

	<b>User Manual</b>	Date	2018-10-01
		Rev	1.4

# DOTR-3000

## User Manual



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## DOTR-3000 Introduction

This document provides information on using the DOTR-3000 functions and accessories. DOTR-3000 is a UHF (900MHz) RFID and Scanner Reader that quickly recognizes EPC Global Gen2 compliant RFID tags. The recognized results are transmitted to your smartphone, tablet, PC, etc. via USB and Bluetooth, both wired and wirelessly.

### Additional Relevant Manual

- RSP Interface Programmers Guide

### Service Information

If you have a problem with your equipment, please contact KCTNS support in your area. For contact information, please visit <http://www.dotel.com/company/contact.asp>

You should have the following information ready when you contact support:

- Serial number of the equipment (Displayed on product label)
- Product name or model name(Displayed on product label)

KCTNS will respond to your inquiries by e-mail, telephone or fax within the time limit specified in the support contract.

If KCTNS Support is unable to resolve your issue, you may need to return your equipment to receive service. In these cases, specific instructions are provided. KCTNS shall not be liable for any damages incurred during carriage unless approved transport packaging is used. Improper shipment of the equipment may invalidate the warranty.

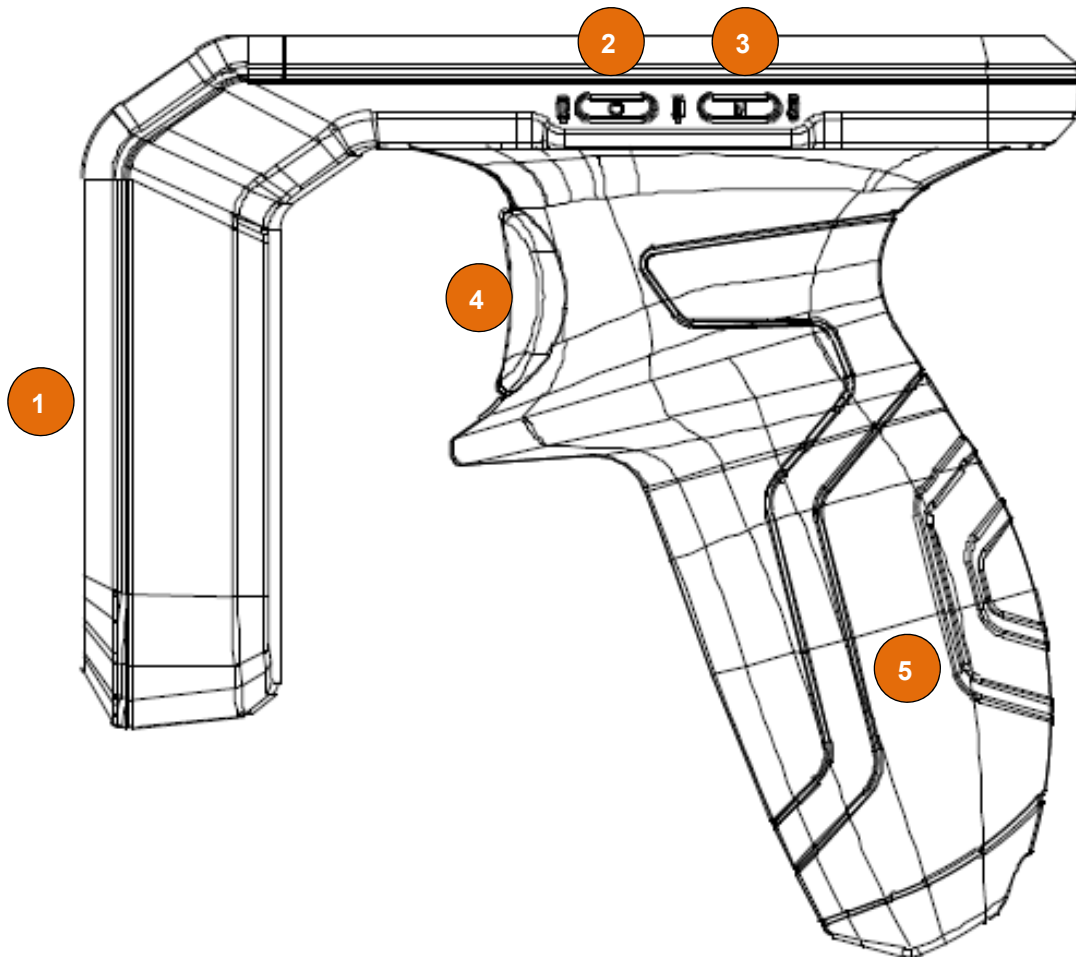
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## Technical Specifications

Item		Description
RFID	Reader Chip	Impinj R-2000 chipset
	Frequency	UHF 900MHz (902.75 ~ 927.25 MHz)
	Protocol	EPC Global Gen2 ISO 130000-6C
	Output	TBD
Communication	USB	USB Type C / USB to Serial Communication
	Bluetooth	Bluetooth v4.1(Classic + Low Energy) 2402 ~ 2480 MHz
	HID	HID support
	LED	LED(Charge / Power / Sync / Status)
	Button	Power, Mode
	Buzzer	Max, Min, Mute
etc.	Size	70 x 139 x 115.8 / Option 70 x 129 x 115.8mm (W x H x D)
	Battery	3,350 mA, 3.6V Li-ion
	Drop	1.5M
	Adaptor	5V / 2A
	Waterproof	IP52
	Weight	1W, 250mW : 338g

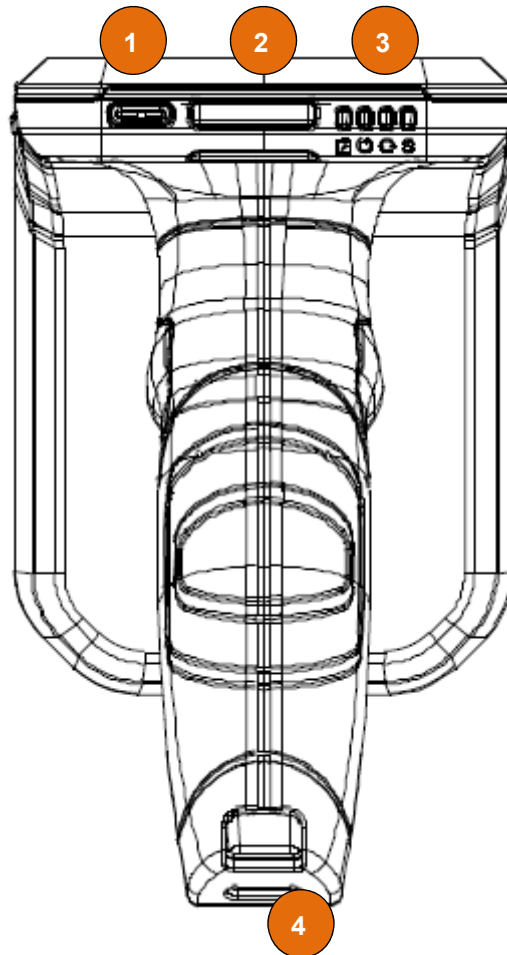
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## Main Parts



1. UHF RFID Antenna
2. Power Key
3. Mode Key
4. Trigger Key
5. Gun Grip / internal battery

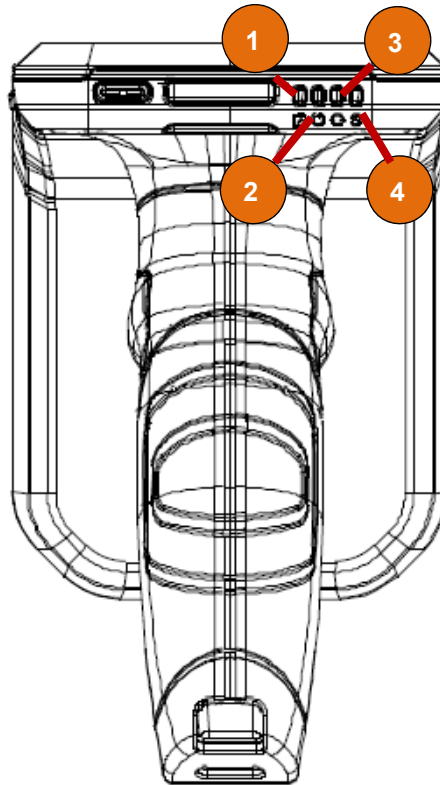
## Main Parts



1. USB type-C Charge Slot
2. Hand Strap Slot
3. LED Status
4. Strap Slot

**Note :** Battery replacement only available by Manufacturer.

## Main Parts



	Main Parts	Status	LED
LED	① Charge	Charging	● RED
		Fully Charged	● GREEN
	② Power	Power On	● RED
		Low Battery	● RED Blink
		Bluetooth Pairing	● GREEN
		Low Battery while Bluetooth Paired	● GREEN Blink
		PC USB Connection	● ORANGE
		Low Battery while connected to PC USB	● ORANGE Blink
	③ Mode(Sync)	SPP Connection for Bluetooth Pairing	● RED
		HID Connection for Bluetooth Pairing	● GREEN
		App Connection for Bluetooth Pairing	● ORANGE
		USB Connection	● ORANGE
		Low Battery while connected to USB	● ORANGE Blink
	④ Status	UHF RFID Ready	● RED
		Barcode Scan Ready	● GREEN



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**Note :** At 10% Battery, a beep sound occurs every 70 seconds. At 5% and below, a beep sound occurs every 7 seconds. At 0% Battery, Protection Mode is enabled.

