



I-POLL 2.0
UHF Handheld Device
Quick Starter Guide

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1 Description

This document provides information on using the I-POLL 2.0 functions and accessories. The I-POLL is a UHF (900MHz) RFID and Scanner Reader that quickly recognizes EPC Global Gen2 compliant RFID tags and barcodes. The recognized results are transmitted to your smartphone, tablet, PC, etc. via USB, Magconn™ and Bluetooth, both wired and wirelessly. The I-POLL 2.0 offers the highest grade (IP68) waterproof and dustproof compliance for stronger product stability against the outside environment.

Additional relevant Manual

- I-POLL 2.0 Programmers Guide

2 Technical Data

Electrical Specifications	
Power Supply	3,399mA, Battery, Standby Mode (40hours)
Charging	Micro USB, Magconn / 1.0A Full charging time 5 hours
Operating Frequency	900Mhz
Antenna	Internal
Scanner	1D Scanner/ 2D Imager option
Reader IC	Impinj R-200 chipset
RFID Protocol	EPC Global Gen2
Interfaces	MicroUSB, Bluetooth 4.1
Display	Blue OLED LCD
Data Storage	Max 1000EA, 60Byte Unit
Mechanical Specifications	
Dimensions	64 x 220 x 27mm
Weight	265 g
Environmental Conditions	
Operating Temperature	0 °C ... +50 °C
Storage Temperature	-10 °C ... +65 °C
Humidity	up to 95 %, non-condensing
Supported Standards / Tags	
UHF	EPC C1 GEN2 / ISO18000-6C
SDK Information	
Supported OS	Android 5.1 (7.1)
Demo Software	Windows; Android; iOS 7

3 List of Figures

3.1 General Overview



3.2 Charging Interface

Charging (Micro USB)



Charging (Magconn)



3.3 USB 2.0 / Bluetooth 4.0 Interface

Power On

Press the Power button about 3 seconds to turn on the device.

Note that please wait until the red LED and sound on after turning the device on.

Power Off

Press the Power button about 3 seconds to turn off the device.

Note that please wait until the sound on after turning the device off.

Interface

USB Interface :



RPT-100 can be connected with Windows PC via USB connection.

Bluetooth Interface : Profile (HID or SPP) support



RPT-100 can be connected with RP1500/RP1600 and PC via Bluetooth communication.







3.4 LED Status

LED	Function	Status	Description
	USB/Magconn™	● Orange	USB/Magconn™ connection status
	Bluetooth	●● Red, Green blink	Bluetooth module initialize
		● Red	Bluetooth connection stand-by
		● Green	Bluetooth connection status
	Battery	● Red	Battery charging
		● Green	Battery fully charged

3.5 Display Icons






Displayed Icon	Description
	Display RFID power
	Device volume maximum.
	Device volume minimum
	Device volume mute
	Device vibration
	Operation mode: Local mode (Max 100ea data)
	Operation mode: RSP mode
	Operation mode: HID mode
	Operation mode: SPP mode
	Operation mode: D100 mode
	Trigger mode: Continue
	Trigger mode : Single
	Trigger mode : Auto
	Trigger mode : Hybrid
	Trigger mode : Dual
	 100% ~ 80% /  79% ~ 50% /  49% ~ 30%  29% ~ 10% /  10% below /  Insufficient
	Model name– MAC address last four digits
	MAC address
	F/W version

3.6 Buttons

	Control	Short press: Switch operation mode Press and hold: Delete saved data
	Reset	Reset device
	RFID	RFID read start/end (Note: RFID+Scanner read start/end in Dual mode)
	Scanner	Scanner decode start/end (Note: Not operational in Dual mode)

3.7 Modes



Icon	Mode	Function
	Single	After data has been once read, reading or scanning will end automatically. The read data is displayed on the LCD, and the redundant data is not incremented by the counter.
	Continue	Data is continuously read only while the key is pressed. RFID only displays new data to the LCD, and redundant data does not increase the output and count. Scanner will also display data to the LCD, and count will increase.
	Auto	Press the key once to read the data continuously, press the key again to stop the operation. RFID only display new data to the LCD, and redundant data does not increase the count. Scanner will also display data to the LCD, and the count will not increase.
	Hybrid	Data is read continuously only while the RFID key is pressed. SCANNER automatically terminates after one reading. RFID is the same as Continue mode, and SCANNER is the same as Single mode.
	Dual	When the RFID key is pressed once, the RFID and SCANNER simultaneously read the data. When the RFID key is pressed again, the RFID and the SCANNER stop working. The SCANNER button does not respond. Generally, it is used in a stationary form.

4. ANDROID TEST PROGRAM

4.1. Download & Installation

Download apk file.

4.2. Config Tab

Config Tab is a for device connection and UHF RFID / Scanner Configuration

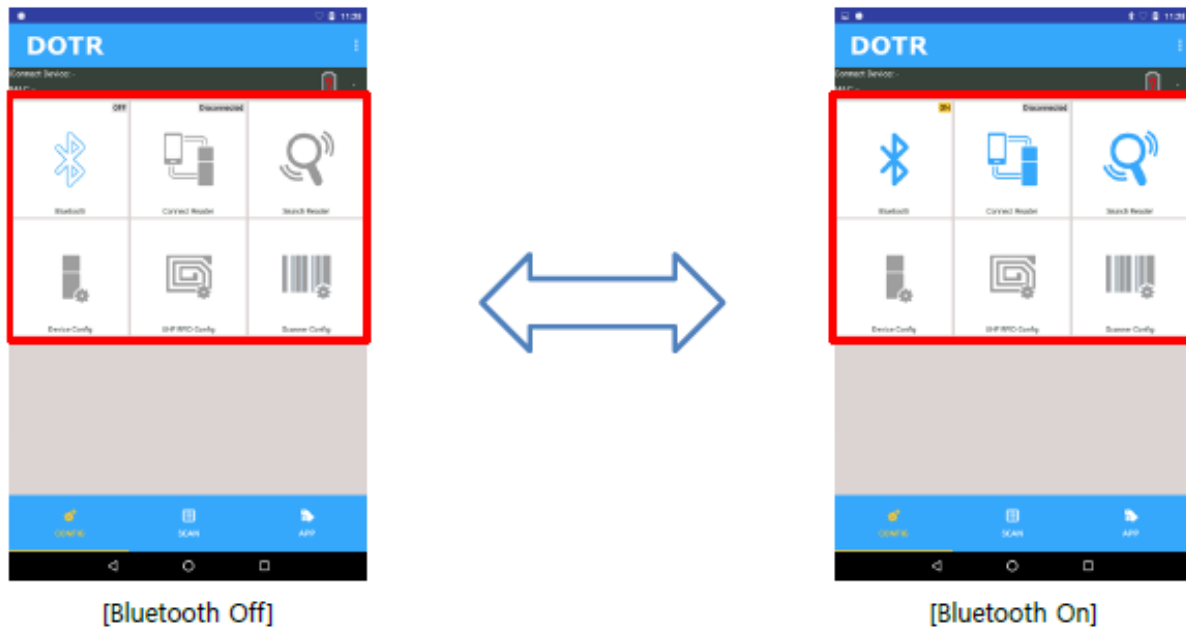


[Config Tab]

4.2.1. BlueTooth

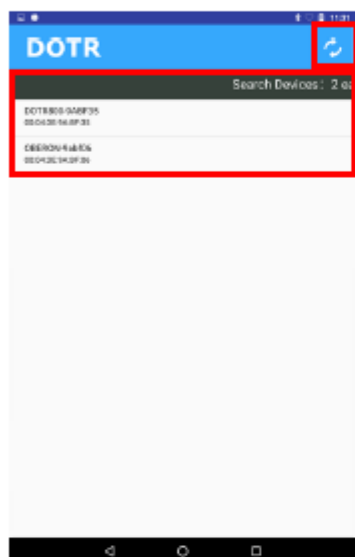
In Bluetooth Off status, only Bluetooth button become active and it can be turned on.

When the Bluetooth is on, "Connect Reader" and "Search Reader" Button turn active.

