SPRT®

SP-POS76IV Receipt Printer

User's Manual

（Ver 1.02）

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Notes For Use

● Don't plug or unplug the interface cable,printer head cabe or power cable under the state of power on,or else it will cause the damage of printer or control board.

● At any time,don’t take the wastepaper or other attached objects by hard things(such as tweezers,blades and so on),in order to avoid the permanent damage to the printer head.

● After printing,if open the cover,don’t touch the printer head or motor case by hands, in order to avoid scald caused by the high temperature of the metal.

Warning

This is A level products.In living condition,the products may cause radio jamming.In this case,may need user to take practicable measures to the jamming.

Chapter 1 Feature and Performance

1.1 Print Performance

●Print method：9 pin inpact dot matrix
●Print paper width：76±0.5mm or 57.5±0.5mm
●Print density：385point/line（half point）, 400point/line（half point）,420 point/line（half point）
●Print speed：76.5mm paper width: 4.4lps；57.5mm paper width：5.6lps
●Feeding speed：120mm/s
●Reliability：
（1）Printing Head life: 7,500,000 lines
（2）Auto Cutter：500,000characters
●Valid print width：42CPL（7×9）/35CPL（9×9）
40CPL（7×9）/33CPL（9×9）

1.2 Print Paper

● High quality commone white paper / impact paper roll 57/76x Φ80（MAX）
● Paper Roll inner diameter ---------- φ13mm
Simplex paper thickness ---------- 0.06mm～0.08mm

Impact paper thickness（1 original+2 copies）：0.05mm～0.20mm

● Paper Loading: Auto Feeding Paper

● Paper Cutting: Manual Tear/ Auto Cutter (Full/Partial Cutting optional)

1.3 Ribbon

ERC-39 purple or black

Working Life:3,000,000characters (ASCII 7×9)

1.4 Print Font and Command

1.4.1 Print Font

● ANK character set，7×9dots or 9×9dots

● GB18030，16×16dots

Font description：

7×9dots（W×H）：half point printing，9/10 half points on the horizontal direction;

9×9dots（W×H）：half point printing，11/12 half points on the horizontal direction;

Size of a point is：0.318mm（W）×0.353mm（H）。

1.4.2 Print Command

Compatible with the ESC/POS command set of EPSON,please see the details in developer guide.

1.5 Interface

●RS-232C Serial Interface：

DB-25 socket（male）,support XON/XOFF and DTR/DSR .

Baudrate:1200,2400,4800,9600,19200,38400,57600,115200bps adjustable.

Data structure：1 start bit ＋ （7 or 8）data bits ＋ 1 stop bit

Parity checking：no parity or odd,even parity is optional.

●Parallel interface：

36 pin，8-bit parallel interface，support BUSY/ACK hadshaking protocol，TTL signal level

●Ethernet interface：

Standard ethernet interface.

●USB interface：

Standard USB interface

●Cash drawer control

DC24V，1A，6pin RJ-11 socket

1.6 Printing Control Command

Character printing command: support ANK character, custom character and Chinese character width, times of high print, can adjust the line space between characters.

1.7 Power Supply

●Put in (110-220)v±10%,50/60Hz,1.5A, Standard three-wire interface socket.

1.8 Working Environment

●Operation temperature：0℃～50℃ Relative humidity：10％～90％

●Storage temperature：-20℃～60℃ Relative humidity：10％～90％

1.9 Outline Dimension&Weight

● Outline Dimension: 248 mm（L）×158 mm（W）×140.5 mm（H）

● Weight: 1800g (not including paper roll)

1.10 Model classification

Model	Cutter	Interface
SP-POS764-BS	With	RS－232C serial interface
SP-POS764-DS	Without	
SP-POS764-BP	With	Parallel interface
SP-POS764-DP	Without	
SP-POS764-BE	With	Ethernet interface
SP-POS764-DE	Without	
SP-POS764-BU	With	USB interface
SP-POS764-DU	Without	