- Protection Mode : At 0% Battery, the device and its LEDs are all turned off automatically.
- DOTR-3000 will not turn on when fully discharged (Protection Mode).

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## DOTR-3000 Power On/Off

### Power On

1. Press and hold 'Power key' for approximately 2 seconds while device is power off.
2. DOTR-3000 will power on.

**Note :** In case you are not able to power on DOTR-3000, please follow the next step.

- In order to power on DOTR-3000, it must be charged adequately. Charge first.

### Power Off

1. Press and hold 'Power key' for approximately 2 seconds while device is powered on.
2. DOTR-3000 will power off.

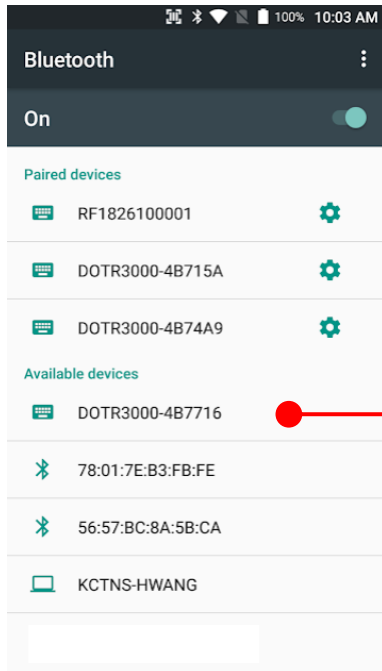
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## Gun Trigger

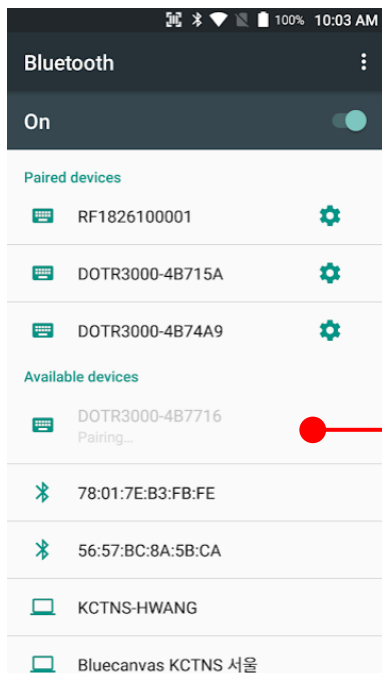
### Trigger

**Note :** DOTR-3000 needs to be connected to HID, Bluetooth or PC Program for the trigger to function accordingly. The trigger of a powered-on DOTR-3000 without any connection will not operate UHF RFID features.

## HID Basic Operation

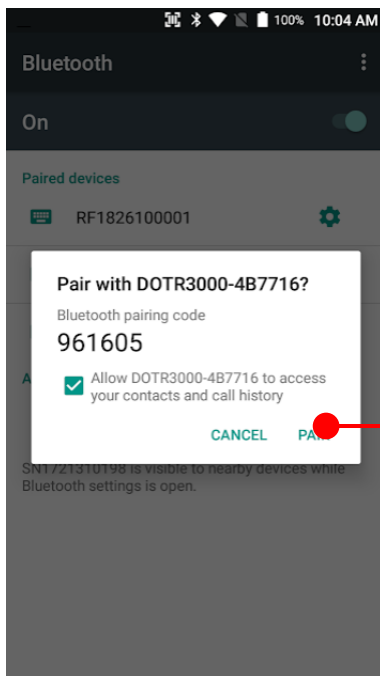


- Press "DOTR3000-XXXXXX"

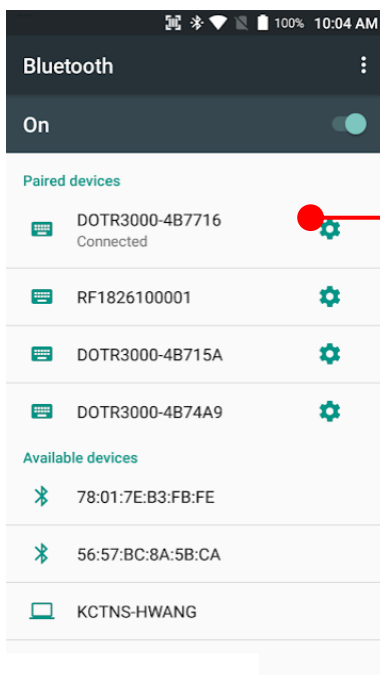


- Registering the DOTR-3000

## HID Basic Operation



- Tap "PAIR"



- Check for "Connected" below the DOTR-3000

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## Android Bluetooth

### Android Connection

**Note :** HID does not operate while the DOTR-3000 is connected to Android Application.

- Connecting PC USB while Bluetooth paired will disconnect the Bluetooth pairing of DOTR-3000.

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## Basic operation for Android application

### 1. ANDROID TEST PROGRAM

This article will explain how to use the Android application for DOTR-3000.

#### 1.1. Config Tab

Config Tab is a for device connection and UHF RFID configuration



[Config Tab]

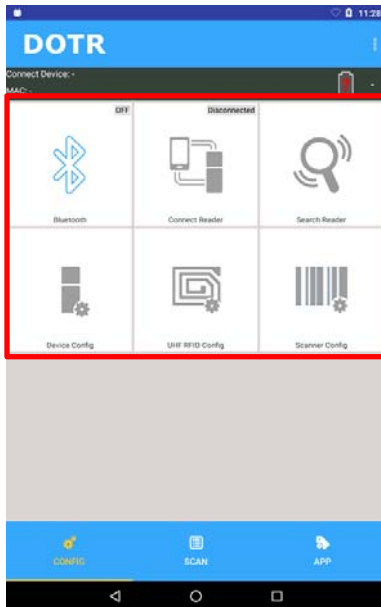
**Note :** Opening the Application will automatically re-connect to the device from the last session.

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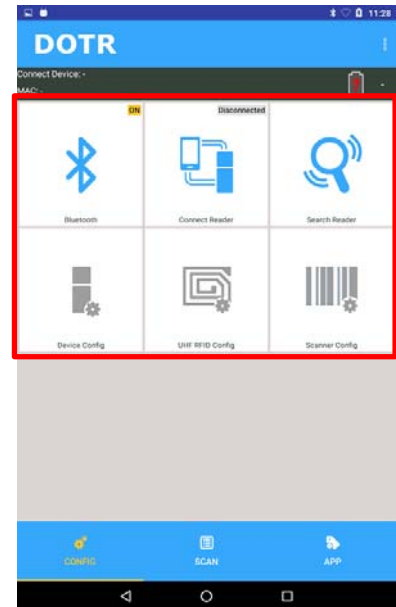
### 1.1.1. Bluetooth

If the Bluetooth on the Android device is Off, only the Bluetooth button becomes active. Pressing the button will turn on Bluetooth.

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



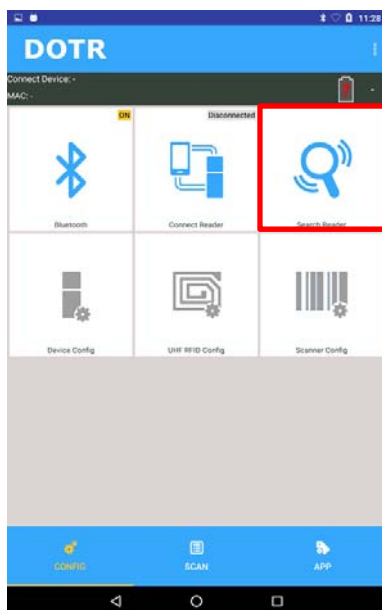
[Bluetooth Off]



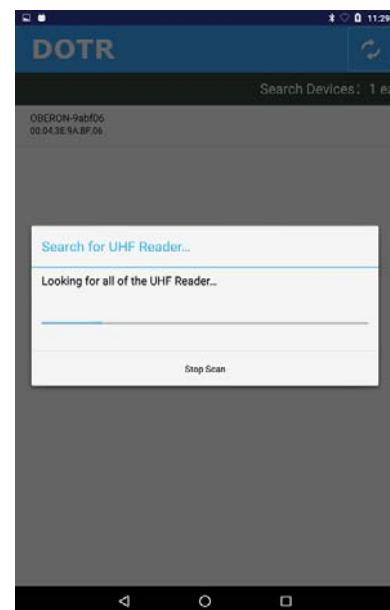
[Bluetooth On]

### 1.1.2. Search Reader

Press "Search Reader" Button to search device. Device search begins as the button is pressed.