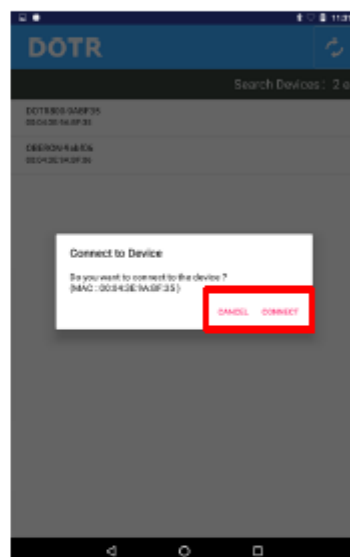


4.2.2.1. Search Reader – Device connection

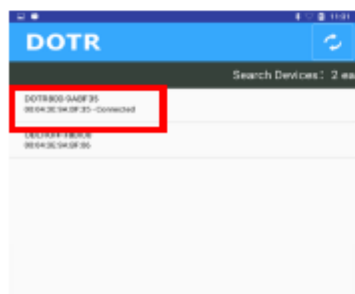
After the device search is finished, All the devices which are scanned would be displayed in the list. Select the device you want to connect then window will be appeared and ask you to confirm connect. Press "Connect" Button to connect with device or Click the "Cancel" Button to close the window. Press the button at the top right to search for devices



[Before connecting to device]

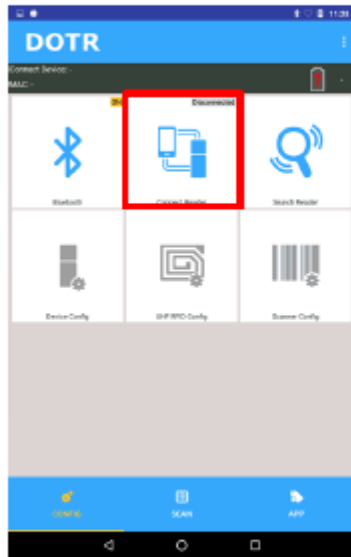


[Confirm device connection]

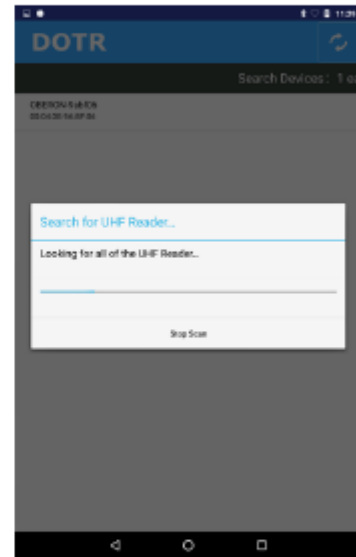


4.2.2. Search Reader

Press "Search Reader" Button to search device. Start searching for devices at the same time as switching the screen.



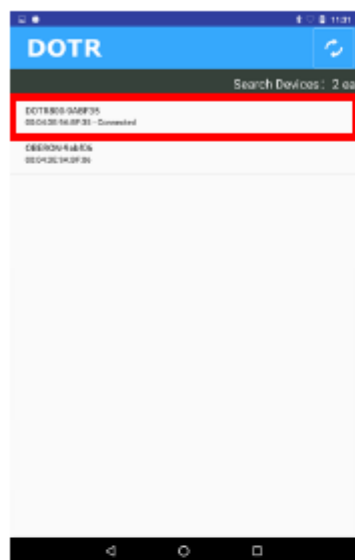
[Search Reader Button]



[Search Devices]

4.2.2.2. Search Reader – Disconnection

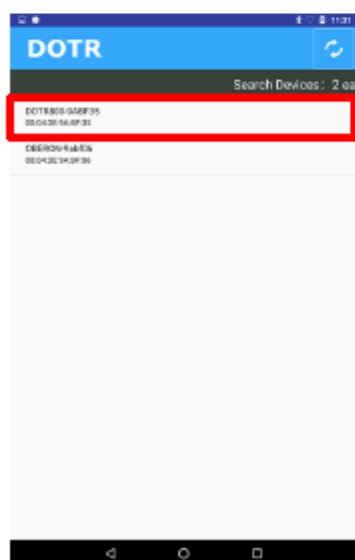
When you select a device in the "Connected" state in the Device List, Window will be appeared whether you confirm to disconnect and click the "Disconnect" button to disconnect.



[Status of connection]



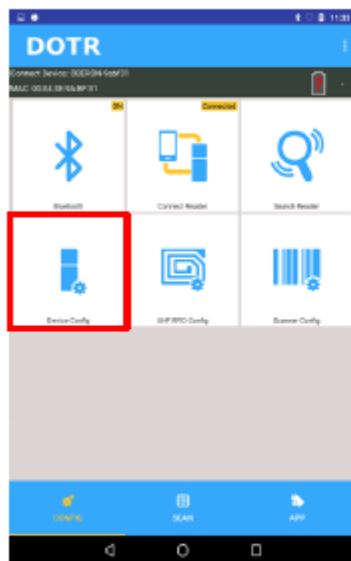
[Confirm to disconnect]



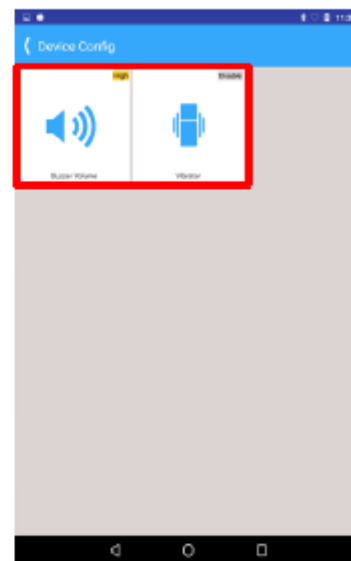
[Status of Disconnection]

4.2.3. Device Config

Tap "Device Config" Button to change the set-up for "Device Config".



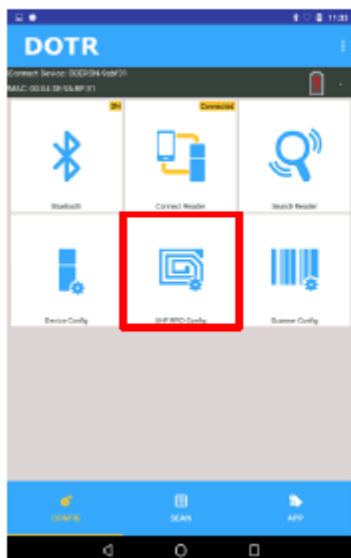
[Device Config Button]



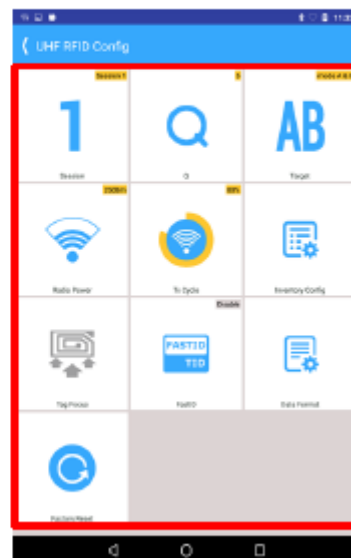
[Device Config Menu]

4.2.4. UHF RFID Config

Tap "UHF RFID Config" Button to change the set-up for "UHF RFID Config".



[UHF RFID Config Button]



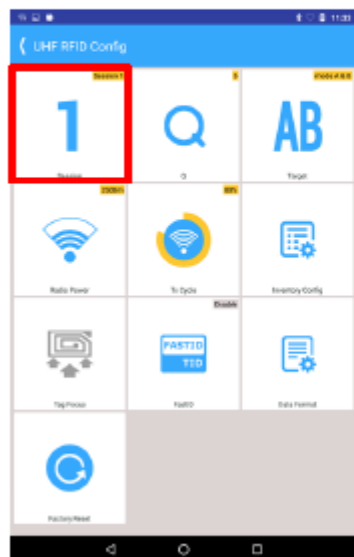
[UHF RFID Config Menu]

4.2.4.1. Session

You can change UHF RFID Session setting of the device (0 ~ 3).

It is returning time that the inventory flag of the tag returns A to B and back to A.

Set the time taken to re-read the tag once read for Multi Reading.



