



Wireless Ring Scanner **PM5** User Manual

Instruction

PM5 is a wireless Bluetooth scanner that brings the full scanning capability on your finger. With two types of trigger accessories, single trigger and sled, you can use PM5 optimizing on your working routine. PM5 can be used with host device, and can also be used as a standalone scanner with batch mode.

This manual provides information about basic features and using the PM5. Please read this manual carefully before using your handy Bluetooth scanner and peripherals to ensure safe and proper use.

Revision History

Revision	Date	Description
V01	09 Feb 2021	Initial release
V02	26 Apr 2021	Revised the sled contents and functions related a button Updated status indication of updating Firmware
V03	07 May 2021	Updated System settings, Notification settings, Symbologies settings as of firmware version 92.05 Updated configuration auto update scenario
V04	15 Jul 2021	Updated Battery safety information chapter
V05	06 Aug 2021	Updated the description and added diagram for activity modes section
V06	27 Aug 2021	Updated System settings (Lock special barcode), reconnection feature, and added Bluetooth settings
V07	19 Oct 2021	Added description for connecting with Windows PC on HID mode. Updated Bluetooth Class special barcode
V08	17 Feb 2022	Applied changed app name (RingControl) and strings (Applied changes of 92.06) Updated configuration default of system and symbology settings Updated status indication, condition for update, etc. Added descriptions of Windows 10 PC connection (SPP, HID mode)
V09	06 Apr 2022	Changed the term 'special barcode' to 'parameter barcode' Updated the parameter barcodes in Appendix
V10	25 Nov 2022	Removed the unsupported feature (vibration) description

Instruction

Related Document

Download related documents from [Point Mobile Service Portal](#).

- RingControl User Guide – Describes how to use RingControl application
- RingControl Lite User Guide – Describes how to use RingControl Lite application

RingControl Configuration Tool Guide – Describes how to use Ring Scanner Configuration PC Tool for making a configuration json file for Ring Scanner.

PM5 SKUs

The contents of this manual can cover the following SKUs.

SKU	Part Number	Scanner	Trigger Accessory	Battery
SKU1	PM500B6212N0	N6703	Single Trigger	Standard battery capacity
SKU2	PM500B6222NX			Extended battery capacity
SKU3	PM500B6312N0		SLED	Standard battery capacity
SKU4	PM500B6322N0			Extended battery capacity

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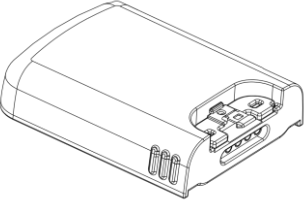
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Getting Started

Product Standard Accessories

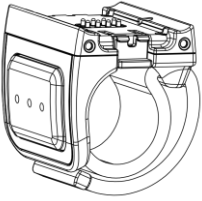
The following item is in the product box regardless of the SKU.

Accessory	Name
	Battery pack

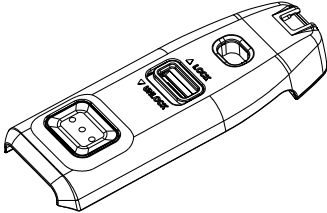
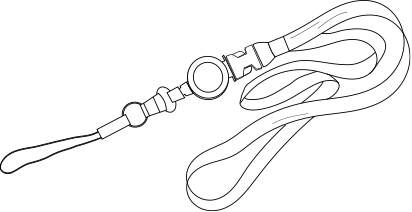
Optional Accessories (By SKU)

Depending on the SKU, one of the following is included in the product box.

Single Trigger SKU (SKU1, SKU2)

Accessory	Name
	Single Trigger

Sled SKU (SKU3, SKU4)

Accessory	Name
	Sled
	Sled Lanyard

Getting Started

Ring Scanner Parts

Figure 1 PM5 Front view

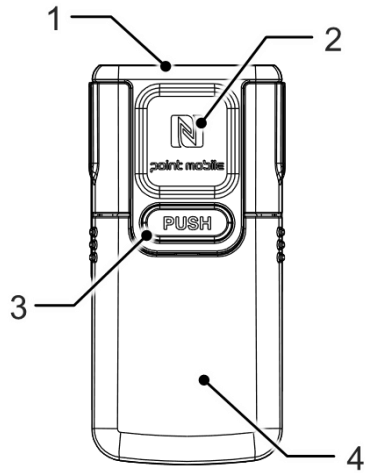
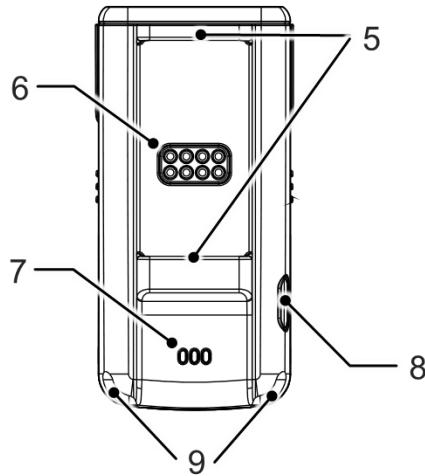


Figure 2 PM5 Back view



No	Name	Description
1	Scanner	Scan a barcode
2	NFC tagging area	Put close to NFC antenna for Tap-to-Pair
3	Battery release button	Press to release the battery from PM5
4	Battery	Provide power
5	Trigger or Sled assembly latch	Assemble the trigger or sled
6	Trigger or Sled connector pin	Communicate with trigger or sled for triggering scan action and charging device
7	Speaker	Emit the beep sound
8	Reset button	Press to reboot or reset PM5
9	LED Indicators	Indicates the status of PM5 with beep sound

Getting Started

Trigger Accessory Parts

Single trigger parts

If you purchased the PM5 single trigger SKU (SKU1, SKU2), a single trigger is included in the package box.

PM5 can be worn on the index finger like a ring by assembling the single trigger. And by USB connector on the trigger, you can charge PM5.

Figure 3 Trigger side view

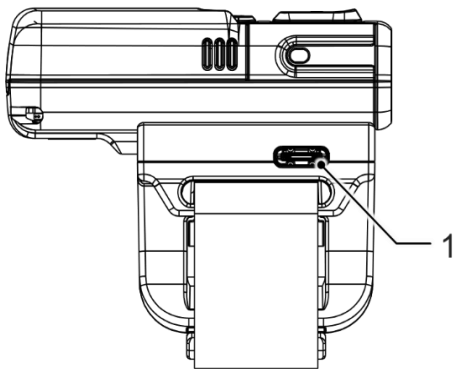
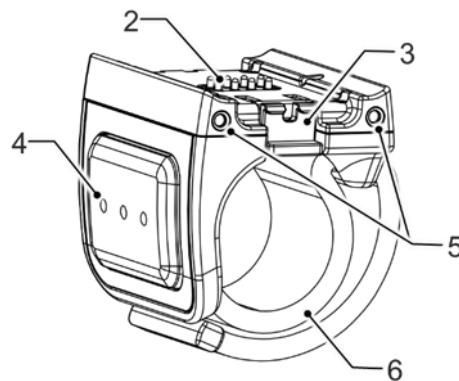


Figure 4 Trigger front + side view



No	Name	Description
1	USB type C Connector	Charge PM5 through USB type C cable
2	PM5 connector pin	Connect PM5 with single trigger
3	Trigger locker	Latch the single trigger / Press to release the single trigger from PM5
4	Trigger scan button	Scan a barcode or power on PM5
5	Cradle charging connector	Connector for 4SC cradle charging
6	Finger strap	Tighten strap to fit your finger

Getting Started

Sled parts

Sled can charge PM5 and lets the PM5 communicate with a host PC, using USB connector. Also, you can wear the PM5 like a necklace by mounting the enclosed lanyard in the Sled SKU package box.

Figure 5 Sled front view

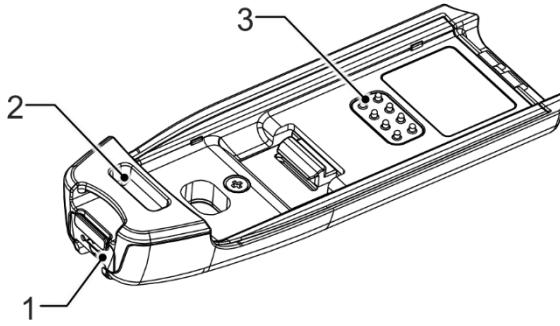
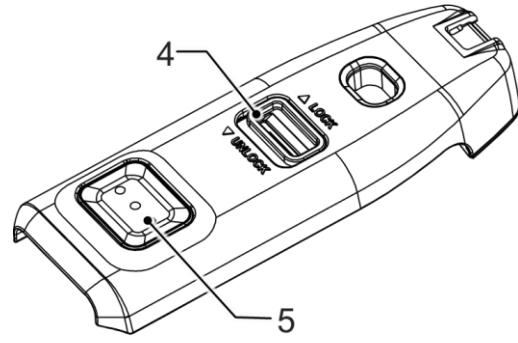


Figure 6 Sled back view



No	Name	Description
1	USB type C Connector	Charge PM5 or let PM5 communicate with PC through USB Type C cable
2	Lanyard hole	Mount lanyard
3	PM5 connector pin	Connect PM5 with sled
4	Sled locker	Latch the sled / Press to release the sled from PM5
5	Sled scan button	Scan a barcode or power on PM5

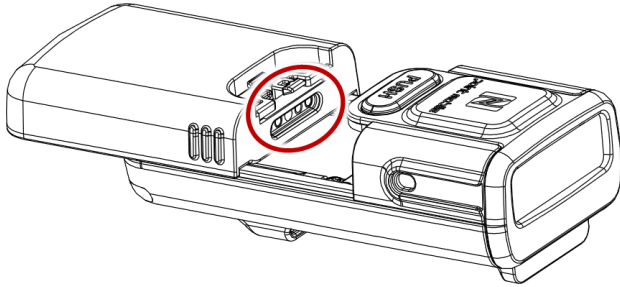
Getting Started

Install & Remove Battery

Install the battery

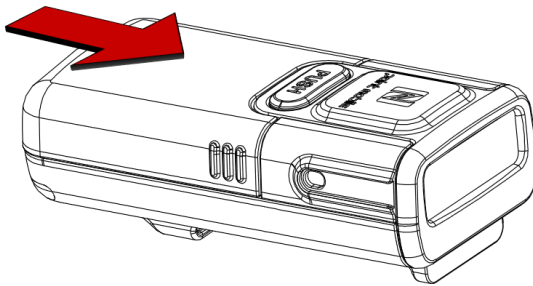
1. Align the connector on the PM5 with the connector on the battery

Figure 7 Install battery_1



2. Slide and press the battery into the battery slot so that the battery is firmly engaged

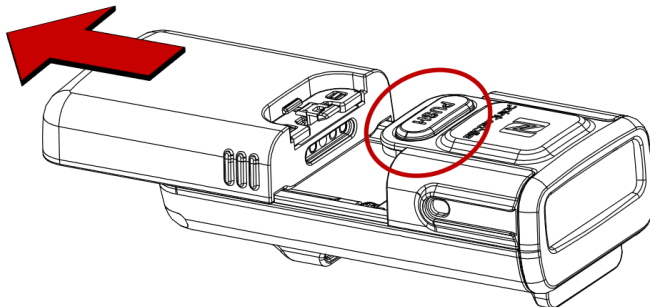
Figure 8 Install battery_2



Remove the battery

Pull the battery while pressing the battery release button.

