SPRT®

SP-POS88Ⅴ Thermal Receipt Printer

User's Manual

（Ver 1.00）

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Content

Introduction

POS88Vprinter is a new type line thermal printer, it features in fast speed print, low print noise, high reliability, perfect print quality and ribbon needless, avoiding the vexation of regular maintenance.

POS88Vprinter: small in outline dimension, simple operation, and extensive application, especially suitable for commercial cash register, PC-POS, bank POS and all kinds of receipts print.

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Chapter 1 Feature and Performance

1.1 Print Performance

- Print method: direct thermal
- Print paper width: 79.5±0.5mm
- Print density: 8 dots/mm, 576 dots/line
- Print speed: approx.250mm／sec.
- Reliability

  (1)Print head life: 100km

Using condition:

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

＊Each dot-line printing at the same time should not exceed 25%, each character line and one dot vertical printing repeatedly should not exceed 11 times

＊Use specified thermal paper

（2）Cutter life: 500,000 cuts

Using condition: less than 30 cuts/minute

- Valid print width: 72mm

1.2 Print Paper

- Thermal paper roll model: TF50KS－E（Japan paper co.ltd）
  AF50KS-E (JUJO THERMAL)
- Thermal paper roll: Width－－－ 79.5±0.5mm
  Outer Diameter －－－ 80mm（max.）
  Inner Diameter－－－ 13mm（min.）
  Thickness －－－ 0.06mm～0.08mm

1.3 Print Font

- ANK Character Set
  12×24 dots，1.5（W）×3.00（H）mm
- GB GB2312-80(Chinese):
  24×24 dots，3.00（W）×3.00（H）mm.

1.4 Interface

- RS－232C Serial Interface：
  DB-25 socket (female), supports XON/XOFF and TR/DSR protocols.
  Baudrate: 2400, 4800, 9600, 19200, 38400, 57600, 115200bps adjustable.
  Data structure: 1start bit + (7 or 8) data bits + 1 stop bit.
  Parity checking: no parity or odd, even parity optional.
- Parallel Interface
  36-pin，8-bit parallel interface，BUSY/ACK handshaking protocol, TTL signal level.
- Ethernet Interface: Normal ethernet interface.
- USB Interface：USB interface
- Cash Drawer Control

  DC24V，1A，6-pin RJ-11 socket.

1.5 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 bit-map graphics with different density
- GS bar code print commands: support UPC-A，UPC-E，EAN-13，EAN-8, CODE39，ITF，CODEBAR，CODE93, CODE128, PDF417,

QR bar code printer.

1.6 Power Supply

● DC24V±10％，2A，A-1009-3P power socket.

1.7 Operation Environment

● Operation temperature: 5～50℃; Relative humidity: 10～80％

● Storage temperature: -40～55℃; Relative humidity: 10～90℃

1.8 Outline Dimension

●200（L）mm×150（W）mm×139（H）mm

1.9 Model classification

Model	Interface
SP-POS88VS	RS232C Serial Interface
SP-POS88VP	Parallel Interface
SP-POS88VM	RS232+USB+Ethernet Interface
SP-POS88VU	USB Interface
SP-POS88VBT	USB+Bluetooth interface