[Session Button]



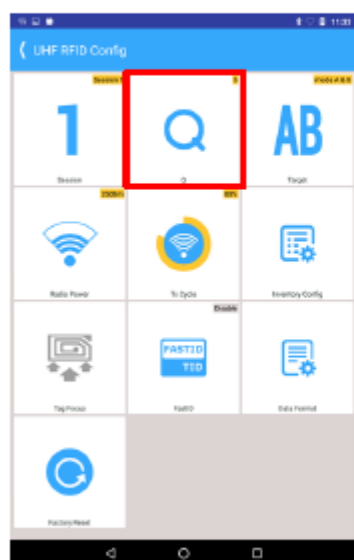
[Session set-up Menu]

4.2.4.2. Q

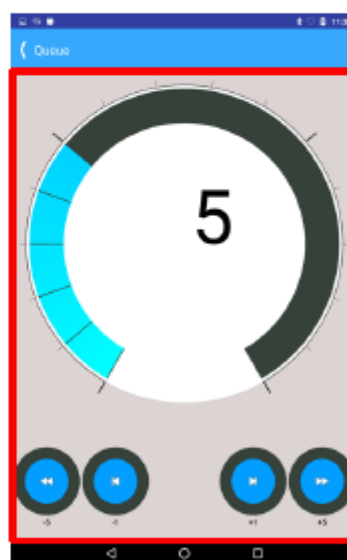
You can change the UHF RFID Q settings of the device from (0 to 15).

The lower value is fit to read small amount of tags faster. The higher value can read more tags at a time.

In case of multi reading, setting value 5 is best option to stable reading speed



[Q Button]



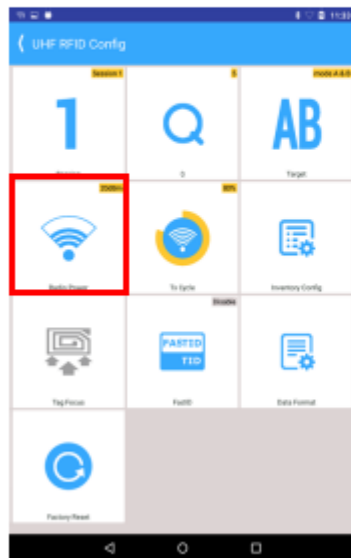
[Q set-up Menu]

4.2.4.4. Radio Power

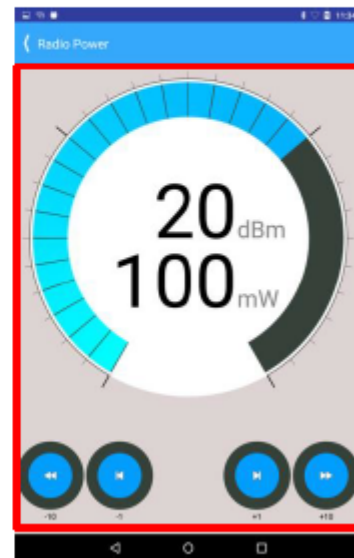
It can be changed UHF RFID TX Power of the device (30dBm ~ 0dBm).

Reading distance is adjustable to TX power level.

At Max 30dBm, reading distance can be longer but battery consumption will increase



[Radio Power Button]



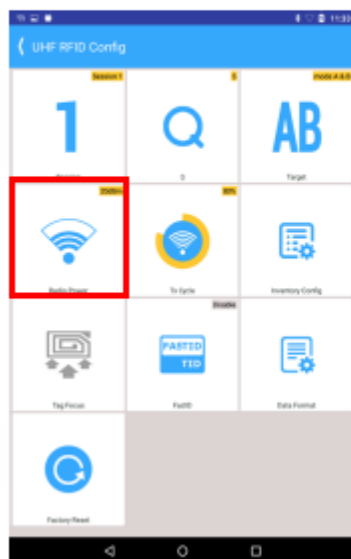
[Radio Power set-up Menu]

4.2.4.4. Radio Power

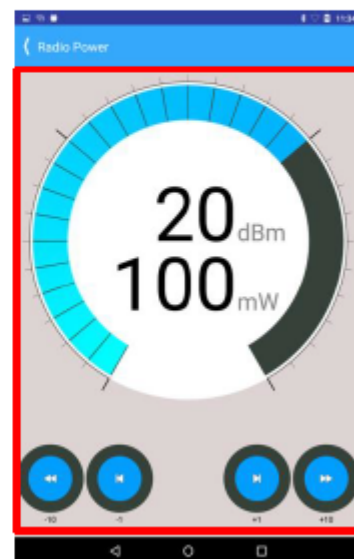
It can be changed UHF RFID TX Power of the device (30dBm ~ 0dBm).

Reading distance is adjustable to TX power level.

At Max 30dBm, reading distance can be longer but battery consumption will increase



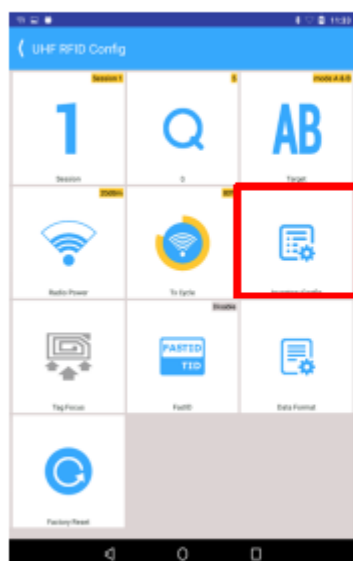
[Radio Power Button]



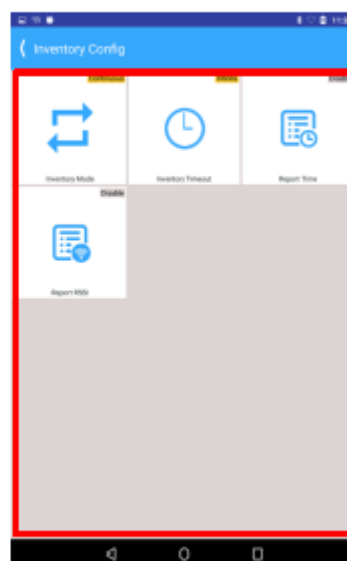
[Radio Power set-up Menu]

4.2.4.6. Inventory Config

Configuration for reading UHF RFID Tag



[Inventory Config Button]

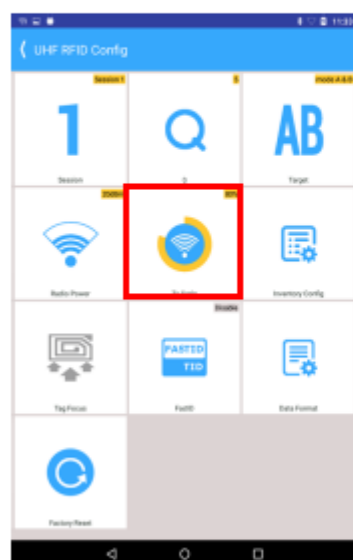


[Inventory Config Menu]

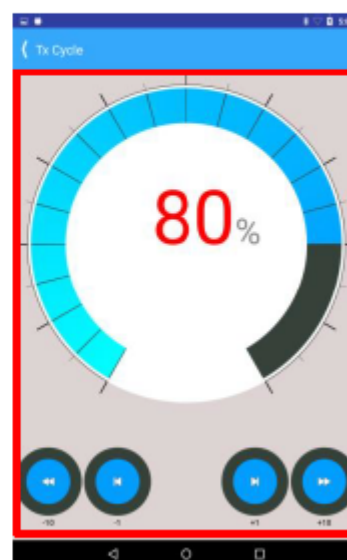
4.2.4.5. TX Cycle

The UHF RFID TX Cycle of the device can be changed (20% to 100%).

Set up reading speed for the tag. The higher cycle rate increase reading speed for tag but the battery consumption is increased. We recommend to set up below 40%.



[Tx Cycle Button]

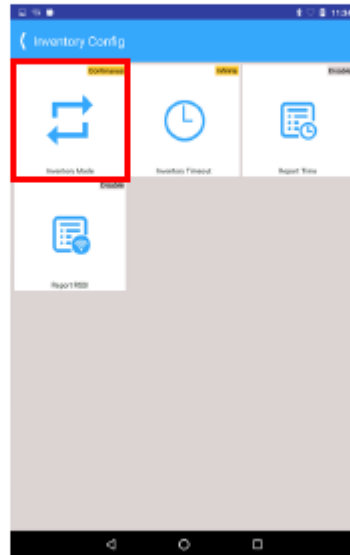


[Tx Cycle set-up Menu]

4.2.4.6.1. Inventory Mode

UHF RFID mode for reading tag can be changed (Continuous or Single).

In case of Single mode, device read tag one by one.

