

POS Thermal Receipt Printer
(SP-POS896)

User's Manual
(Ver 1.00)

Beijing Spirit Technology Development Co.,Ltd.

www.sprt-printer.com

Statement

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⚠ Warnings and Cautions

Warning

Follow the stated precautions to avoid personal injury or equipment damage.

Caution

This manual provides essential information and tips for operating the printer.

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Precautions

Please carefully read this chapter before using the printer

Safety Precautions

- Do not touch the print head or its connected components to avoid burns or damage caused by static electricity.
- If the printer emits smoke, unusual odors, or abnormal noises, immediately turn off the printer and disconnect the power. Continuing use may cause a fire. Contact your dealer or SPRT Customer Service Center for assistance.
- Do not attempt to disassemble the printer yourself. Unauthorized repairs are dangerous and may void the warranty provided by the supplier.
- Use only the power adapter supplied or one that meets the specified standards. An improper power adapter may damage the printer and cause a fire.
- Prevent foreign objects from entering the printer to avoid damage to internal components, which could result in severe consequences like fire or accidents.
- If water or other liquids enter the printer, immediately disconnect the power and contact your dealer or SPRT Customer Service Center for assistance. Continuing use may result in a fire.

Operational Precautions

- Do not submerge the printer in water or expose it to rain, as this may cause damage.
- Do not open the paper cover during printing, as this may disrupt the printer's operation.
- When using the USB interface, do not disconnect the USB cable during printing, as this may result in incomplete print data.
- Although the printer can operate steadily between 0°C and 50°C, excessively high temperatures (above 45°C) or low temperatures (below 5°C) may reduce print quality.
- High humidity (above 85% relative humidity) or low humidity (below 20% relative humidity) may degrade print quality.
- Using low-quality or expired thermal paper may reduce print quality and even damage the printer.

- When printing labels, ensure that the label dimensions do not exceed the printer's design specifications, as this may cause malfunctions.

Storage Precautions

- Store the printer in an environment with a temperature of -20°C to 60°C and relative humidity of 10% to 90%.

This is a Class A product.

Warning: Operating this equipment in a residential environment may cause radio interference.

Introduction

The SP-POS896 is a new line thermal printer featuring high-speed printing, low noise, excellent reliability, and superior print quality. It eliminates the need for ribbons, reducing daily maintenance hassles.

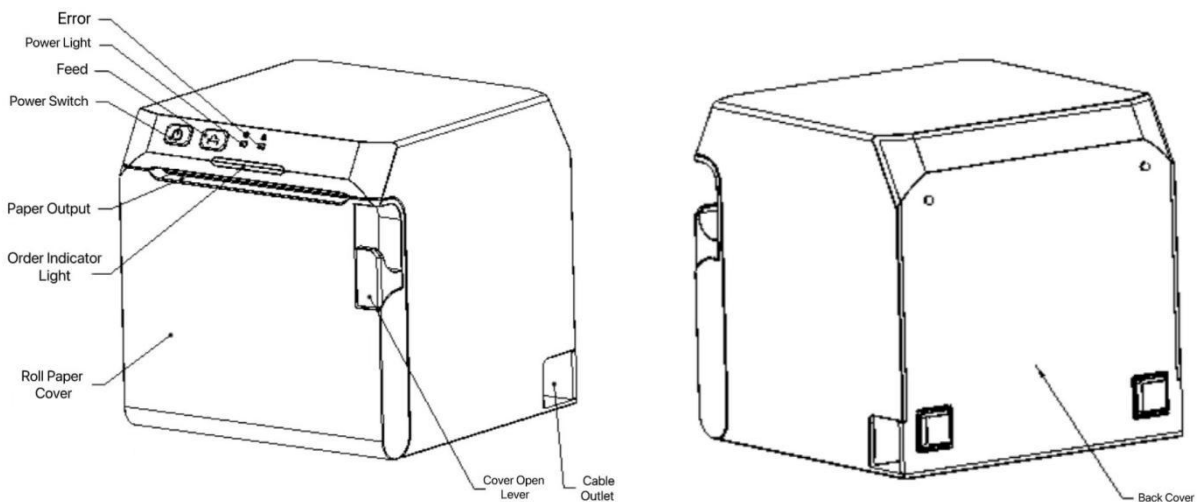
With its compact size, user-friendly operation, and wide application range, the SP-POS896 is ideal for use in commercial cash registers, PC-POS systems, self-checkout solutions, and various other business sectors requiring receipt printing.

