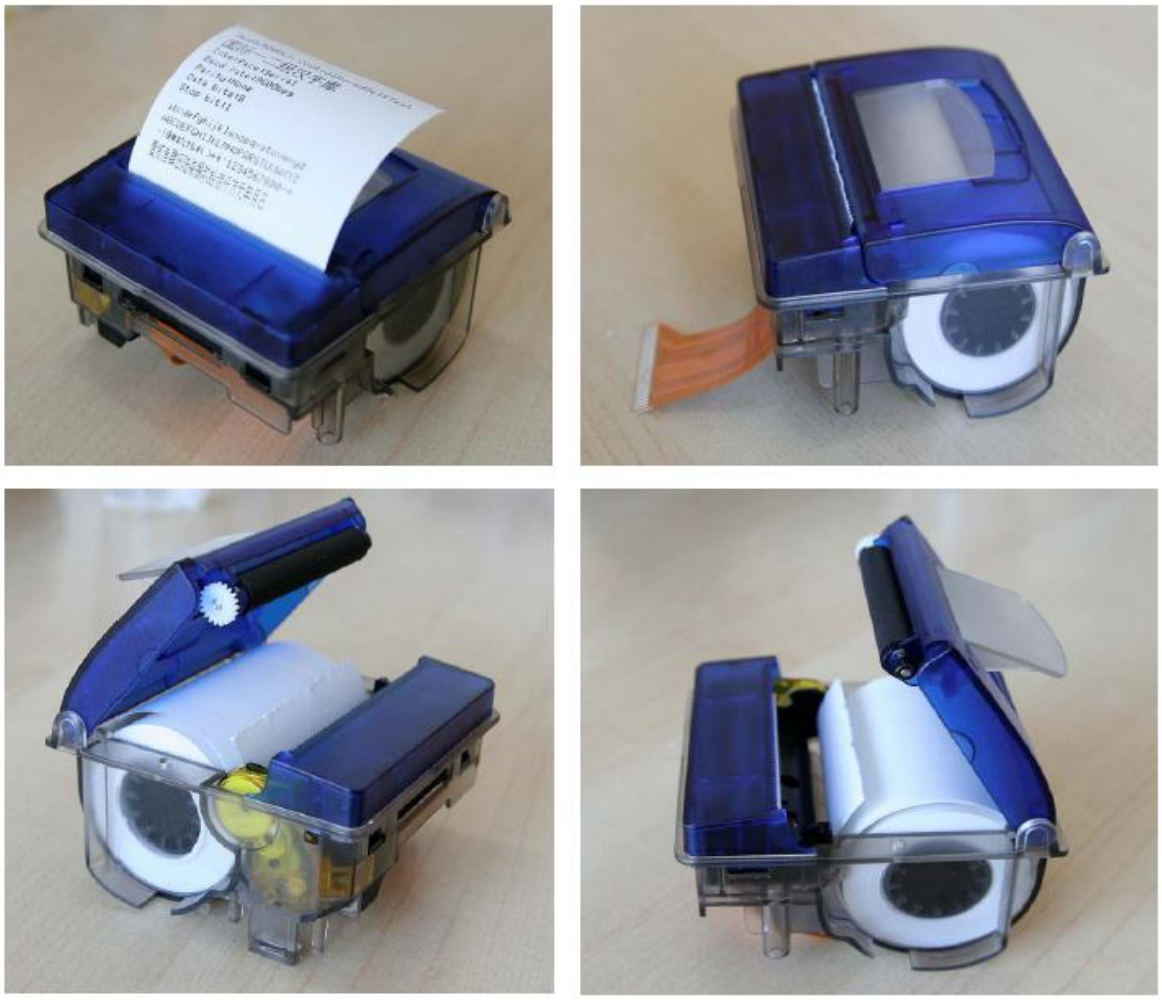
1.性能特色 Features

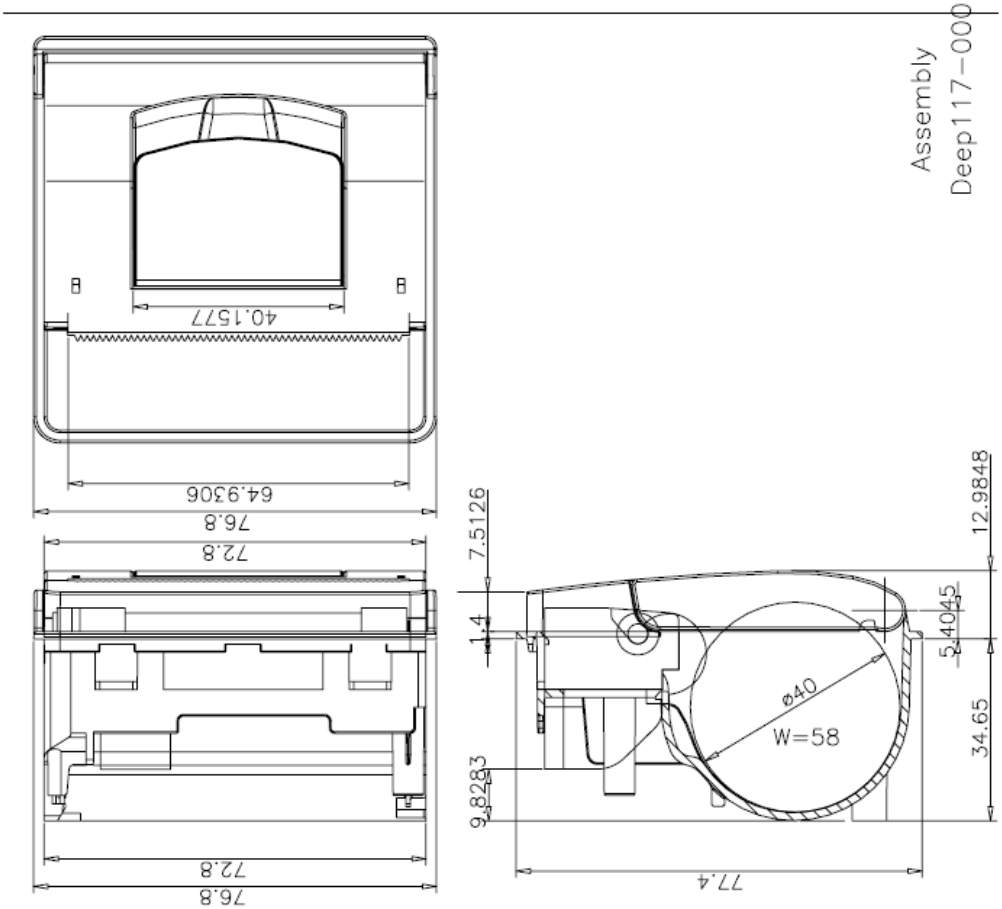
- 低噪音的直接热敏打印方式 Low-noise direct thermal printing method
- 打印控制板内置 GB18030 中文字库，彻底免除生僻字的苦恼 Printer control panel built-in GB18030 Chinese character, thoroughly remove the uncommon words of anguish
- 打印速度快，噪声低 Fast printing speed, low noise
- 可装最大纸卷直径 40MM 的打印纸,约 16-20 米）can support Max.40MM (diameter) paper roll, around 16-20 meter .
- 接口可选串口 （RS-232C ， TTL ）/并口 Optional serial interface (RS-232C, TTL) / parallel port
- 丰富的图形/曲线/文字打印功能 rich of graphics / curves / characters print function
- 易装纸结构方便上纸 Easy paper loading structure
- 支持 5V-9V 宽电压 Support 5V-9V wide power voltage