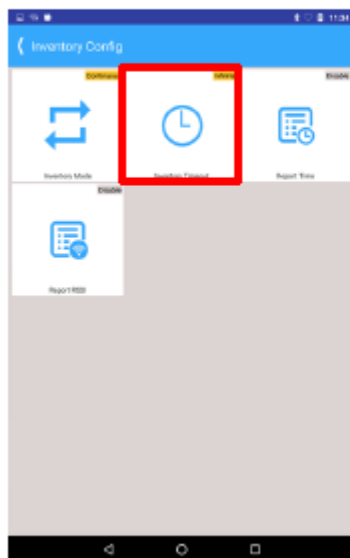


[Inventory Mode Button]

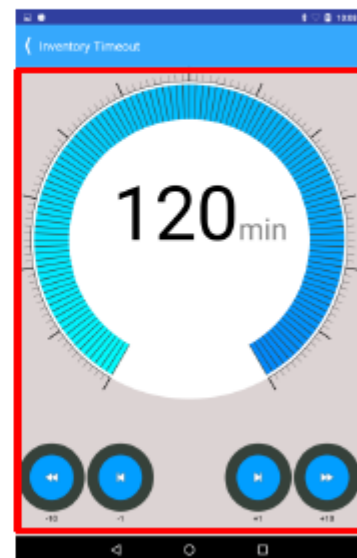
4.2.4.6.2. Inventory Timeout

It can be set up time to take reading UHF Tag (Unlimited ~ 120min).

When set-up time is over, reading tag is stopped. When set to 0, it is unlimited time to read tag



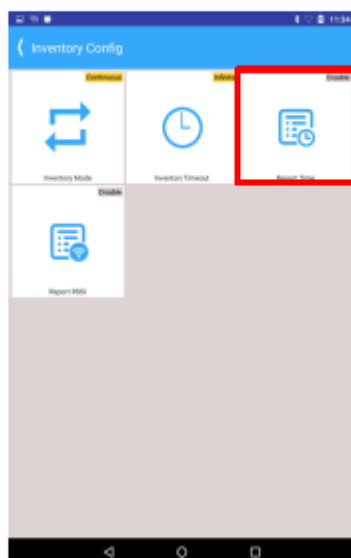
[Inventory Timeout Button]



[Inventory Timeout set-up Menu]

4.2.4.6.3. Report Time

When the device read UHF RFID tag, it is selectable whether to transmit Tag reading time (Enable / Disable). It can be transmitted tag reading time based on the device time.

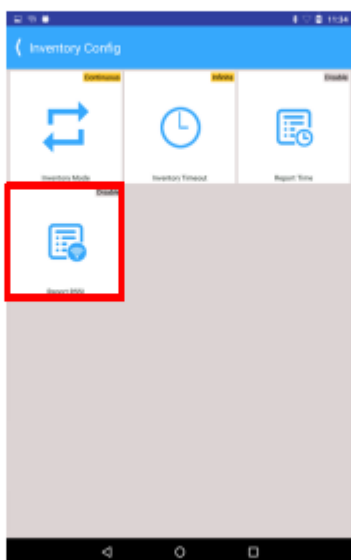


[Report Time Button]

4.2.4.6.4. Report RSSI

It is selectable to transmit RSSI data when device read UHF RFID tag(Enable/Disable)

It can be transmitted Received Signal Strength Indication (RSSI) value which is receiving strength indicator

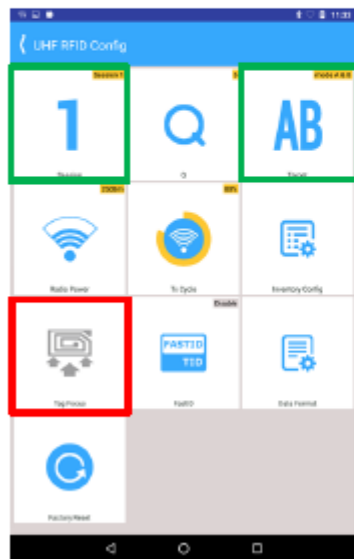


[Report RSSI Button]

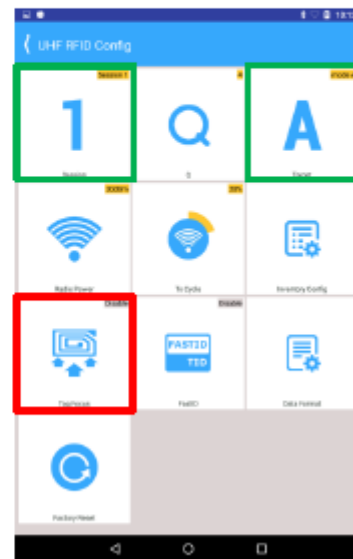
4.2.4.7. Tag Focus

It is selectable to Tag Focus function(Enable / Disable). This function improves efficiency to search for other tags which is unresponsive skipped to responded tag

Session 01, Target A only is available for Tag Focus and refer to UHF Tag list supported to Tag Focus and FastID



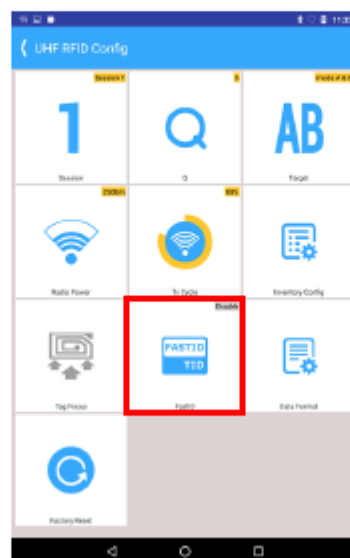
[Tag Focus Button(Inactive)]



[Tag Focus Button(Active)]

4.2.4.8. Fast ID

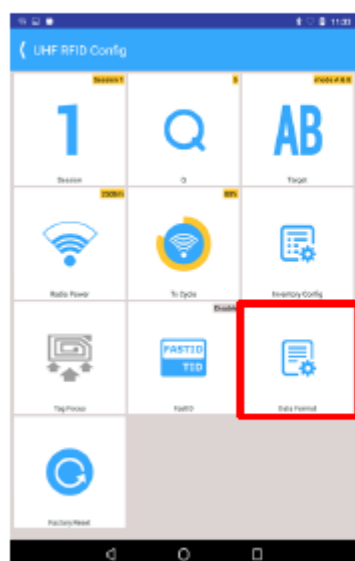
It is selectable to FastID function(Enable/Disable). This mode improves inventory check time based on TID while getting TID value during inventory. Refer to UHF Tag list supported to Tag Focus and FastID



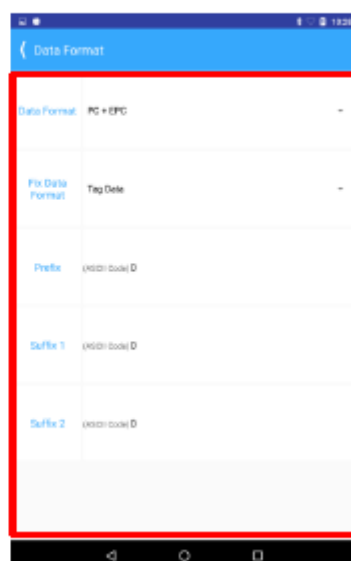
[FastID Button]

4.2.4.9. Data Format

When reading UHF RFID tag, you can set the data format to be transmitted.



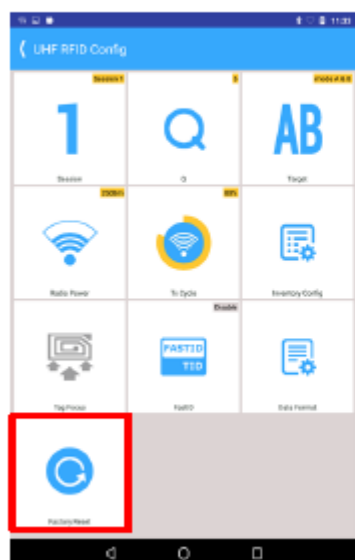
[Data Format Button]



[Data Format set-up Menu]

4.2.4.10. Factory Reset

Initializes UHF RFID settings of the device. Tap "YES" button to proceed.