Chapter 2 Operation Specification

2.1 Printer Appearance

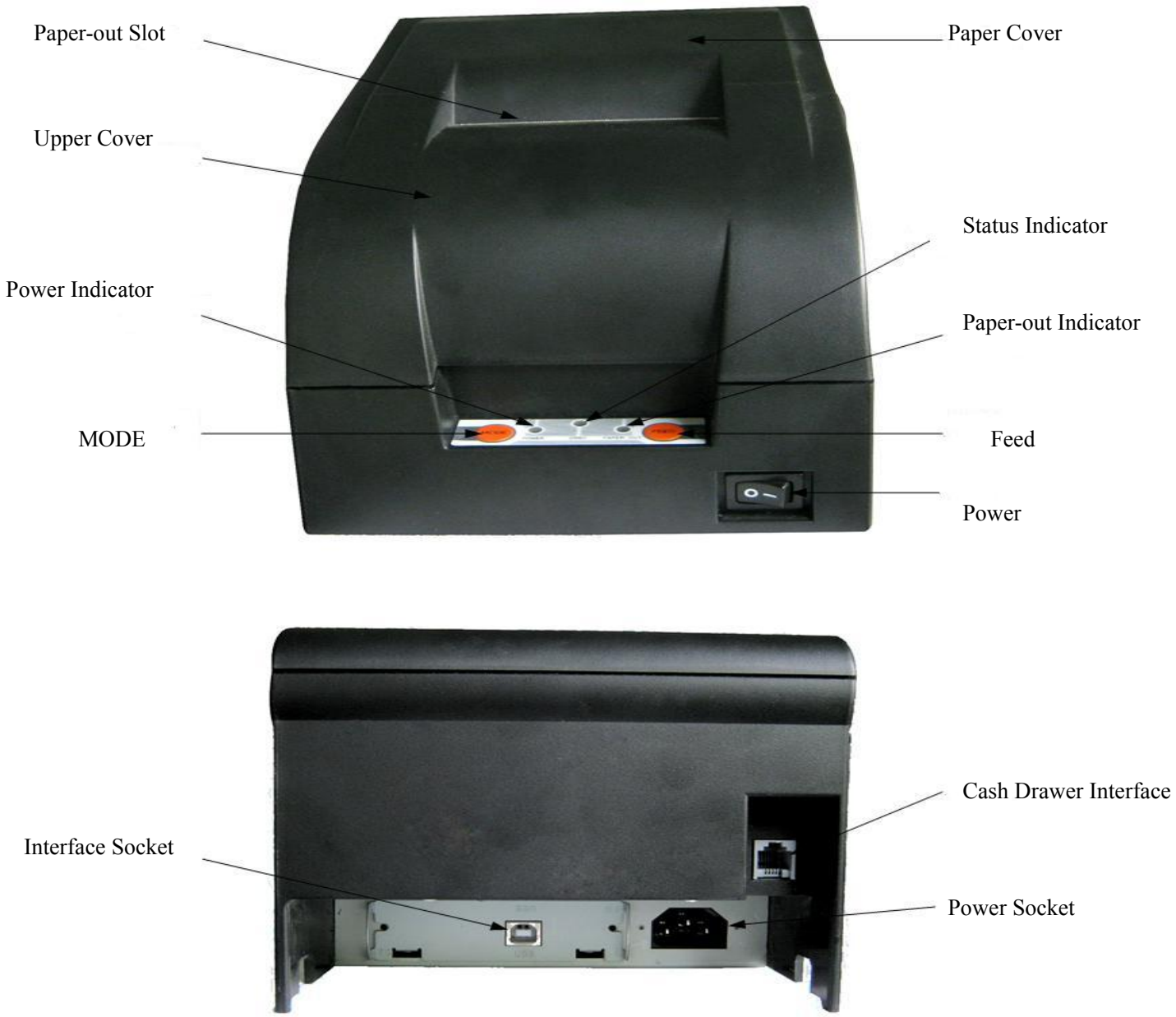


Fig.2-1 printer appearance

2.2 Ribbon and Paper Installation

2.2.1 Ribbon Installation

Steps of ribbon installation are as below

（1）Open front cover

（2）Put the ribbon into printer head,turn the knob as the direction shown on it for two~three circles..

