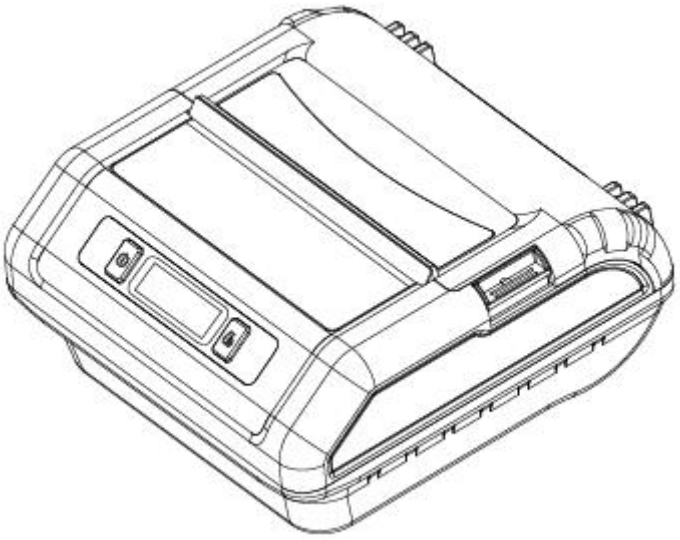
Mobile Printer

HM-Z3

USER MANUAL



Rev.1.2

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E-mail: support@hprt.com

Web: www.hprt.com

Caution Symbol

	Never touch the thermal head immediately after the printer has been used. Let the thermal head cool for a few minutes before touching it.
	This symbol is indicate that it is easily damaged. Observe the precautions for handling electrostatic sensitive devices.

Safety Precautions

Please be sure to read

To use this product in safety, please follow the precautions given below.

⚠WARNING

- ✓If you notice smoke, a strange smell, or a strange sound, turn off the power immediately, and remove the USB cable and/or battery pack. Then contact the dealer.
- ✓ If any foreign material (metal scraps, water, or other fluid) enters the printer, immediately turn off the printer and remove the USB cable and/or battery pack. Then, contact your dealer for advice. Continued use of the printer could result in a fire.
- ✓Never attempt to repair the printer yourself. Also do not disassemble or modify the product. Doing so could lead to injury, fire, or electric shock.
- ✓Do not touch the tear bar.
  - ←There is a tear bar inside the paper outlet slot. Neither put your hand in the paper outlet slot while printing is in progress, or put your hand into the outlet even when printing is not in progress.
  - ←The printer cover can be opened when replacing the paper. However, since the tear bar is on the inside of the printer cover, be careful not to place your face or hands too close to the tear bar.
- ✓During and immediately after printing, the area around the thermal head is very hot.Do not touch it, as you could be burned.
- ✓If any battery fluid gets on your skin or clothing, immediately wash the affected area with fresh water. Otherwise, skin damage may result.
- ✓The battery pack may be hot immediately after the product has been used.

■ Using the Printer

- ✓Some semiconductors can be damaged by static electricity.Be sure to turn off the printer when inserting or removing the battery pack.
- ✓Do not drop the printer or hit it against a hard object.
- ✓Do not open the printer cover while the printer is printing.
- ✓Before you open the printer cover, make sure that printing data is not being sent to the printer.
- ✓Do not unplug or plug in a USB cable while the printer is printing or during communication.
- ✓Do not touch a USB connector while the printer is printing.
- ✓Turn off the printer when you are not using it.
- ✓When the printer is used in a low temperature environment, the battery's performance will be diminished, and the amount of time that you can use the printer for may be reduced.
- ✓Do not pull out paper while the printer cover is closed.
- ✓The heating element and the driver IC of the thermal head are easily damaged. Do not touch them with metal objects, sandpaper, etc.
- ✓Printing quality may suffer if the thermal head heating element becomes soiled by being touched with your hands. Do not touch the thermal head heating element.
- ✓There is a risk of damage to the driver IC of the thermal head from static electricity.Never directly touch the IC.
- ✓Do not operate the printer if there is moisture on the front surface of the head from condensation, etc.

■ Thermal Paper Handling

- ✓Only use thermal paper with the designated specifications.The printing quality and working life of the thermal head cannot be guaranteed if any paper other than that recommended is used. In particular, if ion concentration of [Na+, K+, Cl-] is high, it may drastically reduce the working life of the thermal head. Please exercise caution.
- ✓Store the thermal paper in a cool, dry, dark location.
- ✓Do not rub the thermal paper with a hard object.
- ✓Do not leave the thermal paper in contact with plastic film, an eraser, or adhesive tape for a long period of time.
- ✓Do not stack the thermal paper on fresh diazo copies or wet-type copies.
- ✓Do not use chemical glue on the thermal paper.
- ✓Do not use thermal paper that has been stored for a long period.

■ Operating Environment for the Printer

Before actually unpacking the printer, remember the following points when doing this.

- ✓Do not use the printer in an environment in which it will be subject to strong shaking while it is printing.
- ✓Be careful to ensure that the printer is not exposed to direct sunlight.

The appropriate environment for using the printer is described below.

Temperature: -10°C to 52°C

Humidity: 10% RH to 85% RH (no condensation)

- ✓Do not place the printer near a copying machine or other device that produces a strong electromagnetic field.
- ✓Keep the printer sufficiently removed from heaters and other sources of heat.
- ✓Use the printer in a clean, low-humidity environment that is free from dust.
- ✓Avoid using the printer in high-humidity rooms.

■ Printer Maintenance

Please perform the following maintenance every 6 months.

- ✓Thermal head

  Dip a cotton swab in an alcohol solvent (ethanol, methanol, or isopropyl alcohol), and clean the heating area of the head.
- ✓Platen

  While turning the platen, use a soft dry cloth to lightly rub the entire surface of the platen and remove any foreign objects.
- ✓Paper storage unit and the surrounding area

  Remove any dirt, dust, pieces of paper, etc., from the paper storage unit.