[Search Reader Button]



[Search Devices]



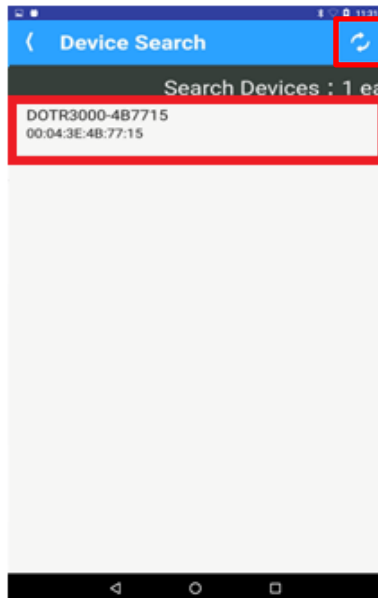
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### 1.1.2.1. Search Reader – Device connection

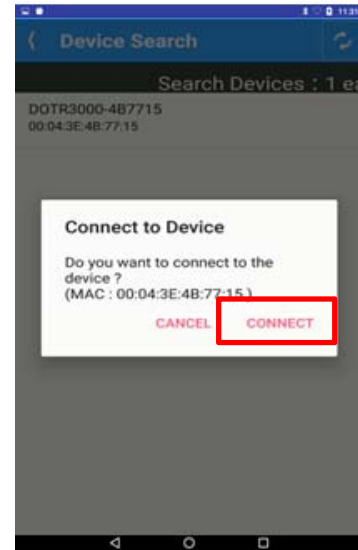
After the device search is finished, devices found will be displayed on the list. Select the device in need of connection.

Press "Connect" Button to connect with device or Click the "Cancel" Button to close the window.

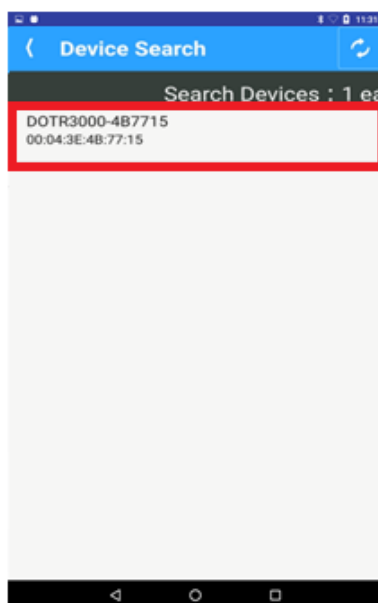
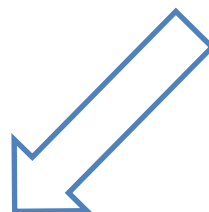
Press the button at the top right to search for devices.



[Before connecting to device]



[Confirm device connection]

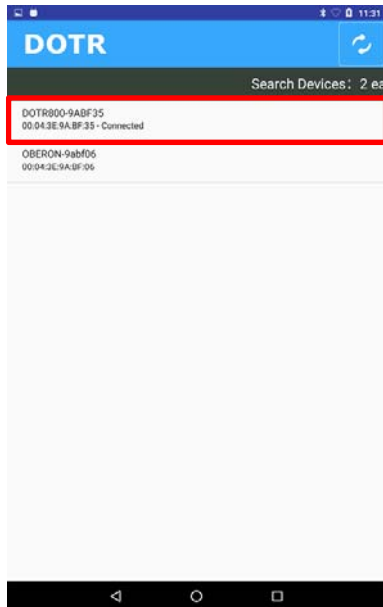


[Status of connection]

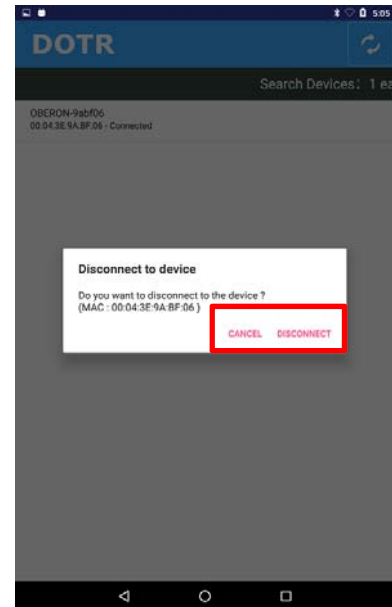
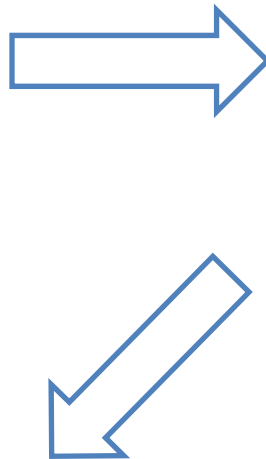
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### 1.1.2.2. Search Reader – Disconnection

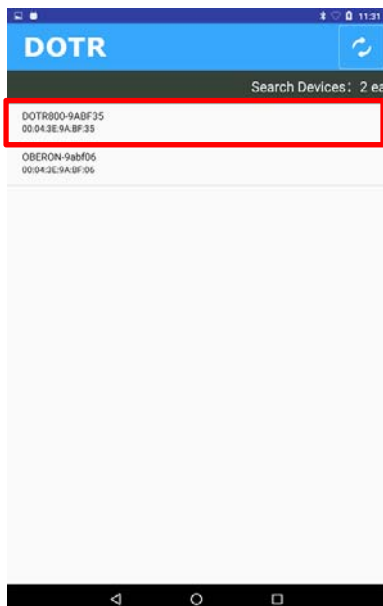
Select the "Connected" device on the Device List. A window will appear asking confirmation to disconnect. Click "Disconnect" to disconnect.



[Status of connection ]



[Confirm to disconnect]

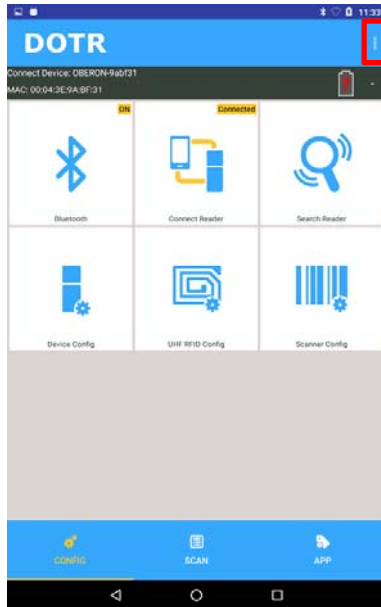


[Status of Disconnection]

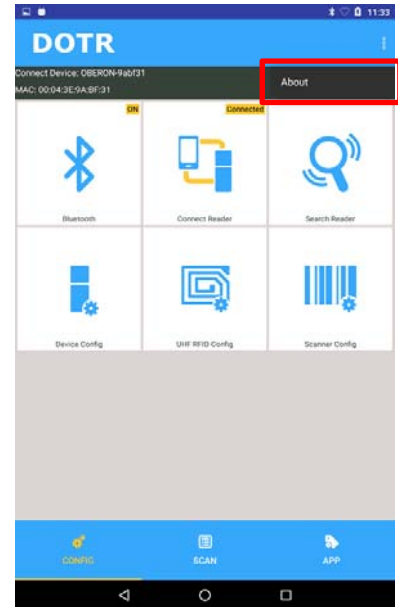
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### 1.1.3. About

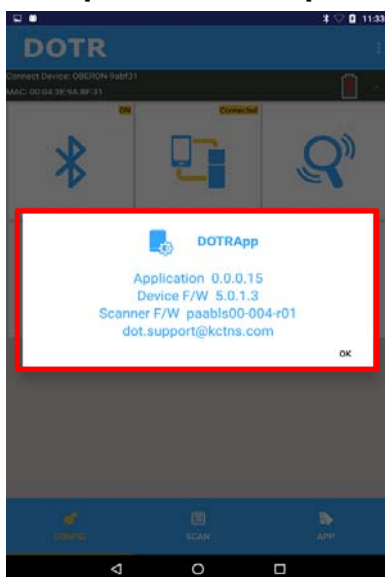
The current version of the application and device can be checked. Click on "Sub Menu" button on the upper right. Click on "About" for Application Version and Device Version.