（3）Close the front cover

2.2.2 Paper Installation

The installation steps of paper are as below:

(1)Living with your hands on both sides of the paper cover, open the paper cover.

(2)Put paper into the paper holder(Keep the paper roll in a right direction)

(3)When the printer is on,put the paper into mouth of printer, it will automatic feed .

(4)Turn off the paper cover, tear off the extra paper.

Notice

1. Attention to the loading direction of paper roll
2. Please do not use hand to make paper go forward or backward.
3. Keep printing head cleaning to avoid affecting printing quality.

2.2.3 Paper Jam and Cutter Stuck

If the cutter was stuck, switch off the power switch, and electricize again, the cutter can be returned to the original place, then take out the paper. If by electricizing again, cutter can't back, can open the front cover, show the cutter. Move the plastic gears on the cutter hand, make cutter back.

2.3 Interface

2.3.1 Serial Interface

The serial interface of POS764 printer is compatible with RS-232C, use DB-25(female) socket, DTR/DSR handshaking protocols.The pin order of the serial port is as Fig.2-2 shows:

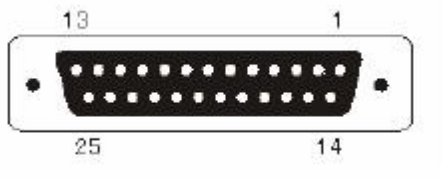


Fig.2-2 Pin Order of Serial Port

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

Pin No.	Signal Name	Direction	Source	Description
1	FG	——	——	Ground
2	TXD	Output	Printer	Printer transmits control code X-ON/X-OFF and data to host
3	RXD	Output	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.

For. 2-1 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 under serial interface mode is 9600bps, 8-bit data bits, no parity and 1 stop bit.

The serial interface of POS764 can be connected to standard RS-232C interface. When it is connected with IBM PC or its compatible machine, connection can accord to Fig.2-3.

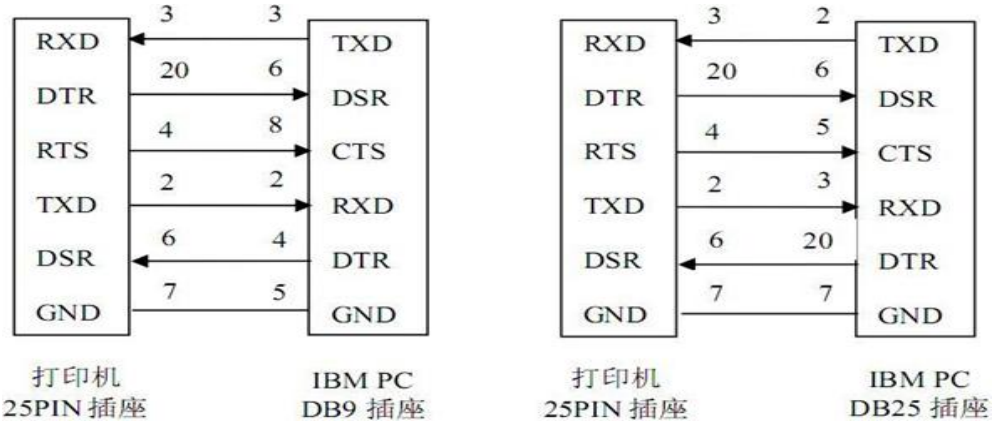


Fig.2-3 Sketch Map of Connection between POS764 and PC Serial Interface

2.3.2 Parallel Interface

The parallel interface of POS764 printer is compatible with CENTRONICS, supports BUSY or ACK handshaking protocol.