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1. Product Overview

This printer is perfect for mobile banking systems, retail, POS (point of sale) terminals and other forms of mobile computing.

The characteristics of this printer are listed below:

- Pocket size (109x108x51.2mm)
- Extremely light and mobile (372g including Battery pack)
- Very silent printing thru direct thermal printing method
- Print speed 60mm/s
- Support Bluetooth Ver3.0/4.0[BLE] Dual Mode
- Belt Clip as a standard accessory
- Support text and graphic printing
- Drop-in design that makes it easy to load paper
- A printer cover that can be opened with the touch of a button
- Printer cover open sensor, Paper-out sensor, Black mark sensor, Voltage detection, TPH temperature detection, Label gap detection

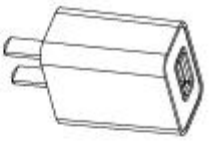
1.1 Printer & Accessories

The printer is packaged with the following accessories.

If any of these accessories is broken or missing, please contact the dealer that you bought the product.

Printer

USB Cable



AC Adapter

Battery

Roll Paper

Quick Start Guide

Belt Clip

CD

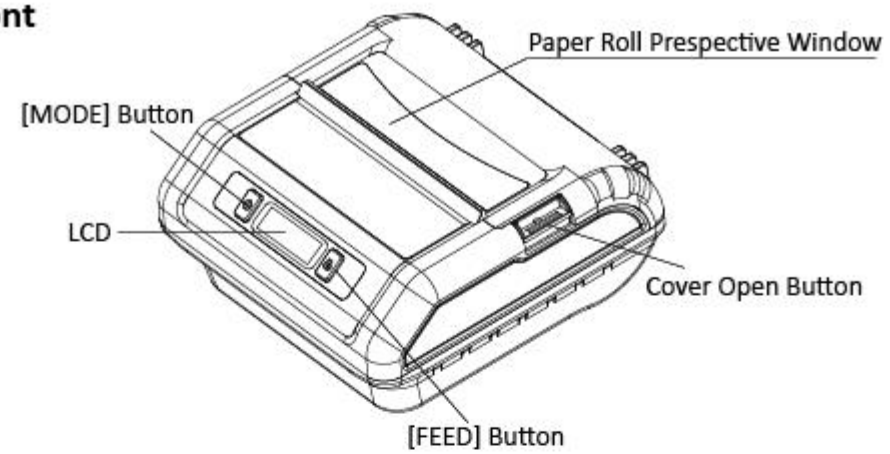
Note:

1) The AC adapter vary by local or region.

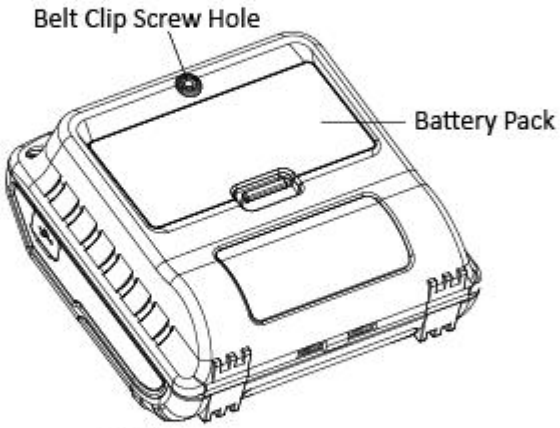
2) The packing materials are actually dependent on the order.