[Sub Menu Button]



[About Button]

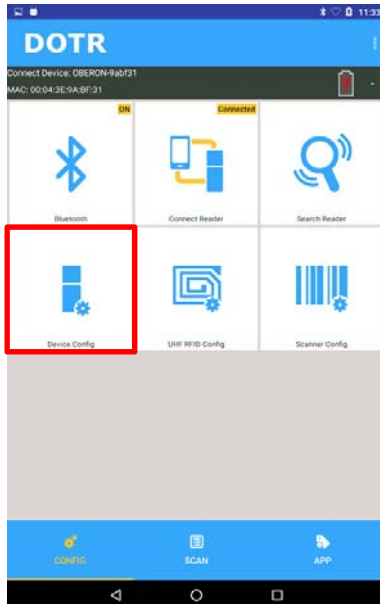


[Information]

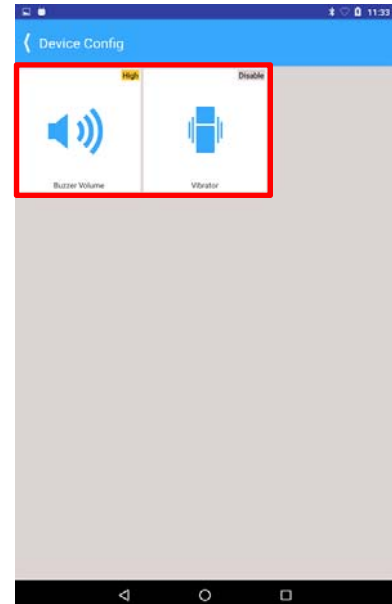
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### 1.1.4. Device Config

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



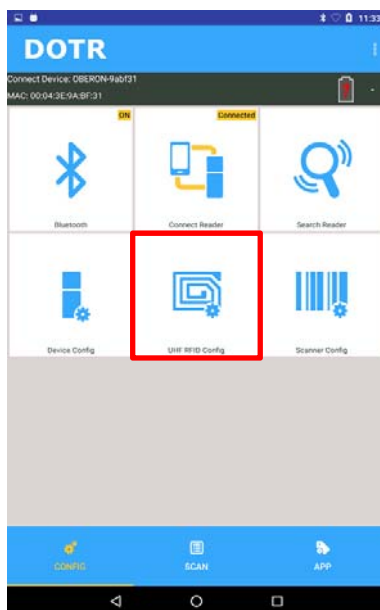
[Device Config Button]



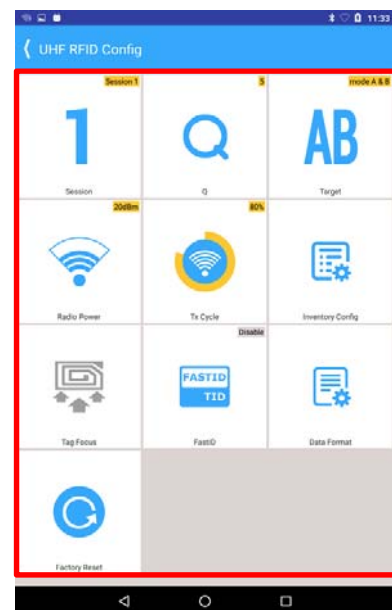
[Device Config Menu]

### 1.1.5. UHF RFID Config

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



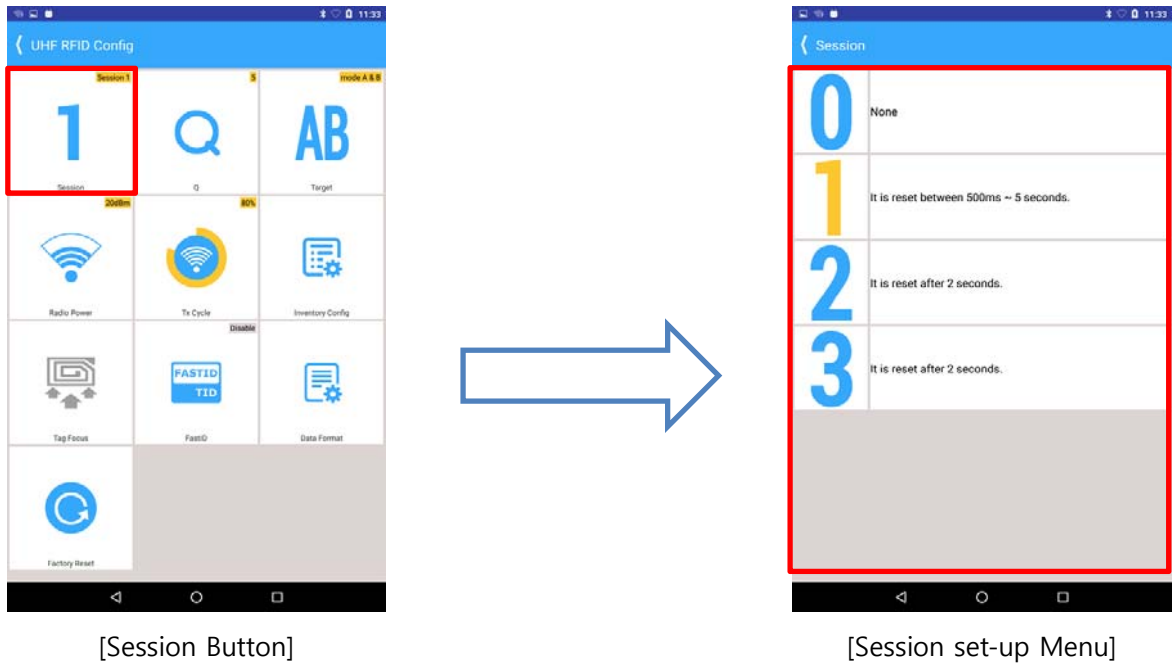
[UHF RFID Config Button]



[UHF RFID Config Menu]

1.1.5.1. Session

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



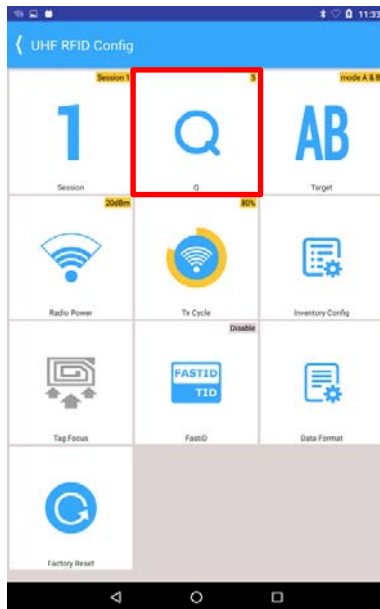
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### 1.1.5.2. Q

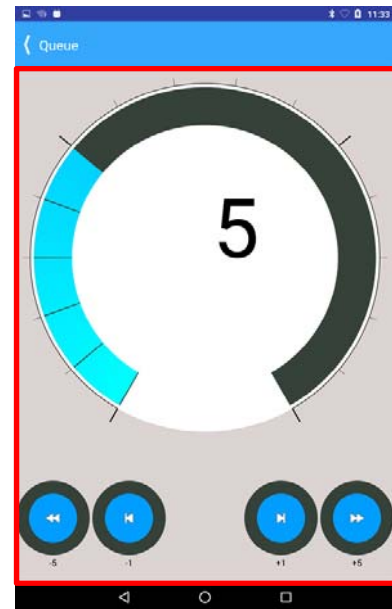
You can change the UHF RFID Q settings of the device from (0 to 15).

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]



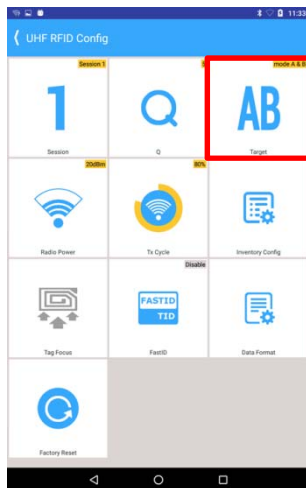
[Q set-up Menu]

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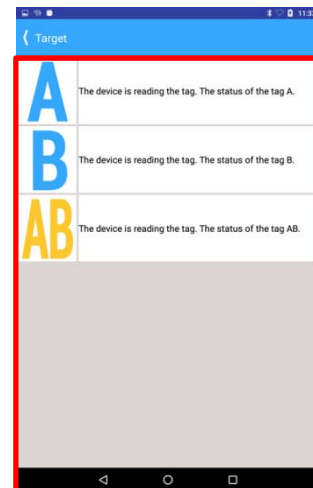
### 1.1.5.3. Target

Change the device UHF RFID Target settings (A, B, AB).

Set the Inventory Flag of the tag to be read. A mode is best option for Multi Reading, and AB is the best option for quick single reading.



