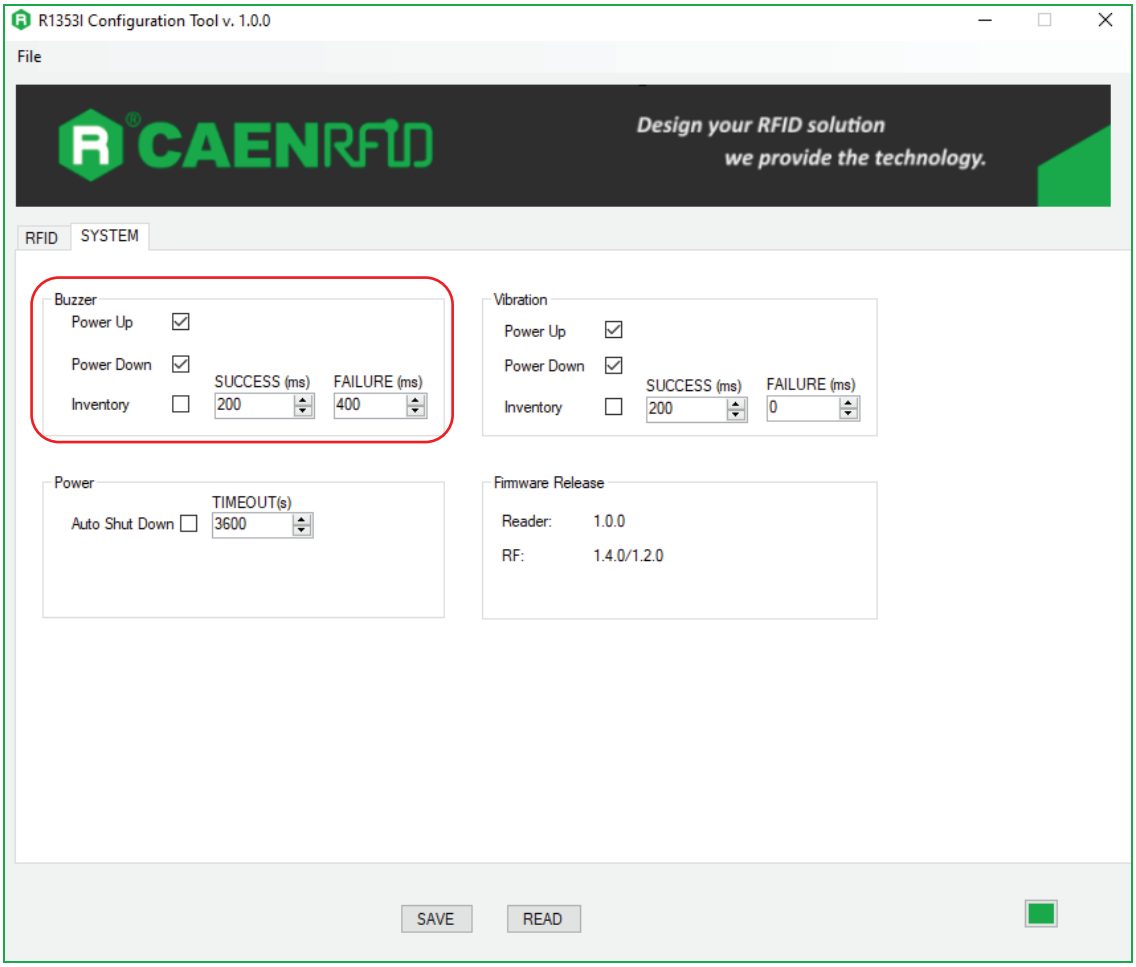
The Slate^3 R1353I menu options are the following:

- **RFID**
- **SYSTEM**

Click on *SYSTEM*:



Buzzer



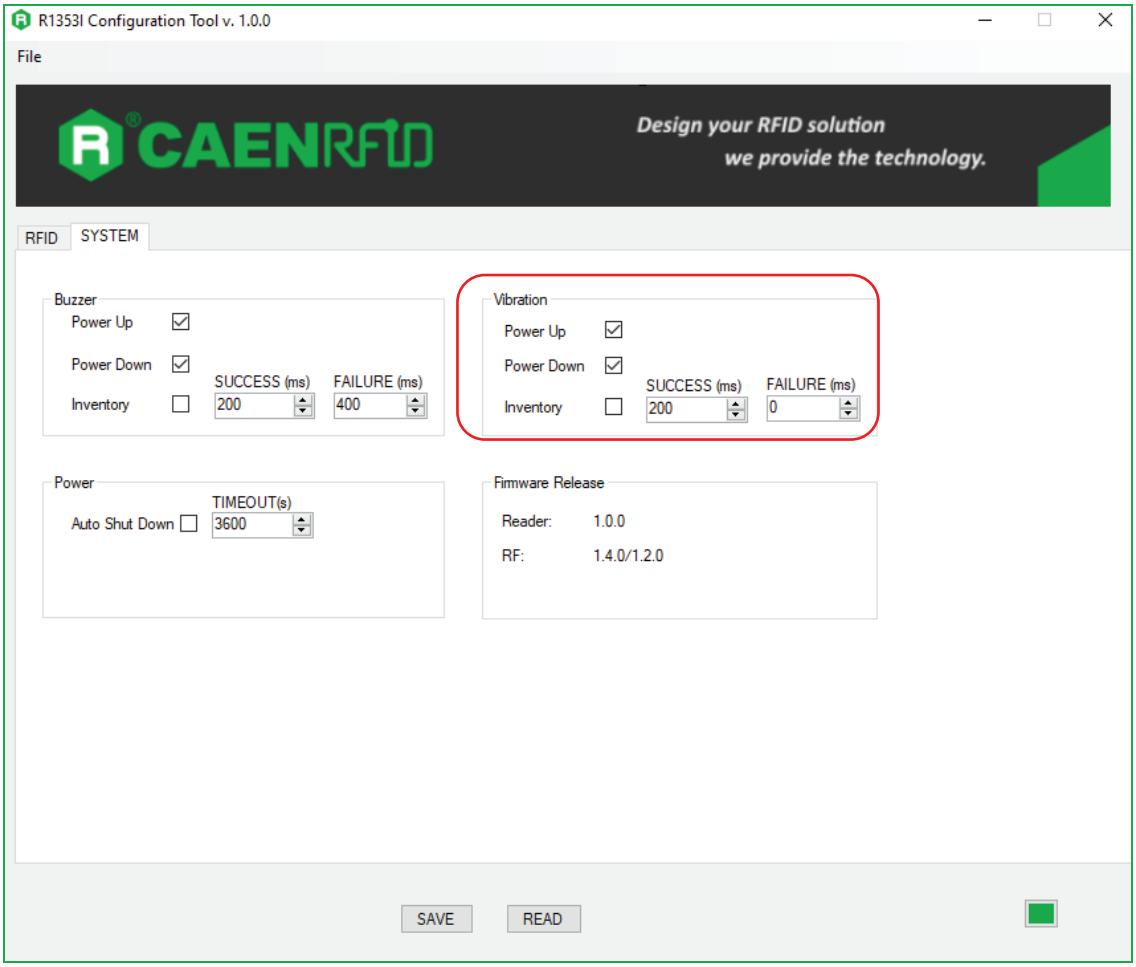
Use this section to set the *Buzzer* options:

