RS60 Ring Scanner

MANUAL

handheld

INSTRUCTION

RS60 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 RS60 optimizing on your working routine. RS60 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 RS60. Please read this manual carefully before using your handy Bluetooth scanner and peripherals to ensure safe and proper use.
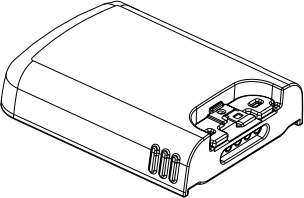
CONTENT

GETTING STARTED

Product Standard Accessories

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

Accessory	Name
	Battery pack

Accessory	Name
	Single Trigger

Optional accessories

Accessory	Name
	Sled
	Sled Lanyard

Ring Scanner Parts

Figure 1 RS60 Front view
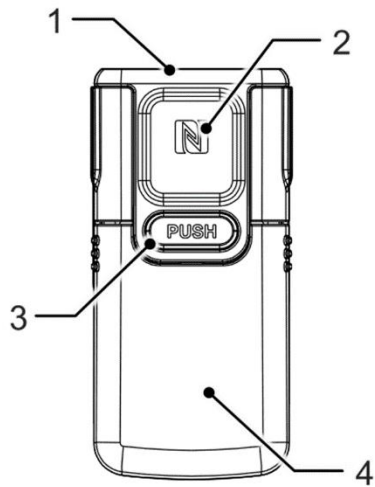
Figure 1 RS60 Back view
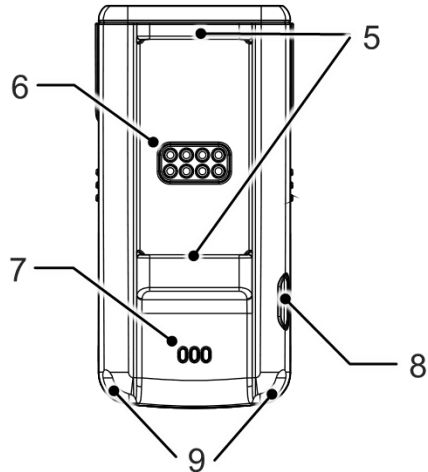
No	Name	Description
1	Scanner	Scan a barcode
2	NFC tagging area	Put close to NFC antenna for Tap-to-Pair
3	Battery release button	Press to release the battery from RS60
4	Battery	Provide power
5	Trigger or Sled assembly latch	Assemble the trigger or sled
6	Trigger or Sled connector pin	Communicate with trigger or sled for triggering scan action and charging device
7	Speaker	Emit the beep sound
8	Reset button	Press to reboot or reset RS60
9	LED Indicators	Indicates the status of RS60 with beep sound and vibration

Trigger Accessory Parts

Single trigger parts

RS60 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 RS60.

Figure 2 Trigger side view
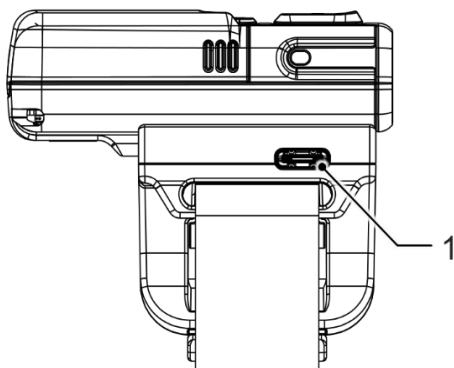
Figure 3 Trigger front + side view
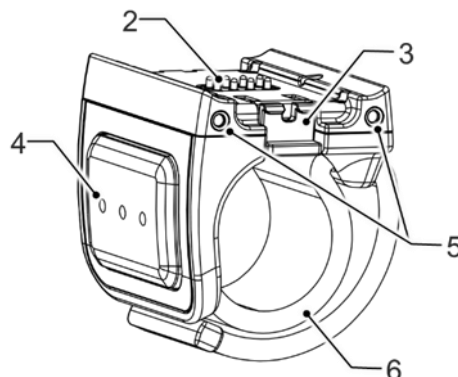
No	Name	Description
1	USB type C Connector	Charge RS60 through USB type C cable
2	RS60 connector pin	Connect RS60 with single trigger
3	Trigger locker	Latch the single trigger / Press to release the single trigger from RS60
4	Trigger scan button	Scan a barcode or power on RS60
5	Charging station connector	Connector for charging station
6	Finger strap	Tighten strap to fit your finger

Sled parts

Sled can charge RS60 and lets the RS60 communicate with a host PC, using USB connector. Also, you can wear the RS60 like a necklace by mounting the enclosed lanyard in the Sled SKU package box.

Figure 4 Sled front view   Figure 5 Sled back view
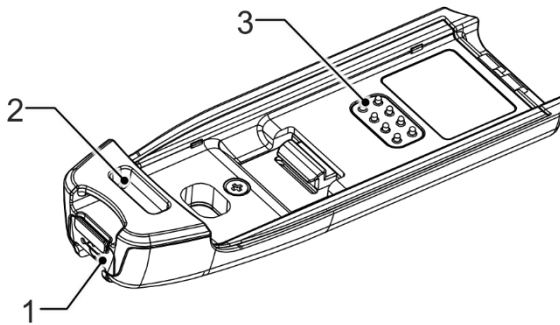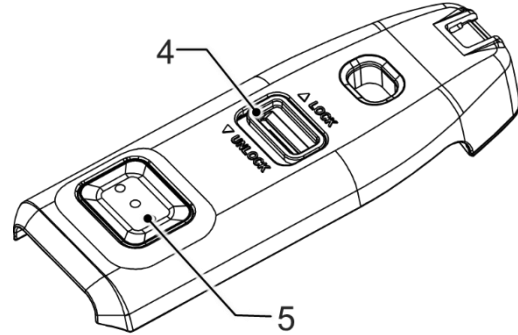
No	Name	Description
1	USB type C Connector	Charge RS60 or let RS60 communicate with PC through USB Type C cable
2	Lanyard hole	Mount lanyard
3	RS60 connector pin	Connect RS60 with sled
4	Sled locker	Latch the sled / Press to release the sled from RS60
5	Sled scan button	Scan a barcode or power on RS60

Install & Remove Battery

Install the battery

1. Align the connector on the RS60 with the connector on the battery.

   Figure 6 Install battery_1
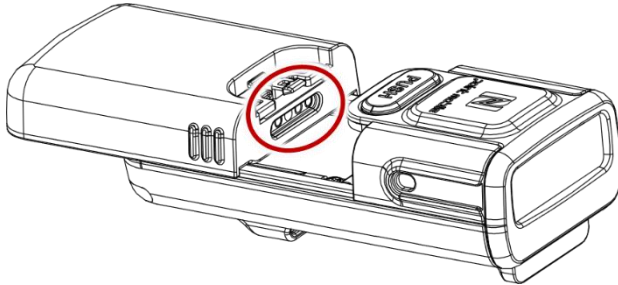
2. Slide and press the battery into the battery slot so that the battery is firmly engaged

   Figure 7 Install battery_2
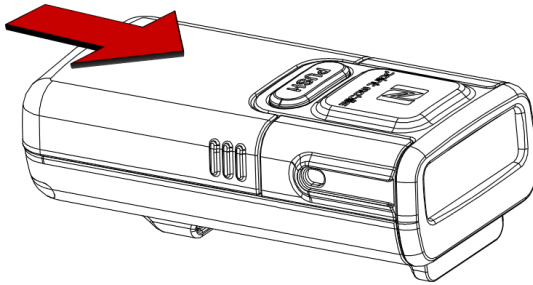
Remove the battery

Pull the battery while pressing the battery release button.

