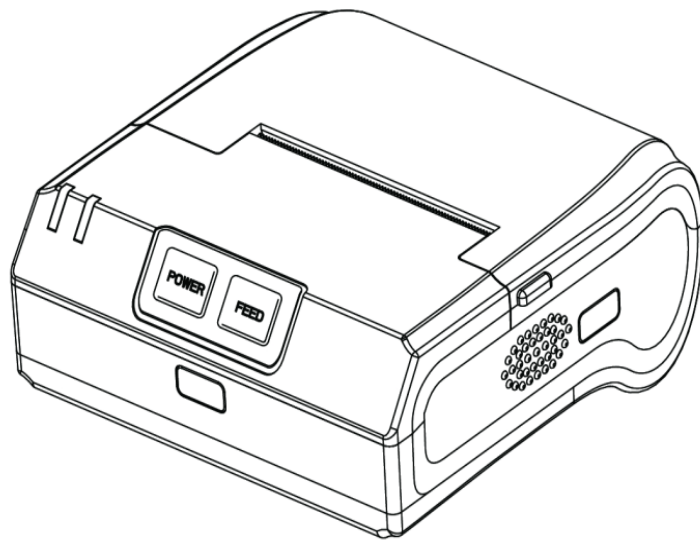


MPD2

User Manual



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Statement

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Printed in China

1.0 Version

Warnings :



This must be complied with in order to avoid any damage to the human body and to the equipment.



This is showing the important information and tips for the printer operating.

REVISION RECORDS

REV.	DATE	DESCRIPTION	Drawn	Checked	Approved
1.0	2013.04.10	— —	Chenweihua	Lin yang	Ren xiaowei
1.1	2013.06.07	Some changes about "descriptions of Replsce the ribbon" -on P11	Chenweihua	Lin yang	Ren xiaowei
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Precautions

1. Safety Precautions

- 1) Be sure to use the specified battery and power source provided by our company. Connection to an improper power source may cause fire, explosion or damage to the printer.
- 2) Don't put the battery into the fire or water, don't disassemble or modify the battery, don't be short circuit, otherwise may result in injury or fire even explosion.
- 3) If the printer would not be used for a long time, be sure to take off the battery, otherwise the battery may leak liquid which is corrosive, if improper operation causes battery leak, and the liquid is spattered on the skin or clothes, please wash it with water, if spattered in the eyes, please rinse them with water thoroughly and see a doctor.
- 4) Please do not open the paper case cover when it is printing or just when printing is over, do not touch the print head with hand or body, overheat may cause scald.

2. Operation Precautions

- 1) Be sure not to print continuously over 1 meter, otherwise may cause damage to the print head.
- 2) Water or other liquid should not spill into the printer, also the printer should not be appeared in the rain, or else may cause printer damage.
- 3) Please do not open the paper case cover when it is printing, otherwise the printer may work improperly.
- 4) If print with serial interface, should not unplug the interface cable in the course of printing, or else some printing data may be lost.
- 5) When print in IR or IrDA mode, be sure the Ir window of the host equipment face rightly the IR window of the printer, the distance should be within the range of 50cm, and the angle should be within the range of 30° .
- 6) When print with Bluetooth interface, the communication distance should be within 10 meters, otherwise the printer doesn't print or prints rubbish codes.
- 7) Too high (50℃) or too low (-10℃) temperature and too high (85%) or too low (20%) relative humidity both effect the print quality.
- 8) The print paper in poor quality or stored for too long time also may reduce the print quality even damage the printer.
- 9) In the black mark detecting mode, the printer requires that the preprinted black mark is accordant with the black mark specifications (details please refer to 4.2), otherwise the black mark can not be detected correctly.
- 10) Be sure to use up the power of the battery before charge it, as it can ensure the using life of the battery.

3. Storage Precautions

- 1) The printer should be placed in such an environment that the temperature is between -20℃ and 70℃, and the relative humidity is between 5% and 95%.
- 2) If the printer will be stored for a long time, please be sure to take out the battery, otherwise may damage the battery and printer.
- 3) Normal thermal paper can't be kept too long, if you need to keep the receipt for a long period, please choose long term effective thermal paper.
- 4) The print paper should be keep away from high temperature environment and point-blank sunshine.

