

HS-EC58 User Manual



Date	Version	Note
Dec.3,2015	V1.0	Corresponding version number : T8USC_151123 V1.0

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1.Introduction:

① HS-EC58 Unit

HS-EC58 Unit is a section of delicate and handy printer, conform to bill printing in many industries. Low power consumption, high quality, stable performance, Motor and thermal print head after numerous tests to achieve high standards, this kind of thermal printer has been favored by the businessmen.

List of supported operating systems:

WINDOWS XP

WINDOWS 7 32/64

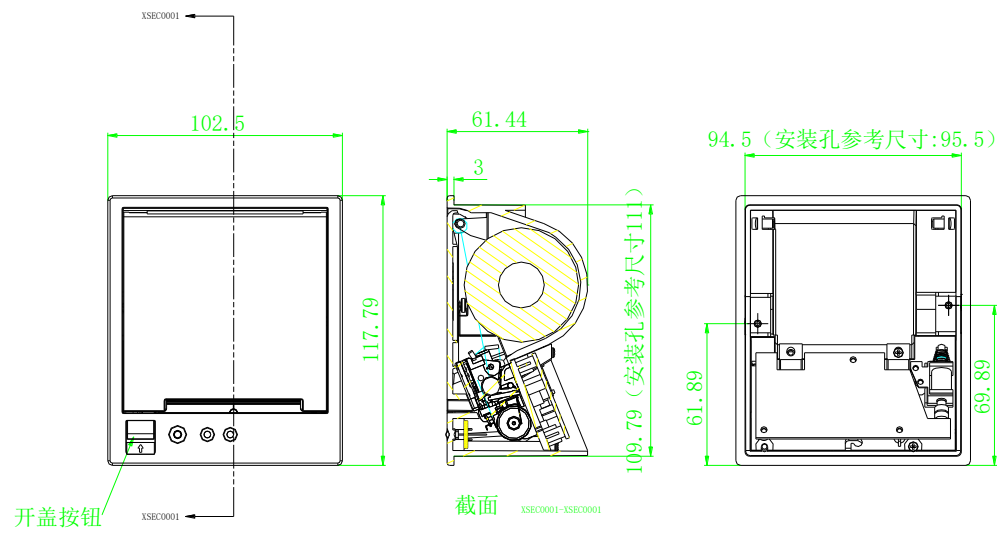
WINDOWS 8

UBUNTU 12.04 32/64

UBUNTU 14.04 32/64

② Main features:

- 1) Delicate and beautiful.
- 2) Low noise, high quality printing.
- 3) Support USB and serial connection.
- 4) Support cash box control interface.
- 5) Convenient and quick paper loading.
- 6) Easy to use and maintain.
- 7) Support continuous paper printing.
- 8) Compatible with different width of paper.
- 9) Printer with auto cutter



2.Pin Definition



2.1 J1 USB Pin Definition

Pin number	Signal name	Illustration
1	VUSB	+5V
2	D-	Negative data line
3	D+	Data line
4	GND	GND

2.2 J3 Power Pin Definition

Pin number	Signal name
1	VIN(+12V)
2	GND

2.3 J4Pin Definition

Pin number	Signal name	Function
1	DTR (printer output)	output
2	TX(Tx, printer output)	output
3	RX(Rx, printer input)	input
4	GND	GND

2.4 J5 Pin box/Interface definition

1) Pin definition

Pin number	Signal name
1	VDR (contact to drawer port RJ-11 6P6C pin4)
2	DRAWER(contact to drawer port RJ-11 6P6Cpin2/5)



Cashbox interface

2) The box type 6P6C connector socket with RJ-11 interface

3 Technical specifications

Printing Method	Thermal line printer
Paper width	58mm
Effective Print Width	48mm
Resolution	203DPI
Points per line	384dot
Print Speed	50mm/s

Printing content	GBK Chinese character library, ASCII character, One-dimensional bar code, Support different density map and download bitmap print. Can be extended to 2D bar code.
Character Set	9X17(ASCII),24x24(chinese)

4 Instruction list

LF	Printing and paper feed	Printing and paper feed instructions
CR	Enter	
ESC J	Printing and paper feed n dot	
ESC d	Printing and paper feed n line	
ESC 3	Set line spacing n dot	Print settings
ESC 2	Set line spacing to default	
ESC \$	Set print position	
GS L nL nH	Set left blank	
ESC !	Set character printing	
ESC M n	Select font	
GS ! n	Set character size	
GS B n	Set, remove white print	
ESC - n	Set, remove underline	
ESC V n	Set, release 90 degree rotary printing	
ESC a	Print alignment	
FS &	Set Chinese mod	
FS .	Cancel Chinese mode	
ESC % n	Select the custom character set	
ESC &	User defined character set	
ESC ? n	Cancel user defined character	
ESC R n	International character set	
ESC t n	Select character code page	
ESC *	Vertical data filling	Graphic print instruction
GS v 0	Picture level model data printing	
GS *	Define a bitmap	
GS / m	Print bitmap	
FS q	Definition NV bitmap	
FS p n m	Print NV bitmap	
HT	Horizontal tabulation	Tab command
ESC D	Set tab position	
GS H	Set one dimensional bar code readable character (HRI) Printing position	One dimensional bar code print instruction
GS h	Set bar height	
GS w	Set bar width	
GS k	Print one-dimensional bar code	

GS (QR code	QR code printing instruction
GS (k pL pH cn fn n	Set up QR Module type	
GS (k pL pH cn fn n	Set up QR Error correction level error	
GS(k pL pH cn fn m d1...dk	Storage QR data to QR Code buffer	
GS(k pL pH cn fn m	Print QR code	
GS(k pL pH cn fn m	Set up QR Graphic information	
GS r n	Transfer status	Status command
DLE EOT n	Real-time transfer state	
DLE ENQ n	Real time printer request	
GS a n	Allow prohibit automatic state reply (ASB)	
ESC @	Initialization printer	Other instructions
DC2 T	Print page self testing	
ESC 7	Set up Print density	
ESC p m t1 t2	Produce cashbox pulse	

5 Detailed instructions

① Printing and paper feed instruction

Printing and paper feed

Instruction name	Printing and paper feed
Instruction code	ASCII : LF Decimal system : 10 Hexadecimal: 0A
Function description	Print the contents of the cache, After that according to the current line spacing setting feed one line paper, and adjust the print position to the next line start position.
Parameter range	not have
Default value	not have
Support model	All models

Matters needing attention	not have
Use example	not have

Enter

Instruction name	Enter
Instruction code	ASCII : CR Decimal system : 13 Hexadecimal : 0D
Function description	When the print buffer is not empty, the same with LF, otherwise no effect.
Parameter range	not have
Default value	not have
Support model	All models
Matters needing attention	not have
Use example	not have

Printing and paper feed n dot

Instruction name	Printing and paper feed n dot
Instruction code	ASCII : ESC J n Decimal system : 27 74 n Hexadecimal : 1B 4A n
Function description	Print the contents of the cache and paper feed n dot
Parameter range	$0 \leq n \leq 255$
Default value	not have
Support model	All models
Matters needing attention	When the print buffer is empty, only paper feed n dot. After the execution of this directive, adjust the print position to the next line start position.
Use example	1b 40 30 31 32 1b 4a 10

Printing and paper feed n line

Instruction name	Printing and paper feed n line
Instruction	ASCII : ESC d n

code	Decimal system : 27 100 n Hexadecimal : 1B 64 n
Function description	Print the contents of the cache and paper feed n line
Parameter range	$0 \leq n \leq 255$
Default value	not have
Support model	All models
Matters needing attention	This command sets the print start position as the starting point of the line.
Use example	1b 40 30 31 32 1b 64 01

②Print settings instructions.

Set line spacing n dot.

