

SPRT®

SP-RMT12

Portable Thermal Printer

User's Manual



(Ver 1.06)

Beijing Spirit Technology Development Co., Ltd

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NOTICE

Please read this manual carefully before using the printer!

Notice of Safety

Be sure to use the specified battery and power supply provided by our company. Otherwise it may cause fire, explosion or damage printer, meanwhile, the battery also may be damaged.

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 liquid, if improper operation causes battery leak liquid, and it paste in the skin or clothes, please rinse it by clean water, if paste in the eyes, please rinse them thoroughly by clean water and see a doctor. Please do not open the paper case cover when it is printing or just when printing is finished, do not touch the printer head with hand or body, overheat may cause scald.

Notice of Using

Don't make the printer print receipt longer than 1m. Otherwise, it might damage the printer.

Water or other liquid should not be spilled into the printer, also the printer should not be appeared in the rain, or else may cause printer damage.

Please do not open the paper case cover when it is printing, otherwise the printer may work improperly.

If printer is using serial port connection to work, should not unplug the serial line, otherwise the data will be incomplete. When printer is using Bluetooth connection to work, the distance of communication should be within 10 meters, otherwise the printer doesn't print or prints rubbish codes.

Though printer can work properly in the 0°C~50°C environment, too high (45°C) or too low (5°C) environment temperature and too high (85%) or too low (20%) environment humidity both effect the printing quality.

The printer paper roll with poor quality or stored for too long time also may reduce the printing quality even damage the printer.

Under the black mark detecting mode, the printer requires that the pre-printed black mark is accordant with the printing rule of black mark (please refer to details in Chapter 4.2), otherwise the black mark can not be detected correctly.

Be sure to use up the power of the battery before charge up it, as it can ensure the using life of the battery. The common working life of printer is:the times of charge/discharge \geq 300 times, battery performance will decrease with the charge/discharge times developed.

Notice of Storing

The printer should be placed in such an environment that the temperature is between -20°C and 60°C, and the relative humidity is between 5% and 95%.

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.

If the printer will be stored for more than three months, battery should be installed and charged on the printer, which in avoid of battery damage of self discharge.

Normal thermal paper receipt can't be kept too long, if you need to keep the receipt for a long period, please choose long-term effective thermal paper.

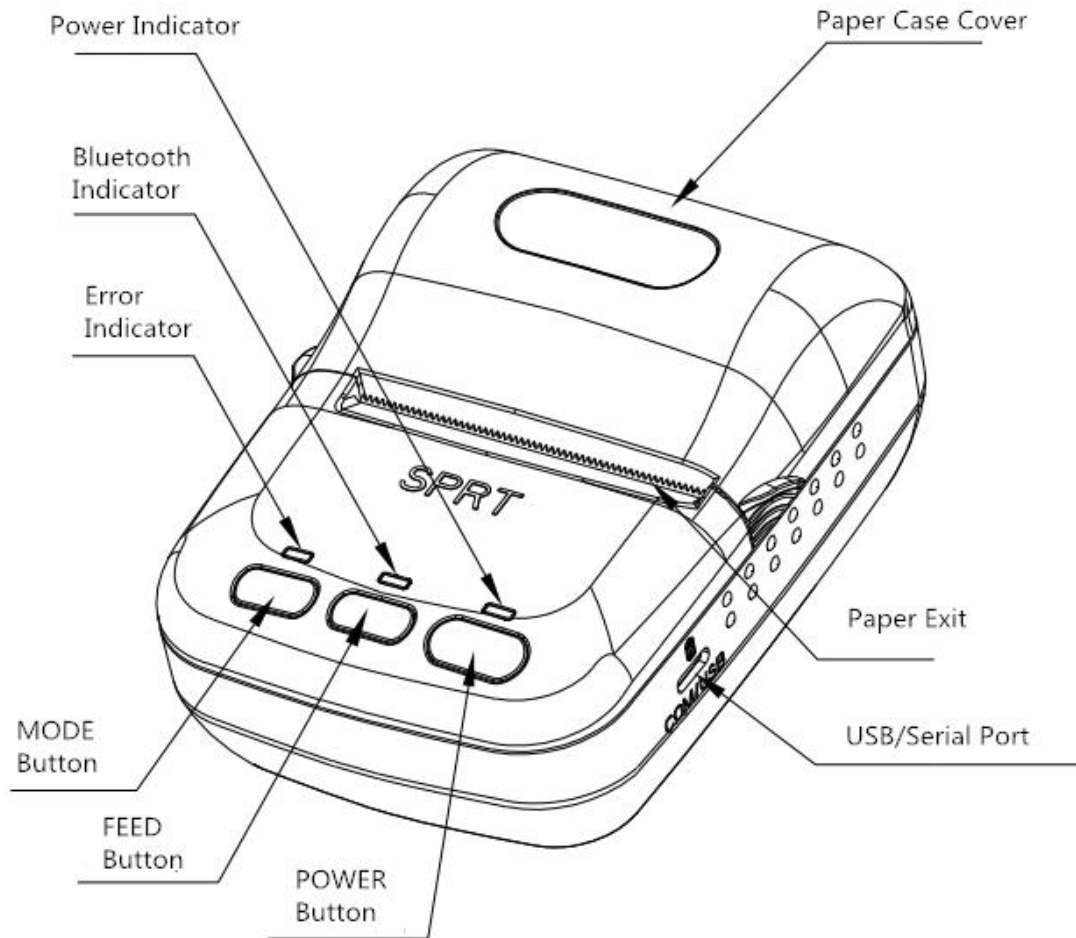
The thermal paper should be keep away from high temperature environment and point-blank sunshine, please store it where is away from light if it have been open.