- **Power Up:** beep at the power on of the reader. By default, the *Power Up* is enabled.
- **Power Down:** beep at the power off of the reader. By default, the *Power Down* is enabled.
- **Inventory:** beep at the identification of a tag. By default, the *Inventory* is disabled.
  - **Success (ms):** length of tone expressed in ms in case of success. The default value is 200.
  - **Failure (ms):** length of tone expressed in ms in case of failure. The default value is 400.

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

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

Vibration



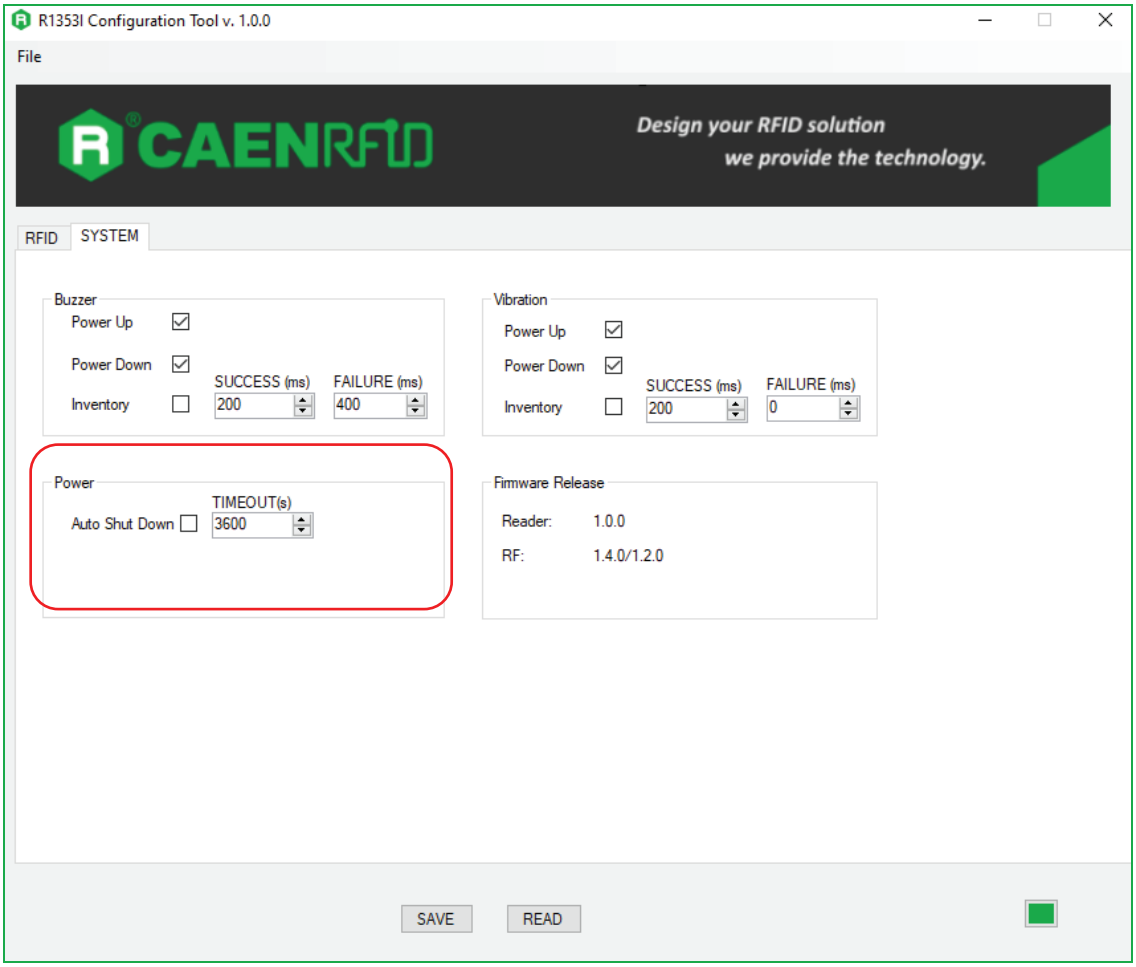
Use this section in order to set the Vibration options:

- **Power Up:** vibration at the power on of the reader. By default, the *Power Up* is enabled.
- **Power Down:** vibration at the power off of the reader. By default, the *Power Down* is enabled.
- **Inventory:** vibration at the identification of a tag. By default, the *Inventory* is disabled.
    - **Success (ms):** length of vibration expressed in ms in case of success. The default value is 200.
    - **Failure (ms):** length of vibration expressed in ms in case of failure. The default value is 0.

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.

