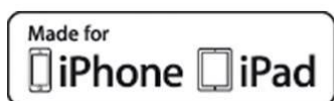


TECHNICAL INFORMATION MANUAL

Revision 0.0 – 22 February 2021

skID R1280I

Mini Sled RAIN RFID Reader



PRELIMINARY



Visit the [skID R1280I](#) 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 skID R1280I Mini Sled RAIN RFID Reader.

Change Document Record

Date	Revision	Changes	Pages
18 Jan 21	0.0	Preliminary release	-
22 Feb 21	0.1	Clarified RFID, USB and Bluetooth® interfaces mutual operation	6

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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Preliminary Product Information

This document contains information for a new product. CAEN RFID reserves the right to modify this product without notice.

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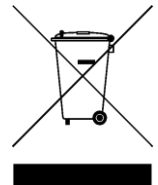
Federal Communications Commission (FCC) Notice (Preliminary)

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 **skID (Model R1280IE, R1280IU)** is a portable RAIN RFID reader of the easy2read® product line with integrated antenna for medium range applications.

The reader hosts an internal rechargeable battery and can retrieve data from tags read by RFID interface both in wired mode, using a USB cable, or in wireless mode through the embedded Bluetooth® module.

USB and Bluetooth® interfaces are mutually exclusive, when the USB is enabled the Bluetooth module is in power down mode.

Thanks to the Bluetooth® communication interface, the **skID** is a perfect add-on for any Bluetooth® enabled host such as a PC, a smartphone, a PDA or a tablet for RAIN RFID readings. The reader is compatible with Windows 8/10, Windows CE/Mobile, Android and iOS operating systems. The device supports both Bluetooth Low Energy (BLE) and Bluetooth classic communication to provide the maximum usage flexibility, including the HID profile for keyboard emulation.

The **skID** can be easily fixed to the smartphone using 3 different methods: magnets, 3M Dual Lock, or SP-Connect.

Designed for mobile operators, the **skID** is ideal for inventory management, mobile workers, service and maintenance applications.

Fig. 1.1: skID R1280I Reader

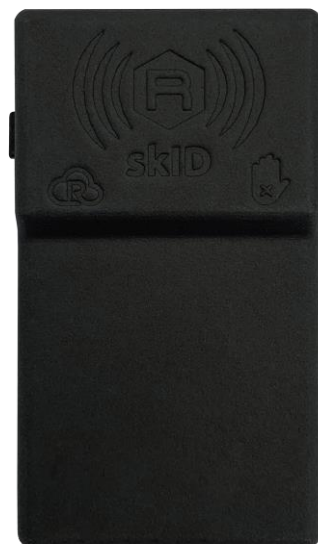


Fig. 1.2: skID R1280I Reader

Front panel

The skID R1280I front panel houses the following buttons (see figure below):



Fig. 1.3: Front Panel

No.	Name	Description
1	Trigger button	Inventory mode: press to perform an inventory cycle (hold down the button to repeat inventory cycles)
2	Power button	Press the button to switch on the reader, press for at least 2 seconds to switch it off
3	Antenna	 Antenna Position, do not cover with your hand!

Tab. 1.1: Front Panel Buttons

Bottom panel



Fig. 1.4: Bottom Panel

No.	Name	Description
1	USB	USB port type C
2	Power LED	Indicates the reader status and battery level (see § Tab. 1.3: Power LED Status Table page 8)
3	Link LED	Indicates the Bluetooth and USB/charger connection (see § Tab. 1.4: Bluetooth and USB/charger LED status table page 8)

Tab. 1.2: Front Panel LEDs and Connection

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	Reader is active and the battery charge is in the range 0÷15%

Tab. 1.3: 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. 1.4: Bluetooth and USB/charger LED status table

Back panel

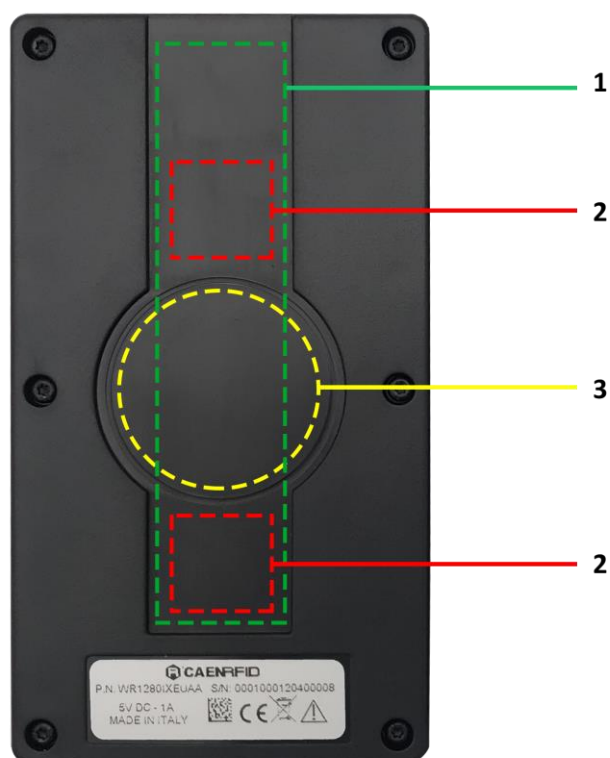


Fig. 1.5: Back Panel

No.	Description
1	Area where to apply the 3M Dual Lock TM
2	Position of the internal magnets that couple with those supplied for direct application on the phone cover
3	Area where to apply the SP

Tab. 1.5: Back Panel

Charging

The skID R1280I is supplied with an USB cable while the power supply for charging is an optional accessory (see § Accessories page 11).

When you charge the reader, the link LED (see § Tab. 1.2: Front Panel LEDs and Connection page 8) lights up orange. When the LED goes out it means that the reader is fully charged. Disconnect the usb cable.

When the reader is on, the power LED (see § Tab. 1.2: Front Panel LEDs and Connection page 8) indicates the battery level according to table Tab. 1.3: Power LED Status Table page 8.



Warning: EMPTY BATTERY CONDITION: When the reader is completely discharged, it is recommended to fully charge it, until the link LED is off (see § Charging page 11) with the USB cable connected.

USB connector

A micro USB Type C socket connector is located in the bottom side of the skID R1280I and can be used to connect the reader to an USB host port or to an AC/DC battery charger.

Accessories

The following accessories are supplied with the skID R1280I reader:



Fig. 1.6: Supplied Accessories

For the skID R1280I optional accessories see § *Ordering Options* page 11:



Fig. 1.7: Optional Accessories

Ordering Options

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

	Code	Description
Reader	WR1280IXUSAA	R1280I - skID - RAIN RFID Mini Sled Reader FCC
	WR1280IXEUAA	R1280I - skID - RAIN RFID Mini Sled Reader ETSI
Accessories	WALIM0000004	AC-DC power supply 5V 1A

2 CONFIGURATION MENU

Introduction

The skID R1280I configuration can be performed via USB using the R1280I Configuration Tool.

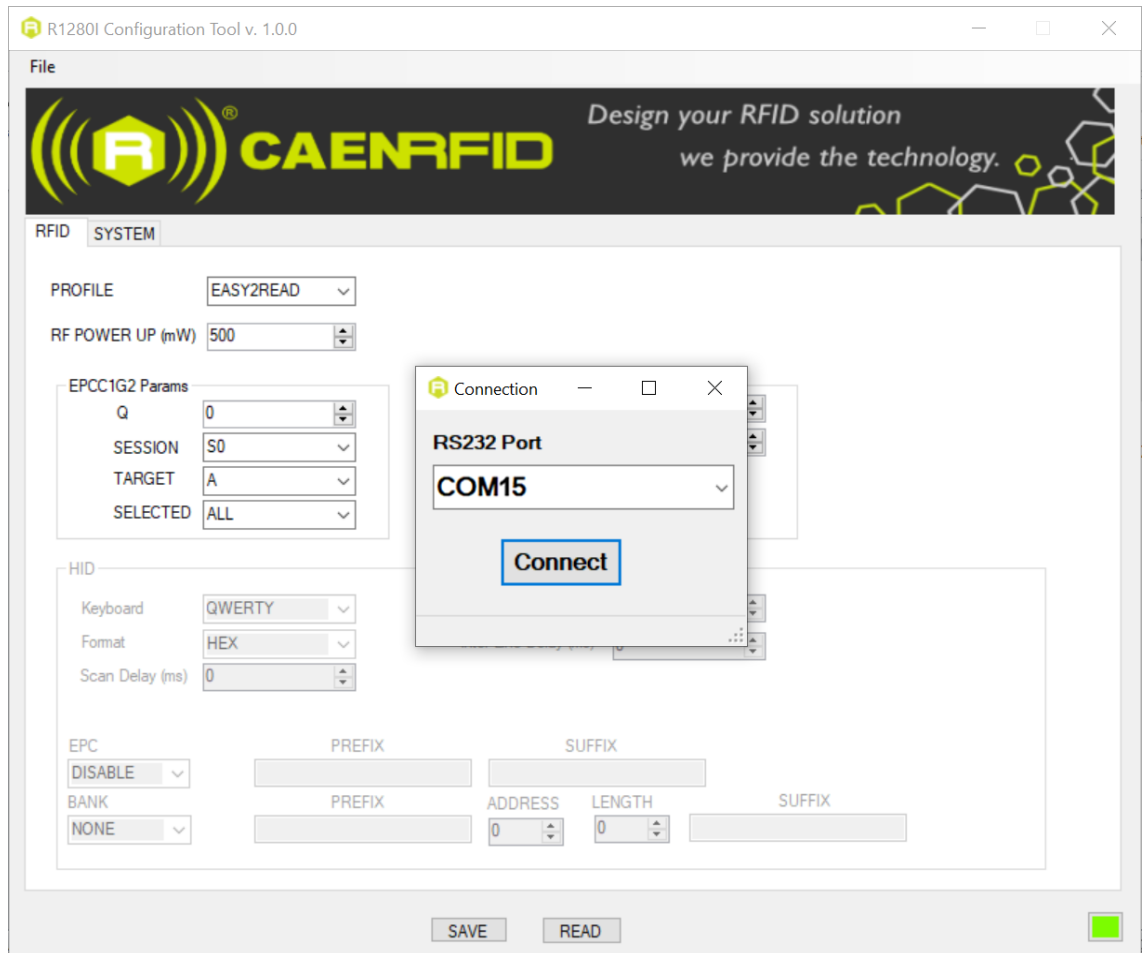
In order to access the configuration menu follow the steps described below:

1. Download from the [skID R1280I web page](#) the latest version of the skID R1280I Configuration Tool.
2. With the reader switched off, connect the R1280I skID reader to a PC using the provided USB cable.
3. Press simultaneously the *trigger* and the *power* button for about two seconds, until you hear a beep. The communication LED is green.
4. Open the skID R1280I Configuration Tool:



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

- Select the right COM port number from the RS232 Port combo box (COM15 in the example):



- Click on *Connect*. If the connection is not successful, the message “connection error” appears.

The skID R1280I menu options are the following:

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

RFID

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

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

Y

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.

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 23.

For details on the EASY2READ configuration options, refer to § *EASY2READ Parameters* page 16.

- **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 54.

For details on the HID configuration options, refer to § *HID Parameters* page 17.

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 500 mW. Accepted values are included in the range 0÷500. The *RF Power Up* is expressed in mW

Note that, when the reader is configured in the EASY2READ profile, to set the *RF Power Up* you can also use the CAEN RFID Easy Controller Application or the *SetPower* function of the SDK (Software Development Kit) library.

EPCC1G2 Parameters

R1280I Configuration Tool v. 1.0.0

File

CAENRFID Design your RFID solution we provide the technology.

RFID SYSTEM

PROFILE: EASY2READ

RF POWER UP (mW): 500

EPCC1G2 Params

- Q: 0
- SESSION: S0
- TARGET: A
- SELECTED: ALL

EASY2READ params

- TID Length: 0
- Read Cycles: 0

HID

- Keyboard: QWERTY
- Format: HEX
- Scan Delay (ms): 0
- Inter Char Delay (ms): 0
- Inter Line Delay (ms): 0

EPC

- DISABLE
- BANK: NONE
- PREFIX:
- SUFFIX:
- ADDRESS: 0
- LENGTH: 0
- SUFFIX:

SAVE READ

- **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 see EPC Class1 Gen2 protocol specification [RD1]. The 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 and S3) and inventories tags within that session. For more information on session see EPC Class1 Gen2 protocol specification [RD1]. Default value is EPC C1G2 Session = S0. You can change the default value using the drop-down menu.
- **Target** A or B. For more information on *target* see EPC Class1 Gen2 protocol specification [RD1]. Default value is *target* = A. You can change the default value using the drop-down menu.
- **Selected:** ALL, NOT selected, selected. For more information on *Selected* see EPC Class1 Gen2 protocol specification [RD1]. Default value is *selected* = ALL. You can change the default value using the drop-down menu

Note that, 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.

Y

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:

The screenshot shows the 'R1280I Configuration Tool v. 1.0.0' interface. The 'RFID' tab is selected, and the 'SYSTEM' sub-tab is active. The 'PROFILE' dropdown is set to 'EASY2READ'. The 'RF POWER UP (mW)' is set to 500. The 'EASY2READ params' section, highlighted with a red box, contains two fields: 'TID Length' and 'Read Cycles', both set to 0. Other sections include 'EPCC1G2 Params' (Q: 0, SESSION: S0, TARGET: A, SELECTED: ALL), 'HID' (Keyboard: QWERTY, Format: HEX, Scan Delay: 0, Inter Char Delay: 0, Inter Line Delay: 0), and 'EPC' (DISABLE, BANK: NONE, PREFIX, ADDRESS: 0, LENGTH: 0, SUFFIX). At the bottom, there are 'SAVE' and 'READ' buttons and a green status indicator.

- **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 0, 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 0 that means no stop in the continuous inventory mode. Note that *Read Cycles* affects only inventory performed with continuous mode.

Y

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:

The screenshot shows the R1280I Configuration Tool v. 1.0.0 interface. The 'HID' section is highlighted with a red box. It contains the following parameters:

- Keyboard:** QWERTY (dropdown menu)
- Format:** HEX (dropdown menu)
- Scan Delay (ms):** 200 (spin box)
- Inter Char Delay (ms):** 5 (spin box)
- Inter Line Delay (ms):** 60 (spin box)
- EPC:** ENABLE (dropdown menu)
- BANK:** NONE (dropdown menu)
- PREFIX:** (text input field)
- SUFFIX:** (text input field)
- ADDRESS:** 0 (spin box)
- LENGTH:** 0 (spin box)
- SUFFIX:** (text input field)

Buttons for 'SAVE' and 'READ' are located at the bottom of the configuration window.

- **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.

- **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 ($96/8 = 12$).

By default the EPC HID format is set to “HEX”. You can change the default value using the drop-down menu.

- **Scan Delay (ms):** Scan Delay is an editable field and the value is expressed in ms. By default, the scan delay is 0 ms. The scan delay is the time between two inventories (in case of continuous inventory mode with no triggers enabled).
- **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 0. If set to 0, the reader does not introduce delay: the only delay is that of the BT of the device in use. The use of the *Inter Char Delay* is recommended to slow down the sending of characters from the reader to mobile devices, as these are not performing enough to keep up with the Bluetooth transmission, with the risk of losing characters.

- **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 0. If set to 0, the reader does not introduce delay: the only delay is that of the BT of the device in use. The use of the *Inter Line Delay* is recommended to slow down the sending of characters from the reader to mobile devices, as these are not performing enough to keep up with the Bluetooth transmission, with the risk of losing characters.

EPC code parameters

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

Tab. 2.1: 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.
- **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.



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\n` (see the following table *Tab. 2.2: Escape Sequences supported* page 18).



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. 2.2: Escape Sequences supported

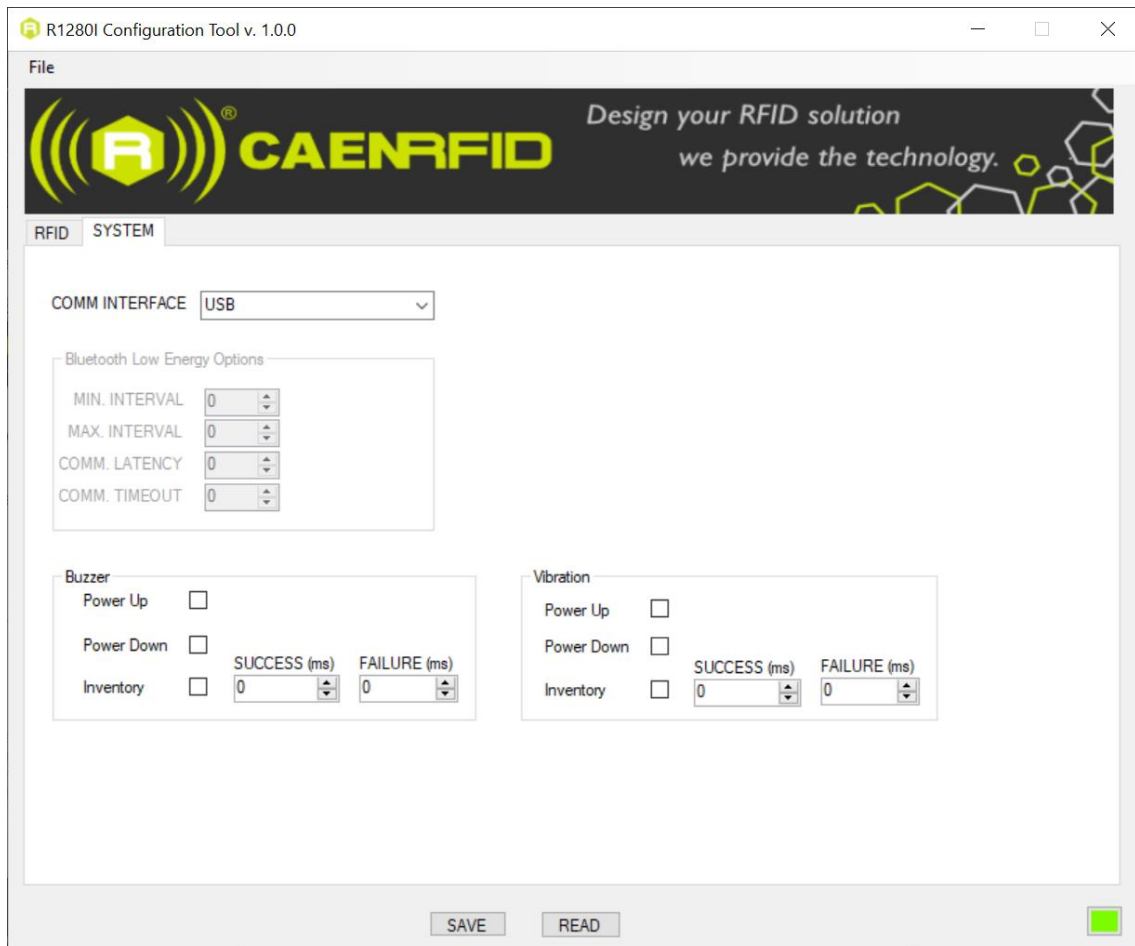
Using the second part of the *Tab. 2.1: EPC Code parameters* page 18, the same parameters (Prefix, Suffix) can be set for individual memory banks (RESERVED, EPC, TID and USER). Addition parameters are:

- **ADDRESS:** The address to start counting the “length” value. By default the *address* string is empty.
- **LENGTH:** number of characters of the EPC code to be displayed counting from the “address”. If not set, all the EPC code is displayed. By default the length string is empty.

SYSTEM

Bluetooth and USB communication

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



Use this section in order to set the communication interface:

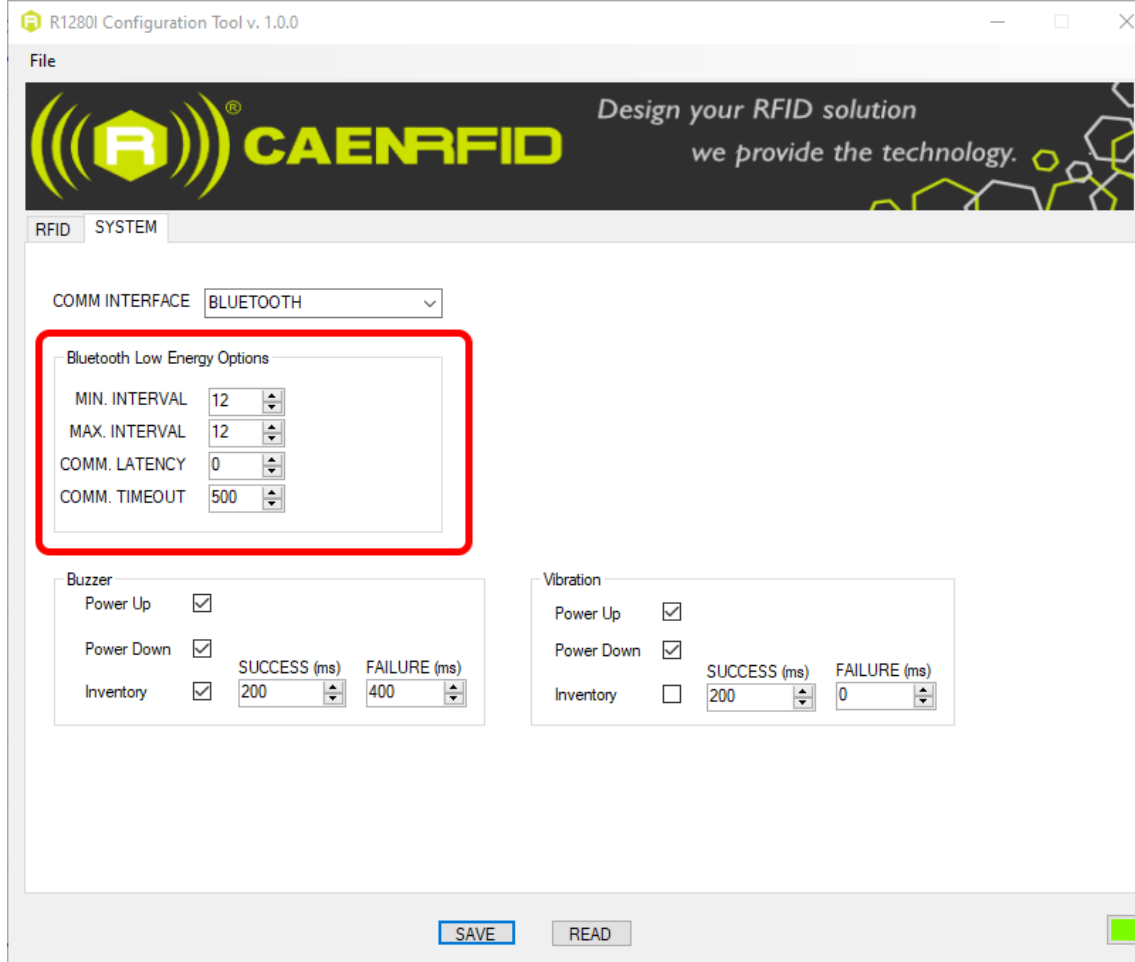
- **COMM INTERFACE:** in the *COMM INTERFACE* box you can set two different communication interface:
 - **USB**
 - **Bluetooth** (BT or BLE, depending on the firmware uploaded into the reader's Bluetooth module)

Y

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.

Bluetooth Low Energy Options

By setting the *COMM INTERFACE* to *Bluetooth*, the window *Bluetooth Low Energy Options* is enabled.



Y

Warning: To enable the Bluetooth Low Energy it is necessary to set the *Bluetooth* option in the *COMM INTERFACE* and to upload the BLE firmware into the reader's Bluetooth module (see § *BT-BLE switching* page 72)

In this section you can set the BLE communication parameters for iOS devices.

This operation is necessary to optimally configure the communication between the Bluetooth module and the iOS operating system. These parameters are important, since they affect power consumption for both the reader and iOS device, data transfer speed of the connection, and, in some cases, the stability of the connection.

- **MIN INTERVAL:**
- **MAX INTERVAL:**
- **COMM LATENCY:**
- **COMM TIMEOUT:**.....

Y

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.

Buzzer

Use this section in order to set the buzzer parameters:

- **Power Up:** beep at the power on of the reader
- **Power Down:** beep at the power off of the reader
- **Inventory:** beep at the identification of a tag
 - **Success (ms):** length of tone expressed in ms in case of success
 - **Failure (ms):** length of tone expressed in ms in case of failure

By default, all the Buzzer options are disabled.

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 parameters:

- **Power Up:** vibration at the power on of the reader
- **Power Down:** vibration at the power off of the reader
- **Inventory:** vibration at the identification of a tag
 - **Success (ms):** length of vibration expressed in ms in case of success
 - **Failure (ms):** length of vibration expressed in ms in case of failure

By default, all the Vibration 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.



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.

3 EASY2READ PROFILE

Introduction

By default, the reader profile is 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.

The connection to the skID reader using the EASY2READ profile is possible via Bluetooth or USB port.

In the following table it is shown the compatibility between the EASY2READ profile and BT/BLE/USB connection for different Operating Systems (Android, PC and iOS):

	ANDROID devices			WINDOWS PC			iOS devices		
	BT	BLE	USB	BT	BLE	USB	BT	BLE	USB
EASY2READ	✓			✓		✓		✓	

Tab. 3.1: Compatibility table EASY2READ-BT/BLE/USB for different OS

Follow the instructions in chapter § *BT-BLE switching* page 72 to switch the reader from BT (Bluetooth Classic) to BLE (Bluetooth Low Energy) or vice-versa.