Declaration

This product is "A" grade. In a domestic environment this product may cause radio interference in which case the user may need to perform practical actions.

Chapter 1 Outer Appearance and Model No.

1.1 Outer Appearance



1.2 Model No.

SP-T12 *

BTDM—double Bluetooth modes, USB supported

U – USB Interface only

S – RS-232 interface only

Chapter 2 Characteristic Specification

2.1 Printing Specification

Printing Method: Thermal line

Paper Width: 57.5mm±0.5mm;

Effective Printing Width: 48mm

Resolution: 8dots/mm (203dpi)

Dots per line: 384dots

Printing Speed: 62mm/s (Max)

Paper Thickness: 0.06-0.08mm

Printable Content: GB18030 Chinese characters, ASCII, self-defined character set, barcode EAN13, EAN8, images.

2.2 Physical Parameters

Dimension (W×L×H): 106.5(L) X79.5(W) X47(H) mm

Physical Weight: 190g (excluding roll paper)

Paper Type: Thermal Paper 58 x φ 40mm (MAX)

Interface: USB, RS-232, Bluetooth

Printing Head Life: 50km

2.3 Environment Parameters

Operating Temp: 0°C~50°C

Operating Humidity: 10%~80%(RH)

Storage Temp: -20°C~60°C

Storage Humidity: 10%~90%(RH)

2.4 Other Specification

- **Paper Loading Method:** drop-in easy loading (please refer to details in 3.1.2 Paper Roll Installation)
- **Paper cutting method:** Manual
- **Black Mark Location:** available(details please see 4.2 pre-printed black mark manual).
- **Printing Control Command:** ESC/POS compatible command set
(refer to <T12 Printer Developer Manual >).
- **Power Supply:** 1500mAh rechargeable polymer lithium battery.
- **Low Power Alarm:** When the electric of battery will run out, the power indicator will be red to alarm if there is still printing data in printer. After printing, printer will be in sleeping mode and buzzer 'one high one low' prompt tone. Or printer will auto power off after buzzer 'one high one