Instruction name	Printing and paper feed n dot
Instruction code	ASCII : ESC 3 n Decimal system : 27 51 n Hexadecimal: 1B 33 n
Function description	Set line spacing n dot.
Parameter range	$0 \leq n \leq 255$
Default value	n = 33
Support mode	All models
Matters needing attention	<p>The line spacing is shown as follows:</p> <p>If the set line spacing is less than the maximum character height in a row, the row spacing is equal to the maximum character height.</p> <p>If ESC 2, ESC @, printer reset, printer power off, line spacing restored to default.</p>
Use example	1b 40 1b 33 30 30 31 32 0d 0a 30 31 32 0d 0a 1b 32 30 31 32 0d 0a 30 31 32 0d 0a

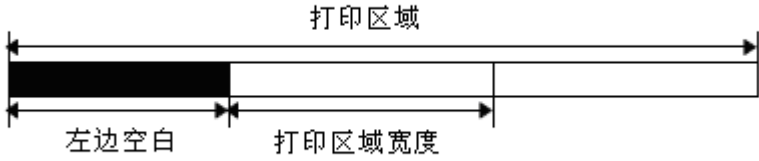
Set line spacing to default

Instruction name	Set line spacing to default
Instruction code	ASCII : ESC 2 Decimal system : 27 50 Hexadecimal : 1B 32
Function description	Set the line spacing to the default 33 dot
Parameter range	not have
Default value	not have
Support model	All models
Matters needing attention	For a detailed look at the ESC 3 line distance instruction. If the set line spacing is less than the maximum character height in a row, the row spacing is equal to the maximum character height. You can use ESC 3 custom line spacing.
Use example	not have

Set print position

Instruction name	Set print position
Instruction code	ASCII : ESC \$ nL nH Decimal system : 27 36 nL nH Hexadecimal : 1B 24 nL nH
Function description	Adjust the print position to the starting position of the print (nL + nH * 256)
Parameter range	$0 \leq nL \leq 255$, $0 \leq nH \leq 255$
Default value	not have
Support mode	All models
Matters needing attention	This instruction is only on the line, after the print position is reset to the print start position. Move beyond print range to next line print.
Use example	1b 40 1b 24 08 00 30 31 32 0d 0a 30 31 32 0d 0a

Set left blank

Instruction name	Set print position
Instruction code	ASCII : GS L nL nH Decimal system : 29 76 nL nH Hexadecimal : 1D 4C nL nH
Function description	Set left blank (nL + nH × 256) dot
Parameter range	$0 \leq nL \leq 255$, $0 \leq nH \leq 255$
Default value	not have
Support mode	All models
Matters needing attention	<p>This command is valid only at the start of a row. The following illustration:</p>  <p>If the setting is out of print range, use the maximum value of the printable unit.</p>
Use example	1b 40 1d 4c 08 00 30 31 32 0d 0a 30 31 32 0d 0a

Set horizontal and vertical movement units

Instruction name	Set horizontal and vertical movement units
Instruction code	ASCII : GS P x y Decimal system : 29 80 x y Hexadecimal: 1D 50 x y
Function description	<ul style="list-style-type: none"> The lateral movement units are set to 25.4/ x mm (1/ x inch) longitudinal moving units to be set to 25.4/ y mm (1/ y) When x and y are 0, X and y are set to default values.
Parameter range	$0 \leq x \leq 255$, $0 \leq y \leq 255$

Default value	x = 200, y = 380, At this point a moving unit is a print point. The transverse distance is about 1/8mm, and the vertical distance is about 1/15mm.
Support mode	80XXX
Matters needing attention	<ul style="list-style-type: none"> • Mobile unit standard mode can be set, page mode can not be set. • Perpendicular to the feed direction transverse to longitudinal feed direction. • In standard mode, the following commands are either X or Y, even if the character is rotated (inverted or rotated 90 degrees) <ul style="list-style-type: none"> ①Command with X: ESC SP, ESC \$, ESC \, FS S, GS L, GS W ②Command with Y: ESC 3, ESC J, GS V • Under the age mode, use X or Y according to the regional direction and print start position. <ul style="list-style-type: none"> ①When the print start position is set to the upper left corner of the ESC T command (from the left to the right) or the lower right corner (from right to left): <ul style="list-style-type: none"> Command with X: ESC SP, ESC \$, ESC W, ESC \, FS S Command with Y: ESC 3, ESC J, ESC W, GS \$, GS \, GS V ②When the print start position is set up in the upper right corner of the ESC T command (from the top to bottom) or in the lower left corner (print direction from bottom to top): <ul style="list-style-type: none"> Command with X: ESC 3, ESC J, ESC W, GS \$, GS \ Command with Y: ESC SP, ESC \$, ESC W, ESC \, FS S, GS V • This command does not affect other settings that were previously set. • The smallest unit of movement is the result of the combined action of the command and other commands. • One inch equals 25.4mm.
Use example	<pre>1d 50 c8 c8 1B 4C 1B 57 30 00 00 00 78 00 30 00 1B 33 18 1B 57 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 30 31 32 0C</pre>

Select font

Instruction name	Select font
Instruction code	ASCII : ESC M n Decimal system : 27 77 n Hexadecimal: 1b 4d n

Function description	Select character font	
	n	Function
	0, 48	Select font A (12×24) 。
	1, 49	Select font B (9×24) 。
	2, 50	Select font C (9×17)
	3, 51	Select font D (8×16)
	4, 52	Select font E (16×18)
Parameter range	n = 0, 1, 2, 3, 4, 48, 49, 50, 51, 52	
Default value	n = 0	
Support mode	Part model	
Matters needing attention	<ul style="list-style-type: none"> • ESC ! You can also select the font type, but the settings you have received from the last command are valid. 	
Use example	1b 40 1b 4d 00 30 31 32 0d 0a 1b 4d 01 30 31 32 0d 0a 1b 4d 02 30 31 32 0d 0a 1b 4d 03 30 31 32 0d 0a 1b 4d 04 30 31 32 0d 0a	

Set character printing

Instruction name	Set character printing																		
Instruction code	ASCII : ESC ! n Decimal system : 27 33 n Hexadecimal : 1B 21 n																		
Function description	Set character printing (Font、reverse type、invert、bold、double-height、double width、and underline) , Bit of parameter n Defined as follows: <table><tr><th>Bit</th><th>Function</th><th>Val</th></tr><tr><th>0</th><th>1</th><th></th></tr><tr><td>0</td><td>Word Model</td><td>Normal Small character</td></tr><tr><td>1</td><td>Undefinition</td><td></td></tr><tr><td>2</td><td>Undefinition</td><td></td></tr><tr><td>3</td><td>Wide Volume</td><td>Cancel Set</td></tr></table>	Bit	Function	Val	0	1		0	Word Model	Normal Small character	1	Undefinition		2	Undefinition		3	Wide Volume	Cancel Set
Bit	Function	Val																	
0	1																		
0	Word Model	Normal Small character																	
1	Undefinition																		
2	Undefinition																		
3	Wide Volume	Cancel Set																	

	4 Double Height Cancel Set 5 Double Wide Cancel Set 6 Undefined 7 Underline Cancel Set
Parameter range	not have
Default value	n = 0
Support mode	All models
Matters needing attention	This instruction is valid for both Chinese and foreign fonts When ESC @, printer reset, power down, this instruction is set to fail.
Use example	1B 40 1B 21 01 30 31 32 0D 0A 1B 40 1B 21 02 30 31 32 0D 0A 1B 40 1B 21 04 30 31 32 0D 0A 1B 40 1B 21 08 30 31 32 0D 0A 1B 40 1B 21 10 30 31 32 0D 0A 1B 40 1B 21 20 30 31 32 0D 0A 1B 40 1B 21 40 30 31 32 0D 0A 1B 40 1B 21 80 30 31 32 0D 0A