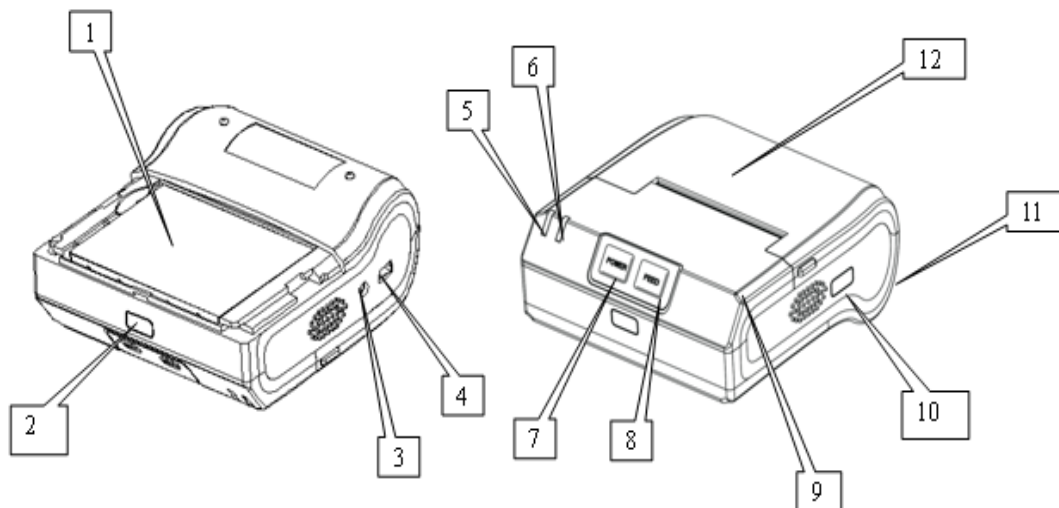
4. Battery Safety Precautions

Be sure to read carefully the user manual before using the product. Ignore the following instructions may cause battery overheating, fire, explosion, damage and / or performance, and reduce product life.

- 1) Do not allow water, sea water from entering or leaking into the battery inside. If the batteries internal safety device burn, when charging it, it may produce any abnormal current and / or voltage, and cause any abnormal chemical reaction, then may cause the battery overheating, fire and / or explosion.
- 2) Do not use or place the battery nearby the stove or other high temperature places. Excessive heat maybe damage the resin shell and / or the insulation materials, thereby cause short-circuit inside the battery, then the battery may be caused overheating, burning and / or explosion.
- 3) When charging, use a specified charger Other conditions (high temperature, high pressure / high current, using the modified battery charger, etc.) excluded here may result in over-charging the battery and abnormal current and / or voltage, cause abnormal chemical reaction, and may cause the battery overheat, light and / or explosion.
- 4) Battery clearly marks with positive and negative. When connect the battery with the charger and / or printer, be sure to verify the correct battery orientation. Reverse insertion will cause the reverse charging and may cause abnormal chemical reaction, and then may cause the battery overheat, ignite, and / or explosion.
- 5) Do not make the battery contact with the power outlet and / or car cigarette lighter socket. This may cause high pressure and excessive current, and lead to the battery overheat, burning and / or explosion.
- 6) Do not heat the battery or put the battery into fire. This may melt insulation material and/ or damage safety devices or safety equipment, then ignite electrolytic solution, and cause the battery overheat, burning and / or explosion.
- 7) Do not use the battery with contrary (+) and (-) Location. In the charging process, this will cause the reverse charging and may cause abnormal chemical reaction. During use, may appear unpredictable current exception, and cause the battery overheat, ignite, and / or explosion.
- 8) Do not make the battery (+) and (-) contact with any metal. Also, do not carry along or store batteries with metal objects, such as necklaces, hair clips and so on. Battery internal short circuit may cause excessive current, and lead to the battery overheat, ignite, and / or explosion and the adjacent metal objects (necklaces, hairpins, etc.) may be overheating.
- 9) Do not throw or heavy attack the battery. If internal safety device of the batteries burn, the battery charging may cause any abnormal current and / or voltage, and abnormal chemical reaction, and lead to the battery overheat, ignite, and / or explosion.

