SP-L37 Portable Label Printer

User's Manual

（VER 1.00）

www.sprinter.com.cn

CONTENT

Precautions

Please read this chapter carefully before using the printer!

Safety Precautions

This printer can only use the special battery and power adapter provided by the company, otherwise it may cause product damage, battery leakage, fire or even explosion.

Do not throw the battery into fire, do not short-circuit, disassemble or heat the battery, otherwise it may cause the battery to leak, catch fire or even explode.

If the printer will not be used for a long time, be sure to remove the battery from the printer, otherwise the battery may leak.

The liquid in the battery is corrosive. If the battery leaks and the liquid sticks to the skin or clothing due to careless operation, please wash it off with clean water immediately. See a doctor. Do not open the paper compartment cover during printing or just after printing, and touch the printing core with your hands or any part of your body to avoid burns caused by excessive temperature.

Precautions for use

The printer should not continuously print more than 1m receipt, otherwise it may cause damage to the printing movement.

The printer should not be immersed in water or exposed to rain, as this may cause damage to the printer.

Do not open the paper compartment cover during printing, otherwise the printer may not work properly.

When using the USB interface to print, do not unplug the USB cable during the printing process, otherwise the print data may be incomplete. When using Bluetooth to print, the distance should not exceed 10 meters during the printing process, otherwise it may cause garbled characters to be printed or unable to print.

Although the printer can work stably from 0°C to 50°C, too high ambient temperature (45°C) or too low ambient temperature (5°C) will result in reduced print quality.

Too high ambient humidity (above 85% relative humidity) or too low ambient humidity (below 20% relative humidity) can result in poor print quality.

Using poor-quality paper or paper that has been stored for an extended period of time may result in poor print quality and even damage to the printer.

When the printer works in the black mark detection mode (when printing a pre-printed receipt with black mark), The black mark preprinted on the paper is required to meet the black mark printing specification (see 4.2 Black Mark Inspection Instructions), otherwise the printer may not be able to accurately detect the black mark.

When the printer works in the label detection mode, the label is required to meet the specifications (see 4.3 Label Paper Instructions), otherwise the printer may not be able to accurately detect the label.

Storage Precautions

The printer should be stored in an environment with a temperature of -20°C to 60°C and a relative humidity of 10% to 90%.

If you store the printer for a long time, be sure to remove the battery from the printer and store it separately, otherwise it may cause the battery to fail or even leak, which may damage the printer.

Statement

This is a ClassA product, which may cause radio interference in a living environment.

In this case, the user may be required to take practical measures for the interference.

Chapter 1 Printer Appearance and Model

1.1 Appearance
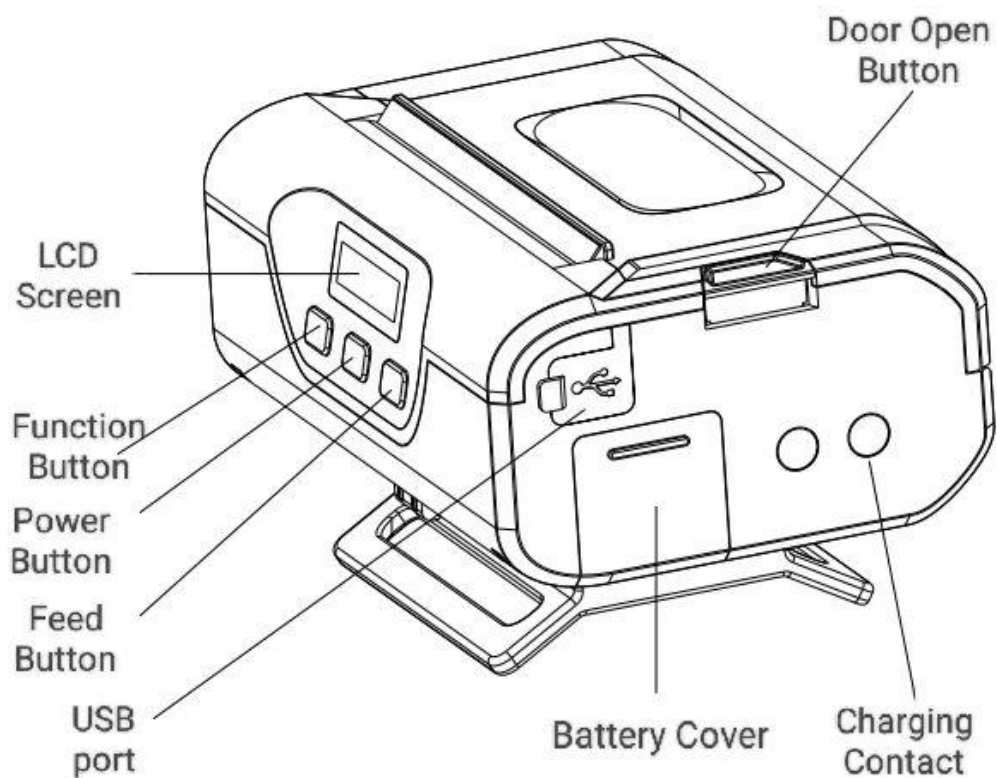
1.2 Model

Model	Interface
SP-L37BTDM	USB、Bluetooth
SP-L37W	USB、WiFi
SP-L37BTDMNFC	USB、NFC
SP-L37WNFC	WiFi、NFC