Warning: To save the changes click on the *SAVE* button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

Power



Auto Shut Down: automatic shutdown of the reader after a certain time of inactivity. If enabled, define the shutdown time in *Timeouts* in seconds. By default, the *Auto Shut Down* is disabled.

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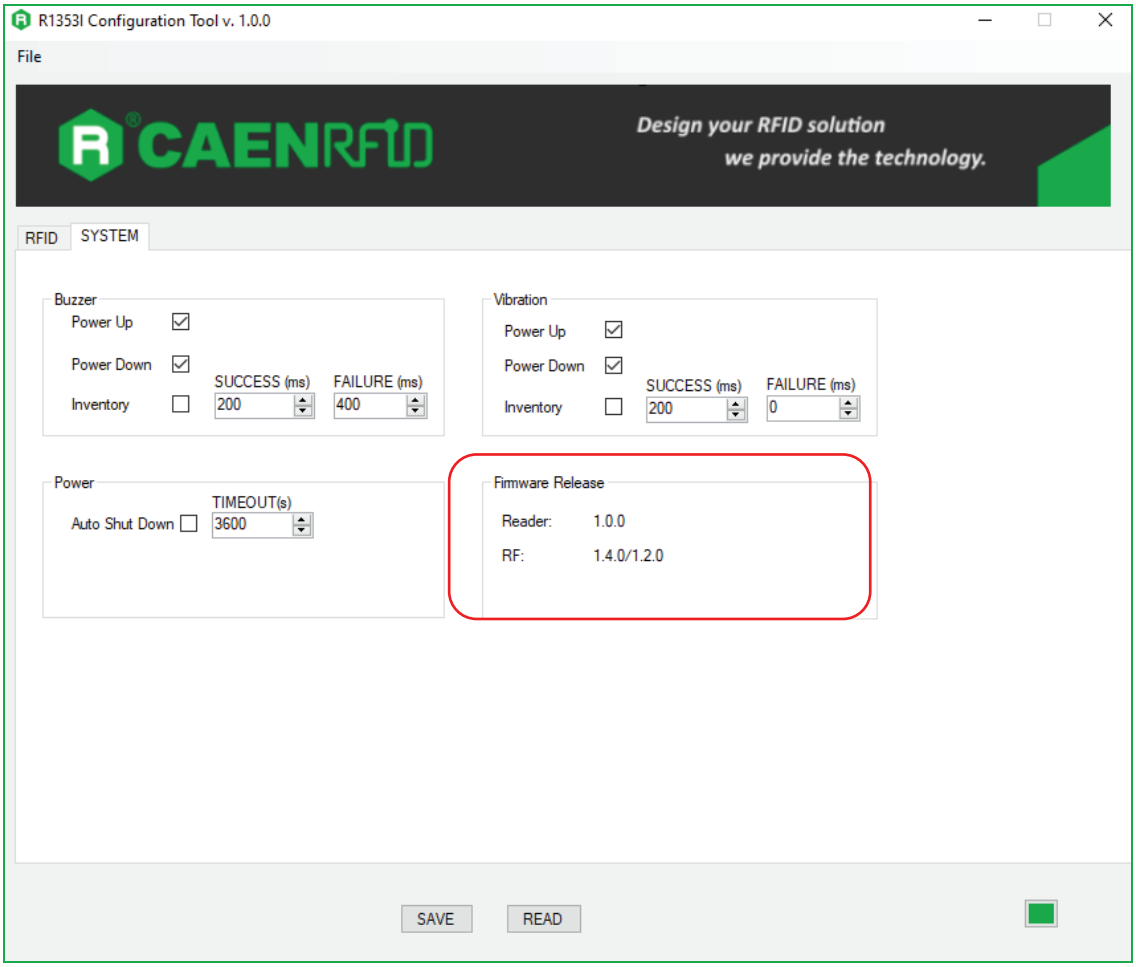
Firmware Release



In this section you can find information about:

- **Reader:** the reader firmware release
- **RF**: the internal RF module revision

4 EASY2READ PROFILE

Introduction

The reader can be configured in two different profiles:

- **EASY2READ** (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.
- **HID:** choosing this option you select the keyboard emulation protocol. For details on the use of the HID profile please refer to *§ HID Profile* chapter page 33.

The reader is sold with the factory profile set to *EASY2READ*.

With the EASY2READ profile active you will use the CAEN RFID easy2read communication protocol and the reader can be controlled using the CAEN RFID Easy Controller Application or the SDK (Software Development Kit) library.

Windows PCs

USB Communication Setup and the Easy Controller for Windows

Follow the steps below to connect your Windows PC to the Slate^3 reader using the USB connection and the Easy Controller Application. All the images below were generated using the Windows 10 Operating System.