Chapter 1 Appearance and Accessories

1.1 Appearance



- | | | | |
|------------------------|--------------------------------|----------------------|-----------------------|
| 1.Li-ion battery cover | 2.Infrared interface | 3.Charging interface | 4.USB/RS232 interface |
| 5.Function indicator | 6.Power indicator | 7.Power button | 8.Feed button |
| 9.Top cover | 10.Infrared ray (IR) interface | 11.Bottom case | 12.Paper cover |

1.2 Accessories

Standard Accessories :



power adapter



USB cable



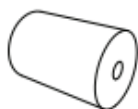
MPD2



leather case



Ribbon



Paper roll



CD



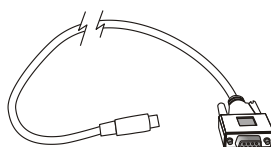
Battery



Quick Start Guide

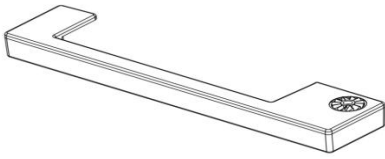
Optional Accessories

The cable depends on customer requirement, if customer choose USB interface printer, the cable is USB interface, if customer choose serial port printer, the cable is RS232 cable.

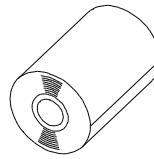


RS232 cable (connect with computer)

Media



Ribbon



Paper roll

Chapter 2 Specification

Model	MPD2	
Physical parameters		
Dimension	106*96*45（L*W*H）mm	
Weight	257g（without paper roll）	
Paper roll diameter	≤40mm	
Print specs.		
Printing method	Dot-matrix printing	
Valid printing width	57.5±0.5mm	
Dots/line	144dots	
Printing speed	7mm/s	
Paper thickness	0.06~0.085mm	
Copy capability	One original, one copy	
Black mark detection	yes	
Reliability	1,500,000 lines	
Resident fonts	ASCII（12*6，16*8） GB2312（12*12，16*16）	
Printable content	English, Number, Symbol, Graph, Curved line, Previous stored icon	
Printing column	24 columns（6*12 dot matrix）	
Interface		
Wired	USB /RS232(optional)	
Wireless	IrDA/SIR/VIR	BLUETOOTH V2.0 CLASS2
Power supply		
Battery	830mAh/7.4V rechargeable Li-ion battery	
Adapter	12V/500mA	
Printing length	40m（12.5% printing density）	
Environment		
Working condition	-10℃~50 ℃/20%~80%RH	
Charging condition	5℃~35 ℃/20%~80%RH	
Storage condition	-20℃~70 ℃/5%~95%RH	

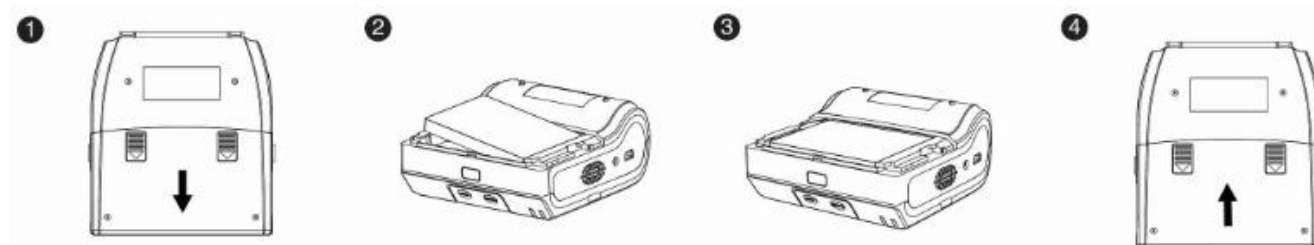
Chapter 3 Method of application

3.1 The preparation before using

3.1.1 Install battery

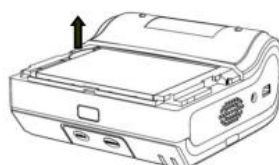
The MPD2 is supplied by battery, please install battery before using the printer.