Chapter 2 Performance Characteristics

2.1 Printing performance

Printing method: line thermal printing;

Printing paper width: 79.5mm±0.5mm; 57.5±0.5mm；

Effective printing width: 72mm; 48mm

Resolution: 8 points/mm (203dpi);

Points per line: 80mm: 576 points/line; 58mm:384 points/line

Printing speed: Normal paper: 80mm/s(Max); Label paper: 60mm/s(Max);

Paper thickness: 0.06-0.0.08mm (normal thermal paper), 0.06-0.15mm (label paper);

Printable content: GB18030 all Chinese characters and characters, BIG5 all traditional Chinese characters, GB12345 all traditional Chinese characters, ShiftJIS Japanese Chinese characters, ASCII characters, custom characters, graphics, Siyuan vector fonts.

1D barcode: UPCA,UPCE,EAN13,EAN8,CODE39,ITF25, CODABAR,CODE93,CODE128

2D barcode: PDF417, QR CODE, DATA Matrix

2.2 Physical parameters

Appearance size: 118(L)X84(W)X48(H)mm;

Weight: 300g (without paper roll);

Paper roll diameter: ≤41mm;

Interface: USB, Bluetooth, WiFi, NFC

Display interface: OLED(0.91 inches, resolution :128x 32); Ink screen (2.13 inches, resolution :212x104)

2.3 Environmental parameters

Working environment temperature: -10℃～50℃;

Working environment humidity: 10% ~ 90% (relative humidity);

Storage environment temperature: -20℃～60℃;

Storage environment humidity: 10% to 90% (relative humidity)

2.4 Other properties

Paper loading method: simple paper loading (please refer to 3.1.2 Printing Paper Roll Installation for the paper loading method).

Tear-off method: Manually tear the paper

Black mark: Yes (please refer to 4.2 Pre-printed black mark instruction for details)

Print control instructions: ESC/POS compatible instruction set/CPCL compatible instruction set (see "SP-L37 Instruction Programming Manual" for details).

Power supply mode: 7.4V/1400mAh rechargeable polymer lithium battery.

Battery Alarm: When the battery is about to run out, the battery icon on the printer's LCD screen flashes.

Charging: Fast charging, it can be fully charged within 3 hours.

Auto Sleep: If the printer does not receive print data or key operation within 5 seconds. The printer will automatically sleep. During the sleep period, if you press the [FEED] key, the [MODE] key, the [COVER] key, the power key, or the printer receives print data, it will wake up automatically;

Available time on a single charge: more than 200m at 25% printing density, and standby time more than 3 days. This parameter is a reference parameter. After the battery is used for a long time, the capacity may decrease and the printing time cannot be guaranteed.

Chapter 3 How to use

3.1 Preparation before use

3.1.1 Battery installation and removal

1. Open the battery cover towards the lower plate, then rotate it upward and lift it to open the battery cover (as shown in the figure below).

2. After the first stop, insert the battery into the battery compartment and close the battery cover

3. When removing the battery, open the battery cover and pull the extraction belt to remove it.

Open the battery cover towards
the lower plate, then lift it up

Battery   Extraction Belt
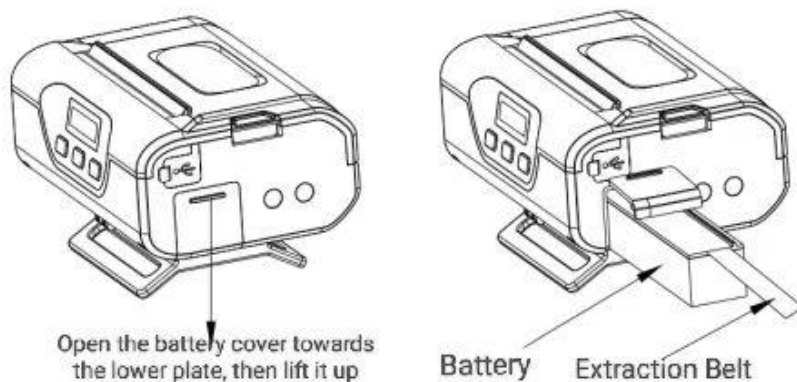
3.1.2 Printing paper roll installation

1. Open the paper compartment cover (as shown in Figure 1), slide the paper roll baffle to the outside, and place your fingers in the finger grooves when sliding the baffle (as shown in Figure 2).

2. Load the roll paper with the thermal side facing down, and pull out the paper in the paper compartment (the end of the paper is beyond the tear-off sheet) (as shown in Figure 3).

3. Close the paper compartment cover and tear off the excess paper.

Door opening Compacting
button   board

Picture1   Picture2   Picture3
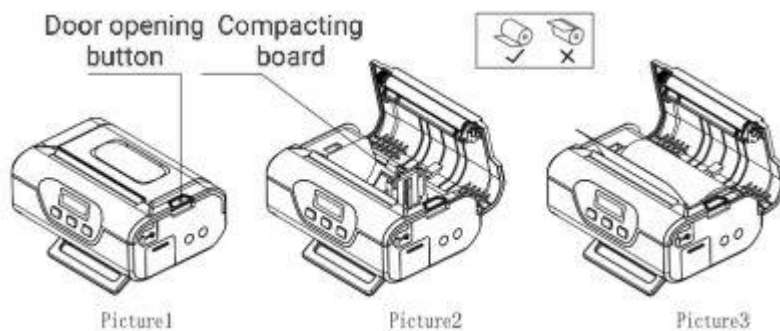
3.1.3 Relevant items

● Instructions for opening and closing the door: After pressing the door opening key, open door slowly.

