



UHF RFID Reader

**RF88**

User Manual

# Instruction

RF88 is a UHF RFID reader for various host devices. This manual provides information about basic features and using the RF88. Please read this manual carefully before using your reader and peripherals to ensure safe and proper use.



**Note:** Screenshots in this manual may differ from actual screens.

## Revision History

Revision	Date	Description
v1.0	Dec 21 2023	Initial release
v2.0	Feb 28 2024	Changed RF88 figures to the no bracket assembled Added more host device installation guides Updated RFID Control description (BT pairing dialog, Wedge settings, etc.) Updated LED indicator operation
v2.1	Mar 22 2024	Changed back cover (Updated company address)
v3.0	Jul 04 2024	Added new host device, PM90-related description (connect mode, install, etc.) Updated RFID Control (V2) Application chapter Removed unsupported Tool descriptions Change the term "Wired" to "Wire"

## Related Documents

You can see the following guides related to RF88 in [Point Mobile Knowledge Base](#) (Account is required).

- RFID Control (V2) User Guide

# Introduction

---

## RF88 SKUs

The contents of this manual can cover the following SKUs.

Part Number	Region	RFID Engine	Sled Bracket
RF88-00Rx-2	EU/UK	IDRO900ME-L-EU/US/KR	<i>(Depending on 'Rx' of part number)</i> 'R5' – PM84/95 bracket 'R6' – PM86 bracket 'R8' – PM85 bracket 'R9' – PM90 bracket
RF88-00Rx-5	US/KR	IDRO900ME-L-EU/US/KR	
RF88-00Rx-7	JP	IDRO900ME-L-JP	

# Table of Contents

---

- INSTRUCTION ..... 1**
  - Revision History ..... 1
  - Related Documents ..... 1
  - RF88 SKUs..... 2
  
- GETTING STARTED ..... 6**
  - Device Parts ..... 6
  - Product Standard Accessories..... 7
  - Replace the Battery ..... 8
  - Charge the Device ..... 9
    - Charging temperature ..... 9
    - Charge with AC adaptor..... 9
    - Charging with Cradle..... 10
  - Turn on/off the Device ..... 10
  - Status Indication ..... 11
  - Sled Bracket Replacement ..... 13
  - Host Device Installation ..... 14
    - PM85 Installation..... 14
    - PM86 Installation..... 15
    - PM84 Installation..... 16
    - PM95 Installation..... 17
    - PM90 Installation..... 18
  
- RFID CONTROL (V2) APPLICATION ..... 20**
  - Introducing RFID Control ..... 20
    - Installing RFID Control (V2) ..... 20
    - Exploring RFID Control (V2) ..... 21
  - Connecting a Reader and Host Device ..... 23
    - Bluetooth Connection..... 23
    - Wire Connection..... 27
    - Disconnect ..... 28

# Table of Contents

---

- Reconnect ..... 28
- RFID Reader Information ..... 29
- Applying Configurations ..... 31
  - Setting up directly..... 31
  - Setting up using JSON..... 33
  - Export Configurations..... 34
  - Reset Configurations..... 35
- Updating Firmware ..... 36
  - Check items ..... 36
  - Update..... 36
- Demonstrating RFID reading ..... 38
  - Rapid Read Demo..... 38
  - Reading Demo ..... 39
- CONFIGURATIONS ..... 40**
  - Configuration ..... 40
    - RFID Settings..... 40
    - Hardware settings ..... 42
  - Profile ..... 44
    - Accuracy mode ..... 44
    - Fastest mode ..... 44
    - Dense readers..... 44
    - Optimal battery..... 44
    - User defined..... 45
  - Wedge ..... 47
    - Result Type ..... 47
    - Terminator..... 47
- READING RFID TAGS / BARCODES..... 48**
  - Reading RFID Tags ..... 48
    - Normal reading..... 48
    - Continuous reading..... 48
    - Batch mode ..... 49

# Table of Contents

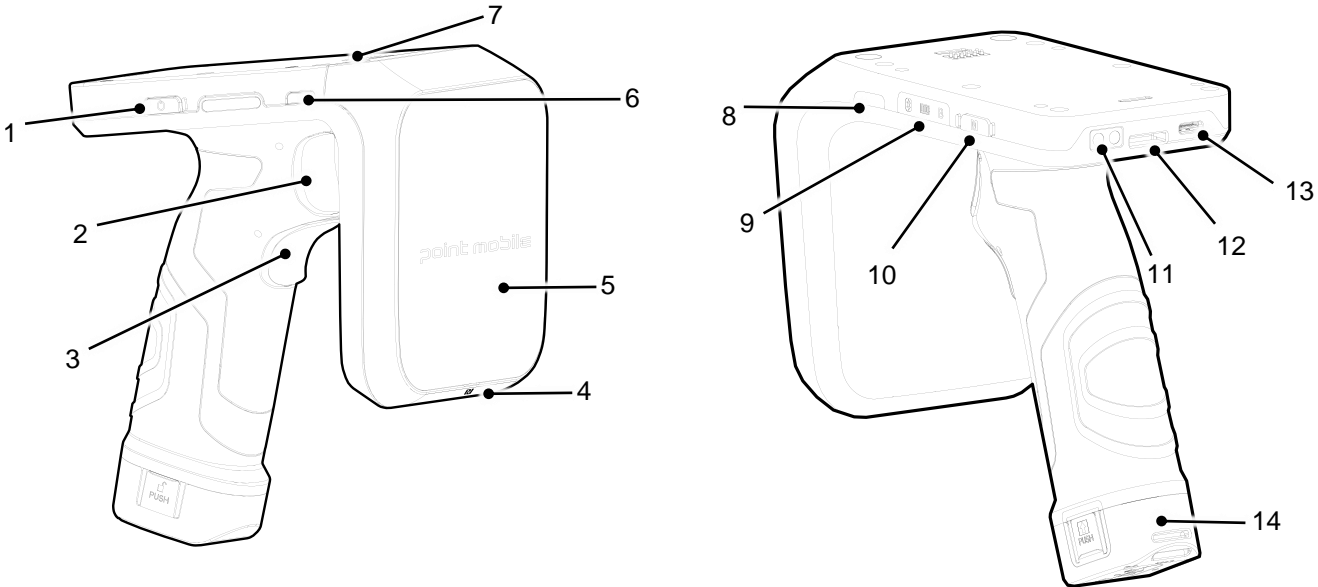
---

- Reading Barcodes ..... 50
- Changing Trigger Mapping ..... 50
  
- ACCESSORIES ..... 51**
  - Hand Strap ..... 51
    - Attach hand strap ..... 52
  - Charging cradle ..... 53
    - Single Slot Cradle / Single Slot Ethernet Cradle (SSC / SEC) ..... 53
  
- SAFETY INFORMATION..... 54**
  - Battery Safety Information ..... 54

# Getting Started

## Device Parts

Figure 1 RF88 Views

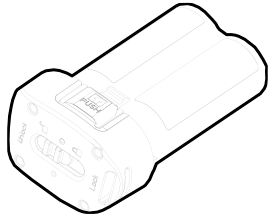
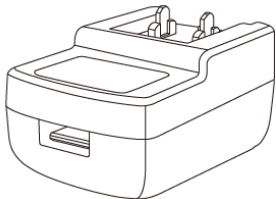
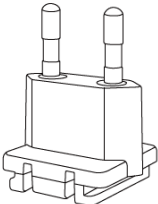

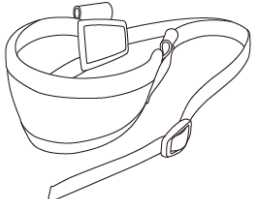


No	Name	Description
1	Power button	Press and hold to turn on/off the RF88
2	Upper trigger button	Read RFID tags by pressing (Changeable)
3	Lower trigger button	Triggers barcode reading of the connected host device (Changeable)
4	NFC tag for Bluetooth connection	Connect a host device using NFC Tap-to-Pair
5	UHF RFID antenna	Read RFID tags
6	Notification LED (Left)	Indicates the result of RFID tag reading
7	Sled bracket connector	Assemble a sled bracket for host device installation
8	Notification LED (Right)	Indicates the result of RFID tag reading
9	LED indicators	Indicate the status of power / charging, connection, batch mode. Refer to <a href="#">Status Indication</a>
10	Mode button	Press and hold to turn on / off the batch mode or change the connect mode (only for PM90)
11	I/O connector	Connector for charging cradle
12	Hand strap hole	Attach hand strap
13	USB Type C connector	Plug USB cable to charge the RF88 or communicate
14	Battery & Battery locker	Supply power to RF88 or replace battery

# Getting Started

## Product Standard Accessories

The following items are in the product box.

Accessory	Name
	Battery
	5V / 2A power adapter
	AC plug
	USB type C cable
	Hand Strap



**Note:** The images may differ from the actual accessory.



# Getting Started

## Replace the Battery

When the battery level is low, replace the battery with a charged one.