1.2 Appearance and Components

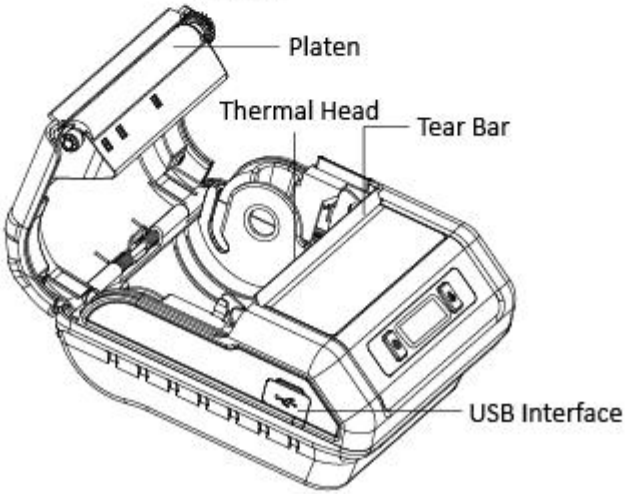
- **Front**



- **Rear**



- **Inside**

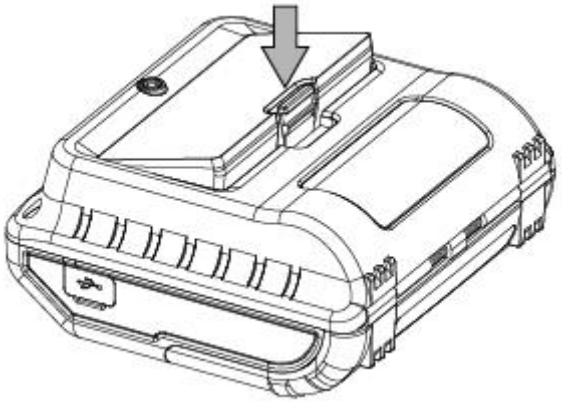


2. Setup

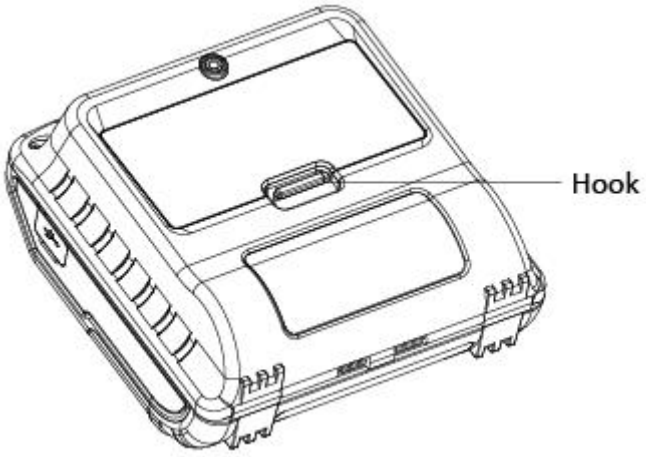
2.1 Battery Pack

2.1.1 Inserting into the Printer

1. Make sure that the printer has been turned off before you insert or remove the battery pack.
2. Insert the battery pack into the back of the printer as in the figure shown below, following the direction of the arrow. Press down on the battery pack until the hooks click into place.



3. To remove the battery back, pull back the hook, and use the opposite procedure from the one you used to insert the battery pack.



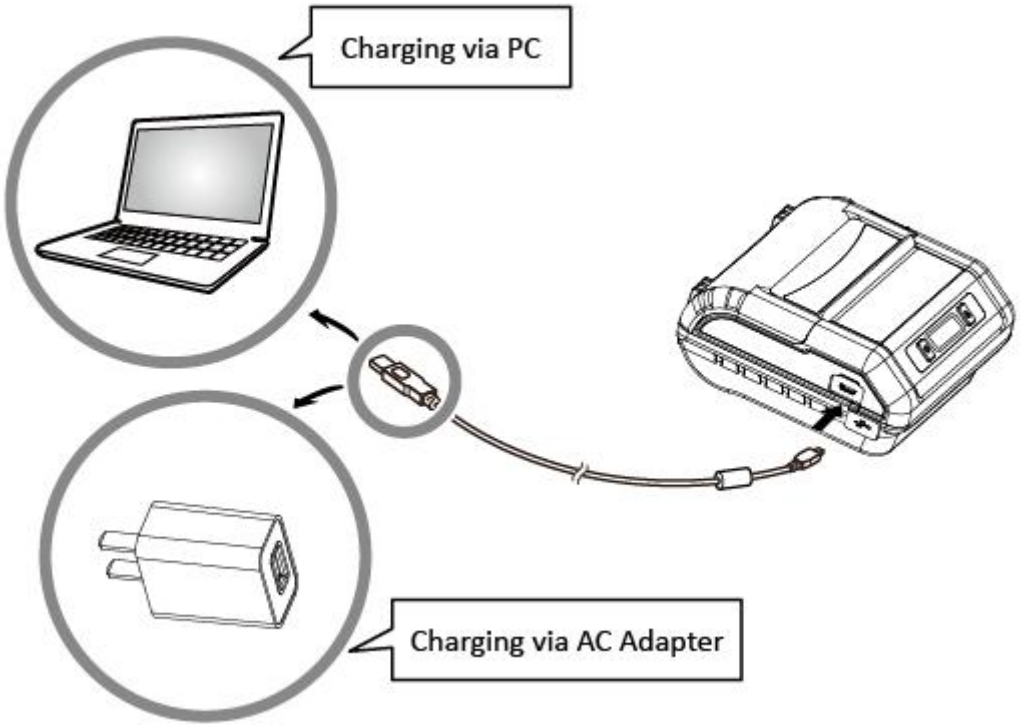
NOTE:

This printer can only use the company's original equipment or approved special battery, otherwise, it may cause damage to the product, battery leakage, fire or explosion.

2.1.2 Charging the Battery

Insert the battery pack into the printer to charge it.

Plug in socket with USB charging.



When battery pack runs out of power, the battery icon will flash. It powers off automatically when continues printing. If you want to go on, please charge it.

Notes about the Battery Pack

◆ **General Battery Characteristics**

- The battery is a consumable and its performance over time gradually decreases.
- While not in use, the battery will slowly discharge itself.
  Prepare a battery pack that has been charged relatively recently (1 to 2 days earlier).
- To ensure that the battery lasts for a long time, we recommend that you turn off the printer whenever possible.
- When used at low temperatures, battery performance will temporarily decline. Be sure to have a fully-charged spare battery standing by if the printer will operate in a cold environment.

◆ **Charging the Battery Pack**

- The battery pack can be charged at ambient temperatures between 0 and 40°C.
- The time required to charge the battery pack varies depending on the voltage and the ambient temperature.
  Normally, it takes 3 to 4 hours to charge the battery pack.

- It will take longer to charge the battery pack if you print while charging the battery pack.
- Do not remove the battery pack while it is being charged.
- Fully charge the battery prior to using the printer. Otherwise, the performance of the battery may be affected.
- There is no need to completely discharge or use up a rechargeable Lithium-ion battery before recharge it.
- It is normal for the battery pack to be hot after it has finished charging or been used.
- Do not recharge a battery pack that has just been fully charged.

◆ **Notes about Using the Battery Pack**

- Only use a designated battery pack.
- Only use the designated battery charging method.
  You cannot use a USB cable other than the designated USB cable.
- Do not throw the battery into a fire, place it near a flame or heating device, or leave it in a hot environment (under direct sunlight, in a car, etc.).
- Do not use a battery pack that has been dropped or subjected to a shock in some other way.
- Do not disassemble or modify the battery pack.
- Do not short the terminals of the battery pack or get it wet.
- Do not place the battery pack in a bag with a small metal object (such as a key).
- If any battery fluid gets on your skin or clothing, immediately wash the affected area with fresh water. Otherwise, skin damage may result.