Figure 9 Remove battery



Getting Started

Using with Trigger Accessory

Single trigger (SKU1, SKU2)

Assemble single trigger

The trigger is designed for ambidextrous use, so determine the hand you want to mount and assemble the trigger with right orientation.

1. Determine the trigger orientation according to the hand you wear the PM5.
 - Align the trigger so that the trigger scan button is positioned next to the thumb.
2. Insert the opposite side of trigger locker to PM5's trigger assembly latch first.

Figure 10 Trigger Assemble_Left hand mount

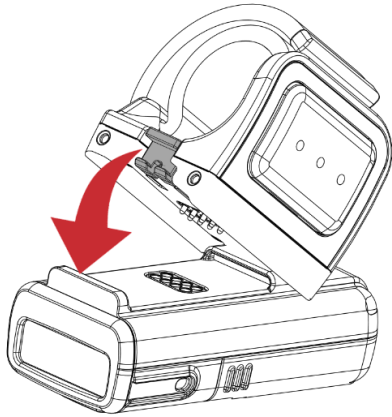
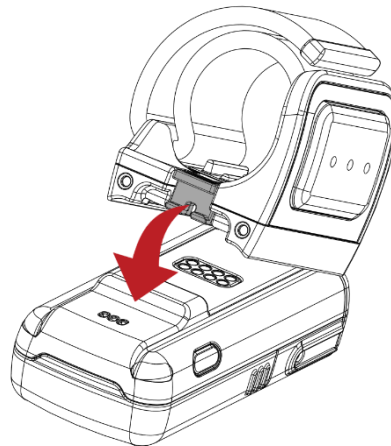
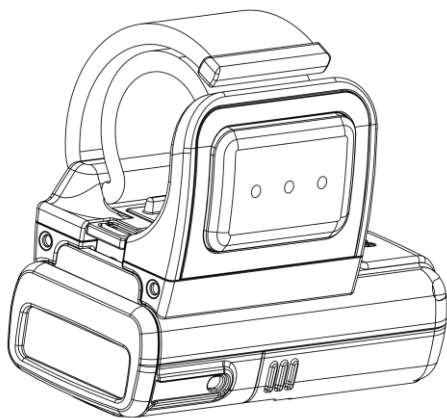


Figure 11 Trigger Assemble_Right hand mount



3. Push the other end down until it clicks.
4. Make sure that the trigger is engaged firmly.

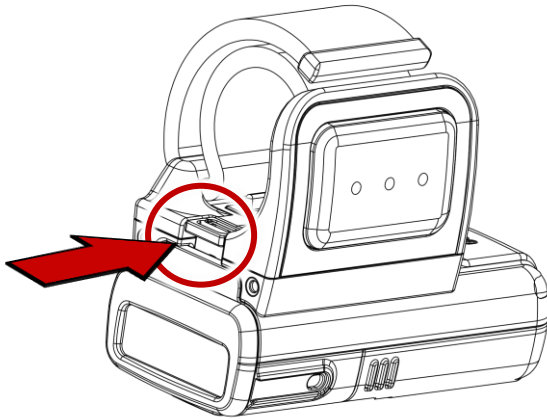
Figure 12 Trigger Assembled_Left hand mount



Getting Started

5. To remove the trigger from PM5, press the trigger locker and pull the trigger up.

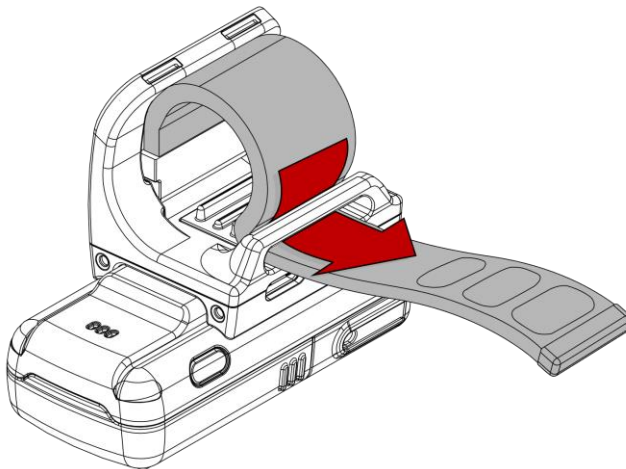
Figure 13 Remove trigger



Wearing on scanner

1. Insert the end of finger strap into the hole on the single trigger

Figure 14 Insert finger strap

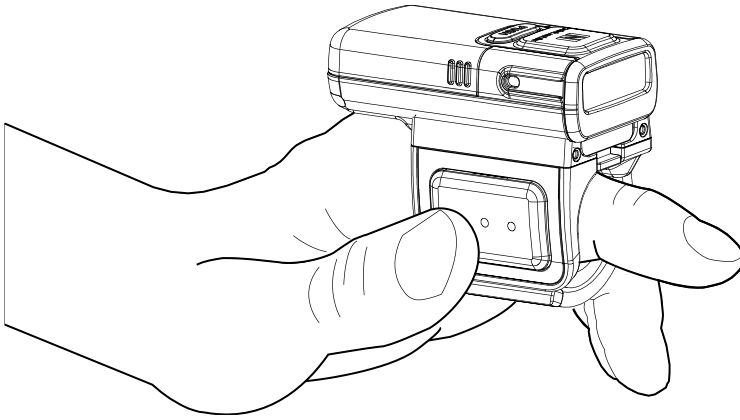


2. Wear the PM5 with single trigger on the index finger as the trigger scan button facing the thumb.

Getting Started

3. Tighten the finger strap and attach the end of the strap to remaining strap.

Figure 15 Mount PM5 onto index finger (Left hand)



4. To loosen the finger strap, detach the end of the strap

Getting Started

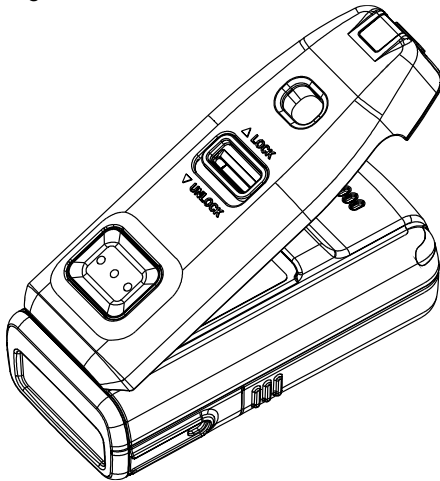
Sled (SKU3, SKU4)

If you assemble the sled to PM5, it becomes a lightweight portable scanner. Also, you can wear the PM5 like a necklace by enclosed lanyard in sled SKU.

Assemble Sled

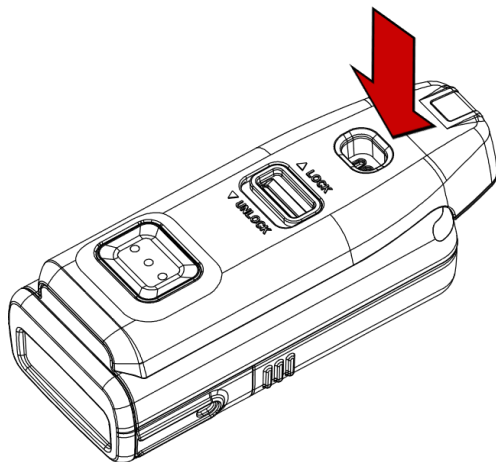
1. Slide and insert the end of sled's scan button side to the scanner side latch on the PM5 as shown below figure.

Figure 16 Assemble sled - 1



2. Push the other end of sled down until it clicks.

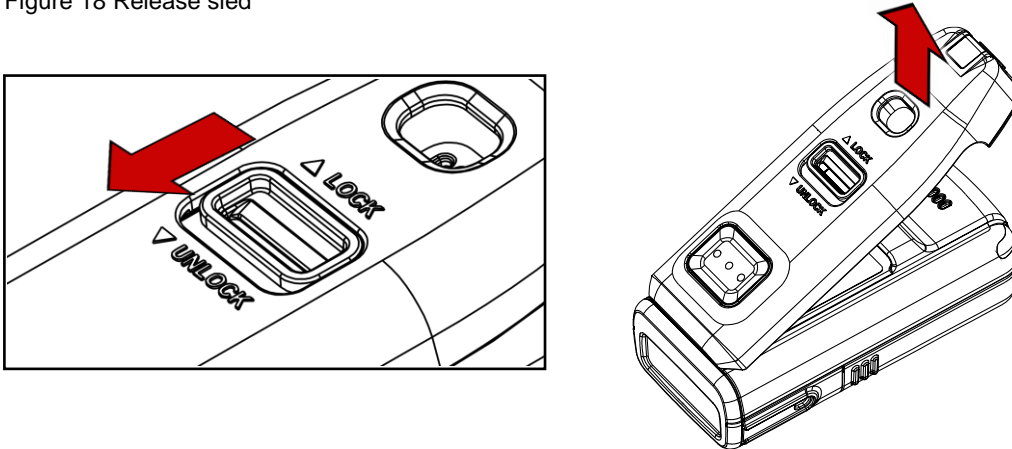
Figure 17 Assemble sled - 2



Getting Started

3. Make sure the sled is engaged firmly.
4. To remove the sled, slide the sled locker toward the **UNLOCK** and lift the sled.

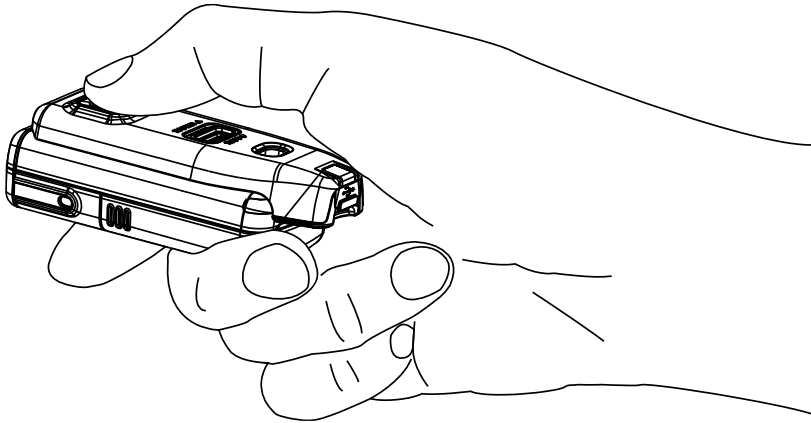
Figure 18 Release sled



Use with Sled

Use PM5 with sled mounted with the scan button on sled facing up. You can easily press the scan button by thumb.