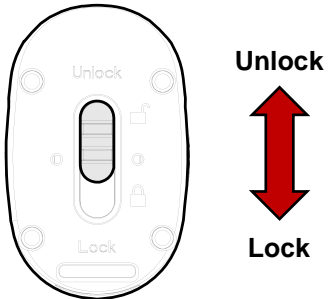
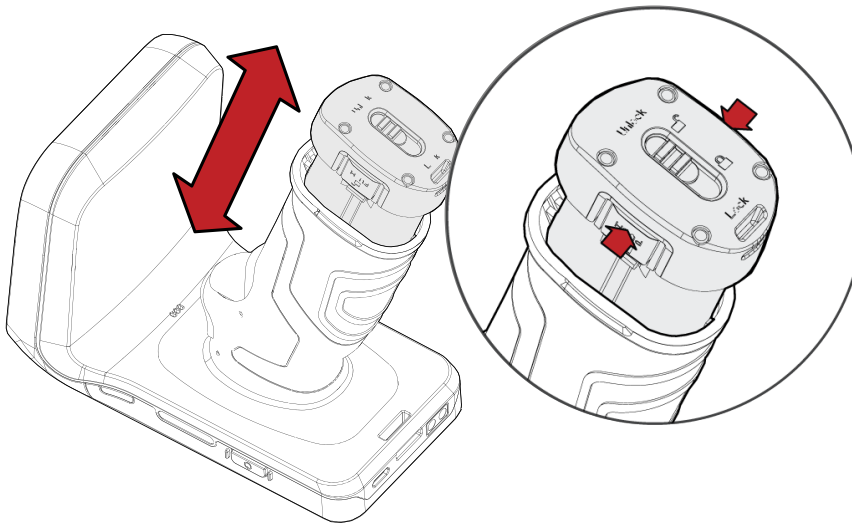
1. Slide the battery locker as **Unlock** .


Figure 2 Battery locker



2. Press the battery release button on both sides and pull the battery out.

Figure 3 RF88 battery replacement



3. Insert a new or charged battery all the way.
4. Slide the battery locker as **Lock**  to engage the battery firmly.

# Getting Started

---

## Charge the Device



**Caution:** Always use an original charger and cable from Point Mobile. Other chargers and cables may damage RF88. Also, make sure the connector, charger, cable is not wet. Follow the [Battery Safety Information](#) for safety of using the battery.

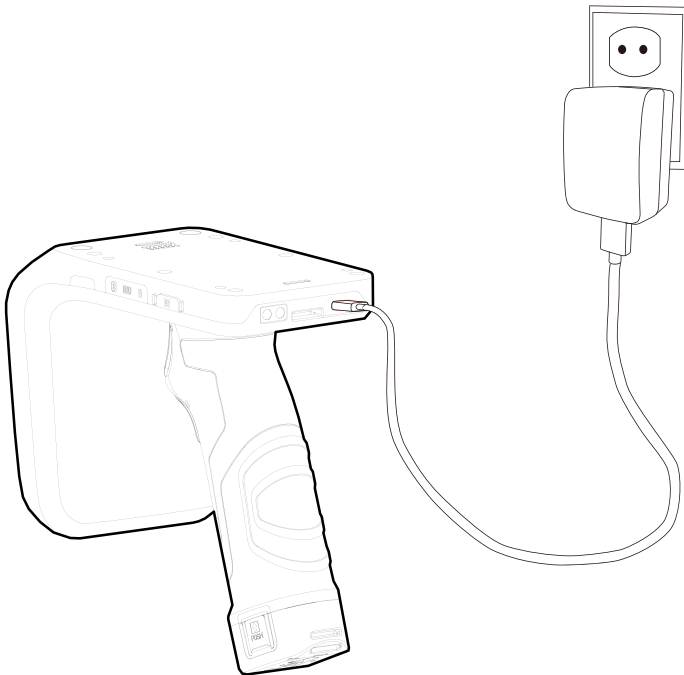
## Charging temperature

**Charge RFID readers and batteries in temperatures from 0 °C to 45 °C.** At out-of-normal range temperatures, the RF88 or battery may be damaged.

## Charge with AC adaptor

1. Assemble the AC plug and power adapter.
2. Plug USB type C cable to the power adapter.
3. Connect the cable to USB connector of RF88.
4. Provide power by plugging the power adapter to the power outlet.

Figure 4 Charge RF88 (Adapter)



**Note:** The RF88 and the host device won't be charged together. When connecting the charger to RF88, only RF88 will be charged.

# Getting Started

---

## Charging with Cradle

### SSC / SEC (Single Slot Cradle)

Charge the RF88 with one of the following host devices installed through the cradle (Optional accessory).

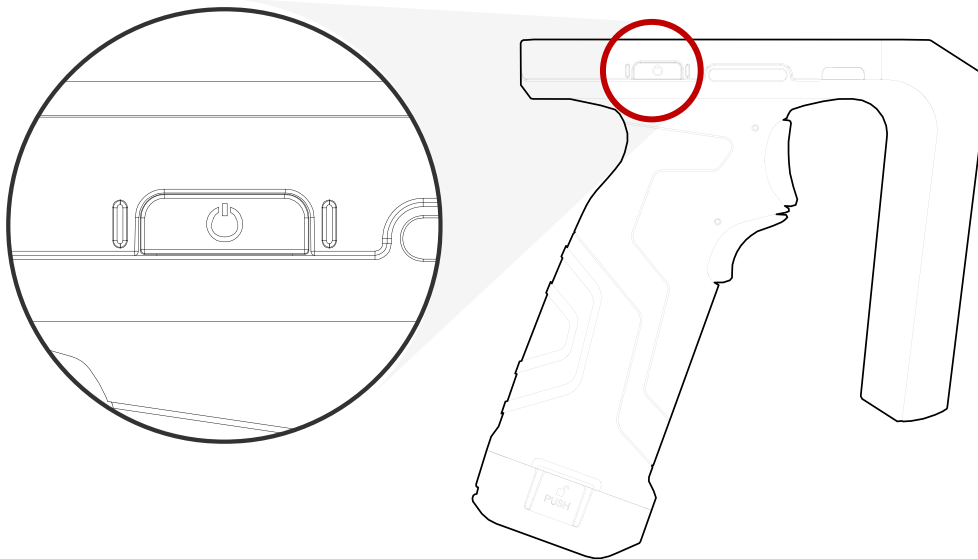
- PM85
- PM86
- PM84
- PM95

Place the device onto the cradle. RF88 and the installed host device will be charged simultaneously when charging with SSC/SEC.

## Turn on/off the Device

To turn on or off the RF88, press and hold the power button for 3 seconds until a melody ring.

Figure 5 RF88 Power button

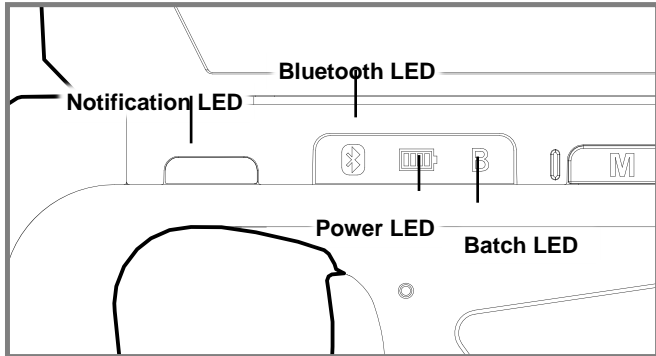


# Getting Started

## Status Indication

Unless the beep sound is muted, user can check the RF88's battery, connection, reading status through LED indicators and beep sound.

Figure 6 RF88 LED indicators



Description	LED Sequence	Beep Sequence
<b>Turn on / off</b>		
RF88 is turning on	(Power) Turns on for 5 seconds depending on the battery level	Short low – Short medium – Short high
RF88 is turning off	All LEDs turn off	Short high – Short medium – Short low
<b>Battery level (Press any button shortly to activate)</b>		
Battery level is more than or equal to 50%	(Power) Green on for 5 seconds	None
Battery level is between 16% to 49%	(Power) Amber on for 5 seconds	None
Battery level is less than or equal to 15%	(Power) Red on for 5 seconds	None
<b>Charging</b>		
Fully charged	(Power) Green on	None
Battery is charged between 15% to 100%	(Power) Amber on	None
Battery is charged under 15%	(Power) Red on	None
Charging error	(Power) Red blinking	None

# Getting Started

Connection		
(for PM90 only) Bluetooth connection mode	(Bluetooth) Blue blinking	(Once when changing) Short high
(for PM90 only) Wire connection mode	(Power) Turns on depending on the battery level	(Once when changing) Short high
Bluetooth connected	(Power) Turns on depending on the battery level (Bluetooth) Blue on	Short high
Wire connected	(Power) Turns on depending on the battery level	Short high
RFID Reading		
Reading RFID tag	(Notification) Green flash	Short high
RF88 is in Continuous read mode	(Notification) Amber blinking slowly	None
RFID reading unavailable	None	Short high x 4
Batch mode		
RFID reader enters batch mode	(Batch) Amber on	Short low – Short high
RFID reader exits from batch mode	(Batch) Amber off	Short high – Short low



**Note:** When RF88 enters sleep mode, all LED indicators will turn off.

# Getting Started

---

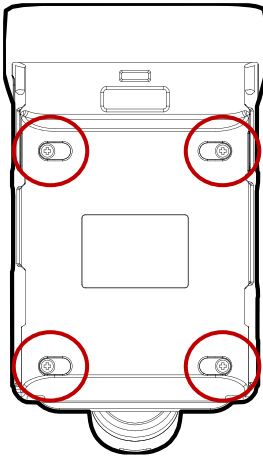
## Sled Bracket Replacement

RF88 can be used with various host devices by sled brackets.