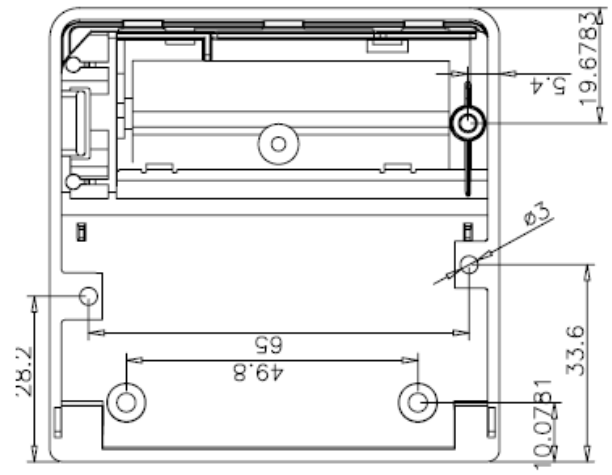
2.外形结构及尺寸 .Printer outline and out dimension

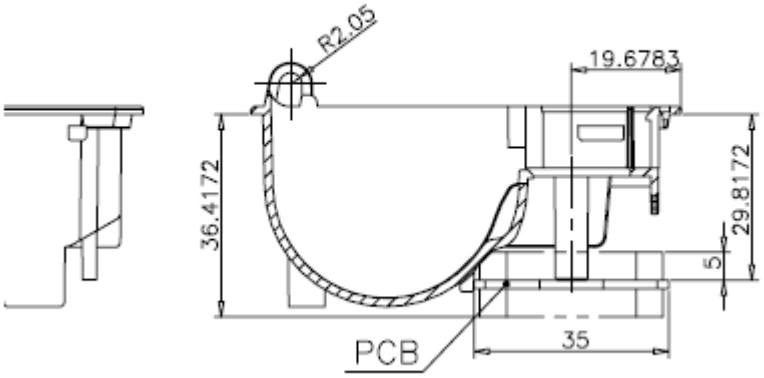


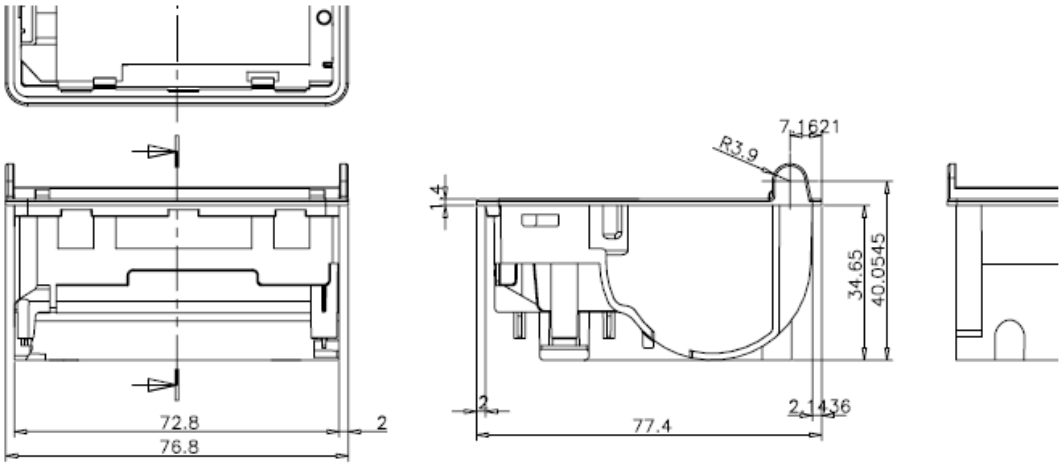
- 外形尺寸: 76.8 W x 77.4 D x 47.6H mm
  outline dimension : 111W*65D*57H mm
- 嵌入尺寸
  Embeded dimension 72.8W x 73.4D x 34.65H mm
  面板尺寸
  Front panel Size: 76.8 W x 77.4D mm
- 嵌入深度
  Embedded depth: 34.65MM
- 可装最大纸卷直径 40MM 的打印纸
  the Max diameter of paper roll :40MM

