SPRT®

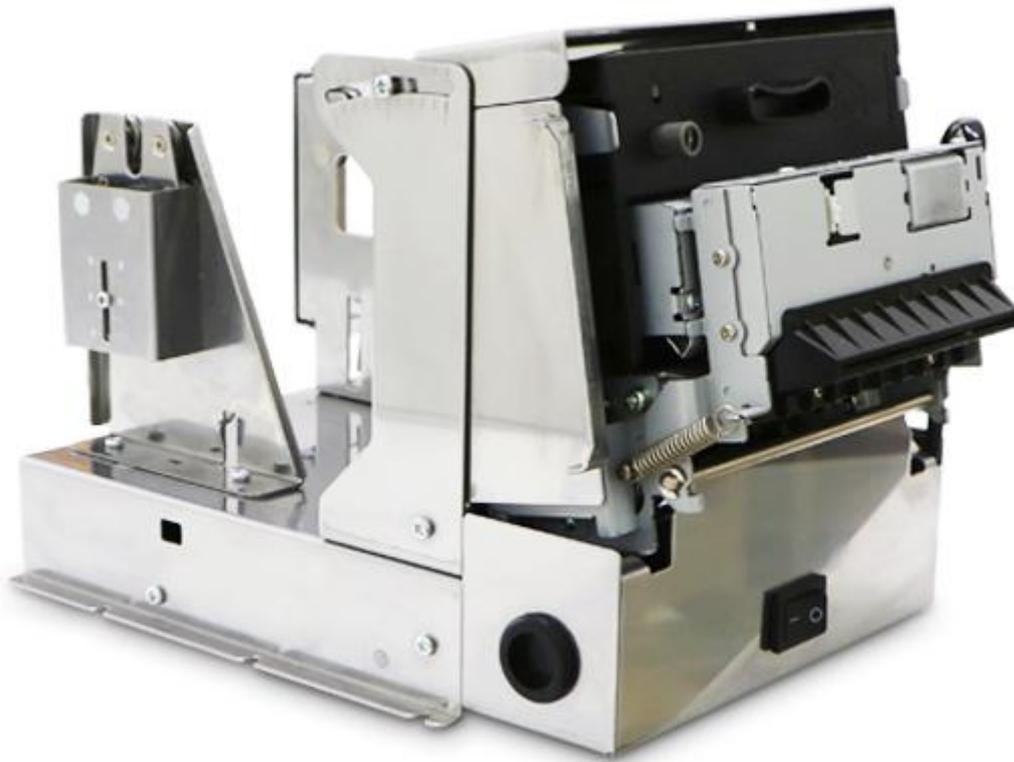## EU761 PRINTING UNIT USER'S MANUAL

(SP-EU761)

(Ver 1.03)

Beijing Spirit Technology Development Co., Ltd

www.sprt-printer.com

Contents

Notes

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

● At any time,do not 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,do not touch the printer head or motor case by hands, in order to avoid scald caused by the high temperature of the metal.

> # Statement
>
> This product belongs to class A. In the living environment, this product may cause radio Interference. In that case, the user need to take practical measures to interference.

Chapter 1 Characteristics and performance

1.1 Print performance

● Print method:9 pin in pact dot matrix

● Printing paper width:76mm±0.5mm

● Resolution: 385dots/line (half-point printing),400dots/line (half-point printing) ,420dots/line (half-point printing)

● Printing speed:4.0lps

● Feeding speed:120mm/s

● MCBF

(1)PTH:9,000,000 lines

(2)Printing head life:15,000,000 characters

● Effective printing width: 42CPL(7×9)/35 CPL(9×9)

40CPL(7×9)/33 CPL(9×9)

1.2 Print paper

● High quality common white paper or impact paper or black-mark Paper

● Paper width ---------- 76mm±0.5mm

   Outside diameter ---------- φ160mm(Max)

   Inside diameter   ---------- φ13mm

   Paper thickness ---------- 0.06mm～0.08mm

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

1.3 Ribbon

● Ribbon ERC-39 Purple or black

● Service life:1,900,000 characters(ASCII 7×9)

1.4 Print characters and print commands

1.4.1 Print characters

● ANK character set:7×9 or 9×9 dots

● GB18030:16×16dots

Characters description:

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

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

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

1.4.2 Print commands

Compatible with the ESC/POS command set of EPSON, please see the details

in developer Command Manual.

1.5 Interface

● RS-232C Serial Interface:

DB-9 socket (pin type),support XON/XOFF和DTR/DSR handshaking

protocol.

Baud rate: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.