● Instructions for abnormal operation: No paper jam is allowed at the paper outlet.

● Placement direction: When printing, hand-held flat printing, try to ensure the stability of the paper roll.

3.2 Use of basic functions

Two printing modes: ticket mode and label mode.

Three paper types: normal paper, black mark paper and label paper

Label mode is divided into: Waybill, voucher and tax receipt.

In waybill mode, the default paper type is label paper (80mm paper width).

In voucher mode, default is standard paper (58mm paper width)

In tax receipt mode, the default use of black label paper (58mm paper width)

Ticket mode is divided into: 80mm, 58mm; in the ticket mode, the default paper type is normal paper

The print mode and paper width are set with the setting tool. （In label mode, waybills and tax receipts cannot be changed)）

3.2.1 Power on

Press and hold the [Power] key, you will hear the prompt tone of "one low and one high", and the LCD screen displays "Loading...", then release the [Power] key, the printer enters the working mode, and the working parameters of the printer are displayed on the LCD screen .

3.2.2 Shutdown

In the power-on state, press and hold the [Power] key, the printer emits a "one high and one low" prompt tone, the LCD screen turns off, and then release the [Power] key to turn off the printer.

3.2.3 Self-test

After the user gets the printer, he can perform self-test on the printer at any time to detect the current settings and status of the printer.

Entering self-test: In the power-off state, press and hold the [FEED] key, press and hold the [Power] key, and when you hear the "one low, one high" power-on prompt, release the 【Power】 key and then release the 【FEED】 key, the printer's self-test test page will be printed out.

3.2.4 Paper feeding (manual feeding)

a. Ticket Mode

In the power-on state of plain paper, press the【FEED】key, the printer starts to feed paper, and release the 【FEED】 key to stop feeding. In the state of black mark paper and the label paper, press the【FEED】 key, the printer starts to move the paper to the black label/gap and stop feeding the paper. If it is not the black mark/label paper, the paper will automatically stop feeding after 26cm length of paper, and report out of paper missing error under the label paper mode.

b. Label mode

In the power-on state of voucher, press the 【FEED】key, the printer starts to feed paper, and release the 【FEED】 key to stop feeding.

In the state of tax receipts and waybills, press the【FEED】key, the printer starts to move the paper to the black label/gap and stop feeding the paper. If it is not black mark/ label paper, it will automatically stop feeding after 26cm length paper, and report out of paper missing error under the waybill mode.

3.2.5 Hexadecimal Printing

The hexadecimal printing function is to print the data received from the host with hexadecimal numbers and its corresponding characters, which is convenient for debugging the application.

Enter hexadecimal printing: in the power-off state, press and hold the 【MODE】key, then press and hold the 【Power】 key, when you hear the "one low, one high" power-on beeping and the LCD displays "Loading...", Release the 【Power】 key, then press the

【FEED】 key, then release the 【MODE】key and the 【FEED】key, the printer enters the hexadecimal printing mode, the LCD displays the hexadecimal mode, and the corresponding information is printed out.

Exit hexadecimal printing: Turn off the power or press the【FEED】key three times to exit the hexadecimal printing mode, enter the normal working mode, and print out the prompt information for exiting the hexadecimal mode.

3.2.6 Printer parameter settings

Some simple parameters of the printer can also be set by key operation. There are two ways to enter the printer parameter setting mode, and the parameter setting content is different.

a. In the power-off state, press and hold the 【MODE】 key first, then press and hold the 【POWER】 key, and when you hear the "one low, one high" power-on prompt, release the【POWER】key first, and then release the 【MODE】key, the printer will enter the parameter setting mode. Press【MODE】or【FEED】key, the LCD screen displays the first settable parameter and its current set value. Please refer to Appendix A for the detailed setting method.

Exit parameter setting: first press and hold the 【MODE】 key, then press and hold the 【FEED】 key, then release the 【MODE】key and 【FEED】 key, save the set parameter value and exit the parameter setting mode; enter the normal working mode. If you directly press and hold the【POWER】 key to turn off the printer, the set parameter values will not be saved.

b. In standby mode, press 【MODE】key for more than two seconds to enter parameter setting mode;【MODE】&【FEED】key in combination, press【MODE】key to adjust setting parameter options, press 【FEED】 key to adjust the submenu of each parameter setting item; please refer to Appendix B for detailed setting method. After the setting is completed, wait for 5 seconds, automatically exit the setting mode, save the setting parameters.

3.2.7 Charging

After the printer is used for a period of time, the power of the printer battery will be exhausted. When the battery power of the printer is nearly exhausted, the battery power indicator icon on the LCD screen will flash to give an alarm, and the user needs to charge the battery at this time.

The charging method is as follows: insert the mains plug of the power adapter into the 220V, 50HZ power socket, and then insert the charging plug into the power socket of the printer, and the printer will start charging. During the charging process, the LCD screen of the printer will have a charging prompt.