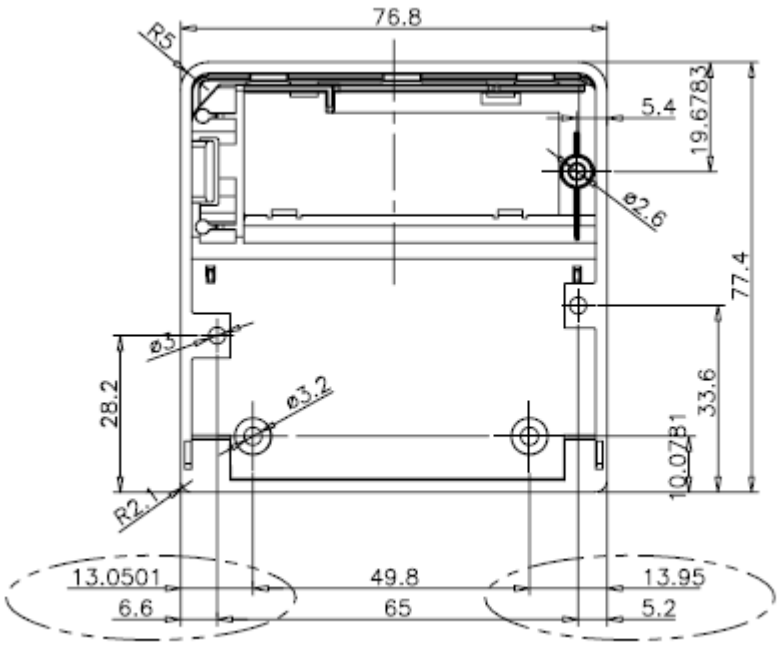
外形图如下: Outline is as follows



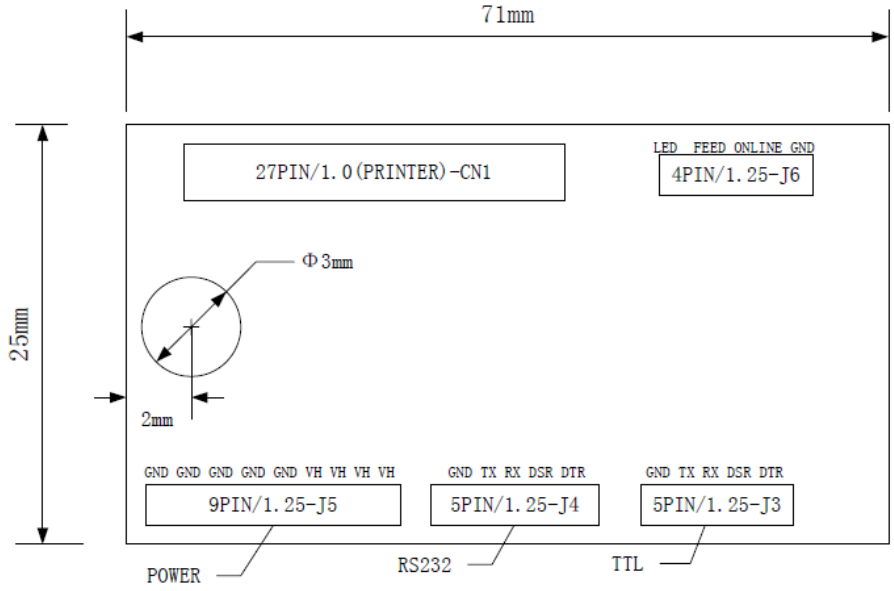

19.6783
5.4
ø3
33.6
65
49.8
28.2
10.0781


R2.05
19.6783
36.4172
29.8172
5
35
PCB

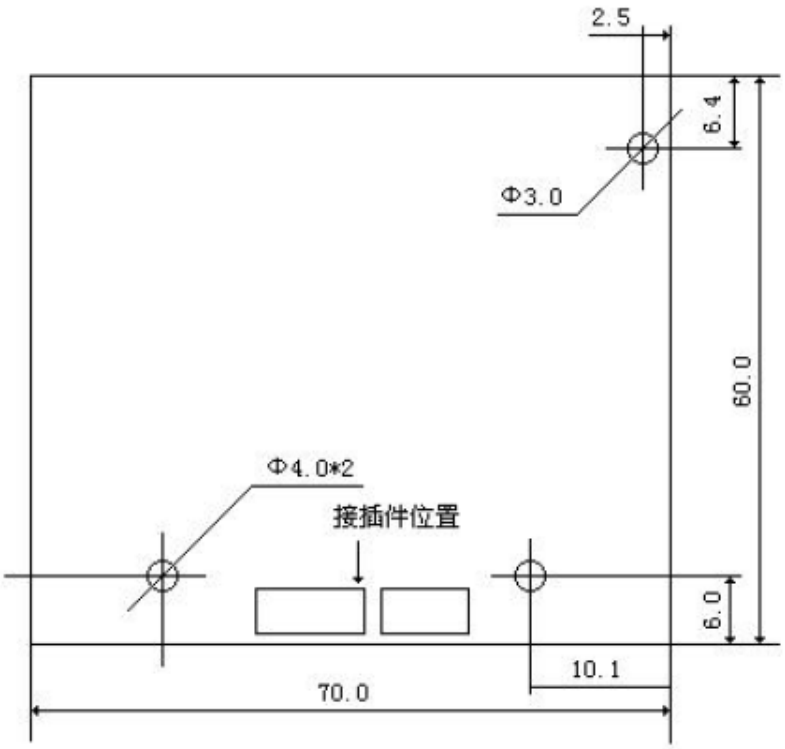

7.1621
R3.9
1.4
34.65
40.0545
2
2.1436
77.4
72.8
76.8
2



控制板尺寸 controller board size



固定方式如图 The install method as below picture：


2.5
6.4
Φ3.0
60.0
Φ4.0*2
接插件位置
6.0
10.1
70.0

3. 规格 specifications

项目	规格
打印方式 PRINT METHOD	thermal direct line printing
装纸方式 Paper loading method	easy paper loading
纸宽 paper width	57mm
打印宽度 print width	48mm
分辨率 resolution ration	8dots/mm(384dots/line)
打印头寿命 life of printing head	50km
打印速度 printing speed	60mm/sec.; Max.:80MM/sec.(voltage 8.5V)
字符大小 character size	12x24dots,or24x24dots
汉字库 Chinese character fonts	GB18030,12x24dots,or24x24dots
外形尺寸 outline dimension	76.8 W x 77.4 D x 47.6H mm
安装尺寸 installation:	72.8W x 73.4D
嵌入深度 embaded depth	34.65MM
纸的规格 paper roll sepcification	(widht :57mm,Max. diameter :40mm)
接口 interface	Serial(RS-232C,TTL)/parallel
输入电源 input power	DC5V-9V
操作温度 operatiing temperature	5° C~50° C
存储温度 storage temperature	-20° C~60° C
操作湿度 operating humidity	10° C~80° C
存储湿度 storage humidity	10° C~90° C