The pin assignment of 36PIN parallel interface is as Fig. 2-4 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	---	CGND
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.2-4 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.2-5shows:

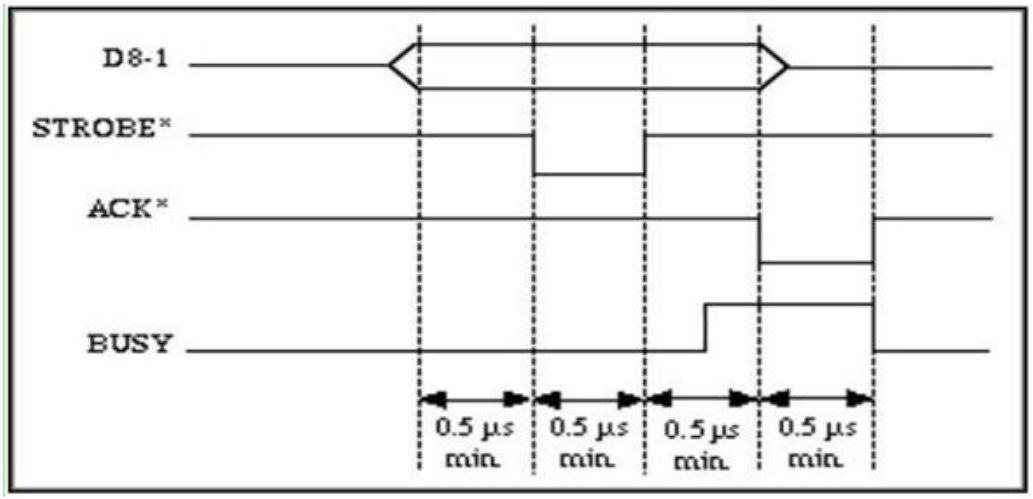


Fig.2-5 Signal Timing Chart of Parallel Interface

2.3.3 Cash Drawer Interface

The cash drawer interface of POS-POS764 adopts RJ-11 6-pin socket, as Fig.2-6 shows:

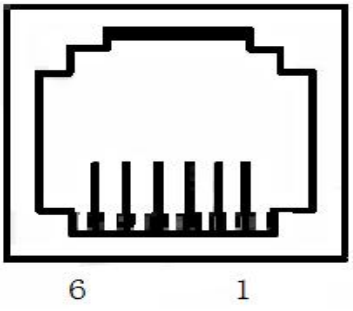


Fig.2-6 Cash Drawer Interface

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	——

2.4 Indicators、Buzzer and Buttons

There is two buttons、 one built-in buzzer and three indicators on POS764 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 feed into the printer; release【FEED】 button, paper feeding stops.

【MODE】is setting button, which can be used to adjust the printing effect when the printer is on two-way printing forms.

The buzzer is used to indicate the type of error state and the paper cutting prompt. The buzzer can be set to error alarm, paper cutting prompt or both by setting parameters. Error status type is the same as ERROR indicator.

The green POWER light is the power indicator, the POWER indicator said printer has been switched on.

The red PAPER OUT light is the paper ending indicator,when there is no paper in printer head,the light will be on, it is out under normal condition.

The Red ERROR light is status indicator, it is dark when the printer works normally, while it flashes when reporting an abnormal emergency.

The Red ERROR light flashes and buzzer rings say the printer is error.

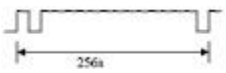
According to Red ERROR light flashes in a different way, indicate the wrong

type of printer:

1. Unrecoverable error: The Red ERROR light flashes and buzzer rings many times then keep on for a long time.
2. Recoverable error: The Red ERROR light flashes and buzzer rings many times then keep off for a long time.
3. Automatic recovery error, Indicator Flashing continuously, buzzer sounding continuously.
4. Lack of paper: PAPER OUT is on,buzzercontinuly ring.

As the following form shows:

1.Unrecoverable error: The Red ERROR light flashes and buzzer rings many times then keep on for a long time.

Error	Desciption of Error	ERROR Light Flashing Way
Unrecoverable error	LED flashes once：Memory read/write error	
	LED flashes twice：overvoltage	
	LED flashes three times：under-voltage	
	LED flashes four times：CPU execution error (wrong address)	
	LED flashes five times：UIB error	
	LED flashes eight times：Temperature detection circuit error	

2.Recoverable error: The Red ERROR light flashes continuly then keep off for a long time

Error	Desciption of Error	ERROR Light Flashing Way
Recoverable error	LED flashes once:cutter was in a wrong place	

3. Automatic recovery error: Red ERROR light flashes continuously.Including the temperature of printer head or the cover is wrong.