In the off state: the icon has a plug, and the battery's power keeps beating to indicate that it is charging; only a battery icon is displayed to indicate that it is fully charged.
In the power-on state: the battery icon in the upper right corner keeps beating to indicate that it is charging; the battery does not move, indicating that it is fully charged.

Do not use the printer during the charging process

3.2.8 Enter program upgrade mode

a. Quick access method:
In the off state, press and hold the【MODE】key and the【FEED】key at the same time, press and hold the [Power] key to turn on, quickly release the【FEED】 key within 200 milliseconds, and then release other keys, the printer enters the program upgrade mode. At this time, the LCD screen displays "Upgrading...". Use the "Update Firmware" (PC-side upgrade tool) upgrade tool to upgrade.

Note: Only the USB interface supports this upgrade way.
b. Upgrade in print mode:
In the power-on state, the printer can support printing mode upgrade when there is no error state. You can connect USB and use "Update Firmware" upgrade tool to

upgrade.You can also use the "SPRT Printer Update Tools" (mobile phone upgrade tool) upgrade tool, to connect Bluetooth or WiFi to upgrade.

3.3 Printer parameter settings

The printer can use the special software <setting tool software> to set more parameters through the computer. You can set the printer's language, font, default code page, the printer's Bluetooth device name and password, print mode and screen displayed content. For the setting method, please refer to the file <Setting Tool Software Help>, which is provided with the software.

3.4 Printer Label Sensor Calibration

The label sensor calibration is to adapt to different types of label paper on the market. By adjusting the sensor configuration of the printer, the printer can correctly position the label. When it is currently in label paper mode, in the off state, first press the【MODE】key, then press and hold the 【Power】key, when you hear the boot sound, release the 【Power】key, and then press the【FEED】key twice times, and then release【MODE】. The printer enters label calibration mode. And print out "Sensor calibration mode\r\nPress the paper feed key\r\n".

Power off directly to cancel calibration.

After pressing the paper feed key, the printer will feed the paper for a fixed length. Then print out "Maximum voltage value: xx.xv \r\n Minimum voltage value: xx.xv \r\n Paper sensor set value: xx".

If the paper type configuration is incorrect or the hardware cannot support the current printing paper, the words "Automatically exit if the paper type is set incorrectly" and "Automatically exit if the calibration error is incorrect" will be printed respectively.

3.5 Printer Restore Default Settings

When the printer configuration setting is mistakenly configured and cannot work properly,

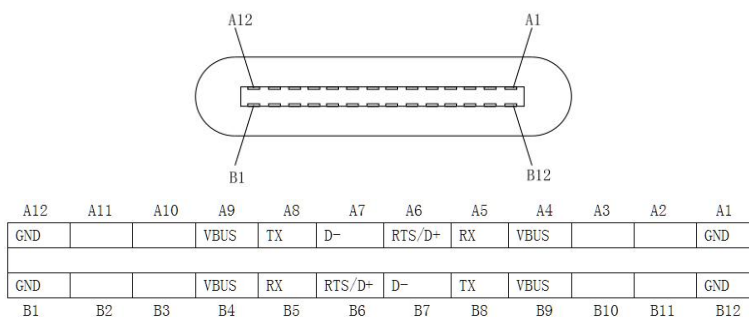use this function to restore the factory default settings.

When the printer is turned off, press the [MODE] key first, then hold down the [Power] key. When you hear the startup sound and see the LCD screen start up, release the [Power] key, press the [FEED] key three times, and then release the [MODE] key. The printer enters the factory reset mode. It will print out the message "Caution: Restoring system settings to default values, press the FEED key once to confirm. Power off directly to cancel."

Cut off power directly to cancel recovery. After pressing the paper feed button, the printer will print out the words "Restore system settings successfully". After recovery is completed, the printer will automatically shut down.

3.6 Printer Connection and Printing

3.6.1 USB connection

The SP-L39 printer comes standard with a standard Type-C cable for connecting the printer to the host device. The USB of the printer belongs to the slave device type (DEVICE); the shape and pin definitions are shown in the following figure:

A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1
GND			VBUS	TX	D−	RTS/D+	RX	VBUS			GND
GND			VBUS	RX	RTS/D+	D−	TX	VBUS			GND
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12

Type-C socket and pin definition

3.6.2 Bluetooth connection

Handheld devices, notebook computers, or other information terminals with a Bluetooth interface can drive SP-L39 to print . The Bluetooth of SP-L37 thermal printer is compatible with Bluetooth 2.0 specification and Bluetooth dual-mode (supports Apple 4.0 and Android 2.0 Bluetooth specification), the power level is CLASS 2, and the effective distance is 10m.

The printer's Bluetooth is a slave device. The initial device name is L37 Printer and the initial password is "1234". Users can use the <Setting Tool Software> to modify the device name and password according to their needs. For the method of changing the device name and password, please refer to the help file of the <Setting Tool Software>.

SP-L37 thermal printer needs to be paired with the Bluetooth master device that controls the printer before working, and the pairing is initiated by the master device. The usual pairing process is as follows:

1. Turn on the printer,

2. The main device searches for external Bluetooth devices, 3. If there are multiple external Bluetooth devices, select the L37 Printer

4. Type the password "1234"

5. Complete the pairing.

For the specific pairing method, please refer to the Bluetooth function description of the master device.