Figure 8 Remove battery
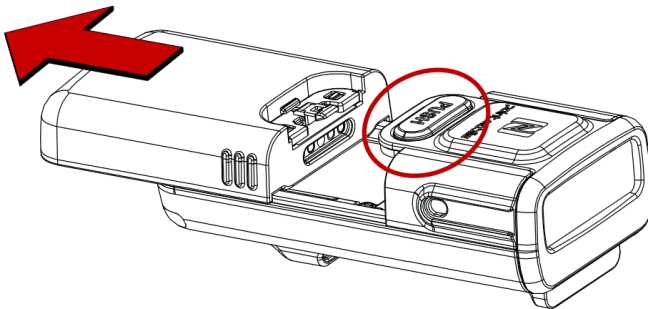
Using with Trigger Accessory

Single trigger

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 RS60.
   - Align the trigger so that the trigger scan button is positioned next to the thumb.
2. Insert the opposite side of trigger locker to RS60's trigger assembly latch first.

Figure 9 Trigger Assemble_Left hand mount   Figure 10 Trigger Assemble_Right hand mount
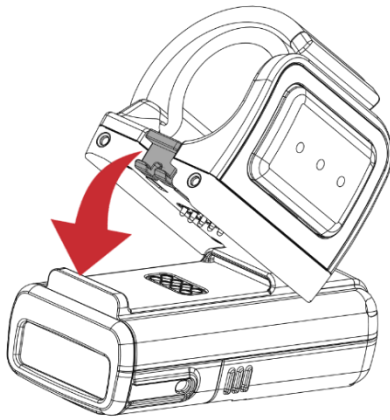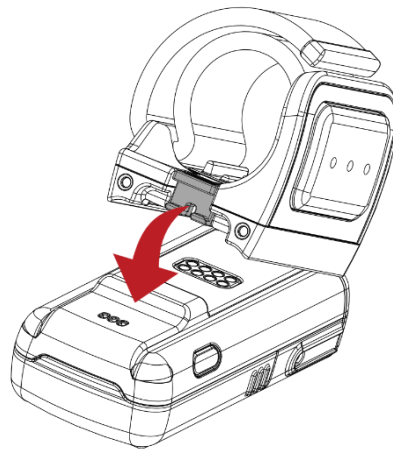
3. Push the other end down until it clicks.
4. Make sure that the trigger is engaged firmly.

Figure 11 Trigger Assembled_Left hand mount
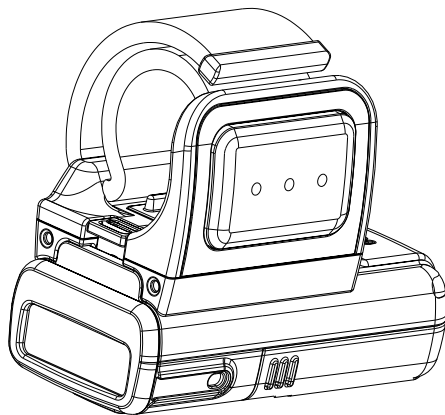
5. To remove the trigger from RS60, press the trigger locker and pull the trigger up.

Figure 12 Remove trigger
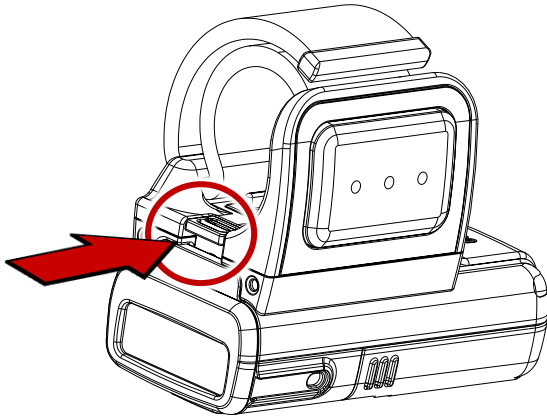
Wearing on scanner

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

Figure 13 Insert finger strap
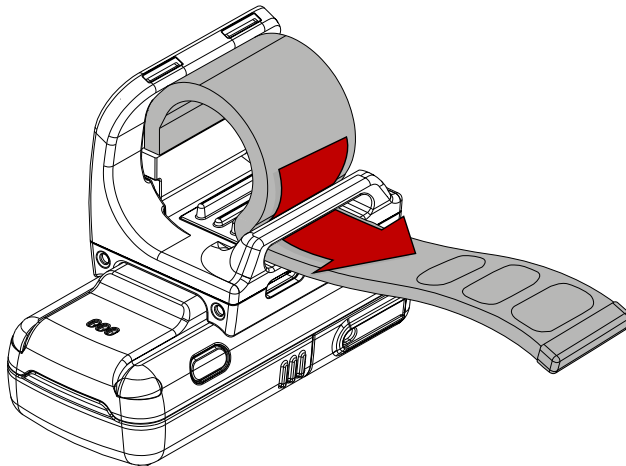
2. Wear the RS60 with single trigger on the index finger as the trigger scan button facing the thumb.

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

Figure 14 Mount RS60 onto index finger (Left hand)
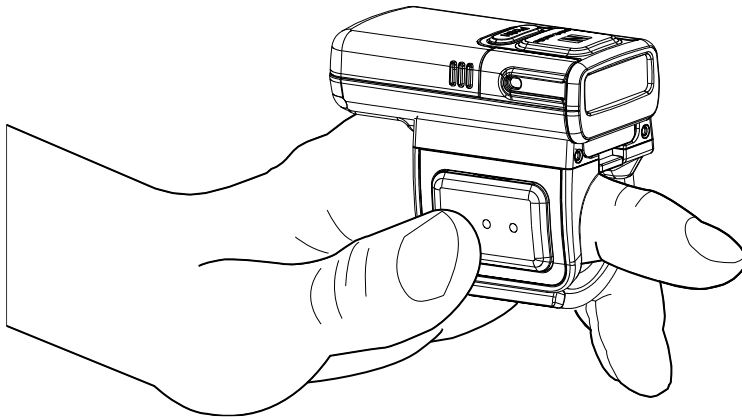
4. To loosen the finger strap, detach the end of the strap

Sled

If you assemble the sled to RS60, it becomes a lightweight portable scanner. Also, you can wear the RS60 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 RS60 as shown below figure.
2. Push the other end of sled down until it clicks.

Figure 15 Assemble sled - 1
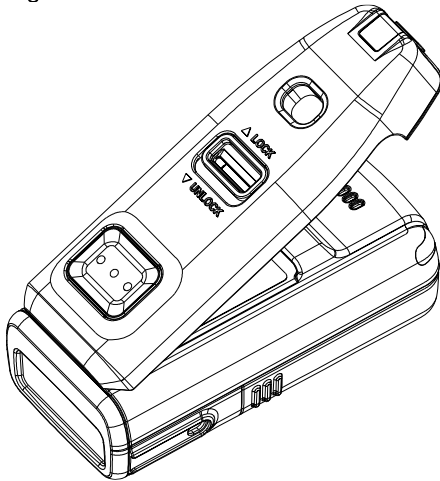
Figure 16 Assemble sled - 2
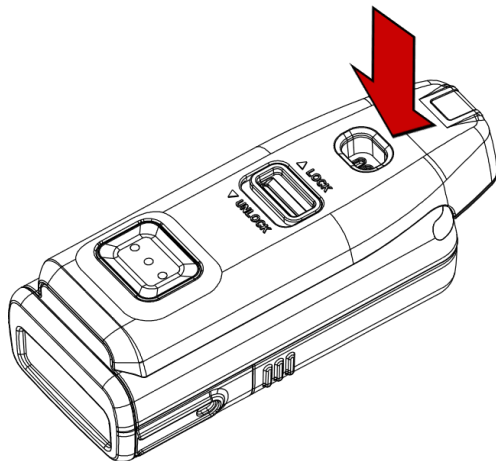
3. Make sure the sled is engaged firmly.
4. To remove the sled, slide the sled locker toward the **UNLOCK** and lift the sled.