Figure 19 Holding PM5 with Sled mounted



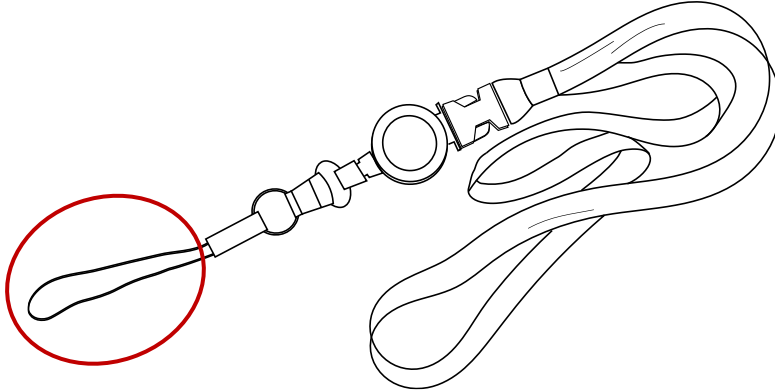
Getting Started

Attach lanyard

Wear the PM5 like a necklace and protect the scanner from falling damage by attaching lanyard. The lanyard is enclosed in PM5 Sled SKU. And it has a retractable wire reel for wider working range.

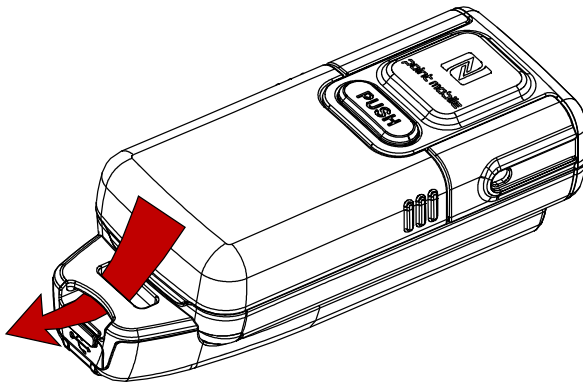
1. Find the end of the strap that thin enough to go through the lanyard hole.

Figure 20 Sled lanyard



2. Slide the strap into the lanyard hole

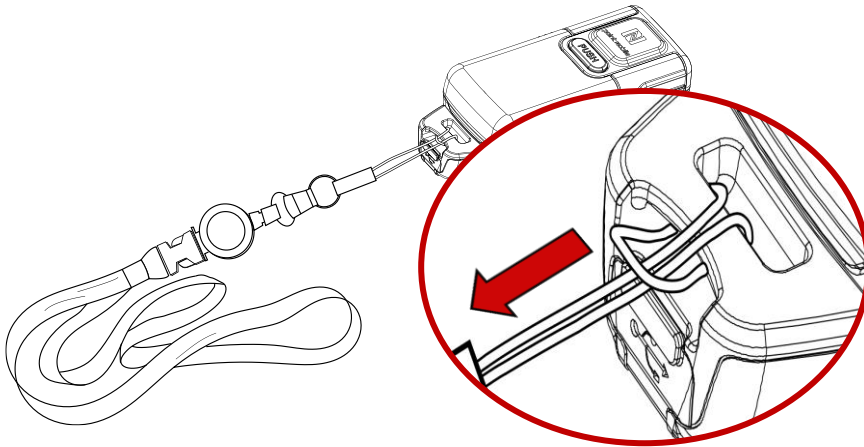
Figure 21 Attach lanyard - 1



Getting Started

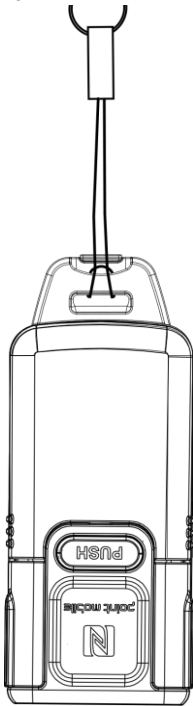
3. Pass the other end of strap through the loop of thin strap.

Figure 22 Attach lanyard - 2



4. Pull the lanyard until it is tight.

Figure 23 Attached lanyard



Getting Started

Charging the Scanner

i **Note:** Before using PM5 for the first time, charge the scanner at least 1 hour for stable operation.

There are two methods to charge PM5. Use power adapter or charging cradles (optional accessory).

Charge via power adapter

According to the SKU, assemble the single trigger or sled and charge PM5 using the USB connector on each accessory.

1. Assemble the single trigger or sled to PM5.
2. (Sled only) Pull the rubber cap to open.
3. Plug the USB Type C charger into the USB connector.
4. Confirm the connection with PM5's LED indicator.
(Red - Charging / Green - Fully charged)

Figure 24 Trigger USB connector

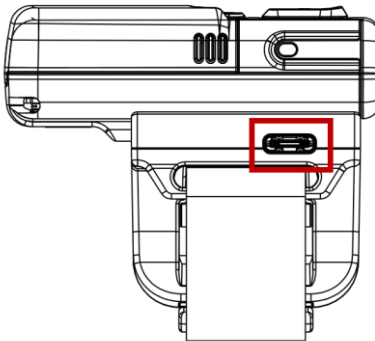
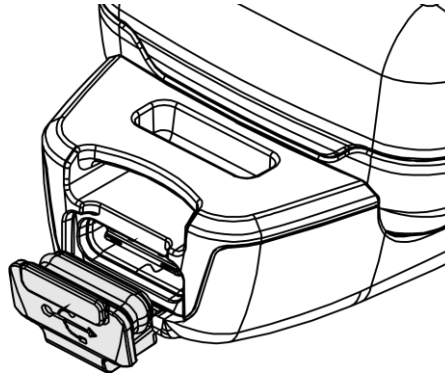


Figure 25 Sled USB connector (Open cap)



Getting Started

Charge via cradle

There are 2 types of cradle (sold separately) for charging PM5, 8SBC (8 Slot Battery Cradle) and 4SC (4 Slot Cradle). The cradles can be connected to make share cradle that can charge the PM5 and batteries with more slots.

8SBC

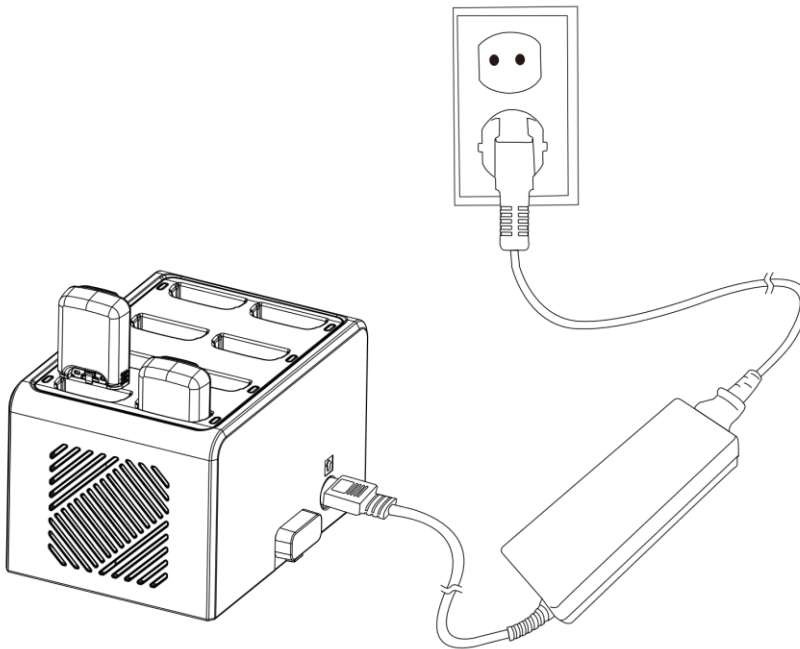
8SBC can charge up to 8 batteries of PM5 simultaneously. To charge the PM5 battery,

1. Assemble the power adapter and power cable, and then connect it to the cradle.
2. Remove the battery from PM5.
3. Align the battery as the shape of the slot, and battery connector should be facing down.
4. Insert the battery into the slot until it clicks.

When the battery is inserted properly, the LED indicator next to the slot will light on.

(Red – Charging / Green – Full charged)

Figure 26 Charging battery with 8SBC



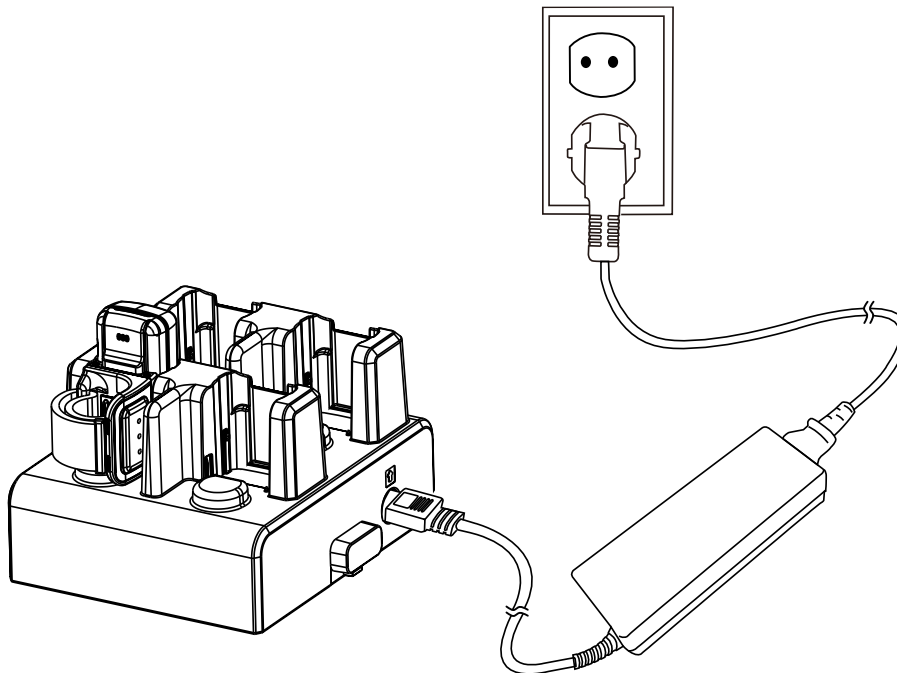
Getting Started

4SC

4SC can charge up to 4 units of PM5 with single trigger mounted. Single trigger must be mounted the PM5 for charging with 4SC (Sled SKU cannot be charged).

1. Assemble the power adapter and power cable, and then connect it to the cradle.
2. Insert PM5 into the slot as the scanner is facing down
3. Push the device down until the LED indicator of PM5 lights up
(Red – charging / Green – Fully charged)

Figure 27 Charging with 4SC



Share cradle

8SBC and 4SC can be connected up to 5 pcs of cradles in one type only or two different types (4SC + 8SBC) to make share cradle. With share cradle, you can charge more PM5 and batteries at the same time.