Change the sled bracket according to the host device model. A screwdriver is needed.

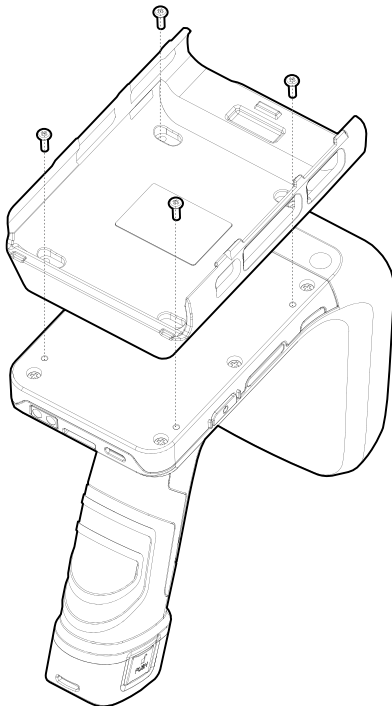
1. Loosen the four screws on each corner of the sled bracket.

Figure 7 Sled bracket (top)



2. Remove the sled bracket.
3. Align another sled bracket suitable with the host device model you want.

Figure 8 Sled bracket replacement



4. Fasten the four screws.

# Getting Started

---

## Host Device Installation

Install a host device onto the RF88.

The way to installation of the host device may differ from the host device model.

- PM85
- PM86
- PM84
- PM95
- PM90

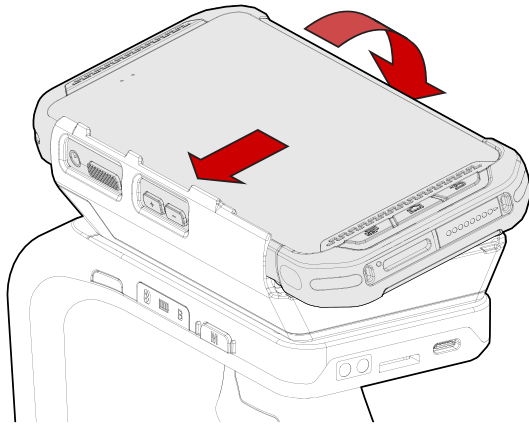
### PM85 Installation



**Caution:** Remove the hand strap of the device before installing it onto the RF88.

1. Align the sled bracket of the RF88 to match the button holes to the PM85 buttons.
2. Place the one side of the PM85 to the bracket first.
3. Push the other side to engage the devices firmly.

Figure 9 Installing PM85



# Getting Started

---

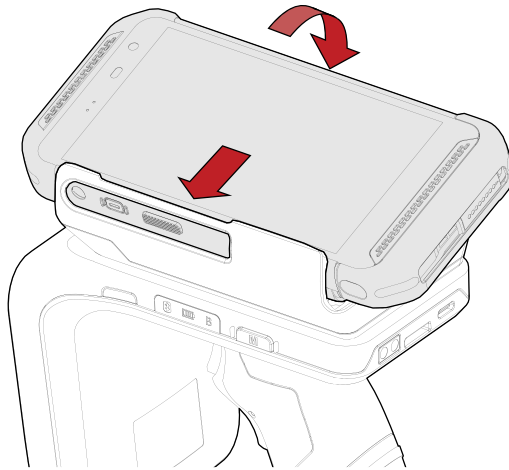
## PM86 Installation



**Caution:** Remove the hand strap of the device before installing it onto the RF88.

1. Align the sled bracket of the RF88 to match the button holes to the PM86 buttons.
2. Place the one side of the PM86 to the bracket first.
3. Push the other side to engage the devices firmly.

Figure 10 Installing PM86






# Getting Started

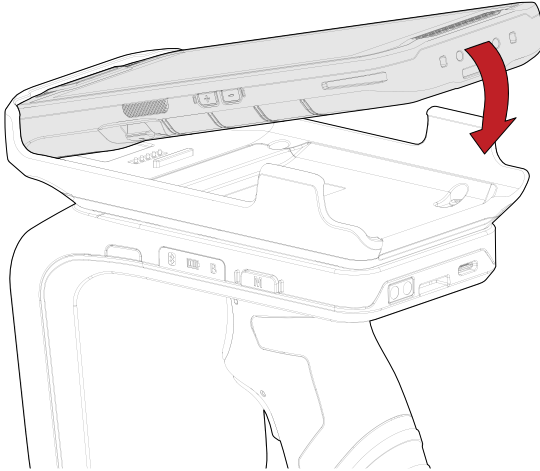
---

## PM84 Installation

 **Caution:** Remove the hand strap of the device before installing it onto the RF88.

1. Put the PM84's top side to the sled bracket first.
2. Push the bottom side to engage the device firmly.

Figure 11 Installing PM84



# Getting Started

---

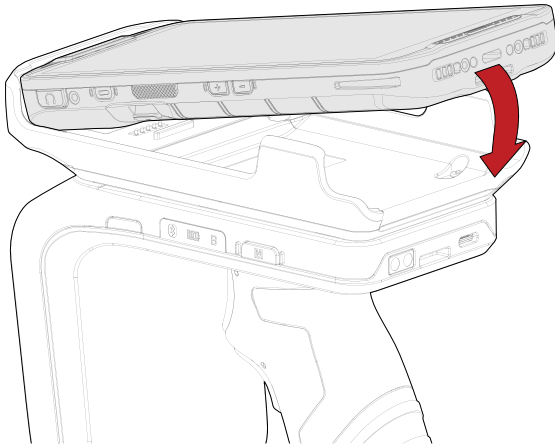
## PM95 Installation



**Caution:** Remove the hand strap of the device before installing it onto the RF88.

1. Put the PM95's top side to the sled bracket first.
2. Push the bottom side to engage the device firmly.

Figure 12 Installing PM95



# Getting Started

---

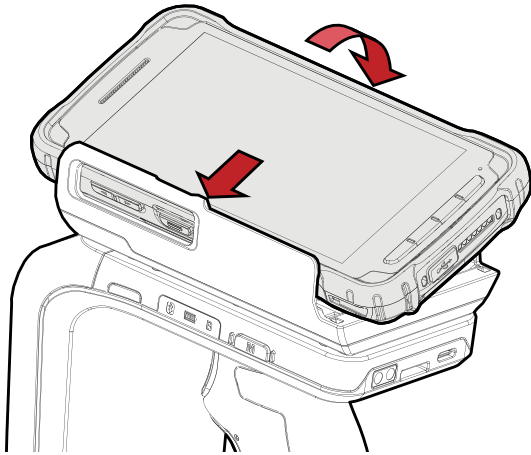
## PM90 Installation



**Caution:** *PM90 MSR SKU cannot be installed onto the RF88.  
Remove the hand strap of the device before installing it onto the RF88.*

1. Align the sled bracket of the RF88 to match the button holes to the PM90 buttons.
2. Place the one side of the PM90 to the bracket first.
3. Push the other side to engage the devices firmly.

Figure 13 Installing PM90



# Getting Started

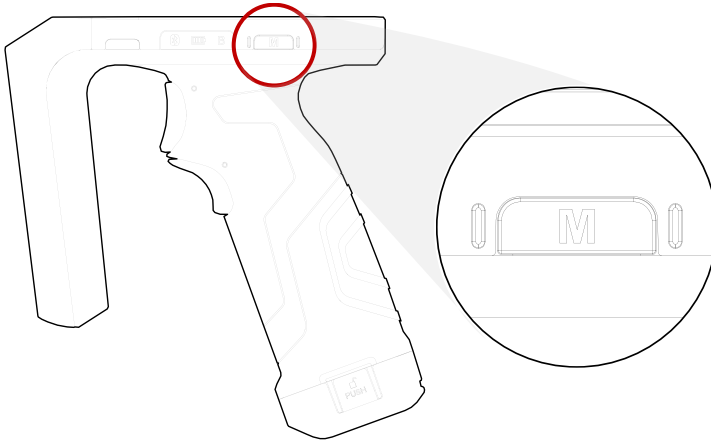
---

## Changing connection mode

Setting up the connection mode is required between the Bluetooth or Wire in case of the connection between an RF88 and a PM90 (when a PM90-exclusive sled bracket is assembled).

To change the connection mode, press the mode button twice quickly.

Figure 14 RF88 mode button



You can check the current connection mode by the RF88's LED indicator.

- In Bluetooth mode (Default): Bluetooth LED blinks
- In Wire mode: Power LED lights on depending on the battery level

Refer to [Status Indication](#) > Connection section for more detail.

# RFID Control (V2) Application

---

## Introducing RFID Control



**Note:** You can find the latest guide of the RFIDControl from the [Knowledge Base](#) website (Log-in required)

The new RFID Control is a Point Mobile RFID solution app for RF88. The app can be run on the Android host device.

