

Features

- Smart appearance
- Easy paper loading
- Low noise thermal printing
- Different interfaces optional
- Front panel make paper replacement easily
- Easily embedded to any kinds of instruments and meters
- Printer control panel built-in GB18030 Chinese character, thoroughly remove the uncommon words of anguish. and it can be updated with different language fonts
- can support Max.22MM (diameter) paper roll, around 16-20 meter .
- Optional serial interface (RS-232C, TTL)
- Rich of graphics / curves / characters print function
- Support 5V-9V wide power voltage , or 12V

APPLICATION

- Taxi meter print proposal
- Recording Meter print proposal
- Self-service Print proposal
- Ticket Machine print proposal
- Medical instrument print proposal
- Weight Machine Print proposal
- Electric Instrument Print proposal
- Test Instrument Print proposal

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

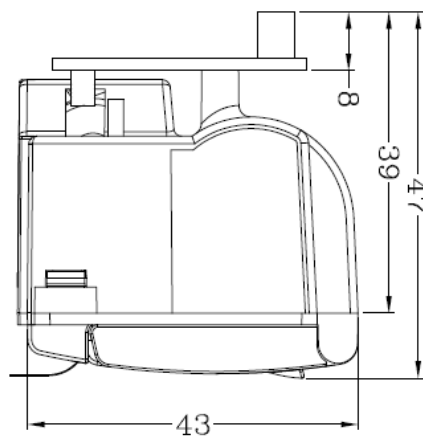
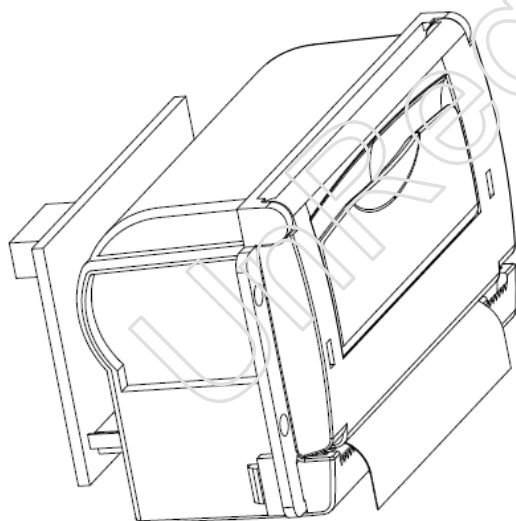


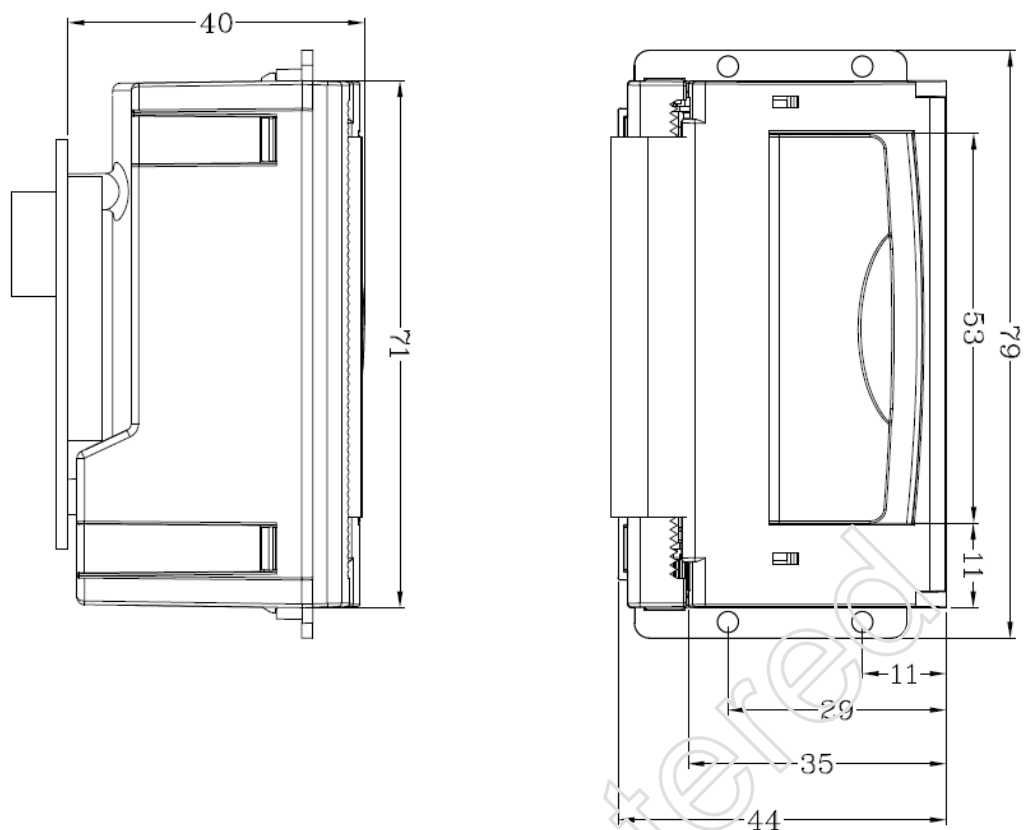
Outline Dimension (WxDxH) : 79x44x47mm (including the controller board)