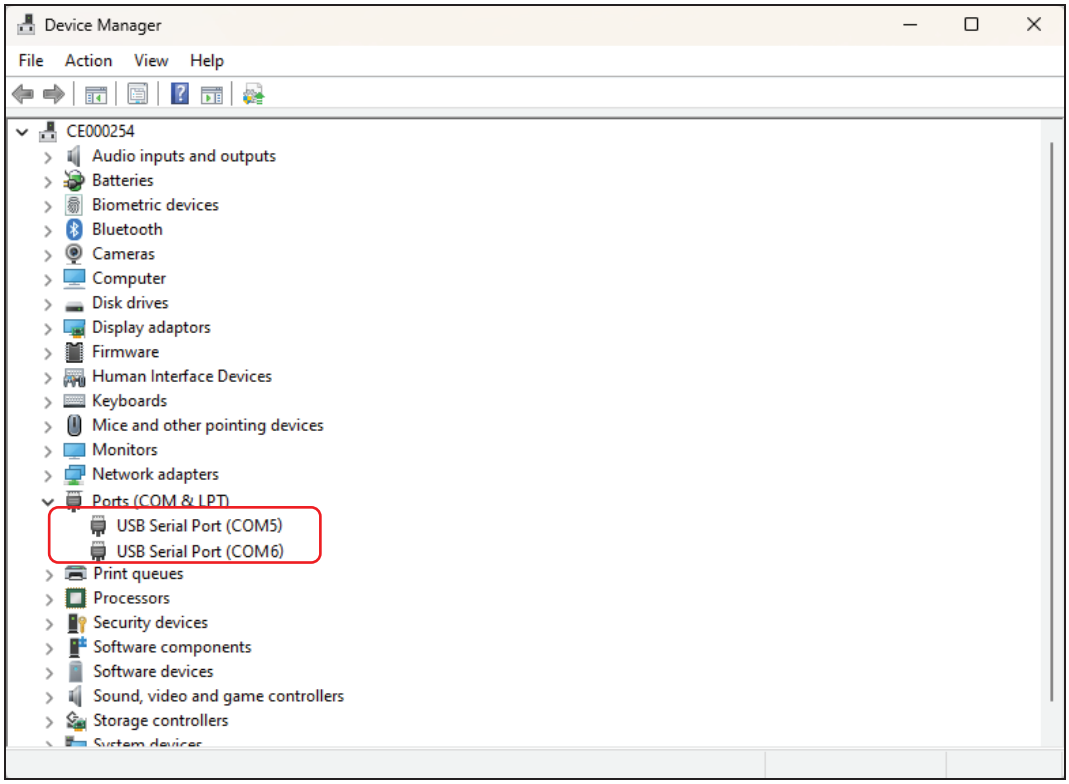
1. Connect the Slate^3 R1353I reader to the PC using the provided USB cable (the reader is powered through the USB port). Verify that the provided USB cable is correctly plugged into the PC. The USB interface creates virtual COM port on the host PC that can be used to connect to the reader with the CAEN RFID Easy Controller application.

   Once the USB connection is established, a virtual COM port is created on the host PC. This COM port is used to connect to the reader with the CAEN RFID Easy Controller application.

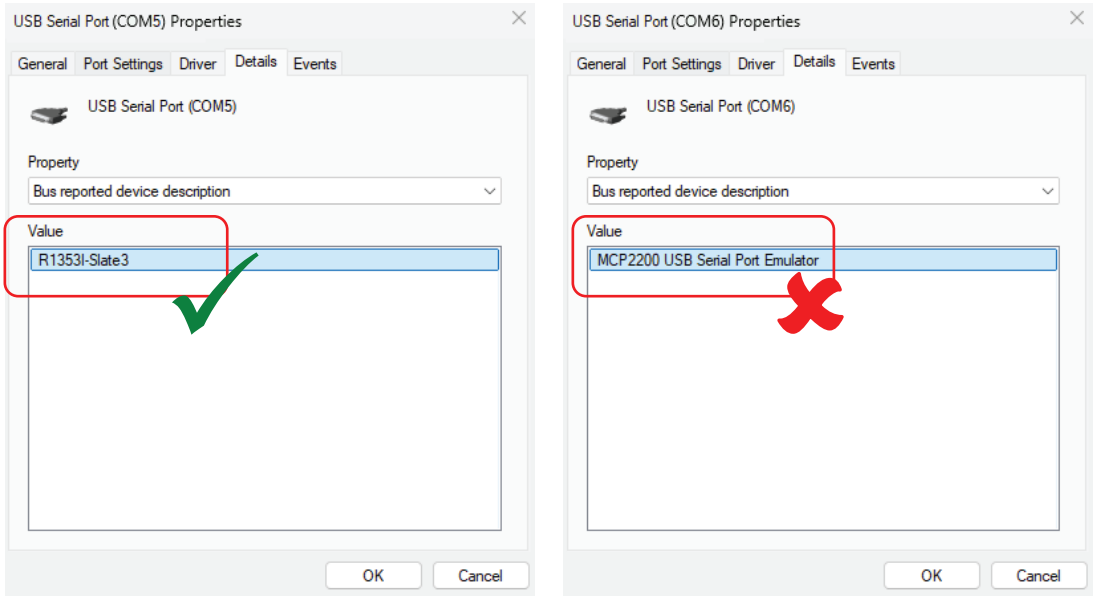
   The orange light of the power LED indicates that the reader is ON.

2. Download from the CAEN RFID web site the latest version of the CAEN RFID Easy Controller for Windows software and install it.
3. In your Windows Pc go to *Settings* → *System*. Open the *System properties* and click on *Device Manager*.

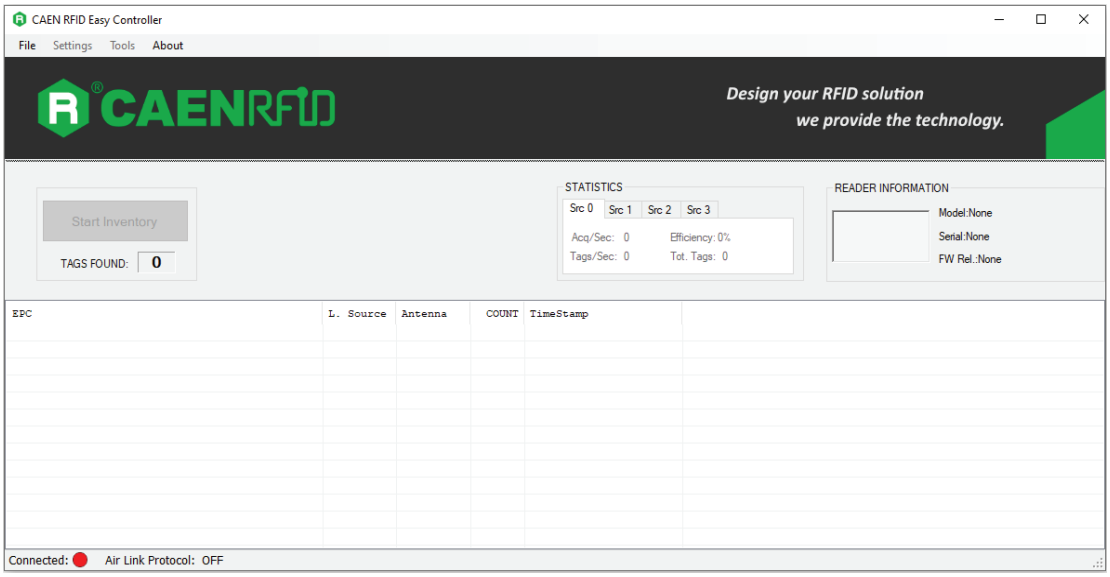
4. Look for the COM port in the *Device Manager* window:



5. Right click each USB serial port, go to *Properties* → *Details* → *Bus reported device description* and look at the value. The correct USB serial port is the one with *Bus reported device description* value = *R1353I-Slate3*. In this example it is COM5:

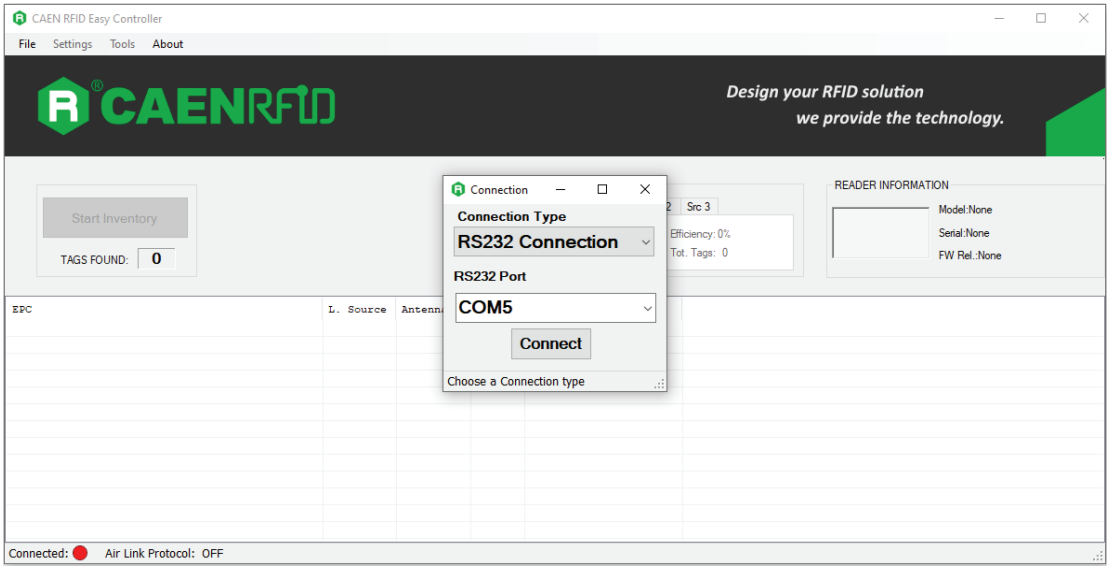


6. Launch the CAEN RFID Easy Controller application:



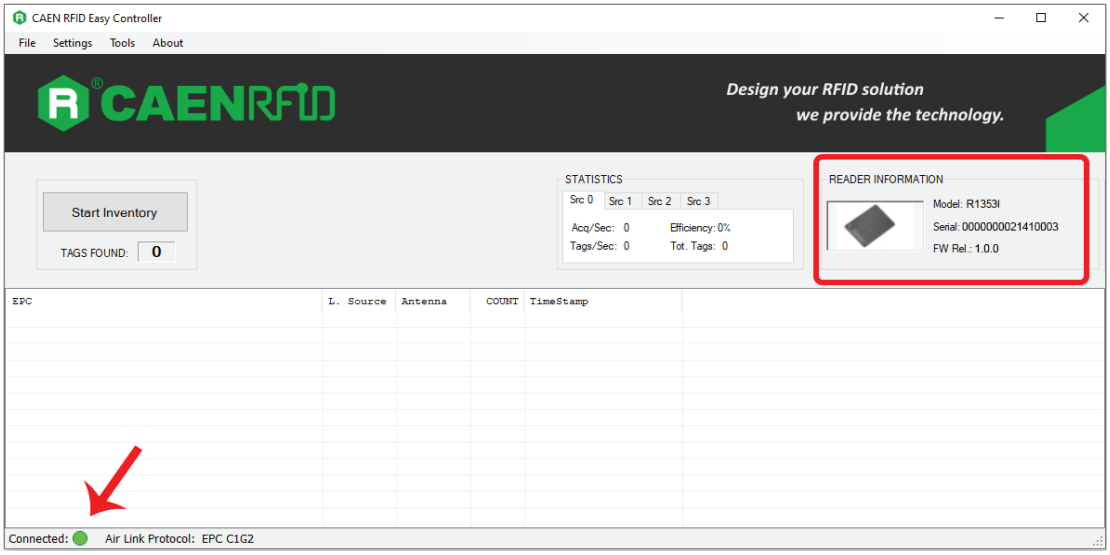
7. On the main application window click on *File → Connect;* the connection dialog box will appear.

8. Select *RS232* from the *Connection Type* combo box and the right COM port number from the *RS232 Port* combo box (COM5 in this example):