If your reader is in HID profile active, in order to set the EASY2READ profile please refer to the next paragraph § *Set the EASY2READ profile* page 23.

Set the EASY2READ profile

If your reader is in HID profile active, in order to set the EASY2READ profile, access the skID R1280I configuration menu via USB connection:

1. Download from the [skID R1280I web page](#) the latest version of the skID R1280I Configuration Tool.
2. With the reader turned off, connect the R1280I skID reader to a PC using the provided USB cable.
3. Press simultaneously the *trigger* and the *power* button for about two seconds, until you hear a beep.
4. Open the skID R1280I Configuration Tool:

R1280I Configuration Tool v. 1.0.0

File

Design your RFID solution
we provide the technology.

RFID SYSTEM

PROFILE: EASY2READ

RF POWER UP (mW): 500

EPCC1G2 Params:

- Q: 0
- SESSION: S0
- TARGET: A
- SELECTED: ALL

EASY2READ params:

- TID Length: 0
- Read Cycles: 0

HID:

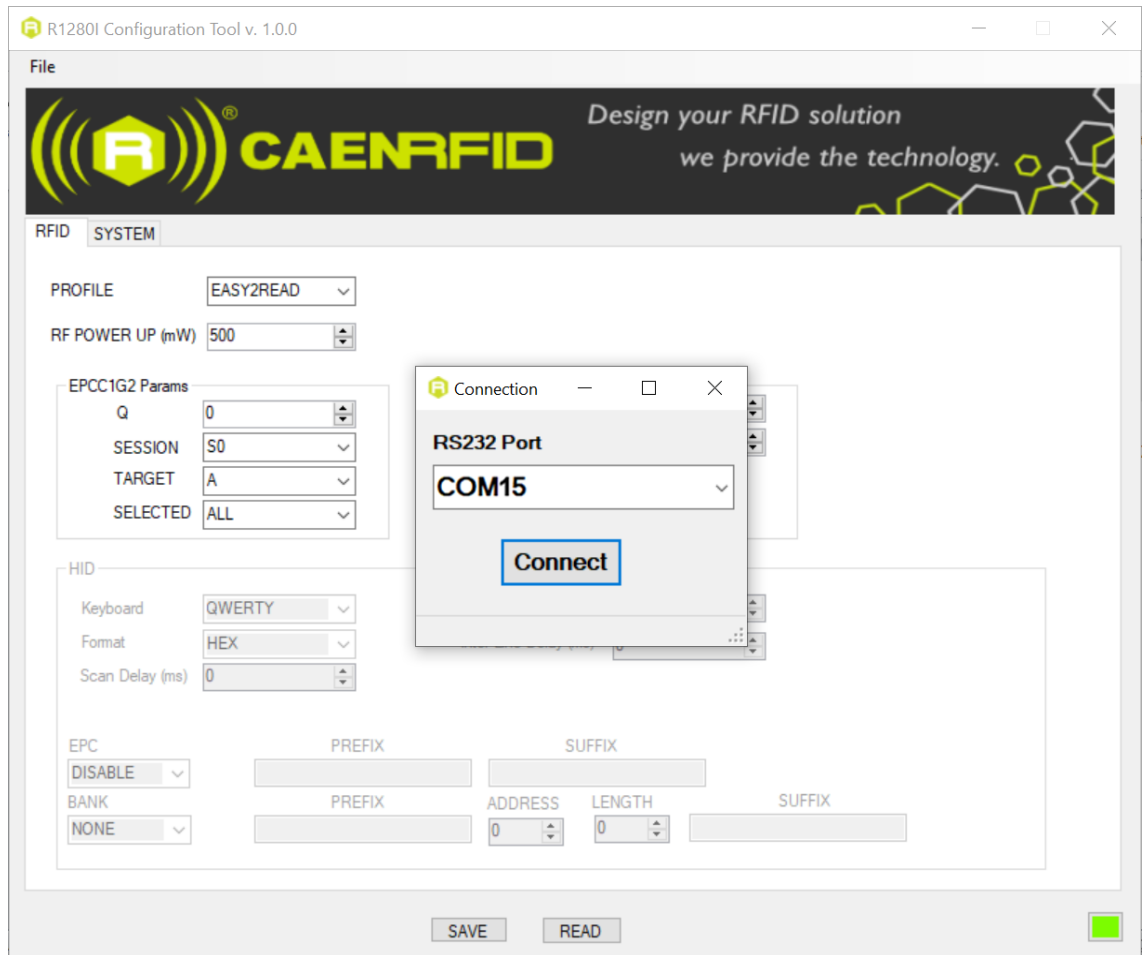
- Keyboard: QWERTY
- Format: HEX
- Scan Delay (ms): 0
- Inter Char Delay (ms): 0
- Inter Line Delay (ms): 0

EPC:

- DISABLE
- BANK: NONE
- PREFIX:
- ADDRESS: 0
- LENGTH: 0
- SUFFIX:

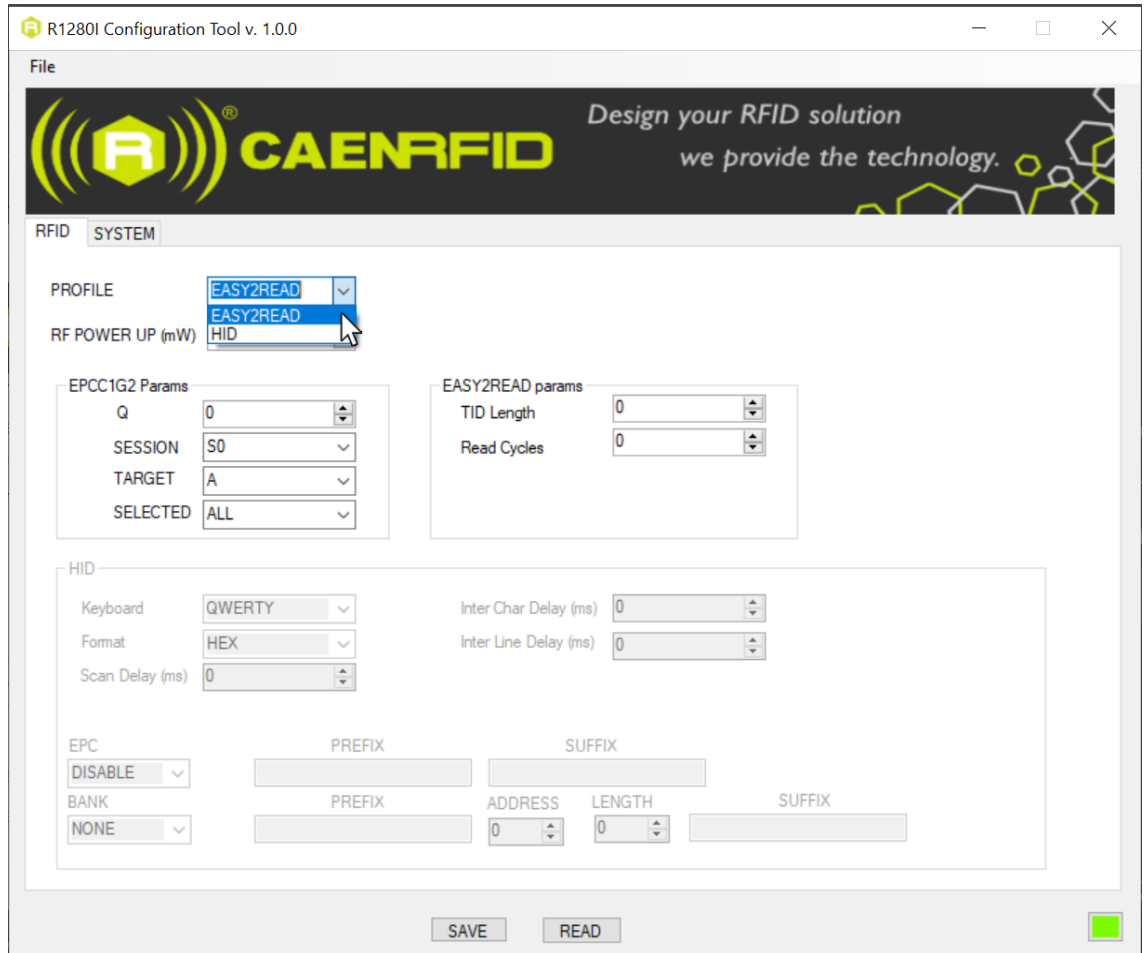
SAVE READ

- On the main application window click on File -> Connect; the connection dialog box will appear.
- Select the right COM port number from the RS232 Port combo box (COM15 in the example):



7. Click on *Connect*. If the connection is not successful, the message “connection error” appears.

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



Y

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 profile options

It is possible to configure various options using the EASY2READ profile:

The screenshot shows the 'R1280I Configuration Tool v. 1.0.0' window. The 'RFID' tab is selected, and the 'SYSTEM' sub-tab is active. The 'EASY2READ' profile is selected in the 'PROFILE' dropdown. The 'RF POWER UP (mW)' is set to 500. The 'EPCC1G2 Params' section includes 'Q' (0), 'SESSION' (S0), 'TARGET' (A), and 'SELECTED' (ALL). The 'EASY2READ params' section includes 'TID Length' (0) and 'Read Cycles' (0). The 'HID' section includes 'Keyboard' (QWERTY), 'Format' (HEX), 'Scan Delay (ms)' (0), 'Inter Char Delay (ms)' (0), and 'Inter Line Delay (ms)' (0). The 'EPC' section includes 'DISABLE' and 'BANK' (NONE). The 'PREFIX' and 'SUFFIX' sections are empty. The 'ADDRESS' is 0, and the 'LENGTH' is 0. The 'SAVE' and 'READ' buttons are at the bottom.

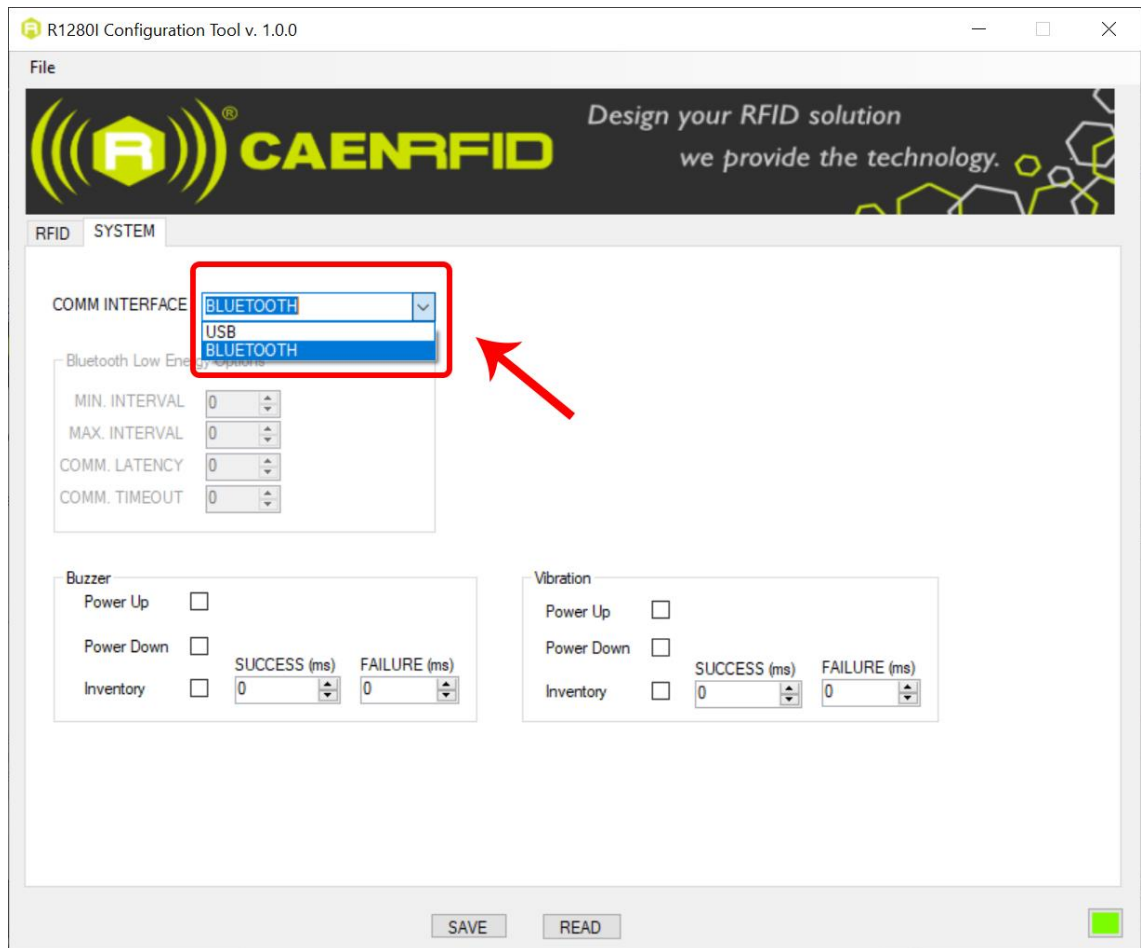
For details on the EASY2READ configuration options, refer to § EASY2READ paragraph page 16.

Android devices

Bluetooth Communication Setup using the Easy Controller for Android

Follow the steps below to connect your Android device to the skID reader using the BT connection and the Easy Controller App. All the images below were generated using a Samsung S7 model device.

1. Follow the instructions given in paragraph § *Bluetooth and USB communication* page 20 to select the *Bluetooth communication interface* using the skID R1280I Configuration Tool:

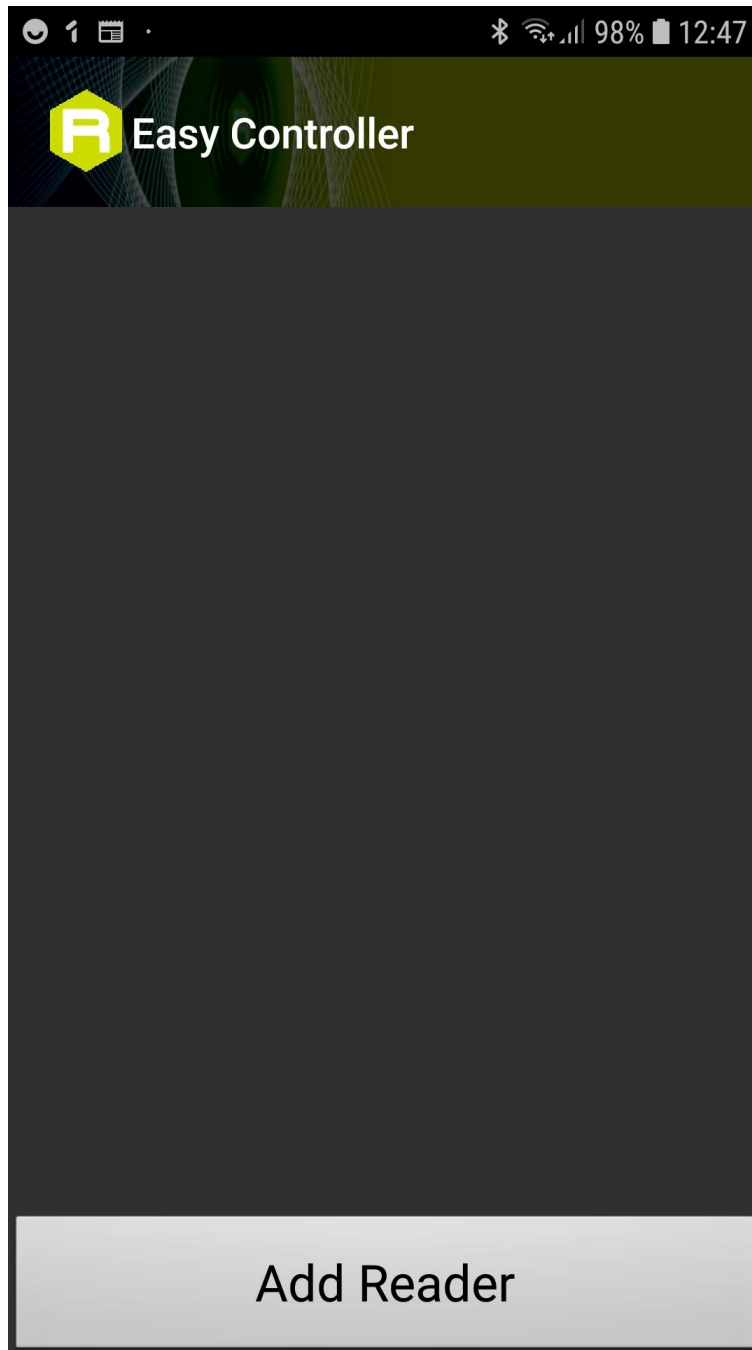


Y

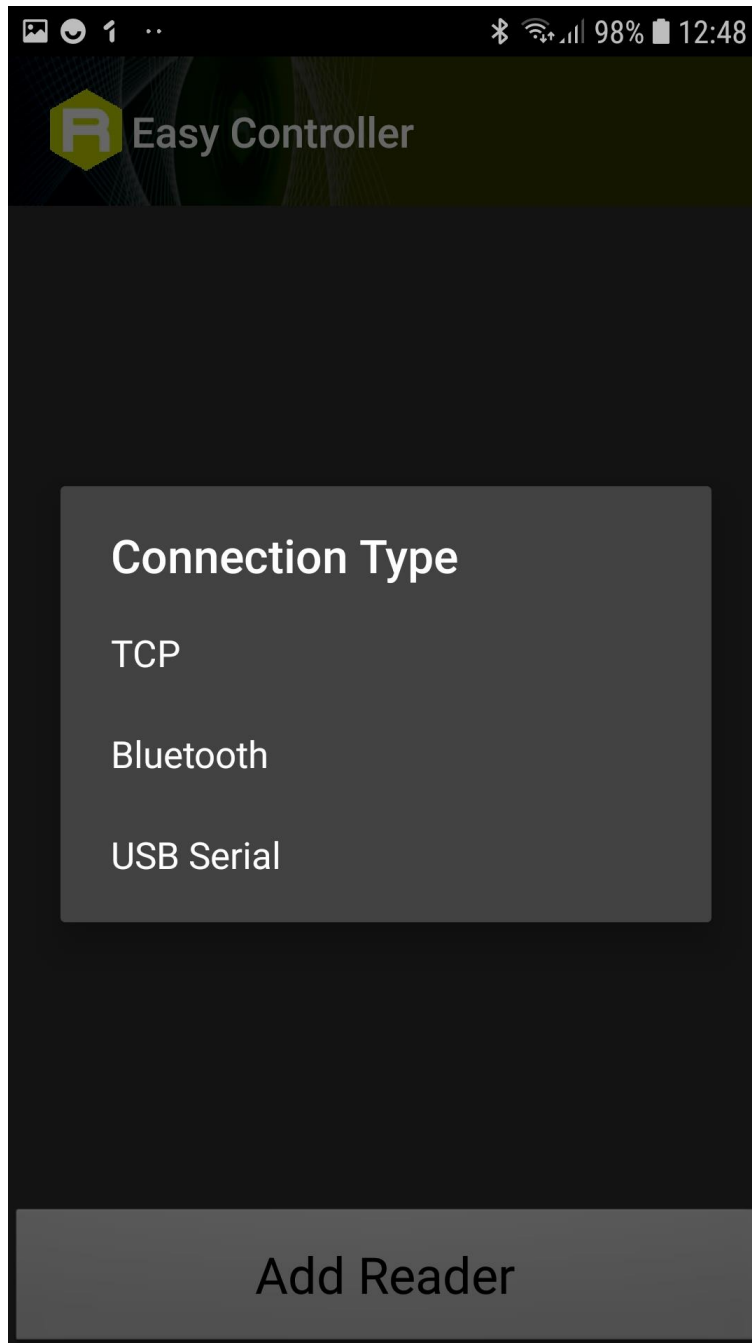
Warning: To save the changes click on the **SAVE** button (check the green dot on the bottom right side of the sidebar). On the main application window click on *File* → *Disconnect*. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

2. Download on your Android device the *CAEN RFID Easy Controller for Android App* (available link at the [skID R1280I web page](#), by clicking on the Android App on Google Play icon).
3. Launch the *CAEN RFID Easy Controller for Android App*.

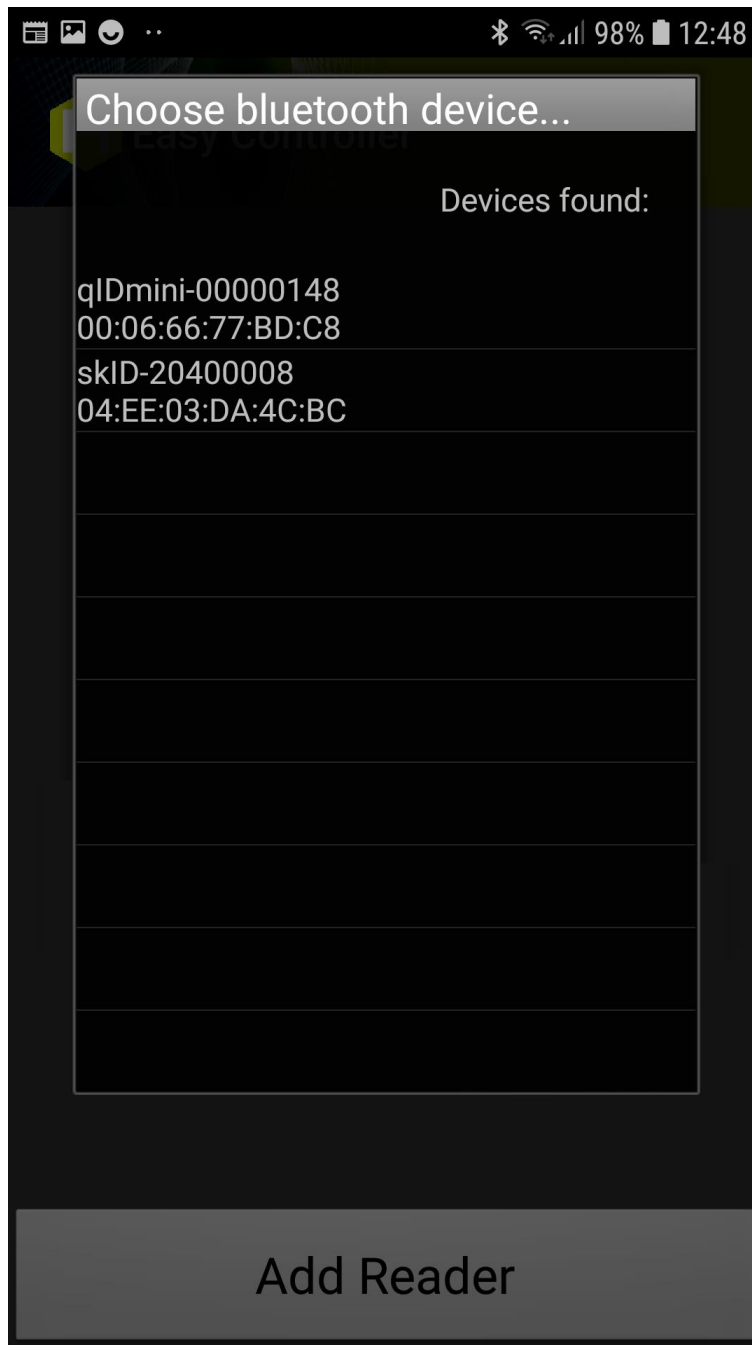
4. Click on “Add reader”:



5. Click on “Bluetooth” in the “Connection Type” window:



6. Select the skID R1280I reader from the list of Bluetooth devices available (in this example the skID with serial number 20400008):