Error	Desciption of Error	ERROR Light Flashing Way

Automatic recovery error	LED flashes continuely:the temperature of printernhead is too high or the cover is wrong.	

2.5 Regular Starting Status

On shutdown state, the 【paper cover 】is closed, then open the power switch, the paper status indicators and the PAPER OUT flash alternately twice, and then put out, after the print head resets, the printer will be into the normal working mode.

2.6 Self-test

Self-test can test whether the printer is working correctly or not. If it can print the content of self-test then the printer is working correcty except the interface which connect with the host computer. If not, it needs maintenance.
The content of self-test below:
Name of manufacturer,Model of printer, Version No. of the printer,type of interface, The parameters of the printer default values, 96 characters in the ASCII code,default type of word stock(English or the name of Chinese character library) ,and so on.

Method of self-test：press【FEED】 button and turn on the power switch,then the printer will print out the content of self-test as Fig:2-8:

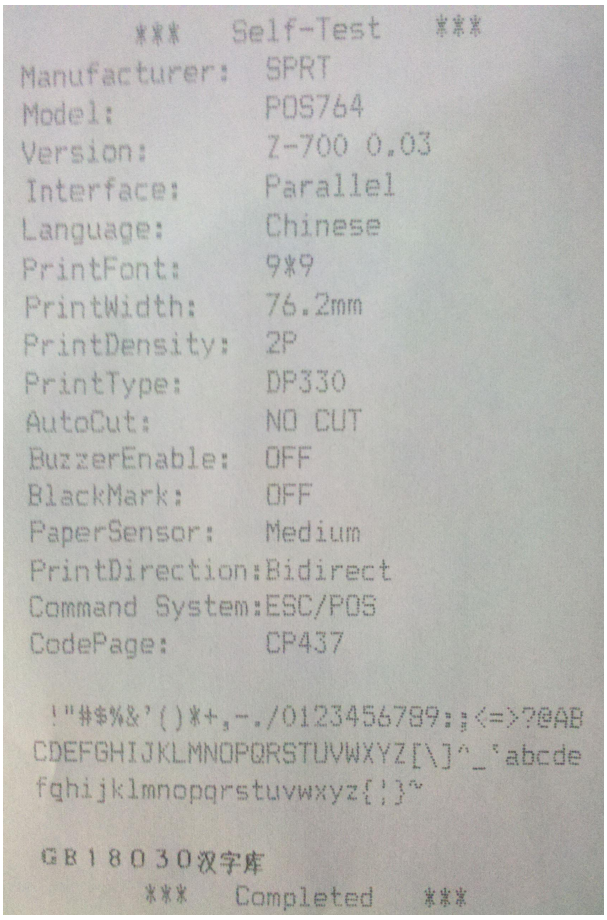


Fig2-8: content of self-test

2.7 Hexadecimal Printing

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

1. Press 【MODE】and 【FEED】in the same time,switch on;
2. After the paper status indicators and the PAPER OUT flash alternately,loose the【MODE】and 【FEED】in the same time;
3. Print out the following 3 lines at this time:

   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.

2.8 the printer parameter set

The function is to set up some simple parameters of the printer.

Enter the parameter setting method:

On shutdown condition, press the "MODE" button first, and then press down the "FEED" button, and then open the power switch. After the status indicators and PAPER OUT lights flash alternately, release the "FEED" button. Then press the "FEED" button twice, then release the "MODE" button. The printer will be in parameter setting mode. And print out the first item can be set parameters and its current value. Please see the appendix A part of the set method in detail.

Exit the parameter setting method: Press the "MODE" button, and press the "FEED"button, then loosen the "MODE" and "FEED" buttons, save the setting values of the parameters and exit parameters setting MODE. Goes into normal working mode.

If directly close the printer power supply, the set of parameter values can not be saved.

2.9 Enter into firmware upgrading MODE

On shutdown condition, press the "MODE" button, and press the "FEED" button, and then open the power switch, after the light of status indicators and PAPER OUT light flash release the "FEED" button. Then press the "FEED" button five times, and then loosen the "MODE" button and then the print will be into application upgrade MODE. Now the status indicator light flashes at the speed of every 1 second.