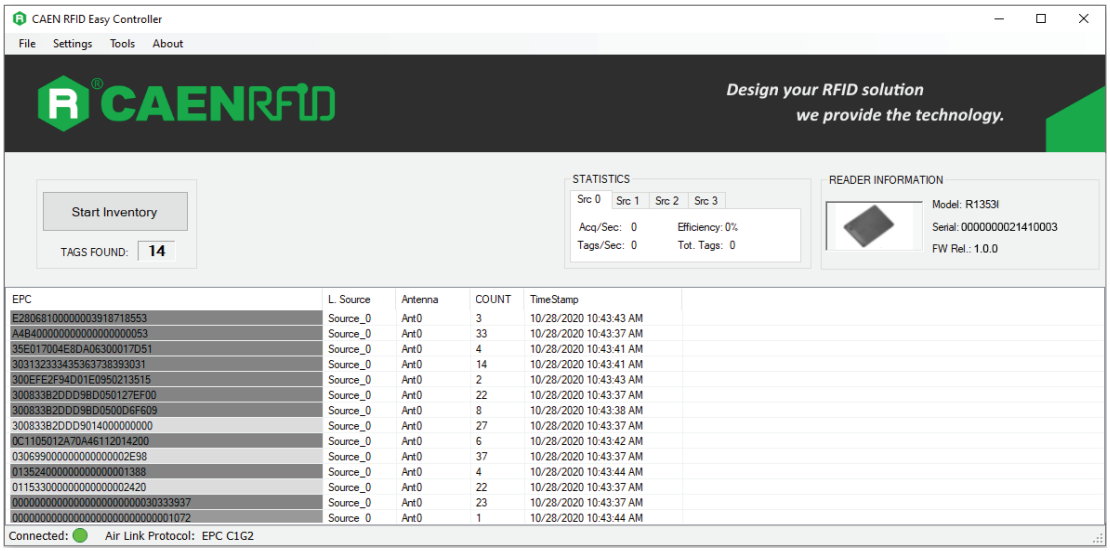


9. Click on *Connect*.

10. To verify if the connection with the reader has been established, check the green dot on the bottom left side of the sidebar. Into the *READER INFORMATION* box you can find information on reader model, serial number and firmware release:



11. Place tags 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 Slate[3] R1353I web page, *Downloads* section or in the Manual and Documents web area.

Warning: Note that in the EASY2READ profile holding down the *trigger* button activates the tag inventory only if the event-based continuous mode is active (see the function *EventInventoryTag Method* in the *CAEN RFID API Reference Manual* that can be download from Slate[3] R1353I web page, *Documents* section).

5 HID PROFILE

Introduction

The reader can be configured in two different profiles:

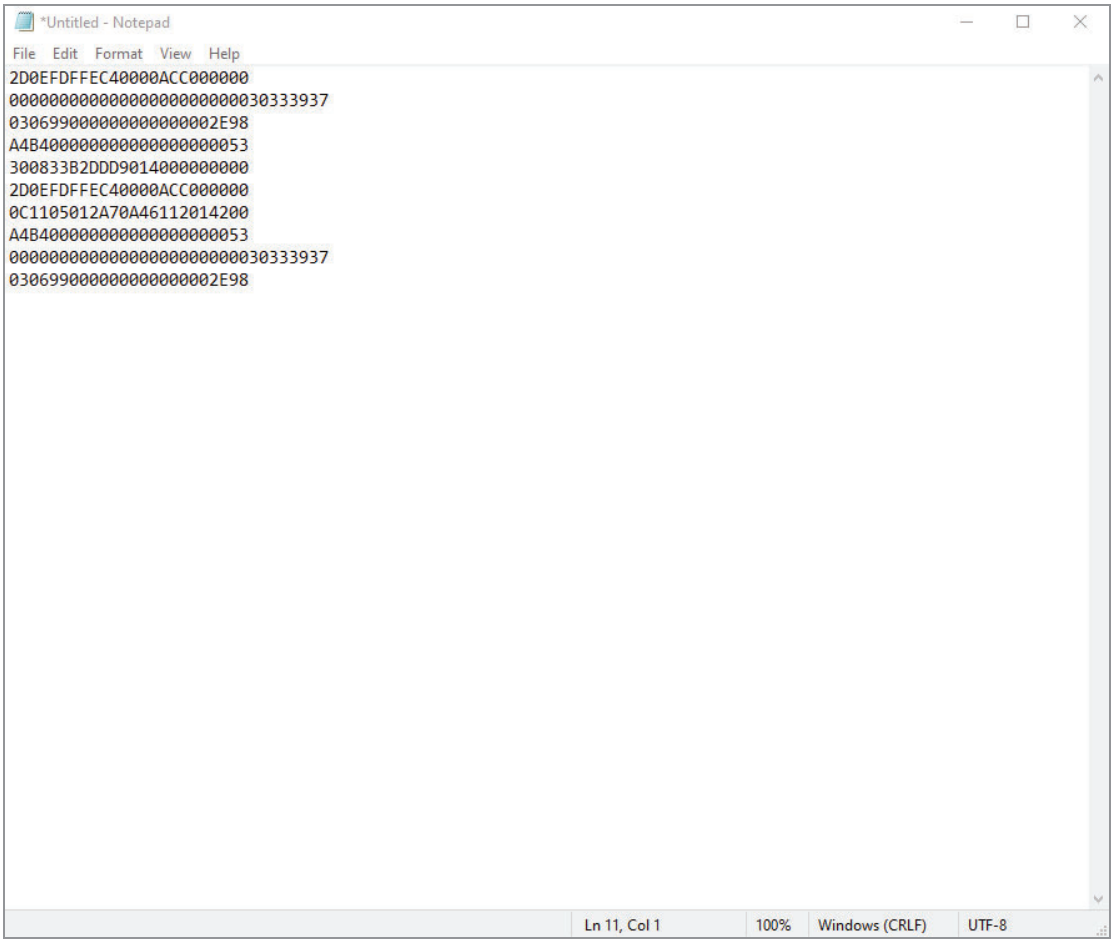
- **EASY2READ** (factory default): choosing this option you select the CAEN RFID easy2read communication protocol. Select this option in order to control the reader using the CAEN RFID Easy Controller Application or the SDK (Software Development Kits) library.
- **HID:** choosing this option you select the keyboard emulation protocol.

By default, the reader is in the easy2read profile.

To set the HID profile, please refer to § *Profile* paragraph page 16.

Windows PCs

1. Launch a text editing App (or any other App accepting keyboard input).
2. Start an inventory cycle by pressing the trigger button. On the text editing App window, you will see the EPCs of the tags (example using Notepad App). The green light of the tag ID LED indicates the reading activity.