Chapter 2 Operation Specification

2.1 Printer Appearance

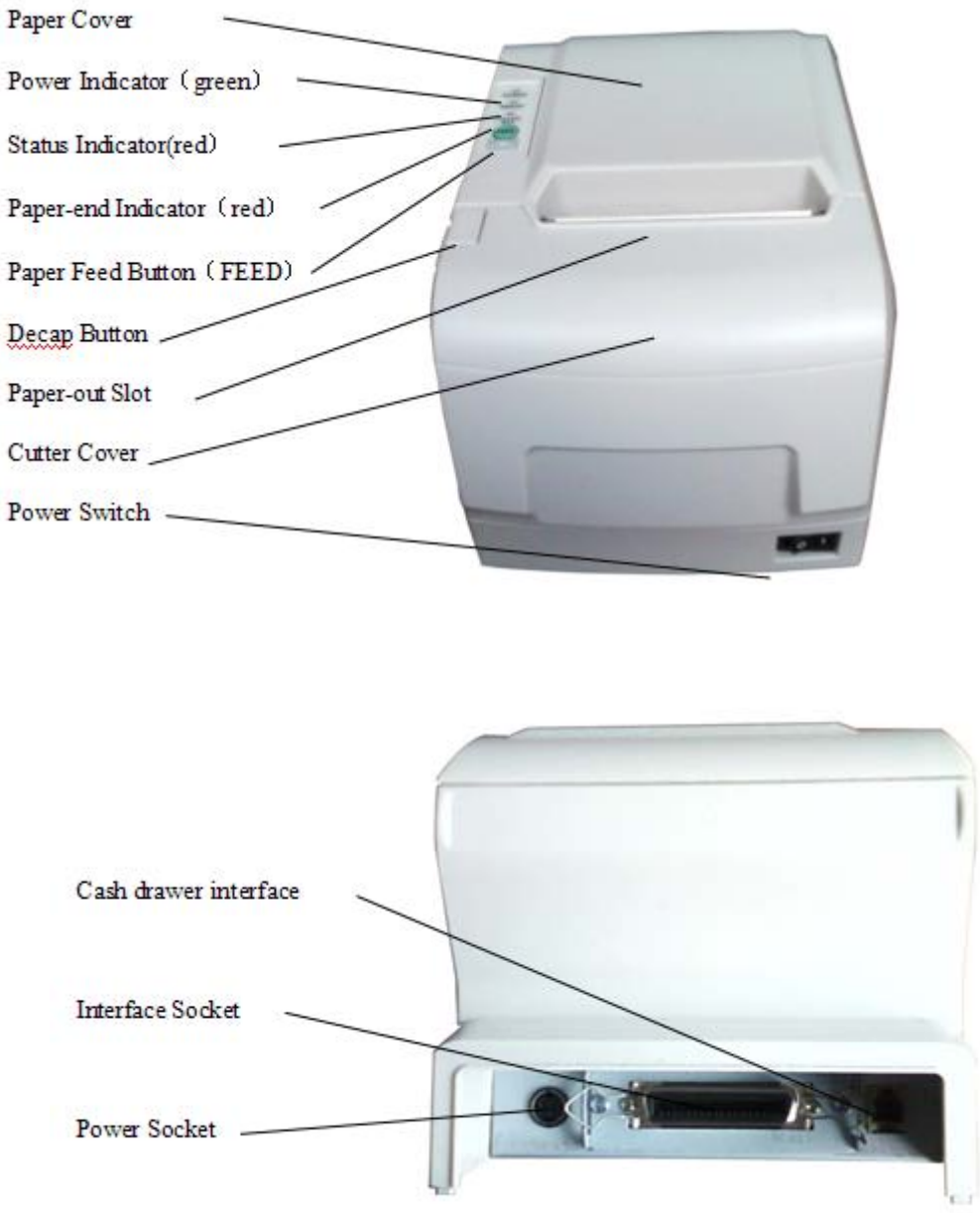

Fig.2-1 Printer Appearance

2.2 Paper Installation

2.2.1 Paper Loading

POS88V adopts 79.5mm width thermal paper roll.

Steps of Loading Thermal Paper Are as below:

Hold down the upper cover button on the left side, open the movable upper cover, draw a certain length of the paper roll, put the paper end on the print head, close the upper cover and press it downwards lightly.

> **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.

2.2.2 Solution to Paper Jam

If cutter jam, turn off the power, and turn on again, the cutter will be back to original position. If paper jam, open the paper strage

cover, and take out the paper. If the cutter can not be back to the original position, open the cover of it, and turn the white plastic gear by the direction suggestive on the cutter by hand to make the cutter be back to the original position.

2.3 Interface

2.3.1 Serial Interface

The serial interface of SP-POS88Ⅴ printer is compatible with RS-232C, supports DTR/DSR and XON/XOFF handshaking protocols, uses DB25 socket (female). The pin order of the serial port is as Fig.2-2 shows:

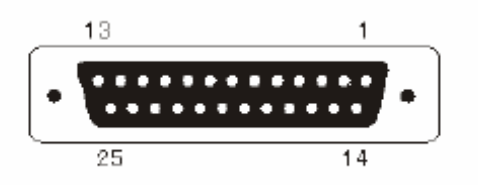

Fig.2-2 Pin Order of Serial Port

The pin assignment of serial interface is shown in Fig. 2-3:

Pin No.	Signal Name	Signal Direction	Source	Description
1	FG	——	——	Cover ground

2	TXD	Output	Printer	Printer transmits control code X-ON/X-OFF and data to host
3	RXD	Input	Host	Printer receives data from host
4	RTS	Output	Printer	The same with 20pins DTR signal
6	DSR	Input	Host	Signal “MARK” means the host is busy and can not receive data. Signal “SPACE” means the host is ready to receive data.
7	GND	——	——	Signal Ground
20	DTR	Output	Printer	Signal “MARK” means the host is busy and can not receive data. Signal “SPACE” means the host is ready to receive data.

Fig. 2-3 The pin assignment of serial interface

Note: (1)“Source” denotes the source that signal come from;

(2)Logical signal level is EIA.

The baud rate and data structure in serial interface mode is 9600bps, 8-bit data bits, no parity bit and 1 stop bit.

The serial interface of SP-POS88Ⅴ can be connected to standard RS-232C interface. When it is connected to IBM PC or its compatible machine, connection can accord to Fig.2-4.