Installation Port Size: 71x43mm,

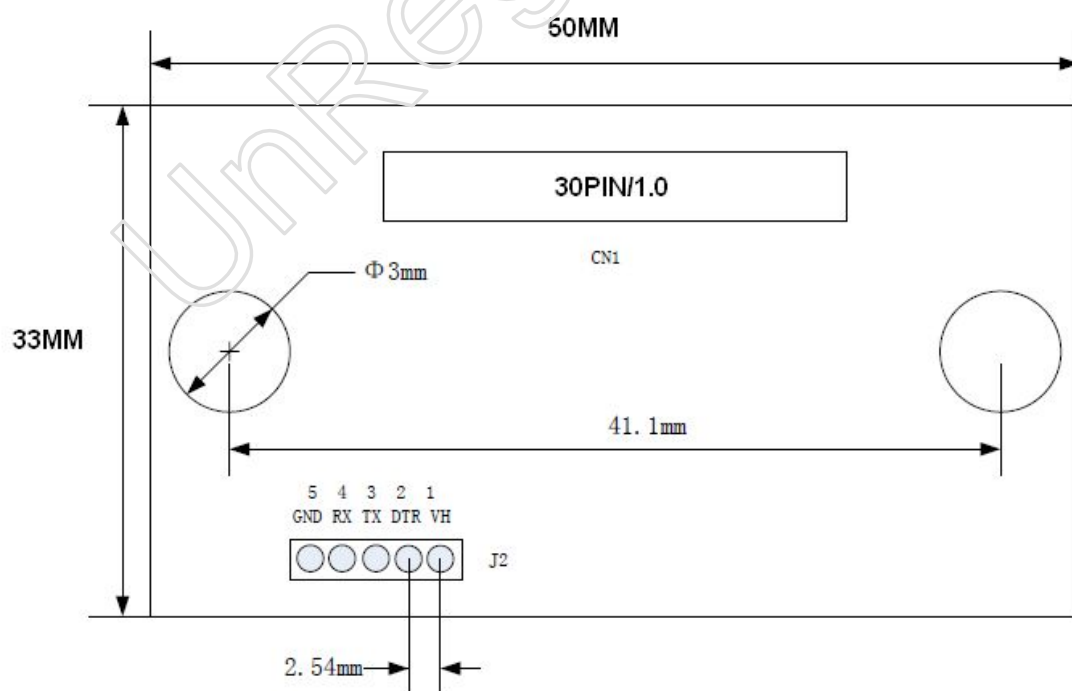
Insert Depth: 39mm

the Max diameter of paper roll :22MM





3.1.1 控制板尺寸 controller board size



3.2 规格 specifications

Print	Printing Method	Thermal Dot Line
	Printing Speed	50-85mm/s
	Resolution	8 dots/mm, 384 dots/line
	Effective Printing Width	48mm
Character	Character Set	ASCII,GB2312-80(Chinese)
	Print Font	ANK:9X17,12X24, Chinese:24x24
	Paper Type	Thermal paper
Paper Spec	Paper Width	57.5± 0.5mm
	Paper Thickness	0.06 to 0.07mm
	Roll Core Inner Diameter	13mm(min.)
	Paper Roll Diameter	Max: 22mm
Reliability	MCBF	5 million lines
Interface		RS-232/TTL/USB
Insert Depth		39 mm
Power Supply (Adapter)		DC5V-9V or 12VDC
Physical	Outline Dimension (WxDxH)	79x44x47 mm(with controller board)
	Installation Port Size	71x43mm,
	Color	Black
Environment	Operating Temp	5°C ~ 50°C
	Operating Humidity	10% ~ 80%
	Storage Temp	-20°C ~ 60°C
	Storage Humidity	10% ~ 90%

3.3HOW TO USE

3.3.1Printing test

After power up, connect J1 and disconnect, one test page will be printed.