With RFID Control, you can perform the following features.

- Connecting a RFID reader
- Configuring RFID reader configurations
- Demonstrating RFID tags reading
- Updating RFID reader firmware

## Installing RFID Control (V2)

Access the [Service Portal](#) and go to the **Download** board > **EmKit) RFID Control Apps & Guide** to find the RFID Control (V2) app.

(If you don't have the credential of the portal site, request the app to your local reseller.)

To install the app (described based on the Point Mobile devices),

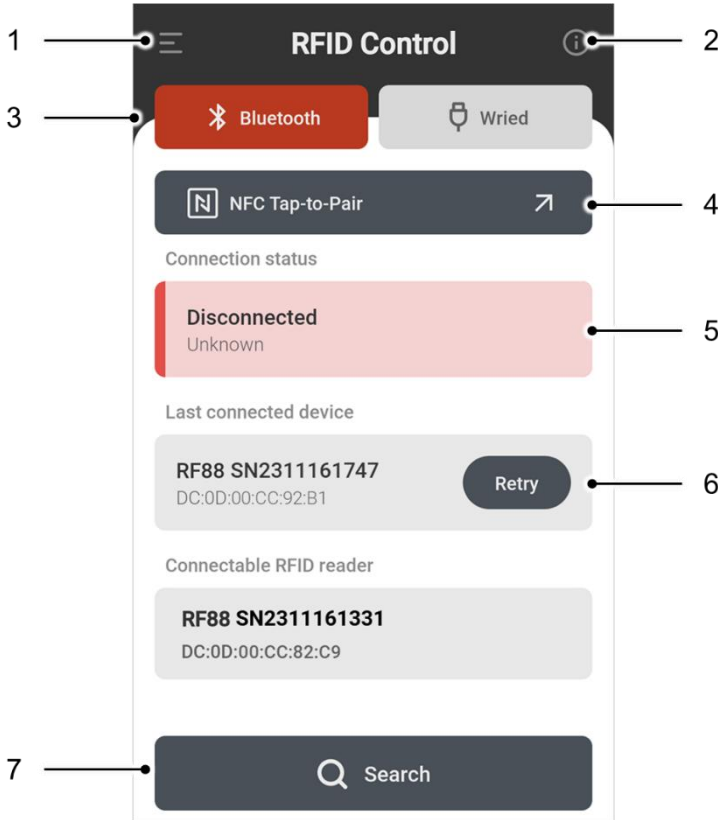
1. Connect the host device to be connected with the RF88 to PC using a USB cable.
2. Set the USB preference option as **File Transfer** or **Transfer files**.
3. Access the device storage from PC.
4. Copy the RFID Control (V2) app file (apk file) to the device storage.
5. Launch the file explorer on the device.
6. Select the app file and install it.

# RFID Control (V2) Application

## Exploring RFID Control (V2)

When launching the app, the following main screen will be displayed.

Figure 15 RFID Control main screen

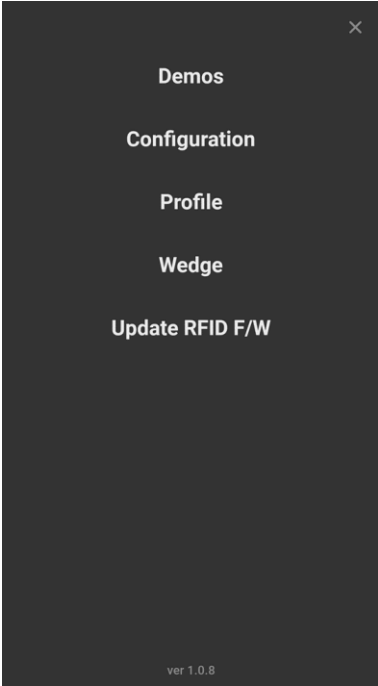


No	Name	Description
1	Additional menus	Tap to open the additional menus.
2	Version	Tap to see the app version.
3	Connect type	Automatically switches between Bluetooth and Wire depending on whether a host device capable of a wire connection is attached.
4	NFC Tap-to-Pair	(Only displays on Bluetooth type) Tap to move to the NFC Tap-to-Pair screen.
5	Connection status	Displays the current connection status.
6	Last connected device	(Only displays on Bluetooth type) Displays the last connected device information, and provides Retry button.
7	Search	(Only displays on Bluetooth type) Tap to search the nearby RFID readers.

# RFID Control (V2) Application

The additional menus provide the following features.

Figure 16 RFID Control - Additional menus



Menu	Description
Demos	Demonstrate the RFID reading in the various read mode. <ul style="list-style-type: none"><li>• Rapid read demo</li><li>• Reading demo</li></ul>
Configuration	Set the RFID configurations.
Profile	Select or Custom the reading profile.
Wedge	Set the wedge settings
Update RFID F/W	Update RFID-related firmware (RFID reader, RFID module, Bluetooth).

# RFID Control (V2) Application

## Connecting a Reader and Host Device

A RF88 can be connected to a host device using Bluetooth or a wire connection. This chapter describes how to connect the RF88 to a host device using RFID Control app.

### Bluetooth Connection

All host devices support the Bluetooth connection with RF88 by searching RFID reader or NFC Tap-to-Pair.

Choose more comfortable way referring to the description below.

- Searching RFID reader: Normal pairing and connection process with manual steps on the app
- NFC Tap-to-Pair: Easy and automatic pairing and connection process with a single tap

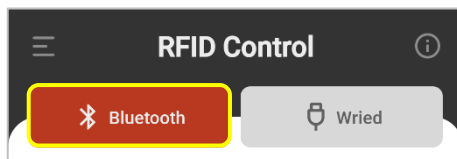
### Searching RFID reader

Search the nearby RFID readers and connect one of them through RFID Control app.

To use this method,

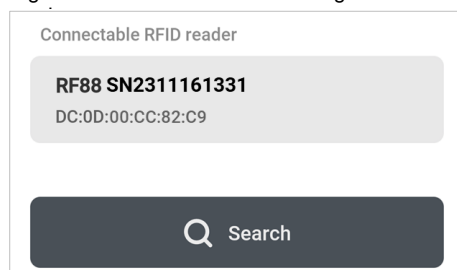
1. Turn on the RF88.
2. Launch the RFID Control without attaching the host device onto the RF88's sled bracket.
3. (Only with PM90 sled bracket) Check if the RF88's Bluetooth LED blinks. It means the reader is in Bluetooth mode. If not, [change the connection mode](#) by pressing the mode button twice quickly.
4. Check if the connect type is **Bluetooth**.

Figure 17 RFID Control - Connect type



5. Tap **Search** on the bottom of the screen.
6. When the RF88 name appears under the **Connectable RFID reader** list, tap the name.

Figure 18 RFID Control - Searching RFID

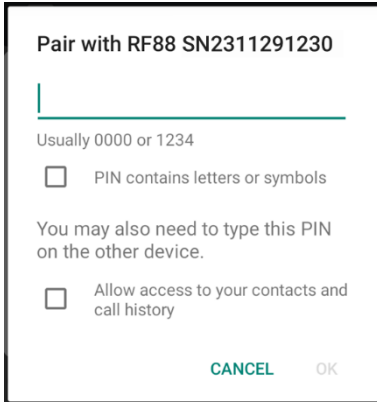




# RFID Control (V2) Application

- Enter the pairing code **0000** into the pairing confirmation dialog.

Figure 19 RFID Control - Pairing dialog



- Wait until the connection establishes properly.
- Check the below items to confirm the connection.
  - The RF88's name displays under the **Connection Status** section
  - The Bluetooth LED of the RF88 turns on blue
  - The Power LED of the RF88 turns on depending on the battery level

Figure 21 RFID Control - RF88 connected

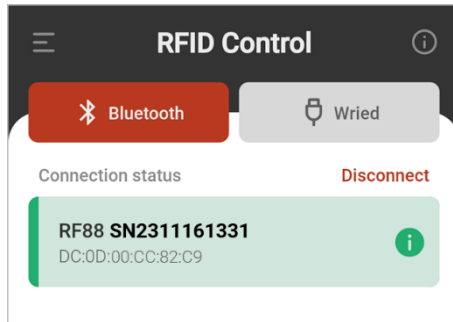
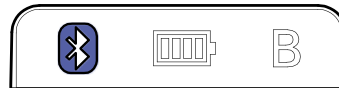


Figure 20 RF88 LED Indicator - Bluetooth



# RFID Control (V2) Application

## NFC Tap-to-Pair

An NFC tag for Bluetooth connection is embedded on the bottom side of the RFID antenna of the RF88.

Tap-to-Pair uses NFC feature. It connects RF88 and the host device just by getting them close while the RFID Control is running.

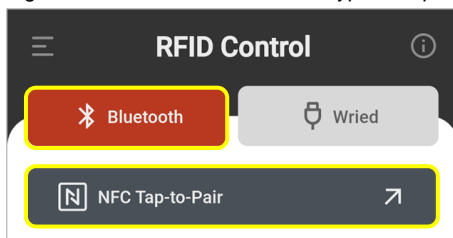
**i Note:** NFC feature on a host device is enabled by default. But if it is turned off, enable NFC by one of the below ways.