As in the following figures:



- 1、 Keeping printer inversion and open the battery cover.
- 2、 Install the battery into battery cover, please pay attention direction of anode and cathode.
- 3、 Close the battery cover.

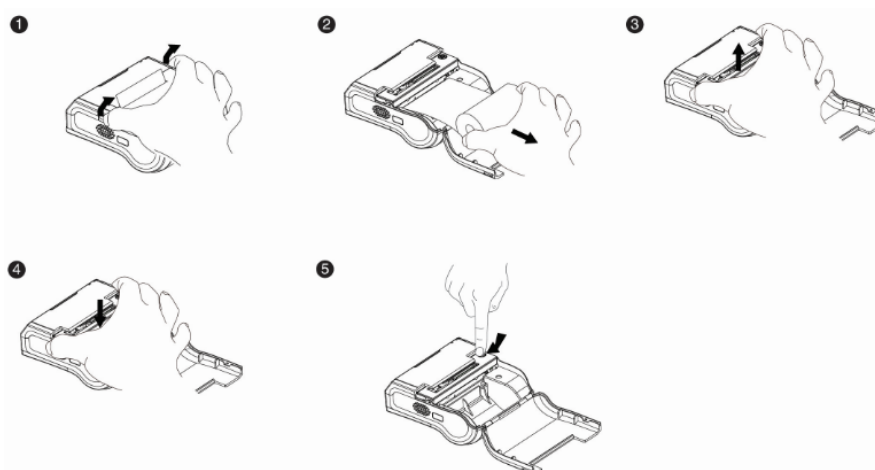
As the picture to get off battery



! Notes:

The printer just allows to use battery that our company appoint ,or it may damage the printer and case battery leakage ,even explode.

3.1.2 Replace the ribbon



- 1) Take each end of the top cover in one hand and open the paper cover;
- 2) Hold on paper to take out of print paper directly.
- 3) Take each end of the old ribbon in one hand and pull out the ribbon.
- 4) Press a new ribbon into the printer.

5) Rotate the button on ribbon according clockwise, straighten ribbon.



Notes:

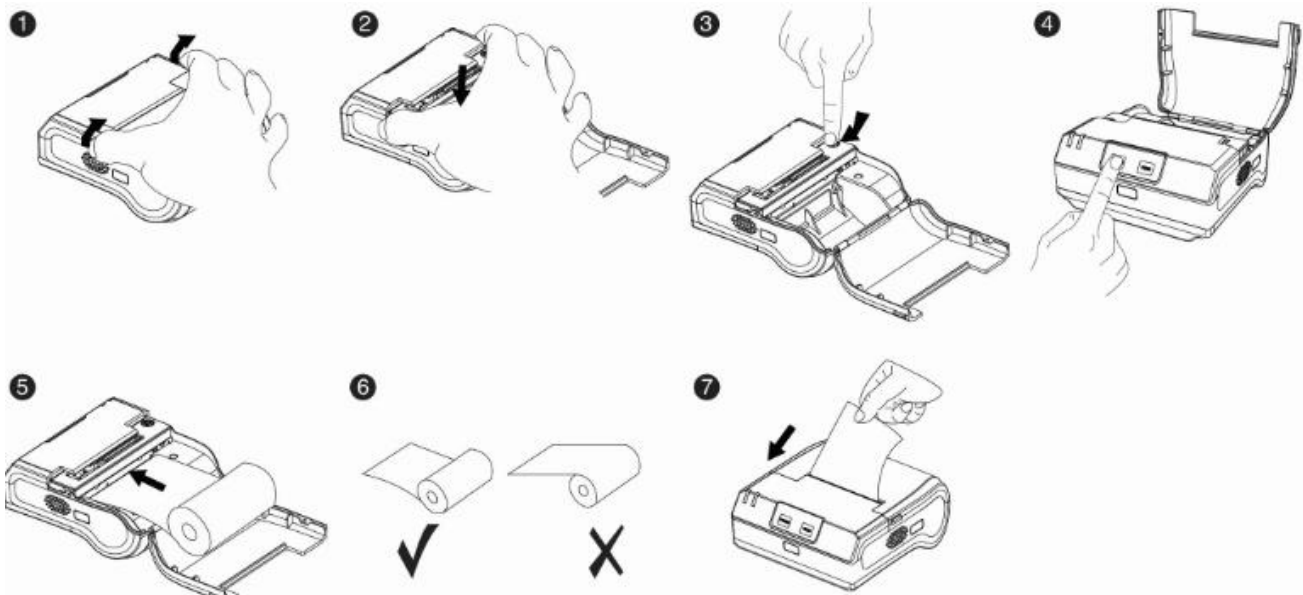
- 1) Please use the original ribbon or the admissible one , or else it may cause a bad print quality ,even damage the printer mechanism.
- 2) Before installing ribbon , you had to make sure you have taken off the print paper ,or else it will make you difficult to install ribbon.