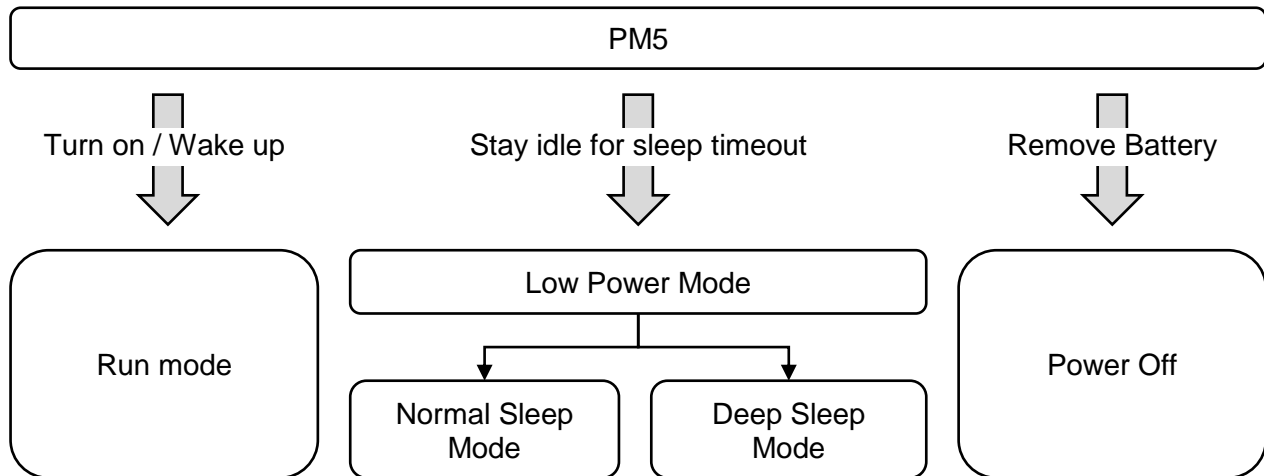
Find more information in [Accessory – Share Cradle](#).

Getting Started

Scanner Status

Activity modes

There are 3 activity modes on PM5, Run mode, Low power mode, and power off.



Run mode

Run mode is a mode that PM5 can operate immediately.

Low Power mode

When PM5 stays idle for sleep timeout you set, PM5 enters sleep mode. Sleep mode has two types, Normal sleep and Deep sleep.

sleep type	description
Normal sleep	Normal sleep mode (Default). Scanner and Bluetooth stay turned on.
Deep sleep	Reduce the battery consumption more by cut off the power of scanner, and Bluetooth (depending on connection state) as well.

The sleep timeout and sleep mode are changeable. See [RingControl User Guide](#) to find out how to configure them.

User can wake up the scanner by below event.

- Press reset button on PM5 or scan button on trigger accessory (single trigger or sled)
- Send an activity through Bluetooth connection
- Connect USB cable



Note: Waking up the PM5 takes more (about 1 second) when using Deep sleep mode.

Getting Started

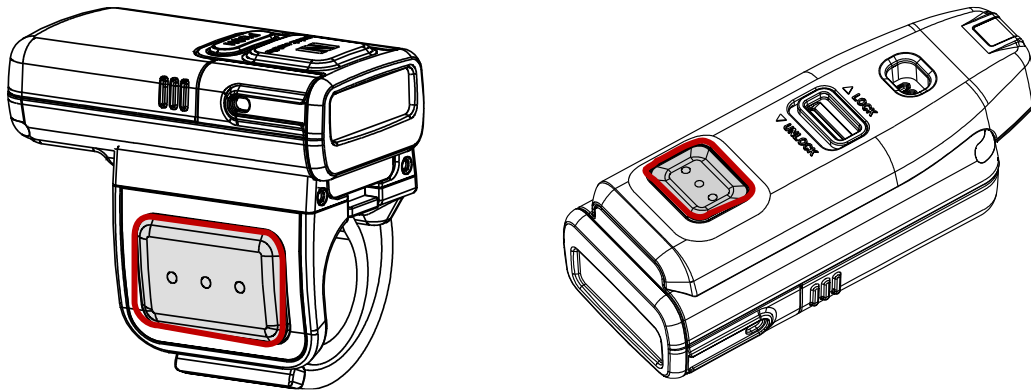
Power Off

Remove the battery to power off the PM5.

Power on

Install battery to PM5, and press scan button on single trigger or sled.

Figure 28 Scan buttons



Reset the PM5

Warmboot

Perform warmboot when you want to restart the PM5. LED indicator will light on blue during warmboot process. To perform warmboot,

- Press reset button for 3 seconds

Factory reset

To reset all setting values as default, perform factory reset. LED indicator will light on red during factory reset process.



Note: Factory reset will erase all customized configuration of PM5, device settings, symbologies settings, Bluetooth pairing information.

Getting Started

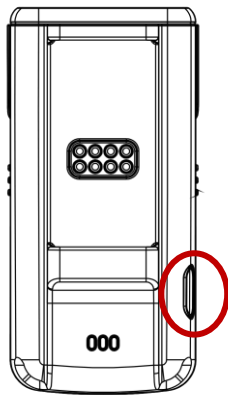
To perform factory reset when PM5 is in run mode or low power mode,

1. Press reset button until the blue LED blinks for 5 seconds.
2. While LED blinks, press and release reset button and scan button on single trigger or sled simultaneously.

To perform factory reset when PM5 is not powered on,

- Press reset button immediately after pressing scan button on single trigger or sled to power on PM5.

Figure 29 Reset button



You can do the factory reset using RingControl (Lite) app or parameter barcode, too. See the application's user guide to find how to perform the factory reset with the app, or see [Appendix – Factory Data Reset](#) to find the parameter barcode.

Getting Started

Status indication

Unless the beep sound is muted or LED notification is disabled, user can check the PM5's status with beep sound and LED as below table.

Description	LED Sequence	Beep Sequence
Booting		
PM5 is powered on	Green (Until the beep sequence ends)	Short low – Short medium – Short high
PM5 is booting as warmboot	Blue	None
PM5 is booting after factory reset	Red	None
Low battery warning (Repeat up to 3 times)		
Battery is low (less than 20% or 10%)	Red (Until the beep sequence ends)	4x Short high
Battery level (Press Reset button to activate)		
Battery level is more than 20%	Green (For 5 seconds)	None
Battery level is between 10% and 20%	Blue (For 5 seconds)	None
Battery level is less than 10%	Red (For 5 seconds)	None
Charging		
Charging battery	Red	None
Fully charged	Green	None
Bluetooth Communication		
Attempting to connect via Scan-to-Pair	Blue blinking	Short high - Short low - Short high - Short low
Bluetooth connected	Green	Short medium - Short high
Bluetooth disconnected	Red	3x Short high

Getting Started

Description	LED Sequence	Beep Sequence
Firmware Update		
Updating firmware	Blue blinking	None
Scanning		
Decoding success	Green flash	Short high
Decoding success and Bluetooth is not connected	Red (until the beep sequence ends)	3x Short low
Decoding fail	Red flash	Short medium – High
Temperature warning		
Battery temperature is low (Under 0 °C)	Red	High – Low – High – Low
Battery temperature is critical low (Under -5 °C and voltage is under 3.8V)	None	High – Middle – Middle – Low (Then shutdown)

Applications for Ring Scanner

There are 3 applications for Point Mobile ring scanners, RingControl, RingControl Lite and RingControl Configuration Tool. These applications can be downloaded from [Point Mobile Service Portal](#).

This manual only describes what features are in each application briefly. If you want more information, please refer to [each application's user guide](#).

RingControl

RingControl is an application installed on a host device for connecting and controlling the ring scanner. RingControl is only compatible with Point Mobile Android devices, such as PM85.

RingControl supports,

- Bluetooth pairing between ring scanner and host device
- Advanced Settings
 - Apply Ring Scanner settings with JSON file
 - Update Ring Scanner F/W with RFU file
 - Wedge settings
 - Ring Scanner settings
 - Rename ring scanner
 - Factory reset
- Get ring scanner's information
- Scan demo

RingControl Lite

RingControl Lite is a RingControl for Android device which is not manufactured by Point Mobile. RingControl Lite supports most of RingControl features, but does not support wedge settings.

Applications for Ring Scanner

RingControl Configuration Tool

RingControl Configuration Tool is a PC tool that can save a json file containing the configurations for ring scanner. The file will be used by the RingControl (Lite) to apply the configuration.

Figure 30 Ring Scanner Configuration Tool

PM5 RingControl Configuration Tool (v2.8.0)

Copyright (c) 2021 Point Mobile, All rights reserved.

Choose File No file chosen Load JSON File

Generate JSON Clear

Revision 0

RingControl Configuration

Admin Password

Set Password ☐

Password

Password Repeat

Ring Scanner Configuration

Configuration

RFU AutoUpdate ☒ Disable ☐ Enable

RFU AutoUpdate Filename

RingScanner AutoUpdate ☒ Disable ☐ Enable

Note: Wedge function is supported with Point Mobile Android products only.

Result Type ☐ User Message ☐ Keyboard Event ☒ Clipboard (KEYCODE_PASTE) ☐ Clipboard (Ctrl + V) ☐ Custom Intent

You can configure the below settings,

- RingControl Configuration
 - Admin Password
- Ring Scanner Configuration
 - Auto Update, Wedge
 - Configuration
 - System
 - Notification
 - Symbologies

Bluetooth Connection

PM5 supports the following Bluetooth modes. Find appropriate Bluetooth mode for connection according to what you do with PM5. Default mode is SPP.

Bluetooth Modes	Purpose
SPP (Serial Port Profile)	<ul style="list-style-type: none"> Changing PM5 configurations Updating PM5 firmware
HID (Human Interface Device) – Classic and LE	<ul style="list-style-type: none"> Getting scan data (Keyboard action)
BLE (Bluetooth Low Energy)	<ul style="list-style-type: none"> Updating PM5 Bluetooth firmware

SPP Connection

SPP (Serial Port Profile) mode is default communication mode of PM5. To change configurations or update PM5 firmware, you must use SPP mode.

Depending on the host device to be connected with, an application is required as follows.

Host device	Required application
Point Mobile Android devices	<ul style="list-style-type: none"> RingControl
General Android devices	<ul style="list-style-type: none"> RingControl Lite
Windows 10 PC	<ul style="list-style-type: none"> Application developed with PM5 SDK

Connect with Point Mobile Android devices

To connect PM5 with Point Mobile Android devices, RingControl app is required. RingControl provides three ways to connect.

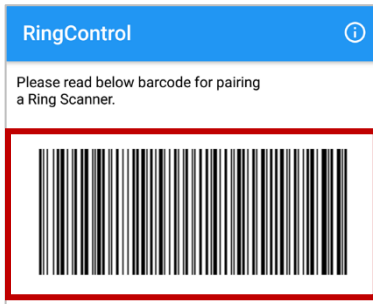
Bluetooth Connection

Scan-to-Pair

Scan-to-Pair is most common way to connect via RingControl.

Scan a barcode provided by RingControl. This barcode makes PM5 change to SPP mode and connect to the host device.