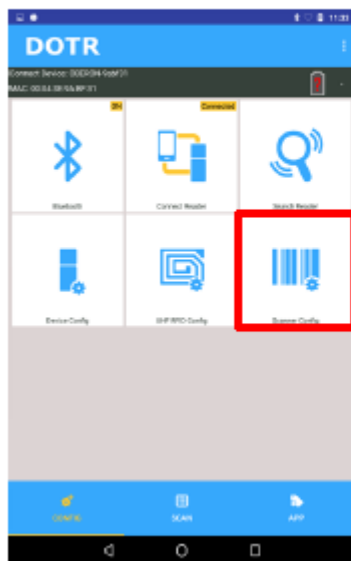
[Factory Reset Button]



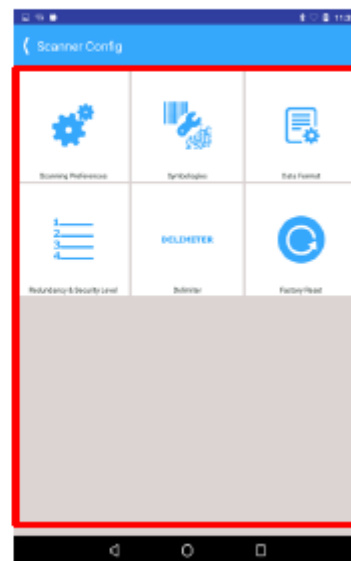
[Factory Reset Window]

4.2.5. Scanner Config

Tap "Scanner Config" Button to enter "Scanner Config" screen to be set up.



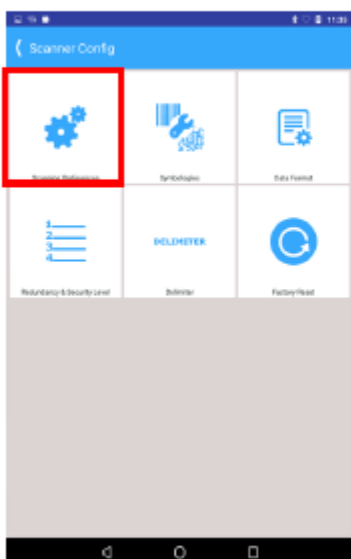
[Scanner Config Button]



[Scanner Config Menu]

4.2.5.1. Scanning Preferences

Tap "Scanning Preferences" button to enter "Scanning Preferences" screen.



[Scanning Preferences Button]



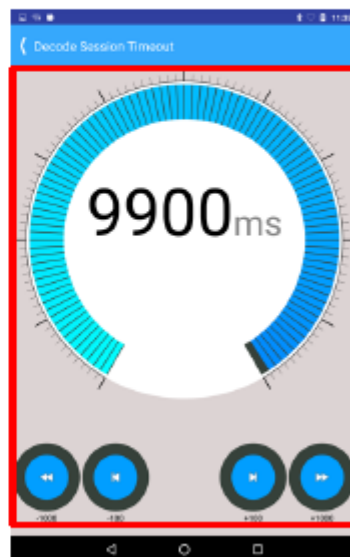
[Scanning Preferences set-up Menu]

4.2.5.1.1. Decode Session Timeout

Tap "Decode Session Timeout" Button to enter "Decode Session Timeout"(500ms ~ 9900ms) to be set decode session timeout.



[Decode Session Timeout Button]



[Decode Session Timeout set-up Menu]

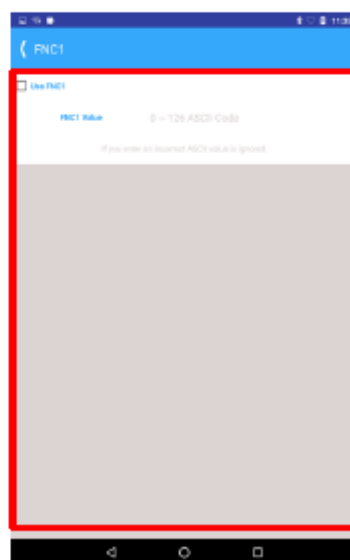
4.2.5.1.2. FNC1

Tap "FNC1" Button to enter FNC1 setting.

You can specify FNC1 value contained in GS1 bar code (GS1-128, GS1-Databar, GS1-DataMatrix) and Code-128 bar code to transmit it to other device



[FNC1 Button]



[FNC1 set-up Menu]

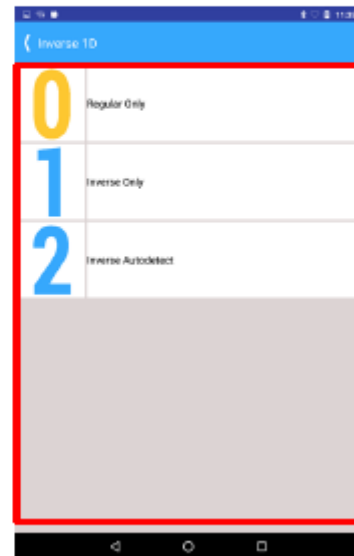
4.2.5.1.3. Inverse1D

Tap "Inverse 1D" Button to enter 1D Barcode Inverse setting.

You can select it among three kind of mode. When black and white bar is reversed, it can be set up inverse detection



[Inverse1D Button]



[Inverse1D 설정 Menu]

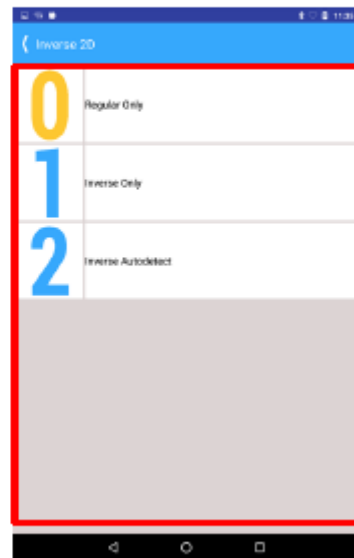
4.2.5.1.4. Inverse2D

Tap "Inverse2D" Button to change the 2D Barcode Inverse setting.

It is selectable whether to read 2D bar codes with black pattern and white pattern reversed each other.



[Inverse2D Button]



[Inverse2D set-up Menu]

4.2.5.1.5. Picklist Mode

You can select "Picklist Mode" function (Enable / Disable).

When is set to enable, only the bar code located at the center of the Aimer Pattern is read.



[Picklist Mode Button]

4.2.5.1.6. Mirrored Image

You can select "Mirrored Image" function (Enable / Disable).

When is set to enable, reads barcode horizontally changed as seen through the mirror.



[Mirrored Image Button]

4.2.5.1.7. Mobile Phone / Display Mode

You can select "Mobile Phone / Display Mode" function (Enable / Disable).

When is set to enable, improves performance for reading bar code output to display of mobile phones and electronic displays.



[Mobile Phone / Display Mode Button]

4.2.5.1.8. Decoding Illumination

You can select "Decoding Illumination" function (Enable / Disable).

When barcode is read, it is selectable to output light.



[Decoding Illumination Button]

4.2.5.1.9. Decoding Aiming Pattern

It is selectable to "Decode Aiming Pattern" function (Enable / Disable).

Set whether to output the aiming pattern, which allows user to aim reading barcode position when reading a barcode.



[Decode Aiming Pattern Button]

4.2.5.1.10. 1D Quiet Zone

Tap "1D Quiet Zone" Button to enter to the "1D Quiet Zone" setting screen. There is four kind of mode. It sets decoding level when reading Quiet Zone attenuated than the standard (from the start to end of the bar code)



[1D Quiet Zone Button]



[1D Quiet Zone set-up Menu]

4.2.5.1.11. Intercharacter Gap Size

You can select "Intercharacter Gap Size"(Normal / Large). In case of Intercharacter Gap Size is larger than the maximum allowable size at Code3 and Coda bar, when the barcode is not readable, It should be set to large



[Intercharacter Gap Size Button]