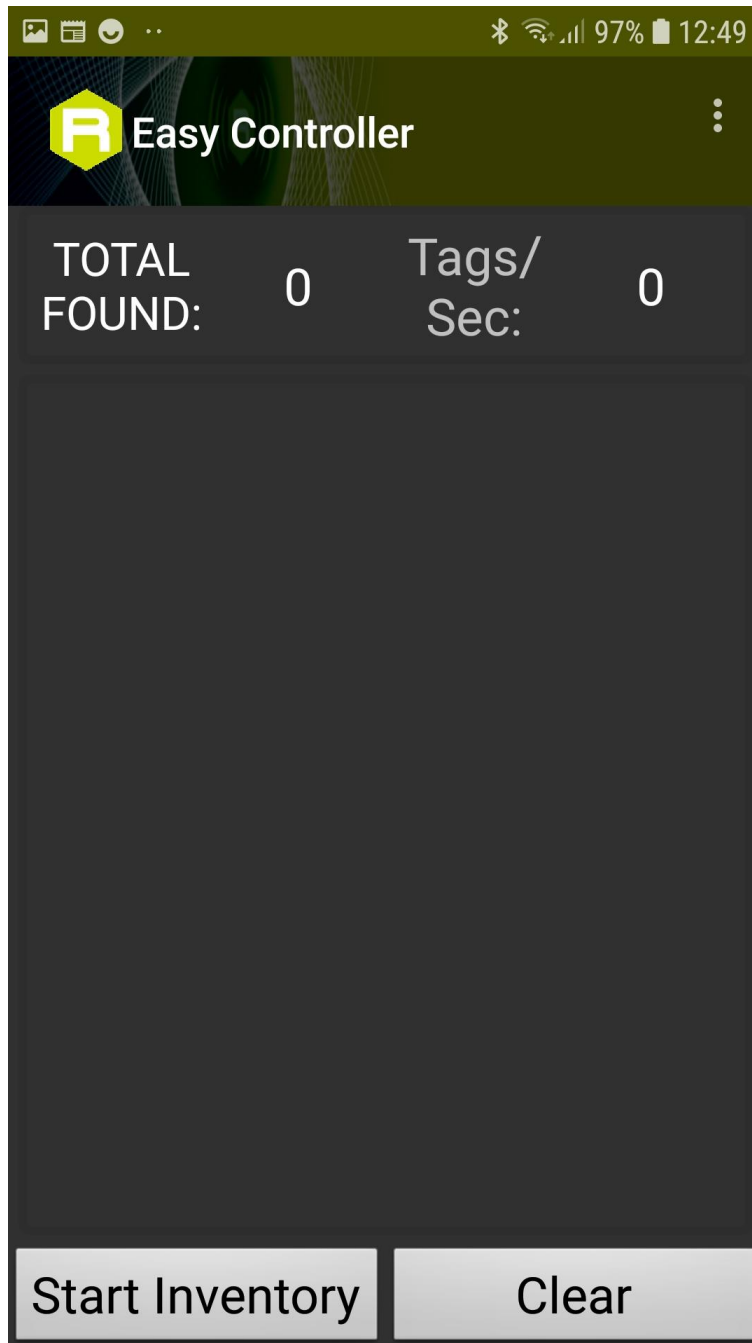


7. Once the connection is established the Bluetooth blue light turns on.

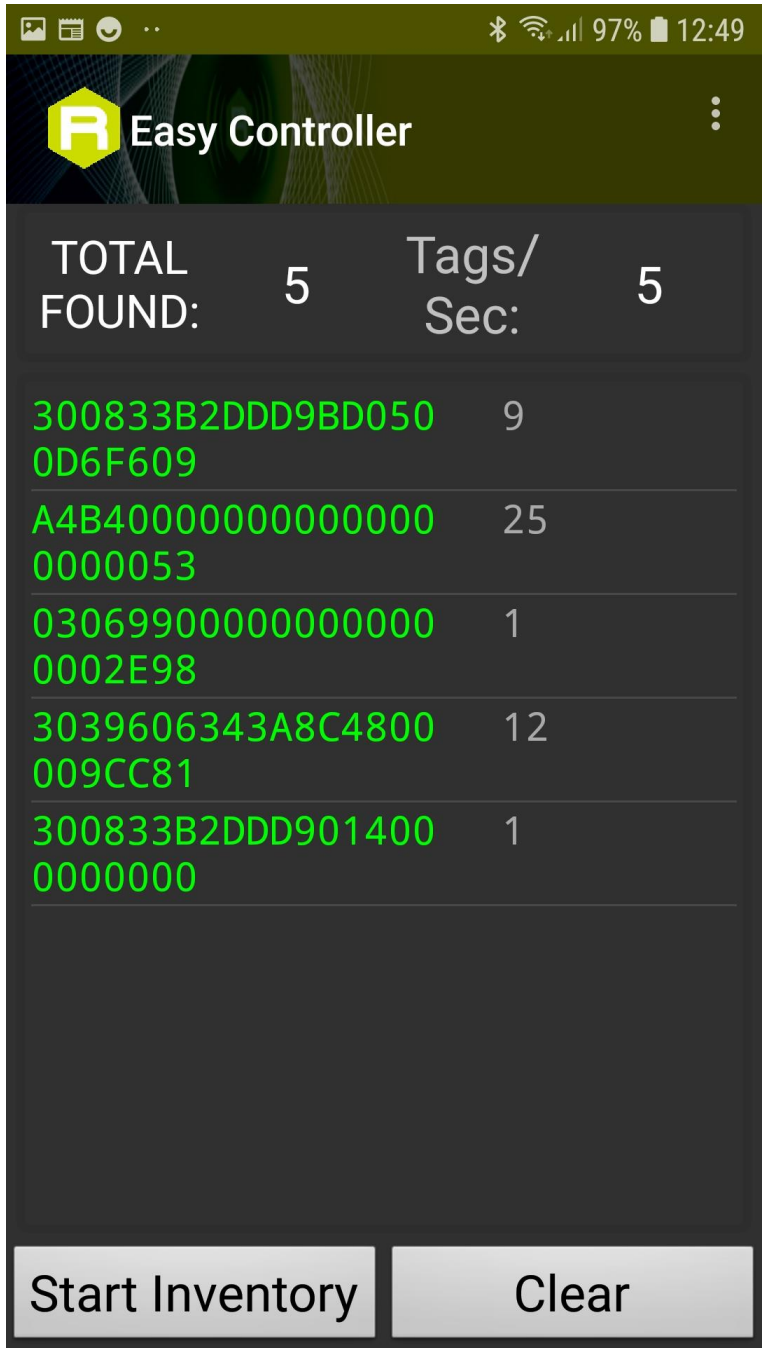
8. To start using your skID R1280I, click on the reader line:



9. Click on “Start Inventory”:



10. A list of the read tags is shown:

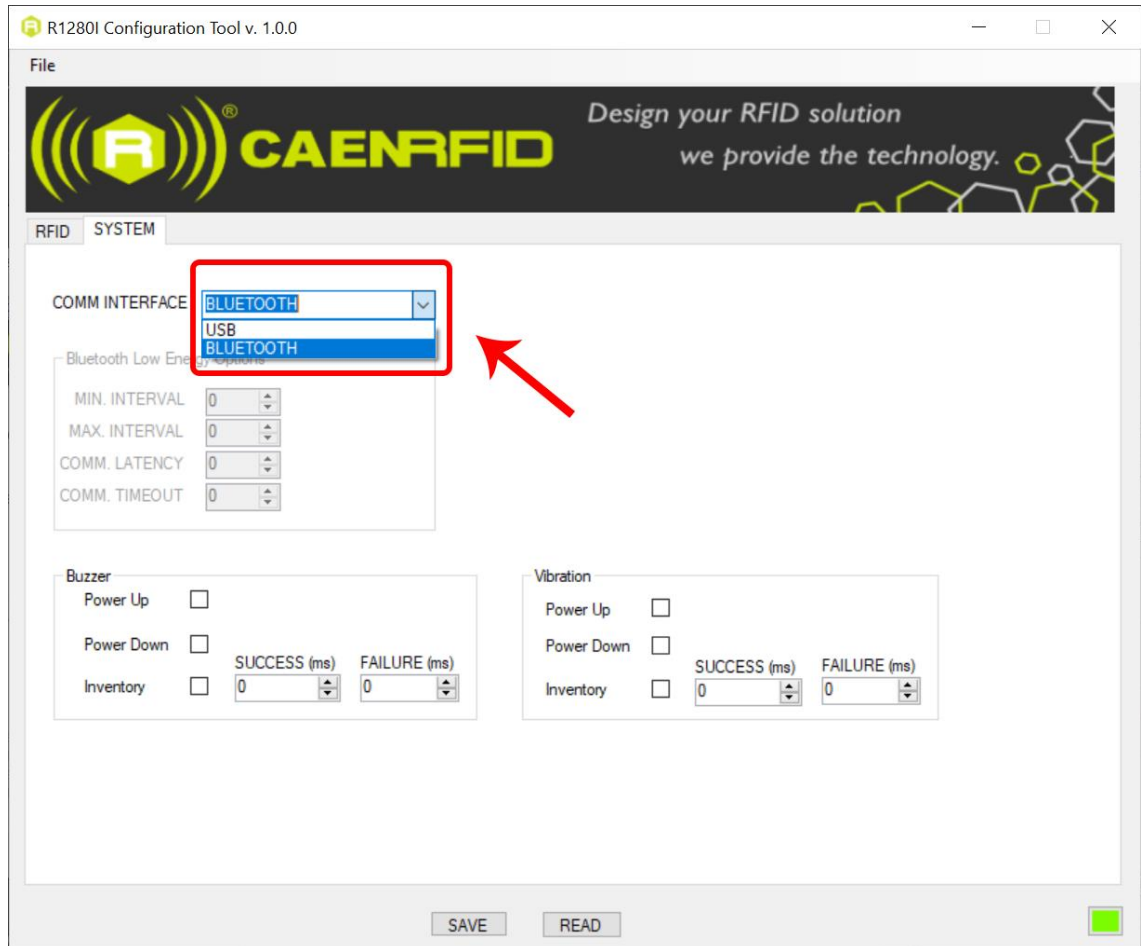


Windows PCs

Bluetooth Communication Setup

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

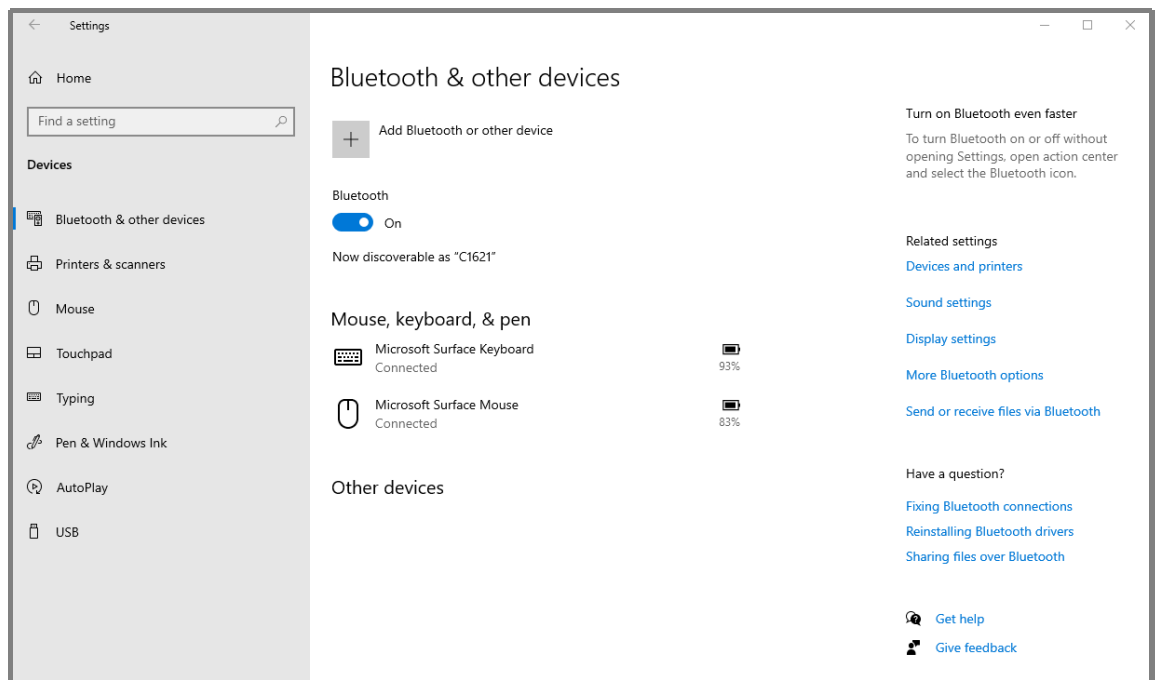
1. Follow the instructions given in paragraph § *Bluetooth and USB communication* page 20 to select the *Bluetooth communication interface* using the skID R1280I Configuration Tool:



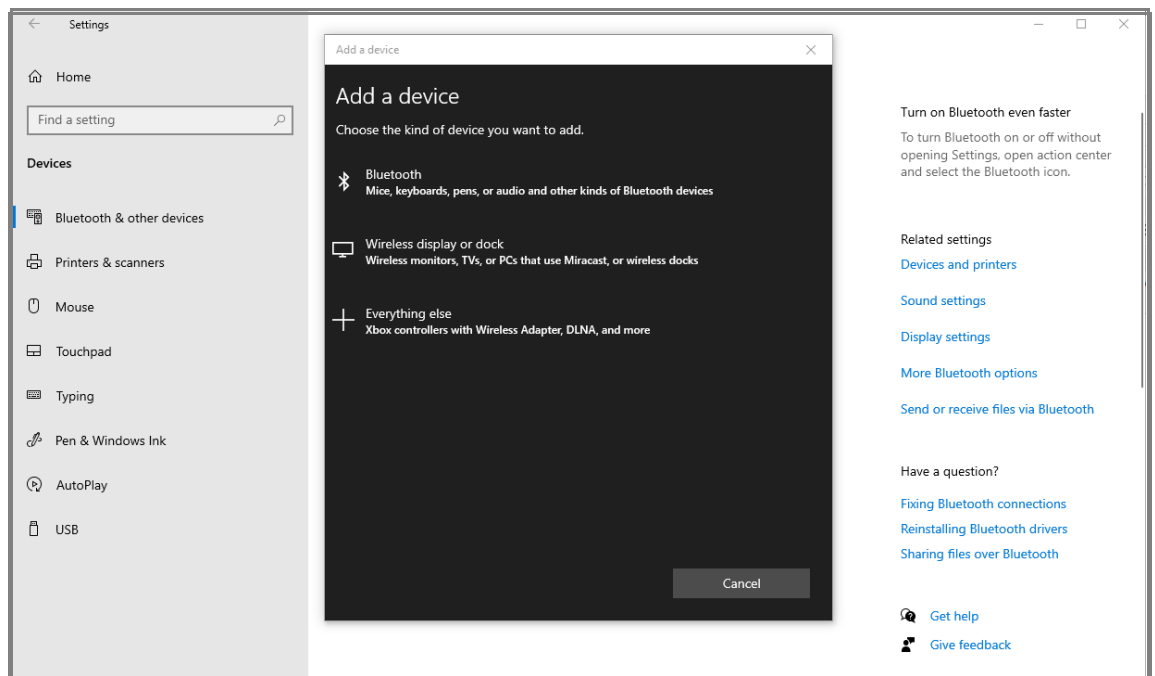
Y

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.

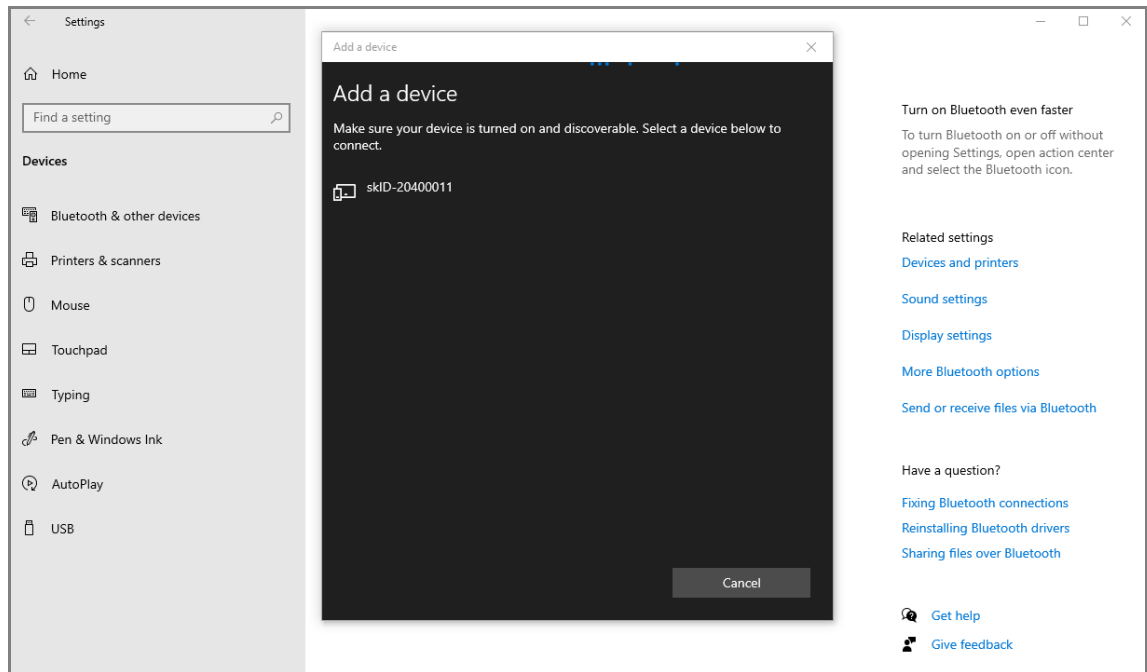
2. In your Windows Pc go to *Settings* → *Devices*.
3. Click on *Bluetooth & other devices* → *Add Bluetooth or other device*:



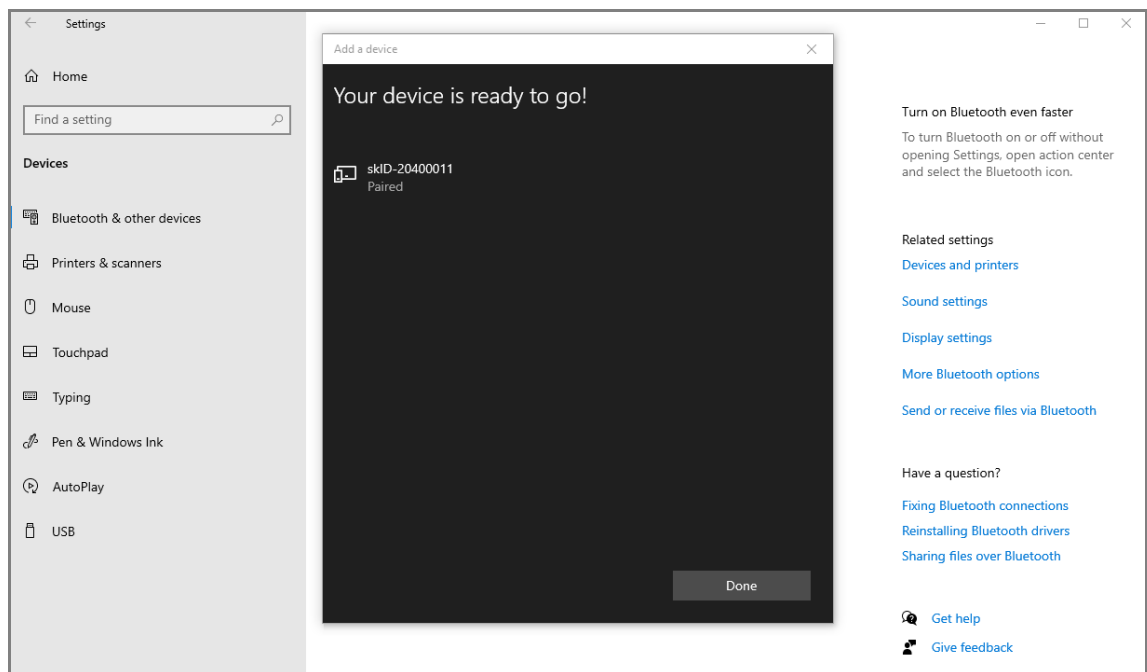
4. Click on *Bluetooth*:



- Select the skID R1280I reader (in this example the skID with serial number 20400011):



- The message on the screen “Your device is ready to go!” informs you that the connection is established and the Bluetooth blue light of the reader turns on.



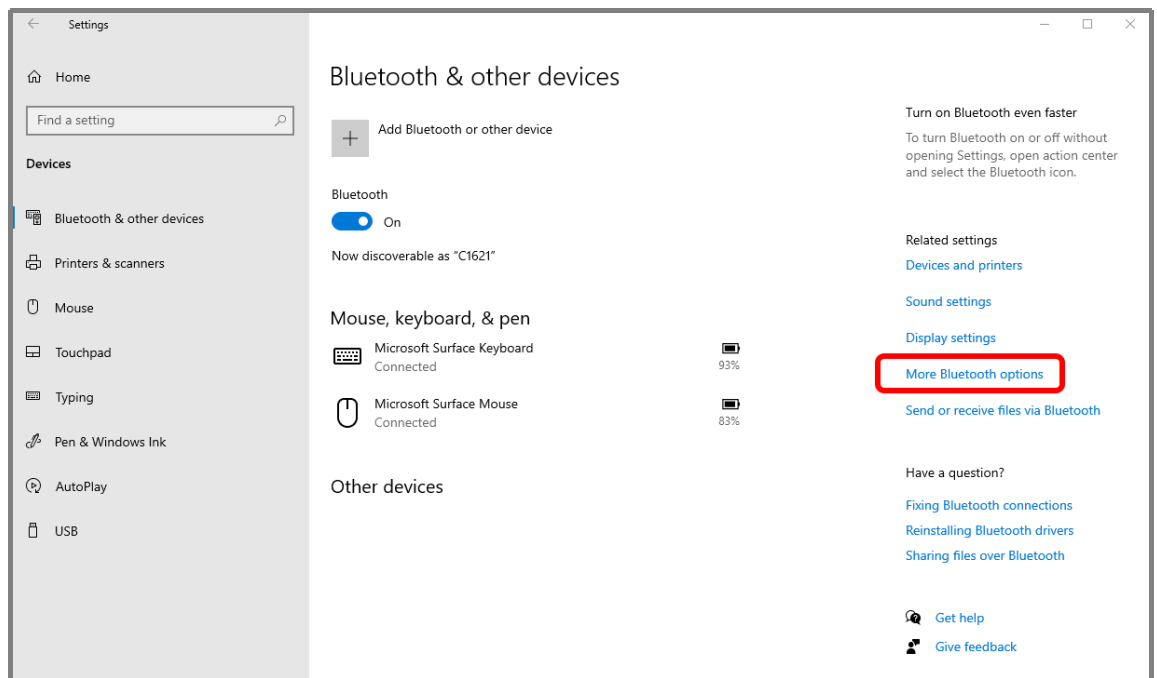
Easy Controller for Windows via Bluetooth connection

Once the Bluetooth connection is established, a virtual COM port is created on the host PC.

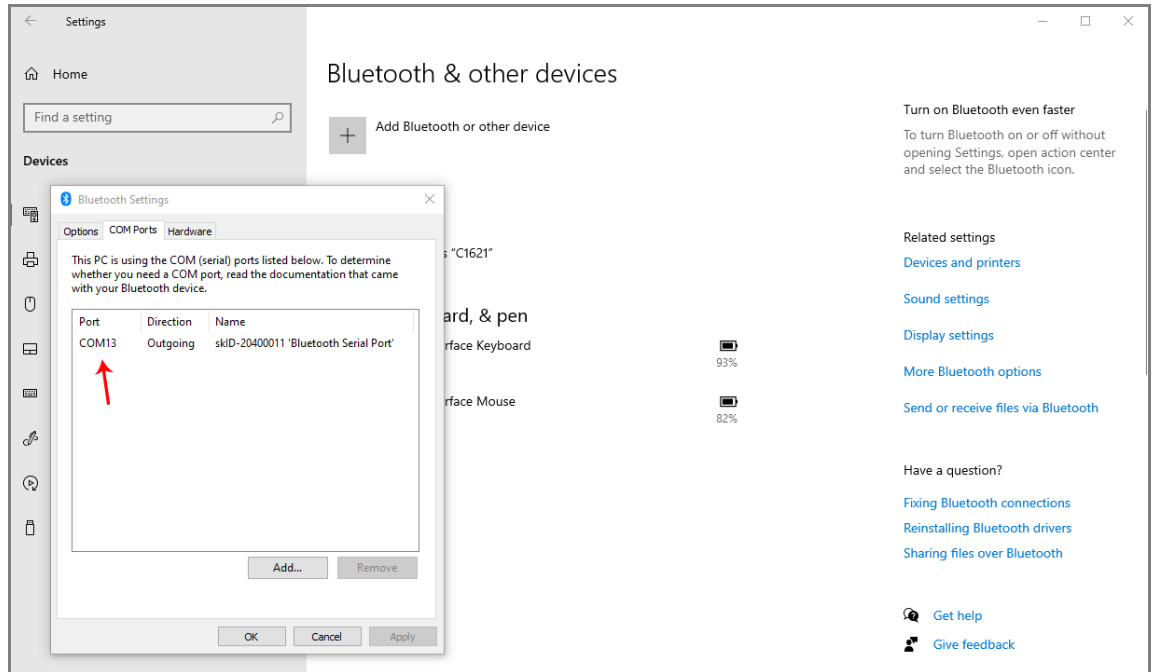
This COM port is used to connect to the reader with the CAEN RFID Easy Controller application.