Figure 31 Scan-to-Pair

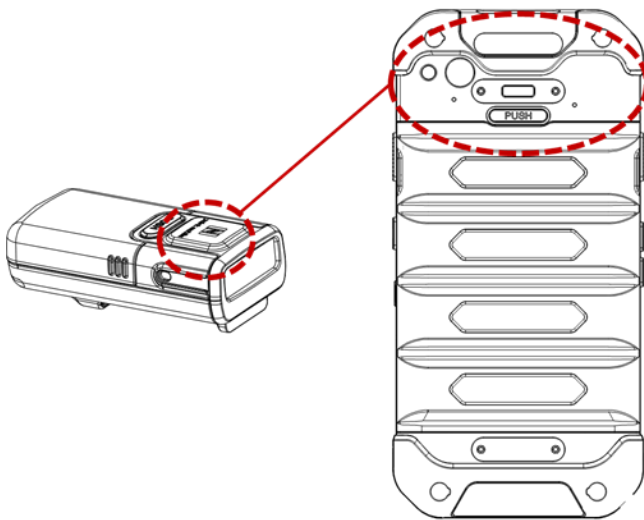


Tap-to-Pair

Find the NFC location of host device and ring scanner, and align NFC logo of ring scanner with NFC antenna of host device to pair.

For instance, PM85's NFC antenna is located on the back side of the device. Align the NFC logo of the PM5 with the NFC area as below figures.

Figure 32 Tap-to-Pair_NFC tapping area (PM85 & PM5)



Bluetooth Connection

Search to Pair

You can connect PM5 through searching during RingControl app is on the background.

1. Go to **Settings > Bluetooth**.
2. Turn on the Bluetooth.
3. Select a PM5 to be connected among the searched Bluetooth device list.



Note: RingControl app must be launching on background via auto-launch.

Connect with general Android devices

To connect PM5 with general Android devices, RingControl Lite app is required. RingControl Lite provides different ways to connect depending on whether your Android device supports the NFC feature or not.

Find detail in the [RingControl Lite User Guide](#).

Tap-to-Pair (Support NFC)

1. Scan the barcode on the RingControl Lite screen.
2. Perform Tap-to-Pair.
 - Check the NFC reader area of host device and the NFC tag area of ring scanner and bring them close.
3. Wait until the scanner is connected.

Scan-to-Pair (Not supporting NFC)

1. Find Bluetooth MAC address
 - The address can be found in Settings > About phone usually.
(Where the address may vary depending on the manufacturer and model.)
2. Enter address to the RingControl Lite.
3. Scan the created pairing barcode.
4. Wait until the scanner is connected.

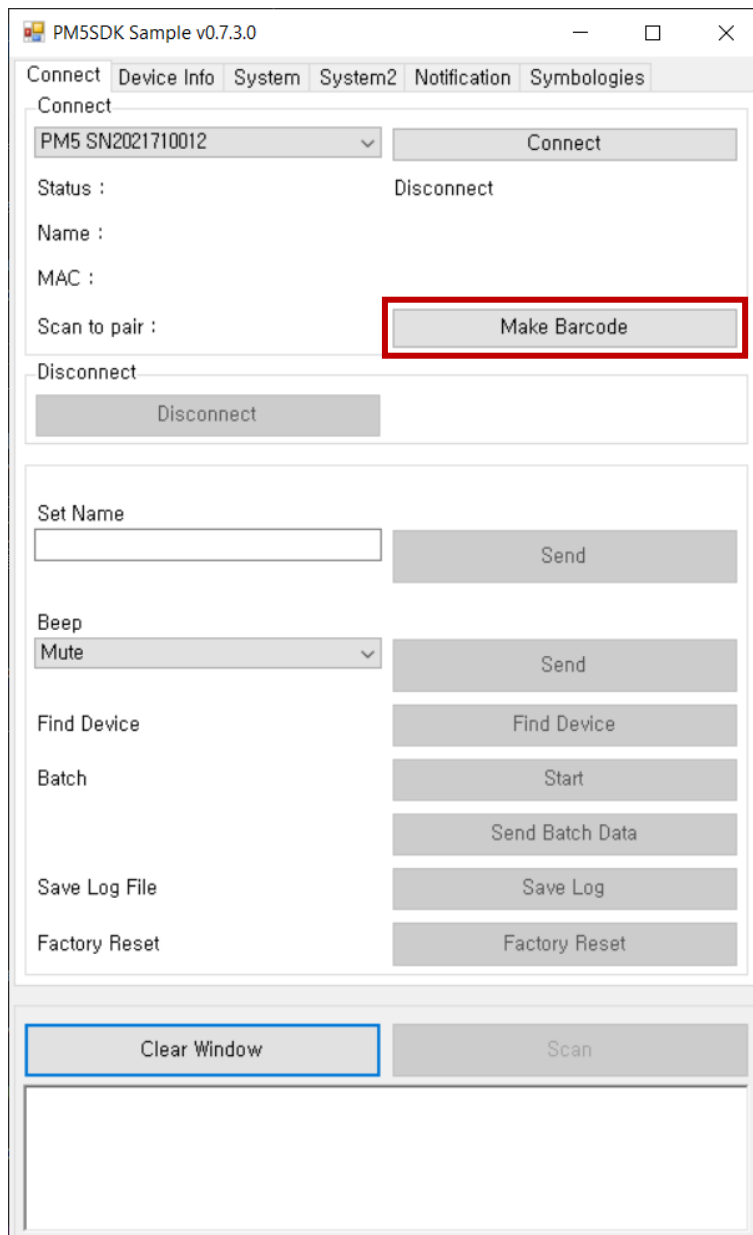
Bluetooth Connection

Connect with Windows 10 PC

Point Mobile provides a sample app for connecting PM5 via scan-to-pair. Download the sample app (SDK) package from [Service Portal](#), and install it on your PC.

1. Execute sample app.
2. Click **Make Barcode**.

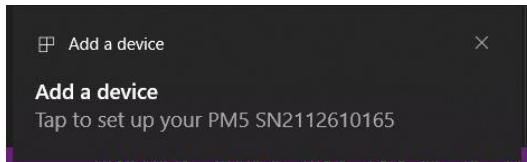
Figure 33 PM5 SDK Sample app (Windows)



Bluetooth Connection

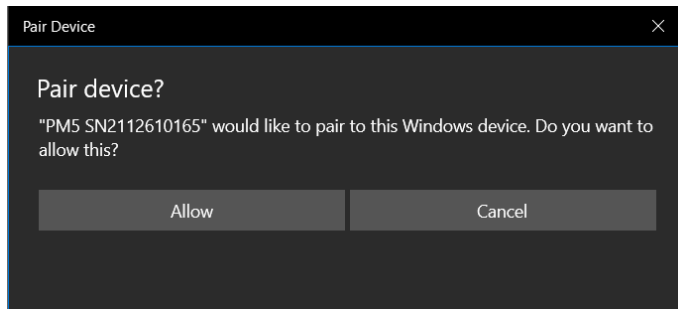
3. Scan the pairing barcode with PM5.
4. Click the notification to add PM5.

Figure 34 Add device notification (Windows)



5. Allow to pair PM5 on the dialog.

Figure 35 Pairing dialog (Windows)



Bluetooth Connection

HID connection

When PM5 is connected as HID mode, the PM5 scans a barcode and sends the decoded data to the host device as a keyboard action.

To change the mode to HID, refer to [Change Bluetooth Connect Mode](#) chapter. And no additional application is required for HID connection.

Supporting host devices are as follows.

- Android devices
- Windows 10 PC



Note: HID LE mode

HID LE mode is kind of HID mode. HID LE mode makes PM5 and host device communicate through Bluetooth low energy radio. HID LE mode supports same pairing method as HID mode.

Connect with Android devices

There are two ways to connect as HID mode, Tap-to-Pair and Searching.

Tap-to-Pair

If your Android device supports NFC feature, use Tap-to-Pair to connect easily.

1. Check the NFC reader area of host device and the NFC tag area of ring scanner and bring them close.
2. Wait until the scanner is connected.

Tap-to-Pair operates like toggle in HID mode. This means that if Tap-to-Pair is performed when the ring scanner is connected to host device, the connection will be closed.



Note: *NFC feature will be paused for 5 seconds after NFC reading. It is a function for preventing duplicate NFC request. So, if you want to connect or disconnect the ring scanner by Tap-to-Pair, try when more than 5 seconds passed since last NFC tagging.*

Bluetooth Connection

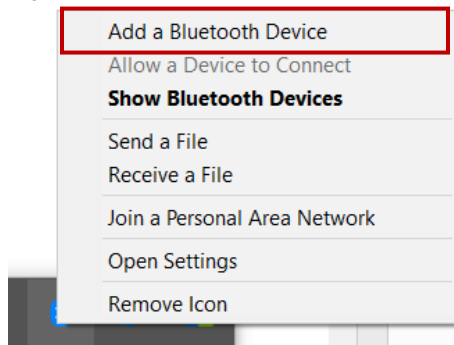
Search to Pair

1. Go to **Settings > Bluetooth** on your Android device.
2. Turn on the Bluetooth.
3. Select a PM5 to be connected among the searched Bluetooth device list.

Connect with Windows 10 PC

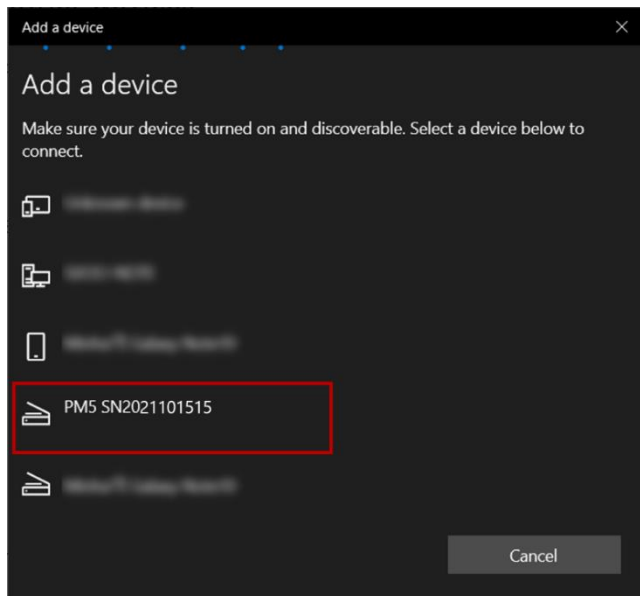
1. Check if your PC supports Bluetooth.
2. Right click the Bluetooth icon on the task bar, and select **Add a Bluetooth Device**.

Figure 36 Connect with Windows PC (HID mode)_1



3. Select PM5 to be connected among the searched nearby Bluetooth device list in **Add a device** window.

Figure 37 Connect with Windows PC (HID mode)_2



4. PM5 emit the beep and LED sequence to confirm the connection.

Bluetooth Connection


BLE Connection

BLE (Bluetooth Low Energy) mode is only used for updating the Bluetooth firmware through RingControl (Lite).

You don't need to change to BLE mode manually because the app(s) will change the mode to BLE automatically when you try to update the firmware. And the PM5 comes back to SPP mode automatically when the update is done.

Disconnect

To close connection between PM5 and host device,

- Turn off Bluetooth on the host device
- Reboot ring scanner
- Tap disconnect icon  on the RingControl app
- Tap-to-Pair (Do when the PM5 is connected. Supports only for HID mode)

If PM5 is disconnected, PM5 emits red LED and high beep sound three times.