We company confirm the following ribbon: ERC-09, ERC-22, ERC-40 are produce by Espon.

3.1.3 Install printer paper

In the paper cover have a paper and a ribbon with printer , but it still didn't put into the printer mechanism the first time it's used, you should put the ribbon into printer mechanism before installing printer paper.

The details methods of install paper:



- 1) Take each end of the top cover in one hand and open the paper cover;
- 2) Install ribbon by press ribbon into the printer.
- 3) Rotate the button on ribbon according clockwise, straighten ribbon.
- 4) Keep pressing on/off button about 2 second and power on;
- 5) Drag out paper, Keep the paper into printer mechanism as the methods of following figures, The printer will feed paper automatically.
- 6) The receipt have to be tear after the printing, the MPD2 has a teeth design for convenient to tear the paper, Please pay attention to the paper tearing angel, using too much power will lead the printing paper out from the paper storehouse.

3.2 The basic function using

3.2.1 Power on/ Power off

Press the power button **【 POWER 】** , the printer will starting up if it is logged off before, and the printer will power off if it is working before.

Please make sure weather the printer is power on or not, if the printer will not work for a long time, please power off the printer to reduce the power consumption and extend the life of the printer.

3.2.2 Printing the selftest page

User can print the selftest page when he got the printer, if the selftest page is printed in the right way, it means that the printer is work in the right except the communicating function and the power charging function.

Method to print the selftest page:

1. Power off (if the printer is power on before)
2. Press the paper feed button **【FEED】** for a while and the printer will begin to print the selftest page, and then loose the paper feed button **【FEED】**.The selftest page will present the printer model, configuration of the interfaces, configuration of the work stock and so on. The last column of the selftest page is "Selftest Finished", if you saw this, it means that the selftest printing is finished. The printer will enter to the working situation after the selftest printing.

3.2.3 Paper feeding(manual paper feeding)

Paper feeding systems can be set up as manual or automatic depending on customer needs.

Press the paper feed button **【FEED】**, the printer will feed the paper, if loose the **【FEED】** then the printer will stop to feed the paper.

3.2.4 The use of the battery and battery power charge

The battery of the printer is a Li-On rechargeable one, and the Li-On rechargeable battery belong to wearing parts, so the using method of the battery directly affect the battery life, please using the battery according to this instruction.

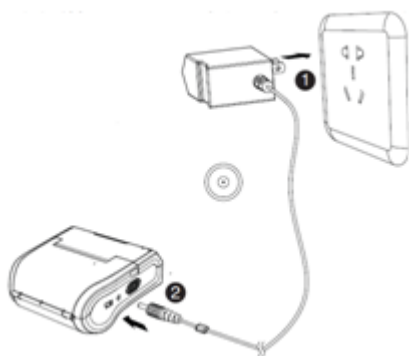
When you will not use the printer for a long time(more than one week), please take the battery out from the printer, and you'd better making the battery full the power before you take out the battery.