Notice:

① When pairing, the SP-L39 thermal printer must be turned on.

②Once the Bluetooth device of the printer is successfully paired with the host Bluetooth device and establishes a link, it will no longer provide search and link services for other primary Bluetooth devices until it is disconnected from the host device linked to it.

③After the pairing is successful and the connection with the printer is established, the Bluetooth icon on the printer's LCD screen will display the connection status.

3.6.3 WiFi Connection

Handheld devices with a WiFi interface can print by connecting to a printer via WiFi. The usage is as follows:

1. While the device is turned off, press and hold the [MODE] key and [Power] key to turn it on.

2. Connect your mobile phone or tablet to a router with internet access.

3. If the printer has not been connected to this router before, you need to set up the network first to connect the printer to the router. Network setup procedure: release the [Power] key, press the [FEED] key four times, and then release the [MODE] key. The printer will enter network setup mode and print a message indicating the start of network setup. Use your mobile phone to scan the QR code for network setup.

4. After successfully setting up the network, the printer will print the message "Exit network setup mode", indicating that the printer has successfully connected to the router. At this point, you can use the handheld device to connect to the printer for printing.

3.7 Buzzer description

The printer has a buzzer, it will also give prompt information, the following is the meaning of the prompt information:

One low and one high: Power on.

One high and one low: Shut down.

Cycle of two consecutive lows: The printer has an error state.

3.8 Description of LCD display

When the printer is turned on, the printer's LCD screen will display the boot prompt information. After the printer is initialized, the LCD will display the relevant information of the printer. If no data is sent to the printer or no external interface is inserted into the printer within 5 seconds, the LCD will automatically turn off the display until the external interface is inserted into the printer or the external device sends data to the printer, the LCD will display again.

1. Label mode

①The ⚡ , 🚫 , 📶 ,and 📶
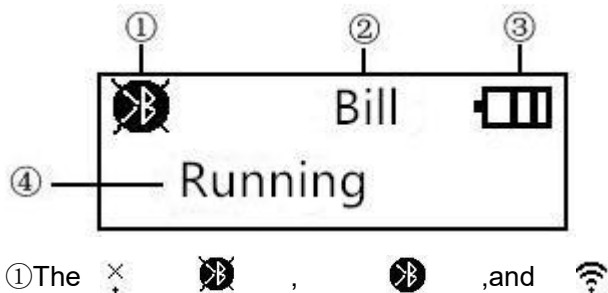
respectively indicate: wifi not connected, bluetooth not connected, bluetooth connected and wifi connected.

③Schematic diagram of the current battery level of the printer.

Use the icons 🔋, 🔋, 🔋, respectively, to display the current battery level of the printer, and the icon
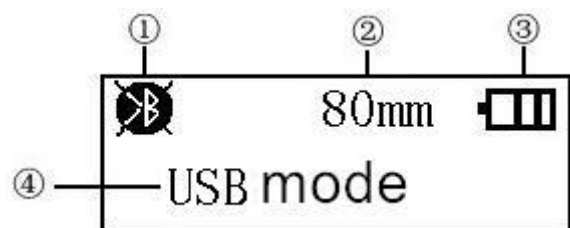
🔋 will flash when the printer battery is low.

④ Text prompt display to show the current status of the printer.   Running is displayed when the printer is in normal standby.

When the printer has a print job, it will display Printing.

When the printer has an error, it will display out of paper, abnormal temperature, abnormal voltage and abnormal paper cover alarm according to the error status.

2. Receipt mode

①When the icon is ⚡ it means WiFi is not connected, 🚫 means that Bluetooth is not

connected, 📶 means Bluetooth is connected, and 📶 means WiFi is connected.

②Display the working mode of different printing paper,80mm/58mm.

③Icons for current battery power of the printer. The icons 🔋 ,

▯▮▮ , ▯▯ for indicating current battery level of the printer. The icon▯▯ will flash when the printer power is low.

④Text prompt display, where the current status of the printer is displayed in text.

When the printer and peripherals are not connected, it displays: USB mode.

When a USB interface is inserted, it shows: USB is connected. When the USB interface sends data to the printer, it displays: USB is communicating. When there is Bluetooth connected to the printer and the corresponding port is opened, it shows: Bluetooth is connected.

When there is WiFi connected to the printer and the corresponding port is opened, it shows: WiFi is connected. When a USB interface is inserted and Bluetooth is connected, it displays:USB and Bluetooth are connected.

When a USB interface is inserted and WiFi is connected, it displays: USB and WiFi are connected.

When the Bluetooth interface sends data to the printer, it shows: Bluetooth is communicating.

When the WiFi interface sends data to the printer, it shows: WiFi is communicating.

3.9 Ink screen display instructions

The ink screen is located on the left side of the printer, as shown below. The display content can be set as needed through the supporting setting tool; it supports the display of two lines of 16-dot text, and the display content will not be lost after power failure.