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

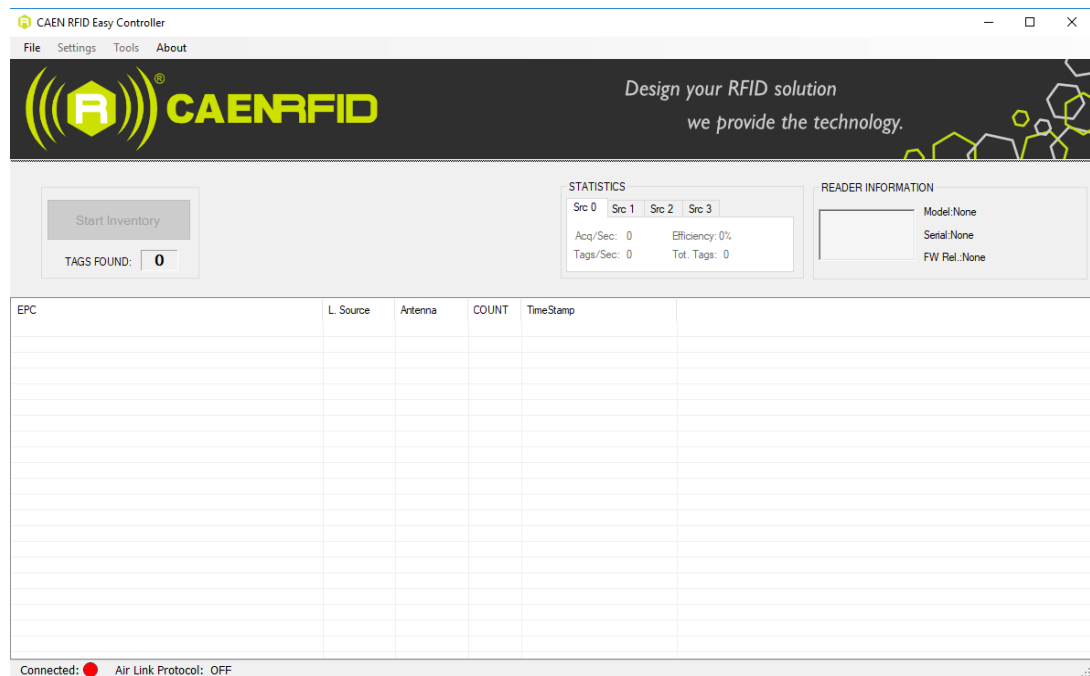
1. Connect the skID reader to your PC using the Bluetooth connection as explained in previous paragraph (§ *Bluetooth Communication Setup* page 35).
2. Download from the CAEN RFID web site the latest version of the CAEN RFID [Easy Controller for Windows](#) software and install it.
3. In your Windows Pc go to *Settings* → *Devices*. Click on *Bluetooth & other devices* → *More Bluetooth option*:



- Look for the COM port in the *Bluetooth Settings* (COM 13 in the example below):

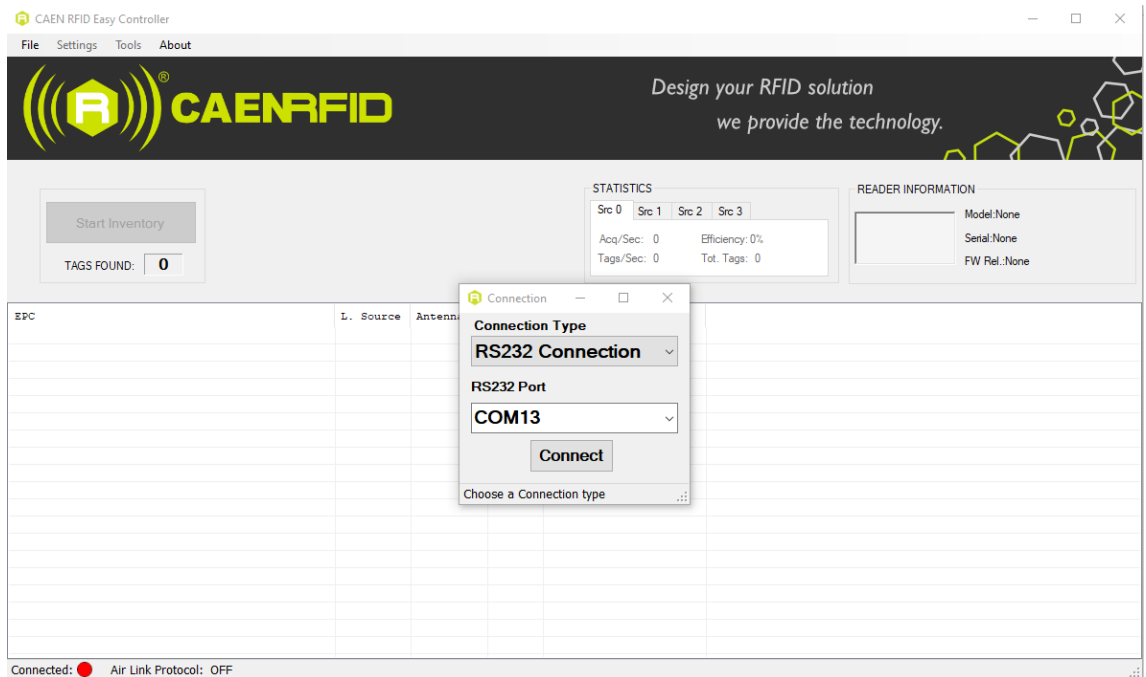


- Launch the CAEN RFID Easy Controller application.

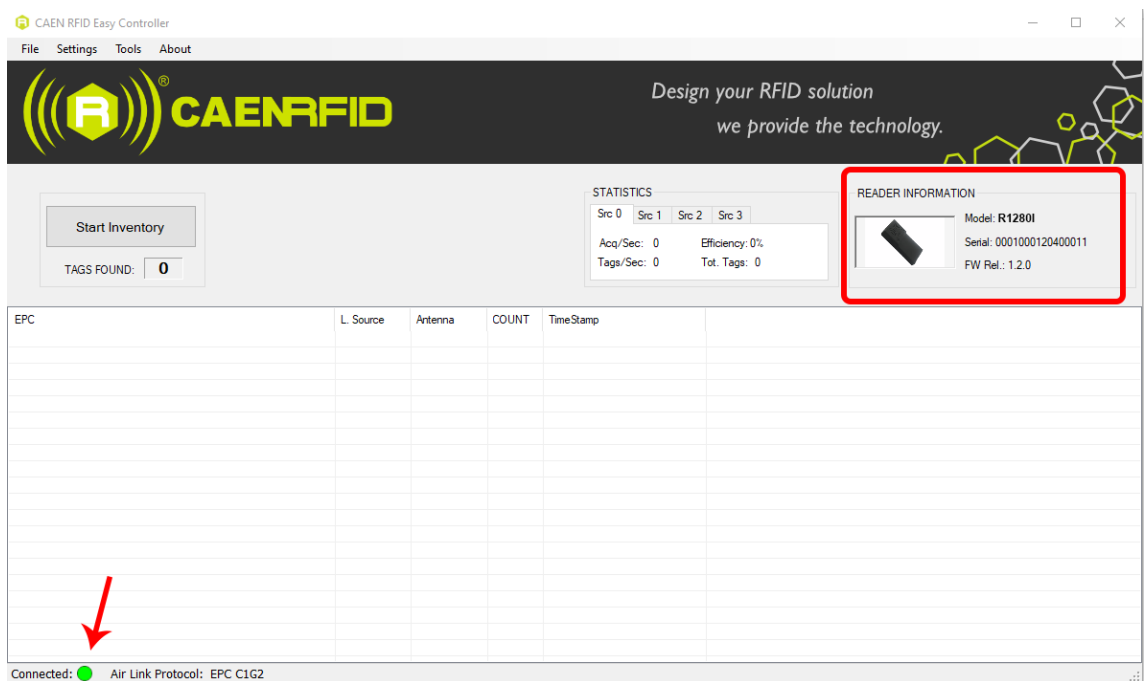


- On the main application window click on *File* → *Connect*; the connection dialog box will appear.

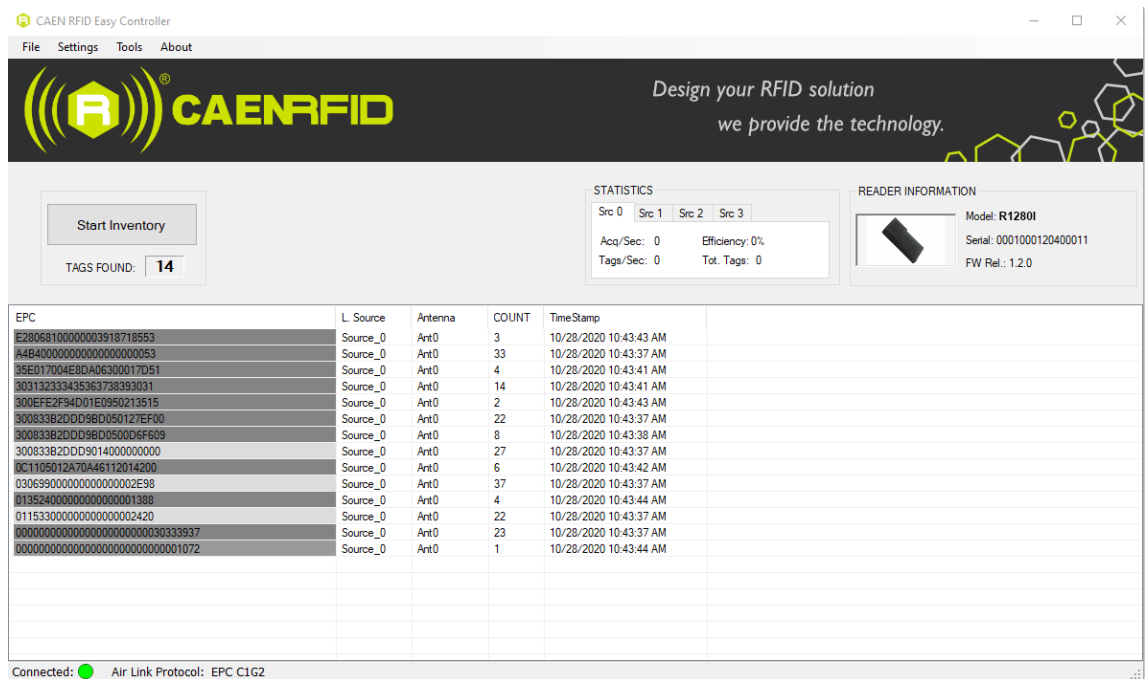
7. Select *RS232* from the *Connection Type* combo box and the right COM port number from the *RS232 Port* combo box (COM13 in this example):



8. Click on *Connect*.
9. 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:



- 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 [skID R12801 web page](#), *Downloads* section or in the [Manual and Documents](#) web area.

Y

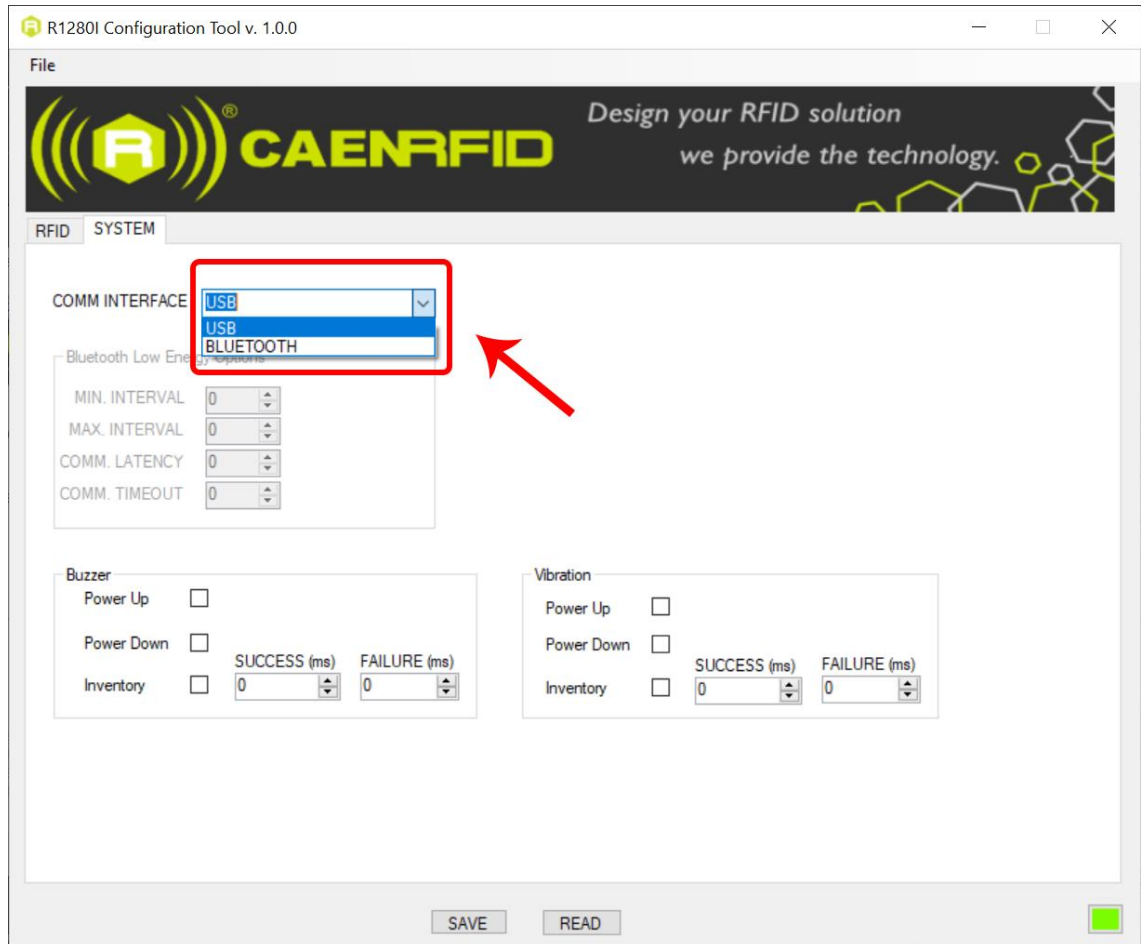
Warning: Note that in the EASY2READ profile holding down the *trigger* button activates the tag inventory only if the continuous mode is active (see the function *EventInventoryTag Method* in the *CAEN RFID API Reference Manual* that can be download from [skID R12801 web page](#), *Documents* section).

USB Communication Setup

The skID R1280I reader can be connected to a PC using the provided USB cable and it is detected by the PC as an emulated serial port.

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

1. Follow the instructions in § *Bluetooth and USB communication* page 20 to select the *USB communication interface* using the skID R1280I Configuration Tool:



Y

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.

2. Connect the skID R1280I reader to the PC using the provided USB cable and then power ON the reader again.

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.

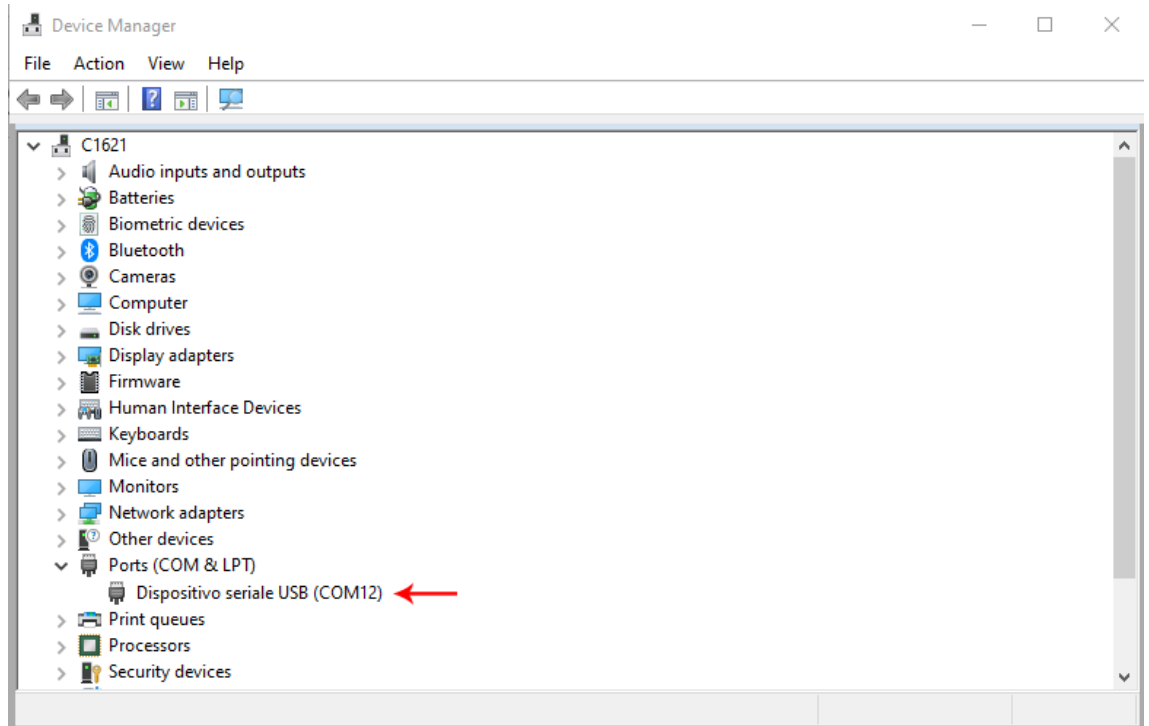
Easy Controller for Windows via USB connection

Once the USB connection is established, a virtual COM port is created on the host PC.

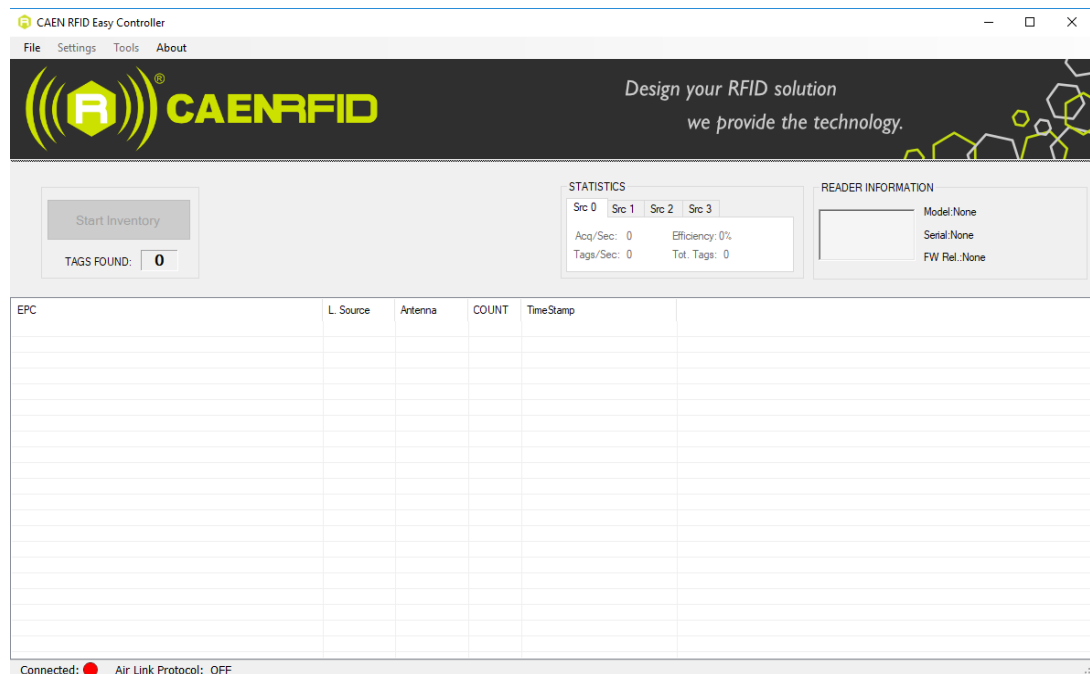
This COM port is used to connect to the reader with the CAEN RFID Easy Controller application.

Follow the steps below to connect the skID reader using the Easy Controller for Windows via USB:

1. Download from the CAEN RFID web site the latest version of the CAEN RFID [Easy Controller for Windows](#) software and install it.
2. In your Windows Pc go to *Settings* → *System*. Open the *System properties* and click on *Device Manager*.
3. Look for the COM port in the *Device Manager* window (COM 12 in the example below):

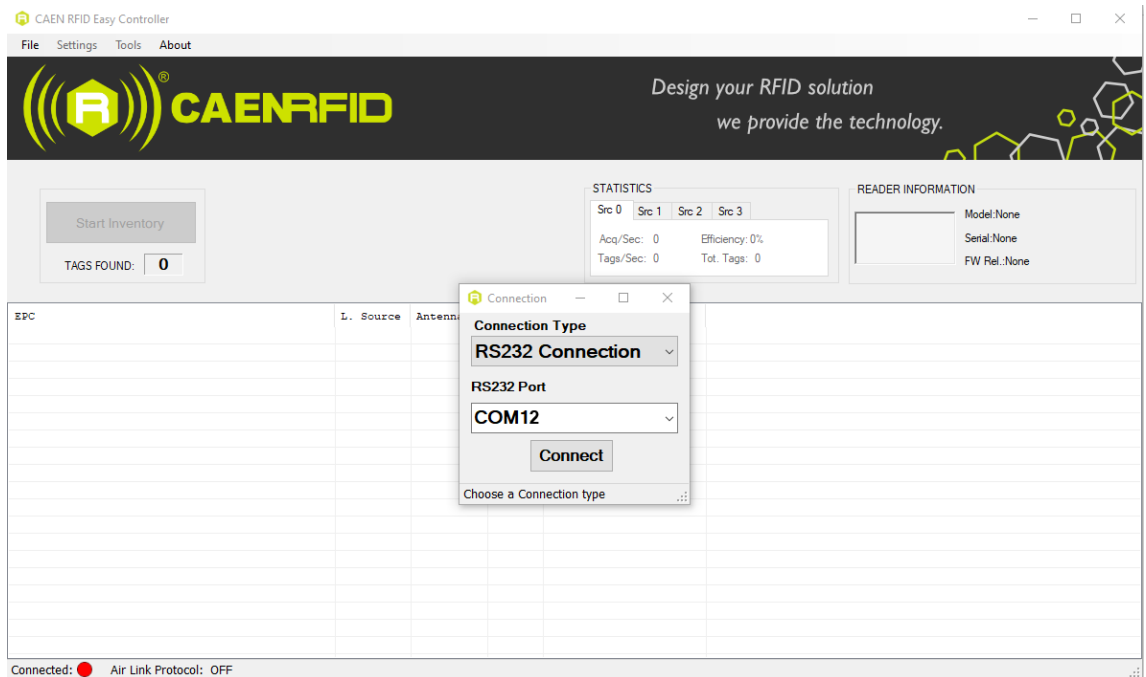


4. Launch the CAEN RFID Easy Controller application.

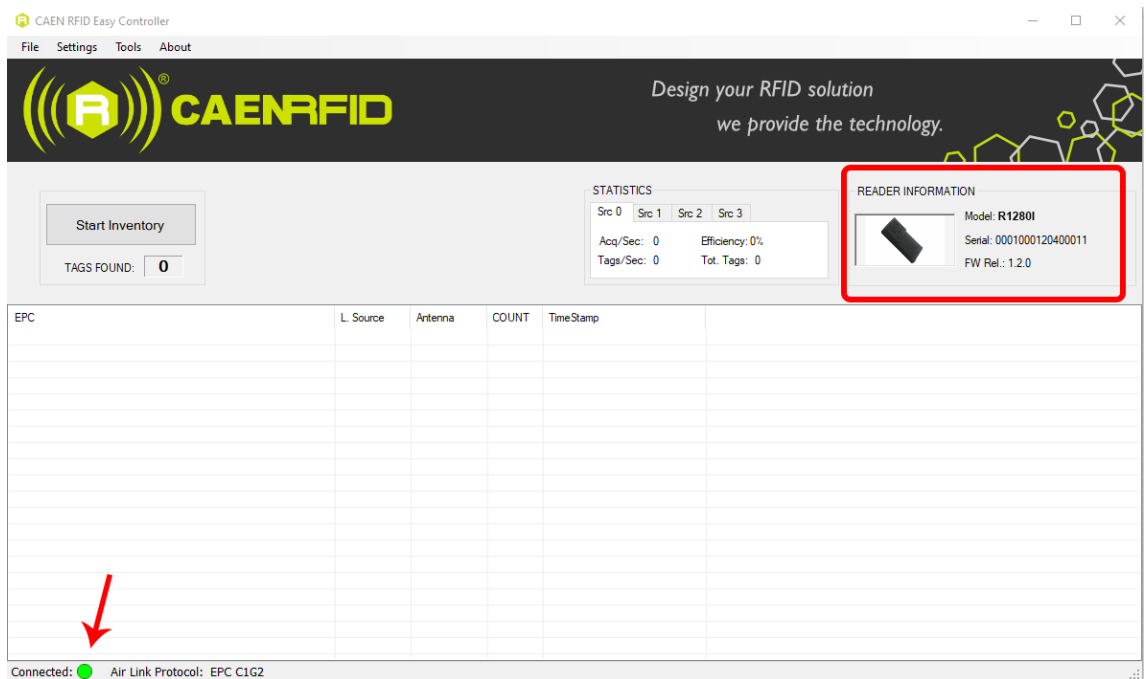


5. On the main application window click on *File* → *Connect*; the connection dialog box will appear.

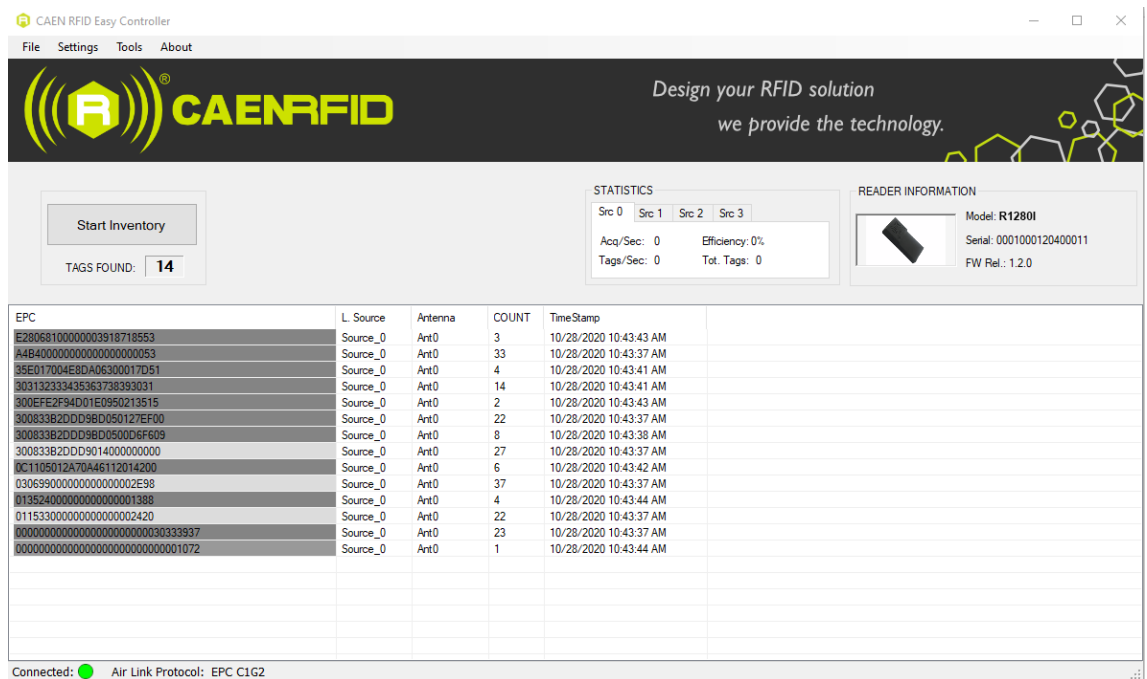
6. Select *RS232* from the *Connection Type* combo box and the right COM port number from the *RS232 Port* combo box (COM12 in this example):



7. Click on *Connect*.
8. 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:



- 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 [skID R1280I web page](#), *Downloads* section or in the [Manual and Documents](#) web area.