Reconnect

Reconnect to the host device connected right before by pressing a button sequence. Reconnection is available for SPP and HID mode (unavailable for HID LE mode).

1. While pressing reset button on PM5, press and hold the scan button on trigger accessory.
2. Release the buttons when blinking green LED.
3. Press shortly the scan button on trigger accessory



Note:

- Do 2~3 steps within 5 seconds after blinking green LED.
- If there is no device information connected before, PM5 emits a long beep sound and red LED blinks three times.

Bluetooth Connection

Change Bluetooth Connect Mode

To change the connect mode, scan the mode change barcodes ([Appendix – Bluetooth Mode Barcodes](#)). If the mode is changed while PM5 is connected to host device, the connection will be closed and you have to connect the devices again.

General Bluetooth Settings

Bluetooth name

Change PM5's Bluetooth name and find out your PM5 more easily. You can rename the PM5 through RingControl (Lite) app. Go to **Advanced Settings > Rename Ring Scanner** on the app and input a new name.

There are some rules for new Bluetooth name of PM5. See the [applications user guides](#) for more detail.

Bluetooth power class

Change the Bluetooth radio power between Class 1 and Class 2, using parameter barcodes or RingControl (Lite) app.

	Class 1	Class 2
Radio power	High	Low
Range	Long	Short
Power consumption	High	Low

The default class of PM5 is Class 2. To increase the range change to Class 1. But Class 1 consumes battery power more than Class 2.

If you want to use parameter barcode, find desired barcode in [Appendix – Bluetooth Power Class](#).

Configuration

PM5 configuration consists of wedge, system, notification, symbology settings. Unless you do factory reset, the configuration maintains after reboot.

This chapter describes how to apply the configuration, and each configuration.



Note: To change all setting values as default, execute factory reset on PM5. Find how to do factory reset in [Reset the PM5](#).

Apply Configuration

To adjust configuration of PM5, use RingControl (Lite) app or JSON file made by RingControl Configuration Tool.

Apply via RingControl

This method is that you change the configuration one by one using RingControl interface.


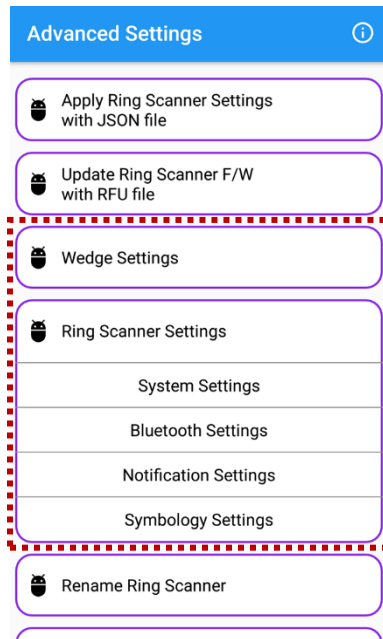
1. Execute RingControl (Lite) and connect PM5 with host device
2. Tap  on the top of the main screen to access **Advanced Settings**
3. Input the admin password (Default password is 1010)
4. Select the settings that you want to change

Figure 38 Ring Control - Advanced settings



Configuration

Apply via JSON file

To apply the configuration via JSON file, RingControl (Lite) app and RingControl Configuration Tool is required.

Generate a **RingControl.json** file containing the configuration and copy it to **RingControl** folder in the internal storage of host device.



Note: Must follow the file name and path. Otherwise, update cannot be performed.

Below table describes two types for applying ring scanner settings with JSON file.

Methods	Description
Auto Update	<ul style="list-style-type: none"> Set configuration auto update in JSON file Apply configuration every time the ring scanner is connected
Manual Update	<ul style="list-style-type: none"> Apply configuration immediately



Note: Update is not available when PM5 battery is too low (<20%) or temperature is out of range (< 0 °C or < 32 °F)

Auto Update

Auto update will be performed every time the ring scanner is connected as SPP mode.

To use auto update, set up the auto update in the **RingControl.json** file and copy the file to **RingControl** folder of host device.

Configuration to be updated depends on the revision number of JSON file. It can be entire configuration, or beep volume setting only. See the following instruction.

- **Entire update**
 - When: Revision number of the JSON file is different from previously applied one
 - What: Entire configuration will be update
- **Beep volume update**
 - When: Revision number of the JSON file is same as the previously applied one
 - What: Only beep volume will be update

For more detail, refer to [application's user guides](#).

Configuration

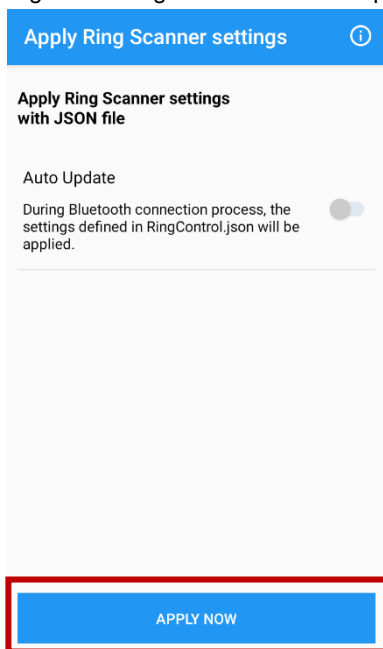
Manual Apply

Manual update can be performed regardless the auto update is enabled or disabled. To apply new configuration with a JSON file immediately,

1. Launch RingControl (Lite) and connect PM5 with host device.
2. Go to **Advanced Settings > Apply Ring Scanner settings with JSON file**
(Password is required).
3. Tap **APPLY NOW** and wait until the process is done.

The app will find the **Configuration.json** file and use it.

Figure 39 Ring Control - Manual Apply Configuration



Configuration

Available Settings

Wedge settings

Wedge settings can be set through RingControl and RingControl Configuration Tool both, but not supported on RingControl Lite. Check the default values in the below table.

Setting	Values	Default
Wedge mode		
Result type	User Message Keyboard Event Clipboard (KEYCODE_PASTE) Clipboard (Ctrl + V) Custom Intent	Clipboard (KEYCODE_PASTE)
Custom intent		
Intent action		device.scanner.EVENT
Intent category		android.intent.category.DEFAULT
Extra decode string value (String)		EXTRA_EVENT_DECODE_VALUE
Extra decode bytes value (ByteArray)		EXTRA_EVENT_BYTES_VALUE
Extra Scanner Source		EXTRA_EVENT_SOURCE
Character set		
Result Charset	UTF-8 UTF-16 UTF-16BE UTF-16LE US-ASCII ISO-8859-1 EUC-KR Shift-JIS windows-1250 windows-1251 windows-1252 windows-1253 windows-1254 windows-1257	UTF-8

Configuration

System settings

System settings can be set through RingControl (Lite) and RingControl Configuration Tool.

Setting	Values / Range	Default
Trigger Timeout (sec)	1~10 sec	10 sec
Sleep Timeout (sec)	1~60000 sec	300 sec
Transmit Barcode ID	Disable Enable	Disable
Prefix	Up to 10 characters	
Suffix	Up to 10 characters	
Terminator	None CR LF CR+LF Tab Space	LF
Center Window	Disable Enable	Enable
Center Window Tolerance	0 ~ 100	40
Inverse Mode	Inverse Off Inverse Only Inverse AutoDetect	Inverse Off
HID Inter Char Delay	0~250 ms	20 ms
Batch Mode	Normal Standard mode Auto mode USB storage mode	Normal
Deep Sleep Mode	Disable Enable	Disable
Connect Alert	Disable Enable	Enable
Trigger Mode	Normal Enhanced Mobile Phone Read	Normal

Configuration

Setting	Values / Range	Default
Poor Quality 1D Codes Reading	Disable Enable	Disable
Poor Quality PDF Codes Reading	Disable Enable	Disable
Decode Security (Reading Tolerance)	Very High High Medium Low	Medium
Aimer	Disable Enable	Enable
LED Illumination	Disable Enable	Enable
Delay before Decoding (sec)	Disable 0.2 ~ 4.0 seconds	Disable
Lock Parameter Barcode Scan	Disable Enable	Disable

Bluetooth settings

Bluetooth settings can be set through RingControl (Lite) and RingControl Configuration Tool.

BT Class setting can also be configured by scanning a parameter barcode.

Setting	Values / Range	Default
BT Class	Class 1 Class 2	Class 2
Bluetooth Disconnection Timeout	None 1 ~24 hours	None

Configuration

Notification settings

Set PM5 notification through RingControl (Lite) or RingControl Configuration Tool.

Setting	Description	Default
Beep		
Enable Beep	Enable or Disable the ring scanner's beep sound	Enable
Beep Volume	Adjust the volume of beep sound <ul style="list-style-type: none"> - Mute - Low - Medium - High 	High
Power Up Beep	Enable or Disable the beep sequence on power up	Enable
Scan Success Beep	Enable or Disable the beep when scanning is successful	Enable
Scan Fail Beep	Enable or Disable the beep when scanning is failed	Disable
LED		
Enable LED	Enable or Disable the LED indicator of ring scanner	Enable
Scan Success LED	Enable or Disable the LED indicating the scan is successful.	Enable
Scan Fail LED	Enable or Disable the LED indicating the scan is failed.	Disable

Symbologies

Symbologies settings

Symbologies can be set through RingControl (Lite), RingControl Configuration PC Tool.

Configuration	Values / Range	Default
Code 39 <i>* If Append mode is enabled, redundancy does not work.</i>		
Enable	Disable Enable	Enable
ID		E
Min		0
Max		48
Check Character	No Check Check and don't transmit Check and transmit	No Check
Send Start / Stop Characters	Disable Enable	Disable
Full ASCII	Disable Enable	Disable
Append	Disable Enable	Disable
Code 32 Pharmaceutical	Disable Enable (Couldn't use with Trioptic)	Disable
Unconventional InterCharacter Gaps	Disable Enable	Disable
Redundancy	0 ~ 10	0
EAN8		
Enable	Disable Enable	Enable
ID		I
Send Check Character	Disable Enable	Enable
Addenda Required	Disable Enable	Disable
Send Addenda Separator	Disable Enable	Enable

Symbologies

Configuration	Values / Range	Default
2-Digit Addenda	Disable Enable	Disable
5-Digit Addenda	Disable Enable	Disable
Redundancy	0 ~ 10	0
EAN13		
Enable	Disable Enable	Enable
ID		J
Send Check Character	Disable Enable	Enable
Addenda Required	Disable Enable	Disable
Send Addenda Separator	Disable Enable	Enable
2-Digit Addenda	Disable Enable	Disable
5-Digit Addenda	Disable Enable	Disable
ISBN Translate	Disable Enable	Disable
Redundancy	0 ~ 10	0
GS1 128		
Enable	Disable Enable	Enable
ID]
Min		1
Max		80
Redundancy	0 ~ 10	0

Symbologies

Configuration	Values / Range	Default
GS1 DataBar OmniDir		
Enable	Disable Enable	Enable
ID		P
Redundancy	0 ~ 10	0
GS1 DataBar Limited		
Enable	Disable Enable	Enable
ID		Q
Redundancy	0 ~ 10	0
GS1 DataBar Expanded		
Enable	Disable Enable	Enable
ID		R
Min		4
Max		74
Redundancy	0 ~ 10	0
Interleaved 2 Of 5		
Enable	Disable Enable	Enable
ID		K
Min		4
Max		80
Check Character	No Check Check and don't transmit Check and transmit	No Check
UPC A		
Enable	Disable Enable	Enable
ID		S