[Target Button]



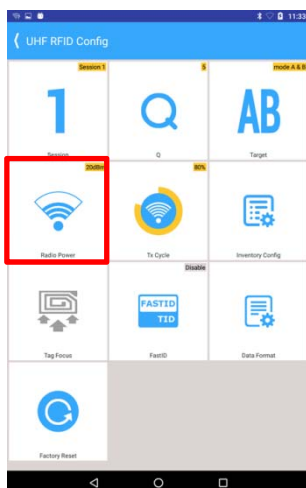
[Target Set-up Menu]

### 1.1.5.4. Radio Power

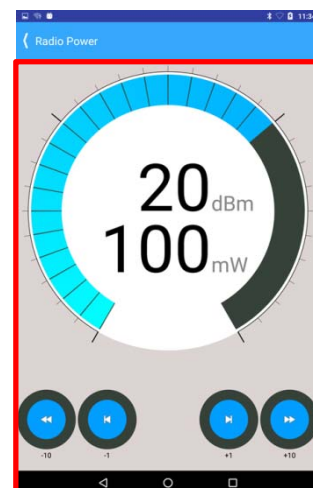
It can be changed UHF RFID TX Power of the device (30dBm ~ 0dBm).

Reading distance is adjustable to TX power level.

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



[Radio Power Button]



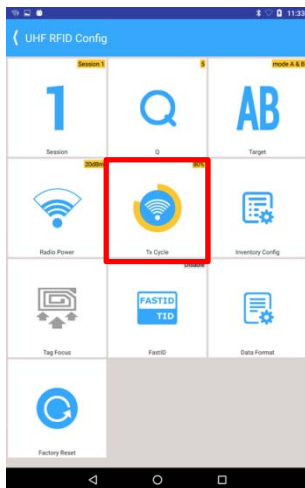
[Radio Power set-up Menu]

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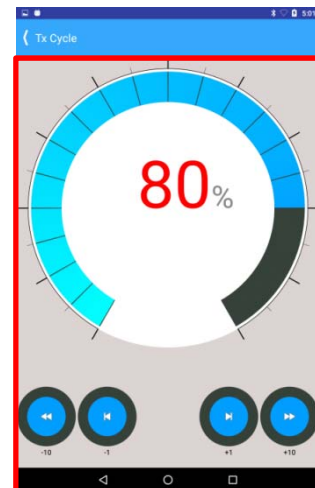
### 1.1.5.5. TX Cycle

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

Set up reading speed for the tag. Higher cycle rate increases reading speed for tag but the battery consumption is increased. Recommended setting is below 40%.



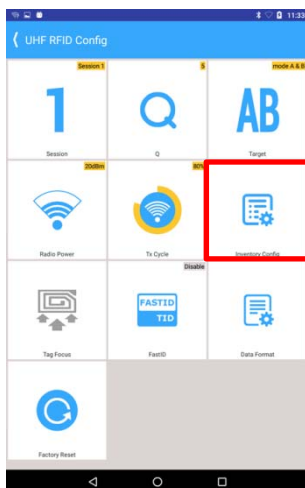
[Tx Cycle Button]



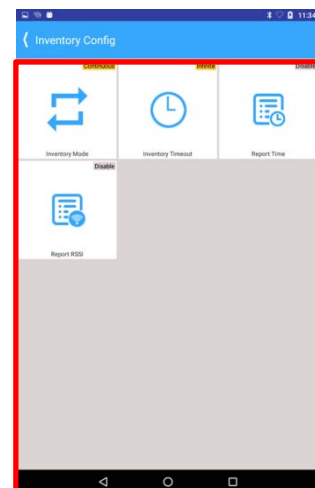
[Tx Cycle set-up Menu]

### 1.1.5.6. Inventory Config

Configuration for reading UHF RFID Tag



[Inventory Config Button]



[Inventory Config Menu]

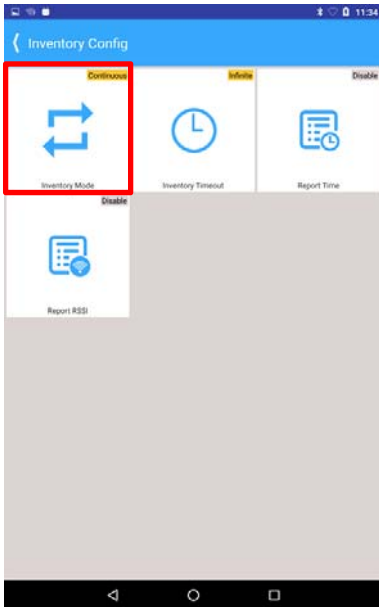


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### 1.1.5.7. Inventory Mode

Setting for UHF RFID Tag Reading Mode (Continuous or Single).

In Single mode, device will stop reading after 1 tag is read.

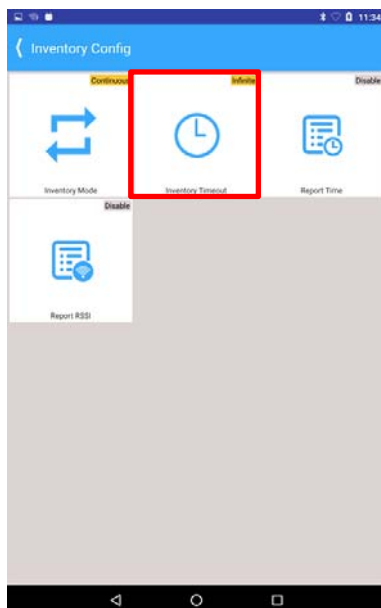


[Inventory Mode Button]

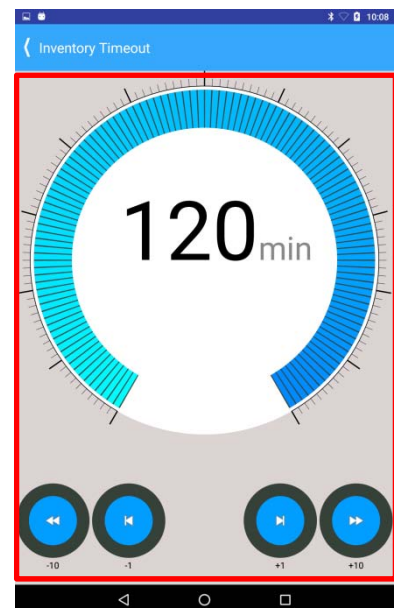
### 1.1.5.8. Inventory Timeout

Setting for UHF RFID Tag Reading Time. (Unlimited ~ 120min)

Tag read will stop when timer reaches 0. Setting the timer to 0 will allow unlimited time for tag reading.



[Inventory Timeout Button]



[Inventory Timeout set-up Menu]

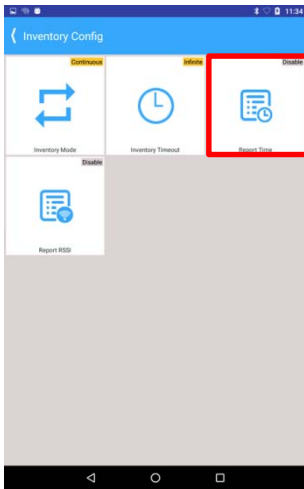
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### 1.1.5.9. Report Time

Setting for Read Time output when UHF RFID Reading takes place. (Enable / Disable)

Read time of the Tag will be transmitted based on the time the reader started reading.

If enabled, same tags will be read with different value.



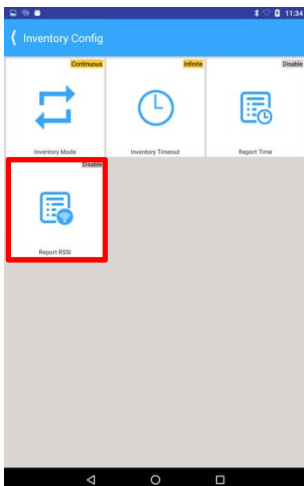
[Report Time Button]

### 1.1.5.10. Report RSSI

Setting for RSSI (Received Signal Strength Indication) when UHF RFID Reading takes place. (Enable / Disable)

Tag distance based on the reader will be transmitted.

If enabled, same tags will be read with different value.



[Report RSSI Button]

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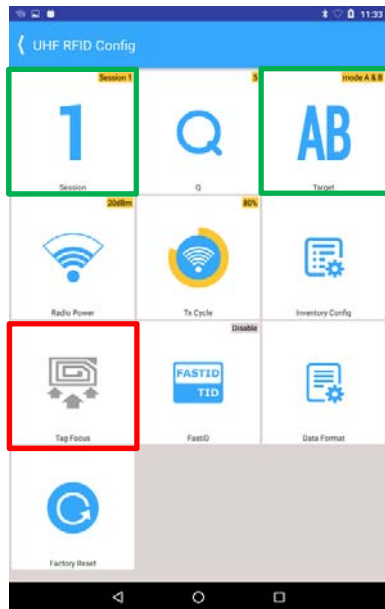
### 1.1.5.11. Tag Focus

Setting for Tag Focus function. (Enable / Disable)

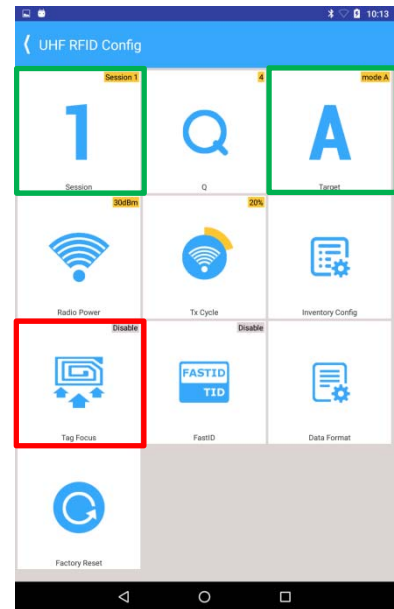
Only applicable for Impinj® Monza Series and Tag Focus enabled Tags.