Y

Warning: Note that in the EASY2READ 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 [skID R1280I web page](#), *Documents* section).

iOS devices

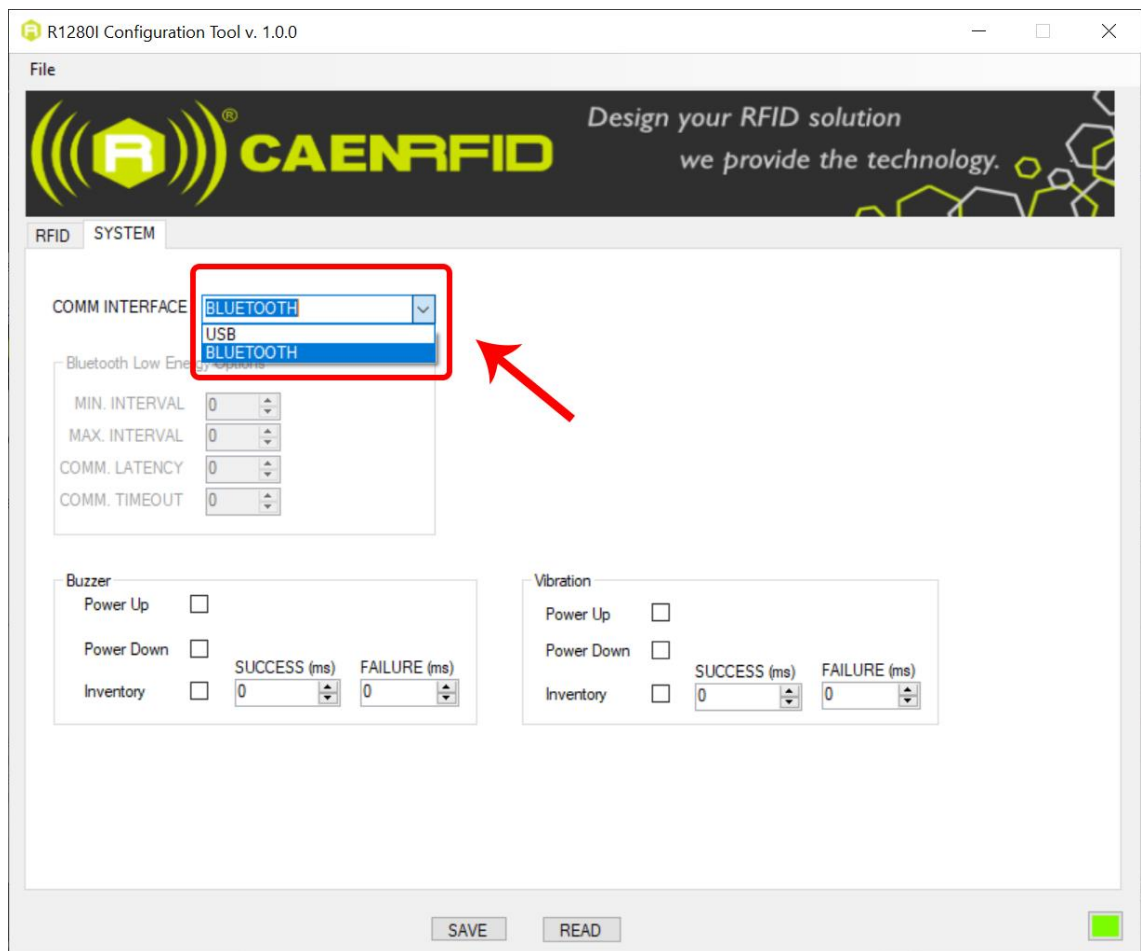
Bluetooth BLE Communication Setup

Y

Warning: Note that in the EASY2READ profile, the BLE connection between your iOS device and the skID reader is made directly through the Easy Controller app.

Follow the steps below to connect your iOS device to the skID reader using the BLE connection and the Easy Controller App. All the images below were generated using an Apple iPhone XR model.

1. Follow the instructions given in paragraph § *Bluetooth and USB communication* page 20 to select the *Bluetooth communication interface* using the skID R1280I Configuration Tool:



Y

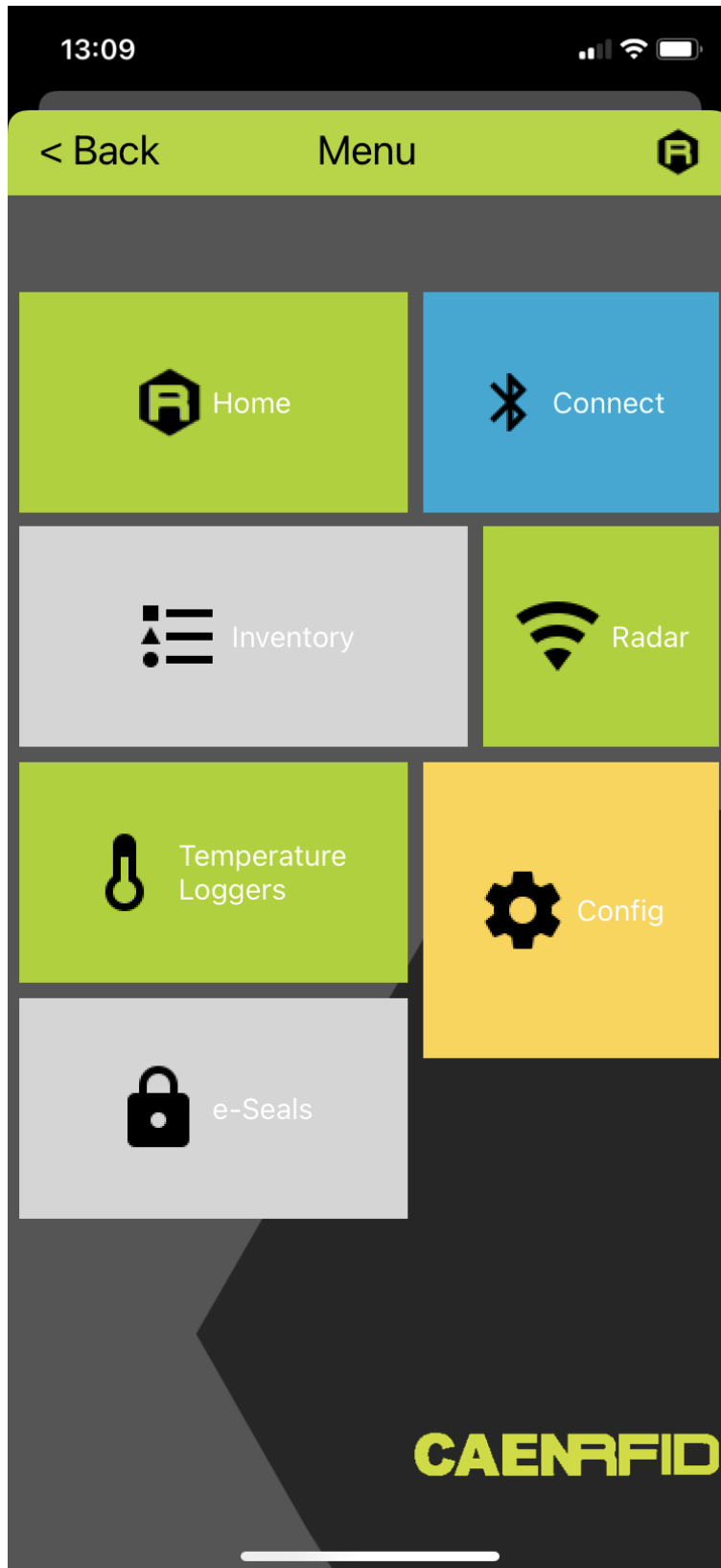
Warning: To save the changes click on the **SAVE** button (check the green dot on the bottom right side of the sidebar). On the main application window click on **File → Disconnect**. Power off the reader, disconnect the USB cable and then power on the reader, the new settings are active.

2. Download on your iOS device the *CAEN RFID Easy Controller for iOS App* (available link at the [skID R1280I web page](#), by clicking on the App Store icon).

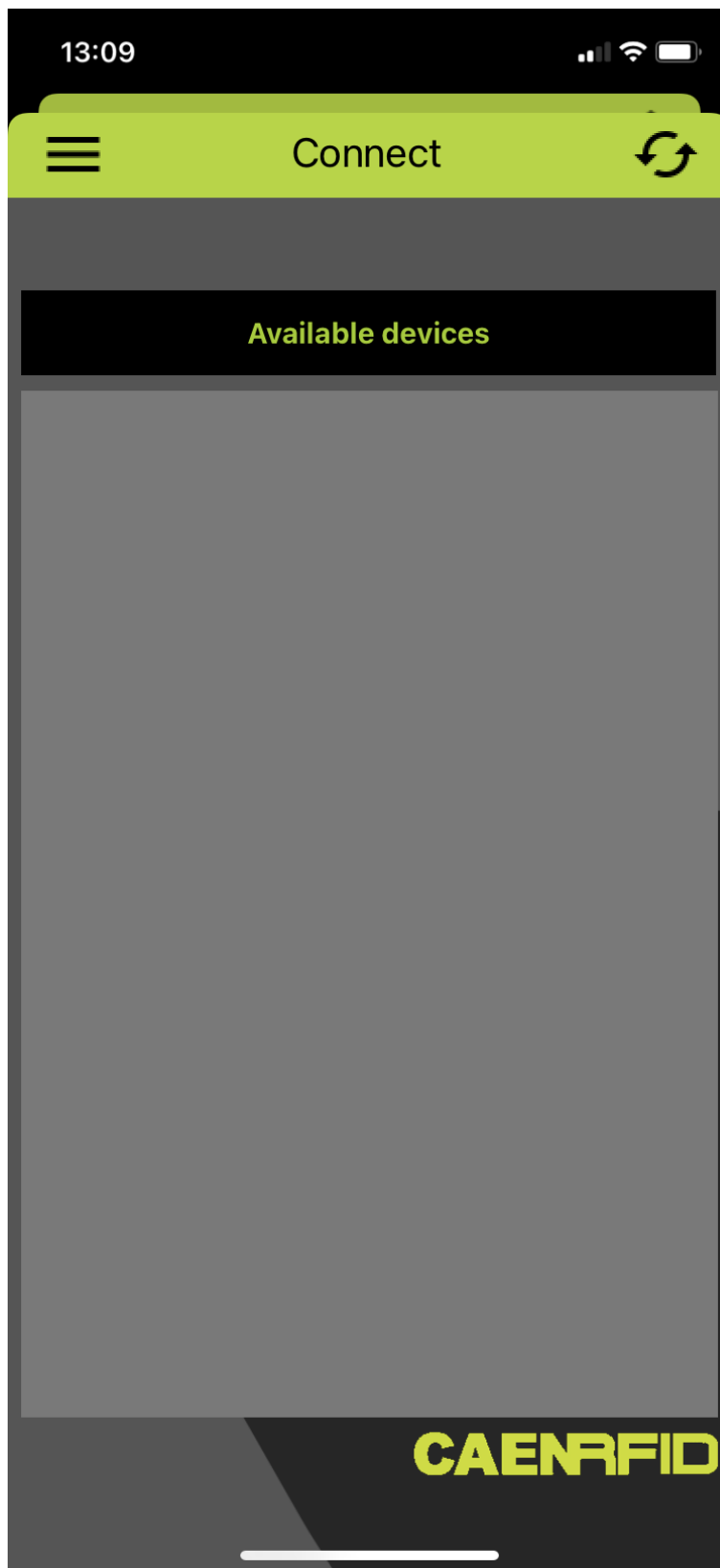
3. Launch the *CAEN RFID Easy Controller* for iOS App:



4. Click on *Menu*: →*Connect*.



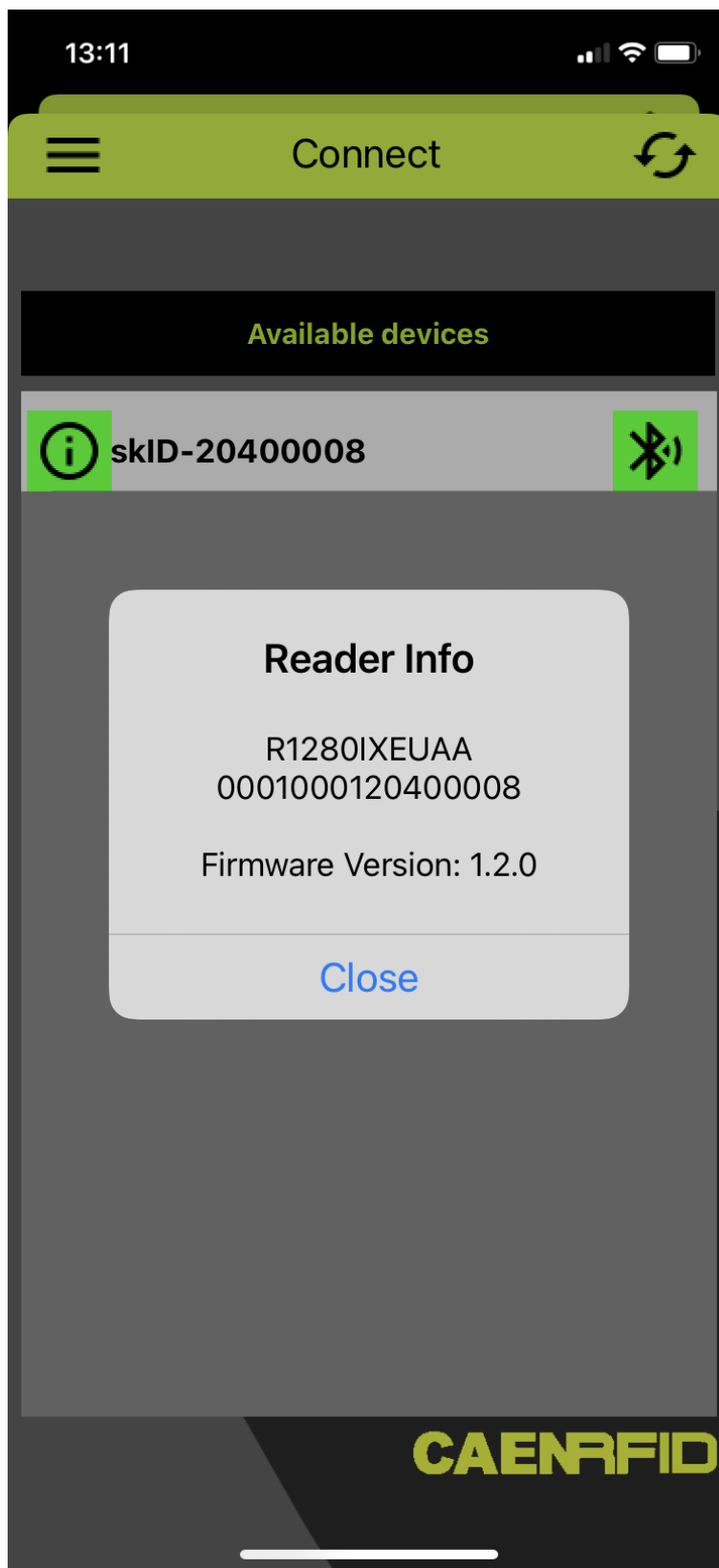
5. Click on  icon:



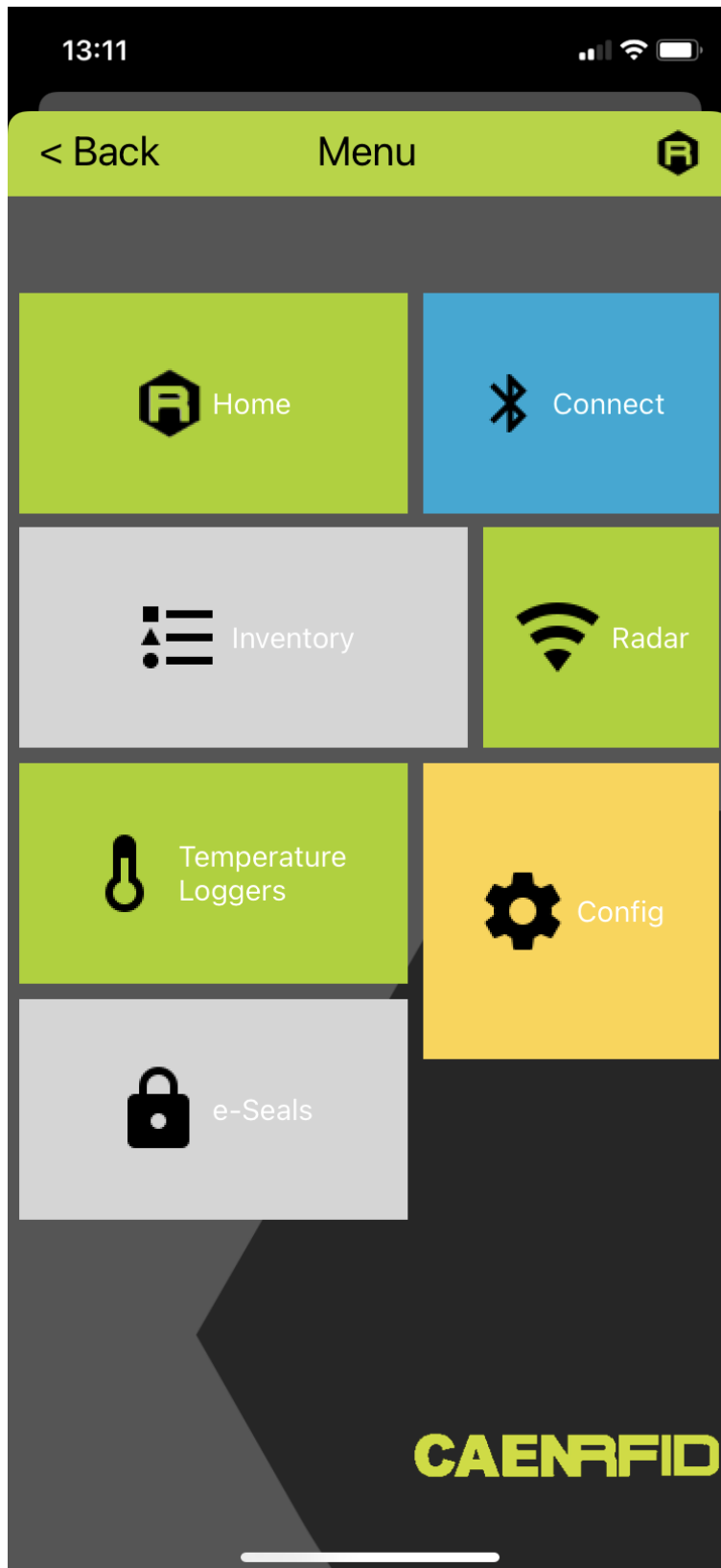
6. The available devices are shown, click on the skID R1280I reader (in this example skID s.n. 20400008):



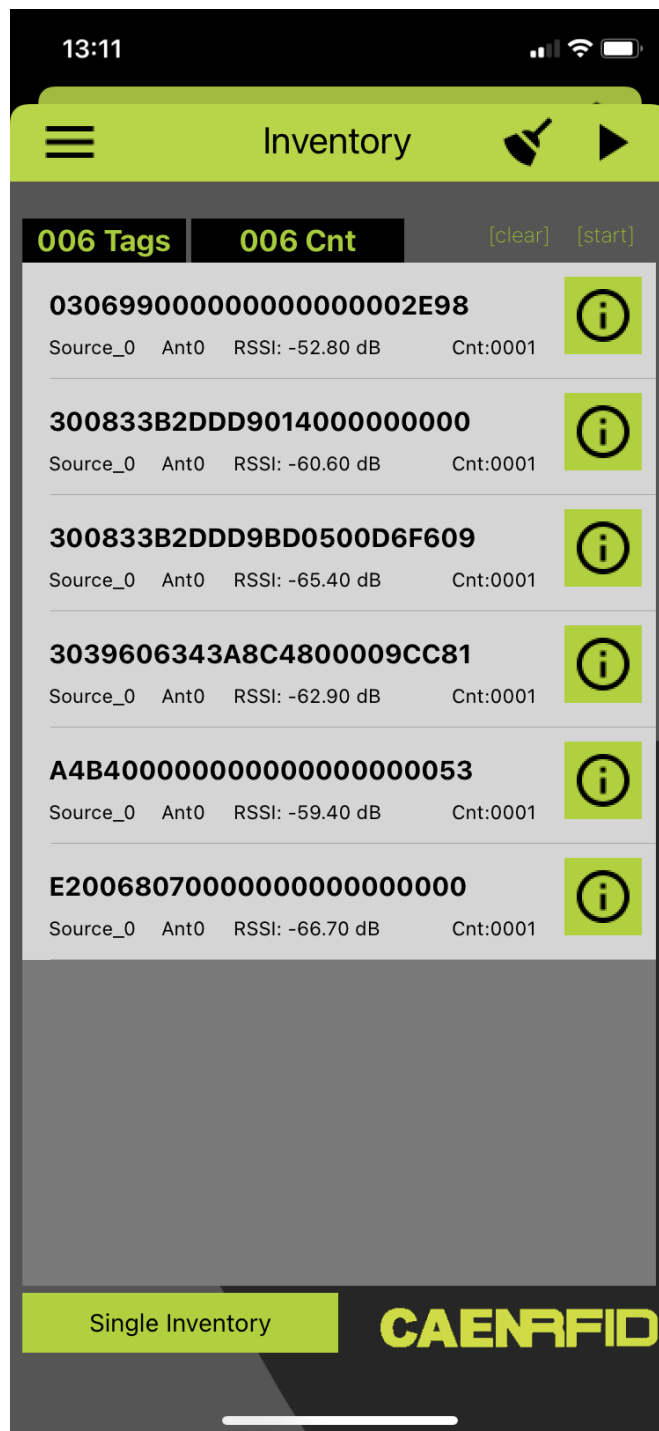
7. Into the *Reader Information* box you can find information on reader model, serial number and firmware release:



8. Once the connection is established, the Bluetooth blue light on the skID R1280I reader turns on and you can start using your reader.
9. Come back and click on the *Menu*→*Inventory*:



10. Click on  icon to start the inventory. A list of the read tags is shown:



4 HID PROFILE

Introduction

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

The connection to the skID Reader using the HID profile is possible via Bluetooth or USB port.

In the following table it is shown the compatibility between the HID profile and BT/BLE/USB connection for different Operating Systems (Android, PC and iOS):

	ANDROID devices			WINDOWS PC			iOS devices		
	BT	BLE	USB	BT	BLE	USB	BT	BLE	USB
HID	✓	✓		✓				✓	

Tab. 4.1: Compatibility table HID-BT/BLE/USB for different OS

Follow the instructions in chapter § *BT-BLE switching* page 72 to switch the reader from BT (Bluetooth Classic) to BLE (Bluetooth Low Energy) or vice-versa.

If your reader is in EASY2READ profile active, in order to set the HID profile please refer to the next paragraph § *Set the HID profile* page 54.

Set the HID profile

If your reader is in EASY2READ profile active, in order to set the HID profile, access the skID R1280I configuration menu via USB connection:

1. Download from the [skID R1280I web page](#) the latest version of the skID R1280I Configuration Tool.
2. With the reader turned off, connect the skID R1280I reader to a PC using the provided USB cable.
3. Press simultaneously the *trigger* and the *power* button for about two seconds, until you hear a beep.
4. Open the skID R1280I Configuration Tool:

R1280I Configuration Tool v. 1.0.0

File

CAENRFID Design your RFID solution we provide the technology.