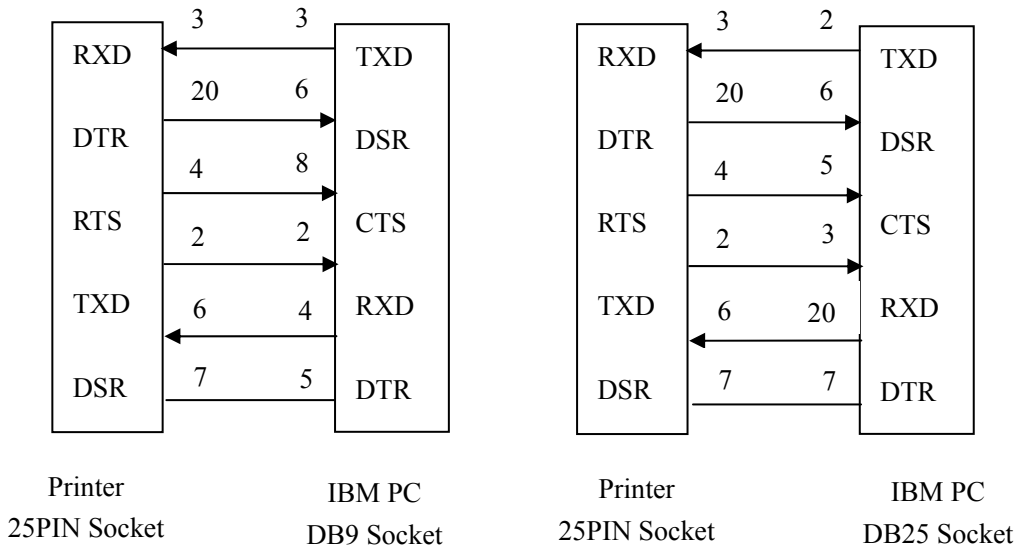

Fig.2-4 Connection between SP-POS88V and IBM PC Serial Interface Sketch Map

2.3.2 Parallel Interface

The parallel interface of POS88Ⅴ printer is compatible with CENTRONICS, supports BUSY or ACK handshaking protocol, uses

36pin CENIRONICS socket (female)

The pin assignment of DB25 parallel interface is as Fig. 2-5 shows:

Pin No.	Signal	Direction	Description
1	STROBE	In	Strobe pulse to latch data, Reading occurs at falling edge.
2	D1	In	These signals represent the 1st bit to 8th bit of the parallel data representatively, each signal is at HIGH level when data is logic 1, and LOW when data is logic 0.
3	D2	In	
4	D3	In	
5	D4	In	
6	D5	In	
7	D6	In	
8	D7	In	
9	D8	In	
10	ACK	Out	Answer pulse, LOW level signal indicates that data have already been

			received and the printer gets ready to receive the next data.
11	BUSY	Out	HIGH level signal indicates that the printer is BUSY and can not receive data.
12	PE	Out	HIGH level signal indicates that paper is end.
13	SEL	Out	Pulling up to HIGH level signal by a resistor
17	FG	---	Signal Cover
18	Logic-H	---	Logic “1” level
32	nFault	Out	Low level means the printer is at fault
14,15,17 18,34,36	NC	---	No connection
16,19~30, 33	GND	---	Grounding logical 0 level
35	+5V	---	+5V power

Fig.2-5 36Pin assignment of parallel interface

Note: (1)“In” denotes input to the printer，“Out” denotes output from the printer.

(2)Signal level is TTL standard.

The timing chart for interface signal of parallel interface is as Fig.2-6shows:

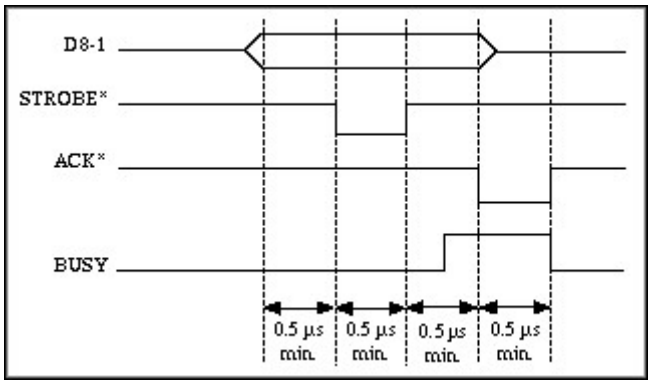

Fig.2-6 Signal Timing Chart of Parallel Interface

2.3.3 BLUETOOH interface connection

The handheld terminal, notebook computer or other terminals with Bluetooth interface can print by POS80 driver. The printer Bluetooth is compatible with Bluetooth 2.0 standard. Power Level is CLASS 2, the valid distance is 10m. The printer Bluetooth is slave device. The initial device name is POS80 BT Printer and initial password is “1234”. The user can change device name and password, etc by <T9 Setting Tool>. The detailed method about changing device name and password can be checked in Help file of <T9 Setting Tool>.