Available when the device setting is on Session 1 / Target A Mode.

Tags are read once, enhancing Multi Reading for various tags.



[Tag Focus Button(Inactive)]

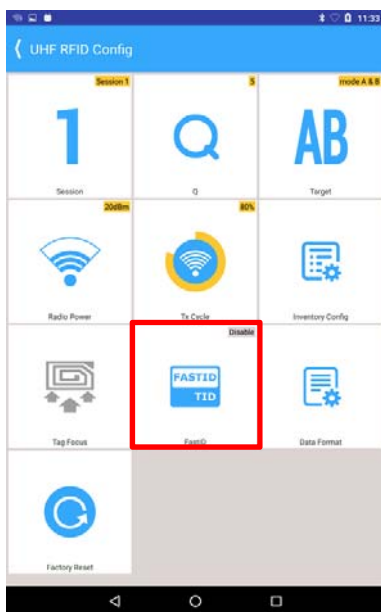


[Tag Focus Button(Active)]

### 1.1.5.12. Fast ID

Setting for FastID function. (Enable/Disable).

This mode improves inventory check time based on TID while getting TID value during inventory.

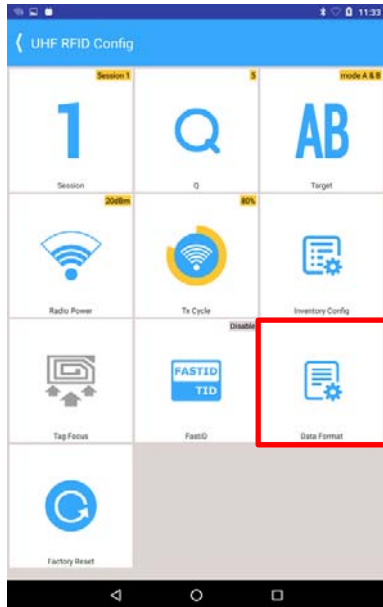


[FastID Button]

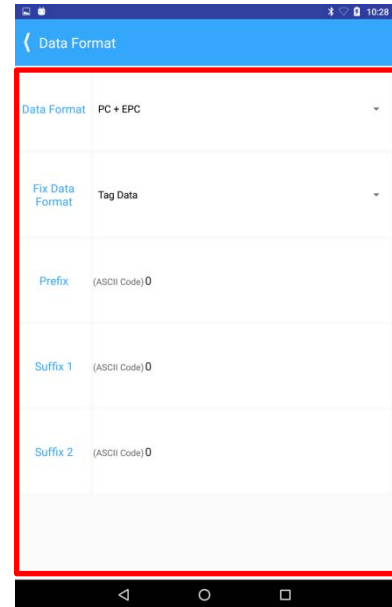
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### 1.1.5.13. Data Format

Setting for Data Format Output of UHF RFID Tag Reading.



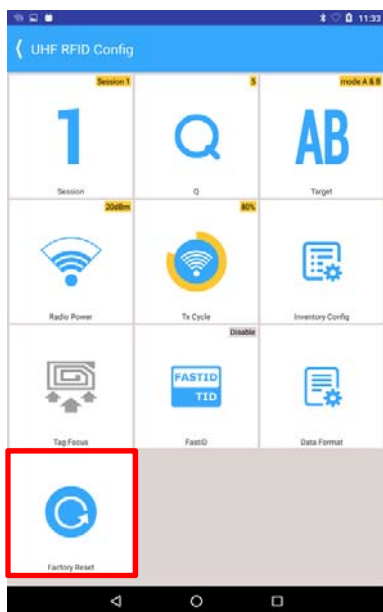
[Data Format Button]



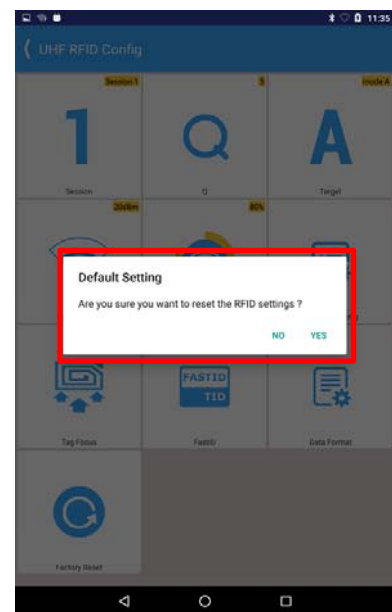
[Data Format set-up Menu]

### 1.1.6. Factory Reset

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



[Factory Reset Button]

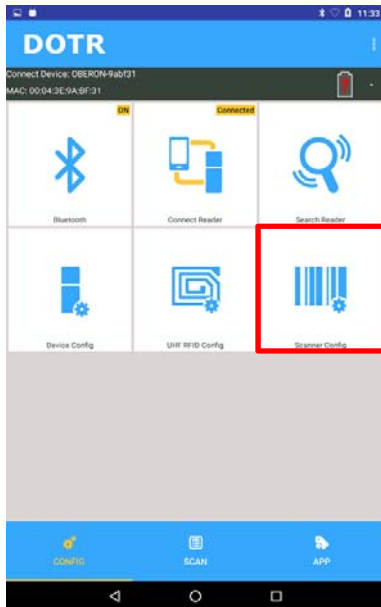


[Factory Reset Window]

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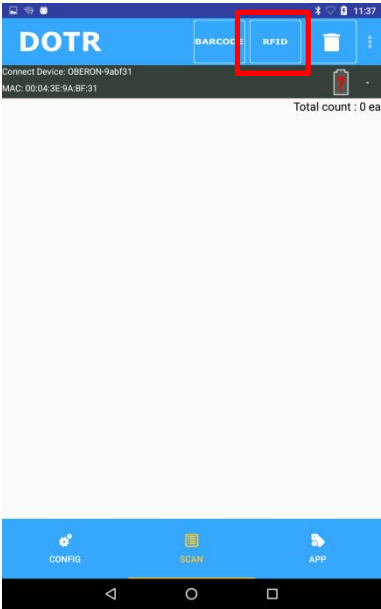
### 1.1.7. Scanner Config

If you are connected to DOT-PM80, pressing "Scanner Config" will pop up the scanner setup window on your device and will be disabled on connection to another device.

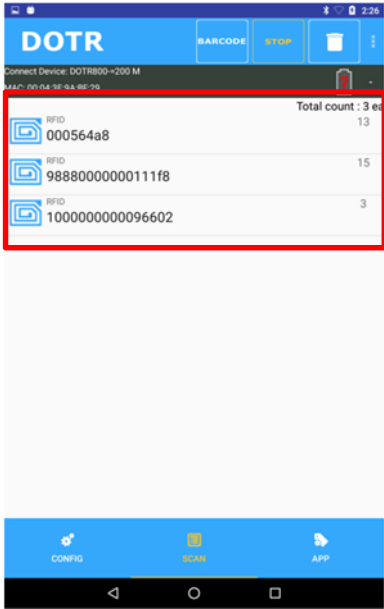


1.1.8. RFID Button

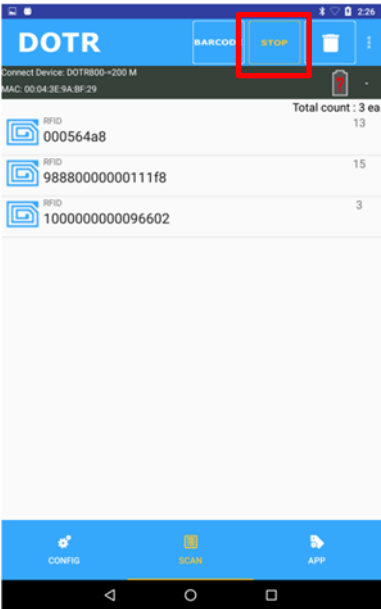
Tap "RFID" button to read the UHF RFID Tag around. Scanned Tags are updated on the list. Re-read counts and total count are shown on the right side. Press "Stop" button to stop UHF RFID Tag Reading.