Note: The name of short-circuit point is different from each board.

3.3.2Panel LED Indicators

There is one LED on board to indicate the status of the board. The indicator is as follows:

Blink one times:	Work well
Blink two times:	No printer is detected
Blink three times:	No paper is detected
Blink five times:	Printer mechanism is overheat.
Blink ten times:	No Chinese word stock IC is detected

4 接口定义 INTERFACE DEFINE

4.1 CONNECTOR

Power supply connector and Serial communication connector (J2)

Power supply (V) is from 3.8v to 8.5v DC.

You can choose use RS232 or RS232 with TTL level before leaving factory. RS232 with TTL level can get less cost.

PIN NUMBER	SIGNAL NAME
1	VH
2	RTS/DTR (printer output)
3	Transmit data (TXD, printer output)
4	Receive data (RXD, printer input)
5	GND

4.2 Define of the FPC cable for the printer mechanism (FPC 30PINs)

1	PHK	Cathode for photo interruptor
2	VSEN	Paper sensor power
3	PHE	Emitter for photo interruptor
4	MT/B	Step motor excitation signal
5	MT/B ⁻	Step motor excitation signal
6	MT/A	Step motor excitation signal
7	MT/A ⁻	Step motor excitation signal
8	VH	Head drive power
9	VH	Head drive power
10	DI	Data in
11	CLK	Asynchronous clock for communication
12	GND	Ground power supply for thermal head
13	GND	Ground power supply for thermal head
14	STB6	Thermal head energizing control signal
15	STB5	Thermal head energizing control signal
16	STB4	Thermal head energizing control signal
17	VDD	Logic power
18	TM	Thermally sensitive resistor input terminal 1
19	TM	Thermally sensitive resistor input terminal 2
20	STB3	Thermal head energizing control signal
21	STB2	Thermal head energizing control signal
22	STB1	Thermal head energizing control signal
23	GND	Ground power supply for thermal head
24	GND	Ground power supply for thermal head
25	/LAT	Data latch
26	DO	Data out
27	VH	Power supply for thermal head
28	VH	Power supply for thermal head
29	N.C(101)SW1(103)	Platen release switch
30	N.C(101)SW2(103)	Platen release switch

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 manufactures ETC, when using the printer, to protect the inner electronic 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沾染其他异物，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，当热敏头上沾染棕榈油时，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 influence print effect,meanwhile,rough paper will incese 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 Cancele the double width and height
	ESC E n	Set or Cancele bold font
	ESC SP	Set the space between chars
	ESC S0	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 ?	Cancele 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 described 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.
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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.
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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.
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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
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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)
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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 $0 \leq m \leq 2$ or $48 \leq m \leq 50$ Align left: n=0, 48 Align 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 $0 \leq m \leq 47$	

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 cancel 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 cancel bold font

Format

ASCII ESC SP n

Decimal 27 32 n

Hexadecimal 1B 20 n

Description D0: 0: normal

1: bold

ESC S0

Select Double Width

Format

ASCII ESC S0

	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 on		
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 Character		
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 character		

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, $32 \leq n \leq m < 127$

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

w: Character width 0~12(s=3)

n: User-defined character starting

m: User-defined characters ending code

dx:data, $x=s*w$

s=3

d1	d4	d7									
d2	d5	d8									
d3	d6	d9									d36

dx

Dx	D7
	D6
	D5
	D4
	D3
	D2
	D1
	D0

code

format:

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 internal 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
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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 specified 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 defines 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), $x \times y < 1200$, $k = x \times y / 8$

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

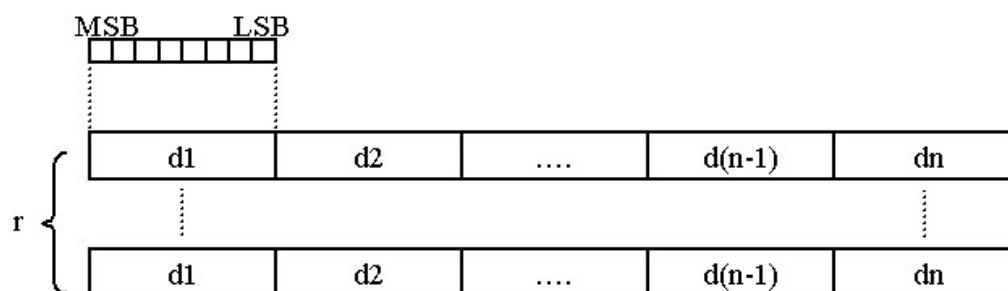
Format ASCII DC2 * r n [d1 ... dn]
 Decimal 18 42 r n [d1 ... dn]
 Hexadecimal 12 2A r n [d1 ... dn]