Figure 17 Release sled
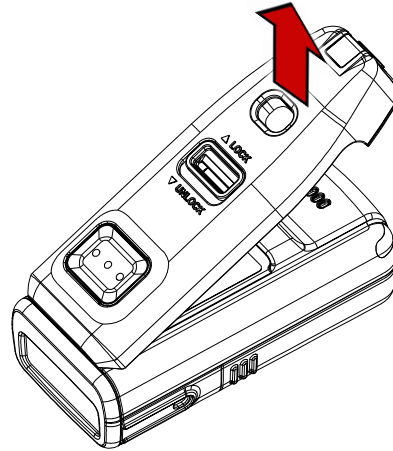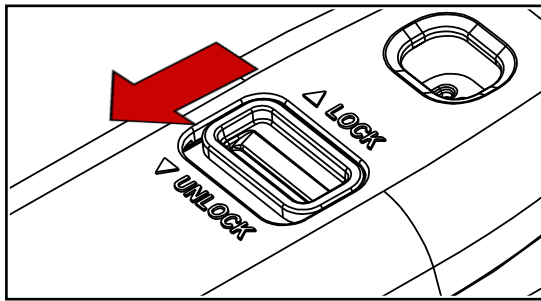
Use with Sled

Use RS60 with sled mounted with the scan button on sled facing up. You can easily press the scan button by thumb.

Figure 18 Holding RS60 with Sled mounted
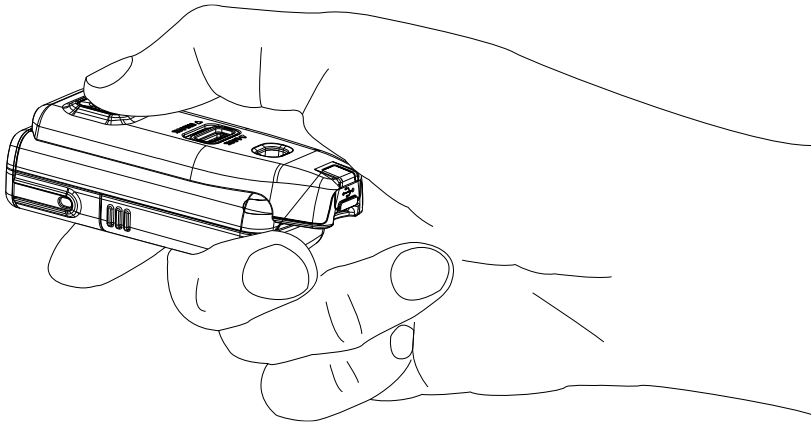
Attach lanyard

Wear the RS60 like a necklace and protect the scanner from falling damage by attaching lanyard.
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 19 Sled lanyard
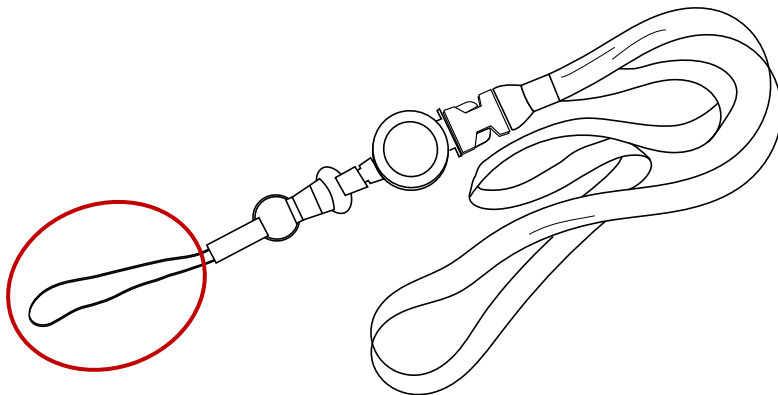
2. Slide the strap into the lanyard hole

Figure 20 Attach lanyard - 1
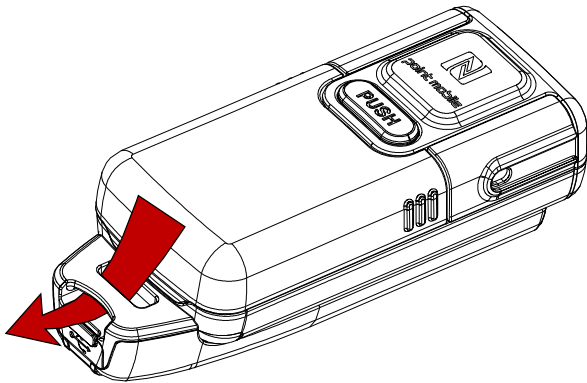
3.   Pass the other end of strap through the loop of thin strap.

Figure 21 Attach lanyard - 2
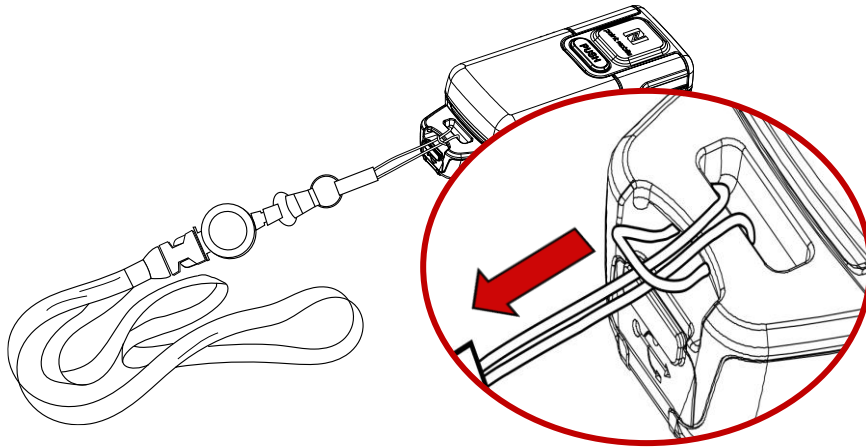
4.   Pull the lanyard until it is tight.

Figure 22 Attached lanyard
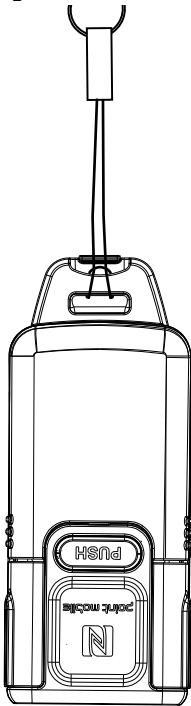
Charging the Scanner

NOTE: Before using RS60 for the first time, charge the scanner at least 1 hour for stable operation.

There are two methods to charge RS60. Use power adapter or charging stations (optional accessory).

Charge via power adapter

Assemble the single trigger or sled and charge RS60 using the USB connector on each accessory.