Notice: when enter the upgrade mode, PAPER OUT light means the interface can't be upgrade. At present, only a serial port and USB interface support online upgrade program.

2.10 BID (Bi - direction) bidirectional printing adjust

Due to there is clearance between print head of mechanical transmission gear and worm, may be after long time printing,the printing will not clear as before.The BID adjustment function can solve the problem, specific operation is as follows:

The first method:

1. open the "setting tool V2.03 L", find "print the BID adjustment test;Click "

2. Click” the BID adjustment test spline", the printer will print out the 25 printing effect whose serial number is “0-24”.Found out the serial number of the best printing effect;Marked with '*' in front of the printing effect for the currently selected;
3. In the "two-way print master set" drop-down menu, select the best label printing effect, and click "Settings" button.Set up is completed, restart the printer can solve the phenomenon of print is not clear.

The second method:

1. Press the "MODE" button, open the power supply;

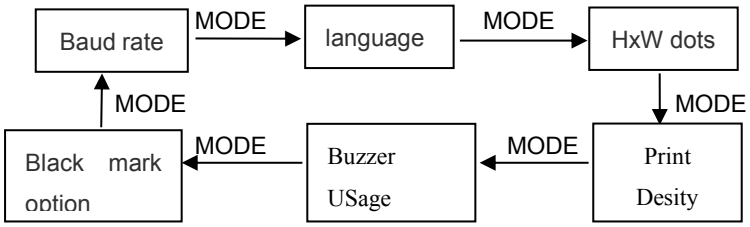
2. After waiting for the print head reset, loosen the "MODE" button and print out the Numbers for the printer "0 to 24. Found out the serial number of the best printing effect;Marked with '*' in front of the printing effect for the currently selected.

3. Be not satisfied with the current print effect, the "MODE" button can adjust printing effect, after choose the best printing effect, long time press the "MODE" button, exit the BID adjust MODE, save the Settings, restart the printer can solve the phenomenon of print is not clear.

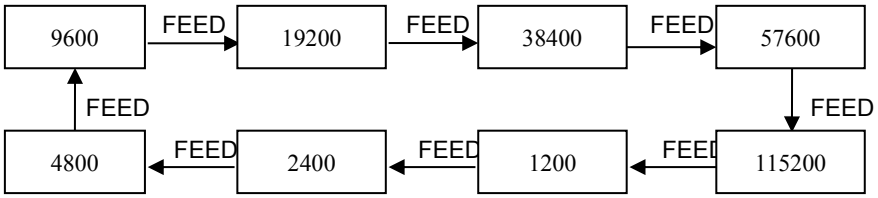
Appendix A: parameter Settings

This appendix is about how to set the default printer parameter by button.

Setup instructions: Press the "MODE" button to choose set items, each click on the "MODE" key, set a change to the next item, and print out the current value. With the "FEED" key to choose a set value of items, each click on the "FEED" key, the set value change for the next value. General Settings:

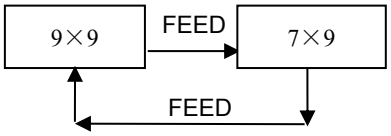


Baud rate：

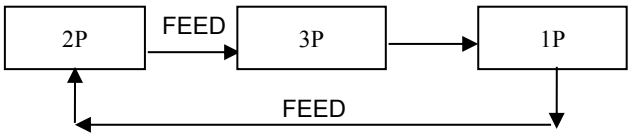


language：

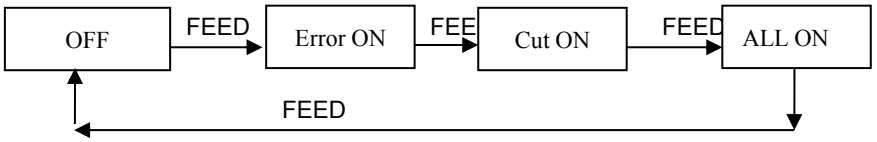
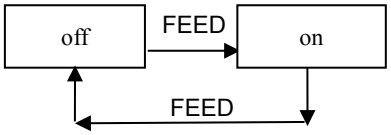
HxW dots：



Print Density：



Buzzer：



Black label：