- **Settings > Connected devices > Connection preferences > NFC > enable switch**
- **Open Quick setting panel > enable NFC**

To use this method,

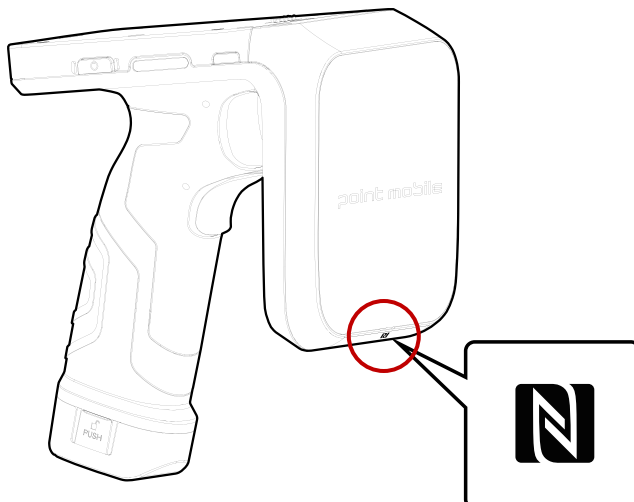
1. Turn on the RF88.
2. Launch the RFID Control without attaching the host device onto the sled bracket.
3. (Only with PM90 sled bracket) Check if the RF88's Bluetooth LED blinks. It means the reader is in Bluetooth mode. If not, [change the connection mode](#) by pressing the mode button twice quickly.
4. Check if the connect type is **Bluetooth**.
5. (Can skip) Tap **NFC Tap-to-Pair**.

Figure 22 RFID Control - Connect type & Tap-to-Pair



6. Bring the host device's NFC tapping area close to the NFC tag location of RF88 (refer to the below figure).

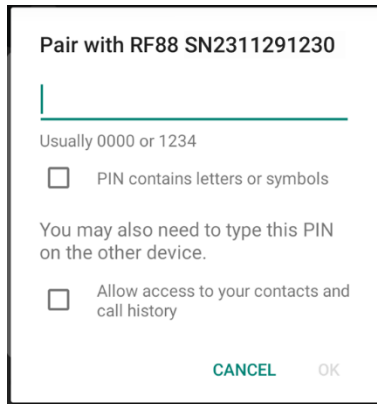
Figure 23 RF88 NFC tag location



# RFID Control (V2) Application

7. Enter the pairing code **0000** into the pairing confirmation dialog.

Figure 24 RFID Control - Pairing dialog



8. Check the below items to confirm the connection.

- The RF88's name displays under the **Connection Status** section
- The Bluetooth LED turns on blue
- The Power LED turns on depending on the battery level

Figure 25 RFID Control - RF88 connected

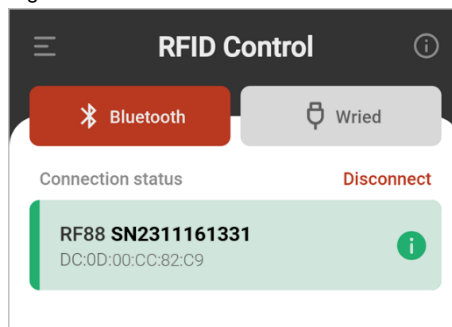
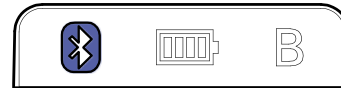


Figure 26 RF88 LED Indicator - Bluetooth



**Notice:** If failed to connect, wake up the RF88 from sleep mode by pressing any button on the reader and try again.

# RFID Control (V2) Application

## Wire Connection

The wire connection connects the RFID reader and the host device physically using pogo pin connectors.

Except for PM85, all compatible host devices manufactured by Point Mobile can use the Wire connection.

A host device's model-exclusive sled bracket must be assembled onto the RFID reader to connect the host device and the reader physically.



**Notice:** PM85 and the host devices not manufactured by Point Mobile do not support the wire connection.

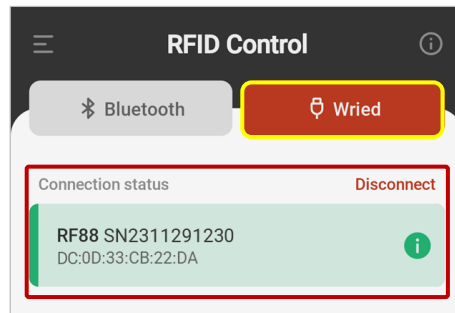
To establish a wire connection,

1. Assemble the proper sled bracket referring to [Sled Bracket Replacement](#).
2. Turn on the RF88, and launch RFID Control on the host device.
3. (Only with PM90 sled bracket) Check if the RF88's Power LED lights on depending on the battery level. It means the reader is in Wire mode. If not, [change the connection mode](#) by pressing the mode button twice quickly.
4. Install the host device onto the sled bracket referring to [Host Device Installation](#).
5. The host device and RF88 will be connected automatically.

Check the below items to confirm the connection.

- The RF88's name displays under the **Connection Status** section.
- The Power LED turns on depending on the battery level

Figure 27 RFID Control - Connect type (Wire)



If the wire connection is not established automatically, tap **Connection** on the bottom.

# RFID Control (V2) Application

---

## Disconnect

In one of the following cases, the connection will be disconnected.

- Common in Bluetooth / Wire connection
  - Tap **disconnect(ion)** button in the RFID Control app
  - Close the RFID Control app
  - Turn off the RF88 or the host device.
  - (Only with PM90 sled bracket) Change the connection mode
- In Bluetooth connection
  - Disable Bluetooth
  - A host device capable of a wire connection is attached onto the RF88
- In Wire connection
  - Detach the host device from RF88



**Note:** When a host device capable of a wire connection is attached onto the RF88, the current Bluetooth connection will be disconnected and switched to the wire connection with the attached host device.

## Reconnect

To reconnect to the last connected RF88,

- Bluetooth connection: Tap **Retry** button under the **Last connected device** from the RFID Control app.
- Wire connection: Attach the host device again onto the RF88's sled bracket.

# RFID Control (V2) Application

## RFID Reader Information


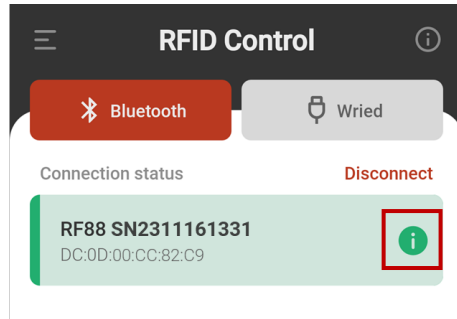
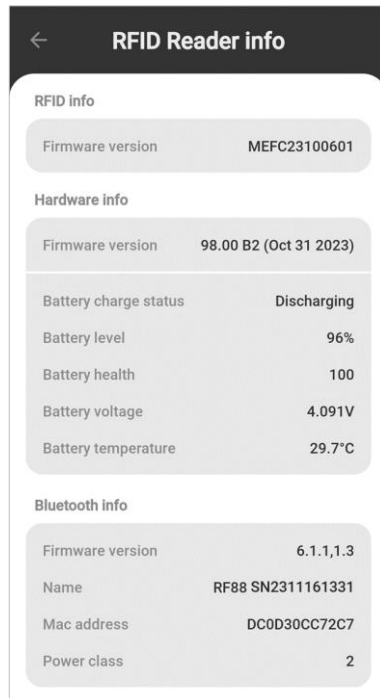
After connecting a RFID reader, tap  to check the connected reader's information.

Figure 28 RFID Control - Reader information



The following information is provided.

Figure 29 RFID Control - Reader Information (detail)



- RFID info
  - ◆ Firmware version
- Hardware info
  - ◆ Firmware version
  - ◆ Battery status
    - Battery charge status
    - Battery level
    - Battery health

# RFID Control (V2) Application

---

- Battery voltage
- Battery temperature
- Bluetooth info
  - ◆ Firmware version
  - ◆ Device Name
  - ◆ Mac address
  - ◆ Power class

# RFID Control (V2) Application

## Applying Configurations

There are two ways to update the RFID configurations. One way uses RFID Control app interface, and another uses configuration JSON file.

Find optimized way to your working routine referring to the below table.

<ul style="list-style-type: none"> <li>✓ Wants to change a few configurations immediately</li> <li>✓ Wants to change the configurations of the currently connected RFID reader only</li> </ul>	→	<b>Setting up directly / Select preset profile</b>
<ul style="list-style-type: none"> <li>✓ Wants to change a lot of configurations at once</li> <li>✓ Wants to save the managed configurations and apply all the connected RFID readers</li> </ul>	→	<b>Setting up using JSON</b>

Refer to the [Configurations](#) chapter to see the available configurations.