4.接口定义 INTERFACE DEFINE

1 Power supply connector

J5	User side matching connector
Molex, 53047 Series 9 contacts (male)	Molex 51021 Series (female) Contacts: 50079/50058.

Pin number	Signal name
1	GND
2	GND
3	GND
4	GND
5	GND
6	V bat
7	V bat
8	V bat
9	V bat

2 RS232 connector

J4	User side matching connector
Molex, 53047 Series 5 contacts (male)	Molex 51021 Series (female) Contacts: 50079/50058.

Pin number	Signal name
1	Gnd
2	Transmit data (Txd, printer output)
3	Receive data (Rxd, printer input)
4	CTS/DSR (printer input)
5	RTS/DTR (printer output)

3 TTL connector

J3	User side matching connector
Molex, 53047 Series 5 contacts (male)	Molex 51021 Series (female) Contacts: 50079/50058.

Pin number	Signal name
1	Gnd
2	Transmit data (Txd, printer output)
3	Receive data (Rxd, printer input)
4	CTS/DSR (printer input)
5	RTS/DTR (printer output)

4 *Integrated Keyboard functions*

The two push buttons and LED functions are described in the following table:

<table>
<tr><th>Printer Status</th><th>OFF</th><th>OFF Line</th><th>On Line</th><th>End of Paper</th><th>Over/Under Voltage or Temperature</th></tr>
<tr><td rowspan="2">Push Button #1</td><td rowspan="2">Execute self-test if pressed during Power-On</td><td>On Line</td><td>Off Line</td><td colspan="2">N/A</td></tr>
<tr><td colspan="4">Switch OFF the printer if pressed more than 2.5 seconds</td></tr>
<tr><td>Push Button #2</td><td>Switch On the Printer</td><td>Feeds Paper</td><td>Feeds Paper if not already printing</td><td colspan="2">N/A</td></tr>
<tr><td>LED</td><td>OFF</td><td>1 Flash “ON”</td><td>Always "ON"</td><td>3 Flash “ON”</td><td>4 Flash “ON”</td></tr>
</table>

J6	User side matching connector
Molex, 53047 Series 4 contacts (male)	Molex 51021 Series (female) Contacts: 50079/50058.

Pin number	Signal name
1	Gnd
2	On Line
3	FEED
4	LED

5 *PRINTER functions*

CN1	FPC27/1.0

Pin number	Signal name	Function
1	CO	Collector of photo-transistor
2	VF	Anode of photo-sensor
3	L_GND	Gnd for logic
4	VH	Dotline voltage
5	VH	Dotline voltage
6	DI	Data input
7	STB6	Sixth strobe
8	STB5	Fifth strobe
9	STB4	Fourth strobe
10	P_GND	Gnd for logic
11	P_GND	Gnd for dotline
12	P_GND	Gnd for dotline
13	P_GND	Gnd for dotline
14	TM	Thermistor first terminal (second in Gnd)
15	STB3	Third strobe
16	STB2	Second strobe
17	STB1	First strobe
18	Vdd	Logic voltage
19	CLK	Serial clock
20	\LAT	Latch
21	DO	Data output
22	VH	Dotline voltage
23	VH	Dotline voltage
24	SM4	Fourth phase of stepper motor
25	SM3	Third phase of stepper motor
26	SM2	Second phase of stepper motor
27	SM1	First phase of stepper motor

5. CAUTION 使用注意事项

Using attention

1.1 机芯上的TPH 与光电传感器是静电敏感器件，使用机芯时，请注意采取保护措施（比如说静电环，保证车间的潮湿度等），防止静电对机芯内部元器件产生损害。
1.1 Please notice, the ESD wrist ring and the humidity manufatures ETC, when using the printer,to protect the inner elctrontic parts of the printer from the damage of ESD,because the TPH of the Printer and photoelectric sensor are ESD Sensitive parts.

1.2 不要在橡胶部分上涂抹任何油或粘染其他异物，为了保护胶轴
1.2 For protecting plastic shaft,Don't smear any oil or others on the rubber parts

1.3 不要用手接触热敏头，当热敏头上粘染棕榈油时，会大大缩短热敏头的使用寿命。如果热敏头粘上任何油或异物时，请立即用棉签沾酒精清洗打印头与胶轴相交区域。此外， 请不要用硬物敲击热敏头。
1.3 Don't touch the TPH, TPH having the palm oil,will induce the usage of the printer.If any oil or others in the TPH,pls using an alcohol cotton stick clean the area between plastic shaft and printer head at once.PS,Don't strike the TPH.

1.4 由于该款机芯是易装纸结构。所以只要用力拉胶棍部分，就可取出胶棍。因此，如果发生卡纸时，太用力拉纸就会引起胶棍齿轮的滑落或损坏。请不要用力拉纸。应打开上盖重新装纸。
1.4 Due to the printer is easy-paper structure,you need pick up the rubber stick only push the rubber stick.So,if the paper jam,push harder will cause the rubber stick gearwheel damaged.so pls don't push the paper harder, pls do open the cover and re-fill the paper

1.5 如果连续打印时，机芯热敏头保护板的温度（用热敏电阻辐射热测量器检测）不能超过65℃， 因为机芯内部的IC 保护板及马达表面温度不能超过90℃，也是为了更好地保护马达线圈。
1.5 The temperature of the TPH protection must be below 65℃,if you print continously,Because the exterior of the temperature of the IC protection & motor can't not over 90℃to protect the motor thread ring.