Ink Screen
Display Area
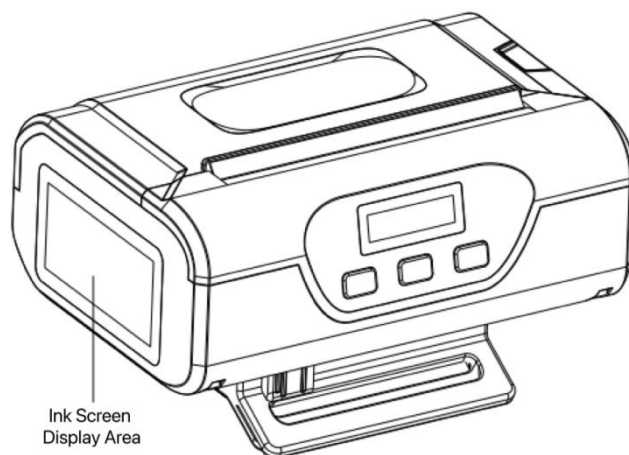
3.10 NFC Connection

Install the NFC printing software on your NFC-enabled mobile phone (the supporting NFC printing software can be obtained from our company's technical support personnel), enter the content to be printed in the printing software, and place the NFC antenna of the mobile phone close to the NFC sensor as shown in the figure below. area (note: the effective distance of the device's sensing area is 2CM, please ensure that the mobile phone is within the effective range of the sensing area). The printer will print out what is entered.


NFC Sensing Area
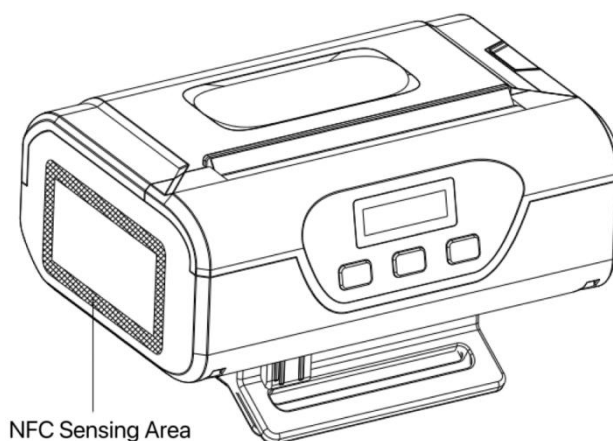
Chapter 4 Other Information

4.1 Command Programming Manual

<SP-L37 commands Manual> is a technical manual for engineer to develop printer utility, and users can claim our company for it.

4.2 Pre-printed black mark instructions

If the user uses a pre-printed black mark for bill positioning, the following black mark pre-printing specifications must be followed when printing the black mark, otherwise the printer may not be able to recognize the black mark. Black label pre-printing specifications:
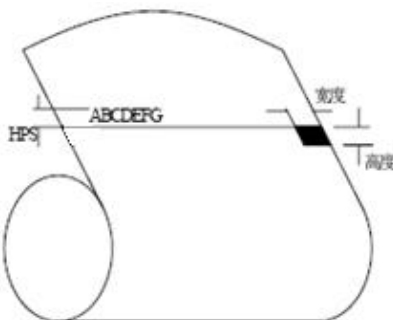
Printing position: As shown in the picture above, the black mark should be printed on the right edge of the text surface (only black marks printed on the text surface of the printing paper are supported).

Width range: width ≥ 12mm (when using 80 black mark paper); width ≥ 16mm (when using 58 black mark paper);

Height range: 4mm≤height≤6mm

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

HPS: HPS is the distance between the upper edge of the printer's black mark and the upper edge of the starting printing point. 4.5mm≤HPS≤6.5mm

4.3 Instruction on Label Paper

Please do comply with the following instruction if the user adopts adhesive label paper, otherwise it may lead to the inaccurate locating the gaps, which results in the missed or blank receipt.
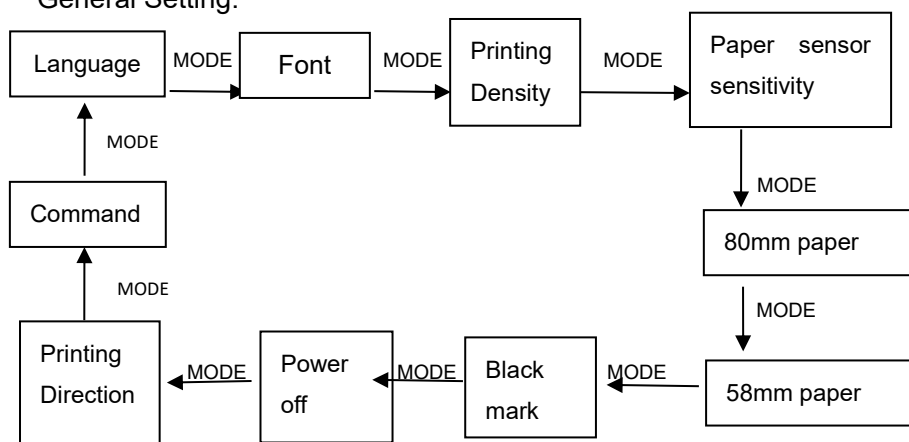
Requirement on label printing paper:

1、The length of each receipt is less than 200mm.

2、The gap width is less than 3mm, not more than 30mm.