1. Assemble the single trigger or sled to RS60.
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 RS60's LED indicator.
   (Red - Charging / Green - Fully charged)

Figure 23 Trigger USB connector
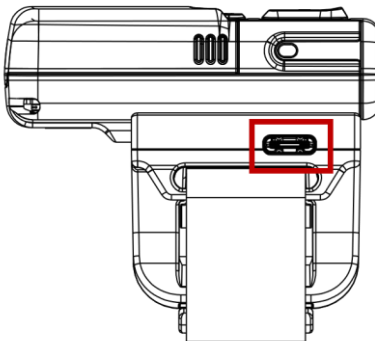
Figure 24 Sled USB connector (Open cap)
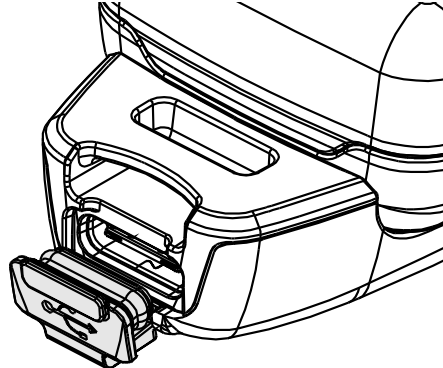
Charge via cradle

There are 2 types of cradle (sold separately) for charging RS60, 8 slot battery charger and 4 slot charging station. The cradles can be connected to make share cradle that can charge the RS60 and batteries with more slots.

HHRS01-1025

HHRS01-1025 can charge up to 8 batteries of RS60 simultaneously. To charge the RS60 battery,

1. Assemble the power adapter and power cable, and then connect it to the cradle.
2. Remove the battery from RS60.
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 25 Charging battery with HHRS01-1025.
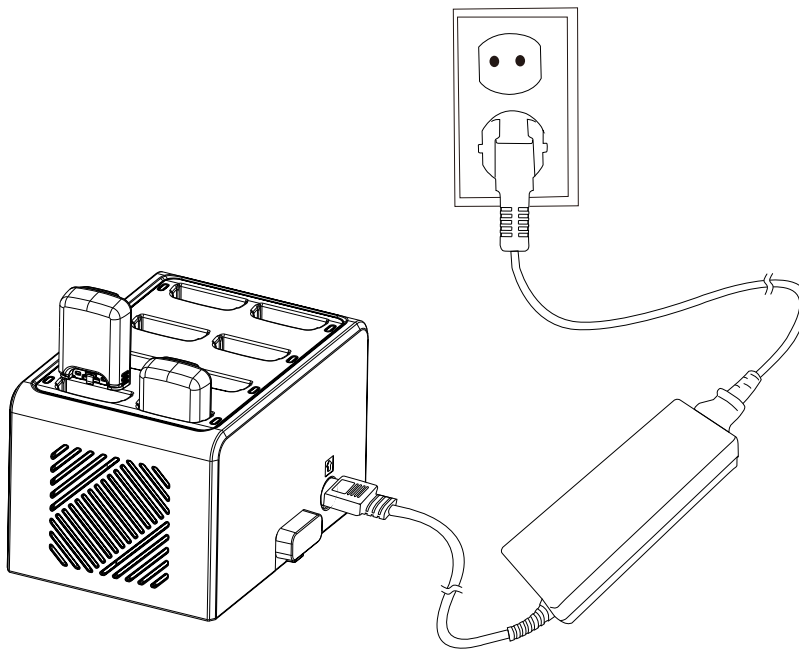
HHRS01-1015

HHRS01-1015 can charge up to 4 units of RS60 with single trigger mounted. Single trigger must be mounted the RS60 for charging with HHRS01-1015 (Sled SKU cannot be charged).

1. Assemble the power adapter and power cable, and then connect it to the cradle.

2. Insert RS60 into the slot as the scanner is facing down

3. Push the device down until the LED indicator of RS60 lights up

   (Red – charging / Green – Fully charged)

   Figure 26 Charging with HHRS01-1015
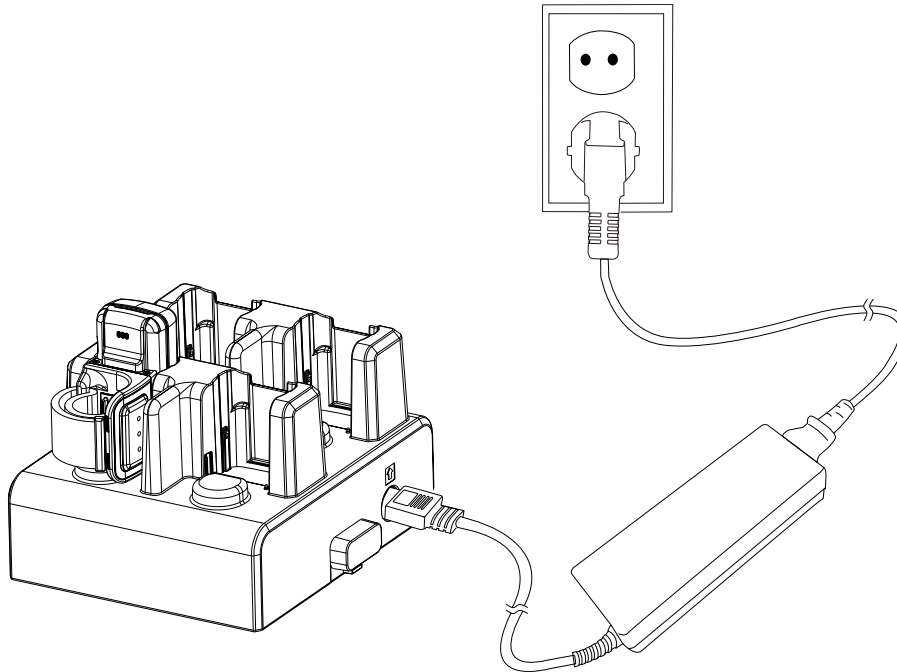
Share cradle

HHRS01-1025 and HHRS01-1015 can be connected to 5 pcs of cradles in one type only or two different types (HHRS01-1015 + HHRS01-1025) to make share cradle. With share cradle, you can charge more RS60 and batteries at the same time.

Find more information in Accessory – Share Cradle.

Scanner Status

Activity modes

Run mode

Run mode is a mode that RS60 can operate immediately.

Low Power mode

When RS60 is idle for sleep timeout you set, RS60 enters suspend mode. User can wake up the scanner by below event. Sleep timeout can be changed (See Ring Control User Guide).

To wake up RS60,

- Press reset button on RS60 or scan button on trigger accessory (single trigger or sled)
- Send an activity through Bluetooth connection with Ring Control
- Connect USB cable

Power Off

Remove the battery from RS60

Power on

Install battery to RS60, and press scan button on single trigger or sled.