◆ **Notes about Storing the Battery Pack**

- If you do not intend to use the battery pack for a long time, be sure to remove it from the printer.
- Keep the battery out of the reach of children. In addition, be careful that children do not remove the battery.
- Store the battery pack in a cool place.
  * We recommend that you store the battery pack in a dry area with an ambient temperature of 15 to 25 ℃.
  * Avoid storing the battery in locations with high or extremely low temperatures.

◆ **Battery Disposal and Recycling**

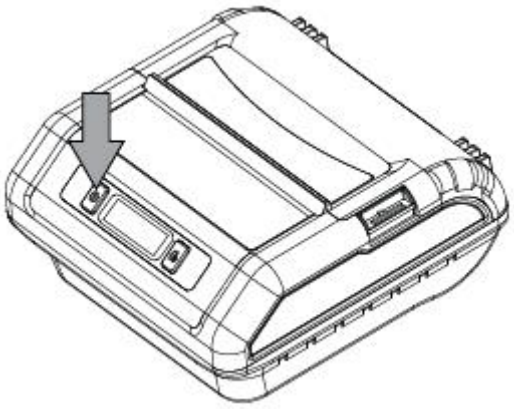
A battery pack is used to power this device. Since the disposal process of batteries varies from country to country, refer to the appropriate measures mandating the disposal method of the country in which this device is used.

If battery pack is not in use for a long time, please remove it after fully charged. And it should be recharged every 3 months.

When power is low,battery should be charged in time. If the printer automatically power down because of low power, be sure to charge the battery in 15 days. Otherwise, it will cause permanent damage to the battery.

2.2 Bluetooth

1. Press and hold MODE button for approx. 2 seconds, and printer is turned on.
   Then, it is ready to pair with another Bluetooth device.



2. If necessary, enter the following information into the terminal that you are using.
   PIN: 1234 (default)
   Device name: “HM-Z3-XXXXX”(default)
   (XXXXX is the last digits of the Product Serial Number)

Notes:

1.HM-Z3 has two Bluetooth modes:

a) One is Bluetooth Ver3.0 with PIN for Android or Windows system. PIN and Device name can be changed through Star Utility. To obtain this utility, please contact with your dealer.

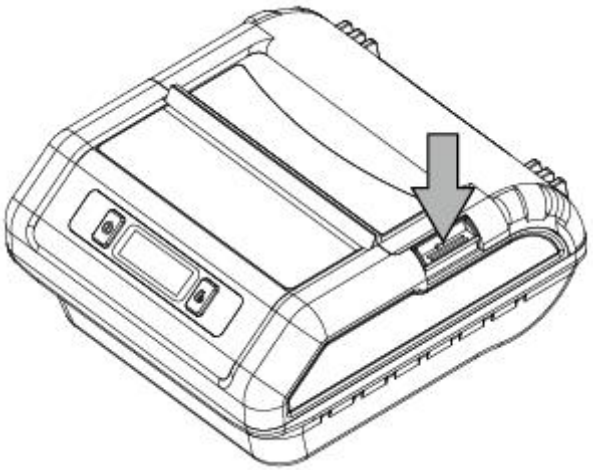
b) Another is Bluetooth 4.0(BLE) without PIN for iOS system.

2.HM-Z3 changes the Bluetooth mode automatically by host system

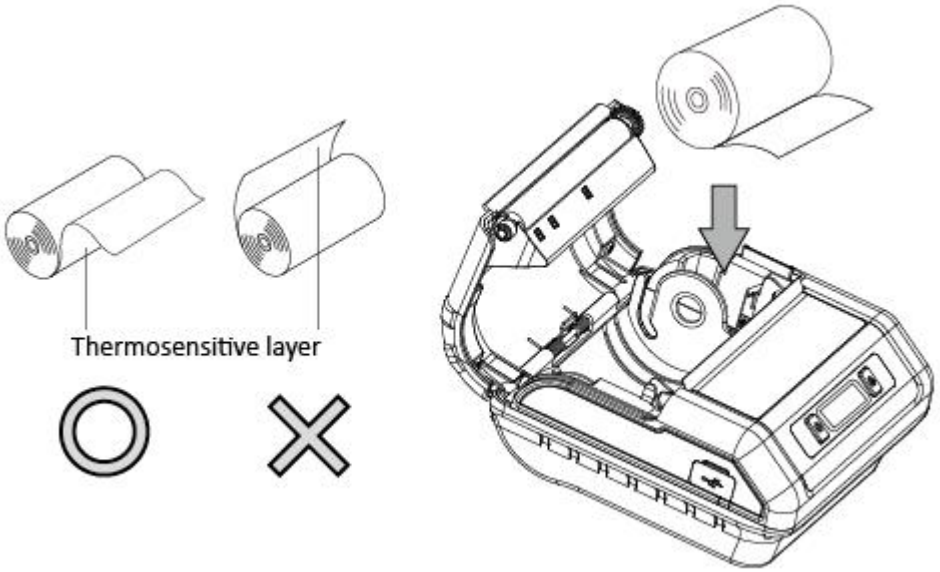
3.Pairing sets one by one in order, otherwise it can‘t figure out which one succeeds in pairing.

2.3 Loading Paper

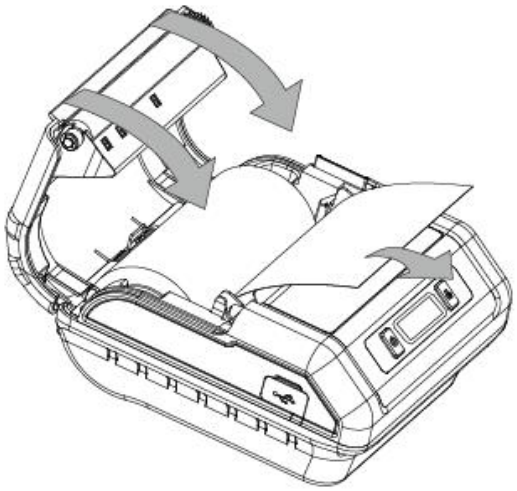
1) Press the cover open button to open the paper cover.