Before printing, the printer needs to pair with the Bluetooth host device. The pair needs to be sponsored by the host device. Usually, the pair steps are as below,

Turn on the printer

1. The host device searches the external Bluetooth device
2. If there are several external Bluetooth devices, choose printer “POS80 BT Printer”
3. Input password “1234”
4. Finish pairing.

About the detailed methods of pairing, pls check The Bluetooth Function Manual of the host device.

Note:

1. When pairing, the printer power must be in on status.
2. After the printer Bluetooth is paired with host device Bluetooth successfully, it won’t be searched and paired with other host Bluetooth device, until the Bluetooth pairing with current host device stop.
3. After pairing successfully, the “Power” indicator will flicker.

2.3.4 BLUETOOH binding address

If the printer has binding address: The printer will remember the paired host device address automatically. Once the printer

remembers the address, the connection will be only between it and the remembered host device and can't be searched or paired by other device. So if the printer wants to connect with other device, it needs to clear away the remembered address or set the mode to no binding address. Reset the binding address mode (Set or Cancel) will clear away the remembered address automatically.

If no binding address: The printer can be searched or paired by other host device.

Therefore, if hope the printer to be connected with the only specified host device and not with other host device, it is better to binding the address. The detailed methods of setting binding address can be checked in "T9 Setting Tool".

2.3.5 Cash Drawer Interface

The cash drawer interface of POS-POS88Ⅴ adopts RJ-11 6-pin socket, as Fig.2-7 shows:

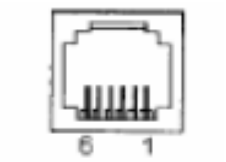

Fig.2-7 Cash Drawer Interface

The pin assignment is as below：

Pin No.	Signal	Direction
1	Chassis Ground	——
2	Cash drawer driver signal 1	Out
3	Cash drawer on/off status signal	In
4	+24VDC	——
5	Cash drawer driver signal 2	Out
6	Signal ground	——

2.3.6 Power Connection

POS88 Ⅴ uses the external power supply adopter as 24V±10％、2A,

power socket is A-1009-3P model, as Fig. 2-10 shows:

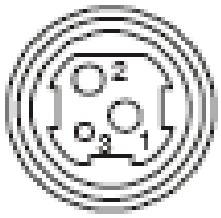

Fig.2-8 Power Socket

The pin assignment is as below：

Pin No.	Signal
1	+24VDC
2	Ground
3	NC

2.4 Buttons and Indicators

There is one button and three indicators on POS88Ⅴ printer. 【FEED】is paper feeding button, the function of its enabling or disabling the button on/off can be set by print command, when the button is enabled, press 【FEED】 button, then the paper presenting driver starts up and paper fed into the printer; release 【FEED】 button, paper feeding stops. The green POWER light is the power indicator, red ERROR light is status indicator, it is dark when the printer works normally, while it flashes when reporting an abnormal emergency, as the following form shows:

Error	Indicator and Buzzer Status	Description
Paper ending	“ERROR” indicator flashes	Paper is running out
Print head uplift	Buzzer rings	Put down print head
Print head overheat	Hurried buzzer ring	Recovers automatically when the print head cools.
Auto cutter Position Error	Buzzer rings and indicator blinks	Impossible to recover, check if there is paper jam.

When any error shown above occurs, pin “nFault” of parallel change to “0” level, and send 1 bit wrong code through serial TXD by itself, it can also send out the printer state by answer the ESC v command.

Red indicator of “Paper Out ” is the paper out indicator. When there is no paper in printer head, it will light, and it is off under normal status.

2.5 Self-test

The self-test will check the condition of printer, if the printer prints out the self-test receipt correctly, it means the printer works normally, except interface with host. Otherwise it needs to repair. The self-test will print out 96 ANK characters, default code page, name of Chinese Character library, interface setting and software version.

Way of self-test: hold down【FEED】button and turn on the

power, self-test begins automatically at this moment.

2.6 Hexadecimal Printing

Turn on the printer according to the step below, it will enter the mode of Hexadecimal Printing

1.Open the cover；

2.Hold down【FEED】button，and connect with power；

3.Close the cover, the printer will print out 3 lines as below:

Hexadecimal Dump
To terminate hexadecimal dump,
Press FEED button three times.

This means the printer has entered hexadecimal printing mode, and under this mode, all of the input will be printed out as hexadecimal number, feed one line with single-click of “FEED” button, after 3 times, it will print out “*** Completed ***”,and exit hexadecimal printing mode.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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