Set character size

Instruction name	Set character size																	
Instruction code	ASCII : GS ! n Decimal system : 29 33 n Hexadecimal : 1d 21 n																	
Function description	Set character size is 1-8 times wide, 1-8 times higher. Defined as follows: Set the character height 4 to 7 bits with a height of between 0 and 3 bits.																	
	Table 1 Character width setting			Table 2 Character height setting														
	<table><tr><th>Hexadecimal</th><th>Decimal system</th><th>Width</th></tr><tr><td>00</td><td>0</td><td>1 (Normal</td></tr></table>			Hexadecimal	Decimal system	Width	00	0	1 (Normal	<table><tr><th>Hexadecimal</th><th>Decimal system</th><th>Height</th></tr><tr><td>00</td><td>0</td><td>1 (Normal</td></tr></table>			Hexadecimal	Decimal system	Height	00	0	1 (Normal
	Hexadecimal	Decimal system	Width															
00	0	1 (Normal																
Hexadecimal	Decimal system	Height																
00	0	1 (Normal																

))
	10	16	2 (Double width)		01	1	2 (Double height)
	20	32	3		02	2	3
	30	48	4		03	3	4
	40	64	5		04	4	5
	50	80	6		05	5	6
	60	96	7		06	6	7
	70	112	8		07	7	8
Parameter range	not have						
Default value	n = 0						
Support mode	All models						
Matters needing attention	<p>This directive is valid for both Chinese and foreign fonts except HRI characters.</p> <p>When ESC @, printer reset, power down, this instruction is set to fail.</p>						
Use example	1b 40 1d 21 11 30 31 32 0d 0a 30 31 32 0d 0a						

Set, remove white print

Instruction name	Set, remove white print
Instruction code	ASCII : GS B n Decimal system : 29 66 n Hexadecimal : 1d 42 n
Function description	Set or release the white print mode. When the least significant bit N 0, inverse mode is closed. When the least significant bit n 1, open the inverse mode.
Parameter range	not have
Default value	n = 0
Support mode	All models
Matters needing attention	<p>Only the lowest bit of n is valid</p> <p>This command is valid for both built-in and user-defined characters.</p> <p>When the inverse mode is open, it is blank on the ESC set SP is also effective.</p>

	<p>This command does not affect bitmap、user defined bitmap、bar code、HRI character、and the Space skipped by HT, ESC \$。</p> <p>This command does not affect line spacing.</p> <p>Inverse mode prior to underline mode. When setting the visual mode, even if the open mode is also prohibited the underscore (but not cancel).</p> <p>When ESC @, printer reset, power down, this instruction is set to fail.</p>
Use example	<pre>1b 40 1d 42 01 30 31 32 0d 0a 30 31 32 0d 0a</pre>

Set, remove underline

Instruction name	Set, remove underline								
Instruction code	<p>ASCII : ESC - n</p> <p>Decimal system : 27 45 n</p> <p>Hexadecimal: 1B 2D n</p>								
Function description	<p>Based on the following n values, set / remove the underline mode:</p> <table border="1"> <thead> <tr> <th>n</th><th>Function</th></tr> </thead> <tbody> <tr> <td>0, 48</td><td>Remove the underline mode</td></tr> <tr> <td>1, 49</td><td>Set the underline mode (1 Point rough)</td></tr> <tr> <td>2, 50</td><td>Set the underline mode(2 Point rough)</td></tr> </tbody> </table>	n	Function	0, 48	Remove the underline mode	1, 49	Set the underline mode (1 Point rough)	2, 50	Set the underline mode(2 Point rough)
n	Function								
0, 48	Remove the underline mode								
1, 49	Set the underline mode (1 Point rough)								
2, 50	Set the underline mode(2 Point rough)								
Parameter range	$0 \leq n \leq 2, 48 \leq n \leq 50$								
Default value	$n = 0$								
Support mode	All models								
Matters needing attention	<p>The printer can underline all characters (including the right side of the character), except for the blank set by the HT.</p> <p>The printer can give clockwise 90 degrees of the characters and the reverse character print underlined.</p> <p>When the n value is set to 0 or 48, the underline mode is removed, the following data is not printed, And the roughness of the underline that is set before lifting the underline mode does not change.</p> <p>The default underline is 1.</p> <p>Changing the character size does not affect the coarseness of the current underline.</p> <p>Use ESC, you can also set or remove the underline mode, but note that the last command is valid.</p>								
Use example	1b 40 1b 2d 01								

	30 31 32 0d 0a
	1b 40 1b 2d 02
	30 31 32 0d 0a
	1b 40 1b 2d 00
	30 31 32 0d 0a

Set, release 90 degree rotary printing

Instruction name	Set, release 90 degree rotary printing
Instruction code	ASCII : ESC V n Decimal system : 27 86 n Hexadecimal: 1B 56 n
Function description	Set, release 90 degree rotary printing. When n is equal to 0 or 48, lift the 90 degree rotary printing. When the n is equal to 1 or 49, set the 90 degree rotary printing.
Parameter range	$0 \leq n \leq 1$, $48 \leq n \leq 49$
Default value	n = 0
Support mode	All models
Matters needing attention	When the underline mode is set, the printer does not underline the character rotated 90 degrees clockwise In the clockwise 90 degree rotation mode, double height and width is commanded that the direction enlarged character should be opposite to the command from the double height and width under the general mode. When ESC @, printer reset, power down, this instruction is set to fail.
Use example	1b 40 1b 56 01 30 31 32 0d 0a 30 31 32 0d 0a

Set print alignment mode

Instruction name	Set print alignment mode (Left, Center, Right)
Instruction code	ASCII : ESC a n Decimal system : 27 97 n Hexadecimal: 1B 61 n
Function description	Alignment of all data in a row, n value is as follows: n model 0, 48 Left, 1, 49 Center

	2, 50 Right
Parameter range	$0 \leq n \leq 2$ 或 $48 \leq n \leq 50$
Default value	$n = 0$
Support mode	All models
Matters needing attention	When ESC @, printer reset, power down, this instruction is set to fail.
Use example	1B 40 1B 61 02 30 31 32 0D 0A 1B 40 1B 61 01 30 31 32 0D 0A 1B 40 1B 61 00 30 31 32 0D 0A

Set Chinese mode

Instruction name	Set Chinese mode
Instruction code	ASCII : FS & Decimal system : 28 38 Hexadecimal: 1C 26
Function description	Select Chinese mode
Parameter range	not have
Default value	not have
Support mode	All models
Matters needing attention	When selecting a Chinese character pattern, the printer processes all Chinese characters, two bytes at a time. In the order of the first byte and second byte handle the Chinese character code.
Use example	1b 40 1C 26 B0 AE C9 CF D7 D4 BC BA 0d 0a 1C 2E B0 AE C9 CF D7 D4 BC BA 0d 0a

Cancel Chinese mod

Instruction name	Cancel Chinese mode
Instruction	ASCII : FS .

code	Decimal system : 28 46 Hexadecimal : 1C 2E
Function description	Cancel Chinese mode
Parameter range	not have
Default value	not have
Support mode	All models
Matters needing attention	When you do not select the Chinese character pattern, all character code as a ASCII code, each character to deal with
Use example	not have