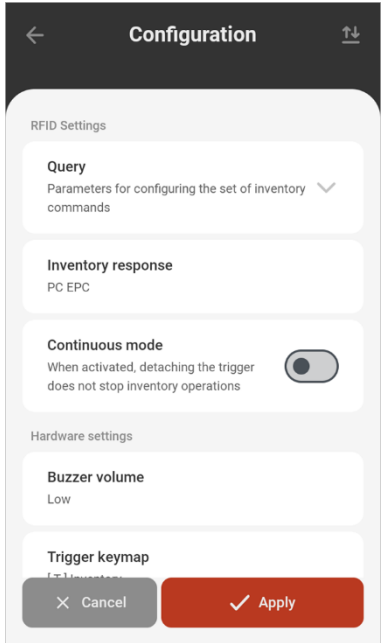
## Setting up directly

Connect the RFID reader you use with the host device, and change the configuration using the RFID Control.

To use this method,

1. Launch RFID Control and connect a RFID reader you use.
2. Access **Configuration** or **Wedge** from the additional menus.
3. Adjust the configurations and wedge settings as you want.
4. Tap **Apply** to save the changes. Or you can reset the changes by **Cancel** button on the bottom.

Figure 30 RFID Control - Configurations





# RFID Control (V2) Application

---

## Select preset profile

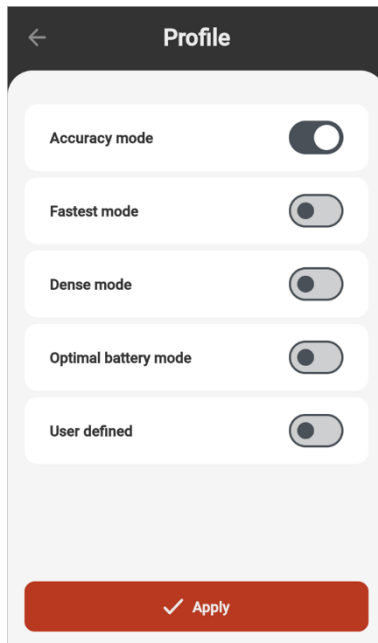
There are preset profiles containing inventory parameter and radio power configurations. You can set the configuration easily with the profile optimized for your use case.

To select a profile,

1. Launch RFID Control and connect a RFID reader you use.
2. Access **Profile** from the additional menus.
3. Select a profile.

If you select the User defined profile, set the detailed configurations.

Figure 31 RFID Control - Profile



4. Tap **Apply** to save the changes.

# RFID Control (V2) Application

## Setting up using JSON

Make a configuration JSON file and apply it through RFID Control app.



**Notice:** Wedge settings do not support the setup through JSON files.


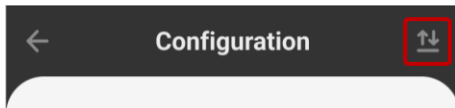
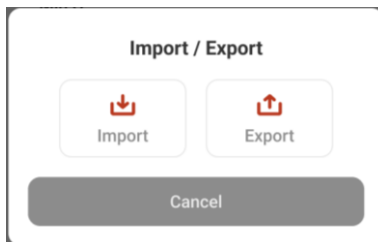
1. Export a configuration of another RFID reader which is set up as you needed as a JSON file. Refer to [Export Configurations](#).
2. Copy the JSON file to the host device.
3. Launch RFID Control and connect a RFID reader you use.
4. Access **Configurations** from the additional menus, and tap  on the title section.

Figure 32 RFID Control - Configuration title



5. Tap **Import** and browse the JSON file you copied. The configuration will be changed the same as the JSON file.

Figure 33 RFID Control - Import / Export



6. Tap **Apply** to save the changes.

# RFID Control (V2) Application

---

## Export Configurations

Export the configuration of the currently connected RFID reader as a JSON file.


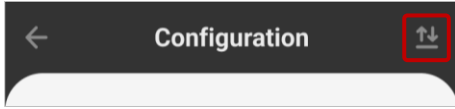
1. Go to **Configuration** from the additional menus.
2. Tap  on the title section.

Figure 34 RFID Control - Configuration title



3. Tap **Export** and wait for completion.

Figure 35 RFID Control - Import / Export



4. The file will be saved into the following location and name.
  - Location: **Download folder (/storage/emulated/0/Download/)**
  - File name: **Configuration.json**

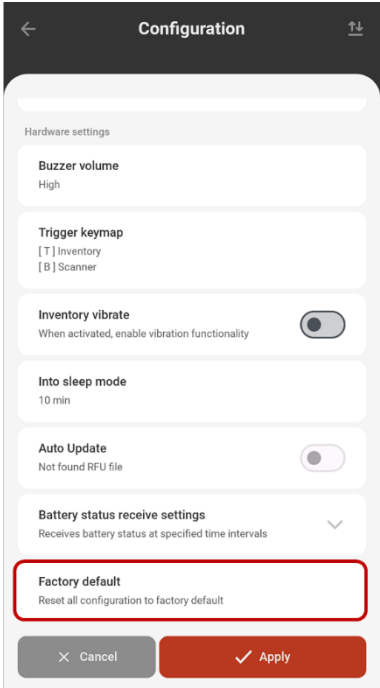
# RFID Control (V2) Application

## Reset Configurations

Reset the configurations (except Wedge settings) to the factory default values.

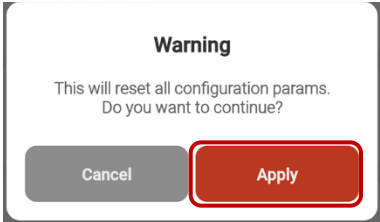
- 1. Go to **Configuration** from the additional menus.
- 2. Select **Factory default**.

Figure 36 RFID Control - Factory default



- 3. Tap **Apply** to reset the configurations to factory default values.

Figure 37 RFID Control – Reset confirm dialog



# RFID Control (V2) Application

## Updating Firmware

To improve the performance of RFID reader, Point Mobile provides up-to-date firmware.

The firmware files are provided as RFU file format, and it contains RFID reader, Bluetooth, and RFID module firmware.



**Notice:** To update the firmware, RFID reader must be connected using Bluetooth.

## Check items

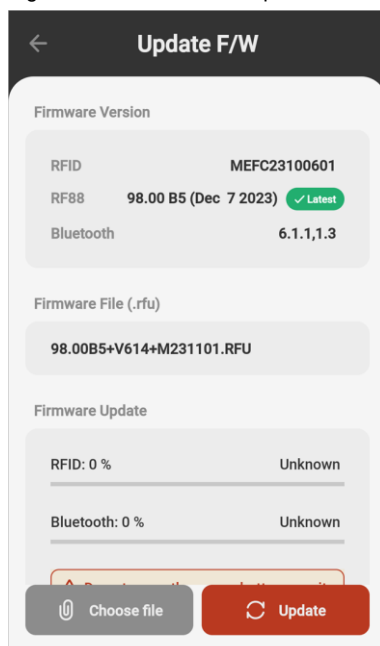
- Download the firmware file (**RFU file**) from Service Portal
- Copy the firmware file to the host device.
- Connect RFID reader and host device using Bluetooth for firmware update.

## Update

If you want to update the firmware,

1. Launch RFID Control and connect a RFID reader you use.
2. Access **Update RFID F/W** from the additional menus.
3. Tap **Choose File** to select the RFU file you prepared.
4. Under the **Firmware Version** section, you can see whether the current firmware is older than the versions in the RFU file. Only the firmware(s) not marked as latest will be updated.

Figure 38 RFID Control - Update RFID F/W



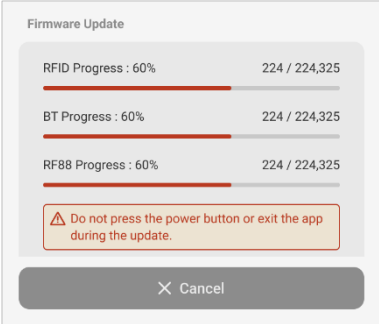
# RFID Control (V2) Application

---

- 5. Tap **Update**.
- 6. Wait until the update process is done.

During the update process, the Bluetooth connection may be disconnected and reconnected several times.

Figure 39 RFID Control - Updating firmware



**Caution:** Do not turn off or disconnect the RF88 until the update is completed.

# RFID Control (V2) Application

## Demonstrating RFID reading

RFID Control provides two types of demo as follows. Navigate to the additional menus and select a demo.

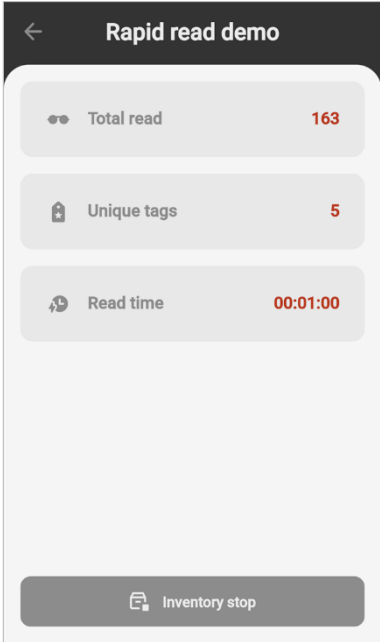
<b>Rapid Read Demo</b>	Demonstrates how fast the RFID reader reads the tag with optimized configuration for rapid reading
<b>Reading Demo</b>	Demonstrates the reading feature with current configurations, and performs various command for one of the read tags.