1.6 请使用质量较好的热敏打印纸，因为 纸质的热敏感度对打印效果有很大影响，同时纸质粗糙的纸张对打印头磨损严重，会缩短打印头的寿命。
1. 6 Pls use the good quality paper,because the sensetive of the paper will infuence print effect,meanwhile,rough paper will incease the excessive wear to the printer head, and reduce the life of the printer.

6 ESC/POS PRINTING COMMAND SET

6.1 Set of Command

Type	Command	Name
Print Command	LF	Print and line feed
	HT	JMP to the next TAB position
	FF	Print the data in the buffer
	ESC FF	Print the data in the buffer
	ESC J	Print and Feed n dots paper
	ESC d	Print and Feed n lines
	ESC =	Toggle the printer online or offline
Line spacing Command	ESC 2	Select default line spacing
	ESC 3 n	Set line spacing
	ESC a n	Select justification
	GS L nL nH	Set the left blank margin with dots
	ESC B n	Set the left blank char number
Character Command	ESC ! n	Select print mode(s)
	GS ! n	Set or Cancle the double width and height
	ESC E n	Set or Cancle bold font
	ESC SP	Set the space between chars
	ESC SO	Turn double width on
	ESC DC4	Turn double width off
	ESC { n	Turn upside-down printing mode on/off
	GS B n	Turn inverting printing mode on/off
	ESC - n	Set the underline dots(0,1,2)
	ESC % n	Select/Cancel user-defined characters
	ESC &	Define user-defined characters
	ESC ?	Cancle user-defined characters
	ESC R n	Select and internation character set
	ESC t n	Select character code table
Bit Image Command	ESC *	Select bit-image mode
	GS *	Define downloaded bit image
	GS /	Print downloaded bit image
	GS v	Print the bitmap with width and height
	DC2 *	Print the bitmap
	DC2 V	Print MSB bitmap
	DC2 v	Print LSB bitmap
Init Command	ESC @	Initialize printer
Status Command	ESC v n	Transmit paper sensor status

	ESC u n	Transmit peripheral device status
	GS a n	Enable/Disable AutomaticStatus Back(ASB)
Bar Code Command	GS H	Select printing position of human readable characters
	GS h	Set bar code height
	GS x	Set bar code left position
	GS w	Set bar code width
	GS k	Print bar code
Board Para Command	ESC 7 n1 n2	Set printing para. Heat & break time, max heat dot
	DC2 # n	Set printing density.
	DC2 T	Printing test page

6.2 Command detail

TCB thermal printer control board use ESC/POS command set.
The printing command is descripted as followed format:

CMD		Function
Format	ASCII	List by ASCII characters
	Decimal	LIST BY DECIMAL CHARACTERS
	Hexadecimal	List by hexadecimal characters
Description	Command function description	
Example	Command use example	

6.2.1 Print Commands

LF		Print and line feed
Format	ASCII	LF
	Decimal	10
	Hexadecimal	0A
Description	LF prints the data in the print buffer and feeds one line. When the print buffer is empty, LF feeds one line.	

HT		Jump to the next TAB position
Format	ASCII	HT
	Decimal	09
	Hexadecimal	09
Description	TAB position is 8 chars position.	

FF	Print the data in buffer and locate to the next black mark

Format	ASCII	FF
	Decimal	12
	Hexadecimal	0c
Description	Print the data in the buffer. Locate to the black mark NOTE: Only board with black mark function support this command.	

ESC J n — Print and feed paper

Format	ASCII	ESC J n
	Decimal	27 74 n
	Hexadecimal	1B 4A n
Description	n = 0-255。 ESC J prints the data in the print buffer and feeds n dots. The command will not change the setting set by command ESC 2, ESC 3.	

ESC FF — Print the data in buffer and locate to the next black mark

Format	ASCII	ESC FF
	Decimal	27 12
	Hexadecimal	1b 0c
Description	Print the data in the buffer. Locate to the black mark NOTE: Only board with black mark function support this command.	

ESC d n — Print and feed n lines

Format	ASCII	ESC d n
	Decimal	27 100 n
	Hexadecimal	1B 64 n
Description	n = 0-255。 Print the data in the buffer and feed paper n lines. The lines height is defined by ESC 2,ESC 3.	

ESC = n — Set print online or offline

Format	ASCII	ESC = n
	Decimal	27 61 n
	Hexadecimal	1B 3d n
Description	n = 0,1 1: Online 0: Offline	

6.2.2 Line spacing setting command

ESC 2		Select default line spacing
Format	ASCII	ESC 2
	Decimal	27 50
	Hexadecimal	1B 32
Description	ESC 2 sets the line space to default value (32dots)	

ESC 3 n		Set line spacing
Format	ASCII	ESC 3 n
	Decimal	27 51 n
	Hexadecimal	1B 33 n
Description	n = 0-255 ESC 3 n sets the line spacing to n dots. The default value is 32	

ESC a n		Select align mode
Format	ASCII	ESC a n
	Decimal	27 97 n
	Hexadecimal	1B 61 n
Description	Default is 0 0 ≤ m ≤ 2 or 48 ≤ m ≤ 50 Align left: n=0,48 Aligh middle: n=1,49 Align right: n=2,50	

GS L nL nH		Set left space
Format	ASCII	GS L nL nH
	Decimal	29 76 nL nH
	Hexadecimal	1D 4c nL nH
Description	Set the left space with dots Left space is nL+nH*256,unit:0.125mm	

ESC $ nL nH		Set left space
Format	ASCII	ESC $ nL nH
	Decimal	27 36 nL nH
	Hexadecimal	1B 24 nL nH
Description	Set the left space with dots Left space is nL+nH*256,unit:0.125mm	

ESC B n		Set left blank char nums
Format	ASCII	ESC B n
	Decimal	27 66 n
	Hexadecimal	1B 42 n
Description	Default is 0	
	0 ≤ m ≤ 47	

6.2.3 Character command

ESC ! n		Select print mode
Format	ASCII	ESC ! n
	Decimal	27 33 n
	Hexadecimal	1B 21 n

Description

The default value is 0. This command is effective for all characters.