Description Printing bitmap with width & height

r: Bitmap height

n: Bitmap width

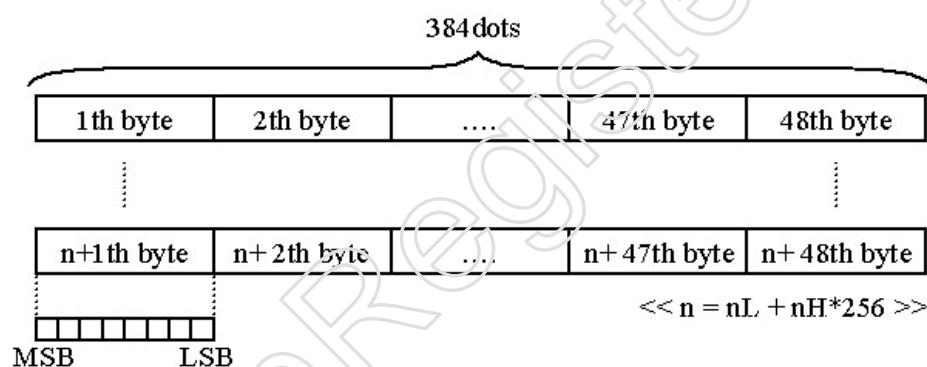
Bitmap format:



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]

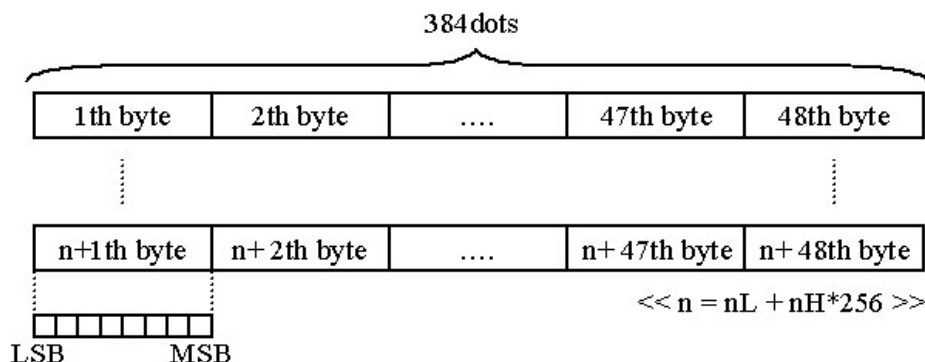
Description This command use to print MSB format bitmap,
 The width of bitmap must the same as the printer mechanism
 Bitmap height: $nL+nH*256$
 Bitmap format:



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 effect. 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. <ul style="list-style-type: none"> ➤ 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 definition:

bit0: Drawer status.

bit4: 0

Always return 0 back.

6.2.8 Bar Code Command

GS H n Select printing position of human readable character

s

Format ASCII GS H N

Decimal 29 72 n

Hexadecimal 1D 48 n

Description	$0 \leq n \leq 3$ $48 \leq n \leq 51$ 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 Position 0, 48: Not printed 1, 49: Above the barcode 2, 50: Below the barcode 3, 51: Both above and below the barcode
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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 $1 \leq n \leq 255$
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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
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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
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GS k m d1 d2 ... dk NUL	Print barcode symbology
GS k m n d1 d2 ... dn	

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: $0 \leq M \leq 10$ FORMAT 2: $65 \leq M \leq 75$

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 heating dots, the more peak current will cost when printing, 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 printing speed.

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 $n(D7-D5) * 250\mu s$

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	ù	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	ç	£	¥	£	f
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	ù	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	×	f
A	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	;	«	»
B	▒	▒	▒		└	┘	Á	Â	Ã	©	└		┐	ç	¥	└
C	└	└	└	└	└	└	â	ã	└	┐	└	└	└	└	└	○
D	ð	Ð	Ê	Ë	È	Ì	Í	Î	Ï	└	┐	▀	▀		Ï	■
E	Ó	ß	Ô	Õ	Ö	Ø	μ	þ	Ë	Ú	Û	Ü	Ý	Ý	—	'
F	-	±	=	¾	¶	§	÷	,	°	“	•	¹	³	²	■	