**Note:** To read RFID tags, press the trigger button which is mapped to the RFID reading (inventory) action. Refer to the [Trigger keymapping](#).

### Rapid Read Demo

Figure 40 RFID Control - Rapid read demo



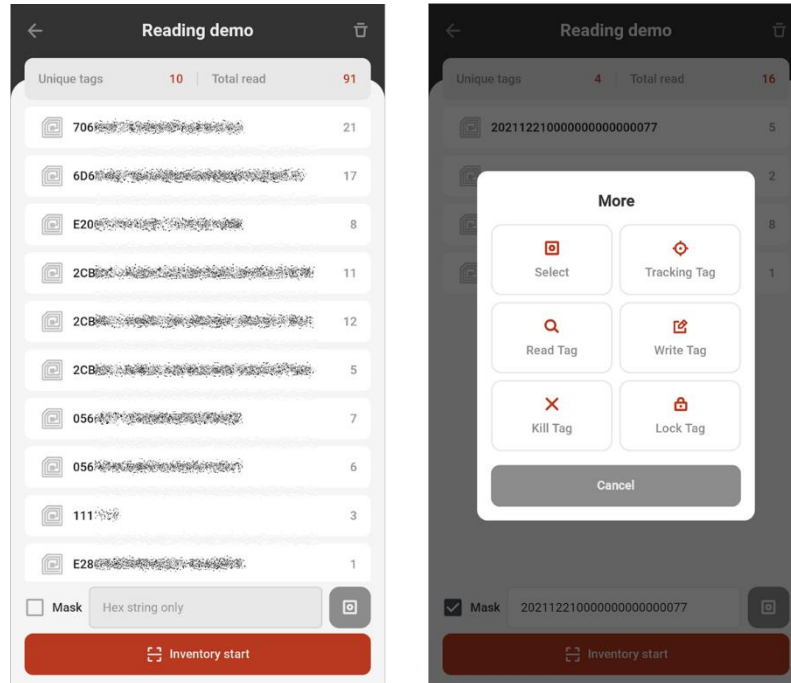
Rapid Read Demo shows how fast the RFID reader reads the tag in continuous read mode with the maximized RFID reading speed configurations:

Aim the tag and then press the trigger button of the RFID reader, or tap **Inventory start** button on the screen. You can see the total read count, the number of unique tags (excluding duplicates) and read time in the demo screen.

# RFID Control (V2) Application

## Reading Demo


Figure 41 RFID Control - Reading Demo



Demonstrate the tag reading with the current RFID reader configurations. When tapping a tag from the read list, you can see more features.

Aim the tag and then press the trigger button of RFID reader or tap the **Inventory start** button on the screen.

### Mask option

You can filter the tag to be read by **Mask** option. Select a tag data from the read list and access Select command. Or tap  next to the Mask option

Select the option and enter the hex strings to be filtered. Only the tags including the entered strings will be read.

### More features

Tap a tag read, and then select an advanced feature among the Select, Tracking Tag, Read Tag, Write Tag, Kill Tag, and Lock Tag. You can find the detailed guides from [RFID Control \(V2\) Web Guide](#) (Log-in required).



# Configurations

---

RF88 supports the following configuration types. To control the configurations, use RFID Control (V2) app.

## Configuration

### RFID Settings

#### Query

RFID readers command tags in an inventory round to choose the random number from the range  $0 \sim 2^Q-1$  and singulates the tag that has a zero.

Because the reader cannot read either tag if multiple tags have the same number (collision), the Q value shall change according to the number of tags.

To increase or decrease the Q value automatically depending on the tag response, set value criteria and amount of change.

Setting	Range / Options	Default
Start Q	0 ~ 15	7
Min Q	0 ~ 15	0
Max Q	0 ~ 15	15
Q Increment	On / Off	Off
Q Decrement	On / Off	Off
Fixed Q	On / Off	Off

# Configurations

---

## Inventory response

Set parameters for configuring the set of SELECT commands.

- Options:
  - PC EPC
  - EPC ONLY
  - PC EPC CHECKSUM
  - PC EPC RSSI
  - PC EPC FREQUENCY
  - SHOW ALL
- Default: PC EPC

## Continuous mode

Read RFID tags continuously at one triggering.

- Options: On / Off
- Default: Off

# Configurations

---

## Hardware settings

### Buzzer volume

Adjust the buzzer volume of RF88.

- Options: Disable / Low / High
- Default: High

### Trigger keymapping

Map the inventory or scanner triggering to the top / bottom trigger buttons.

- Options: Inventory / Scanner
- Default:
  - Top: Inventory
  - Bottom: Scanner

### Inventory vibrate

Turn on or off the vibration when reading RFID tags.

- Options: On / Off
- Default: Off

### Into sleep mode

Set the timeout that RFID reader enters sleep mode.

- Options:
  - Disable
  - 1 ~ 30 min
- Default: 10 min

# Configurations

---

## Battery status receive settings

Receives the battery status at specified time intervals.

Setting	Range / Options	Default
Battery level	On / Off	Off
Battery charge status	On / Off	Off
Battery voltage	On / Off	Off
Battery temperature	On / Off	Off
Receive interval time	Disable / 1 ~ 10 second(s)	Disable (32 seconds if any of the battery settings are turned on)

# Configurations

---

## Profile

The four profiles are predefined. Select a profile or a user defined profile and set the detailed configurations.

		Accuracy mode (Default)	Fastest mode	Dense readers	Optimal battery	User defined
<b>Power</b>		30.0 dBm	30.0 dBm	30.0 dBm	27.0 dBm	30.0 dBm
<b>Inventory Param</b>	<b>Session</b>	S1	S1	S1	S1	S1
	<b>Flag</b>	A	AB	A	A	A
	<b>Link Profile</b>	11: 13-285	03: NA-120	09: 05-241	09: 05-241	10: 07-244

### Accuracy mode

This mode only reads the tag within the state A fast. This mode can be useful for a use case needing perfect inventory management.

### Fastest mode

This mode reads the RFID tags including the multiple tags fast. This mode can be useful where inventory runs out quickly and orders are placed multiple times daily.

### Dense readers

This mode is helpful when the RFID readers are used nearby. This mode can be useful for using multiple RFID readers that must operate independently of each other.

### Optimal battery

This mode uses low radio power (27.0 dBm) to save the battery. But, in low radio power, the reading distance may become shorter.

# Configurations

---

## User defined

You can custom the following configurations.

### Power

Set RFID antenna power.

- Range: 0 ~ 30.0 (dBm)
- Default: 30.0 dBm

### Session

Set the session with tags to be inventoried.

- Options: S0 / S1 / S2 / S3
- Default: S1

### Inventory flag

Set the inventoried flag (state) for tags, indicating whether a tag may respond to a RFID reader. RFID readers typically inventory tags from A to B followed by a re-inventory of tags from B back to A (or vice versa).

- Options:
  - AB (Dual target)
  - A
  - B
- Default: A

### Link Profile

Select the profile to be used by the reader.

- Options:

Link Profile	Mode Optimization	Forward Link Modulation	Tari (µs)	PIE	BLF (kHz)	Backscatter Link Modulation
01: NA-103	Read Rate	DSB	6.25	1.5	640	M1
02: 11-302	Read Rate	PR	7.5	2	640	M1
03: NA-120	Read Rate	DSB	6.25	1.5	640	M2

# Configurations

---

04: 1-323	Read Rate	PR	7.5	2	640	M2
05: NA-345	Read Rate	PR	7.5	1.5	640	M4
06: 15-344	ET-UB (D)	PR	15	2	640	M4
07: 12-223	ET-LB	PR	15	2	320	M2
08: 03-222	ET-LB	PR	20	2	320	M2
09: 05-241	ET-LB (D)	PR	20	2	320	M4
10: 07-244	FCC (D)	PR	20	2	250	M4
11: 13-285	Sens	PR	20	2	160	M8

- Default: 10: 07-244

# Configurations

---

## Wedge

### Result Type

Set the result type of inventoried data.

- Option: None / Custom intent
- Default: None

### Custom Intent

Configure the custom intent to broadcast the inventory data to other apps.

Setting	Default name
Action	EXTRA_EVENT_ACTION
Category	EXTRA_EVENT_CATEGORY
Extra name	EXTRA_EVENT_EXTRA_NAME

### Terminator

Select terminator on the end of the inventoried data.

- Option: None / Space / CR / LF / CRLF
- Default: None



# Reading RFID Tags / Barcodes

---

RF88 can trigger the RFID tag reading and barcode scanning with two trigger buttons. The triggering for each button is changeable using RFID Control (V2) app.

## Reading RFID Tags

The upper trigger button is mapped to the RFID reading as default.

Figure 42 RF88 upper trigger button



After connecting with a host device or entering the batch mode, read RFID tags. Aim the tag area and then press the trigger button of RF88.

## Normal reading

The RFID reader reads tags while the trigger button is pressed.

## Continuous reading

Continuous mode performs the RFID tag reading continuously. If the RFID reader is in continuous mode, the notification LED blinks slowly in amber.

The RFID reader starts reading when the trigger button is **pressed twice** in the continuous mode.

The RFID reader can enter the continuous mode by RFID Control (V2) app. Refer to [Continuous mode](#).