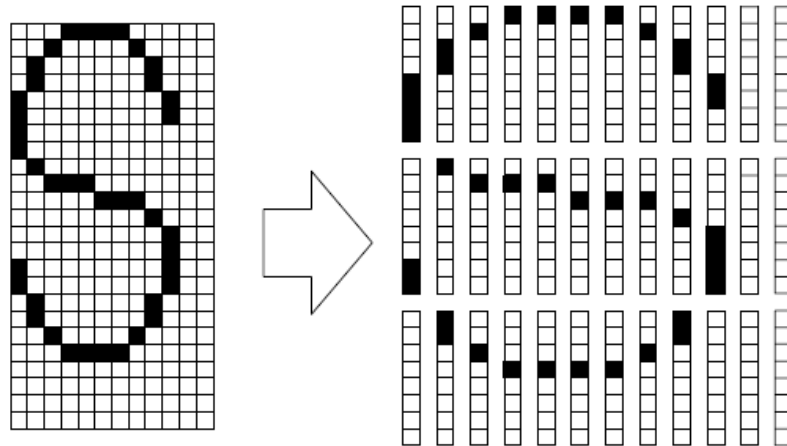
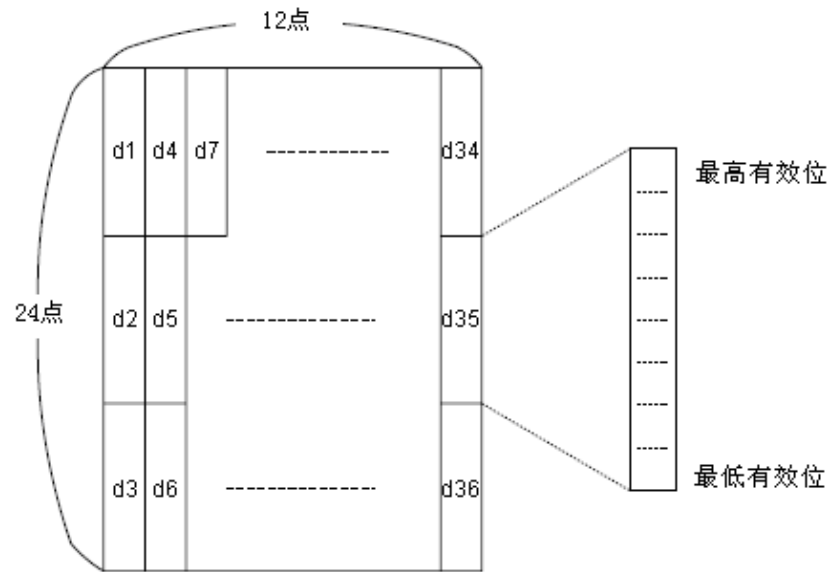
Select cancel user defined character set

Instruction name	Select cancel user defined character set
Instruction code	ASCII : ESC % n Decimal system : 27 37 n Hexadecimal : 1B 25 n
Function description	Select cancel user defined character set When the least significant bit of n is 0, the user defined character set is canceled. When the n is the least significant bit of 1, the user defined character set is selected.
Parameter range	$0 \leq n \leq 255$
Default value	0
Support mode	All models
Matters needing attention	When the user - defined character set is canceled, the internal character set is automatically selected.
Use example	not have

Definition user defined character set

Instruction name	Definition user defined character set
Instruction code	ASCII : ESC & y c1 c2 [x1 d1 ... d (yx1)] ... [xk d1 ... d(y x k)] Decimal system : 27 38 y c1 c2 [x1 d1 ... d(yx1)] ...[xk d1 ... d(yxk)] Hexadecimal : 1B 26 y c1 c2 [x1 d1...d(y x1)]...[xk d1...d(yxk)]
Function description	Definition user defined character set Y specifies the number of bytes in the vertical direction.

	<p>C1 specifies the start character encoding, C2 specifies the end character encoding.</p> <p>XK specifies the number of horizontal points.</p>
Parameter range	<p>The scope of the X Y corresponds to the internal font</p> <p>If you select the 6*12 font, then $y = 2, 0 \leq x \leq 6$</p> <p>If you select the 12*24 font, then $y = 3, 0 \leq x \leq 12$</p> <p>$32 \leq c1 \leq c2 \leq 126$</p> <p>$0 \leq d1 \dots d(y*xk) \leq 255$</p>
Default value	not have
Support mode	All models
Matters needing attention	<p>Defines the range of character encoding: From <20>H to <7E> HASCII code(95 character).</p> <p>Can be defined multiple characters continuous character encoding. When only one character is required, $C1 = c2$.</p> <p>D is the point data of the character. The point pattern is the horizontal direction starting from the left.</p> <p>The data defining user - defined characters is $(y*x)$ bytes.</p> <p>Set the corresponding bit of the print point to 1 or not the corresponding point of the print point is 0.</p> <p>This command defines a different user - defined character pattern for each font. Use ESC!</p> <p>The user - defined character and the next - pass bitmap cannot be defined at the same time. When the command is executed, the next bit is cleared.</p> <p>User defined characters are removed in the following cases:</p> <ul style="list-style-type: none"> Execute ESC @. Execute GS *. Execute ESC ?. <p>The printer resets or turn off the power supply</p> <p>Scheme:</p> <p>When setting the font A (12 24).</p>


$$d1 = \langle 0F \rangle H \quad d4 = \langle 30 \rangle H \quad d7 = \langle 40 \rangle H \dots$$
$$d2 = \langle 03 \rangle H \quad d5 = \langle 80 \rangle H \quad d8 = \langle 40 \rangle H \dots$$
$$d_3 = \langle 00 \rangle H \quad d_6 = \langle 00 \rangle H \quad d_9 = \langle 20 \rangle H \dots$$

Use example

$$\textcircled{1}y = 2$$

1B 40

```
1b 26 02 20 20 06 FF FF FF FF FF FF FF FF FF FF FF
```

1b 25 01

20 20 0D 0A

1b 3f 20

30 20 30 20 0d 0a

② $y = 3$

1B 40

```
1b 26 03 20 20 06 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF
```

1b 25 01

20 20 0D 0A

	1b 3f 20 30 20 30 20 0d 0a
--	-------------------------------

Cancel user defined character

Instruction name	Cancel user defined character
Instruction code	ASCII : ESC ? n Decimal system : 27 63 n Hexadecimal : 1B 3F n
Function description	Cancel user-defined characters encoded by n
Parameter range	$32 \leq n \leq 126$
Default value	not have
Support mode	All models
Matters needing attention	<p>This command terminates the style that is defined for character encoding, and the character encoding is specified by the n.</p> <p>After the user - defined character is canceled, it is printed in the corresponding character pattern.</p> <p>In the font selected by ESC, the command deletes the style defined for the specified encoding.</p> <p>If a user-defined character is not defined, the printer ignores the command.</p>
Use example	not have

International character set

Instruction name	International character set												
Instruction code	ASCII : ESC R n Decimal system : 27 82 n Hexadecimal : 1B 52 n												
Function description	<p>Set the international character set according to the value of N in the following table.</p> <table> <tr> <td>n</td><td>Character set</td></tr> <tr> <td>0</td><td>U.S.A</td></tr> <tr> <td>1</td><td>France</td></tr> <tr> <td>2</td><td>Germany</td></tr> <tr> <td>3</td><td>Britain</td></tr> <tr> <td>4</td><td>Denmark I</td></tr> </table>	n	Character set	0	U.S.A	1	France	2	Germany	3	Britain	4	Denmark I
n	Character set												
0	U.S.A												
1	France												
2	Germany												
3	Britain												
4	Denmark I												

	5 Sweden 6 Italy 7 Spain I 8 Japan 9 Norway 10 Denmark II 11 Spain II 12 Latin America 13 Korea 14 Slovenia 15 China
Parameter range	$0 \leq n \leq 15$
Default value	0
Support mode	All models
Matters needing attention	Not have
Use example	1B 40 1B 52 00 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F 40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56 57 58 59 60 6A 6B 6C 6D 6E 6F 70 71 72 73 74 75 76 78 79 7A 7B 7C 7D 7E 0D 0A

Select character code page

Instruction name	Select character code page
Instruction code	ASCII : ESC t n Decimal system : 27 116 n Hexadecimal: 1B 74 n
Function description	Select n from character code page N code page 0 CP437 [U.S.A, European standard] 1 KataKana [Katakana] 2 CP850 [Multi language] 3 CP860 [Portugal] 4 CP863 [Canadian French]