● USB interface:

　Standard USB interface

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 spacing between characters.

1.7 Power Supply

● Input voltage:DC24V±10%,2A

● Power outlet: A-1009-3P,The pin definition as follows:
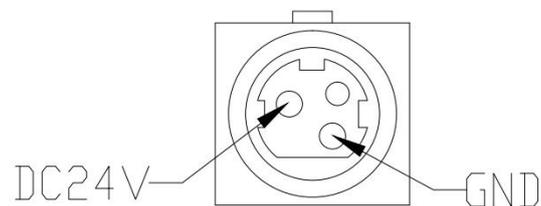
1.8 Working Environment

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

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

1.9 Outline Dimension
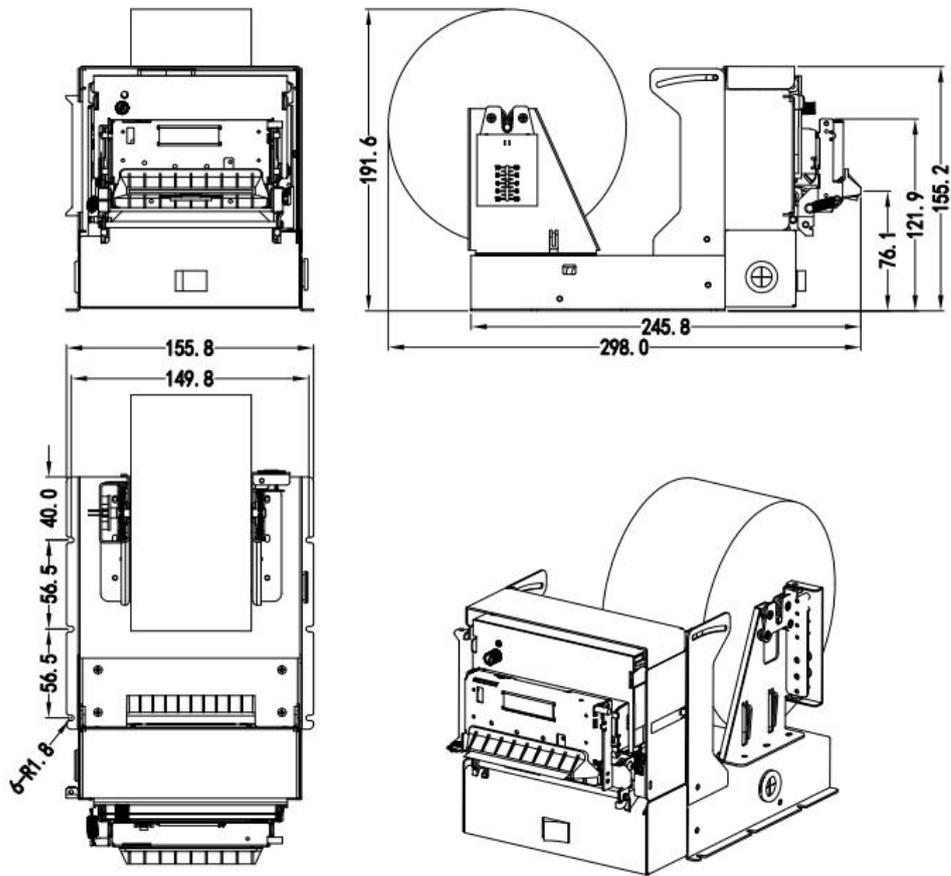
Outer dimension: 249.5mm x 156mm x 156mm (L x W x H)