# Reading RFID Tags / Barcodes

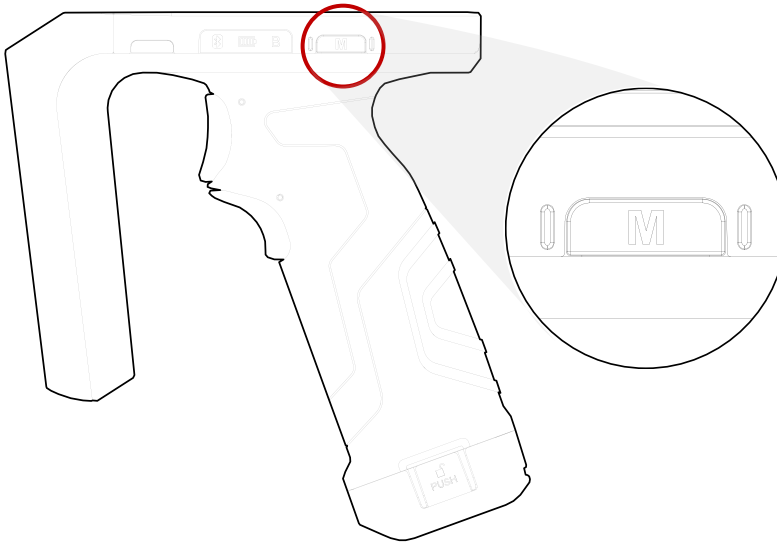
---

## Batch mode

Batch mode is a function that collects tag data in the RFID reader's internal memory and sends it to the host device at once when a host device is connected.

To turn on the batch mode, press the mode button for 3 seconds. When the batch mode activates, the batch mode LED turns on amber.

Figure 43 RF88 mode button



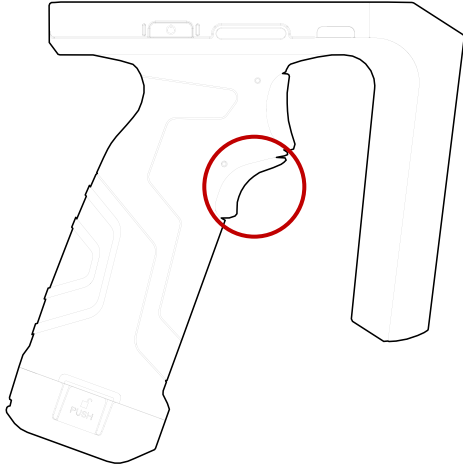
# Reading RFID Tags / Barcodes

---

## Reading Barcodes

RF88 can trigger the barcode scanning of the connected host device. When press the scanning trigger button, the scanner beam of the host device emits and read aimed barcodes. The scanning trigger is mapped to the lower trigger button by default.

Figure 44 RF88 lower trigger button



## Changing Trigger Mapping

Change the mapped triggering for the upper and lower trigger button by RFID Control (V2) app.

By default, the trigger buttons are designated as follows.

- Upper trigger button: Reading RFID tags
- Lower trigger button: Scanning barcodes (Read by host device)

To change the button features, refer to [Trigger keymapping](#) chapter.

# Accessories

---

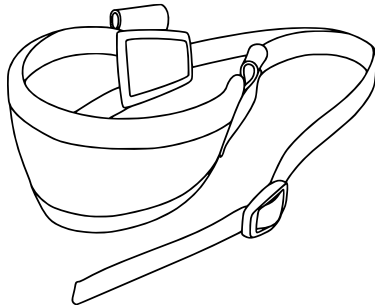
RF88 supports below accessories. All accessories except hand strap are sold separately.

Category	Accessory Name	Usage
Hand strap	Hand strap	Carries RF88 easily
Charging cradle	SSC (Single Slot Cradle)	Charges one RF88 with a host device installed.

## Hand Strap

The hand strap is enclosed in the RF88 standard package. Attach the strap and you can grab the reader more firmly.

Figure 45 Hand strap



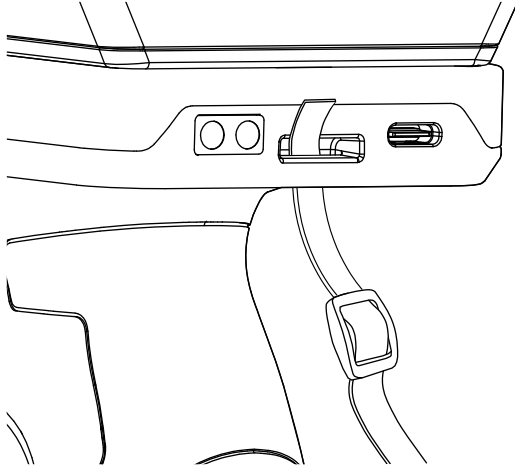
# Accessories

---

## Attach hand strap

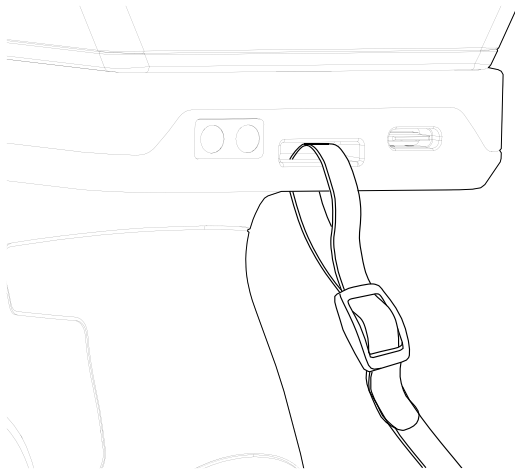
1. Thread the strap through the hand strap hole next to the USB connector.

Figure 46 Attaching hand strap



2. Slide the strap through the buckle at the appropriate length.

Figure 47 Attached hand strap



# Accessories

---

## Charging cradle

### Single Slot Cradle / Single Slot Ethernet Cradle (SSC / SEC)

Charge the RF88 with one of the following host devices installed through the cradle (Optional accessory).

- PM85
- PM86
- PM84
- PM95

Place the device onto the cradle. RF88 and the installed host device will be charged simultaneously when charging with SSC/SEC.

# Safety Information

---

## Battery Safety Information

Follow the battery safety guidelines for safe usage, storage, and disposal of Li-ion batteries. Improper battery use may result in a fire, explosion, or other critical hazards.

### Battery Safety Guidelines

- Use only Point Mobile approved batteries and charging accessories. Other batteries and chargers may damage the device or result in a fire, leakage, or other hazards.
- Do not expose the battery to excessive heat or cold.
- Do not use or store the battery in or near areas that might get very hot, such as in a parked vehicle, near a heat duct or close to other heat sources.
- Do not allow objects that may cause a short circuit, such as metal objects, corrosive substances, or liquids like water, to contact the battery.
- Do not disassemble, crush, bend, shred, press, or other actions that may damage or deform the battery.
- Do not use or replace the battery on the go or from a high location. Dropping may result in an explosion or fire.
- Do not put any labels, stickers, tags, etc. on the device or battery. Performance of the device or battery, such as sealing, drop, or tumble, could be affected.
- Close supervision is necessary when used near children to avoid the risk of injury.
- If battery leakage is observed, avoid any contact with the skin or eyes and properly dispose of the battery. If contact has been made, wash the affected area with water for 15 minutes and seek medical advice.
- If you notice any type of damage to the battery, such as swelling, dents, and leaks, stop using it immediately and contact Point Mobile.

### Battery Charging Guidelines

- Charge the battery in a clean, cool, dry, and ventilated environment.
- Separate the charger from the battery as soon as possible when the battery is fully charged.
- Battery performance can degrade due to the stress of daily charging and discharging. Batteries typically need to be replaced after 300 to 500 charging cycles (full charge-discharge cycles) or when the battery capacity has been reduced to 70 ~ 80% of its original capacity. The actual number of charging cycles varies based on usage patterns, temperature, age, and other factors.

# Safety Information

---

## Battery Storage / Disposal Guidelines

- Store the batteries in a clean, dry and ventilated environment within ambient temperature ranges of  $20\pm 5^{\circ}\text{C}$ .
- For safety regulations, batteries are charged to below 20~30% of full capacity during production.
- When not using batteries for a long period, charge the battery for 30 minutes to 1 hour at least once every 6 months to prevent full discharge and keep the performance.
- Batteries should be stored separately when storing for long periods. Disconnect from any device, charger, or cradle.
- Dispose of used batteries promptly according to local disposal regulations.
- Do not dispose of the battery in fire. It may cause explosion.



**Notice:** *The battery is consumable. Point Mobile provides a warranty for the battery for 12 months after purchase. If you suspect the battery swelling, change the battery immediately and contact Point Mobile.*





## **Point Mobile. Co., Ltd.**

### **Offline**

Tel: +82-2-3397-7870~1

Fax: +82-2-3397-7872

Address: 26F, Building A, Gasan Publik,  
178, Digital-ro, Geumcheon-gu, Seoul, Korea 08513

### **Online**

Website: <https://www.pointmobile.com>

E-mail : [pm\\_ta@pointmobile.com](mailto:pm_ta@pointmobile.com)