5	CP865 [Northern Europe]
6	WCP1251 [Slavic]
7	CP866 Slavic2
8	MIK[Bulgarian / Slavic]
9	CP755 [Eastern Europe, Latvia 2]
10	[Iran, Persia]
11	Retain
12	Retain
13	Retain
14	Retain
15	CP862 [Hebrew]
16	WCP1252 [Latin1]
17	WCP1253 [Greece]
18	CP852 [Latin 2]
19	CP858 [Multilingual Latin 1+ European symbols]
20	Iran II [Persian]
21	Latvia
22	CP864[Arabic]
23	ISO-8859-1 [Western Europe]
24	CP737 [Greece]
25	WCP1257 [The Baltic Sea]
26	Thai
27	CP720[Arabic]
28	CP855
29	CP857[Turkish]
30	WCP1250[central]
31	CP775
32	WCP1254[Turkish]
33	WCP1255[Hebrew]
34	WCP1256[Arabic]
35	WCP1258 [Vietnamese]
36	ISO-8859-2[Latin 2]
37	ISO-8859-3[Latin 3]
38	ISO-8859-4[Baltic language]
39	ISO-8859-5[Slavic]

	40 ISO-8859-6[Arabic] 41 ISO-8859-7[Greek] 42 ISO-8859-8[Hebrew] 43 ISO-8859-9[Turkish] 44 ISO-8859-15[Latin9] 45 [Thai2] 46 CP856 47 Cp874 255 GBK2312
Parameter range	$0 \leq n \leq 255$
Default value	0
Support mode	All models
Matters needing attention	not have
Use example	1B 40 1C 2E 1B 74 00 80 81 82 83 84 85 86 87 88 89 8A 8B 8C 8D 8E 8F 90 91 92 93 94 95 96 97 98 9A 9B 9C 9D 9E 9F A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE AF B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD BE BF C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 CA CB CC CD CE CF D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE DF E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC ED EE EF F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF 0D 0A

③Graphic print instruction

Graphical vertical mode selection data fill

Instruction name	Graphical vertical mode selection data fill
Instruction code	ASCII : ESC * m Hl Hh [d]k Decimal system : 27 42 m Hl Hh [d]k Hexadecimal : 1B 2A m Hl Hh [d]k
Function description	Print longitudinal image data, the parameters are as follows: M as a bitmap format: m Pattern Horizontal proportion Vertical proportion 0 8dot single density ×2 ×3 1 8dot double density ×1 ×3

	<p>32 24dot single density ×2 ×1</p> <p>33 24dot double density ×1 ×1</p> <p>Hl, Hh for horizontal points ($Hl + 256 \times Hh$)</p> <p>[d]k is the point data</p> <p>K is used to indicate the number of bytes in the data point, not to transmit.</p>
Parameter range	<p>XX58:</p> <p>$m = 0, 1, 32, 33$</p> <p>$1 \leq Hl + Hh \times 256 \leq 384$</p> <p>$0 \leq d \leq 255$</p> <p>$k = Hl + Hh \times 256$ (当 $m = 0, 1$)</p> <p>$k = (Hl + Hh \times 256) \times 3$ (当 $m = 32, 33$)</p> <p>XX80:</p> <p>$m = 0, 1, 32, 33$</p> <p>$1 \leq Hl + Hh \times 256 \leq 576$</p> <p>$0 \leq d \leq 255$</p> <p>$k = Hl + Hh \times 256$ (当 $m = 0, 1$)</p> <p>$k = (Hl + Hh \times 256) \times 3$ (当 $m = 32, 33$)</p>
Default value	not have
Support mode	All models
Matters needing attention	<p>[d]k corresponding to 1 points that the point of print, the corresponding bit is 0, then the point is not printed.</p> <p>The part of the image that is horizontally out of print will be ignored.</p> <p>The relationship between the point data and the printing effect is as follows:</p> <div style="text-align: center;"> <p>8点方式 24点方式</p> <p>点图数据 (位图) 点图数据 (位图)</p> </div> <p>This instruction is only filled with the print buffer. The image is printed only after the print command is received.</p> <p>If you need to print the image height is large, you can first split into a number of height of 8 ($M = 0, 1$) or ($M = 32, 33$) points of the images were printed.</p> <p>After filling the graphic data, you can continue to fill other information so that the graphics are printed with other information. After filling the point map, the general use of ESC J ($n = 24$) instructions for printing, You can also use the LF command to print,</p>

	<p>but the LF command will lead to feed operation (by spacing feed), multi line image discontinuity, You can set the line spacing is 0, not too much paper.</p> <p>(Needle printer will be offset, if there is a break in the middle, please continue to send data)</p>
Use example	<p>1B 40</p> <p>1b 2a 00 0C 00 FF FF FF FF FF FF FF FF FF FF FF</p> <p>1B 33 00</p> <p>0A</p>

Picture level model data printing

Instruction name	Picture level model data printing																				
Instruction code	ASCII : GS v 0 Decimal system : 29 118 48 m xL xH yL yH [d]k Hexadecimal : 1D 76 30 m xL xH yL yH [d]k																				
Function description	Print the image data, and the parameters are as follows: M bitmap mode: <table><tr><td>m</td><td>model</td><td>Horizontal proportion</td><td>Vertical proportion</td></tr><tr><td>0,48</td><td>normal</td><td>× 1</td><td>× 1</td></tr><tr><td>1,49</td><td>double width</td><td>× 2</td><td>× 1</td></tr><tr><td>2,50</td><td>double height</td><td>× 1</td><td>× 2</td></tr><tr><td>3,51</td><td>double width and height</td><td>× 2</td><td>× 2</td></tr></table> XL, xH is the number of bytes in the horizontal direction (xL + xH × 256) YL, yH for vertical direction points (yL + yH × 256) [d]k is the point data. K is the number of bytes of data points, K is used to indicate, without transmission.	m	model	Horizontal proportion	Vertical proportion	0,48	normal	× 1	× 1	1,49	double width	× 2	× 1	2,50	double height	× 1	× 2	3,51	double width and height	× 2	× 2
m	model	Horizontal proportion	Vertical proportion																		
0,48	normal	× 1	× 1																		
1,49	double width	× 2	× 1																		
2,50	double height	× 1	× 2																		
3,51	double width and height	× 2	× 2																		
Parameter range	XX58: $0 \leq m \leq 3; 48 \leq m \leq 51$ $1 \leq xL + xH \times 256 \leq 48$ $0 \leq yL \leq 255, 0 \leq yH \leq 255$ $0 \leq d \leq 255$ $k = (Hl + Hh \times 256) \times (yL + yH \times 256)$ XX80: $0 \leq m \leq 3; 48 \leq m \leq 51$ $1 \leq xL + xH \times 256 \leq 72$ $0 \leq yL \leq 255, 0 \leq yH \leq 255$ $0 \leq d \leq 255$																				

	$k = (Hl + Hh \times 256) \times (yL + yH \times 256)$																
Default value	not have																
Support mode	All models																
Matters needing attention	<p>[d]k corresponding to 1 points that the point of print, the corresponding bit is 0, then the point is not printed.</p> <p>If the number of bytes in the image level exceeds the print area, the excess portion will be ignored.</p> <p>This instruction is executed according to the image size is not affected by the feed, ESC 2, ESC 3 line spacing effect.</p> <p>After this command is executed, the print coordinates are reset to the left position, and the image content is empty.</p> <p>The relationship between bitmap data and print results is as follows:</p> <table><tr><td>d1</td><td>d2</td><td>.....</td><td>dx</td></tr><tr><td>d(x+1)</td><td>d(x+2)</td><td>.....</td><td>d(x+2)</td></tr><tr><td> </td><td> </td><td>.....</td><td> </td></tr><tr><td>.....</td><td>d(k-2)</td><td>d(k-1)</td><td>dk</td></tr></table> <p>MSB LSB MSB LSB MSB LSB MSB LSB</p> <p>This instruction has a printing function, the edge of the data side printing, no need to use the print command.</p>	d1	d2	dx	d(x+1)	d(x+2)	d(x+2)			d(k-2)	d(k-1)	dk
d1	d2	dx														
d(x+1)	d(x+2)	d(x+2)														
																
.....	d(k-2)	d(k-1)	dk														
Use example	1B 40 1d 76 30 00 03 00 09 00 FF																