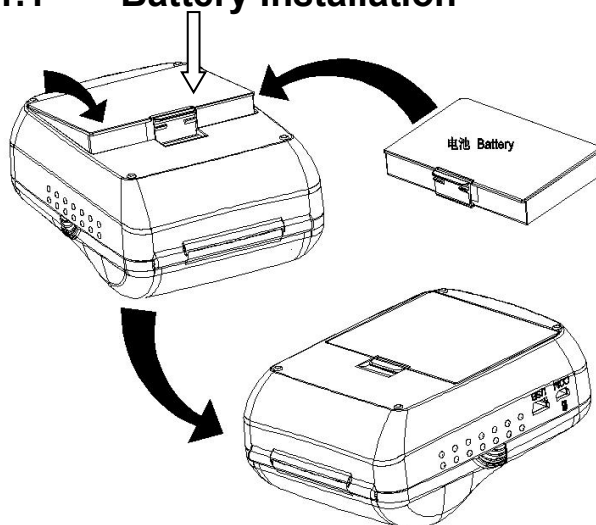
low' prompt tone if in the sleeping mode.

- **Auto-sleeping:** the printer will fall into sleep after in 2 seconds without button operation or receiving data , and can be awoken by pressing 【FEED】 button or sending data to it.
- **Battery Charging:** quick charging, it will be fully charged ab hours;
- **Battery Duration:** under 25% printing density, more than 90 meters; the standby time is over 4days. (These parameters are just for reference. Long term usage will cause the capacity decline, and can not ensure the time of printing.)

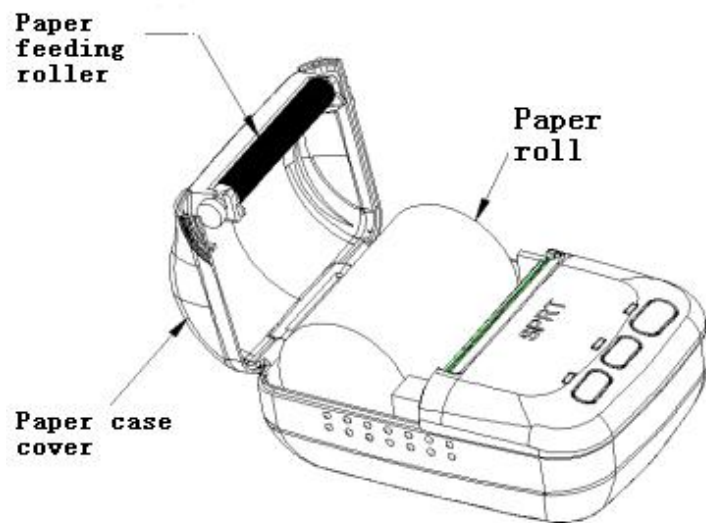
Chapter 3 Operation Method

3.1 Using Preparation

3.1.1 Battery Installation



3.1.2 Paper Roll Installation



3.1.3 Others

Opening and closing instructions: closing two side slowly by two hands at the same time

Abnormal operation instructions: No blocking paper on the paper outlet

Paper direction: Holding the printer in a flat-wise orientation during printing.
Keep steady when running paper.

3.2 Basic function usage

3.2.1 Switch On

In the status of power off, press the power button for one second, then the printer will in working status; the power indicator will be green.

Notice: when the battery is almost exhausted, the power indicator will be red, please charge or change the battery if you continue to use the printer. The method of charging the battery, please refer to 3.2.5.

3.2.2 Switch Off

In the status of power on, pressing the power button for one second to switch off the printer. All the indicators are off whenever the printer is off.

3.2.3 Self-test

After receiving the printer, user can check its current setting and status at anytime. Switch off the printer (if the printer in working mode), holding down the **【FEED】** button, then turn on the power (press the power button) at the same

time. Then loosen the 【FEED】 button and the current setting and status will be printed out.

3.2.4 Paper Feeding (Manual Feeding)

When the printer works normally, hold down 【FEED】 button, the paper feeding begins, and stops when stopped holding the 【FEED】 button. When the printer works in black mark mode, hold down 【FEED】 button, the printer begins to feed paper and stops at the position of black mark. If the paper is not black mark paper, the printer stops automatically after feeding paper for 30cm.

3.2.5 Battery Charging

After the printer has been in use for a period of time, the printer's battery power will be exhausted. When the printer's battery power is nearly exhausted, if there is printed data in the printer, the printer will give a power alarm by turning the power indicator red. There will be three beeps; if the printer is in sleep state, the printer will automatically turn off the power after three beeps, and the user needs to charge the printer.