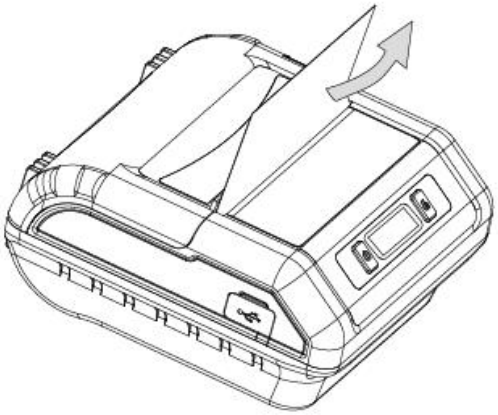
2) Load the roll paper in the orientation shown in the figure below.



3) Pull the end of the roll straight toward you. Then press down on both sides of the printer cover to close it firmly.When you close the printer cover, make sure that it is closed on both sides.



4) Use the tear bar to cut the extra paper.



⚠ *WARNING*

1) Do not touch the tear bar.

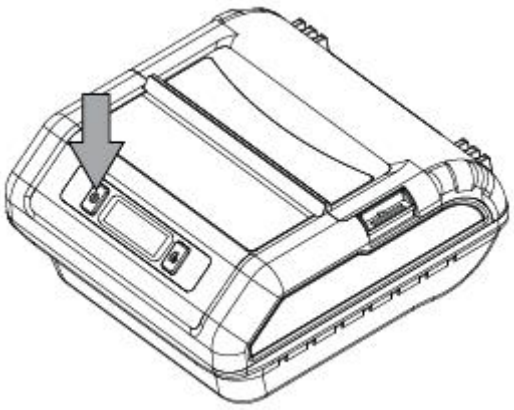
- There is a tear bar inside the paper outlet slot. You could neither put your hand in the paper outlet slot while printing is in progress nor put your hand into the outlet even when printing is not in progress.
- The paper cover can be opened when replacing the paper, be careful not to place your face or hands too close to the tear bar.

2) During and immediately after printing, the area around the thermal head is very hot. Do not touch it, as you could be burned.

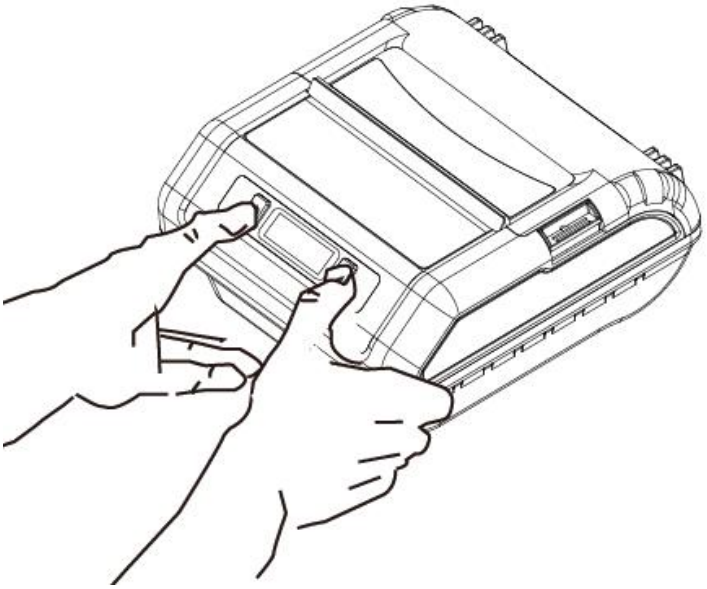
2.4 Menu Settings

Change the Menu settings by following operations.

1. Press and hold the MODE button for approx. 2 seconds, and printer is turned on.



Press and hold both the MODE & FEED. Release the buttons after printer displays “Language: English”, you can configure the settings.



2.To switch the Menu and option parameter, or return to the previous menu, press MODE button.

3.To switch or confirm the new setting, press FEED button.

> ⚠CAUTION
>
> Before changing the menu setting, make sure that the communication with a host device is disconnected. When the printer is under the Bluetooth communication with a host device, it cannot enter the Menu Settings mode.

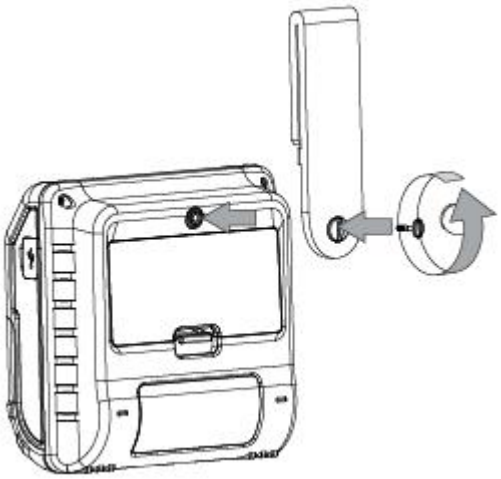
2.5 Belt Clip

2.5.1 Install the Belt Clip

Follow the procedure below to attach the belt clip to the printer.