Definition down pass bitmap

Instruction name	Definition down pass bitmap
Instruction code	ASCII : GS * x y d1...d(x×y×8) Decimal system : 29 42 x y d1 ...d(x×y×8) Hexadecimal: 1D 2A x y d1...d(x×y×8)
Function description	Use X and y to specify points to define the next bitmap X specifies the horizontal direction points to 8*x. Y specifies the number of vertical points to 8*y.
Parameter range	$1 \leq x \leq 255$ $1 \leq y \leq 48$ $x*y \leq 1536$ $0 \leq d \leq 255$
Default value	not have

Support mode	All models
Matters needing attention	<p>If the $x \times y$ exceeds the specified range, the command is disabled. D represents the bitmap data. The data (d) specifies that the print bit is 1, and the print bit is not as high as 0.</p> <p>Clear the definition of the following bitmap under the following conditions:</p> <p>Execute ESC @.</p> <p>Execute ESC &.</p> <p>The printer resets or turn off the power supply.</p> <p>The relationship between the underlying bitmap and the print data is shown in the following figure.</p>
Use example	<p>1B 40</p> <p>1D 2A 03 03</p> <p>FF FF</p> <p>FF FF</p> <p>FF FF</p> <p>1D 2F 00</p>

Print down pass bitmap

Instruction	Print down pass bitmap
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name											
Instruction code	ASCII : GS / m Decimal system : 29 47 m Hexadecimal : 1D 2F m										
Function description	Print down the bitmap with the pattern specified by M. <table border="1"> <tr> <th>M</th><th>Model</th></tr> <tr> <td>0, 48</td><td>Normal</td></tr> <tr> <td>1, 49</td><td>Double width</td></tr> <tr> <td>2, 50</td><td>Double height</td></tr> <tr> <td>3, 51</td><td>Double width and height</td></tr> </table>	M	Model	0, 48	Normal	1, 49	Double width	2, 50	Double height	3, 51	Double width and height
M	Model										
0, 48	Normal										
1, 49	Double width										
2, 50	Double height										
3, 51	Double width and height										
Parameter range	$0 \leq m \leq 3$ $48 \leq m \leq 51$										
Default value	not have										
Support mode	All models										
Matters needing attention	<p>If the bitmap data is not defined, the command is ignored.</p> <p>In standard mode, this command is valid only if there is no data in the print buffer.</p> <p>Print mode(Font Bold、Overlapped、Font Underline、Character dimension or Inverse print)This command is not valid except for the reverse print mode.</p> <p>If you want to print the next transfer over the print area, the data is not printed.</p>										
Use example	Not have										

Define NV bitmap

Instruction name	Define NV bitmap
Instruction code	ASCII : FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n Decimal system : 28 113 n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n Hexadecimal : 1C 71 n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n
Function description	Defines a NV bitmap with a specific n value. N specifies the number of NV bitmaps defined XL, xH for the definition of the NV bitmap to specify the number of points in the horizontal direction $(xL+xH*256) * 8$. YL, yH for the definition of the NV bitmap to specify the number of points in the vertical direction $(yL+yH*256) * 8$.
Parameter range	$1 \leq n \leq 255$ $0 \leq xL \leq 255$ $0 \leq xH \leq 3$ $(1 \leq (xL+xH*256) \leq 1023)$

	$0 \leq yL \leq 255$ $0 \leq yH \leq 1$ $(1 \leq (yL+yH*256) \leq 288)$ $0 \leq d \leq 255$ $k = (xL+xH*256)*(yL+yH*256)*8$ Total defined data area = 64K bytes
Default value	not have
Support mode	All models
Matters needing attention	<p>Frequent execution of write commands maybe damage NV storage.</p> <p>Therefore, it is recommended that one day be performed on the NV storage for no more than 10 write operation.</p> <p>After an image is placed in the NV storage, the printer performs a hardware reset operation.</p> <p>Therefore, the user - defined character, the next - pass bitmap should be defined after completion of the command. Printer clear receive and print buffer, and reset to the effective mode when connect to the power supply.</p> <p>(Hardware reset interface not supported)</p> <p>This command cancels all NV bitmaps that have been defined with this command.</p> <p>Mechanical operation cannot be performed during the processing of this command until the hardware reset is completed. (Including when the cover is open initialize the print head position paper feed button etc.)</p> <p>During this command processing, the printer is busy and stops receiving data when writing data to the user's NV memory.</p> <p>Therefore, it is forbidden to transfer data during execution of this command, including real-time commands.</p> <p>A NV bitmap is a bitmap defined in a non-volatile memory. Using FS Q definition FS P printing.</p> <p>In standard mode, the command is valid only when a row is started.</p> <p>The order of the 7 bytes of the <FS~yH> is normally processed after the command is valid.</p> <p>When the amount of data exceeds the xL, x, yL, yH defined by the range of the left capacity, The printer will handle the range defined by xL, xH, yL, and yH beyond the defined scope.</p> <p>In the first set of bitmaps, When xL, xH, yL, and yH are out of bounds for any parameter, the command is disabled.</p> <p>In a group of bitmaps that are not the first group, When the printer encounters xL, xH, yL, yH beyond the defined range, The command is stopped and then start to write the NV image. Now, The NV bitmap</p>

that has not been defined is not available (undefined), But any previously defined NV bitmap is still valid.

D represents the definition of data, In data (d), a 1 bit specifies a point to be printed and a 0 bit specifies a point that is not printed.

This command defines n as the number of NV bitmaps. The number starts from the bitmap 01H order.

So the first data set [xL xH yL yH d1...dk] is the NV bitmap of 01H , the last data set [xL xH yL yH d1...dk] is the NV bitmap of n . The total number is consistent with the number of FS P commands set in the NV bitmap.

The definition of a NV bitmap data is composed of [xL xH yH D1...Dk] yL. So, when only one NV bitmap is n=1, the printer only processes the data set [xL xH yH D1 yL dk] at a time.

The printer uses NV memory ([data: (xL+xH *256) * (yL+yH*256) * *8]+[header:4]) bytes.

The definition of this printer is 192K bytes (max). The command can define several bitmaps, but can not define the total data capacity [bitmap data + head] more than 192K bytes of the bitmap.

Even if the ASB is set, the printer does not transmit the ASB state or the execution state detection during processing the command.

Once a NV bitmap is defined, it cannot be executed by the ESC @ command, reset, and power down.

This command executes only the definition of the NV bitmap, and the printing of the NV bitmap that does not execute is performed by the FS P command.

Graphic: 当 xL = 64, xH = 0, yL = 96, yH = 0

Use example	1B 40 1C 71 01 03 00 03 00 FF 1C 70 01 00

Print NV bitmap

Instruction name	Print NV bitmap										
Instruction code	ASCII : FS p n m Decimal system : 28 112 n m Hexadecimal : 1C 70 n m										
Function description	Print the NV bitmap n with the pattern specified by m. <table border="1"> <thead> <tr> <th>m</th><th>Model</th></tr> </thead> <tbody> <tr> <td>0, 48</td><td>Normal</td></tr> <tr> <td>1, 49</td><td>Double width</td></tr> <tr> <td>2, 50</td><td>Double height</td></tr> <tr> <td>3, 51</td><td>Double width and height</td></tr> </tbody> </table>	m	Model	0, 48	Normal	1, 49	Double width	2, 50	Double height	3, 51	Double width and height
m	Model										
0, 48	Normal										
1, 49	Double width										
2, 50	Double height										
3, 51	Double width and height										
Parameter range	$0 \leq m \leq 3$ $48 \leq m \leq 51$ $1 \leq n \leq 255$										
Default value	not have										
Support mode	All models										
Matters needing attention	<p>n is the number of NV bitmaps (defined with the FS Q command) m specifies bitmap mode.</p> <p>A NV bitmap is a bitmap defined in a non-volatile storage. Using FS Q to define FS P printing.</p> <p>This command is invalid when the specified NV bitmap does not exist.</p> <p>In standard mode, the command is valid only if there is no data in the print buffer.</p> <p>This command is not affected by print mode (FontBold printing、overlapping、Underline、Character dimension、Inverse print or Character 90) , except rotation etc reversed print mode. If more than one line is printed, the data is not printed. At ordinary and double width mode, the command input n (n NV bitmap height), in double height and four times the size of mode (the command input 2n, N, ESC and NV bitmap height) 2 or ESC 3 set line spacing.</p> <p>After printing the bitmap, the command sets the print position at the beginning of a line, and the subsequent data is processed by ordinary data.</p>										
Use example	无										