Chapter 2 Operation Specification

2.1 Printer appearance

Power indicator
Error indicator
Paper out indicator
Mode button
Feed button
Power socket
USB interface
DB9 socket
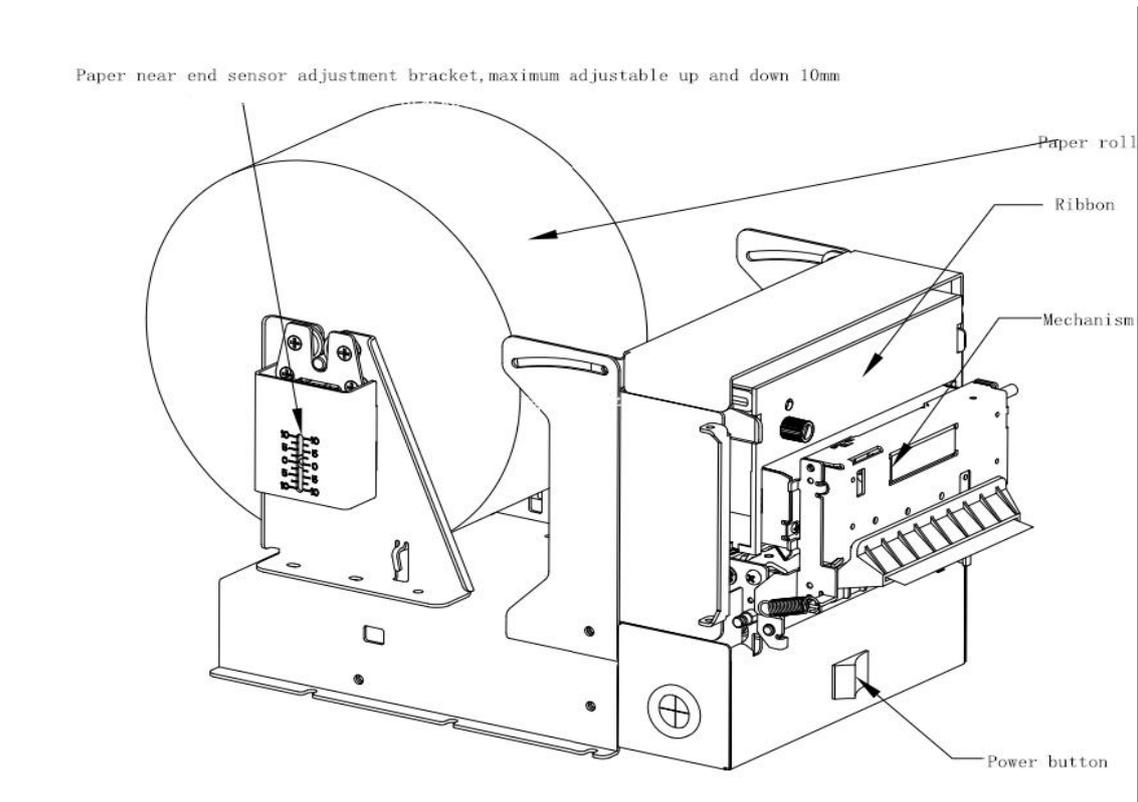
Fig.2-1 Printer appearance

2.2 Ribbon and Paper Installation

2.2.1 Ribbon Installation

Steps of ribbon installation are as below:
(1) Open the cutter
(2) Put the ribbon into printer head,turn the knob as the direction shown on it for two~three circles
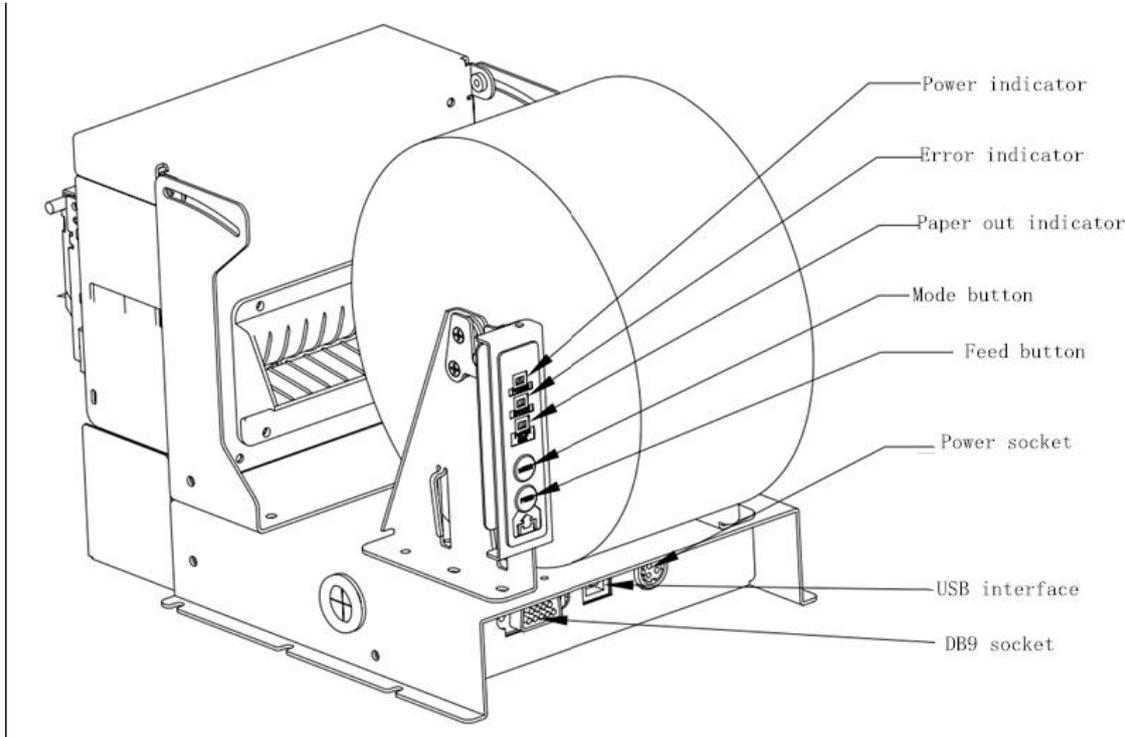(3) Close the cutter