4.2.5.1.12. Fuzzy 1D Processing

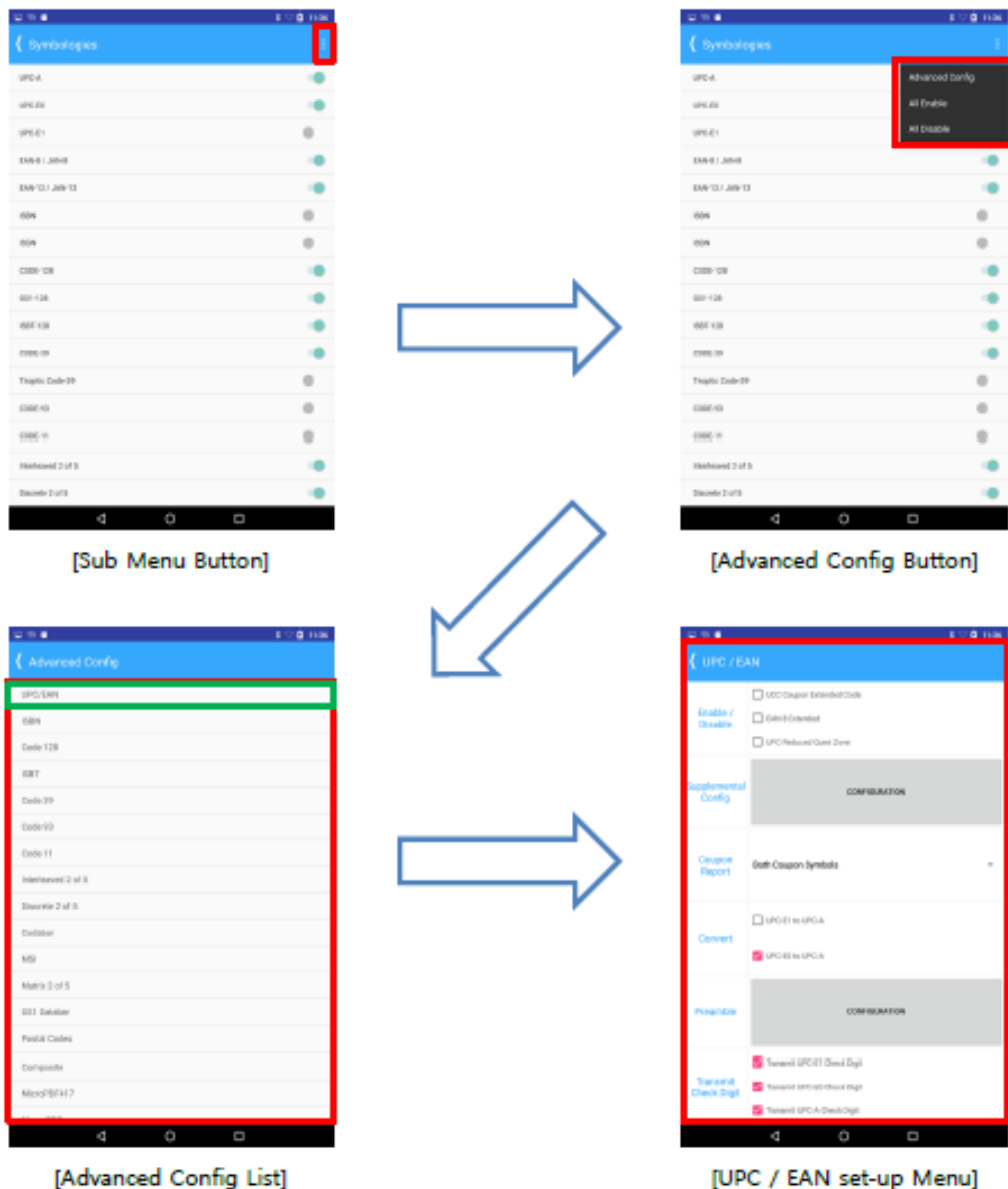
You can select "Fuzzy 1D Processing" function (Enable / Disable).
When is enable, improves reading performance for damaged 1D bar code.



[Fuzzy 1D Processing Button]

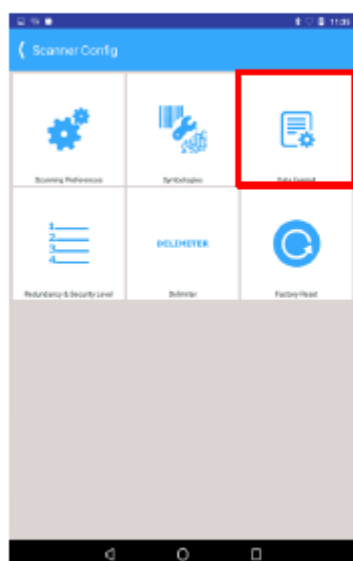
4.2.5.2.1. Symbologies Advanced Config

On the "Symbologies" setting window, tap "Sub Menu" button on the upper right side to appear "Advanced Config" / "All Enable" / "All Disable" Menu. Tap "Advanced Config" button and "Advanced Config" window will be appeared then Barcode Type List will be displayed. When Barcode type is selected, it can be set up detail parameter for each of those.

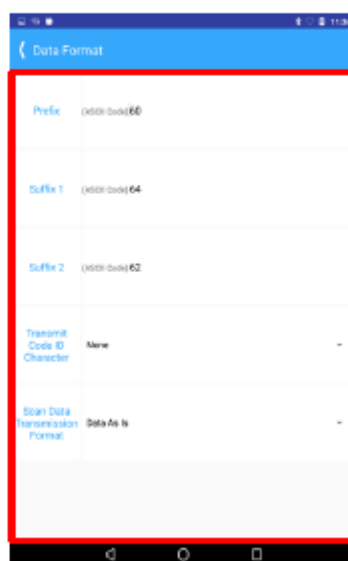


4.2.5.3. Data Format

Tap "Data Format" to set up data format when reading barcode



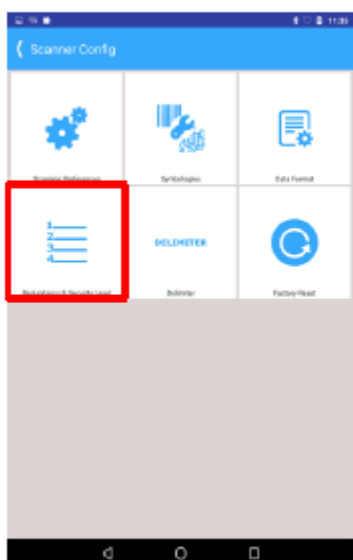
[Data Format Button]



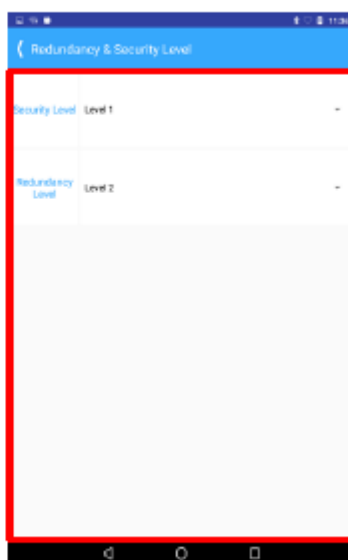
[Data Format set-up Menu]

4.2.5.4. Redundancy & Security Level

Tap "Redundancy & Security Level" to set up Redundancy & Security level



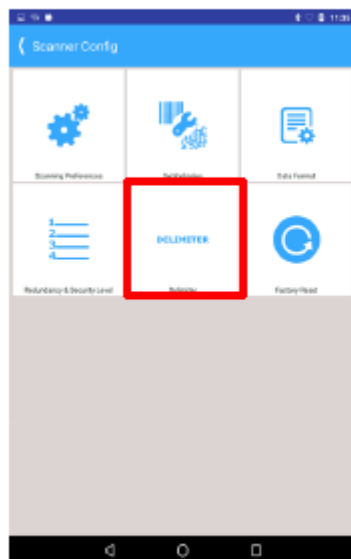
[Redundancy & Security Level Button]



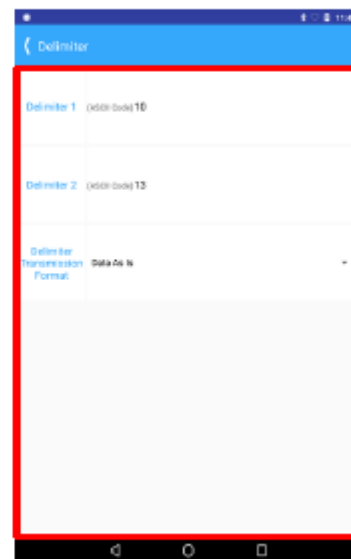
[Redundancy & Security Level set-up Menu]

4.2.5.5. Delimiter

Tap "Delimiter" to be set Delimiter



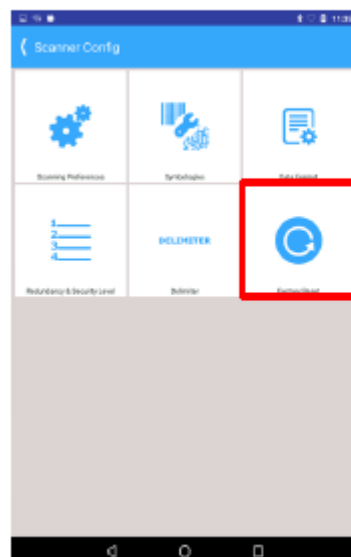
[Delimiter Button]



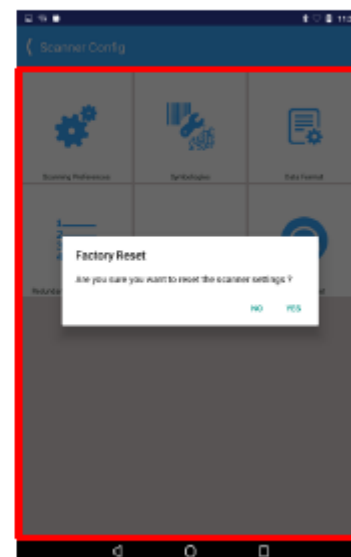
[Delimiter set-up Menu]

4.2.5.6. Factory Reset

Initialize scanner settings of the Device. Tap "YES" button to proceed.