Though the printer has the automatic dormancy function and the automatic wake-up technology function to save the battery power, the best way to save electricity is to turn off the power.

The power of the printer will power after a long time use, so you have to charge or else the printer will not work.

When the power of the printer is low, the printer will send an alarm signal (two short tingles, and the indicator light **【FUN】** will turn red and blinking, this is to indicate that the power will be used up soon. However, the printer will last to working a while though the power is low, but it can't make sure the working time, so the printer have to charge. If the printer send out the alarm to indicate that the power is too low, and the user still not make the printer to charge power, it will continue to send out alarm signal.

Input one end of the charger to the 220V/50HZ AC outlet, and the other end to the printer charge socket.



Power-off charging: LED light will always indicate red color and go off when fully charged.

Power-on charging: LED light will keep blinking in red color, and will always indicate red color when fully charged.

It needs about 1~2hours to make the battery full charged. You'd better not using the printer When the battery is

being charged or else the battery life will reduce.



Attentions:

- 1) You can only use original or a dedicated battery and charger for this printer or else will damage the product, Such as battery leakage or even explosion.
- 2) Please make sure the battery is been charging last for at least 12 hours or else the battery electric quantity will not be guaranteed.
- 3) Do not through the battery to fire, don't put the battery short circuit, break up or heat or else will lead to battery leakage or even explosion.
- 4)

3.3 Communication Interfaces

3.3.1 RS232 serial interface

The baud rate of MPD2 is: 9600bps, 19200bps, 38400bps, 57600bps, 115200bps.

3.3.2 Infrared ray: IR interface

IR is the wireless communication interface with low power loss, sophisticated technology and easy using, is widely applicable to portable devices, such as notebook, mobile cell, palm computer, wince computer etc.

On hardware, MPD2 meets the regulations of IrDA1.1 physical layer.

When MPD2 communicates with main devices, whose hardware also meets the regulation of IrDA 1.1 physical layer, make the IR interfaces (from both MPD2 and main device) right towards to each other (angle shall not be more than 30°), no obstacles between them, the distance shall be less than 0.5M. MPD2 communicates with main device according to Vir protocol or IrCOMM protocol(IrDA).

When MPD2 communicates with main device, IR transceiver just change the serial interface signal into IR signal or change light signal into serial interface signal according to the certain code. Under this situation, this IR interface is called RAW -IR.

When you use RAW-IR, it is not compatible with IrDA for there is no software using IrDA protocol during receiving and sending data.VIR is much safer and more reliable IR communication way, for there is the VIR protocolon the base of RAW-IR.

Compared with VIR protocol, IrCOMM, which is IR communication made by international IR Communication on the base of RAW IR hardware protocol, has the wide application.On the base of RAW-IR hardware, IrDA transfers data more stably and reliably and much easier. IrCOMM is the subset of IrDA. Wireless communication protocol developed by IrDA, All portable devices supporting IrDA (such as wince, pocket pc, palm, IR cell phones etc.) all support IrCOMM. If main device (driving printer) use the operation (such as winge, palmOS) supporting IrDA , for user, IrCOMM interface is the virtual serial port. If the main device has no IrDA protocol and want to realize IrCOMM data transmission, the user has to compose IrDA protocol. Please turn to supplier for more info and to make sure whethermain device support IrCOMM or not. RAW-IR interface, VIR interface and IrCOMM interface in MPD2 have the same hardware source, so they can't work at the same time. The original mode of MPD2 is IrCOMM. If you want to change IR interface mode, please refer to MPTTools modification setting. Details in 【3.5 Parameter setting】 Detailed IrDA protocol, please refer to IrDA official website: <http://www.irda.org/>.