3、Requirement of receipt shape (rectangle or similar to), irregular shape labels are not supported.
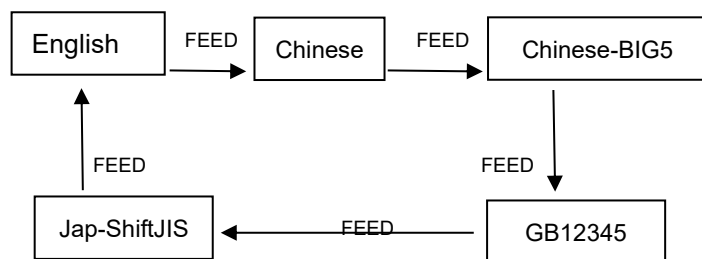
Appendix A

Setting instruction: hit the 【MODE】button to choose "set" item; press it once,the set item will become the next alternative option, and it will print the present value of the chosen item. Hit the【FEED】button to set the value needed, when pressing it once , the value will become the next one in sequence.

After setting, hit the【MODE】and【FEED】button together, the current value will be saved, and printer enters into normal operation status. Or it won't save the value.
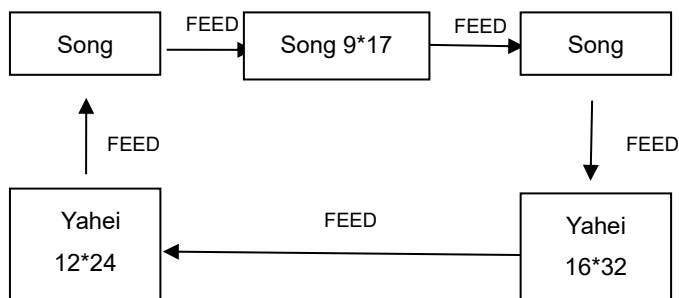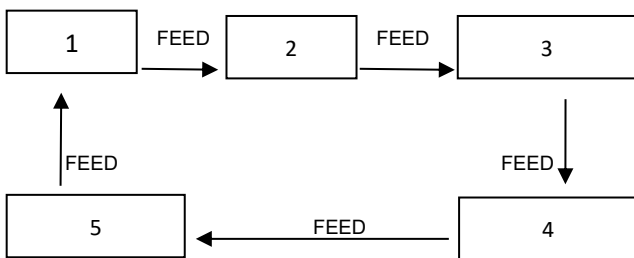
General Setting:

Language：

Font：

Printing Density：

| 1 | FEED → | 2 | FEED → | 3 |

↑ FEED   FEED ↓

| 5 | ← FEED | 4 |

Paper sensitivity setting：
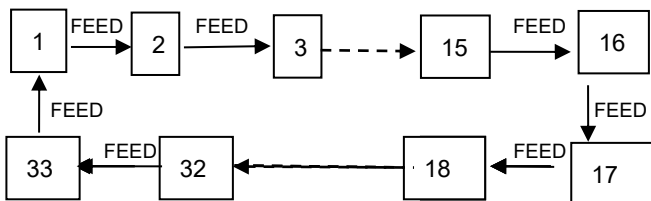
| 1 | FEED → | 2 | FEED → | 3 | - - - → | 15 | FEED → | 16 |

↑ FEED   FEED ↓

| 33 | ← FEED | 32 | ← - - - | 18 | ← FEED | 17 |

80mm/58mm paper：

| Normal Paper | FEED → | Black Mark | FEED → | Label Paper |

↑   ↓

← FEED

Position of black mark：

| Front | FEED → | Back | →

↑   ↓

← FEED

Power Off setting

| Never | FEED → | 10 minutes | FEED → | 20 minutes | FEED → | 30 Minutes |

↑   ↓

← FEED

Printing Direction：

```
┌─────────┐  FEED  ┌───────────┐
│ Normal  │ ─────→ │ Inversion │ ──────┐
└─────────┘        └───────────┘       │
     ↑                                  ↓
     └──────────────FEED────────────────┘
```
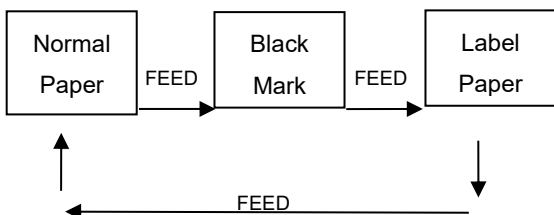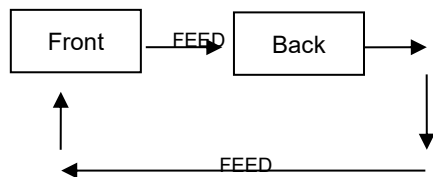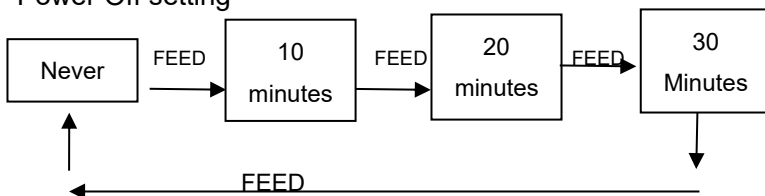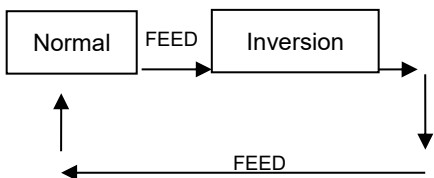
Printing Commands Compatibility：

```
┌─────────┐ FEED ┌────────┐ FEED ┌────────┐
│ ESP/POS │ ───→ │  SPMP  │ ───→ │ OTHER  │
└─────────┘      └────────┘      └────────┘
     ↑                                │
     └────────────FEED────────────────┘
```
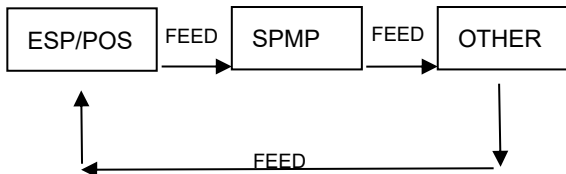
Appendix B