RFID SYSTEM

PROFILE

RF POWER UP (mW)

EPCC1G2 Params

Q

SESSION

TARGET

SELECTED

EASY2READ params

TID Length

Read Cycles

HID

Keyboard

Format

Scan Delay (ms)

Inter Char Delay (ms)

Inter Line Delay (ms)

EPC

BANK

PREFIX

SUFFIX

PREFIX

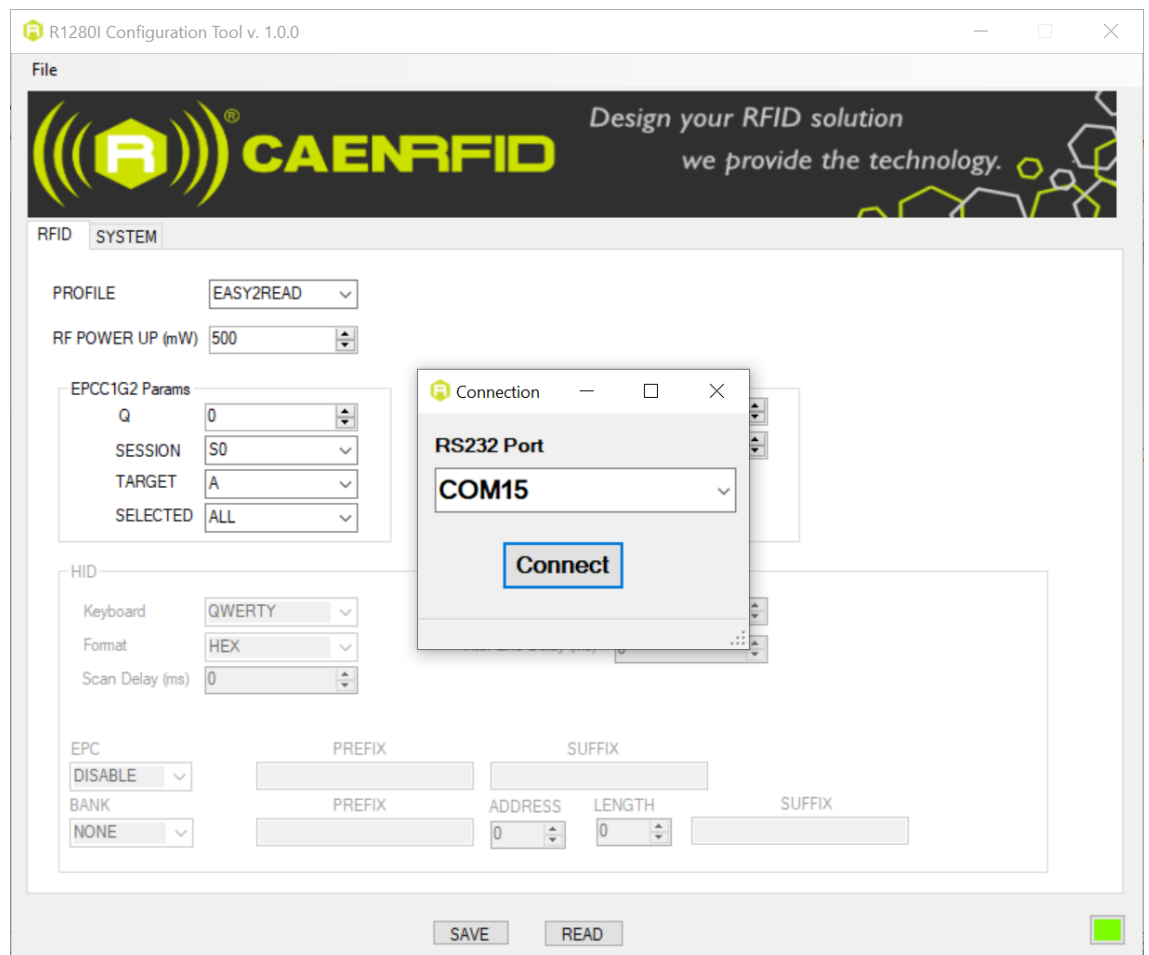
ADDRESS

LENGTH

SUFFIX

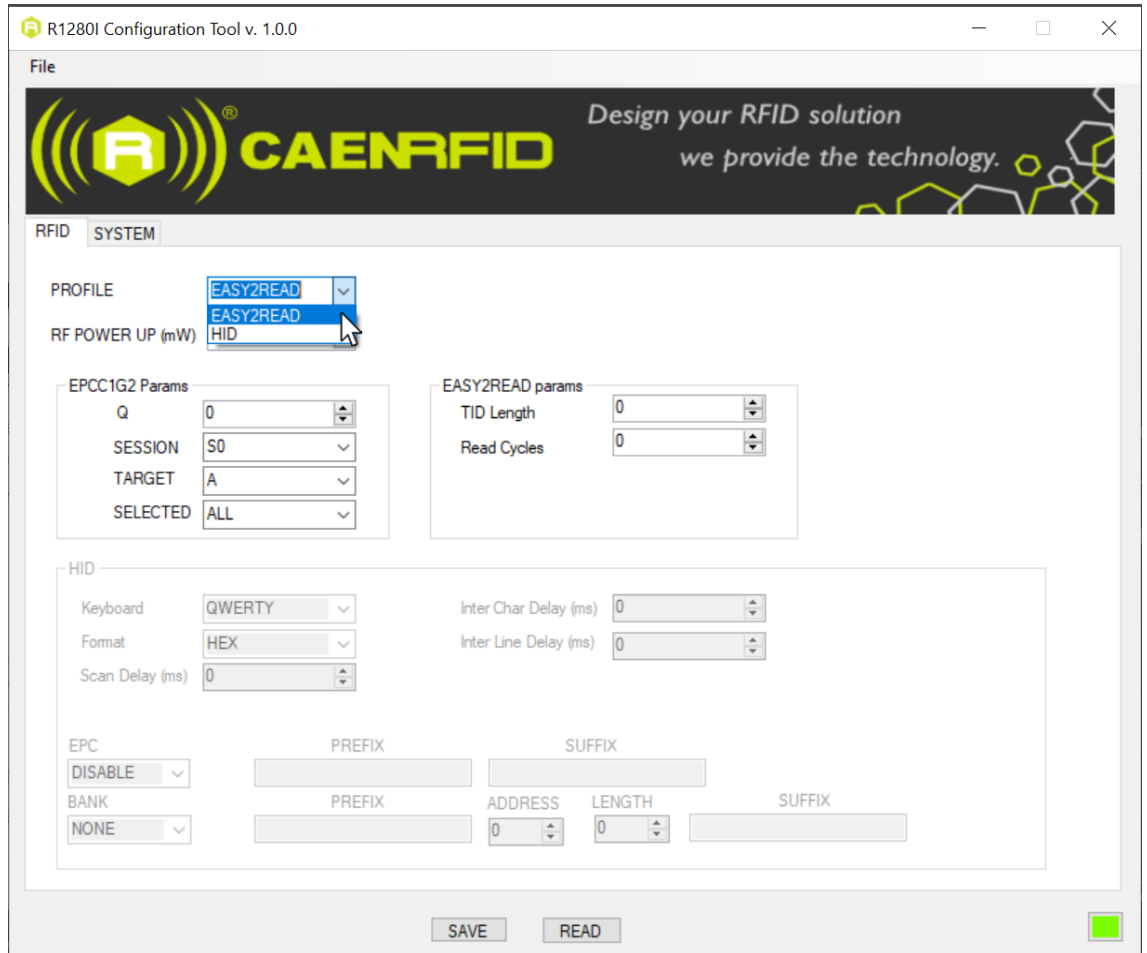
SAVE READ

5. On the main application window click on File -> Connect; the connection dialog box will appear.
6. Select the right COM port number from the RS232 Port combo box (COM15 in the example):



7. Click on *Connect*. If the connection is not successful, the message “connection error” appears.

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



Y

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 profile options

It is possible to configure various options using the HID profile:

The screenshot shows the 'R1280I Configuration Tool v. 1.0.0' window. The 'RFID' tab is selected, and the 'SYSTEM' sub-tab is active. The interface features a header with the CAENRFID logo and the tagline 'Design your RFID solution we provide the technology.' Below the header, the 'RFID' section contains a 'PROFILE' dropdown set to 'HID' and an 'RF POWER UP (mW)' spinner set to '500'. The 'EPCC1G2 Params' section includes 'Q' (6), 'SESSION' (S0), 'TARGET' (A), and 'SELECTED' (ALL). The 'EASY2READ params' section includes 'TID Length' (12) and 'Read Cycles' (1). The 'HID' section contains 'Keyboard' (QWERTY), 'Format' (HEX), 'Scan Delay (ms)' (200), 'Inter Char Delay (ms)' (5), and 'Inter Line Delay (ms)' (60). The 'EPC' section has 'ENABLE' (ENABLE) and 'BANK' (NONE). The 'PREFIX' and 'SUFFIX' fields are empty. The 'ADDRESS' field is set to '0', 'LENGTH' is set to '0', and 'SUFFIX' is empty. At the bottom, there are 'SAVE' and 'READ' buttons and a green status indicator.

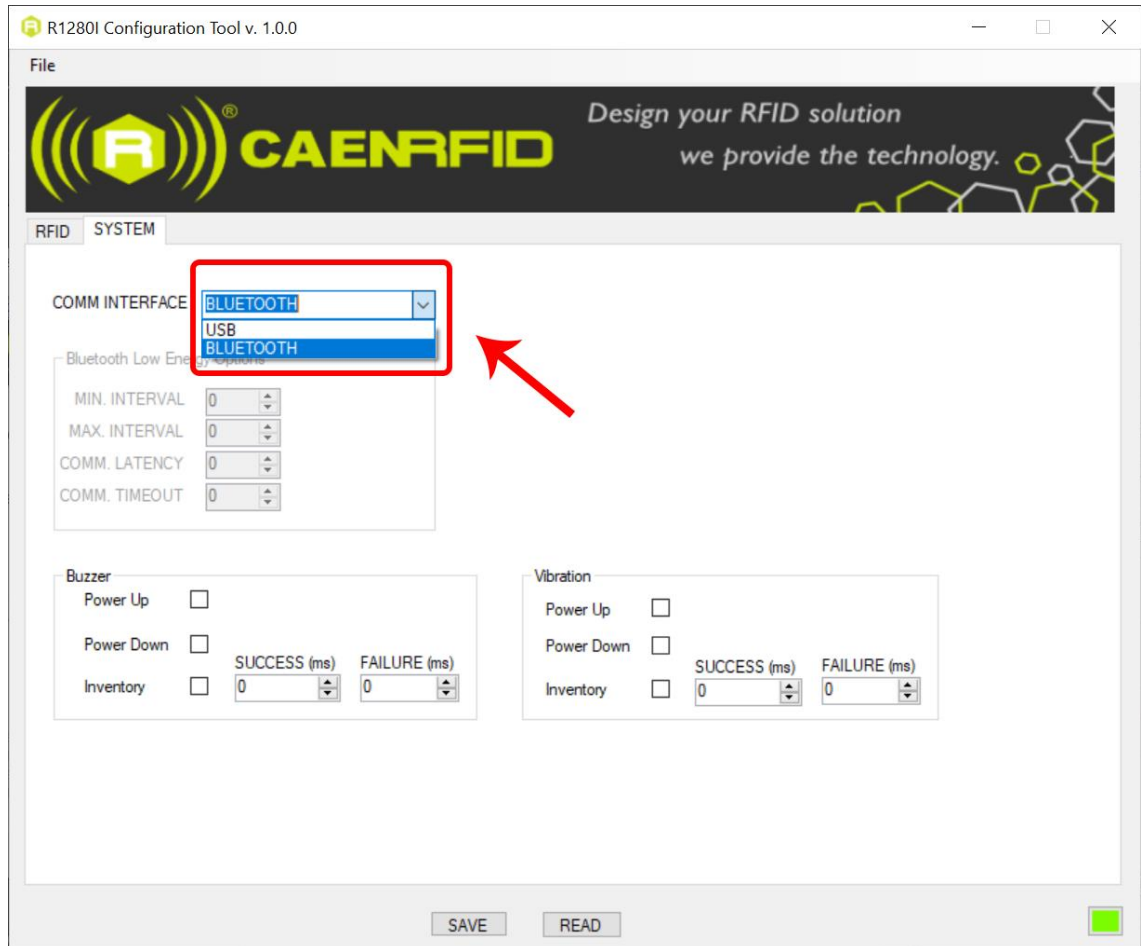
For details on the EASY2READ configuration options, refer to § *HID Parameters* paragraph page 17.

Android devices

Bluetooth Communication Setup

Follow the steps below to connect your Android device to the skID reader using the BT or BLE connection. All the images below were generated using a Samsung S7 model device.

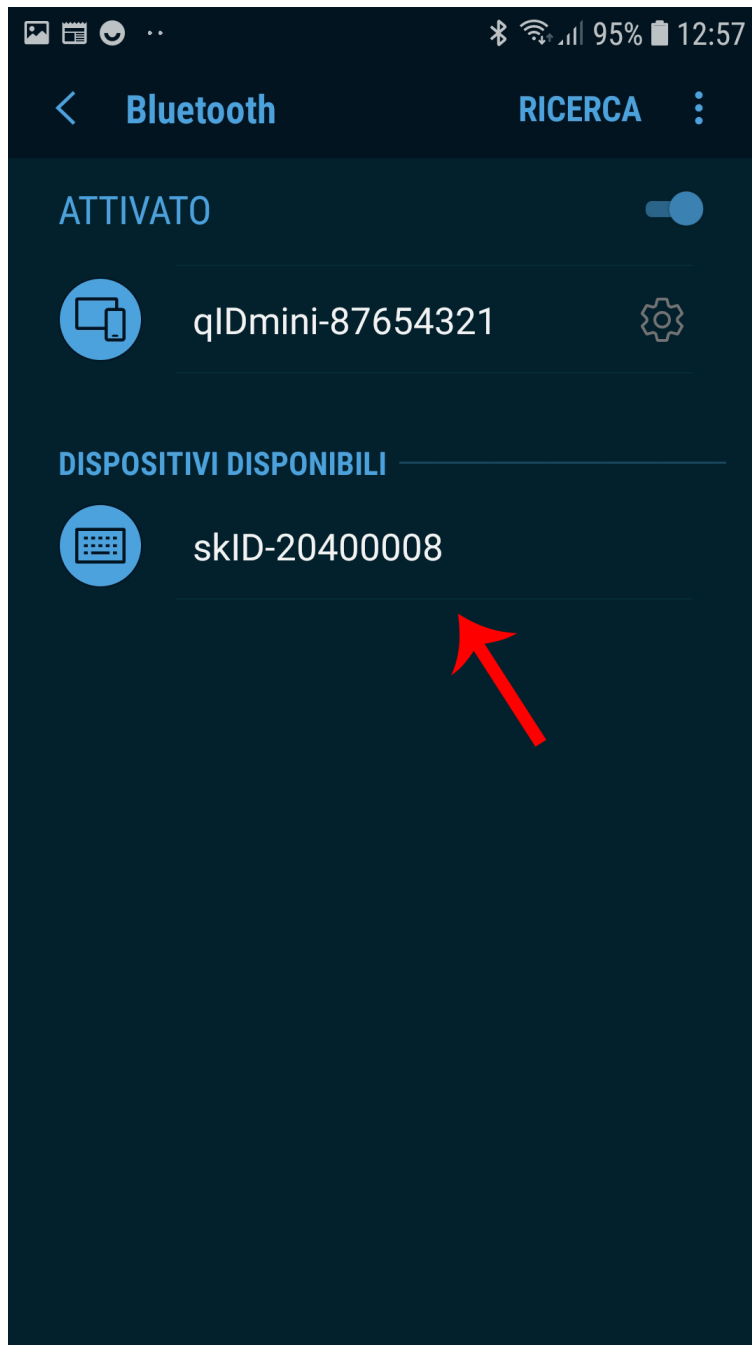
1. Follow the instructions given in paragraph § *Bluetooth and USB communication* page 20 to select the *Bluetooth communication interface* using the skID R1280I Configuration Tool:



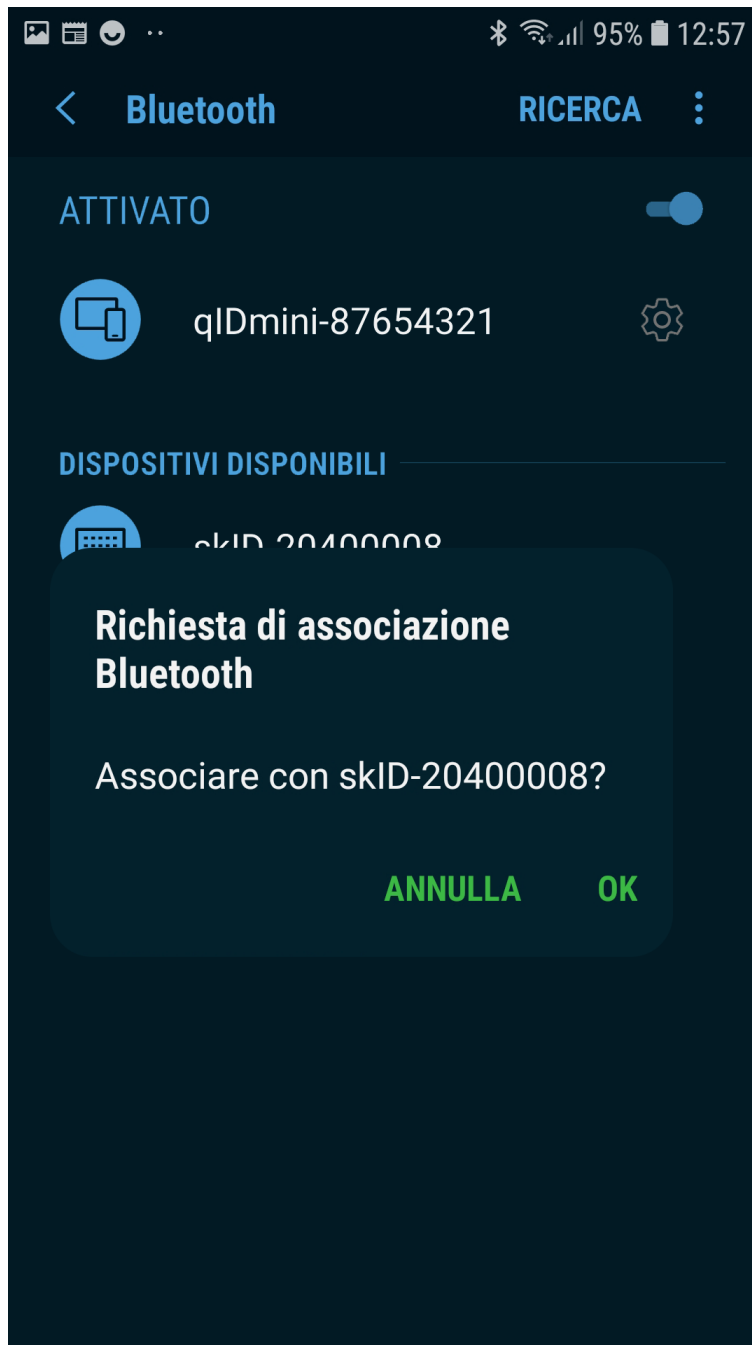
Y

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.

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

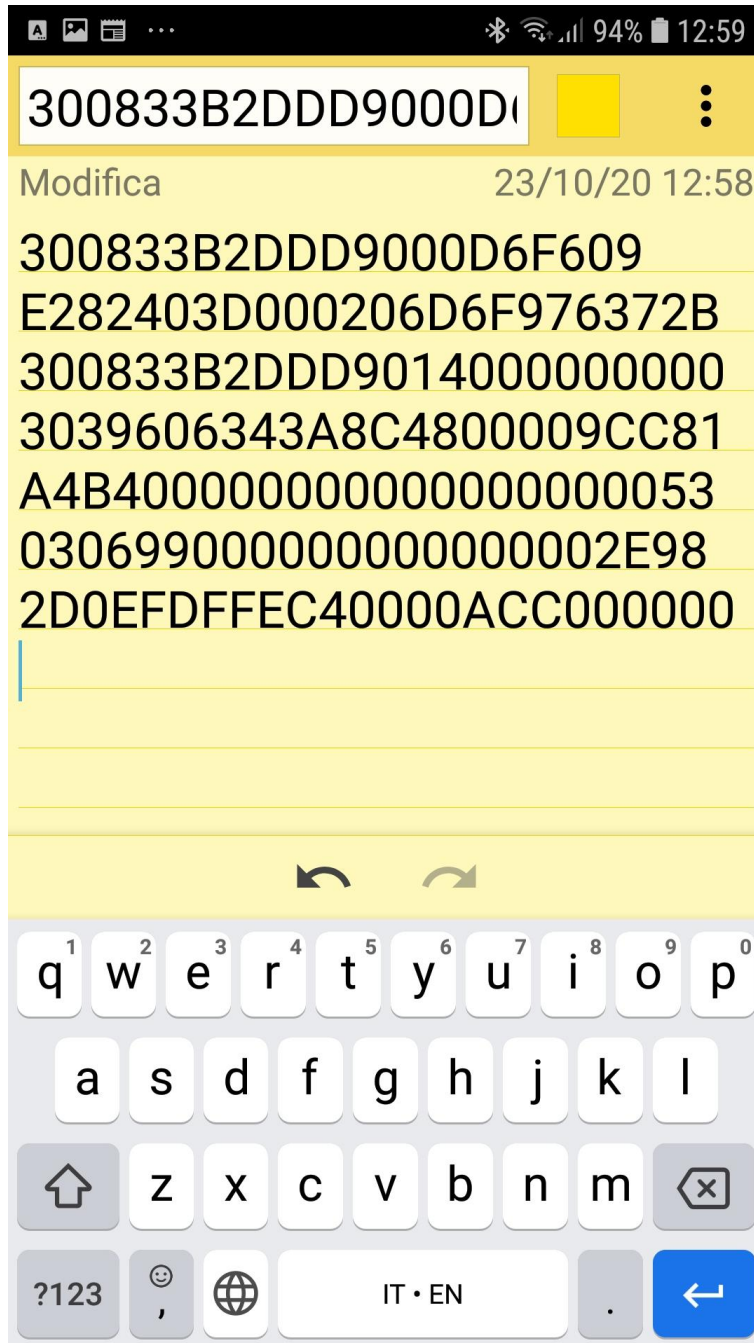


- Click on the *skID R1280I* reader(in this example the skID with serial number 20400008), confirm the Bluetooth pairing and wait until the pairing is complete:



- Once the connection is established the Bluetooth blue light on the *skID R1280I* reader 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. On the text editing App window you will see the EPCs of the tags:



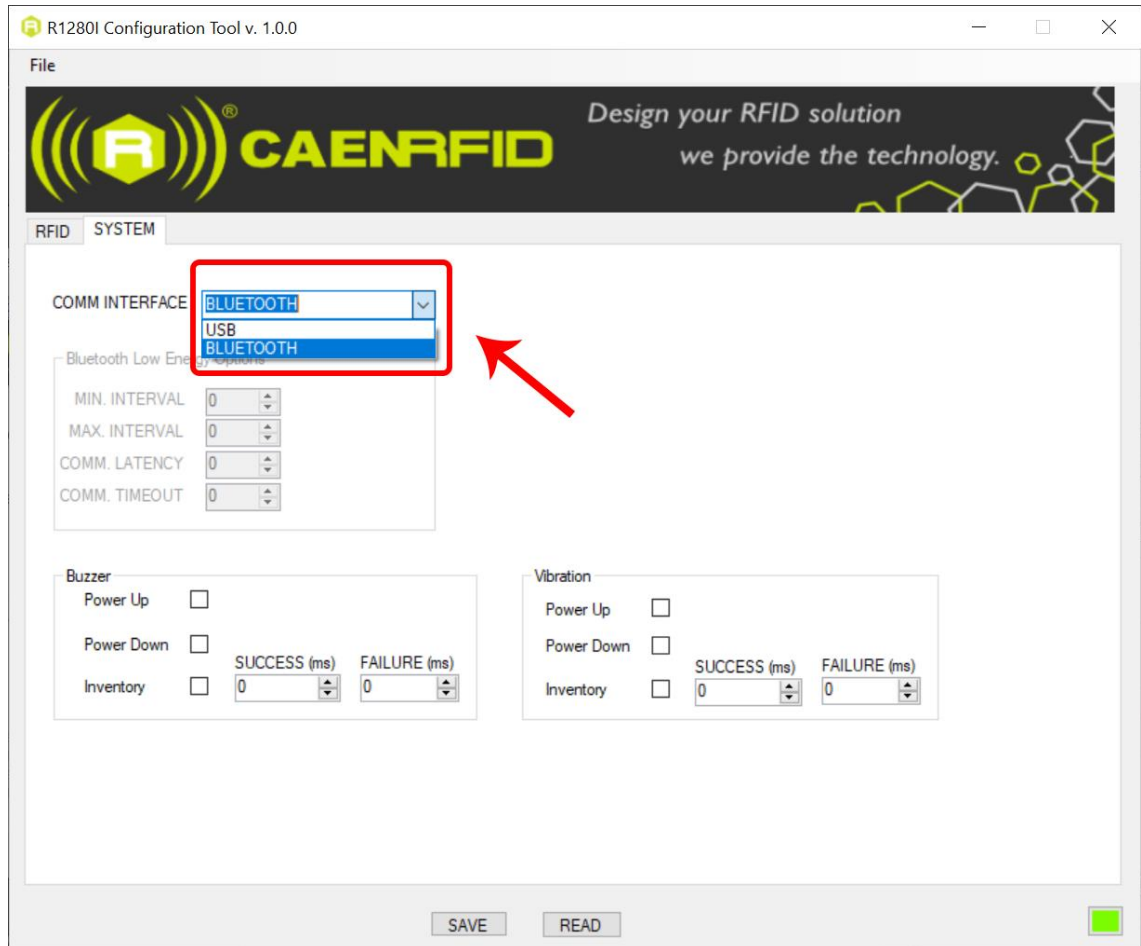
Note that, when configured in HID profile and paired to a device, the skID R1280I reader will automatically reconnect to the same device every time the Bluetooth link is active (skID R1280I switched ON and Bluetooth activated on the host). You can verify this behaviour looking at the blue LED that, in this case, turns ON automatically as soon as you switch on the skID R1280I reader.