BIT0:

BIT1: 1: Reverse mode selected
0: Reverse mode not selected

BIT2: 1: Updown mode selected
2: Updown mode not selected

BIT3: 1:Emphasized mode selected
0:Emphasized mode not selected

BIT4: 1:Double Height mode selected
0:Double Height mode not selected

BIT5: 1:Double Width mode selected
0:Double Width mode not selected

BIT6: 1:Deleteline mode selected
0:Deleteline mode not selected

BIT7:

GS ! n		Set the font enlarge
Format	ASCII	GS ! n
	Decimal	29 33 n
	Hexadecimal	1D 21 n
Description	D3..0 0: height don't enlarge	
	1: height enlarge	
	D7..4 0: width don't enlarge	
	1: width enlarge	

ESC E n		Set and cancle bold font
Format	ASCII	ESC ! n

	Decimal	27 69 n
	Hexadecimal	1B 45 n
Description	D0: 0: normal 1: bold	

ESC SP n — Set and cancle bold font

Format	ASCII	ESC SP n
	Decimal	27 32 n
	Hexadecimal	1B 20 n
Description	D0: 0: normal 1: bold	

ESC SO — Select Double Width

Format	ASCII	ESC SO
	Decimal	27 14
	Hexadecimal	1B 0E
Description	Select Double Width mode To turn double width off, use LF or DC4 command.	

ESC DC4 — Disable Double Width

Format	ASCII	ESC DC4
	Decimal	27 20
	Hexadecimal	1B 14
Description	Disable Double Width mode	

ESC { n — Set/Cancel Character Updown

Format	ASCII	ESC { n
	Decimal	27 123 N
	Hexadecimal	1B 7B n
Description	n=1:Enable Updown mode n=0:Disable Updown Mode Default value is 0	

GS B n — Turn white/black reverse printing mode or

Format	ASCII	ESC B n
	Decimal	29 66 n
	Hexadecimal	1D 42 n
Description	n=1:Enable white/black reverse mode n=0:Disable white/black reverse mode Default value is 0	

ESC - n — Set the underline height

Format	ASCII	ESC – n

	Decimal	27 45 n
	Hexadecimal	1B 2D n
Description	n=0-2,the underline dots default: 0 —— no underline	

ESC % n — Enable/Disable User-defined Charac

Format	ASCII	ESC % n
	Decimal	27 37 n
	Hexadecimal	1B 25 n
Description	n=1:Enable User-defined character n=0:Disable User-defined character	

ESC & s n m w — Define User-defined characte

Format	ASCII	ESC & s n m w d1 d2 ... dx
	Decimal	27 38 s n w m d1 d2 ... dx
	Hexadecimal	1B 26 s n w m d1 d2 ... dx

Description

The command is used to define user-defined character.Max 64 user chars can be defined.

s= 3,32≤ n ≤ m < 127

s: Character height bytes, =3(24dots)

w: Character width 0～12(s=3)

n: User-defined character starting code

m: User-defined characters ending code

dx:data, x=s*w

s=3 dx format:

d1	d4	d7								
d2	d5	d8								
d3	d6	d9								d36

Dx	
	D7
	D6
	D5
	D4
	D3
	D2
	D1
	D0

ESC ? n — Disable user-defined character

Format	ASCII	ESC ? n
	Decimal	**27 37 N**
	Hexadecimal	1B 25 n

Description

ESC ? n disable user-defined characters, printer will use the interal character.

ESC R n — Select an internal character set

Format	ASCII	ESC R n
	Decimal	27 82 N
	Hexadecimal	1B 52 n

Description

Select an internal character set n as follows:

0:USA	5:Sweden	10:Denmark II
1:France	6:Italy	11:Spain II
2:Germany	7:Spain1	12:Latin America
3:U.K.	8:Japan	13:Korea
4:Denmark 1	9:Norway	

ESC t n — Select character code table

Format	ASCII	ESC t n
	Decimal	27 116 N
	Hexadecimal	1B 74 n

Description

Select a page n from the character code table as follows::

0:437	1:850

6.2.4 Bit Image Command

ESC * m nL nH d1 d2...dk — Select bit-image mode

Format	ASCII	ESC * m nL nH d1 d2 ... dk
	Decimal	27 42 m nL nH d1 d2 ... dk
	Hexadecimal	1B 2A m nL nH d1 d2 ... dk

Description

Attention: The command may clear the user defined char.

This command selects a bit image mode using m for the number of dots specifed by (nL+nH*256)

m =0,1,32,33。

NL=0-255

nH=0-3

dx=0-255

k = nL+256*nH (m=0,1)

k = (nL+256*nH)*3 (m=32,33)

The modes selected by m are as follows:

0: 8dots single density, 102dpi

1: 8dots double density, 203dpi

31:24 dots single density,102dpi

32:24 dots double density,203dpi

The bit image format is the same as user-defined character.

GS / n — Print downloaded bit image

Format
ASCII GS / n
Decimal 29 47 n
Hexadecimal 1D 2F n

Description

This command prints a downloaded bit image using the mode specified by n as specified in the chart. In standard mode, this command is effective only when there is data in the print buffer. This command is ignored if a downloaded bit image has not been defined.

n=0-3、48-51: Specify bit image mode

n	Pattern Mode	Vertical DPI	Horizontal DPI
0,48	Normal	203DPI	203DPI
1,49	Double width	203DPI	101DPI
2,50	Double height	101DPI	203DPI
3,51	Quadruple	101DPI	101DPI

GS * x y d1...dk — Define downloaded bit image

Format
ASCII GS * x y d1 ... dk
Decimal 29 42 x y d1 ... dk
Hexadecimal 1D 2A x y d1 ... dk

Description

This command defineds a downloaded bit image by using x*8 dots in the horizontal direction and y*8 dots in the vertical direction. Once a downloaded bit image has been define, it is avaiable until