Figure 27 Scan buttons
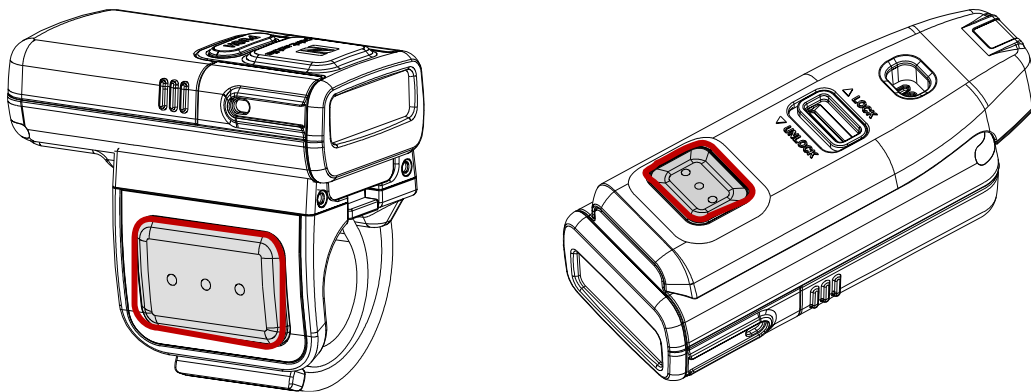
Reset the RS60

Warmboot

Perform warmboot when you want to restart the RS60. 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 RS60, device settings, symbologies settings, Bluetooth pairing information.

To perform factory reset when RS60 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 RS60 is not powered on,

- Press reset button immediately after pressing scan button on single trigger or sled to power on RS60

Figure 28 Reset button
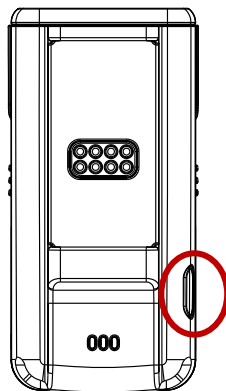
You can do the factory reset using Ring Control app or special barcode, too. See the application's user guide to find how to perform the factory reset with the app, or see Appendix – Factory Data Reset to find special barcode.

Status indication

Unless the beep sound is muted or LED notification is disabled, user can check the RS60's status with beep sound and LED as below table.

DESCRIPTION	LED SEQUENCE	BEEP SEQUENCE
Booting		
RS60 is powered on	Green (Until the beep sequence ends)	Short low – Short medium – Short high
RS60 is booting as warmboot	Blue	None
RS60 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		
Bluetooth connected	Green	Short medium - Short high
Bluetooth disconnected	Red	3x Short high
Firmware Update		
Updating firmware	Blue blinking	None

DESCRIPTION	LED SEQUENCE	BEEP SEQUENCE
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 ℃)	Red	High – Low – High – Low
Battery temperature is critical low (Under -5 ℃and voltage is under 3.8V)	None	High – Middle – Middle – Low (Then shutdown)

APPLICATIONS FOR RING SCANNER

There are a few applications/tools for Handheld ring scanners.
These applications can be downloaded from Handheld knowledge base.

This manual only describes what features are in each application briefly.

Ring Control

Ring Control is an application installed on a host device for connecting and controlling the ring scanner. Ring Control is only compatible with Handheld Android devices, such as most Nautiz.

Ring Control 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 this ring scanner
    - Factory reset
- Get ring scanner's information
- Scan demo

Ring Control Configuration Tool

Ring Control 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 Ring Control to apply the configuration.

Figure 29 Ring Scanner Configuration Tool

You can configure the below settings,

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

BLUETOOTH PAIRING

Supporting Bluetooth Modes

RS60 supports following Bluetooth modes,

- SPP (Serial Port Profile)
- HID (Human Interface Device) – Supports classic and LE
- BLE (Bluetooth Low Energy)

SPP (Serial Port Profile)

RS60 communicates as SPP mode by default. To use Ring Control application, you must connect the host device and RS60 with SPP mode.

When the RS60 is connected as SPP mode, you can update the configuration and firmware of RS60 through the Ring Control app. RS60 can be paired as SPP mode through Scan-to-Pair and Tap-to-Pair both.

HID (Human Interface Device)

When RS60 is connected as HID mode, the RS60 scans a barcode and sends the decoded data to the host device as a keyboard action. HID mode supports Tap-to-Pair only.

HID LE (Human Interface Device Low Energy)

HID LE mode is kind of HID mode. HID LE mode makes RS60 and host device communicate through Bluetooth low energy radio. HID LE mode supports same pairing method as HID mode.

BLE (Bluetooth Low Energy)

BLE mode is only used for updating the Bluetooth firmware through Ring Control. 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 RS60 comes back to SPP mode automatically when the update is done

Pairing Methods

There are two ways for connection between ring scanner and host device, Scan-to-Pair and Tap-to-Pair. Choose more comfortable method.

Pairing Method	Description	Support Mode
Scan-to-Pair	Scan the barcode on the Ring Control pairing screen.	SPP mode only
Tap-to-Pair	Bring the NFC tag of ring scanner close to host device's NFC antenna.	SPP mode HID mode

Scan-to-Pair

Scan a barcode provided by Ring Control. This barcode makes RS60 change to SPP mode and connect to the host device.

Figure 30 Scan-to-Pair
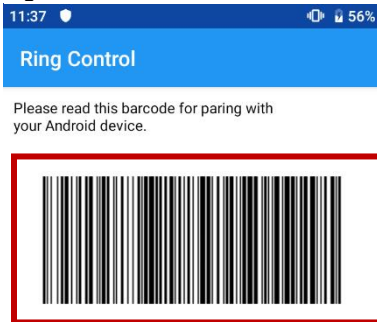
Tap-to-Pair

Find the NFC location of host device and ring scanner and align Handheld logo of ring scanner with NFC antenna of host device to pair.
Example below, the NFC antenna is located on the back side of the device. Align the NFC logo of the RS60 with the NFC area as below figures.

Figure 31 Tap-to-Pair_NFC tapping area (Sample device & RS60)
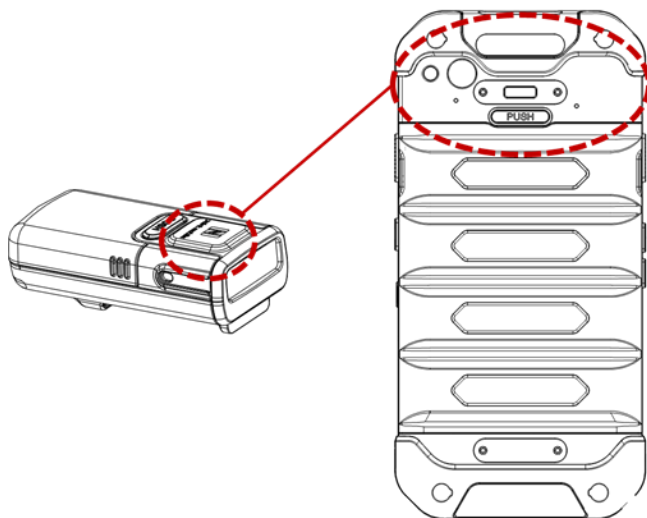
Figure 32 Tap-to-Pair_Align RS60 and sample device
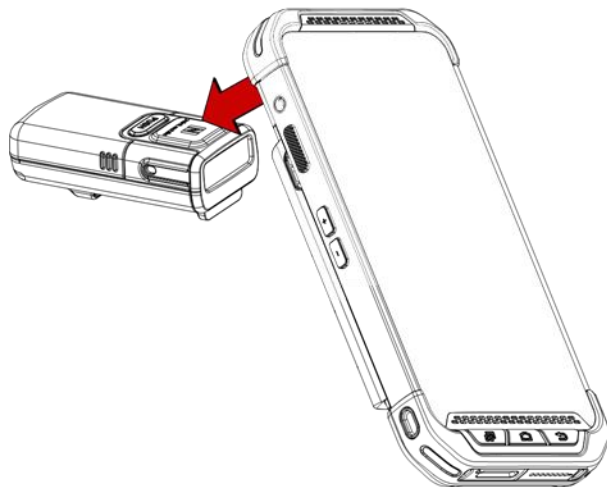
Tap-to-Pair operates like toggle in HID mode. This means that if Tap-to-Pair is performed when the ring scanner is connected to host device, the connection will be closed.