[Factory Reset Button]



[Factory Reset confirmation]

4.3. Scan Tab

Tap "Scan" that read barcode and UHF Tag and display the scanned data.



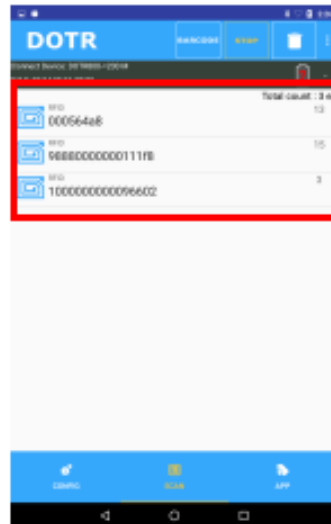
[Scan Tab]

4.3.1. RFID Button

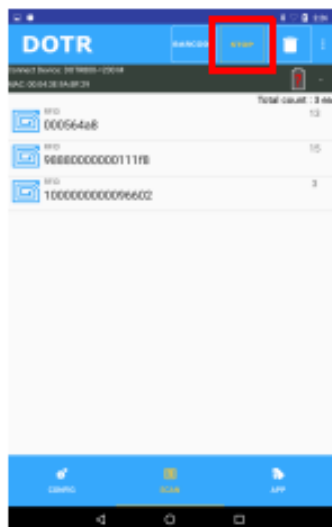
Tap "RFID" button to read the UHF RFID Tag around. Scanned Tags are updated to the list. It will show you number of rereading same tags and total reading number. When tap to "Stop" button, It will be stopped to read UHF RFID Tag.



[RFID Button]



[Tag Reading]



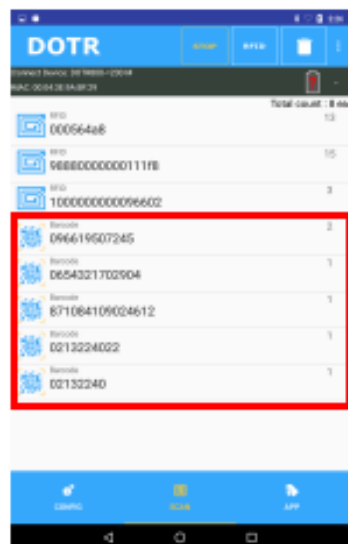
[Stop Button]

4.3.2. Barcode Button

Tap "Barcode" button to output Scanner Laser. When the Scanner Laser is aimed to the barcode, It can be read corresponding barcode. Scanned barcode is updated on the list and it will show you number of rereading barcode and total reading number. Just tap "Stop" button to stop operation.



[Barcode Button]



[Barcode Reading]



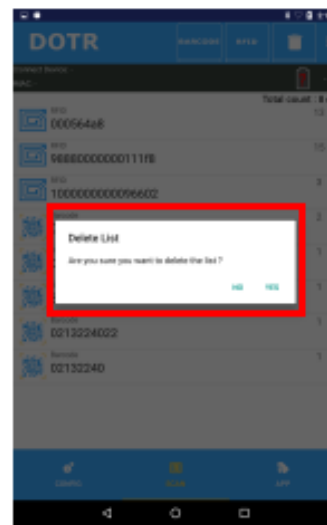
[Stop Button]

4.3.3. Delete Button

Tap "Delete" button and new window will appear to be confirmed "Delete". If yes, it will be deleted the selected list



[Delete Button]



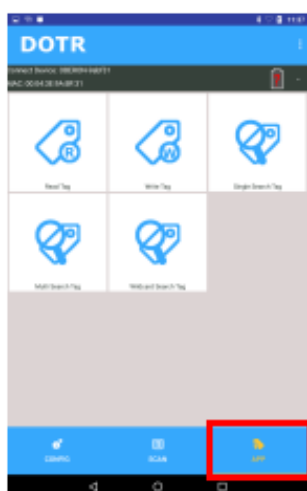
[Confirmation Delete]



[Delete]

4.4. App

"App" is menu to search for UHF RFID Tag Memory Read / Write / Tag.

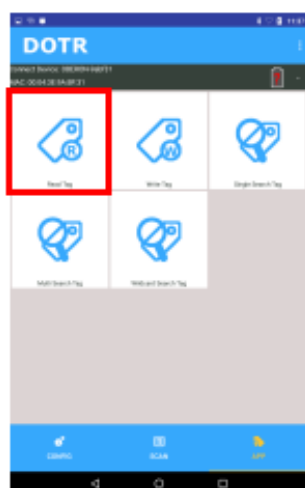


[App Tab]

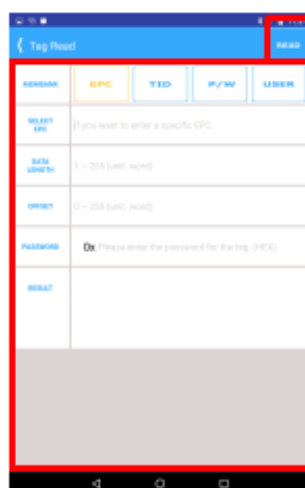
4.4.1. Read Tag

"Read Tag" is function to output data from reading memory of UHF RFID.

It can be read EPC / TID / Password / User in the memory as specified format.



[Read Tag Button]

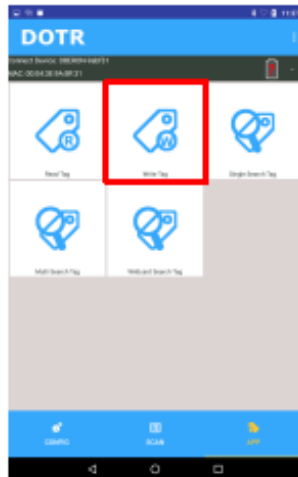


[Read Tag Menu]

4.4.2. Write Tag

"Write Tag" is a function to write data in the memory of UHF RFID Tag

Data can be written in the memory of EPC / PASSWORD / USER area according to the specified format.



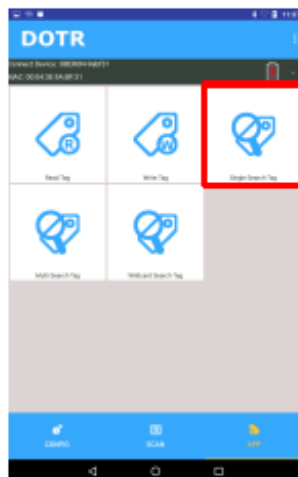
[Write Tag Button]



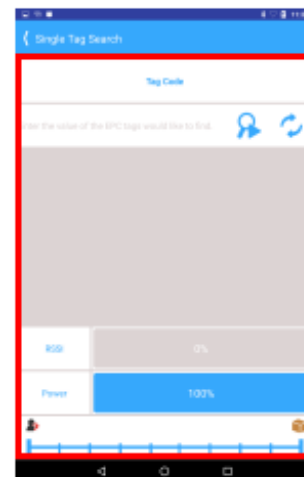
[Write Tag Menu]

4.4.3. Single Search Tag

Single Search Tag is a function to find the position of specified Tag while reducing TX Power.