- Another definition is made
- ESC & or ESC @ is executed
- The power is turned off
- The printer is reset

x=1～48(width), y＝1～255(height), x×y ＜ 1200, k=x×y×8

GS v 0 p wL wH hL hH — Print bitmap

Format
ASCII GS v 0 p wL wH hL hH d1 ... dk
Decimal 29 118 0 p wL wH hL hH d1 ... dk
Hexadecimal 1D 76 0 p wL wH hL hH d1 ... dk

Description

p: bitmap format。

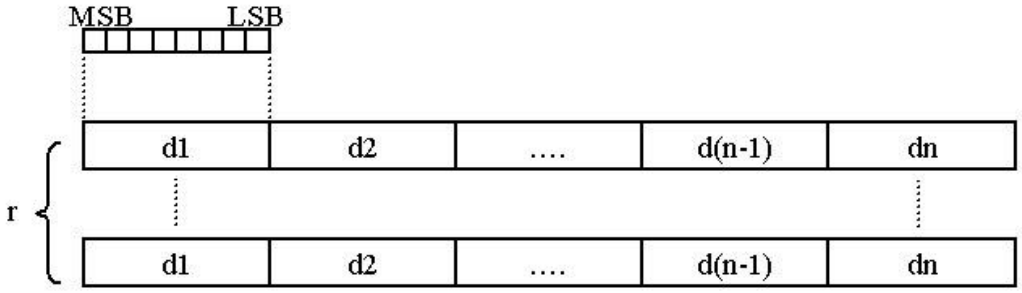
D0: 1: bitmap need double width
0: bitmap don't need double width
D1: 1: bitmap need double height
0: bitmap don't need double height

W=wL+wH*256 mean horital bytes

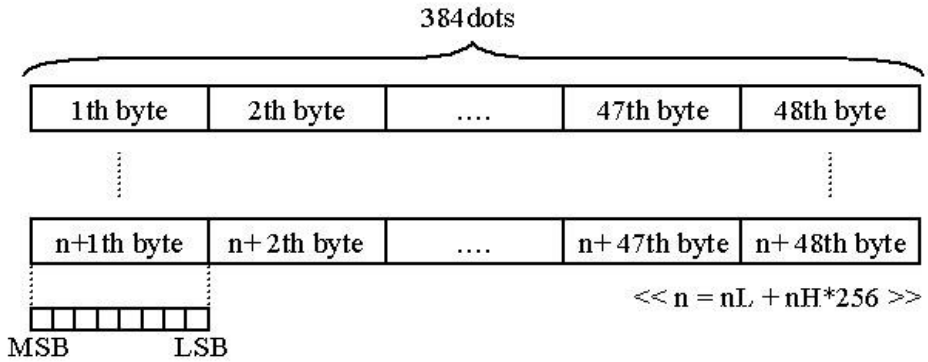
H=wL+wH*256 mean vertical dots.

Bitmap use MSB format, the MSB is printed at the left. And data sent first is printed at the left.

DC2 * r n [d1...dn]		位图打印
Format	ASCII	DC2 * r n [d1 ... dn]
	Decimal	18 42 r n [d1 ... dn]
	Hexadecimal	12 2A r n [d1 ... dn]
Description	Printing bitmap with width & height r: Bitmap height n: Bitmap width Bitmap format:	

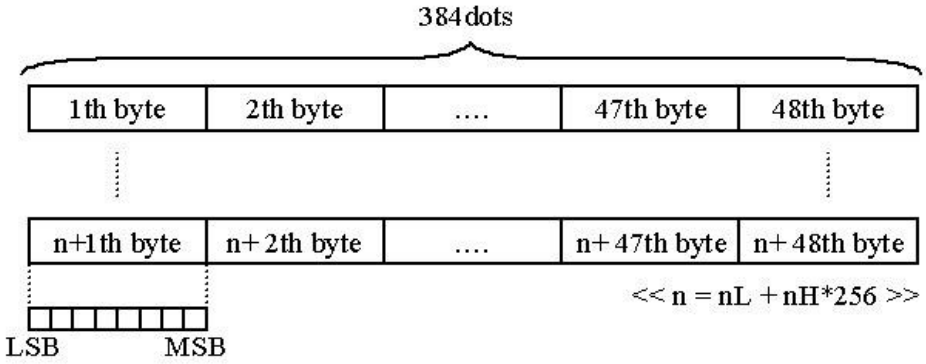


DC2 V nL nH [d1...dn]		Print MSB Bitmap
Format	ASCII	DC2 V nL nH [d1 ... d48]
	Decimal	18 86 nL nH [d1 ... d48]
	Hexadecimal	12 56 nL nH [d1 ... d48]
Description	This command use to print MSB format bitmap, The width of bitmap must the same as the printer mechanism Bitmap height: nL+nH*256 Bitmap format:	



DC2 v nL nH [d1...dn]		Print LSB Bitmap
Format	ASCII	DC2 v nL nH [d1 ... d48]
	Decimal	18 118 nL nH [d1 ... d48]
	Hexadecimal	12 76 nL nH [d1 ... d48]

Description	This command use to print LSB format bitmap, The width of bitmap must the same as the printer mechanism Bitmap height: nL+nH*256 Bitmap format:



6.2.5 Key control command

ESC c 5 n		Enable/Disable the panel key
Format	ASCII	ESC c 5 n
	Decimal	27 99 53 n
	Hexadecimal	1B 63 35 n
Description	This command has no effection. n=1, Disable the panel key n=0, Enable the panel key(Default)	

6.2.6 Init command

ESC @		Initialize the printer
Format	ASCII	ESC @
	Decimal	27 64
	Hexadecimal	1B 40
Description	Initializes the printer. ➢ The print buffer is cleared. ➢ Reset the param to default value. ➢ return to standard mode ➢ Delete user-defined characters	

6.2.7 Status Command

ESC v		Transmit paper sensor status
Format	ASCII	ESC v n
	Decimal	27 118 N
	Hexadecimal	1B 76 n

Description:Transmit board status to host

Return:

P<Paper>V<Voltage>T<Degree>

Example: P1V72T30 Mean:Paper Ready,Current voltage 7.2V,Printer degree:30

GS a n		Enable/Disable Automatic Status Back(ASB)
Format	ASCII	GS a n
	Decimal	29 97 n
	Hexadecimal	1D 61 n

Description n definition as follows:

Bit	Function	Value	
		0	1
0	0		
1			
2	Disable/Enable ASB	Disable	Enable
3-4			
5	Disable/Enable RTS as flow control	Disable	Enable
6-7			

When ASB is enabled, the printer will send the changed status to PC automatically.