Symbologies

Configuration	Values / Range	Default
Send Check Character	Disable Enable	Enable
Send System Character	Disable Enable	Enable
Addenda Required	Disable Enable	Disable
Send Addenda Separator	Disable Enable	Enable
2-Digit Addenda	Disable Enable	Disable
5-Digit Addenda	Disable Enable	Disable
Convert to EAN13	Disable Enable	Enable
Redundancy	0 ~ 10	0
UPC E		
Enable	Disable Enable	Enable
ID		T
Send Check Character	Disable Enable	Disable
Expand	Disable Enable	Enable
Leading Zero	Disable Enable	Enable
Addenda Required	Disable Enable	Disable
Send Addenda Separator	Disable Enable	Enable
2-Digit Addenda	Disable Enable	Disable
5-Digit Addenda	Disable Enable	Disable

Symbologies

Configuration	Values / Range	Default
UPC E1 Enable	Disable Enable	Disable
Redundancy	0 ~ 10	0
Code93 <i>* If Append mode is enabled, redundancy does not work.</i>		
Enable	Disable Enable	Disable
ID		F
Min		0
Max		80
Append	Disable Enable	Disable
Redundancy	0 ~ 10	0
Aztec		
Enable	Disable Enable	Enable
ID		A
Min		1
Max		3832
Append	Disable Enable	Enable
DataMatrix		
Enable	Disable Enable	Enable
ID		H
Min		1
Max		3166
Low Contrast Enhancements	Low Contrast Enhancements Off Low Contrast Enhancements On Reflective Low Contrast Enhancements On	Low Contrast Enhancements Off
Append	Disable Enable	Enable

Symbologies

Configuration	Values / Range	Default
Codabar		
Enable	Disable Enable	Enable
ID		B
Min		4
Max		60
Check Character	No Check Check and don't transmit Check and transmit	No Check
Concatenation	Disable Enable Require	Disable
Send Start / Stop Characters	Disable Enable	Disable
QR Code		
Enable	Disable Enable	Enable
ID		O
Min		1
Max		7089
Append	Disable Enable	Enable
No Quiet Zone	Disable Enable	Disable
Code 11		
Enable	Disable Enable	Disable
ID		C
Min		4
Max		80

Symbologies

Configuration	Values / Range	Default
Check Character Required	One Check Char Two Check Char	Two Check Char
Redundancy	0 ~ 10	0
Code 128 <i>* If Append mode is enabled, redundancy does not work.</i>		
Enable	Disable Enable	Enable
ID		D
Min		0
Max		80
Append*	Disable Enable	Enable
Redundancy	0 ~ 10	0
Composite		
Enable	Disable Enable	Disable
ID		G
Min		1
Max		2435
UPC EAN	Disable Enable	Disable
Maxicode		
Enable	Disable Enable	Disable
ID		L
Min		1
Max		150
Message Format	Primary Message Only Primary Required, Secondary if Available Both Primary and Secondary Required	Primary Required, Secondary if Available

Symbologies

Configuration	Values / Range	Default
Micro PDF 417		
Enable	Disable Enable	Disable
ID		M
Min		1
Max		366
PDF417		
Enable	Disable Enable	Disable
ID		N
Min		1
Max		2750
Macro PDF417	Disable Enable	Enable
Straight 2 Of 5 IATA		
Enable	Disable Enable	Disable
ID		U
Min		4
Max		48
Redundancy	0 ~ 10	0
CodaBlock A		
Enable	Disable Enable	Disable
ID		V
Min		1
Max		600

Symbologies

Configuration	Values / Range	Default
Coda Block F		
Enable	Disable Enable	Disable
ID		W
Min		1
Max		2048
MSI		
Enable	Disable Enable	Disable
ID		X
Min		4
Max		48
Check Character	Validate Type 10, Don't transmit Validate Type 10, Transmit Validate 2 Type 10 Chars, Don't transmit Validate 2 Type 10 Chars, Transmit Validate Type 10 then Type 11 Char, Don't Transmit Validate Type 10 then Type 11 Char, Transmit No Check Characters	Validate Type 10, Don't transmit
Redundancy	0 ~ 10	0
TLC39		
Enable	Disable Enable	Disable
ID		Y
Trioptic		
Enable	Disable Enable (Couldn't use with Code32)	Disable
ID		Z
Redundancy	0 ~ 10	0

Symbologies

Configuration	Values / Range	Default
Matrix 2 Of 5		
Enable	Disable Enable	Disable
ID		[
Min		4
Max		80
Redundancy	0 ~ 10	0
Telepen		
Enable	Disable Enable	Disable
ID		\
Min		1
Max		60
Output	AIM Original	AIM
Redundancy	0 ~ 10	0
ISBT		
Enable	Disable Enable	Disable
ID		^
Straight 2 Of 5 Industrial		
Enable	Disable Enable	Disable
ID		—
Min		4
Max		48
Redundancy	0 ~ 10	0

Symbologies

Configuration	Values / Range	Default
HanXin		
Enable	Disable Enable	Disable
ID		a
Min		1
Max		7833
DotCode		
Enable	Disable Enable	Disable
ID		b
Min		1
Max		2400
Poor Quality DotCodes	Disable Enable	Disable
Digimarc		
Enable	Disable Enable	Disable
ID		c
China Post		
Enable	Disable Enable	Disable
ID		d
Min		4
Max		80
Redundancy	0 ~ 10	0
Korea Post		
Enable	Disable Enable	Disable
ID		e

Symbologies

Configuration	Values / Range	Default
Min		4
Max		48
Send Check Character	Disable Enable	Disable
2D Postal		
Enable	Disable Enable	Disable
ID		f
2D Postal Code	Australian Post InfoMail Japanese Post KIX Post Planet Code Postnet British Post InfoMail and British Post Postal-4i Intelligent Mail Postnet with B and B' Fields Planet Code and Postnet Planet Code and Postal-4i Postnet and Postal-4i Planet Code and Intelligent Mail Postnet and Intelligent Mail Postal-4i and Intelligent Mail Planet Code and Postnet with B and B' Fields Postal-4i and Postnet with B and B Fields Intelligent Mail and Postnet with B and B' Fields Planet Code, Postnet, and Postal-4i Planet Code, Postnet, and Intelligent Mail Planet Code, Postal-4i, and Intelligent Mail Postnet, Postal-4i, and Intelligent Mail Planet Code, Postal-4i, and Postnet with B and B' Fields	Australian Post

Symbologies

Configuration	Values / Range	Default
2D Postal Code (Continued)	Planet Code, Intelligent Mail, and Postnet with B and B' Fields Postal-4i, Intelligent Mail, and Postnet with B and B' Fields Planet Code, Postal-4i, Intelligent Mail, and Postnet Planet Code, Postal-4i, Intelligent Mail, and Postnet with B and B' Fields Canadian Post	Australian Post
Australian Post Interpretation	Bar Output Numeric N Table Alphanumeric C Table Combination N and C Tables	Bar Output
Send Planet Code Check Character	Disable Enable	Disable
Send Postnet Code Check Character	Disable Enable	Disable

Firmware Update

Update Bluetooth firmware and PM5 MCU firmware to up-to-date version using one RFU file. Download the RFU file from [Service Portal](#) and copy it to the **RingControl** folder in internal storage of host device.



Note: Must follow the file path. Otherwise, update cannot be performed.

After update, PM5 will be restarted automatically.

Below table describes two types for firmware update.

Methods	Description
Auto Update	<ul style="list-style-type: none"> Set FW auto update in JSON file Update FW every time the ring scanner is connected
Manual Update	<ul style="list-style-type: none"> Update FW immediately



Note: Update is not available when PM5 battery is too low (<20%) or temperature is out of range (< 0 °C or < 32 °F) unless the scanner is charging.

Auto Update

Firmware auto update is performed when...

- Ring scanner is connected through RingControl (Lite) app
- Firmware auto update is set in **RingControl.json** file
- Firmware version of the RFU file is different from current ring scanner firmware version

Set up the firmware auto update in the **RingControl.json** file and copy the file to **RingControl** folder. Every time the PM5 is connected as SPP mode, RingControl (Lite) updates configuration automatically.

For more detail, refer to [application's user guides](#).

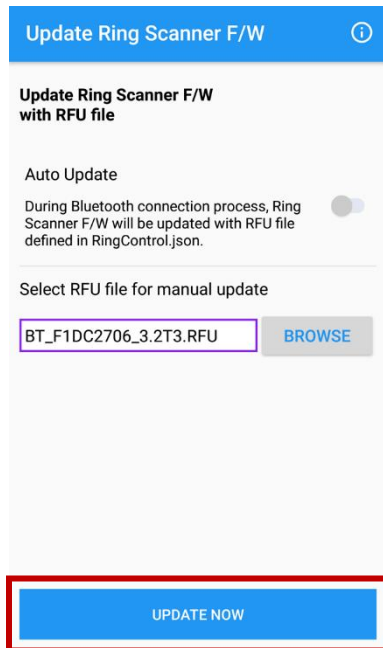
Firmware Update

Manual Update

Manual update can be performed regardless the auto update is enabled or disabled. To update firmware with RFU file manually,

1. Launch RingControl (Lite) app and connect PM5 with host device
2. Go to **Advanced settings > Update Ring Scanner F/W with RFU file** (Password is required)
3. Tap **BROWSE** and select RFU file you copied
4. Tap **UPDATE NOW** and wait until the process is done

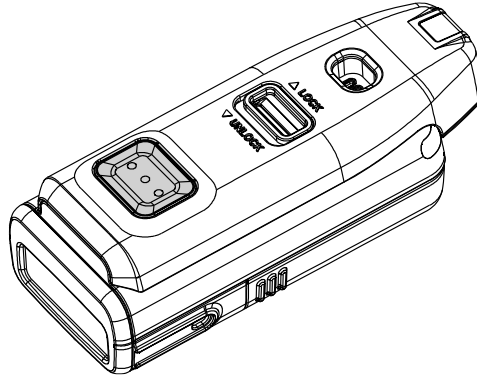
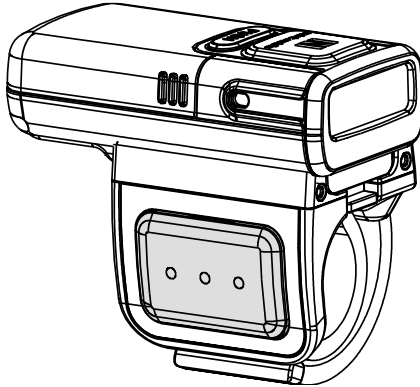
Figure 40 RingControl - Manual update



Scan a Barcode

To scan a barcode, aim the barcode while pressing the scan button on the single trigger or sled. Aim as the center cross is placed on the center of the barcode.

Figure 41 Scan buttons



Ideal Scanning



Aim the middle of barcode.