Setting instruction: hit the【MODE】button to choose "set" item; press it once,the set item will become the next alternative option, and it will print the present value of the chosen item. Hit the【FEED】button to set the value needed, when pressing it once , the value will alter to the next one in sequence.

After setting, it'll quit the Setting mode automatically and save the current value after 5 seconds.

General Setting：

```
┌──────────┐      ┌──────────┐      ┌───────────┐
│ Language │ ───→ │ Printing │ ───→ │ Bluetooth │
└──────────┘      │ Density  │      └───────────┘
     ↑            └──────────┘            │
   MODE                                 MODE
     │                                    ↓
┌────────────────┐   MODE   ┌──────────────┐
│Black Mark Sensor│ ←────── │ Label Sensor │
└────────────────┘          └──────────────┘
```
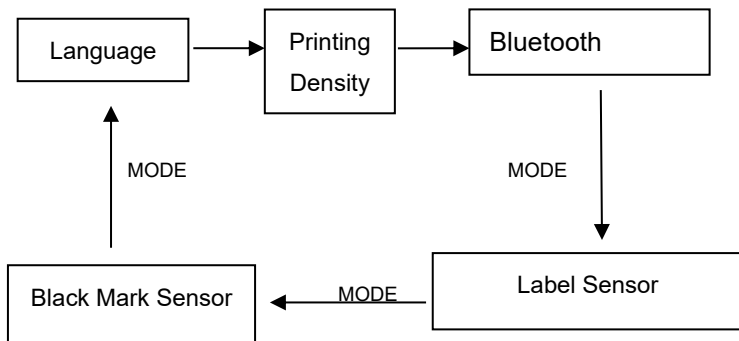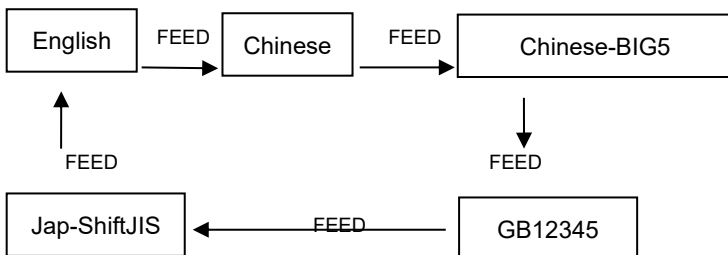
Language：

```
┌─────────┐ FEED ┌─────────┐ FEED ┌──────────────┐
│ English │ ───→ │ Chinese │ ───→ │ Chinese-BIG5 │
└─────────┘      └─────────┘      └──────────────┘
     ↑                                   │
   FEED                                FEED
     │                                   ↓
┌──────────────┐   FEED   ┌──────────┐
│ Jap-ShiftJIS │ ←─────── │ GB12345  │
└──────────────┘          └──────────┘
```

Printing Density：

```
┌─────────┐  FEED   ┌─────────┐  FEED   ┌─────────┐
│    1    │ ──────▶ │    2    │ ──────▶ │    3    │
└─────────┘         └─────────┘         └─────────┘
     ▲                                        │
     │ FEED                             FEED  │
     │                                        ▼
┌─────────┐  FEED            ┌─────────┐
│    5    │ ◀────────────────│    4    │
└─────────┘                  └─────────┘
```
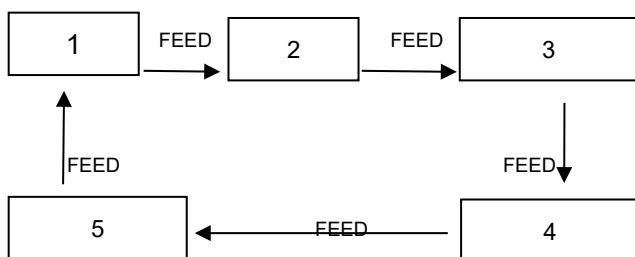
Bluetooth Visible：

```
┌─────────┐  FEED   ┌─────────┐
│   YES   │ ──────▶ │   NO    │ ──────▶
└─────────┘         └─────────┘        │
     ▲                                 │
     │                                 ▼
     │          FEED
     ◀──────────────────────────────
```
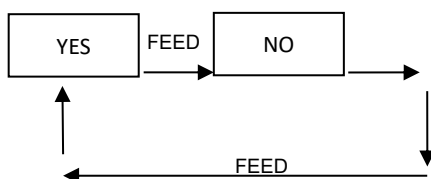
Manufacture has right to amend the content of the instruction without prior announcement!