ESC u n		Transmit peripheral devices status
Format	ASCII	ESC u n
	Decimal	27 117
	Hexadecimal	1B 75

Description This command is not supported.

Return status bytes definetion:

bit0: Drawer status.

bit4: 0

Always return 0 back.

6.2.8 Bar Code Command

GS H n		Select printing position of human readable characters
Format	ASCII	GS H N
	Decimal	29 72 n
	Hexadecimal	1D 48 n
Description	0 ≤ n ≤3 48 ≤ n ≤51 This command selects the printing position for human readable characters when printing a barcode. The default is n=0. Human readable characters are printed using the font specified by GS fn. Select the printing position as follows: n Printing Positioin 0,48: Not printed 1,49: Above the barcode 2,50: Below the barcode 3,51: Both above and below the barcode	

GS h n		Set bar code height
Format	ASCII	GS h n
	Decimal	29 104 n
	Hexadecimal	1D 68 n
Description	This command selects the height of a barcode. n specifies the number of dots in the vertical direction. The default value is 50 1 ≤ n ≤ 255	

GS x n		Set barcode printing left space
Format	ASCII	GS x n
	Decimal	29 120 n
	Hexadecimal	1D 78 n
Description	Set the barcode printing left space	

GS w n		Set bar code width
Format	ASCII	GS w n
	Decimal	29 119 N
	Hexadecimal	1D 77 n
Description	This command selects the horizontal size of a barcode. n = 2,3 The default value is 3	

GS k m d1 d2 ... dk NUL GS k m n d1 d2 ... dn			Print barcode symbology
Format 1	ASCII	GS k m d1 d2 ... dk NUL	
	Decimal	29 107 m d1 d2 ... dk 0	
	Hexadecimal	1D 6B m d1 d2 ... dk 00	
Format 2	ASCII	GS k m n d1 d2 ... dn	
	Decimal	29 107 m n d1 d2 ... dn	
	Hexadecimal	1D 6B m n d1 d2 ... dn	

DESCRIPTION **M: BARCODE TYPE**

FORMAT 1: 0 ⩽ M ⩽ 10

FORMAT 2: 65 ⩽ M ⩽ 75

N: BARCODE LENGTH

m	Bar code system	Number of characters	Remarks
0,65	UPC-A	11,12	48-57
1,66	UPC-E	11,12	48-57
2,67	EAN13	12,13	48-57
3,68	EAN8	7,8	48-57
4,69	CODE39	>1	32,36,37,43,45-57,65-90
5,70	I25	>1 even number	48-57
6,71	CODEBAR	>1	36,43,45-58,65-68
7,72	CODE93	>1	0-127
8,73	CODE128	>1	0-127
9,74	CODE11	>1	48-57
10,75	MSI	>1	48-57

6.2.9 Control Parameter Command

ESC 7 n1 n2			Setting Control Parameter Command
Format:	ASCII:	ESC 7 n1 n2 n3	
	Decimal:	27 55 n1 n2 n3	
	Hexadecimal:	1B 37 n1 n2 n3	

Description:	Set “max heating dots”,”heating time”, “heating interval” n1 = 0-255 Max printing dots, Unit(8dots), Default:7(64 dots) n2 = 3-255 Heating time, Unit(10us),Default:80(800us) n3 = 0-255 Heating interval,Unit(10us), Default:2(20us) The more max heting dots, the more peak current will cost whenprinting, the faster printing speed. The max heating dots is 8*(n1+1) The more heating time, the more density , but the slower printing speed. If heating time is too short, blank page may occur. The more heating interval, the more clear, but the slower printingspeed.

ESC 8 n1 Sleep parameter

Format:	ASCII: ESC 8 n1 Decimal: 27 56 n1 Hexadecimal: 1B 38 n1
Description:	Setting the time for control board to enter sleep mode. n1 = 0-255 The time waiting for sleep after printing finished, Unit(Second), Default:0(don’t sleep) When control board is in sleep mode, host must send one byte(0xff) to wake up control board. And waiting 50ms, then send printing command and data. **NOTE: The command is useful when the system is powered by battery.**

DC2 # n Set printing density

Format:	ASCII: DC2 # n Decimal: 18 35 n Hexadecimal: 12 23 n
Description:	D4..D0 of n is used to set the printing density Density is 50% + 5% * n(D4-D0) printing density D7..D5 of n is used to set the printing break time Break time is n(D7-D5)*250us

DC2 T Printing test page

Format:	ASCII: DC2 T Decimal: 18 84 Hexadecimal: 12 54
Description:	Printing the test page

APPENDIXA：CODE PAGE

PC437

	0	0	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
9	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	¢	£	¥	₧	ƒ
A	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	»
B	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
C	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	█	▄	▌	▐	▀
E	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	ⁿ	²	■	

PC850

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
9	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	ƒ
A	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
B	░	▒	▓	│	┤	Á	Â	À	©	╣	║	╗	╝	¢	¥	┐
C	└	┴	┬	├	─	┼	ã	Ã	╚	╔	╩	╦	╠	═	╬	¤
D	ð	Ð	Ê	Ë	È	ı	Í	Î	Ï	┘	┌	█	▄	¦	Ì	▀
E	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý	¯	´
F	-	±	‗	¾	¶	§	÷	¸	°	¨	·	¹	³	²	■	