6 FIRMWARE UPGRADE

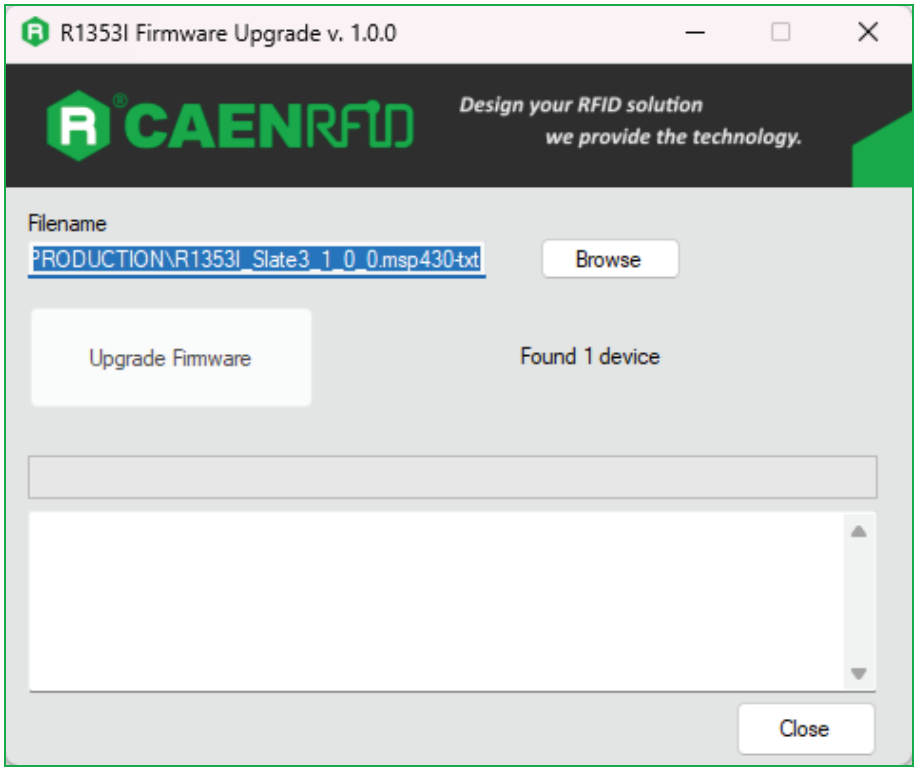
The Slate³ R1353I firmware upgrade can be performed via USB using the *Slate³ R1353I Firmware Upgrade Tool*, available for free at the Slate³ R1353I web page.

To upgrade the firmware, follow the steps described below:

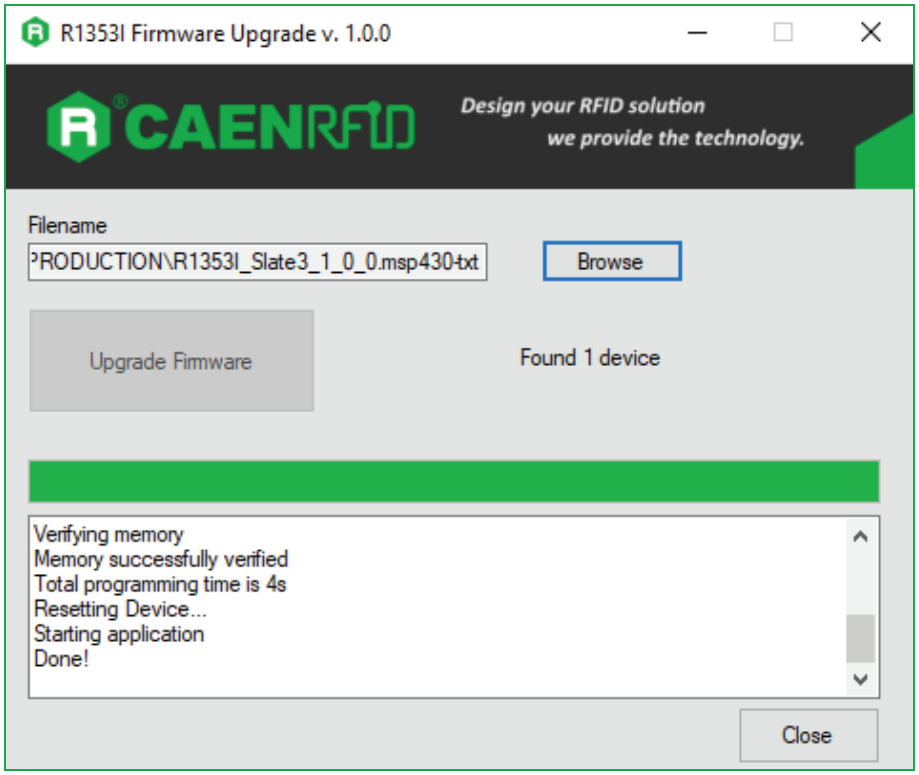
1. With the reader switched off, hold down the *power* button, connect the R1353I Slate³ reader to a PC using the provided USB cable and then release the power button.
2. Open the *Slate³ R1353I Firmware Upgrade Tool*.
3. Click on the *Next* button:

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

5. Select the firmware image file by clicking on the “Browse” button:



6. Click on the “Upgrade Firmware” button and wait for the upgrade process to be completed.
7. At the end of procedure, if the upgrade has been successfully performed, you will see the messages reported in the image below:



8. Power off the reader, disconnect the USB cable and then power on the reader again: the reader is ready for normal operation.

7 TECHNICAL SPECIFICATIONS

Technical Specifications Table

Frequency Range	865.600÷867.600 MHz (ETSI EN 302 208 V3.3.1) (Mod. R1353IE) 902÷928 MHz (FCC part 15.247) (Mod. R1353IU)
RF Power	Configurable from -5 dBm ERP to 20 dBm ERP (Mod. R1353IE) Configurable from -3 dBm EIRP to 22 dBm EIRP (Mod. R1353IU)
Number of Channels	4 channels (compliant to ETSI EN 302 208 V3.3.1) (Mod. R1353IE) 50 hopping channels (compliant to FCC part 15.247) (Mod. R1353IU)
Standard Compliance	ISO 18000-63/EPC C1G2
Antenna Gain	-3 dBi (typical)
Antenna Type	Circular Polarized UHF Antenna
Read Range	up to 1 m (typical)
USB Interface	USB 2.0 Full Speed (12 Mbit/s) via USB Type-C connector • HID profile available • Virtual COM Port parameters: – Baudrate up to 921.600 kbit/s – Databits: 8 – Stopbit: 1 – Parity: none – Flow control: none
User Interface	• Power button • Power and tag read status LED • Trigger button • Jack connector for external trigger button • Bi-tonal buzzer for event signalling
IP Rating	IP30
Dimensions	220 x 140 x 13/17 mm^3 (8.67 x 5.51 x 0.51/0.67 $inches^3$)
Length of USB cable	1.5 m
Operating Temperature	-10 °C to +55 °C
Weight	275 g

Tab. 7.1: Technical Specifications Table

Warning: The RF settings must match the operating country/region 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.