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.

Disconnect

To close connection between RS60 and host device,

- Turn off Bluetooth on the host device
- Reboot ring scanner
- Tap-to-Pair (Do when the RS60 is connected. Supports only for HID mode)

If RS60 is disconnected, RS60 emits red LED and high beep sound three times.

Change Bluetooth Connect Mode

To change the connect mode, scan the mode change barcodes (Appendix – Bluetooth Mode Barcodes). If the mode is changed while RS60 is connected to host device, the connection will be closed and you have to connect the devices again. Refer to Pairing Methods.

General Bluetooth Settings

Bluetooth name

Change RS60's Bluetooth name and find out your RS60 more easily. You can rename the RS60 through Ring Control app. Go to **Advanced settings** > **Rename this Ring Scanner** on the app and input a new name.

There are some rules for new Bluetooth name of RS60. See the applications user guides for more detail.

Bluetooth power class

Change the Bluetooth power between Class 1 and Class 2, using special barcode. Find desired barcode in Appendix – Bluetooth Power Class.

CONFIGURATION

RS60 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 RS60. Find how to do factory reset in *Reset the RS60*.

Apply Configuration

To adjust configuration of RS60, use Ring Control app or JSON file made by Ring Control Configuration Tool.

Apply via Ring Control

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

1. Execute Ring Control and connect RS60 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 33 Ring Control - Advanced settings
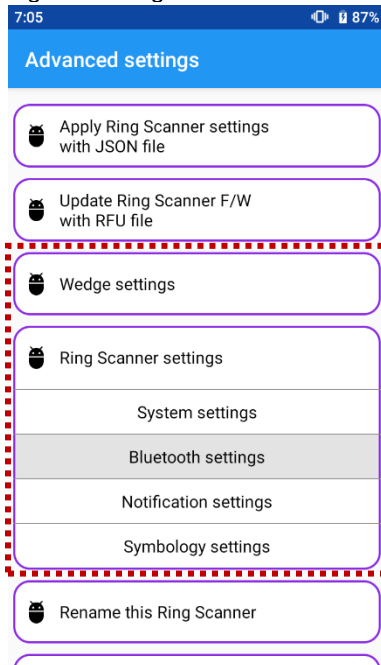
Apply via JSON file

To apply the configuration via JSON file, Ring Control app and Ring Control 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	• Set configuration auto update in JSON file • Apply configuration every time the ring scanner is connected
Manual Update	• Apply configuration immediately

Auto Update

Configuration auto update is performed when…

- Ring scanner is connected through Ring Control app
- Configuration auto update is set in **RingControl.json** file
- Revision number of the JSON file is different from previously applied one

Set up the auto update in the **RingControl.json** file and copy the file to **RingControl** folder. Every time the ring scanner is connected as SPP mode, the app updates configuration automatically.

For more detail, refer to application's user guides.

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 Ring Control and connect RS60 with host device.
2. Go to **Advanced settings** > **Apply Ring Scanner settings** (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 34 Ring Control - Manual Apply Configuration
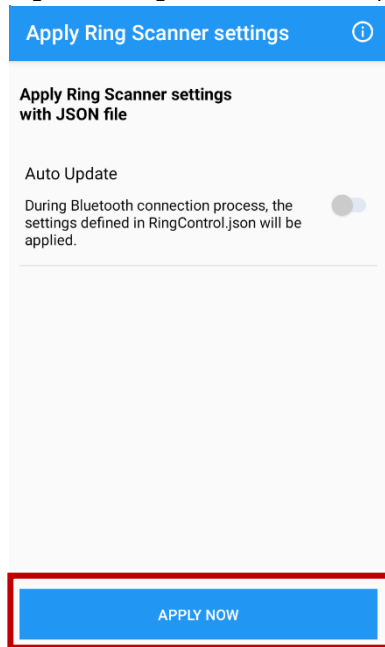
Available Settings

Wedge settings

Wedge settings can be set through Ring Control and Ring Control Configuration Tool both, but not supported on Ring Control 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
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
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

System settings

System settings can be set through Ring Control and Ring Control Configuration Tool.

Setting	Values / Range	Default
Trigger Timeout (sec)	1~10 sec	10 sec
Sleep Timeout (sec)	1~60000 sec	60 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	None
Center Window	Disable Enable	Disable
Center Window Tolerance	0 ~ 100	30
Inverse Barcode	Inverse Off Inverse Only Inverse AutoDetect	Inverse Off
HID Inter Char Delays	0~250 ms	0 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

Notification settings

Set RS60 notification through Ring Control or Ring Control Configuration Tool. Vibration setting is supported only for special trigger.

SETTING	DESCRIPTION	DEFAULT
Beep		
Beeper Enable	Enable or Disable the ring scanner's beep sound	Enable
Beeper Volume	Adjust the volume of beep sound - Mute - Low Volume - Medium Volume - High Volume	High Volume
Power Up Beeps	Enable or Disable the beep sequence on power up	Enable
LED		
Enable LED	Enable or Disable the LED indicator of ring scanner	Enable
Vibration (Only supported for special trigger)		
Vibration Time After Decode Success	Adjust the length of vibration time after decode success - Disable - Short (100ms) - Middle (150ms) - Long (250ms)	Short (100 ms)
Vibration Time After Decode Fail	Adjust the length of vibration time after decode fail - Disable - Short (250ms) - Middle (400ms) - Long (700ms)	Long (700 ms)

SYMBOLOGIES

Symbologies settings

Symbologies can be set through Ring Control, Ring Control Configuration PC Tool.

CONFIGURATION	VALUES / RANGE	DEFAULT
Code 39		
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
EAN8		
Enable	Disable Enable	Enable
ID		I
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

CONFIGURATION	VALUES	DEFAULT
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
GS1 128		
Enable	Disable Enable	Enable
ID		]
Min		1
Max		80
GS1 DataBar OmniDir		
Enable	Disable Enable	Enable
ID		P
GS1 DataBar Limited		
Enable	Disable Enable	Enable
ID		Q

CONFIGURATION	VALUES	DEFAULT
GS1 DataBar Expanded		
Enable	Disable Enable	Enable
ID		R
Min		4
Max		74
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
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	Disable

CONFIGURATION	VALUES	DEFAULT
UPC E		
Enable	Disable Enable	Enable
ID		T
Send Check Character	Disable Enable	Enable
Expand	Disable Enable	Disable
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
UPC E1 Enable	Disable Enable	Disable
Code93		
Enable	Disable Enable	Enable
ID		F
Min		0
Max		80
Append	Disable Enable	Disable

CONFIGURATION	VALUES	DEFAULT
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
Append	Disable Enable	Enable
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
Start / Stop Characters	Disable Enable	Disable

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CONFIGURATION	VALUES	DEFAULT
QR Code		
Enable	Disable Enable	Enable
ID		O
Min		1
Max		7089
Append	Disable Enable	Enable
Code 11		
Enable	Disable Enable	Disable
ID		C
Min		4
Max		80
Check Character Required	One Check Char Two Check Char	Two Check Char
Code 128		
Enable	Disable Enable	Enable
ID		D
Min		0
Max		80
Append	Disable Enable	Enable
Composite		
Enable	Disable Enable	Disable
ID		G
Min		1
Max		2435