3.3.3 Bluetooth interface

Bluetooth is the wireless technology and support short distance communication (within10m). It can transfer the data among many devices, such as mobile phone, PDA, printer, note book, wireless earphone etc. Bluetooth standard is IEEE802, 2.4 GHz, bandwidth 1Mb/s. For more details of Bluetooth, please refer to Bluetooth official

website: <http://www.bluetooth.org>. MPD2 support wireless data transmission interface, meet Bluetooth 2.0 regulations, power class 2.

MPD2 is only sub-device, and user need to drive the printer by Bluetooth main devices (PDA, mobile phone, and notebook). It won't drive the printer to print without other main devices.

MPD2 default device Name is MPD2. User can change the device Name according to your requirements. Please refer to **【3.5 Parameter setting】**.

Default Bluetooth connecting password is 0000. User can change the connecting Name according to your requirements. Please refer to **【3.5 Parameter setting】**

Pairing:

Before printing, MPD2 need pairing with main devices that drives the mobile thermal printer. Pairing process originates from main devices.

Pairing processes as follow:

1. Power on printer
2. Main device search outer Bluetooth device
3. If there are some outer Bluetooth devices, select MPD2.
4. Enter password —"XXXX".(see the selftest)

Note: Self test-when power off, please push the paper FEED button, at the same time t push PWOER button, printer can print the self-testing paper which shows the printer status, printer setting parameters and printing sample.

5. Finish pairing.

Detailed pairing methods, please refer to main devices Bluetooth Names. In pairing, mobile thermal printer MPD2 must be turn on.

Note: when pairing, do not set many printers on, otherwise it can't figure out which one succeeds in pairing. Having finished pairing, other main devices (main devices) still can pair with mobile thermal printer. The max main devices of each printer are 8. If more than 8, the earliest ones will be deleted from printer paring list automatically. If you these earliest main devices want to drive printer to print and need pairing again.

3.4 Other Functions

3.4.1 Sleep mode

To save electricity and prolong the using time, MPD2 printer adopts the technology of automatic dormancy.

Printer will enter into Sleep mode if there is not any printing job for sleep time schedules in Ready mode.

At this point, Power indicator will keep blinking in green color. The machine shouts off automatically when Beyond the setting time.

3.4.2 Paper —end Alarm

MPD2 can judge paper status by Paper Near End Sensor.

when paper is out, Two LED indicators will keep blinking and the buzzer rings before replace a new paper roll.

After replace paper roll, Function indicator will go off , power indicator will always indicate green color and the whistling stopped.

If the paper is out when printing, the printer will continue to print after replace paper roll.

3.5 Parameter setting

There is software which called MPTTools.

MPTTools is software to set the printer parameters, it used to set the baud rate of serial port, Infrared mode,

RAW-IR and VIR, it also support setting the printer Bluetooth device name and password.
The instructions pls refer to MPTTools Guide .

3.6 LED indicator and Buzzer definition

There are one buzzer and two LED indicators to indicate the printer status. LED indicators indicate current status and buzzer indicates the changes of status

Power indicator (green)	Function indicator (red)	Status
Bright		Printer is powered on
Flash slowly		Standby
	Bright	Charging(In power off)
	Flash	Out of power
	Flash quickly	Charging(In power on)
Flash quickly	Flash quickly	Paper end

Beeper	Status
beep	Power on
beep~beep	Power off
beeping	Paper end

Chapter 4 Other Information

4.1 Printer technical manual

Pls refer to MPD2 technical manual.

4.2 Preprinted black mark specification

If user wants to locate receipt by detecting preprinted black mark, shall accord to the following specification for the black mark. Otherwise it may cause printer can't recognize the black mark.
Printing position: black mark shall preprint at the left side of receipt.

Width rang: $\geq 7\text{mm}$

Height: $4\text{mm} \leq \text{height} \leq 6\text{mm}$

Reflection rate to IR: $< 10\%$ (reflection rate to the black mark on paper $> 65\%$)

Hps: Hps indicates the distance from down edge of detecting mark from beginning line.

$0\text{mm} \leq \text{Hps} \leq 1\text{mm}$