Supported RF modes

The Slate^3 R1353I reader supports the following link profiles, whose characteristics are reported in the following table:

Link Profile	Regulation	Forward Link Profile			Reverse Link Profile	
		R2T Modulation	Tari	PIE	T2R Modulation	Link Frequency
1	ETSI	PR-ASK	20 µs	2	Miller M=2	320 kHz
2	ETSI	PR-ASK	20 µs	2	Miller M=4	320 kHz
3	FCC	PR-ASK	20 µs	2	Miller M=4	250 kHz
4	ETSI	PR-ASK	15 µs	2	Miller M=2	320 kHz
5	ETSI/FCC	PR-ASK	20 µs	2	Miller M=8	160 kHz

Tab. 7.2: RF Modes – Forward and Reverse Link Profiles

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https://www.bsr.at
sales@bsr.at

Technical Drawings

The following drawings show the R1353I Slate^3 from different points of view.

All dimensions are in millimeters.

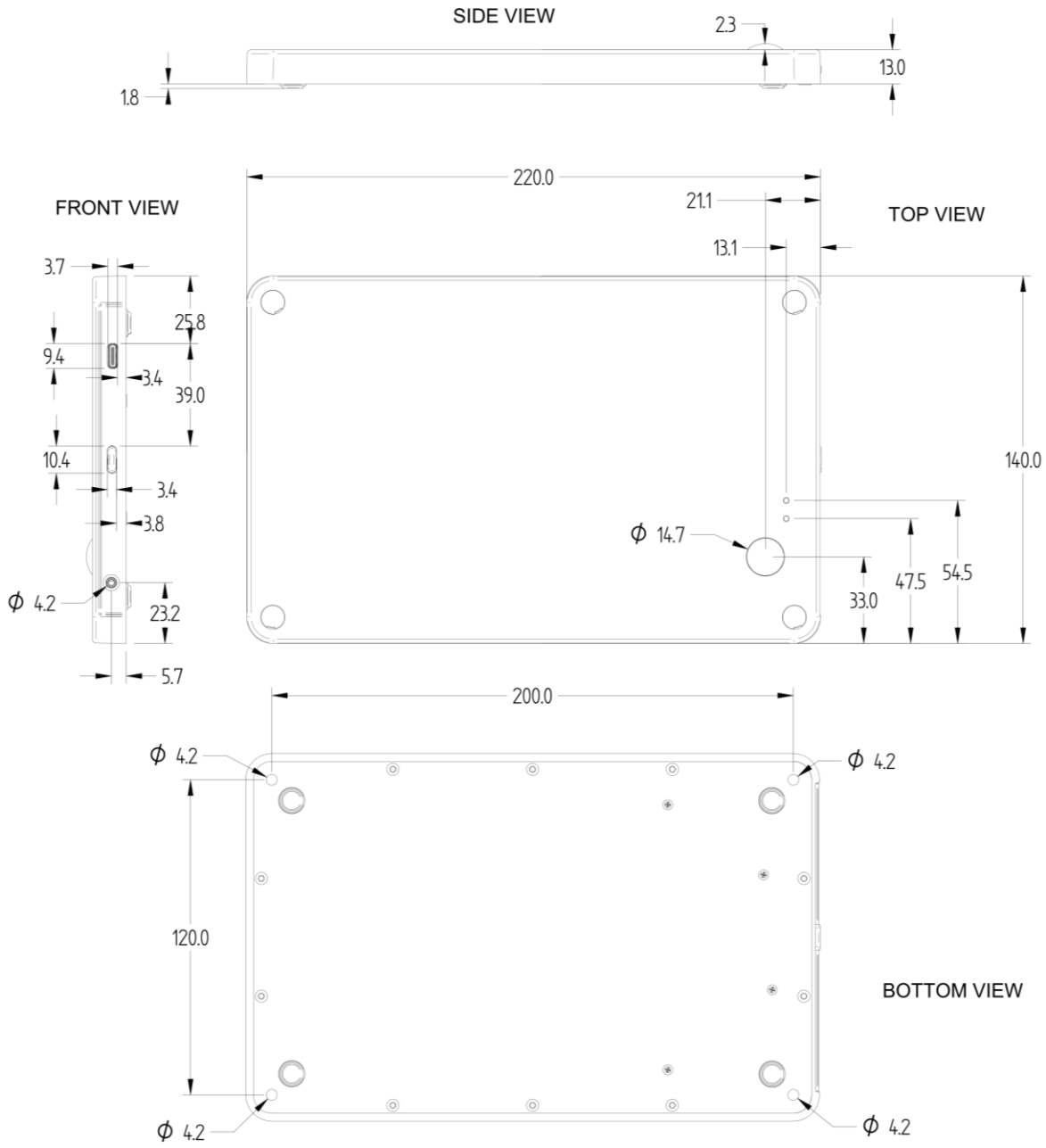

Fig. 7.1: Technical Drawings

8 REGULATORY COMPLIANCE

RoHS Directive

The Slate^3 R1353I Reader is compliant with the EU Directive 2015/863/EU (RoHS3) and the UK Regulation 2012 SI 2012/3032 (RoHS) on the Restriction of the Use of certain Hazardous Substances in Electrical and Electronic Equipment.

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