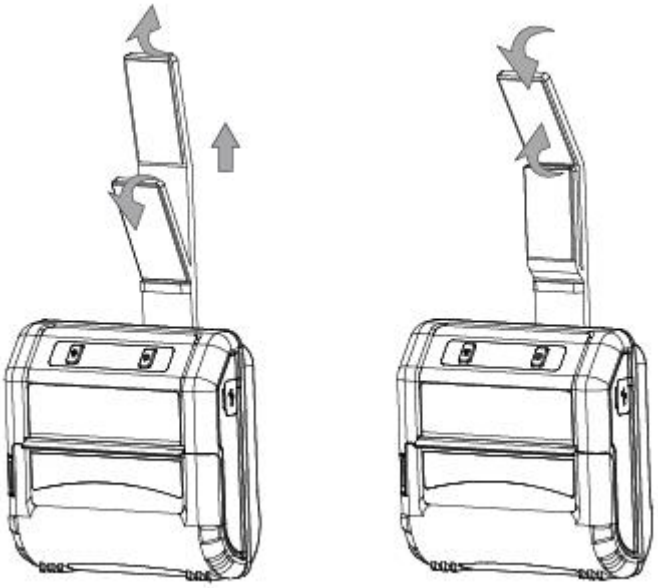
1. Make sure that you are attaching the belt clip in the right orientation, then screw the screw that comes with the belt clip into the designated screw hole to attach the belt clip to the printer.

2. Use a coin to firmly screw in the screw.



2.5.2 Using the Belt Clip

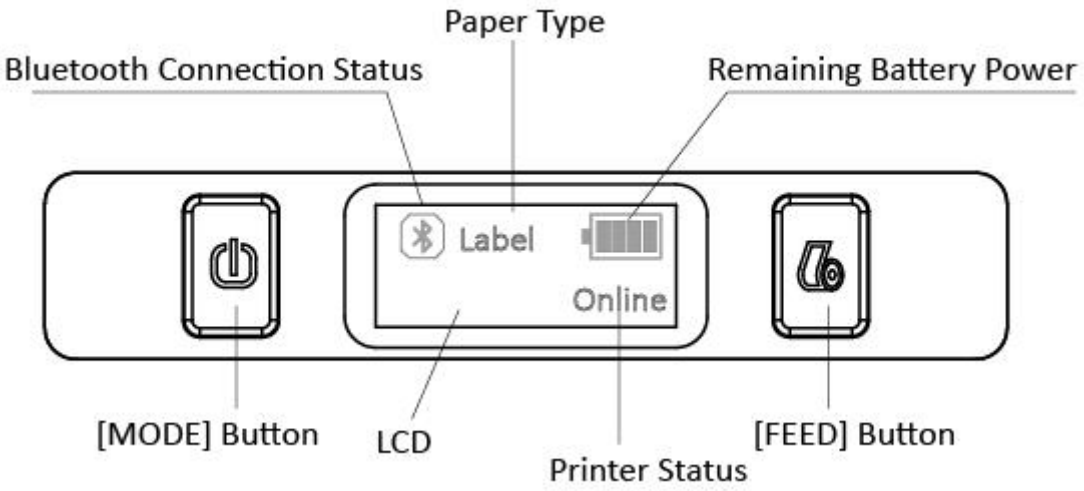
When the printer is attached to your belt, you can use it like the picture below.



Note: Be careful not to drop when use a belt clip.Velcro be securely fixed.

3. Printer Features

3.1 Control Panel



3.1.1 Button

1) MODE Button:

①Pressing and holding the MODE button for 2 seconds or more will turn the power on or off.

②Pressing and holding MODE & FEED buttons for 5 seconds will put the printer into Menu Setting mode. The MODE button can now be used to change Printer MODE status visible on the LCD screen for fast configuration.

2) FEED Button:

①When the printer is on, paper can be fed manually by pressing and holding the FEED button for more than one second.

②In Menu Setting mode,the FEED button can be used to switch and confirm the new setting.

3.1.2 LCD Indication

LCD will display most of the printer status.

Content

Mode/Status: Indicates the currently specified printer mode or error status.

Remaining battery power :

There is sufficient remaining battery power.

The remaining battery power is low. Please charge the battery pack.

The remaining battery power is extremely low.

Flashing Stop using the printer immediately, and charge the battery pack.

Note: If you continue printing at the low remaining battery power status, the printer cannot feed paper properly and may print with condensed (narrow) line spacing.

Bluetooth connection status

The mark on the left indicates that there is no Bluetooth connection.

The mark on the left indicates that there is a Bluetooth connection.

3.1.3 Buzzer Description

Buzzer	Status
No ring	Low battery
Once	Begin charging/Press button/Cover close
Twice	Paper out/Cover open
Three	USB disconnected

3.2 Self Test

You can use self test to check the printer's settings.

Before you start the self test, make sure that roll paper has been properly loaded into the printer.

Self Test Procedure:

1)Turn on the power while holding down FEED button.

2)The printer will print the current printer status, including the firmware version, communication mode.

3)The self test will finish automatically. The printer will be ready to receive data after the self test finishes.

HPRT Techno logies
HM-Z3

Serial Number : XXXX
Density : MID(MID SPEED)
Paper Type : Receipt
TOP Margin : 0 mm

Program :
Firmware : V1.01.07 CPCL-1 LC
Build date : 2016.10.31
Build time : 11 : 26 : 02

Power Management :
Standby Time : 60 s
Power Off Time : 120 min

Bluetooth :
Name : HM-Z3
Baud : 115200
Address : 8C:DE:52:C1:BF:DA
Password : 1234

NOTE: Please subject to the actual self-test page, this self-test page is only for reference.

3.3 Instruction for Standby(Sleep) Mode

The printer in the Standby(Sleep) Mode will recover to the Print Ready Mode when receiving print data or button operations.

Press the FEED button or the MODE button and confirm that the LCD is turned on. When the LCD is not turned on, it is possible that the printer is turned off by the Power OFF mode. In this case, turn the printer on manually.