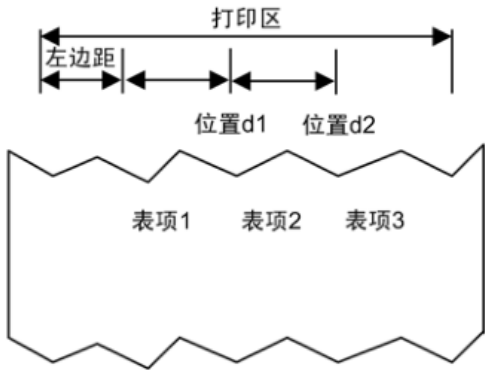
④Tab command

Horizontal tabulation

Instruction name	Horizontal tabulation
Instruction code	ASCII : HT Decimal system : 9 Hexadecimal: 09
Function description	Move the printing position to the next tab position
Parameter range	not have
Default value	not have
Support mode	All models
Matters needing attention	Tab position set by ESC D This command will be treated as a LF instruction if the tab position is not set (the default level is not a tab stop) If the tab position exceeds the print area, the coordinates will be moved to the start of the next line (newline)
Use example	Not have

Setting level tab position

Instruction name	Setting level tab position
	ASCII : ESC D [d]k NUL Decimal system : 27 68 [d]k 0 Hexadecimal : 1B 44 [d]k 00
Function description	Set the horizontal tab position, the parameters are as follows: d1 ... dk: Setting level tab position, Take 8 points for unit. NULL is the end symbol
Parameter range	XX58: $1 \leq d \leq 46$ ($d_1 < d_2 < \dots < d_k$, $1 \leq k \leq 16$) XX80: $1 \leq d \leq 70$ ($d_1 < d_2 < \dots < d_k$, $1 \leq k \leq 16$)
Default value	[d]k = 0 (Default no level tab position)
Support mode	All models
Matters needing attention	Tab position is as follows:

	 <p>设置制表位置d1和d2</p> <p>Maximum support 16 tab position setting. Use this command to cancel the previous tab location settings. K is for the use of signs, without transmission. When the transmission [d]k encounters NULL, it is regarded as the end. If DK is less than or equal to DK-1, it is regarded as the end, and the remaining data is treated as ordinary data. Tab position can be switched by HT. When the left margin changes, the tab position changes. When ESC @, printer reset, power down, this instruction is set to fail.</p>
Use example	not have



⑤Dimension bar code printing command

Select the print position HRT characters

Name	Select the print position HRI characters
Format	ASCII : GS H n Decimal code : 29 72 n Sixteen hexadecimal code : 1D 48 n
Description	Print bar code print position HRI characters n Select the print position as shown below: n print position 0, 48 not print 1, 49 in the bar code 2, 50 in the code below 3, 51 in the upper part and the lower part of the bar code
Range	$0 \leq n \leq 3$ 或 $48 \leq n \leq 51$
Default	n = 0
Model	ALL
Be careful	When ESC @, printer reset, power down, the set of the command is failure
Using sample	none
Instruction name	设置条码可读字符（HRI）打印位置
Instruction	ASCII : GS H n

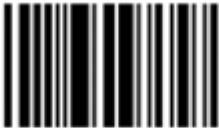

code	Decimal system : 29 72 n Hexadecimal : 1D 48 n
Description	Print bar code print position HRI characters n Select the print position as shown below: n print position 0, 48 not print 1, 49 in the bar code 2, 50 in the code below 3, 51 in the upper part and the lower part of the bar code
Range	$0 \leq n \leq 3$ 或 $48 \leq n \leq 51$
Default	n = 0
Model	ALL
Be careful	When ESC @, printer reset, power down, the set of the command is failure
Using sample	none

Set the height of bar code

Name	Set the height of bar code
Format	ASCII : GS h n Decimal code : 29 104 n Sixteen hexadecimal code : 1D 68 n
Description	Set the height of bar code. n set the vertical point  高度为 50  高度为 100
Range	$1 \leq n \leq 255$
Default	n = 64
Model	ALL
Be careful	When ESC @, printer reset, power down, the set of the command is failure
Using sample	none

Set the bar width

Name	Set the bar width
Format	ASCII : GS w n Decimal code : 29 119 n Sixteen hexadecimal code : 1D 77 n
Description	Set the bar code level size. n set the bar width

	 宽度为 3  宽度为 4
Range	$1 \leq n \leq 6$
Default	$n = 2$
Model	ALL
Be careful	When ESC @, printer reset, power down, the set of the command is failure
Using sample	none

Barcode printing

Name	Barcode printing																																												
Format	<p>(A) ASCII : GS k m [d]k NUL Decimal code : 29 107 m [d]k NUL Sixteen hexadecimal code : 1D 6B m [d]k NUL</p> <p>(B) ASCII : GS k m n [d]k Decimal code : 29 107 m n [d]k Sixteen hexadecimal code : 1D 6B m n [d]k</p>																																												
Description	<p>Print barcode, the parameters are shown below: m is encoder mode n is length of coded data, only (B) use, the difference between (A) and (B) is the ending method that the data segment of (A) end of NULL code, but the (B) end of the length of the command data [d]k is code data k is length of the bar code data, used to indicate not transmission. The relationship between parameters as system: (command A)</p> <table border="1"> <thead> <tr> <th rowspan="2">m</th><th rowspan="2">Bar code system</th><th colspan="4">Bar code data (SP = space)</th></tr> <tr> <th>Data length</th><th>k</th><th>Character set</th><th>data (d)</th></tr> </thead> <tbody> <tr> <td>0</td><td>UPC-A</td><td>fixed</td><td>k = 11, 12</td><td>0~9</td><td>$48 \leq d \leq 57$</td></tr> <tr> <td>1</td><td>UPC-E</td><td>fixed</td><td>$6 \leq k \leq 8$, k = 11, 12</td><td>0~9</td><td>$48 \leq d \leq 57$ [当 k = 7, 8, 11, 12, d1 = 48]</td></tr> <tr> <td>2</td><td>JAN13 (EAN13)</td><td>fixed</td><td>k = 12, 13</td><td>0~9</td><td>$48 \leq d \leq 57$</td></tr> <tr> <td>3</td><td>JAN8 (EAN8)</td><td>fixed</td><td>k = 7, 8</td><td>0~9</td><td>$48 \leq d \leq 57$</td></tr> <tr> <td>4</td><td>CODE39</td><td>changea</td><td>$1 \leq k \leq 255$</td><td>0~9, A~Z</td><td>$48 \leq d \leq 57$,</td></tr> </tbody> </table>					m	Bar code system	Bar code data (SP = space)				Data length	k	Character set	data (d)	0	UPC-A	fixed	k = 11, 12	0~9	$48 \leq d \leq 57$	1	UPC-E	fixed	$6 \leq k \leq 8$, k = 11, 12	0~9	$48 \leq d \leq 57$ [当 k = 7, 8, 11, 12, d1 = 48]	2	JAN13 (EAN13)	fixed	k = 12, 13	0~9	$48 \leq d \leq 57$	3	JAN8 (EAN8)	fixed	k = 7, 8	0~9	$48 \leq d \leq 57$	4	CODE39	changea	$1 \leq k \leq 255$	0~9, A~Z	$48 \leq d \leq 57$,
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4	CODE39	changea	$1 \leq k \leq 255$	0~9, A~Z	$48 \leq d \leq 57$,																																								