[RFID Button]



[Tag Reading]

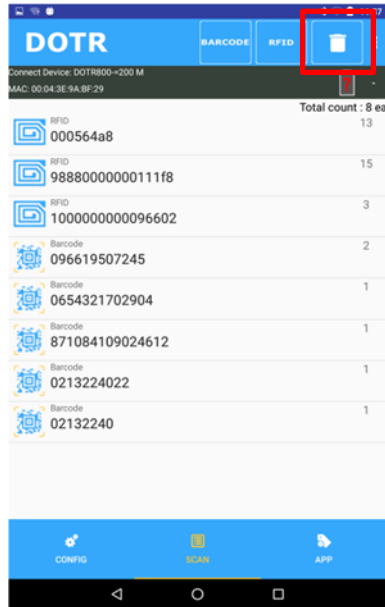


[Stop Button]

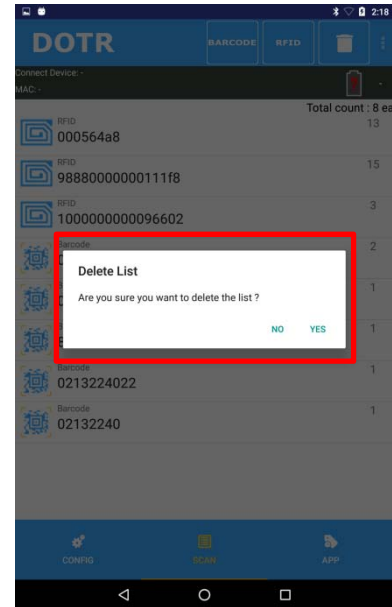
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### 1.1.9. Delete Button

To delete the list, tap the "Delete" icon. Tap "YES" to proceed with deletion.



[Delete Button]



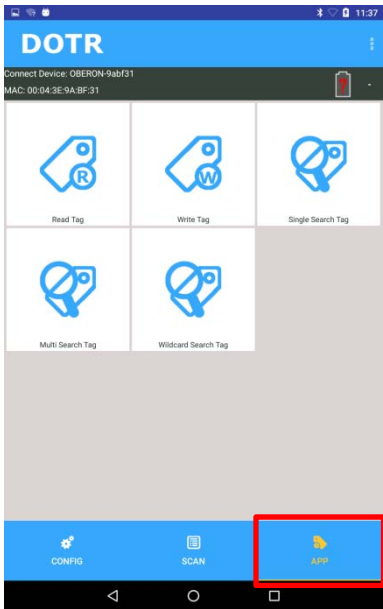
[Confirmation Delete]



[Delete]

1.2. App

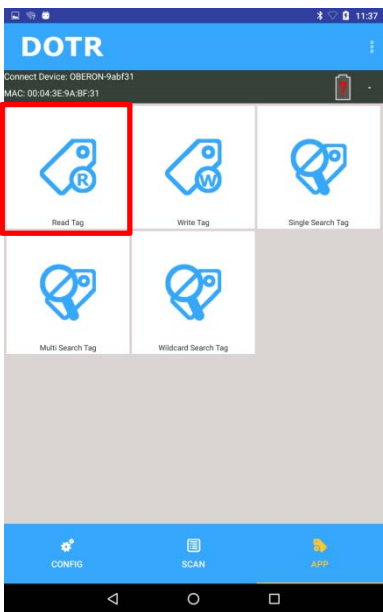
“App” menu provides search feature for UHF RFID Tag Memory Read / Write / Tag.



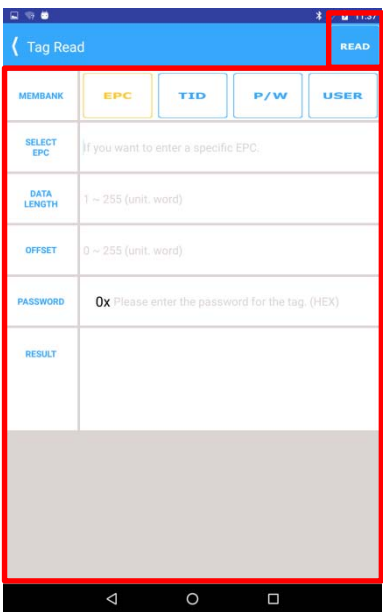
[App Tab]

1.2.1. Read Tag

“Read Tag” function enables memory data reading of UHF RFID Tag.  
EPC / TID / PASSWORD / USER data are read according to their format.



[Read Tag Button]



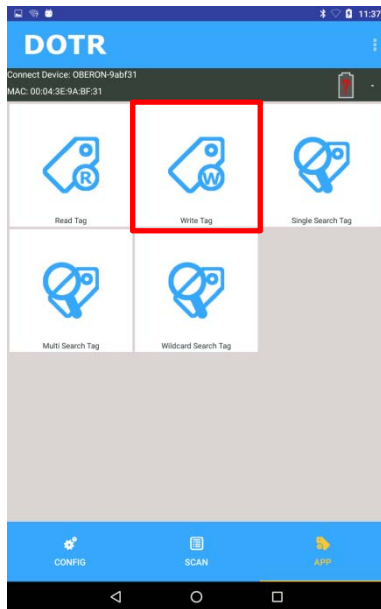
[Read Tag Menu]



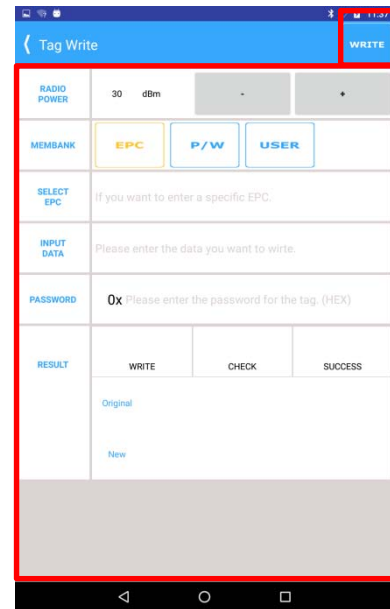
## 1.2.2. Write Tag

"Write Tag" function enables memory data writing of UHF RFID Tag

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



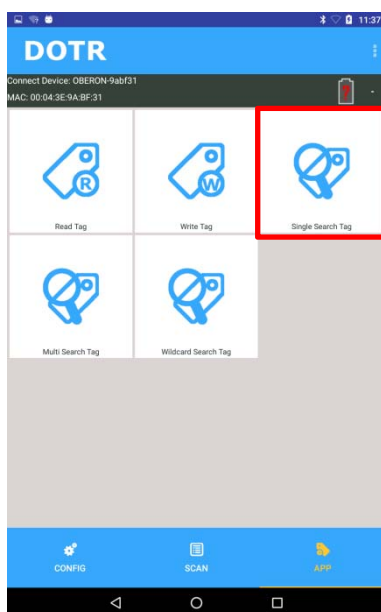
[Write Tag Button]



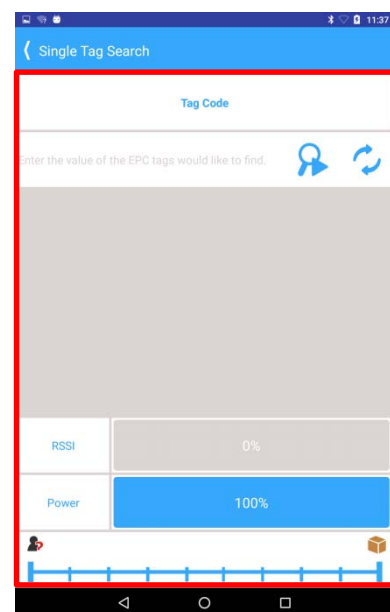
[Write Tag Menu]

## 1.2.3. Single Search Tag

Single Search Tag function enables tracking of specific Tag while reducing TX Power.



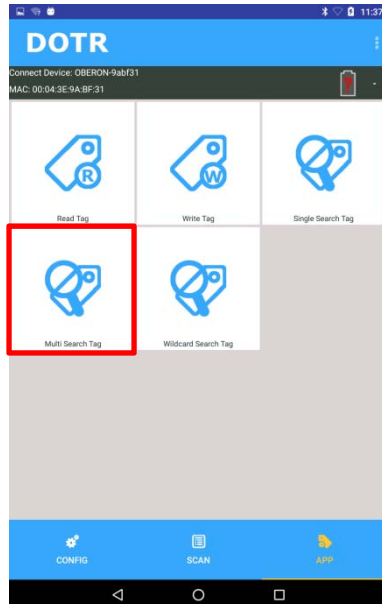
[Single Search Tag Button]



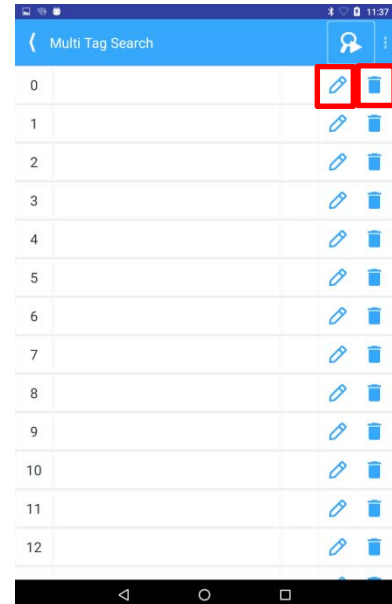
[Single Search Tag Menu]