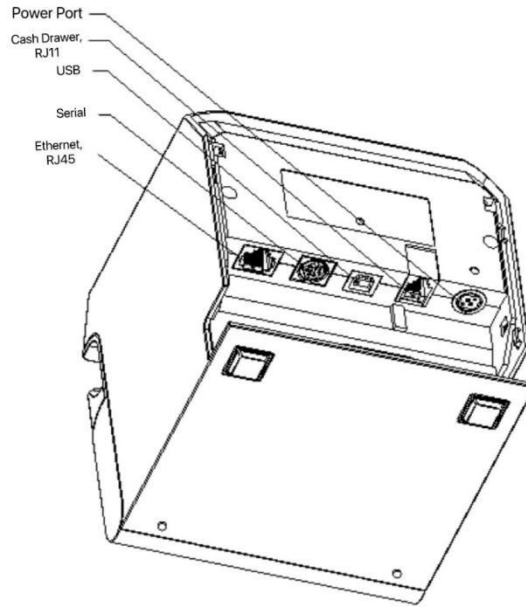
Declaration

This is a Class A product. In residential environments, this product may cause radio interference. In such cases, users may need to take practical measures to mitigate the interference.

Chapter 1 Printer Appearance and Models

1.1 Printer Appearance





SP-POS896 Appearance

Note: The back cover can be removed to connect to each interface. The cable exits through the cable outlet hole.

1.2 Model

Model	Model Description	Printing Resolution
SP-POS896UBTDM	USB, Bluetooth double mode,Cash Drawer	8dots/mm (203dpi)
SP-POS896UBTMM	USB,Bluetooth multi mode,Cash Drawer	
SP-POS896UE	USB,Ethernet,Cash Drawer	
SP-POS896M	USB,Serial,Ethernet,Cash Drawer	

Chapter 2 Feature and Performance

2.1 Printing performance

- ◇ Printing method: Line thermal printing
- ◇ Printing Width: 79.5±0.5mm
- ◇ Effective printing width: 72mm
- ◇ TPH:100Km

Using Condition : * Print 12 × 24 ASCII characters, print 50 lines each time, intermittent print
repeatedly

* Use specified thermal paper

- ◇ Cutter Life: 1,000,000 times
- ◇ Print density: 8dots/mm(203dpi), 576dots/line
- ◇ Printing Speed: Max printing speed 260mm/s(25% printing density)

2.2 Print Paper

- ◇ Thermal paper roll model: TF50KS—E(Japan paper co.ltd)
AF50KS-E(JUJO THERMAL)
- ◇ Thermal Paper Roll: Paper Type ----- Normal Thermal Paper 79.5xφ83mm(max)
Paper Thickness ----- 0.06mm~0.08mm

2.3 Print Font

- ◇ BIG5, GB18030 Chinese characters and characters
- ◇ English character sets:
12×24 dots, 1.5(width)×3.00(height)mm
- ◇ Chinese Character:
24×24 dots, 3.00(width)×3.00(height)mm

2.4 Print Control Commands

- ✧ Character print commands: support double-width, double height print of ANK characters, user-defined characters and Chinese characters, the character line spacing is adjustable.
- ✧ Graphics print commands: support the print of bit-map graphics and download 3 bit-map graphics with different density.
- ✧ 1D Barcode:UPC-A、UPC-E、EAN-13、EAN-8、CODE39、ITF25、CODABAR、CODE93、CODE128
- ✧ 2D Barcode:PDF417、QR Code、DATA Matrix

2.5 Physical parameters

- ✧ Dimension:126.5(L)X125(W)X125(H)mm
- ✧ Interface:USB、RS-232 Serial interface(PS/2 plugs(hole type)), Ethernet interface, Bluetooth interface (dual-mode Bluetooth interface or multi-mode Bluetooth interface)

2.6 Operation Environment

- ✧ Operation temperature: 0~50℃; Relative humidity: 10%~85%
- ✧ Storage temperature: -20~60℃; Relative humidity: 10%~90%

2.7 Other Performance

- ✧ DC24V±10%, 1.5A, A-1009-3P power socket
- ✧ Cash drawer control: DC24V, 1A, 6-wire RJ-11 socket.

Chapter 3 Operation Specification

3.1 Operation Procedure

Paper loading

- (1) Turn the cover lever to open the roll paper cover.
- (2) Place the thermal paper roll into the paper warehouse of the printer, pull out a section of the paper roll, and then place the paper end on the manual cutter.
- (3) Close the roll paper cover, press down gently.