4. General Specification

Item		Specifications
Printing	Printing method	Direct line thermal printing
	Resolution	203dpi (8dots/mm)
	Printing speed	60mm/s
	Interface	USB, Bluetooth
Power saving	Sleep mode	YES
Memory	RAM	16Mb
	Flash	32Mb
Font	Chinese	GBK: 18x16, 24x24
	Alphanumeric	ASCII: 9x16, 12x24
Barcode	1D	UPC-A, UPC-E, EAN8, CODE39, ITF, CODE128M, CODE128, CODE93
	2D	QR code
Detection	Sensors	Printer cover open sensor, Paper-out sensor, Black mark sensor, Voltage detection, TPH temperature detection, Label gap detection
Power	Output	5V ⎓ 1A
	Battery	2000mAh/7.4V rechargeable Li-ion battery
Paper	Paper type	Thermal paper or Label paper
	Paper width	46mm or 62mm or 80mm
	Paper thickness	0.053mm≤X ≤0.15mm
	Roll paper diameter	Ø40mm
	Recommended paper	Thermal paper : P220AG, PD450, FD200, Alpha 400-2.1 Label paper : RICHO 150PSMW, UPM DT80W
Physical characteristics	Operation condition	-2°C to 52°C, 30% to 85%RH
	Storage condition	-20°C to 70°C, 5% to 90%RH
	Dimension	109(W) x 108(H) x 51.2(D) mm
	Weight	372g (including battery pack)
Reliability	TPH	50km(not more than 12.5% printing density)/100 million pulses
Software	Emulation	CPCL
	Driver	Windows(7/8/10/Vista/XP)
	SDK	WinCE, Win Mobile, Android, IOS

⚠WARNING:

Please use the recommended thermal paper or same quality paper, otherwise it will influence the printing quality and decrease the thermal print head life.

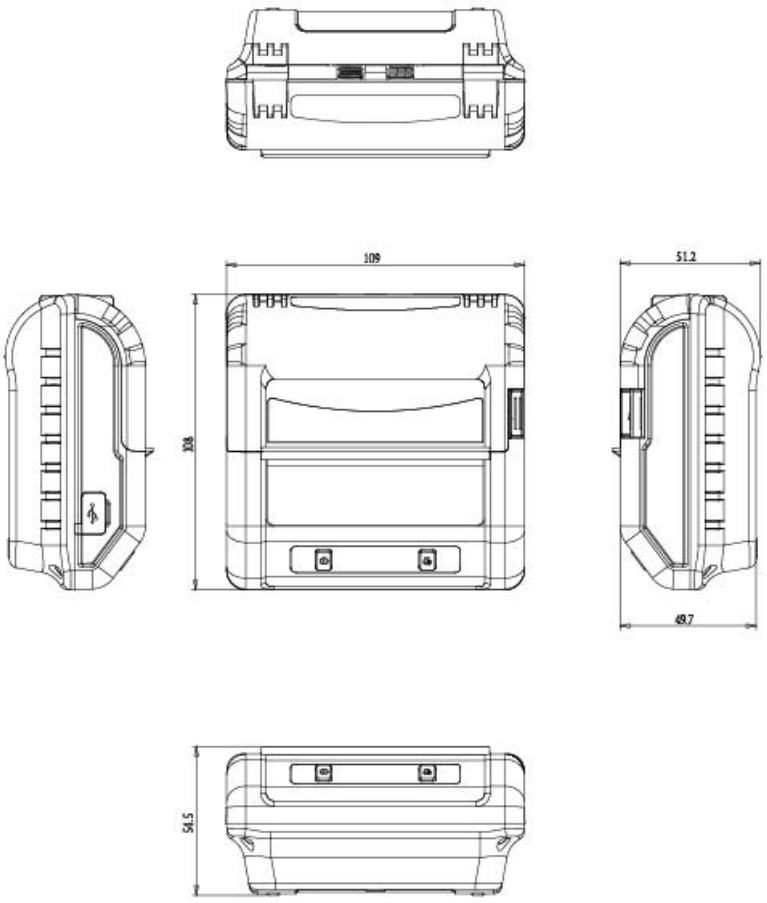
Please Use at a room temperature if you want to set the print density to “Special”.

Some types of the paper are not suitable for use in low-temperature environment.

■ Dimensions

・External Dimension: 109mm (W) x 51.2mm(D) x 108mm (H)

・Weight : 372g (including battery pack)

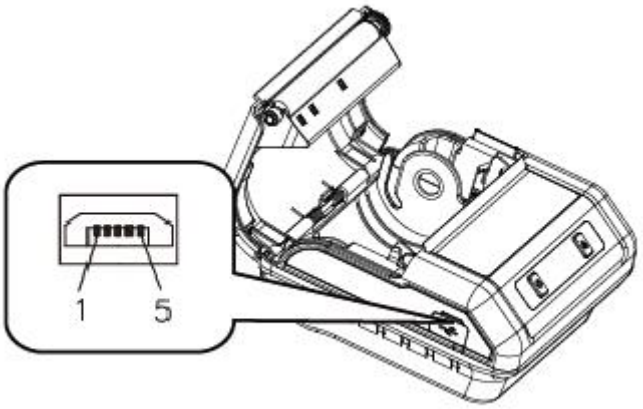


5. Detailed Specification

Item	Specification
Hardware specification	MCU: 32bits RISC, FLASH : 256K bytes, RAM: 48K Bytes
Bluetooth highest frequencies	2.4 GHz
Bluetooth module basic clocking	26MHz
Bluetooth output	2.34mW (3.7dBm)

6. Interface

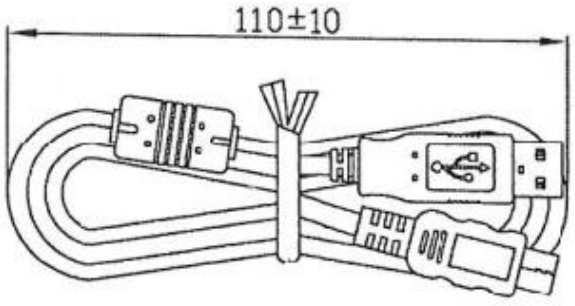
6.1 USB for Battery Charge



HM-Z3 printer has a USB interface for Battery charging and is connected by means of 5pin micro USB socket.In the following table, the signals present on the micro USB socket are listed.