Windows PCs

Bluetooth Communication Setup

Follow the steps below to connect your Windows PC to the skID reader using the BT connection. All the images below were generated using the Windows 10 Operating System.

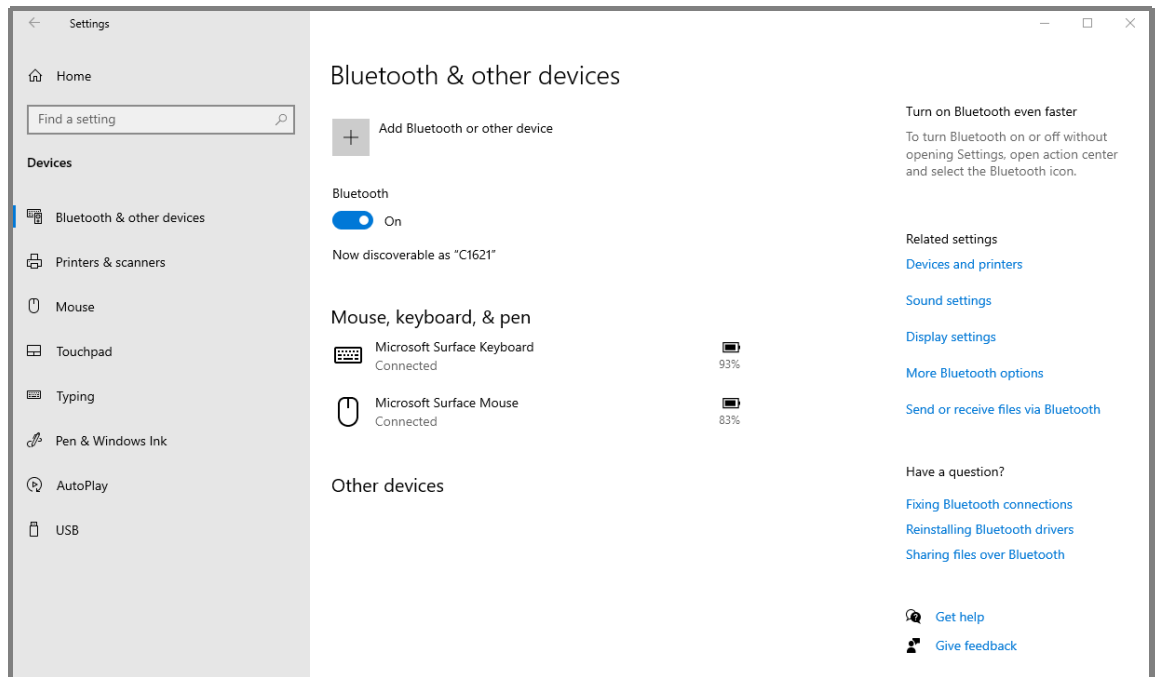
1. Follow the instructions given in paragraph § *Bluetooth and USB communication* page 20 to select the *Bluetooth communication interface* using the skID R1280I Configuration Tool:



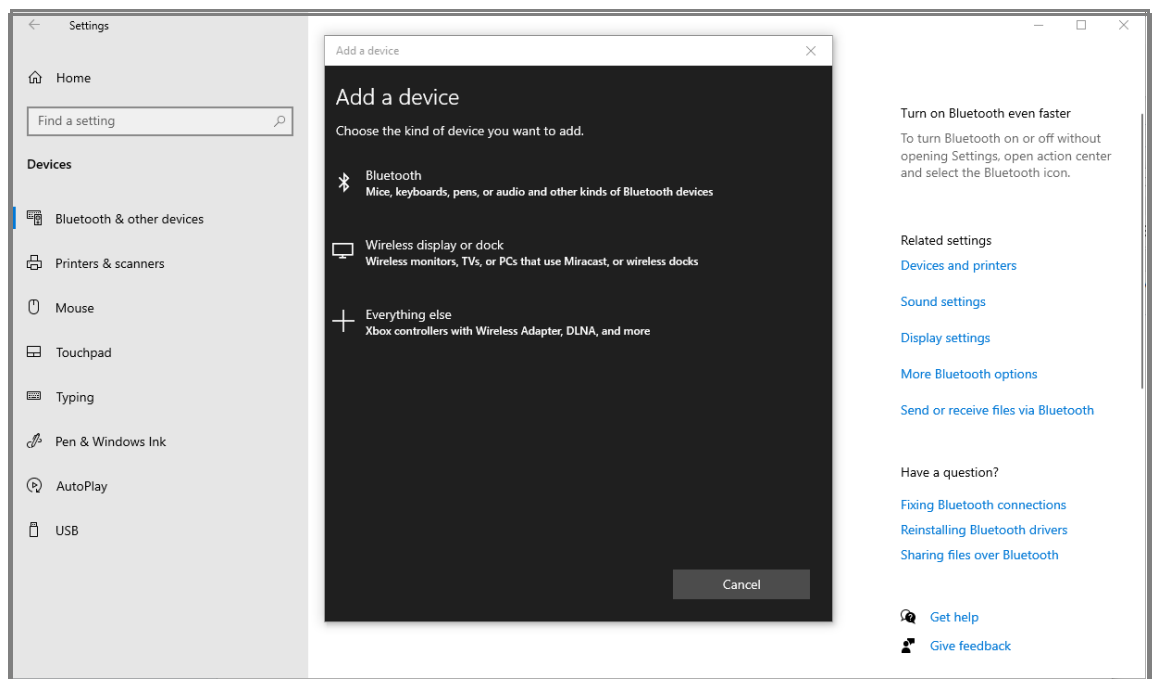
Y

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.

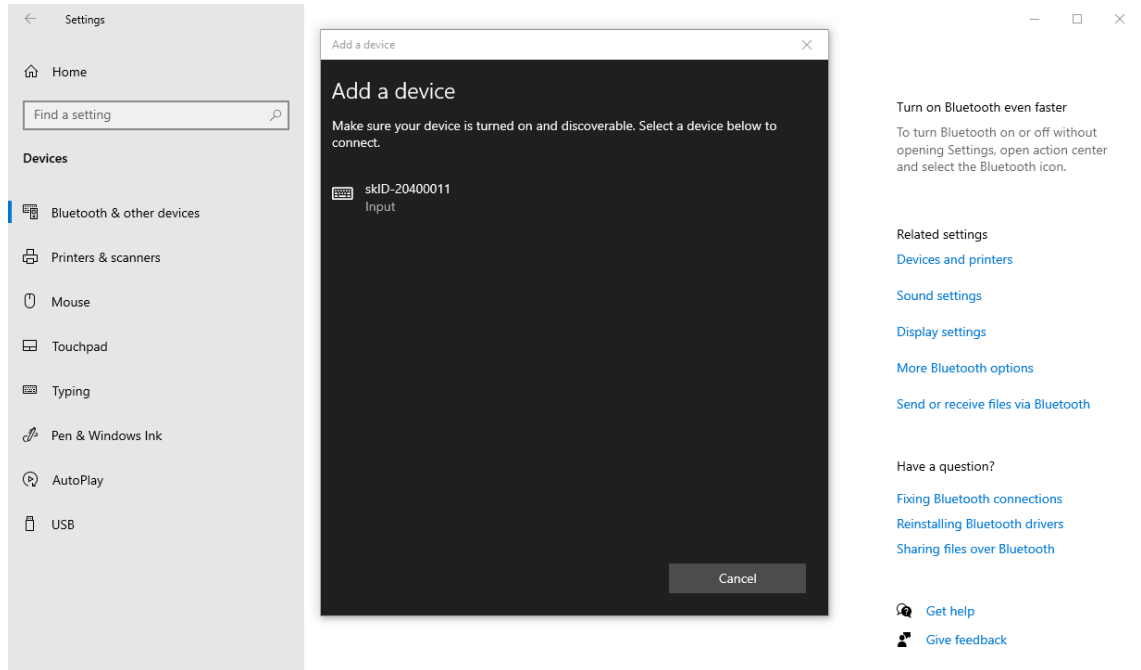
2. In your Windows Pc go to *Settings* → *Devices*.
3. Click on *Bluetooth & other devices* → *Add Bluetooth or other device*:



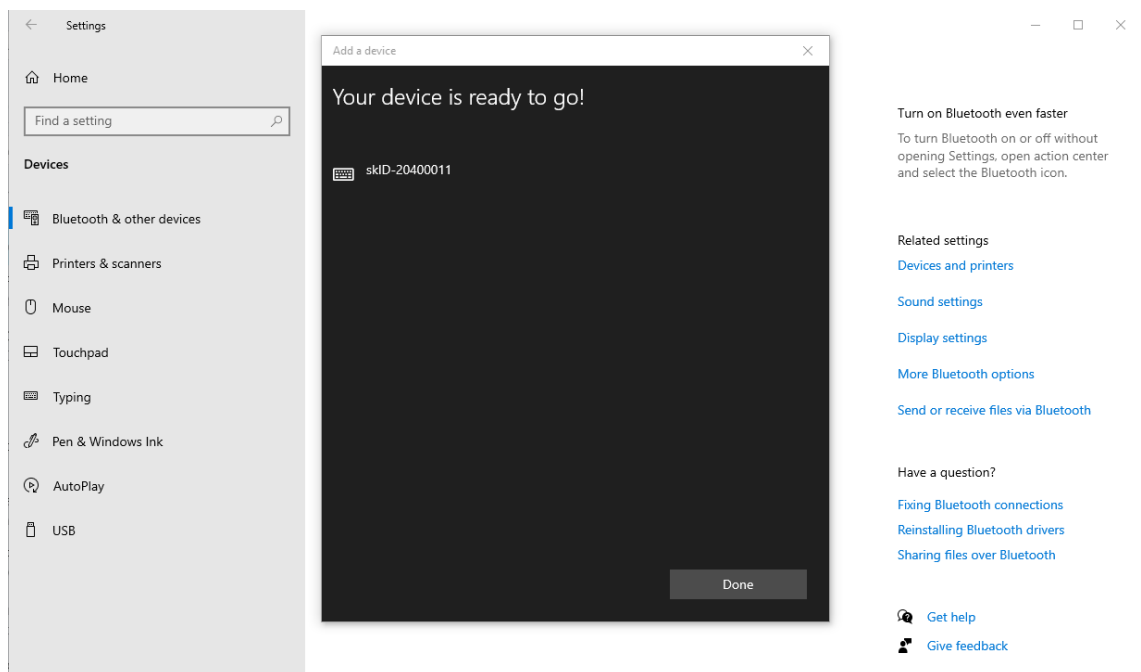
1. Click on *Bluetooth*:



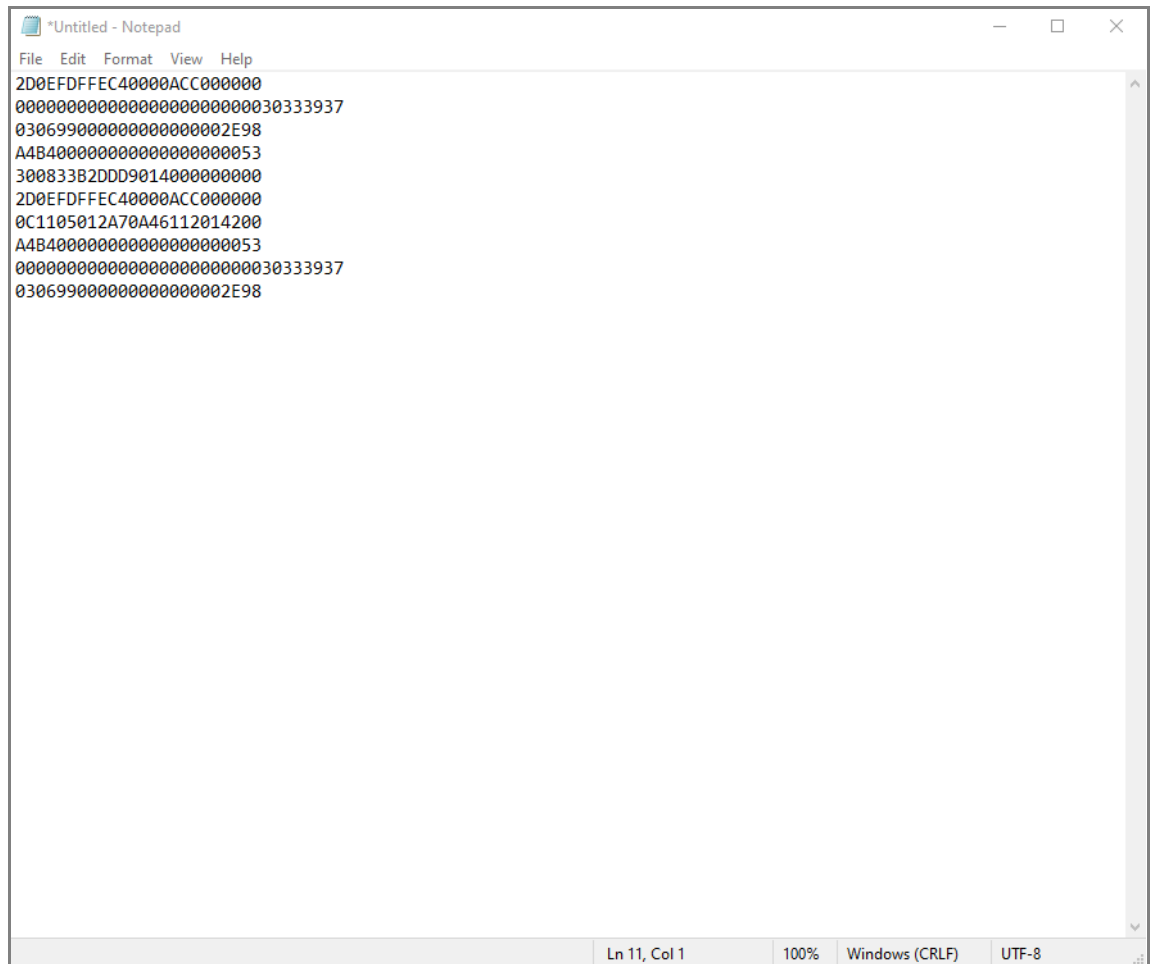
2. Select the skID R1280I reader (in this example the skID with serial number 20400011):



3. The message on the screen “Your device is ready to go!” informs you that the connection is established and the Bluetooth blue light of the reader turns on.



4. Once the connection is established, the Bluetooth blue light on the skID R1280I reader turns on.
5. Launch a text editing App (or any other App accepting keyboard input).
7. 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):



```

*Untitled - Notepad
File Edit Format View Help
2D0EFDFFEC40000ACC000000
00000000000000000000000030333937
030699000000000000000002E98
A4B40000000000000000000053
300833B2DDD9014000000000
2D0EFDFFEC40000ACC000000
0C1105012A70A46112014200
A4B40000000000000000000053
00000000000000000000000030333937
030699000000000000000002E98
Ln 11, Col 1 100% Windows (CRLF) UTF-8
  
```

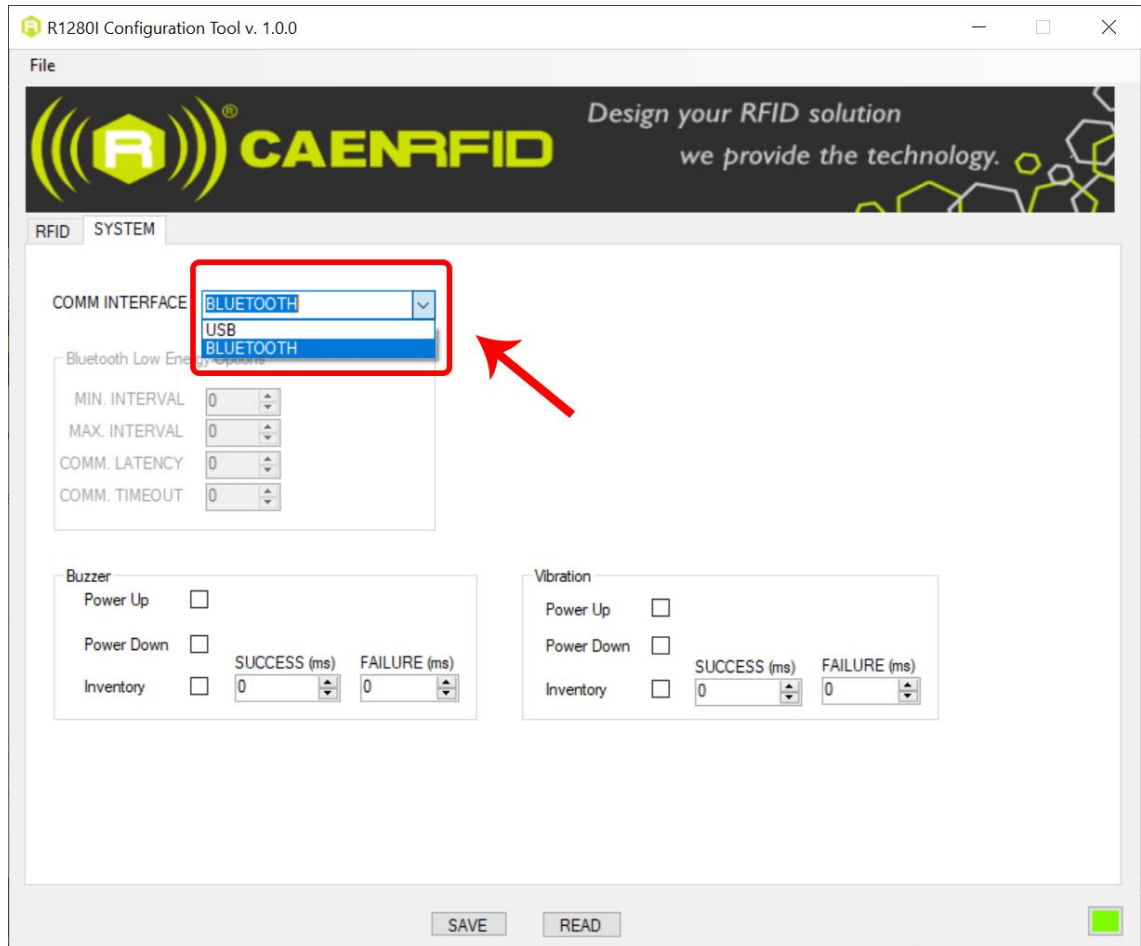
Note that, when configured in HID profile and paired to a device, the skID R1280I reader will automatically reconnect to the same device every time the Bluetooth link is active (skID R1280I switched ON and Bluetooth activated on the host). You can verify this behaviour looking at the blue LED that, in this case, turns ON automatically as soon as you switch on the skID R1280I reader.

iOS devices

Bluetooth BLE Communication Setup

Follow the steps below to connect your iOS device to the skID reader using the BLE connection. All the images below were generated using an Apple iPhone XR model.

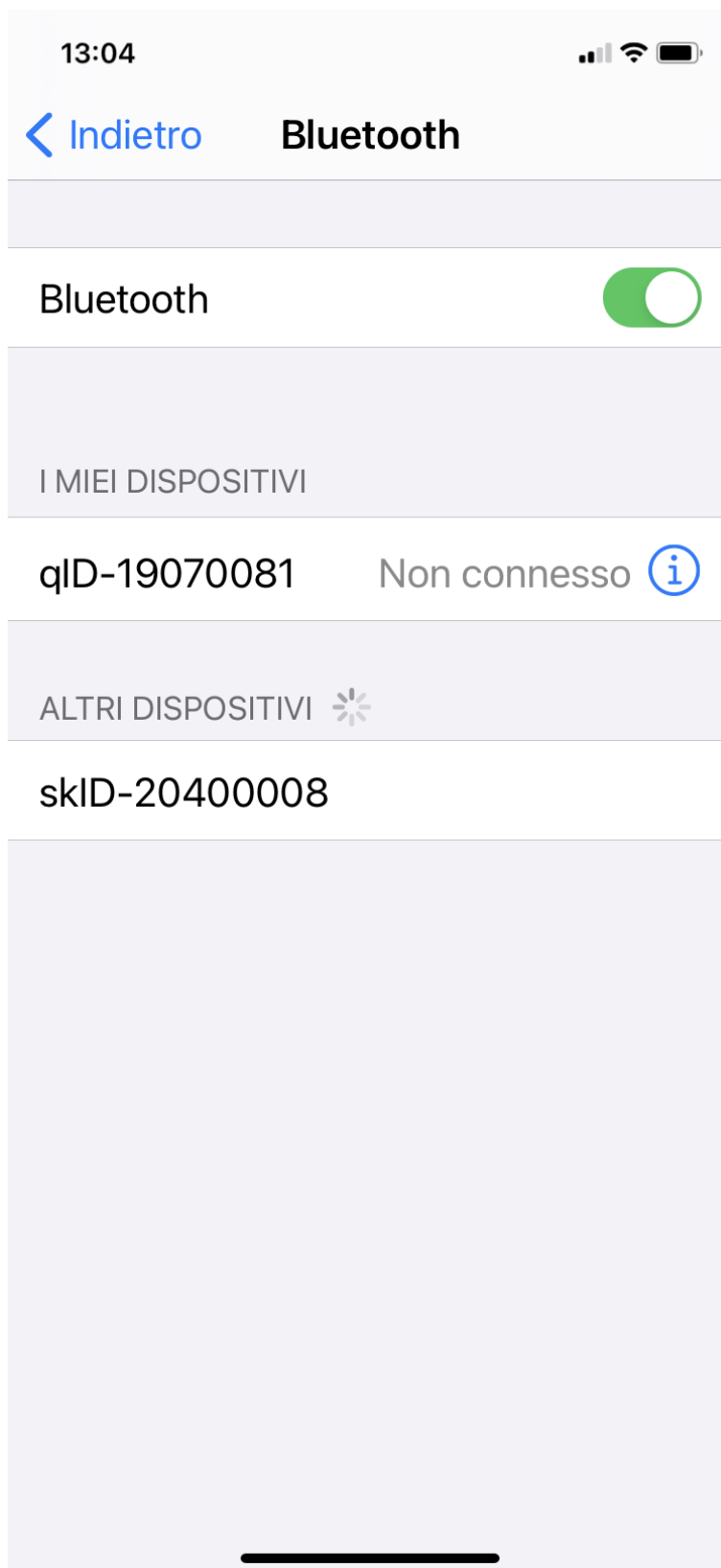
1. Follow the instructions given in paragraph § *Bluetooth and USB communication* page 20 to select the *Bluetooth communication interface* using the skID R1280I Configuration Tool:



Y

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.

2. On your iOS device, go to *Setting* and enable the *Bluetooth*.
3. Select the skID R1280I reader from the list of Bluetooth devices available (in this example the skID with serial number 20400008):



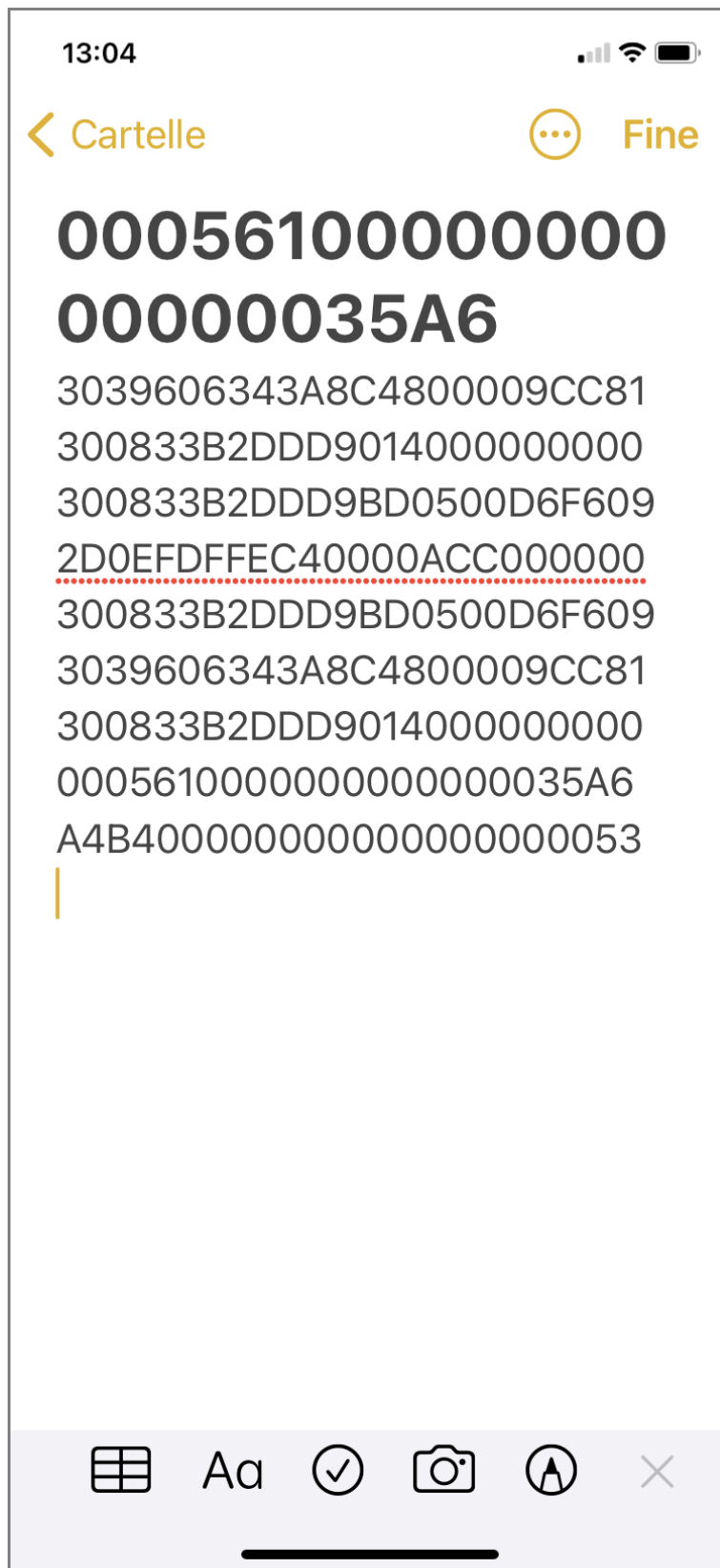
4. Confirm the Bluetooth pairing and wait until the pairing is complete:





5. Once the connection is established, the Bluetooth blue light on the skID R1280I reader turns on.
6. Launch a text editing App (or any other App accepting keyboard input).