Even you aim the barcode slightly upper or down area, or angle is slightly tilted, you can read the barcode.

Bad Scanning



If you aim the barcode wrong direction or aim point is too tilted to scan only the part of the barcode, you can't read the barcode.

Accessory

PM5 supports below optional accessories which is sold separately.

Category	Accessory Name	Usage
Charging cradle	8SBC (8 Slot Battery Cradle)	Charge up to 8 PM5 batteries
	4SC (4 Slot Cradle)	Charge up to 4 PM5
	Share cradle	Charge PM5 and its batteries with more slots

8SBC (8 Slot Battery Cradle)

8SBC is a charging cradle for PM5 battery. Up to 8 batteries can be charged simultaneously. For more detail, find [Charge the Scanner – Charging via cradle](#) chapter or 8SBC Quick start guide.

4SC (4 Slot Cradle)

4SC is a charging cradle for PM5. Up to 4 units of PM5 can be charged simultaneously. For more detail, find [Charge the Scanner – Charging via cradle](#) chapter or 4SC Quick start guide.

Share Cradle

8SBC and 4SC can connect up to 5 pcs of cradles in one type only or two different types (4SC + 8SBC) to make share cradle. With share cradle, you can charge more PM5 and batteries at the same time.

There is a separate SKU for making a share cradle. Buy as many SKUs for share cradle as you want to connect and assemble the cradles using enclosed screws and brackets.

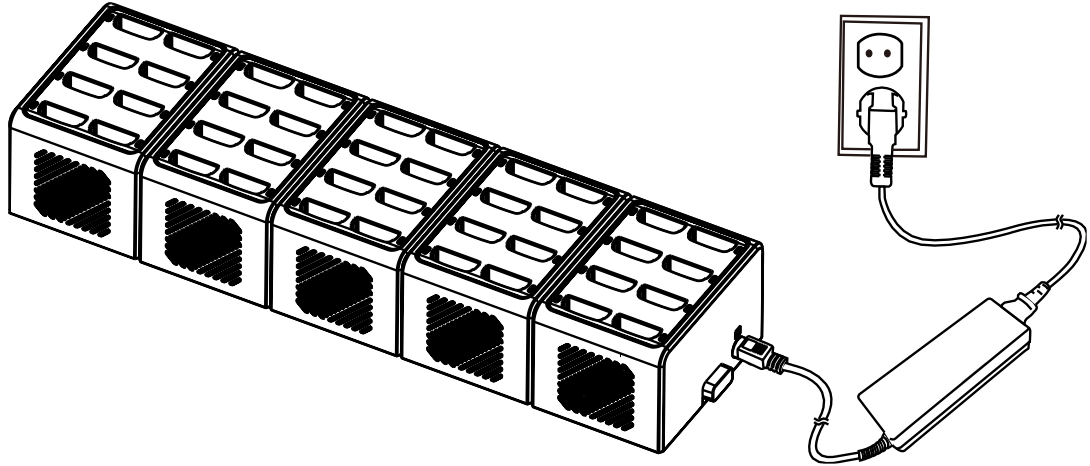
Power will be provided to all connected cradles when an adapter is connected to the last cradle.

Accessory

- **40 slot battery cradle**

- Make 40SBC connecting 5 pcs of 8SBC.

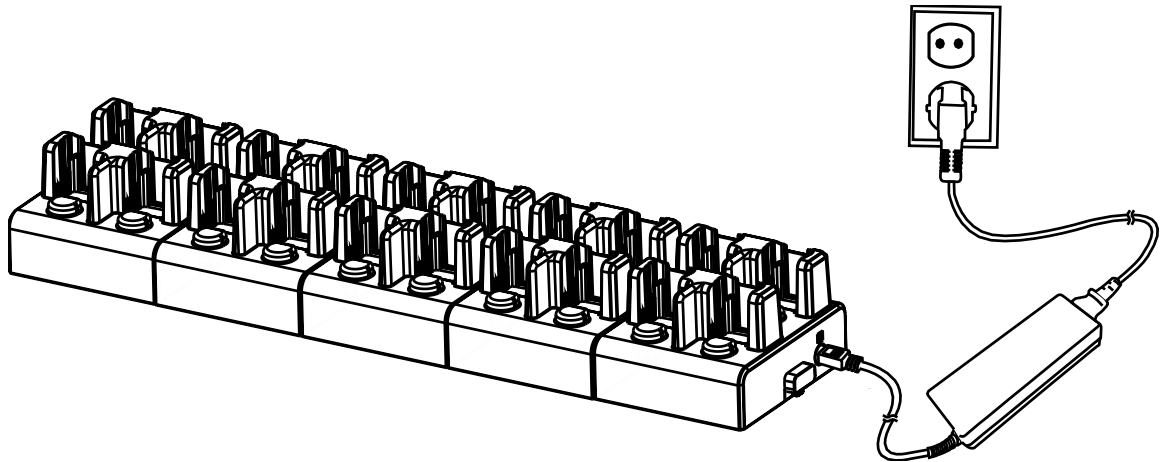
Figure 42 40SBC



- **20 slot ring cradle**

- Make 20 slot ring cradle connecting 5 pcs of 4SC.

Figure 43 20 slot ring cradle

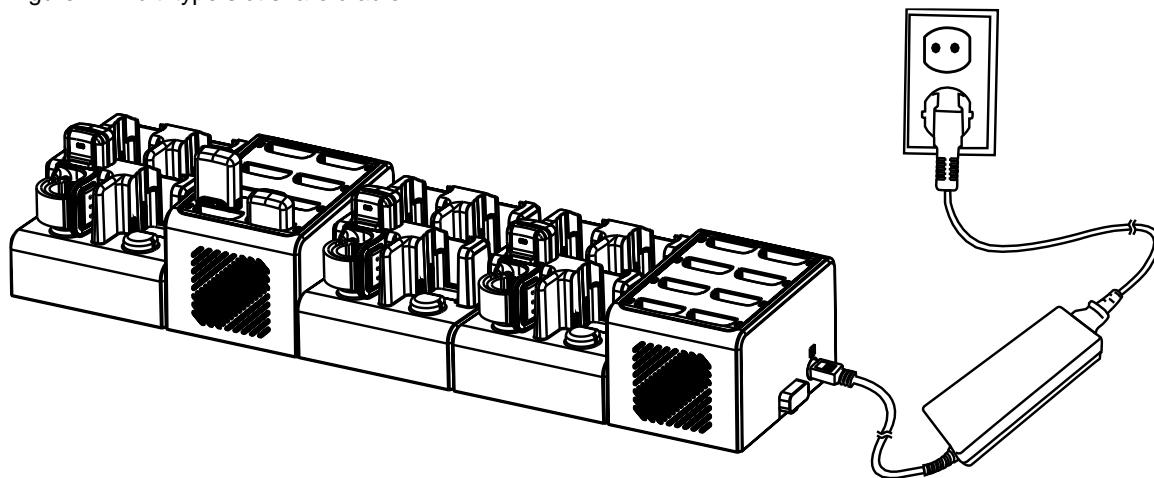


Accessory

- **Multi type slot share cradle**

- Connect 4SC and 8SBC to make multi type slot share cradle.

Figure 44 Multi type slot share cradle



Safety Information

Battery Safety Information

Follow battery safety guidelines in this manual for safe usage and disposal of Li-ion batteries. Improper battery usage may result in an explosion, fire, or other critical hazards.

Battery Usage & Disposal Guidelines

1. Use only Point Mobile approved batteries and charging accessories. Other batteries and charger may damage the device.
2. Do not disassemble or modify the battery. Do not bend, shred, deform the battery.
3. Do not expose the battery to excessive heat or cold. Do not place the battery into a microwave oven or dryer.
4. Do not short-circuit the battery or allow a foreign object to battery contacts.
5. Do not burn, expose to water, or other liquids the battery.
6. If battery leakage is observed, avoid any contact with the skin or eyes. If contact has been made, wash the affected area with water for 15 minutes, and seek medical attention.
7. Follow the local regulations for the disposal of used batteries.
8. Do not store or charge the battery in direct sunlight or in areas prone to get hot such as in a parked vehicle, near a heat duct, or close to other heat sources.

Battery Charging Guidelines

1. Do not charge the battery in or near areas with materials that could obstruct charging or cause a short-circuit.
2. Do not charge the battery in the excessive hot or cold area.
3. Separate the charger from the battery as soon as possible when the battery is fully charged.

Safety Information

Battery Storage Guidelines

Storing the batteries is as important as using it safely. Battery is a core part of the device's performance so that you should treat the batteries safely.

1. Batteries should be stored in the clean, dry and ventilated environment within ambient temperature ranges of 20 ± 5 °C
2. Keep batteries away from corrosive substances.
3. Keep batteries away from fire and heat.
4. Batteries are charged while producing to below 20 ~ 30 % of full capacity for safety regulations.
5. Charge it for 30 minutes –1hour t least once every six months to prevent full discharge and keep the performance, when you are not using the battery for a long period.

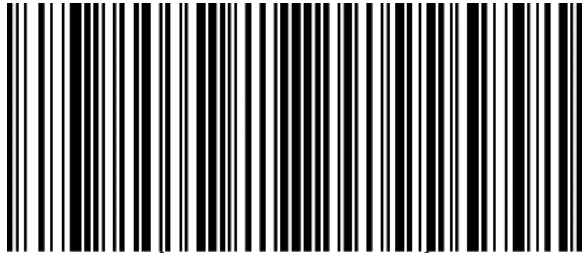


Notice: The battery is consumable goods. Point Mobile provides warranty for battery in 6 months after purchase.

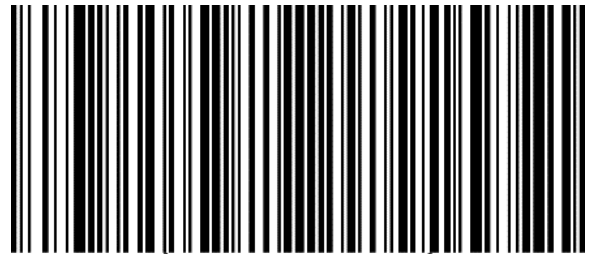
If you suspect the battery swelling, change the battery and contact Point Mobile to use safely.

Appendix

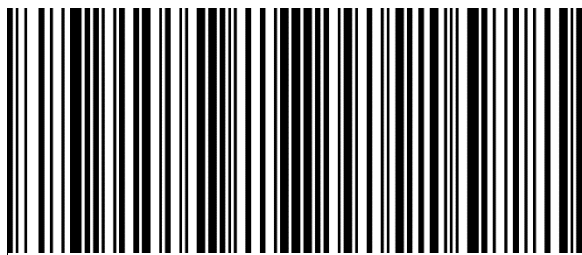
Bluetooth Mode Barcodes



SPP Mode



HID Mode



HID LE Mode

Appendix

Bluetooth Power Class



Class 1



Class 2

Appendix

Batch Mode Barcodes



Normal



Auto mode



Standard mode



USB storage mode



Start
(Standard mode)



Send
(Standard mode)

Appendix

Factory Data Reset





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