2.2.2 Paper Installation

The installation steps of paper as below:

(1) put paper into the paper shaft
(2) Put the paper shaft on the bracket
(3) Put the paper end into the paper inlet when the printer turned on, the printer will automatically feed the paper (note the direction of the paper roll)

⚠ **Notice**

6

1. Attention to the loading direction of paper roll
2. Please do not use hand to make paper go forward or backward
3. Keep print head clean, lest affect printing quality

2.2.3   Paper Jam and Cutter Stuck

If the cutter is jammed, turn off the power and turn on the printer again, the cutter will recover. If the paper is jammed, please open the rubber roll and take out the paper. If the cutter does not recover after reset, you can move the plastic gears on the cutter to recover the cutter.

2.3 Interface connection

2.3.1 Serial Interface connection

The serial interface of EU761 printer is compatible with RS-232C, supports DTR/DSR and XON/XOFF handshaking protocols, uses DB-9 socket (pin socket),handshaking protocols are DTR/DSR ,The pin order of the serial port and the definition of pin as below Fig.2-2
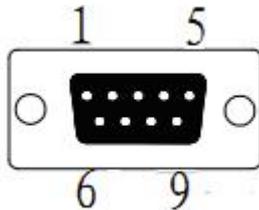
Fig.2-2

Pin No	Signal Name	Signal Direction	Source	Description
1	NC	----	----	
2	RXD	Input	Host	Printer receives data from host
3	TXD	Output	Printer	Printer transmits control code X-ON/X-OFF and data to host
4	DTR	Output	Printer	Signal MARK means the printer is busy and can not receive data.Signal SPACE means the printer is ready to receive data.
5	GND	----------	-------	Signal Ground
6	DSR	Input	Host	Signal MARK means the printer is busy and can not receive data.Signal SPACE means the printer is ready to receive data.
7	RTS	Output	Printer	Same as DTR
8	CTS	Input	Host	Same as DSR
9	NC	----------	---------	

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 EU761 can be connected to standard RS-232C interface. When it is connected with IBM PC or its compatible machine,connection as below:
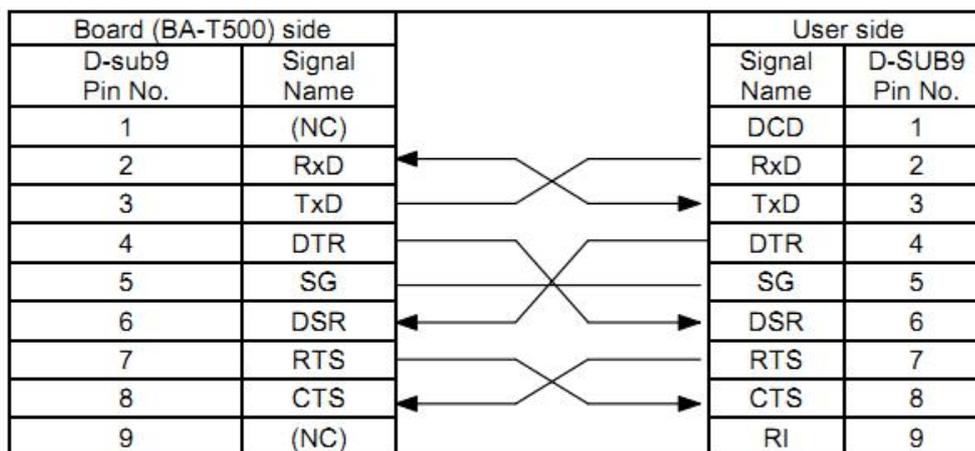
Board (BA-T500) side			User side	
D-sub9 Pin No.	Signal Name		Signal Name	D-SUB9 Pin No.
1	(NC)		DCD	1
2	RxD		RxD	2
3	TxD		TxD	3
4	DTR		DTR	4
5	SG		SG	5
6	DSR		DSR	6
7	RTS		RTS	7
8	CTS		CTS	8
9	(NC)		RI	9