Caution!

- 1. Pay attention to the direction of loading paper, make the printing surface face to the print head.**
- 2. Please don't feed or draw the paper forwards or backwards with hands.**
- 3. Keep clean of the print head, avoid to influence the printing quality.**

3.2 Solution to Paper Jam

If the cutter is stuck, turn off the power switch and then turn it back on, the cutter will return to its original position. If paper is stuck, open the roll paper cover and take out the paper.

3.3 Interface

3.3.1 Serial Interface

Insert the dedicated DB9-PS/2 cable and set the serial interface according to the prompts on the self-test page.

3.3.2 Ethernet Interface

Models equipped with a network port use an RJ45 network socket; the appearance is shown in Figure 2-2.

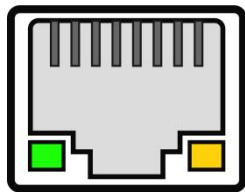
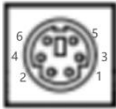


Figure 2-2 Ethernet Interface

		
Pin No.	Definition	Notes
1	RX	Serial data reception
2	TX	Serial data transmission
3	RTS	Request to send low active
4	CTS	Clear to send low active
5	GND	
6	GND	

3.3.3 USB Interface

The standard configuration of the SP-POS896 printer is equipped with a standard USB printer cable D-type data connection cable, which is used to connect the printer and the host device. The printer's USB belongs to the slave device type (DEVICE); the appearance and pin definition are shown in 2-3.



Figure 2-3 USB Interface

Pin No.	Function	Notes
1	V Bus	Power+ 5V
2	Data -	Data -
3	Data +	Data +
4	GND	Ground

3.3.4 Bluetooth Interface

Handheld devices, laptops, or other information terminals with Bluetooth interfaces can drive SP-POS896 to print through the Bluetooth interface. The Bluetooth of the SP-POS896 printer is compatible with the Bluetooth 5.0 Bluetooth specification, with an effective distance of 10m. The printer's Bluetooth is a slave device. The initial device name is POS896 + the last four digits of the Bluetooth MAC address (in uppercase), and the initial password is "1234". Users can use the "SP-POS896 Setting Tool

Software" to modify the device name and password as needed. For details on how to change the device name and password, see the help file of the "SP-POS896 Setting Tool Software".

Before the SP-POS896 printer works, it needs to be paired with the Bluetooth host device that controls the printer. The pairing is initiated by the host device. The usual pairing process is as follows:

- 1、 Switch on the printer;
- 2、 Host device searches for the outer Bluetooth;
- 3、 If there are multiple external Bluetooth devices, select POS896+the last four digits of the Bluetooth MAC address (uppercase) (the Bluetooth name can be checked by printing a self-test page)
- 4、 Enter the password "1234";
- 5、 Pairing finished.

Note: The Bluetooth of SP-POS896 printer is divided into dual-mode Bluetooth and one-to-many Bluetooth. Dual-mode Bluetooth supports Android devices and Apple 4.0 devices, and only one device can be connected to the printer at the same time. One-to-many Bluetooth supports 4 Android devices and 1 Apple device to connect to the printer at the same time.

3.3.5 Cash Drawer Interface

The cash drawer interface adopts RJ-11-6 wire socket, as shown in Figure 2-4.

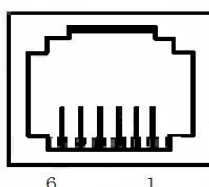


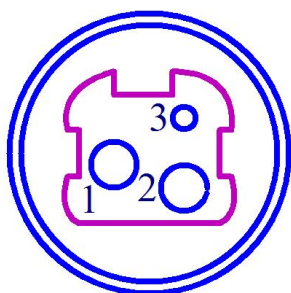
Figure 2-4

The pin definitions are as follows:

Pin Number	Signal	Flow direction
1	Ground	---
2	Cash drawer drive signal	Output
3	Cash drawer open/close status signal	Input
4	+24VDC	Output
5	N.C	---
6	Cash drawer open/close status signal ground	---

3.4 Power Connection

The rated supply voltage is DC 24V±10%, the rated current is 1.5A, and the socket is A-1009-3P. The appearance and pin definition are shown in Figure 2-5.