7. 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 Note App):



5 BT-BLE SWITCHING

In the following table it is shown the compatibility between the skID R1280I reader profiles and BT/BLE/USB connection for different Operating Systems (Android, PC and iOS):

		ANDROID devices			WINDOWS PC			iOS devices		
		BT	BLE	USB	BT	BLE	USB	BT	BLE	USB
Profile	EASY2READ	✓			✓		✓		✓	
	HID	✓	✓		✓				✓	

Tab. 5.1: Compatibility table profiles-BT/BLE/USB for different OS

Follow the instructions in the next paragraph to switch the reader from BT (Bluetooth Classic) to BLE (Bluetooth Low Energy) and vice-versa.

Otherwise, to configure the reader to communicate via the USB cable instead of Bluetooth, follow the instructions in § *Bluetooth and USB communication* page 20 using the skID R1280I Configuration Tool.

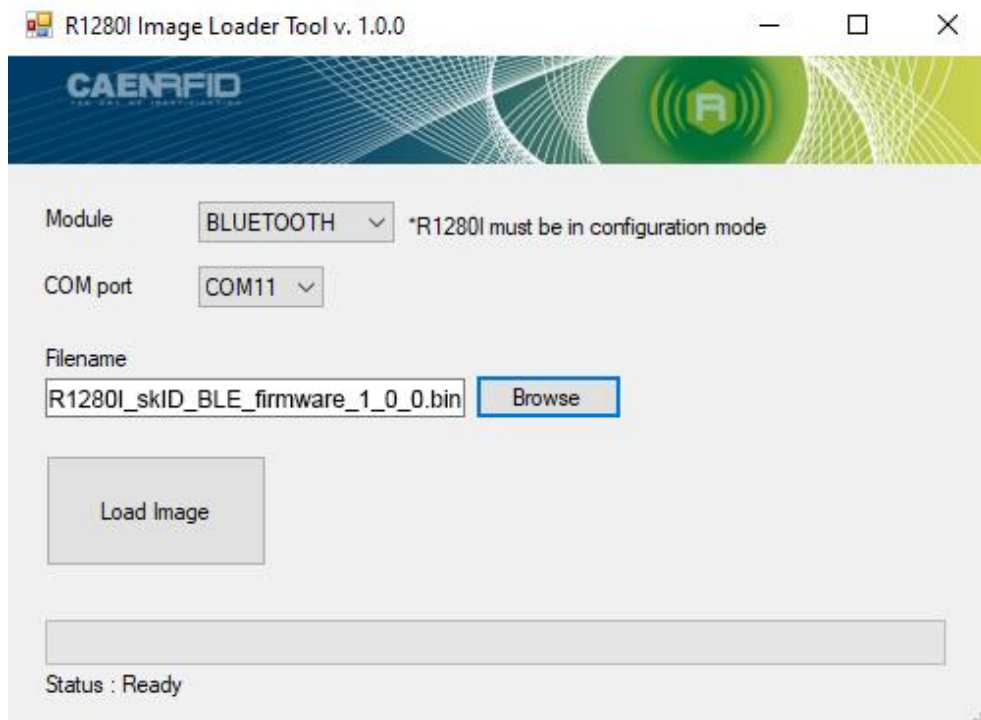
Switching the reader from BT to BLE

Follow the instructions below to load the Bluetooth BLE firmware into the Bluetooth module

This step is required for the communication with iOS devices.

Note that when BLE is available, Bluetooth Classic profile is not available and vice-versa.

1. Power off the skID R1280I reader
2. Attach an USB cable to the reader and connect it to a Windows PC
3. Hold down the *trigger* button, power on the reader and release both *power* and *trigger* buttons when the reader beeps. The communication LED should turn green.
4. Run the *skID R1280I Image Loader Tool* available at the [skID R1280I web page](#)
5. In the *Module* ComboBox select the *BLUETOOTH* option, in the *COM Port* the reader's COM Port and in the *Filename* TextBox the *R1280I_skID_BLE_firmware.bin* file:



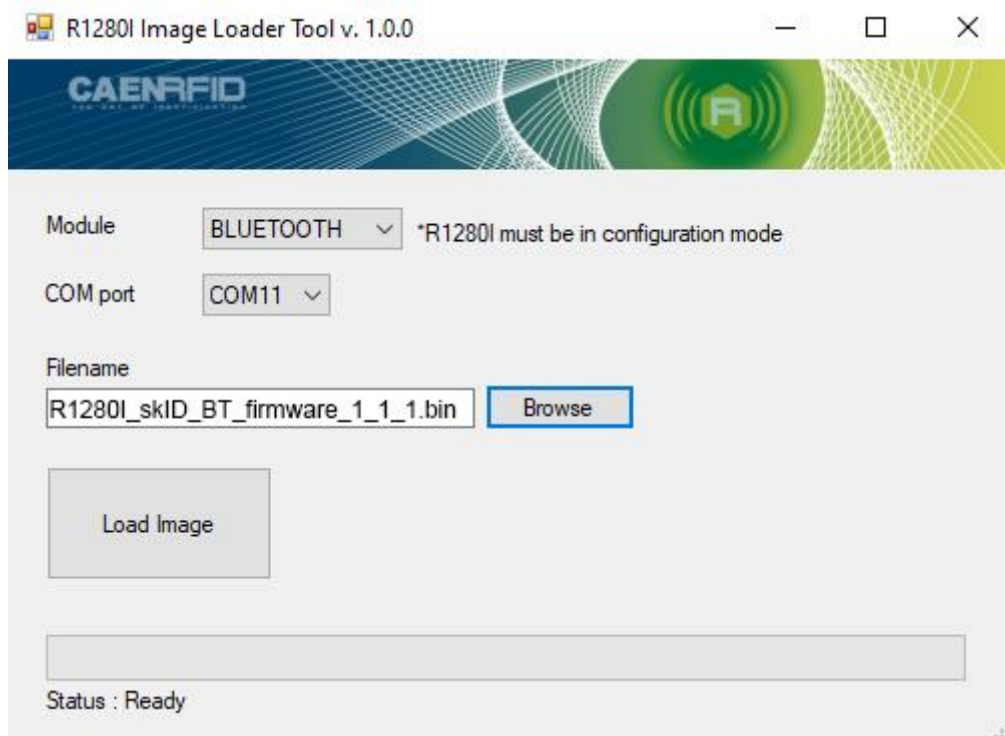
6. Press the *Load Image* button
7. When requested by the tool, power off the reader then press the OK button

Switching the reader from BLE to BT

Follow the instructions below to load the Bluetooth BT firmware into the Bluetooth module

Note that when Bluetooth Classic is available, BLE profile is not available and vice-versa.

8. Power off the skID R1280I reader
9. Attach an USB cable to the reader and connect it to a Windows PC
10. Hold down the *trigger* button, power on the reader and release both *power* and *trigger* buttons when the reader beeps. The communication LED should turn green.
11. Run the *skID R1280I Image Loader Tool* available at the [skID R1280I web page](#)
12. In the *Module* ComboBox select the *BLUETOOTH* option, in the *COM Port* the reader's COM Port and in the *Filename* TextBox the *R1280I_skID_BT_firmware.bin* file:



13. Press the *Load Image* button
14. When requested by the tool, power off the reader then press the OK button

6 RESET THE READER

To reset the reader, press the *power* and the *trigger* buttons (see § Fig. 1.4: Bottom Panel page 8) simultaneously for about five seconds and then release the buttons. The reader restarts by itself.

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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.

7 FIRMWARE UPGRADE

The skID R1280I firmware upgrade can be performed via USB using the skID R1280I Firmware Upgrade Tool, available for free at the [skID R1280I web page](#).

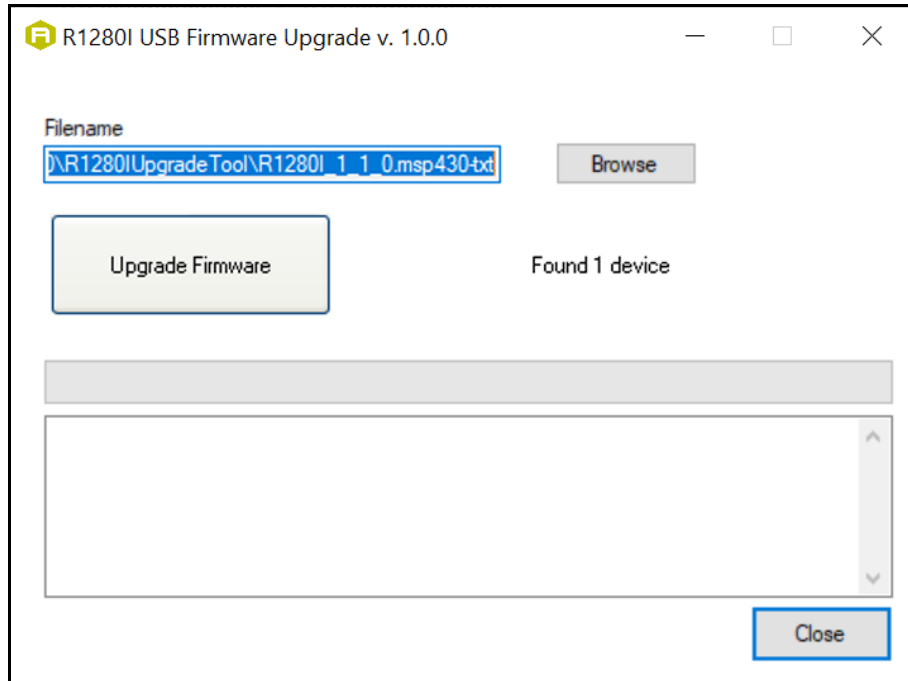
In order to upgrade the firmware follow the steps described below:

1. With the reader switched off, connect the R1280I skID reader to a PC using the provided USB cable.
2. Press simultaneously the *trigger* and the *power* button for at least 10 seconds and then release them.
3. Open the skID R1280I Firmware Upgrade Tool.
4. Click on *Next* button:

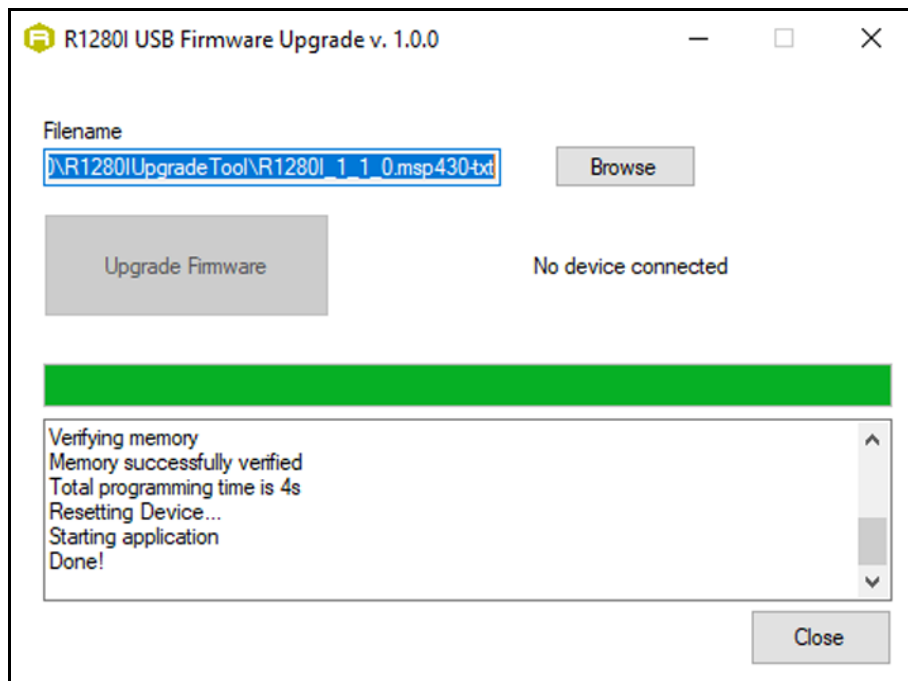


5. In the window you will see the message "Found 1 device" (if the message is "No device connected" repeat the points 2,3, 4 and 5).

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:



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

8 TECHNICAL SPECIFICATIONS

Technical Specifications Table

Frequency Range	865.600÷867.600 MHz (ETSI EN 302 208 V3.1.1) (Mod. WR1280IXEUAA) 902÷928 MHz (FCC part 15.247) (Mod. WR1280IXUSAA)
RF Power	Configurable from 1dBm ERP to 28dBm ERP (Mod. WR1280IXEUAA) Configurable from 3dBm EIRP to 30dBm EIRP (Mod. WR1280IXUSAA)
Number of Channels	4 channels (compliant to ETSI EN 302 208 V3.1.1) (Mod. WR1280IXEUAA) 50 hopping channels (compliant to FCC part 15.247) (Mod. WR1280IXUSAA)
Standard Compliance	ISO 18000-63/EPC C1G2
Antenna Gain	3dBi
Antenna Polarization	Integrated Circular Polarized Antenna
Read Range	up to 2.0 m (typical)
USB Interface	USB 2.0 Full Speed (12 Mbit/s) via USB Type-C connector
Bluetooth Interface	– Bluetooth 4.1 Smart Ready compliant – 12dBm EIRP output power BR/EDR – 8dBm EIRP output power BLE – HID and Serial over GATT (BLE) – HID and SPP profiles (Bluetooth classic)
User Interface	– Power and Trigger buttons – Power and battery status LED – Communication and operation result LED – Bi-tonal buzzer and vibration element for event signalling
Battery Type	Li-ion 3.7V, 1200mAh
Battery Life	Operating: > 12h (with 40,000 tag readings) Standby: > 15 days (powered off, no LED blinking)
Battery Charging Time	– 3h connected to a PC USB port – 1h 30min with 1A AC/DC power supply
IP Rating	IP54
Dimensions	112 x 62 x 16 mm ³ 4.4 x 2.4 x 63 inches ³
Length of USB cable	1.5 m
Operating Temperature	-10 °C to +55 °C
Weight	110 g

Tab. 8.1: skID R1280I Technical Specifications Table

Y

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.

Technical Drawings

The following drawings show the R1280I skID from different points of view.

All dimensions are in millimeters.

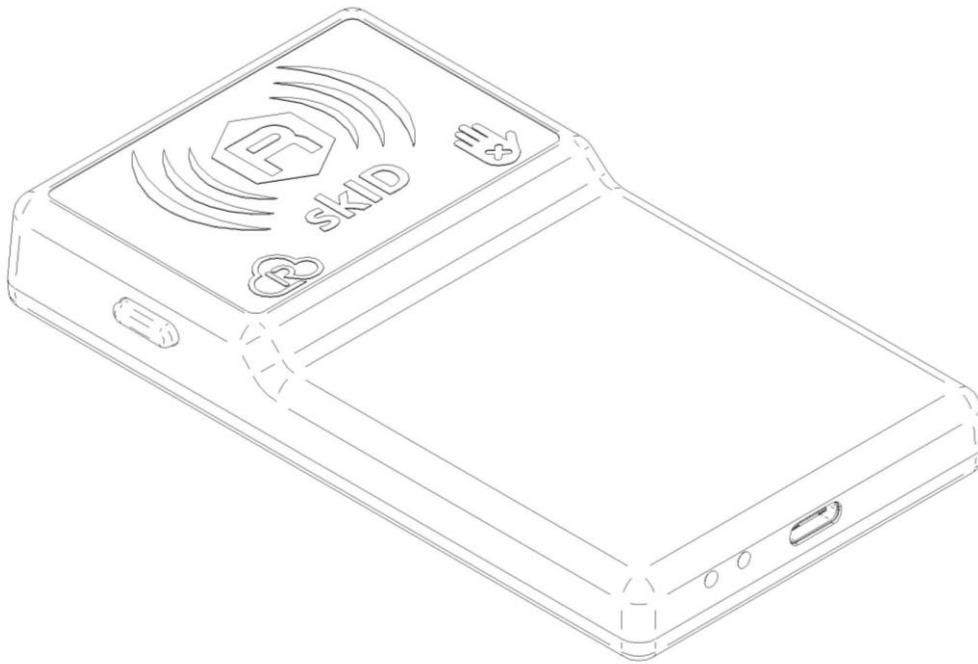


Fig. 8.1: skID R1280I Technical Drawings

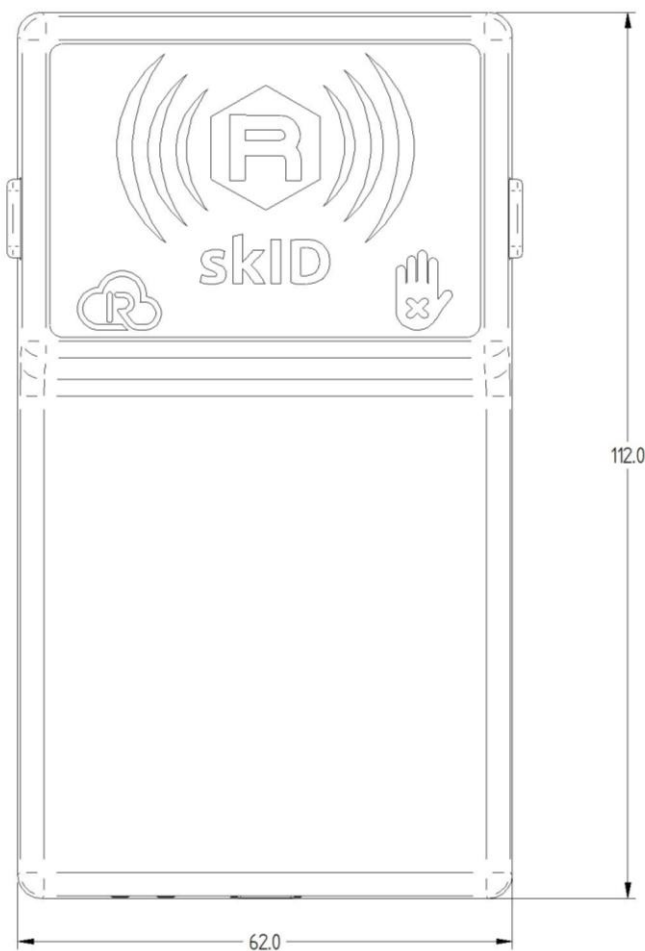


Fig. 8.2: skID R1280I Technical Drawings – Front panel view

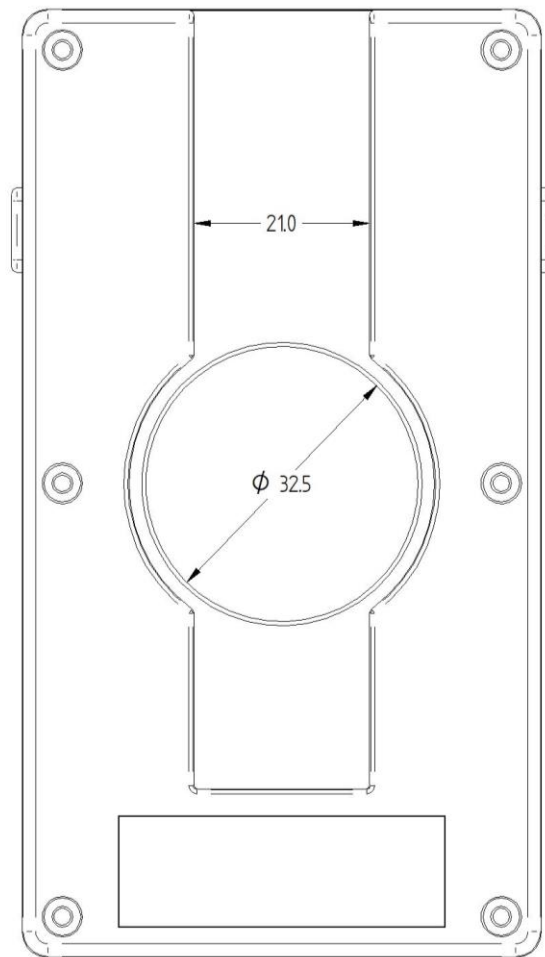


Fig. 8.3: skID R1280I Technical Drawings – Back panel view

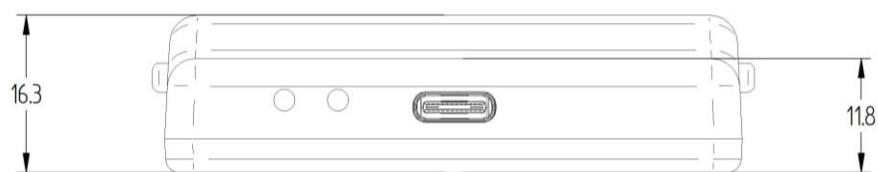


Fig. 8.4: skID R1280I Technical Drawings – Bottom panel view

Battery Life

The following tables show the values of the battery life of the SKID R1280I reader in three operating states:

No.	Status	Property	Battery Life
1	Power down	Not discoverable by BT	50 days
		Not indication status battery	
2	Stand by	Discoverable by BT	3,5 days
		Indication status battery	
3	Connected	Connected BT	24 hours
		Indication status battery	

Tab. 8.2: skID R1280I Battery Life

When the reader is completely discharged, it is recommended to fully charge it, until the link LED is off (see § *Charging* page 9) with the USB cable connected.

If you do not fully charge, the battery level indicated by the power LED according to table *Tab. 1.3: Power LED Status Table* page 8 may not be accurate.

By default, if the reader is turned on, it stays on all the time, until the power button is long pressed.

There is currently no automatic shutdown mode.

Some typical usage scenarios of the reader have been described below to show battery life for different applications. 3 modes of use are described: intensive, moderate, light. The reading mode has been calibrated to cover an 8 hour working day.

1. Intensive Use

Scenario A: Incoming goods in stock

Configuration	Reading mode	Target	Approx tag reads	Battery consumption
– BT Always Connected – Power 500mW – Q default – No vibration – No sound	Continuous inventory of 30 seconds every 5 minutes for 8 hours	Box of 100 tags	9600	90,00%

Tab. 8.3: skID R1280I Battery Life – Intensive Use – Scenario A

Scenario B: Access Control (e.g. stadium, show...)

Configuration	Reading mode	Target	Approx tag reads	Battery consumption
– BT Always Connected – Power 200mW – Q default – Vibration – Sound	Inventory on button press every 10 seconds for 8 hours	Ticket with single tag	2880	80,00%

Tab. 8.4: skID R1280I Battery Life – Intensive Use – Scenario B

2. Moderate Use

Scenario C: Incoming goods in stock

Configuration	Reading mode	Target	Approx tag reads	Battery consumption
– BT Always Connected – Power 500mW – Q default – No vibration – No sound	Continuous inventory of 10 seconds every 3 minutes for 8 hours	Box of 30 tags	4800	65,00%

Tab. 8.5: skID R1280I Battery Life – Moderate Use – Scenario C

Scenario D: Clothing store inventory

In this scenario the reader is switch off between one inventory and another:

Configuration	Reading mode	Target	Approx tag reads	Battery consumption
– Power down after inventory – Power 500mW – Q default – No vibration – No sound	Continuous inventory of 20 minutes twice in 8 hours	Shop with 1000 tags	2000	50,00%

Tab. 8.6: skID R1280I Battery Life – Moderate Use – Scenario D

3. Light Use

Scenario E: Car parking ticket check

Configuration	Reading mode	Target	Approx tag reads	Battery consumption
– BT Always Connected – Power 500mW – Q default – Vibration – Sound	Inventory on button press every 1 minute for 8 hours	Ticket with single tag	480	45,00%

Tab. 8.7: skID R1280I Battery Life – Light Use – Scenario E

Scenario F: Separate waste collection operator

Configuration	Reading mode	Target	Approx tag reads	Battery consumption
– BT Always Connected – Power 200mW – Q default – Vibration – Sound	Inventory on button press every 1 minute for 8 hours	Bin with single tag	480	40,00%

Tab. 8.8: skID R1280I Battery Life – Light Use – Scenario F

9 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.