Pin No.	SIGNAL
1	VBUS
2	D-
3	D+
4	NC
5	GND

■ USB cable



6.2 Bluetooth

Category	Specification
Bluetooth Spec.	Bluetooth Ver 3.0/4.0 [BLE] Dual Mode
Frequency Range	2.4GHz ISM band
Data Transmission Rate	115200bps adjustable
Data Bit	8 data bit fixed
Parity Bit	No parity fixed
Stop Bit	1 stop bit fixed
SSP	Compatible

PIN code: 1234 as default

Device Name: HM-Z3-XXXXX

(XXXXX is the last 5 digits of the Product Serial Number)

7. Specifications of Accessories

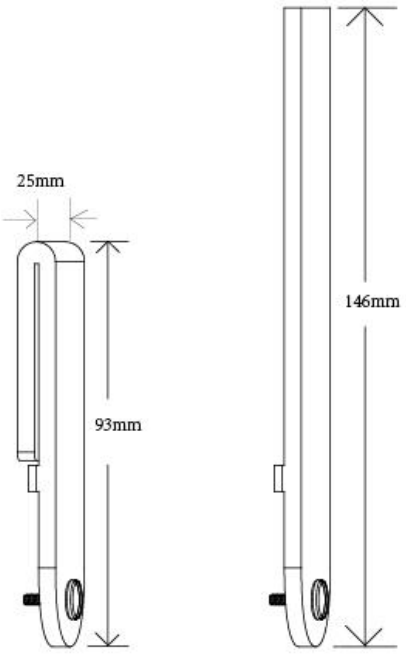
7.1 Battery Pack

7.4V, 2000mAh

Rechargeable Lithium-ion

Safety Approvals: PSE

7.2 Belt Clip



8. Troubleshooting Procedure

When a trouble occurs, confirm its phenomenon, locate a defective part in accordance with "8.1 Troubleshooting Guide", and troubleshoot as described below.

Phenomenon:

Find a trouble phenomenon in this column. If there are multiple phenomena, take all the corresponding items into consideration. This allows you to specify a hidden defective part.

Cause:

Lists as many possible causes as possible. Guess a trouble cause out of them and take its check method to specify the trouble cause.

Check Method:

Describes a check method to specify a trouble cause.

Remedy:

Troubleshoot by taking a remedy described in this column.

By troubleshooting in accordance with the above-mentioned procedure, you can troubleshoot efficiently with fewer misjudgments.

8.1 Troubleshooting Guide

8.1.1 Power Supply Failure

Phenomenon	Cause	Check Method	Remedy
No Power	The battery is not connected		Connect the specified battery
	The battery is discharged	Battery level ≤7.4V	Charge the battery

8.1.2 Printing Failure

Phenomenon	Cause	Check Method	Remedy
No printing	The roll paper is loaded upside down.		Install the roll paper properly.
	Faulty Main Logic Board Unit.		Replace the Main Logic Board Unit.
	Faulty connection of the thermal head connector.	Check connection of the thermal head connector.	Connect the thermal head cable to connector properly.
	Faulty thermal head.		Replace the Mechanism Unit.
Partly not printed	Faulty connection of the thermal head connector.	Check connection of the thermal head connector.	Connect the thermal head cable to connector properly.
	Printer cover one side close.		Close printer cover correctly.
	Faulty thermal head.		Replace the Mechanism Unit.
Faint printout or uneven printout	Level of battery voltage is low.	Check the battery lamp on the LCD.	Charge the battery.
	Printer cover one side close.		Close printer cover correctly.
	Faulty thermal head.		Replace the Mechanism Unit.
	Foreign substance is adhered to the thermal head.	Check whether any foreign substance are adhered to the thermal head.	Dip a cotton swab or soft cloth in ethyl alcohol and wipe the foreign substance with them.
	Non-recommended paper is used.	Check whether the paper being used meets the specification.	Replace it with the specified paper.
	Faulty mounting of the platen.	Check mounting condition of the platen.	Mount the platen properly.

8.1.3 Faulty Sensor

Phenomenon	Cause	Check Method	Remedy
Does not detect presence of paper.	Faulty paper sensor.	Check whether the ERROR lamp flickers when paper is out.	Replace the Mechanism Unit.
	Foreign substance is attached the paper sensor.	Check whether any foreign substance are adhered to the paper sensor.	Remove the foreign substance.
	Faulty connection of the paper sensor connector.	Check connection of the paper sensor connector.	Connect the paper sensor cable to connector correctly.

8.1.4 Paper Feed Failure

Phenomenon	Cause	Check Method	Remedy
Paper is not feed or feed irregularly	The printer cover is not closed properly.		Close the printer cover properly.
	Faulty connection of the motor connector.	Check connection of the motor connector.	Connect the motor cable to connector correctly.
	Defective motor.		Replace the Mechanism Unit.
	Battery voltage drop.	Check the battery display of the LCD.	Charge the battery.
	Faulty Main Logic Board Unit.		Replace the Main Logic Board Unit.
	Faulty mounting of the platen.	Check mounting condition of the platen.	Mount the platen properly.
	Paper feed failure.	Check whether or not the paper is jamming or torn and caught in the paper path.	Eliminate unnecessary paper in the paper path and set paper properly.
	Foreign substance in the gear.		Eliminate the foreign substance.
	Broken gear.		If the gear is broken, replace the Mechanism Unit.

8.1.5 Error Message(Printer Status indication on the LCD)

Message	Description of failure message	Remark
Cover Open	Printer cover is not closed properly.	Close printer cover properly.
Out of Paper	Empty paper.	Replace the roll paper.
High Temperature	Thermal Head is overheat.	Is recovered with the automatic which comes to be cool.

FCC WARNING

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.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.