CONFIGURATION	VALUES	DEFAULT
UPC EAN	Disable Enable	Disable
Maxicode		
Enable	Disable Enable	Enable
ID		L
Min		1
Max		150
Micro PDF 417		
Enable	Disable Enable	Enable
ID		M
Min		1
Max		366
PDF417		
Enable	Disable Enable	Enable
ID		N
Min		1
Max		2750
Straight 2 Of 5 IATA		
Enable	Disable Enable	Disable
ID		U
Min		4
Max		48
CodaBlock A		
Enable	Disable Enable	Disable

CONFIGURATION	VALUES	DEFAULT
ID		V
Min		1
Max		600
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
TLC39		
Enable	Disable Enable	Disable
ID		Y
Trioptic		
Enable	Disable Enable (Couldn't use with Code32)	Disable
ID		Z

CONFIGURATION	VALUES	DEFAULT
Matrix 2 Of 5		
Enable	Disable Enable	Disable
ID		[
Min		4
Max		80
Telepen		
Enable	Disable Enable	Disable
ID		\
Min		1
Max		60
Output	AIM Original	AIM
ISBT		
Enable	Disable Enable	Disable
ID		^
Straight 2 Of 5 Industrial		
Enable	Disable Enable	Disable
ID		_
Min		4
Max		48
HanXin		
Enable	Disable Enable	Disable
ID		a
Min		1
Max		7833

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CONFIGURATION	VALUES	DEFAULT
DotCode		
Enable	Disable Enable	Disable
ID		b
Min		1
Max		2400
Digimarc		
Enable	Disable Enable	Disable
ID		c
China Post		
Enable	Disable Enable	Disable
ID		d
Min		4
Max		80
Korea Post		
Enable	Disable Enable	Disable
ID		e
Min		4
Max		48
2D Postal		
Enable	Disable Enable	Disable
ID		f

CONFIGURATION	VALUES	DEFAULT
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 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

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CONFIGURATION	VALUES	DEFAULT
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 RS60 MCU firmware to up-to-date version using one RFU file. Download the RFU file from Handheld knowledge base 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, RS60 will be restarted automatically.
Below table describes two types for firmware update.

Methods	Description
Auto Update	Set F/W auto update in JSON file Update F/W every time the ring scanner is connected
Manual Update	Update F/W immediately

Auto Update

Firmware auto update is performed when…

- Ring scanner is connected through Ring Control 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 RS60 is connected as SPP mode, Ring Control updates configuration automatically.

For more detail, refer to application's user guides.

Manual Update

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

1. Launch Ring Control app and connect RS60 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
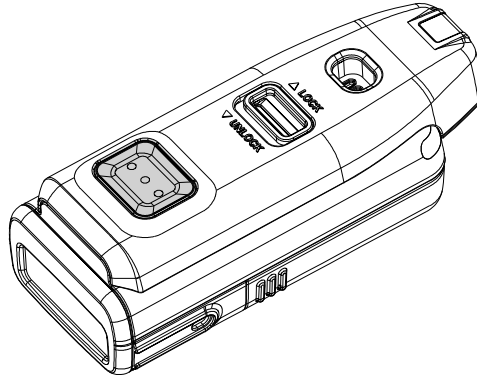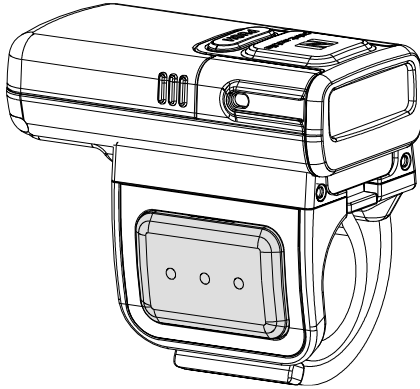4. Tap **UPDATE NOW** and wait until the process is done

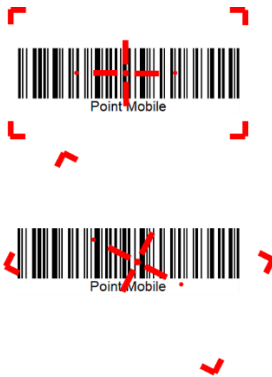Figure 35 Ring Control - Manual update
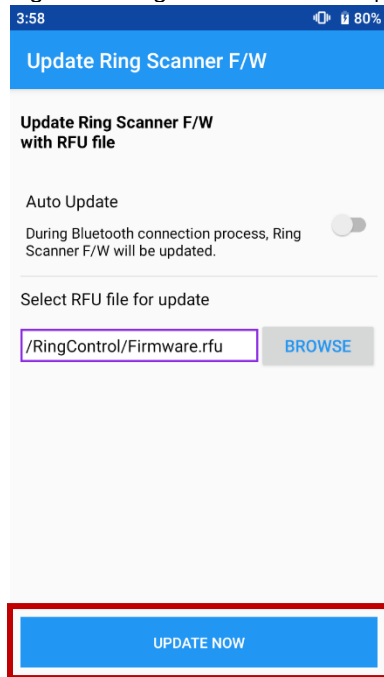
SCAN A BARCODE

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 36 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

RS60 supports below optional accessories which is sold separately.

Category	Accessory Name	Usage
Charging cradle	HHRS01-1025 (8 slot battery charger)	Charge up to 8 RS60 batteries
	HHRS01-1015 (4 slot charging station)	Charge up to 4 RS60 ring scanners
	Share cradle	Charge RS60 and its batteries with more slots

HHRS01-1025 (8 slot battery charger)

HHRS01-1025 is a charging cradle for RS60 battery. Up to 8 batteries can be charged simultaneously. For more detail, find Charge the Scanner – Charging via cradle chapter or HHRS01-1025 Quick start guide.

HHRS01-1015 (4 slot charging station)

HHRS01-1015 is a charging cradle for RS60. Up to 4 units of RS60 can be charged simultaneously. For more detail, find Charge the Scanner – Charging via cradle chapter or HHRS01-1015 Quick start guide.
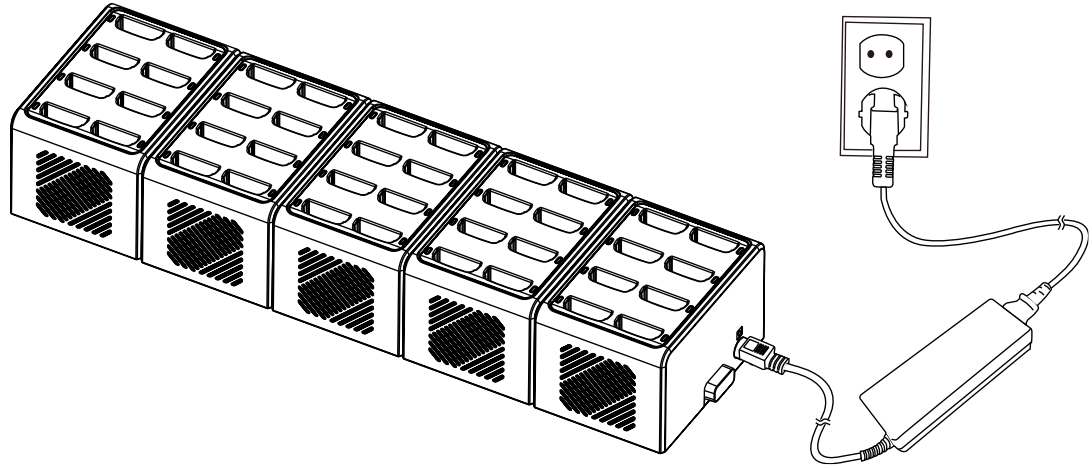
Share Cradle

HHRS01-1025 and HHRS01-1015 can connect to 5 pcs of cradles in one type only or two different types (HHRS01-1015 + HHRS01-1025) to make share cradle. With share cradle, you can charge more RS60 and batteries at the same time.