Pin Number	Signal
1	+24VDC
2	Ground
3	NC

Figure 2-5 Power socket and pin definition

3.5 Indicator Light Description


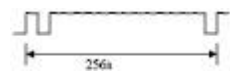


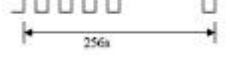
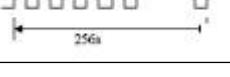

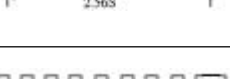

SP-POS896 has two status lights (Power and Error) and a light strip.

3.5.1 Power indicator light description

Device Status	Indicator light display	Remark
The device is powered on	Green light is always on	

3.5.2 Error indicator light description

Device Status	Indicator light display	Remark
The device status is normal and the paper is normal	Light off	
The device is out of paper. The paper cover is open. The print head is overheated.	The light flashes red at intervals of 1s. The buzzer sounds at the same frequency. The fault is eliminated and the status	When the paper runs out halfway through printing, the printer can record the complete data of the order. After reloading paper, the first order will print the complete

	is restored.	backlog of bills in the memory. Maximum support 45K.
Cutter failure	The light flashes red once: the cutter position is wrong. The buzzer sounds at the same frequency. The fault is eliminated and the status is restored.	
Unrecoverable Error	The light flashes once: memory read/write error	
	The light flashes twice: overvoltage	
	The light flashes three times: undervoltage	
	The light flashes four times: CPU execution error (wrong address)	
	The light flashes five times: UIB error	
	The light flashes six times: FLASH write error	
	The light flashes seven times: parameter write error	
	The light flashes eight times: temperature detection circuit error	

3.5.2 Light Strip Description

Device Status	Indicator light display	Remark
Device Idle	Breathing light. Flashing interval 10s/cycle	
Receipt Printing	The green light is always on, following	

	the printing time	
Order not picked up	<p>If the order is not picked up for more than 30 seconds, the light strip will flash at high speed with an interval of 0.2 seconds and maximum brightness. The buzzer will sound at the same frequency. Repeat 5 times. Wait for 180 seconds before reminding again. Restore silence after picking up the order.</p>	

3.6 Buzzer Description

SP-POS896 printer has a built-in buzzer.

The buzzer is used to indicate the error status type, and can be set to enable or disable the error alarm through parameter settings. The error status type is the same as the error indicator.

3.7 Button operation description

SP-POS896 has two buttons: the power button and the paper feed button.

3.7.1 Power button description

Press and hold the power button for 2 to 3 seconds. After the error indicator flashes twice, the printer enters normal working mode. Similarly, press and hold the power button for 2 to 3 seconds to shut down the printer.

3.7.2 Paper feed button description

The print command can be used to allow or prohibit the button switch function. When the button control is allowed, single-click the button to eject paper. Long-press the button to feed paper continuously, and release it to stop.

3.7.3 Combination button description

button Operation	Execution	Remark
Paper cover open + long press the paper feed button	When DHCP is off: turn on DHCP mode and print out successful turn on and current IP address When DHCP is on: turn off DHCP mode	
The paper cover is open + double-click the paper feed button (with an interval of 0.5 second) + close the paper bin, and the device detects that there is paper.	The following three lines are printed at this time: Hexadecimal Dump To terminate hexadecimal dump, Press FEED button three times. This means that the printer has entered the hexadecimal mode. In this mode, all inputs will be printed as hexadecimal data. Press the feed button three times in a row (with an interval of 0.5 second) to exit the hexadecimal mode.	
Press and hold the paper feed button and the power button at the same time, and release the paper feed button within 200ms.	Enter BOOT upgrade mode. The error indicator flashes slowly, with an interval of 1S.	

3.8 Self-Test

Self-test can detect whether the printer is working properly. If the self-test page can be printed correctly, it means that the printer is normal except for the interface with the host. Otherwise, it needs to be repaired.

The self-test prints out in order: manufacturer name, printer model, software version, interface type, default values of various printer parameters, 96 characters in ASCII code, default code page content

(language set to English) or Chinese character library name (if the language is set to Chinese), barcode type.

The method of self-test is to press and hold the power button and paper feed button at the same time, then the printer will immediately print out the self-test page. The parameters of the self-test pages of different models will be different.

Chapter 4 Printer Usage under Windows

The driver version of SP-POS896 thermal receipt printer is SP-DRV2155Win. The driver and installation instructions can be downloaded from our website (<https://www.sprt-printer.com/>) and will not be introduced in detail here.