The charging method is as follows: insert the mains plug of the power adapter into a 220V, 50Hz power socket, and then insert the charging plug into the printer's power socket,

The printer will start charging. During the charging process, the POWER light on the printer will turn red. When the battery is fully charged, the POWER light on the printer will turn green. The time required for charging is about 3 hours.

During the charging process, if you use the printer to print the data, the charging time will be extended.

3.3 Printer Setting

Users can set more parameters by using the attached software with printer < Setting Tools > through computer. The setting includes: Printer serial Baud rate and data format, black mark, language, font, printing density, Bluetooth device name and password etc. The setting method please refer to the < Setting Tools Software Help >, offered with the software together.

3.4 Printer Interface Connection and Printing

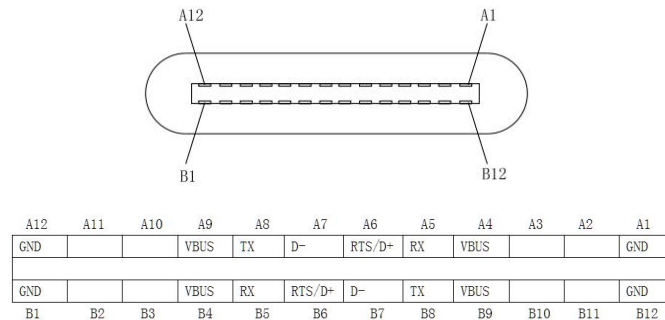
3.4.1 Serial Port Connection

The optional configuration of the SP-T12S printer already contains a DB9 hole / Type-C cable (the other end is connected to the printer and is a Type-C plug). The printer serial port is a Uart asynchronous serial port, which can work at 1200bps, 2400bps, 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps baud rate. For the method of changing the serial port baud rate,

see 3.3 Printer Settings.

3.4.2 RS-232

Serial interface each pin number definition shown as figure:



TXD: Printer send data to computer , when use X-ON/X-OFF handshaking protocol agreement, the printer will send control code X-ON/X-OFF to computer.

RXD: Printer receive data from computer.

RTS (BUSY) : When the signal show “MARK”, it is means the printer is busy and can not receive data, when the signal show “ SPACE”, it is mean the printer get ready and can receive data.

GND: Signal ground

Under the serial interface connect, the baud rate and data structure can be set with button or software, Before out of factory the product has been set to 9600bps, 8 data bits, no calibration and one stop bit; two types of handshaking protocol agreement can be chosen. One is mark control way, other is X-ON/X-OFF agreement, two kinds of handshaking protocol agreement’s instructions shown as figure.

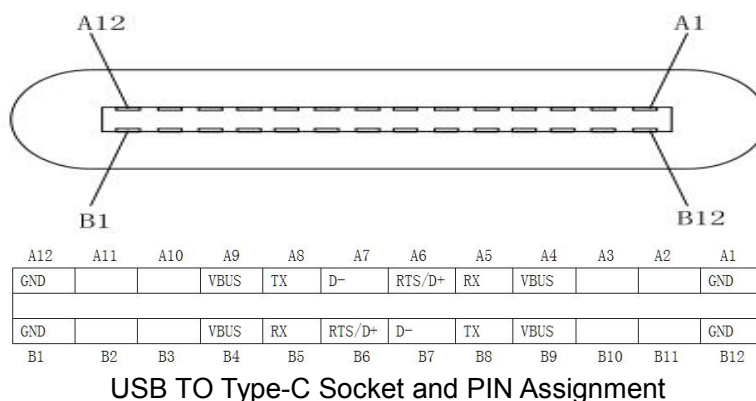
Type of handshaking protocol agreement	Data direction	RS-232 interface signal
Mark control	Data allowable	Signal line RTS are show Space
	Data disallowed	Signal line RTS are show Mark
X-ON/ X-OFF control	Data allowable	Send X-ON code 11H on signal line TXD
	Data disallowed	Send X-ON code 13H on signal line TXD