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

- **40 slot battery charger**
  - Make a 40-slot battery charger by connecting 5 pcs of HHRS01-1025.
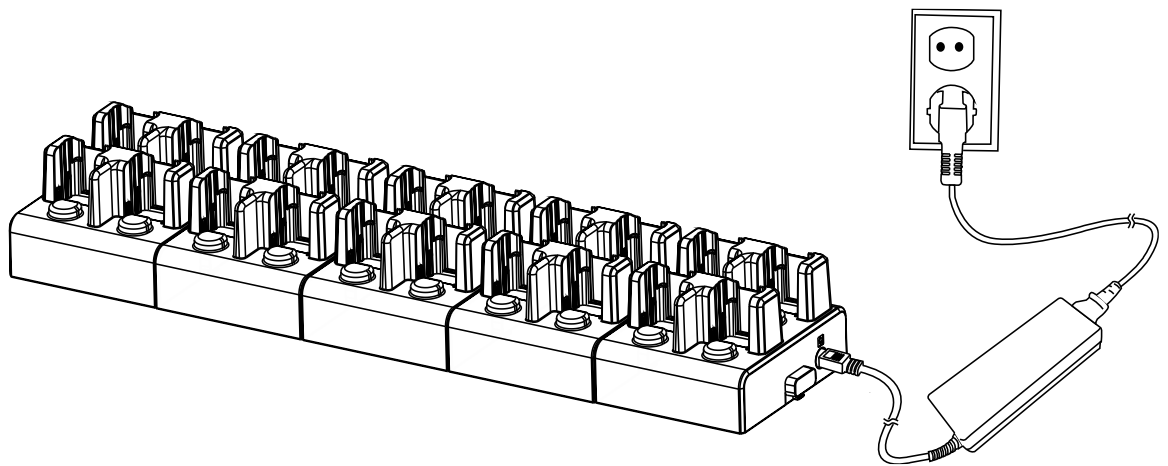
    Figure 37 40 slots

- **20 slot charging station**
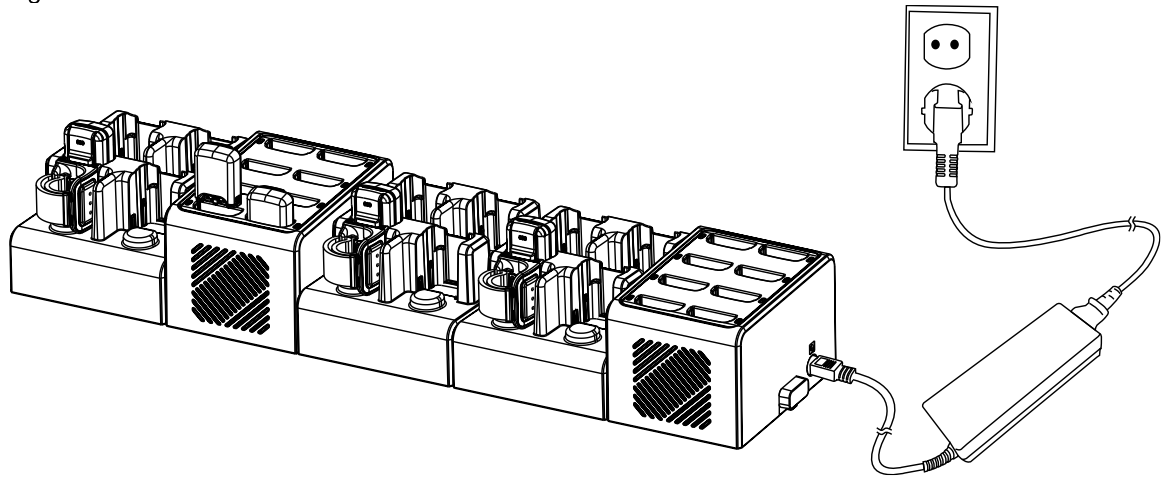 - Make a 20-slot charging station by connecting 5 pcs of HHRS01-1015.

    Figure 38 20 slots

- **Multi type slot share cradle**
  - Connect HHRS01-1015 and HHRS01-1025 to make multi-functional share cradle.

  Figure 39 Multi-functional 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 Handheld 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.
4. Charge it at least once every six months to prevent full discharge and keep the performance, when you are not using the battery for a long period.
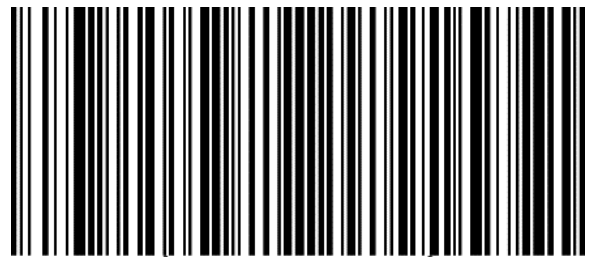
⚠️ **NOTICE: The battery is consumable goods. Handheld provides warranty for battery in 6 months after purchase. If you suspect the battery swelling, change the battery, and contact Handheld to use safely.**

APPENDIX

Bluetooth Mode Barcodes
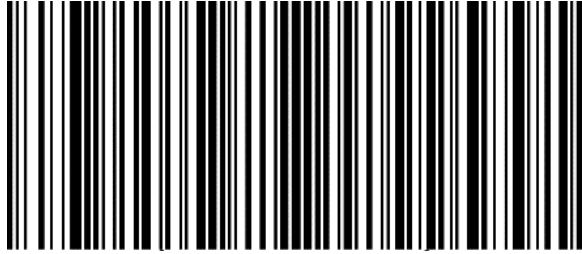
SPP Mode

HID Mode
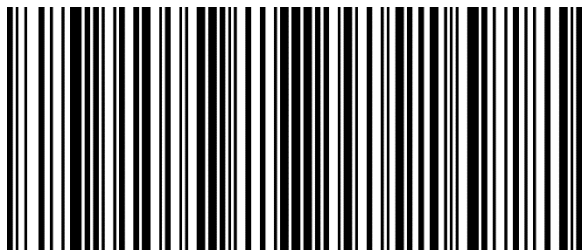
HID LE Mode

Bluetooth Power Class

Class 1

Class 2

Batch Mode Barcodes

Normal

Auto mode

Standard mode

USB storage mode

**Start
(Standard mode)**

**Send
(Standard mode)**

Factory Data Reset

FCC & IC APPROVAL

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1)This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful Interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help

Caution: Any changes or modifications to this device not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device contains licence-exempt transmitter(s)/receiver that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:(1) This device may not cause interference.(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil contient des émetteurs / récepteurs exempts de licence qui sont conformes aux RSS exempts de licence d'Innovation, Sciences et Développement économique Canada. Son fonctionnement est soumis aux deux conditions suivantes:(1) Cet appareil ne doit pas provoquer d'interférences.(2) Cet appareil doit accepter toute interférence, y compris les interférences qui peuvent provoquer un fonctionnement indésirable de l'appareil.

This device complies with FCC/IC RF exposure requirements.

Cet appareil est conforme aux exigences d'exposition aux RF FCC/IC.