Fig.2-2 Connection between printer and PC Serial Interface

2.4 Indicators, Buzzer and Buttons

EU761:There are two buttons、one built-in buzzer and three indicators .
【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.【OPEN BUTTON】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 status, paper cutting tips. The buzzer can be set to false alarm, paper cutting prompt or both at the same time through parameter setting. The error status type is the same as the 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
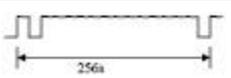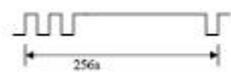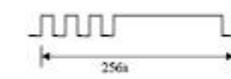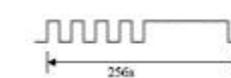
keep off for a long time

3. Automatic recovery error:continuous flashing lights, continuous buzzer ring.

4. Lack of paper: PAPER OUT is on,buzzer continue ringing.

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	Description of Error	ERROR Light Flashing Way
Unrecoverable error	LED flashes once:Memory read/write error	
	LED flashes twice:Over-voltage	
	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 continuously then keep off fora long time.

Error	Description 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	Description of Error	ERROR Light Flashing Way
Automatic recovery error	LED flashes continuously:the temperature of printer head is too high or the cover is wrong	

2.5 Normal working mode

open the power switch, the 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 correctly except the interface which connects 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,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: 2-7

Fig2-7: content of self-test

2.7 HEX Printing mode

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.

2.8The printer parameters setting

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 the program upgrading mode

On shutdown condition, press the "FEED" and "MODE"button, and then open the power switch,

PAPER OUT light flash release the "FEED" button. Then   loosen the "MODE" and "FEED" buttons.The printer will be into program 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 upgraded. At present, only the serial port and USB interface support online upgrading

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 as follows:

The first method:

1. Open"SettingTool Pro V1.40L06.exe",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

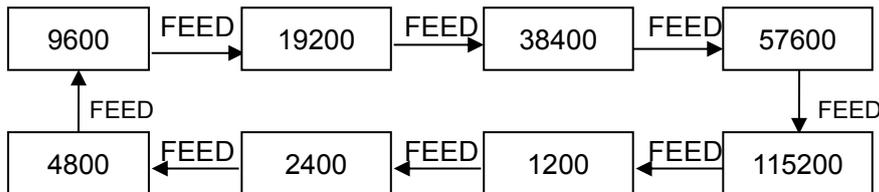This appendix is about how to set the default printer parameter by button.Setup instructions: Press the "MODE" button to choose set items, each click on the "MODE" key, set a change to the next item, and print out the current value. With the "FEED" key to choose a set value of items, each click on the"FEED" key, the set value change for the next value.General Settings:
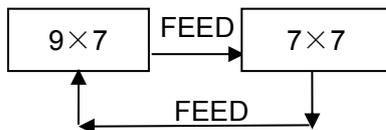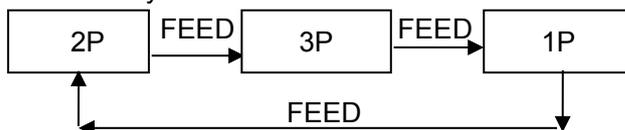
Full setting:

```
  Baud rate   --MODE-->   Language   --MODE-->   Font dots
      ^                                              |
      | MODE                                         | MODE
      |                                              v
  Black mark  <--MODE--   Buzzer    <--MODE--    Print
  option                  Usage                  Density
```

Baud rate:

```
  9600  --FEED-->  19200  --FEED-->  38400  --FEED-->  57600
    ^                                                    |
    | FEED                                               | FEED
    |                                                    v
  4800  <--FEED--  2400   <--FEED--  1200   <--FEED--  115200
```

Language:

```
  China  --FEED-->  China-BI  --FEED-->  English
    ^                                        |
    |<--------------- FEED -------------------
```

Font dots:

```
  9×7  --FEED-->  7×7
    ^              |
    |<-- FEED -----
```

Print density:

```
  2P  --FEED-->  3P  --FEED-->  1P
    ^                            |
    |<--------- FEED -------------
```

Buzzer:

```
  OFF  --FEED-->  Error ON  --FEED-->  Cut ON  --FEED-->  ALL ON
    ^                                                        |
    |<------------------- FEED --------------------------------
```

Black label :

```
┌──────────┐  FEED   ┌──────────┐
│   off    │────────▶│    on    │
└──────────┘         └──────────┘
     ▲                     │
     │      FEED           │
     └─────────────────────┘
```