Two types of handshaking protocol agreement

3.4.3 USB Connection

The standard configuration of the SP-T12BTDM / T12U printer is equipped with a standard USB TO Type-C cable for connecting the printer and the host device. The USB of the printer belongs to the type of slave device (DEVICE);

the shape and pin definition are as shown in the figure below:



3.4.4 Bluetooth Connection

Hand-held device, laptop and other information terminal devices with Bluetooth can drive SP-T12BT/T12BTDM to print by the Bluetooth interface. SP-T12BT portable printer is compatible with Bluetooth2.0 standard(SP-T12BTDM is compatible with Bluetooth2.0 regulation and Bluetooth4.0) and power class is CLASS 2, effective communication distance is 10meters. The initial name of the printer is T12 BT Printer, the initial password is '1234'. Users can change the printer name and password by using< T12 Setting Tools> software. Please see the details of changing the device name and password in help file of < T12Setting Tools>.

Before working, SP-T12BT/T12BTDM Portable Thermal Printer needs to be paired with host device, Pairing begins with the host device. Usual pairing steps are as below:

1. Switch on printer;
2. Host device searches for the outer Bluetooth device;
3. If there are other Bluetooth devices, please select T12 BT Printer;
4. Enter the password '1234';
5. Pairing finished.

Please see details in host device Bluetooth function instruction for reference.

Notice:

If user doesn't change the device name, during pairing, please do not switch on other printers, otherwise, it will be difficult to identify which printer is paired successfully.

3.5 Indicator and Buzzer

There are three indicators - **【POWER】** , **【BULETOOTH】** and **【ERROR】** . **【POWER】** indicator is red or green, **【BLUETOOTH】** indicator is blue and

【ERROR】 indicators is red. The below are the meanings of indicators:

【ERROR】 indicator

Constant on red lighting: printer out of paper

Red light flashing (twice): it constants on lighting for 5s after flashing twice, this means over-voltage.

Red light flashing (once in 500ms): red light constants 500ms, then turn off 500ms, this means the printing head over-heating.

【BLUETOOTH】 indicator

Blue light flashing: Bluetooth has been connected

Blue light off: Bluetooth disconnected

【POWER】 indicator

Green light constant on: printer is power on and in normal status

Red light constant on: power of battery is low

There is also a buzzer to indicate various status of the printer. The meanings are as below:

One low one high: power on;

One high one low: power off or under-voltage seriously, printer switches itself off in the sleeping mode.

Circulation continuous two highs: printer at error status

Chapter 4 Other Information

4.1 Command Programming Manual

<T12 printer developing manual> is the technical manual for engineer to develop printer Application. If need, pls contact with our company.

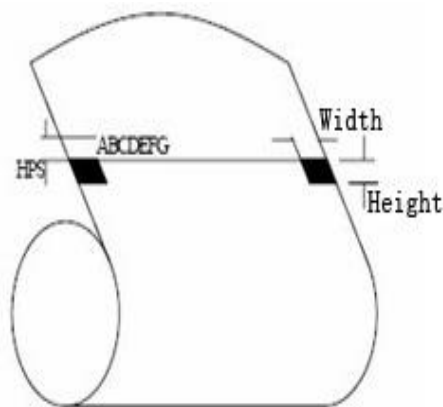
This manual includes the hardware interface (Serial interface, Bluetooth, USB interface) technical description, the technical documentation of printing control command set, and others such as how to print black mark and locate by it.

4.2 Description of Pre-printed Black Mark

If users use pre-printed black mark to locate the receipt, please be sure to abide by the following black mark pre-print regulation when print the black

mark paper, otherwise, it will cause that the printer can not identify the black mark.

The black mark pre-print regulations are as below:



Printing Position: As the picture above, the black mark should be printed on the right edge of the printed side of paper.