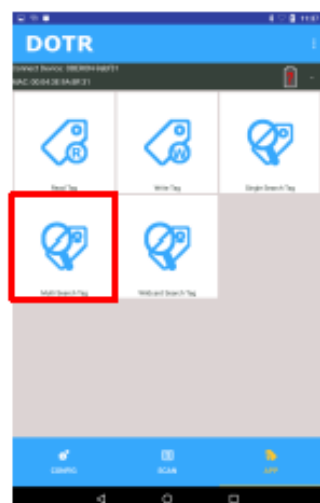
[Single Search Tag Button]



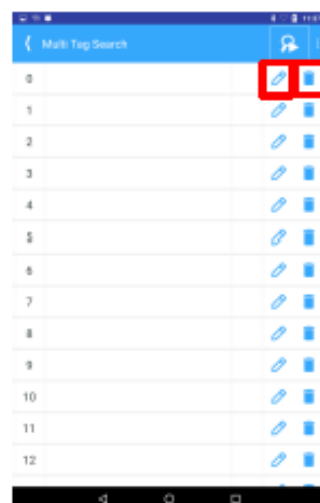
[Single Search Tag Menu]

4.4.4. Multi Search Tag

"Multi Search Tag" is a function to search for tags in the list up to 50 tags registered.



[Multi Search Button]



[Tag Add / Delete]



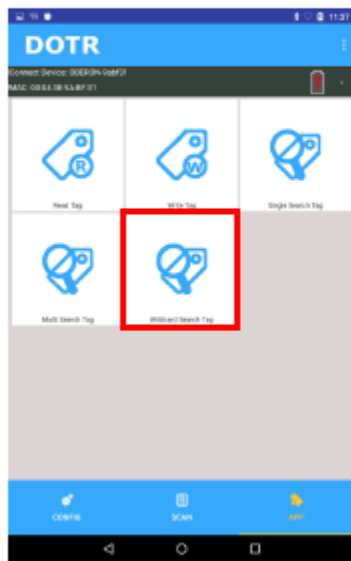
[Edit List]



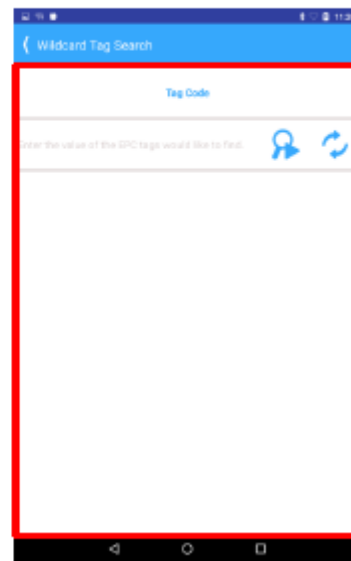
[Tag Search]

4.4.5. Wildcard Search Tag

"Wildcard Search Tag" is function to use *,? To search for specified tags.



[Multi Search Button]



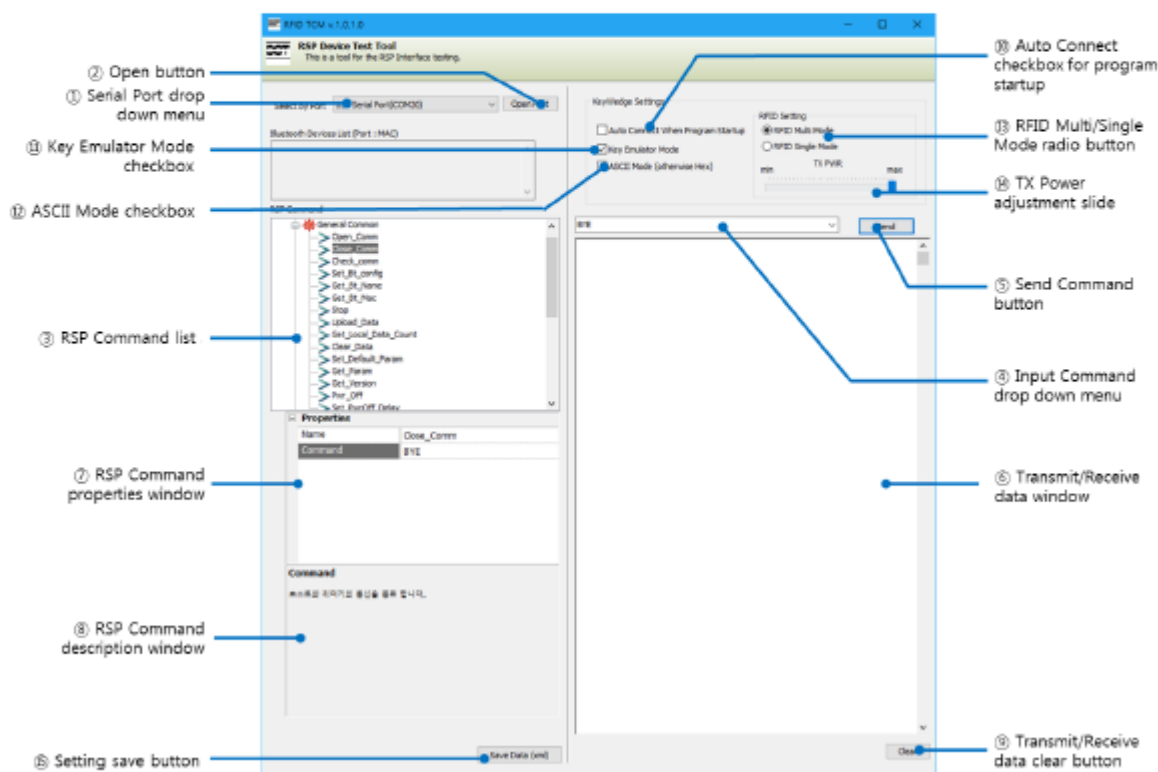
[Tag Add / Delete]

5. PC Test Program

5.1. Program Introduction

This program (RFIC_CMD) provides easy and simple test of Command (RSP Interface) required for device operation and Key Emulator function to use device as wired HID.

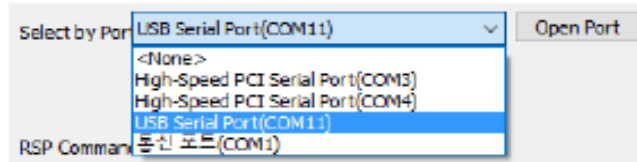
5.2. User Interface information



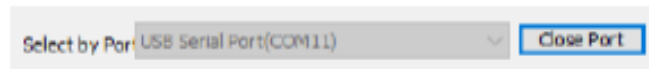
5.3. How to Use

- ① Select the serial port through the serial port drop down menu.

If it is connected via USB, Magconn™ cable, or Bluetooth, a port that can connect with the device program will be created. (The port number may differ from the illustration below)



- ② Press the Open button and the connection will be changed as shown below.
(Open Port button to Close Port button on)



- ③ You can select the command to transfer to device from RSP command list. Please refer to the "RSP Interface Programmers Guide" for command and detailed explanation.
- ④ You can input Command directly from the Input Command drop down menu.
[Note] You can use the Command only if the serial port is properly connected.
[Note] Program's General Commons > "Open_Comm" command must be executed first.
- ⑤ Commands can be sent to the device through the command transfer button.
- ⑥ You can check the result of command transmission /reception from "Transmit / Receive" window..
- ⑦ Through RSP command property window, ③ Properties for command selected in RSP command list are displayed. Parameter properties can be changed by the user.
- ⑧ Explanation of the command selected in the RSP command list is displayed through the RSP command description window..
- ⑨ Receive data window ⑥ Transmit / Receive data window can be cleared by the clear button.

- ⑩ When checked, it will automatically connect to the last connected serial port when executing the program, and send "Open_Comm" command to make it ready to send commands to the terminal.

When checking, data value of RFID or scanner is transferred to the currently active window (window with cursor)

[Note] The value may look different depending on the state of language. (Default: English)

When checked, RFID Tag value is converted into ASCII character and displayed. When cleared, it is displayed as HEX character.

[Note] If the RFID Tag value is not in ASCII format, it may be displayed as an invalid character.

- ⑪ Select RFID operation mode (Multi/Single).
When Multi Mode is selected, multiple tags are read while the RFID button is held down. When Single Mode is selected, only one tag is read.
- ⑫ Adjust the TX output of the RPT-100. The tag read distance is adjusted according to the TX output.
[Note] If TX output is too small, the RFID tag may not be recognized.
- ⑬ Save the current setting value of the program as XML.