## 1.2.4. Multi Search Tag

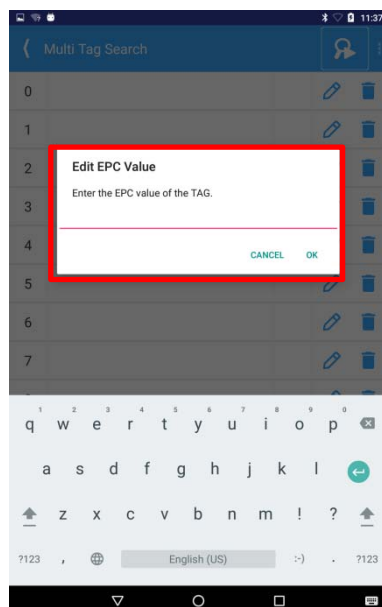
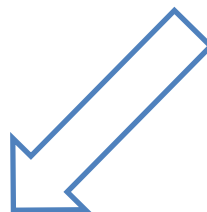
"Multi Search Tag" function enables search for registered tags. (up to 50)



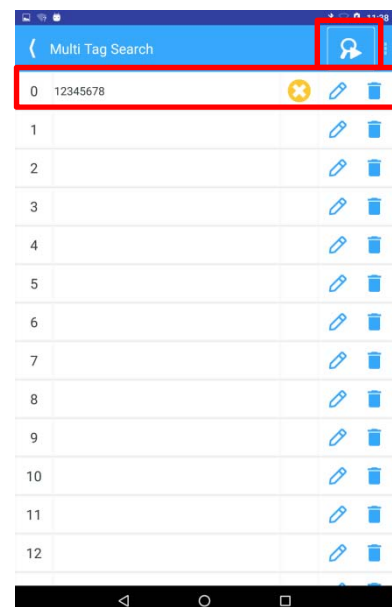
[Multi Search Button]



[Tag Add / Delete]



[Edit List]

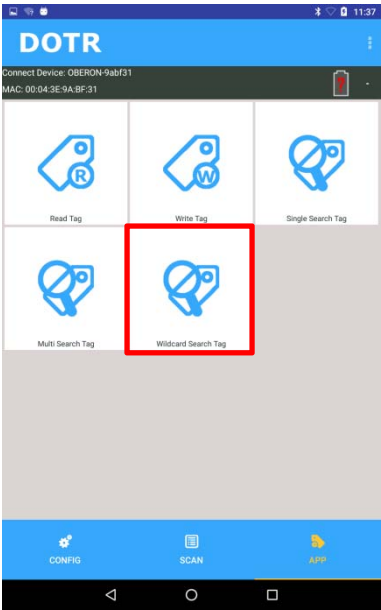


[Tag Search]

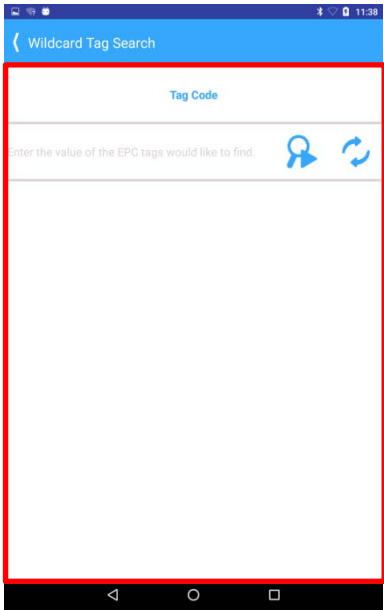
## 1.2.5. Wildcard Search Tag

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“Wildcard Search Tag” function enables the use of \*,? wildcards to search for specific tags.



[Multi Search Button]



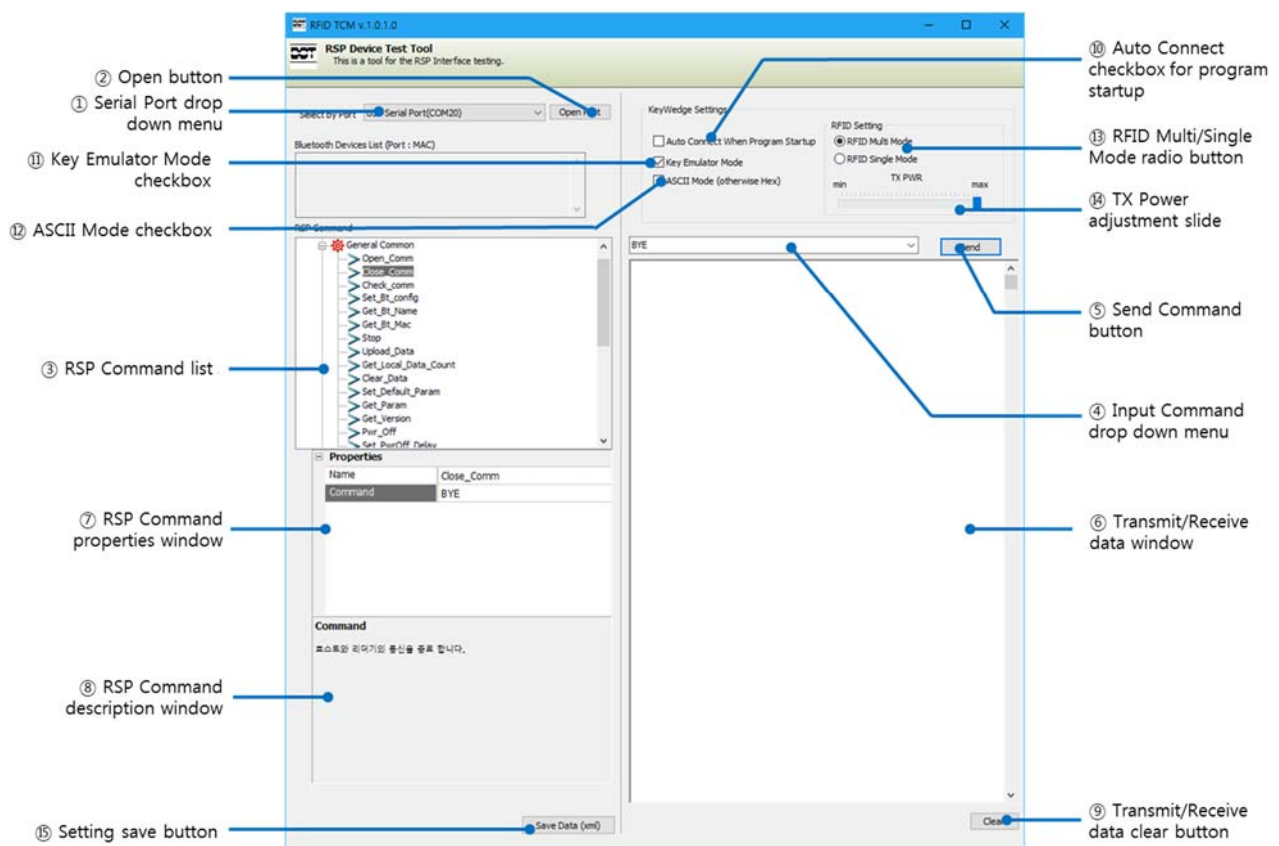
[Tag Add / Delete]

## 2. PC Test Program

### 2.1. 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.

### 2.2. User Interface information

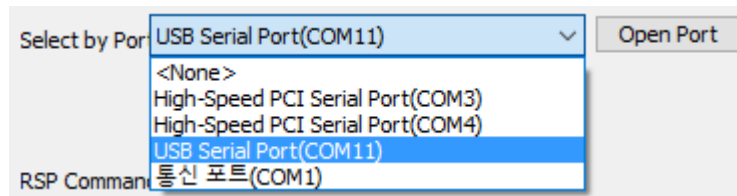


① Serial Port Drop Down Menu	② COM Port Open Button
③ RSI Command List	④ Input Command Drop Down Menu
⑤ Send Command Button	⑥ Transmit/Receive Data Window
⑦ RSP Command Properties Window	⑧ RSP Command Description Window
⑨ Transmit/Receive Data Clear Button	⑩ Auto Connect Checkbox
⑪ Key Emulator Mode Checkbox	⑫ ASCII Mode Checkbox
⑬ RFID Multi Mode	⑭ TX Power Adjustment Slide
⑮ Setting Save Button	

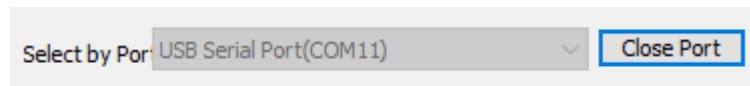
## 2.3. How to Use

- 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.

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- 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 DOTR-3000. 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.

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This device comply with part15 of FCC rules.

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device & its accessories must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Part15.21 statement

Changes or modifications not expressly approved by the manufacturer (or party responsible) for compliance could void the user's authority to operate the equipment.

RF Exposure

This device complies with RF exposure requirement.