Width range: width \geq 7mm

Height range: 4mm \leq height \leq 6mm

Reflectivity of infrared ray: <10% (infrared ray reflectivity of other parts of the black mark paper is>65%)

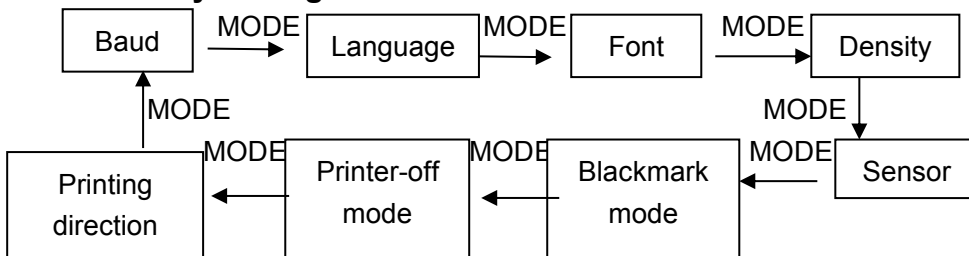
HPS: it is the distance between edges of black mark and loading position.
4.5mm \leq Hps \leq 6.5mm

Appendix

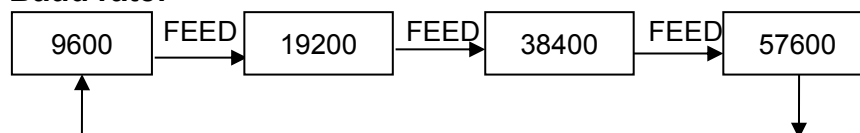
The appendix is usage method to set printer parameters:

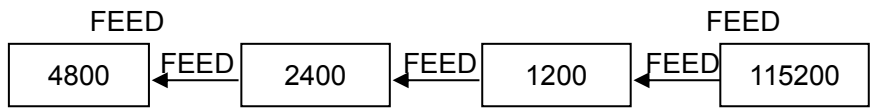
Setting instruction: Choose setting item through 【MODE】 button. Press 【MODE】 button once, the setting item will go to the next. item and print the current number value of this item. Choose the setting value of setting item through 【FEED】 button. Press 【FEED】 button once, the setting value will go to the next.

Primary settings:

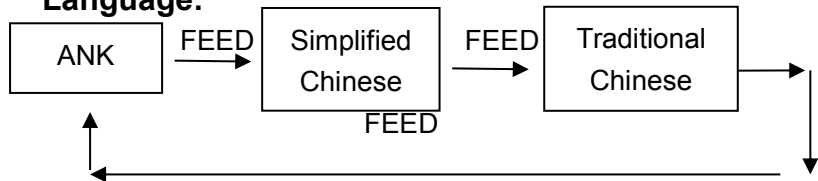


Baud rate:

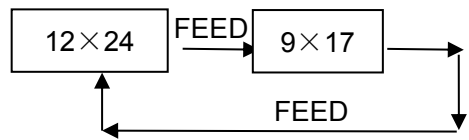




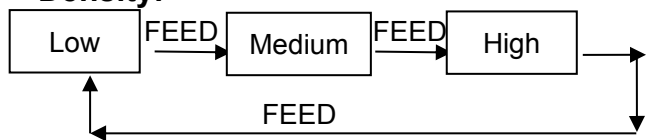
Language:



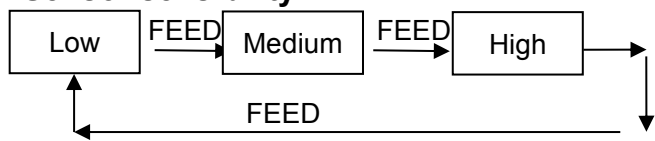
Font:



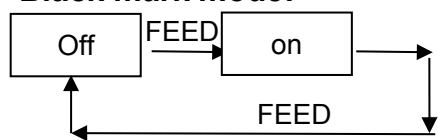
Density:



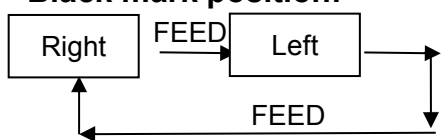
Sensor sensibility:



Black mark mode:



Black mark position:



Manufacture has right to amend the content of the instruction without prior announcement!