		ble		SP, \$, %, +, -, ., /	$65 \leq d \leq 90$, $d = 32, 36, 37, 42, 43, 45, 46, 47$
5	ITF (Interleaved 2 of 5)	changeable	$2 \leq k \leq 255$ (even number)	0~9	$48 \leq d \leq 57$
6	CODABAR (NW-7)	changeable	$1 \leq k$	0~9, A~D, a~d \$, +, -, ., /, :	$48 \leq d \leq 57$, $65 \leq d \leq 68$, $97 \leq d \leq 100$, $d = 36, 43, 45, 46, 47, 58$ ($65 \leq d1 \leq 68$, $65 \leq dk \leq 68$, $97 \leq d1 \leq 100$, $97 \leq dk \leq 100$)
(command B)					
m	Bar code system	Bar code data (SP=space)			
		Data length	n	Character set	data (d)
65	UPC-A	fixed	$n = 11, 12$	0~9	$48 \leq d \leq 57$
66	UPC-E	fixed	$6 \leq n \leq 8$, $n = 11, 12$	0~9	$48 \leq d \leq 57$ [当 $n = 7, 8, 11, 12$, $d1 = 48$]
67	JAN13 (EAN13)	fixed	$n = 12, 13$	0~9	$48 \leq d \leq 57$
68	JAN8 (EAN8)	fixed	$n = 7, 8$	0~9	$48 \leq d \leq 57$
69	CODE39	changeable	$1 \leq n \leq 255$	0~9, A~Z SP, \$, %, +, -, ., /	$48 \leq d \leq 57$, $65 \leq d \leq 90$, $d = 32, 36, 37, 42, 43, 45, 46, 47$
70	ITF (Interleaved 2 of 5)	changeable	$1 \leq n \leq 255$ (even number)	0~9	$48 \leq d \leq 57$
71	CODABAR (NW-7)	changeable	$1 \leq n \leq 255$	0~9, A~D, a~d \$, +, -, ., /, :	$48 \leq d \leq 57$, $65 \leq d \leq 68$, $97 \leq d \leq 100$, $d = 36, 43,$

						45, 46, 47, 58 ($65 \leq d1 \leq 68$, $65 \leq dk \leq 68$, $97 \leq d1 \leq 100$, $97 \leq dk \leq 100$)
	72	CODE93	change able	$1 \leq n \leq 255$	00H~7FH	$0 \leq d \leq 127$
	73	CODE12 8	change able	$2 \leq n \leq 255$	00H~7FH	$0 \leq d \leq 127$
	74	UCC/EA N128	change able	$2 \leq n \leq 255$	00H~7FH C1H~C4H(FNC)	$0 \leq d \leq 127$ d = 193, 194,195,196
Range	(A) $0 \leq m \leq 6$ (B) $65 \leq m \leq 74$					
Default	none					
Model	ALL					
Be careful	<p>If bar code width exceeds the specified range, the printer can't execute bar code printing.</p> <p>The command to print bar code requirements for feed, regardless of ESC 2 or ESC 3 set line spacing.</p> <p>This command is not affected by ESC! Character style.</p> <p>Print bar codes, the command will print position is set at the start of a line.</p> <p>When m:0-6(A)& 65-71(B) choose the same bar code system, the printing effect is the same.</p> <p>m= 0-6(A), the code by the end of NULL code.</p> <p>m= 65-74(A), the code use n to express data length</p> <p>k 用于示意，不需要传输</p> <p>k use to indicate not transmission</p> <p>When printing UPCA(m=0 or 65, need noted:</p> <p>Regardless of the input data length is 11 or 12, check bit will automatically insert or error correction。</p> <p>The starting character, middle separator character, terminator inserted automatically.</p> <p>When printing UPCE(m=1 or 66), need noted:</p> <p>When data length is 6, system character(NSC)0 insert automatically</p> <p>When data length is 7,8,11,12, the first system character (NSC)d1 must be 0</p> <p>Regardless of input data length is 6,7,8,11 or 12, check bit will insert or error correction automatically.</p> <p>Regardless of input data length is 6,7,8,11or 12, barcode readable characters(HRI) only show 6 bits of data, not include system (NSC) and check code;</p> <p>The transformation relationship of transmission data and printing data is as follows:</p>					

传输的数据										打印的数据					
d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d1	d2	d3	d4	d5	d6
0~9	0~9	0	0	0	-	-	0~9	0~9	0~9	d2	d3	d9	d10	d11	0
0~9	0~9	1	0	0	-	-	0~9	0~9	0~9	d2	d3	d9	d10	d11	1
0~9	0~9	2	0	0	-	-	0~9	0~9	0~9	d2	d3	d9	d10	d11	2
0~9	0~9	3~9	0	0	-	-	-	0~9	0~9	d2	d3	d4	d10	d11	3
0~9	0~9	0~9	1~9	0	-	-	-	-	0~9	d2	d3	d4	d5	d11	4
0~9	0~9	0~9	0~9	1~9	-	-	-	-	5~9	d2	d3	d4	d5	d6	d11

When d6 is 1-9, it should ensure d7,d8,d9,d10 is 0, d11 is 5-9.

The Start character and terminator insert automatically.

When print EAN13 (m = 2 or 67) , need noted:

Regardless of input data length is 12 or 13, check bits insert or error correction automatically.

The starting character, middle separator character, terminator inserted automatically.

When print EAN8 (m = 3 or 68) , need noted:

Regardless of input data length is 7 or 8, check bits insert or error correction automatically.

The starting character, middle separator character, terminator inserted automatically.

When print CODE39 (m = 4 or 69) 时, need noted:

When d1 or dn is not starting character/ terminator “*”, coder insert “*” automatically.

When data meet “*”, coder see it as the terminator, the other data as a common data to process;

Check code do not calculate and add automatically

When print ITF25 (m = 5 or 70) , need noted:

The Start character and terminator insert automatically.

Check code do not calculate and add automatically.

When print CODABAR (NW-7) (m = 6 or 71) , need noted:

The Start character and terminator do not insert automatically, need user add manually, the range is “A” ~ “D” or “a” ~ “d”

Check code do not calculate and add automatically.

Print CODE93 (m = 72) , need noted:

The Start character and terminator insert automatically.

Two check code calculate and add automatically.

When setting code readable character (HRI) to print, not setting any HRI code to show begin/end.

When setting code readable character (HRI) to print, control code is replaced by space.

When using the CODE128 (M = 73):

On the CODE128 bar code and code table information, see Appendix D.

In the printer when you use CODE128, please consider the following factors on data transfer:

- ① The bar code data string head have to choose coded character set (CODE A, CODE B, or CODE C), is used to select the first use of the code set.
- ② The character "{" and a combination of characters to define the special characters. Through the continuous transmission of two "ASCII" "{" definition of character".

ASCII code, Sixteen hexadecimal code, Decimal code

Special character s	Data transmission		
	ASCII 码		ASCII 码
SHIFT	{S	7B,53	123, 83
CODEA	{A	7B,41	123, 65
CODEB	{B	7B,42	123, 66
CODEC	{C	7B,43	123, 67
FNC1	{1	7B,31	123, 49
FNC2	{2	7B,32	123, 50
FNC3	{3	7B,33	123, 51
FNC4	{4	7B,34	123, 52
"{"	{{	7B,7B	123, 123

[Example] Print "instance data No. 123456."

In this case, the printer first by using the CODE B print "No.", and then use the CODE C to print the following numbers.

GS k 73 10 123 66 78 111 46 123 67 12 34 56



CODE 128:

1b 40 1d 48 02 1d 68 64 1d 77 03

1d 6b 49 0A 7B 42 4E 6F 2E 7B 43 0C 22 38

- If the bar code data string head not code set select the character, the printer stop command processing, and the subsequent data processing as general data.
- If "{" and subsequent characters are not applicable to any special characters, the printer stop command processing, and the subsequent data processing as general data.
- If the printer received cannot be used for special code set of characters, the printer stop command processing, and the subsequent data processing as general data.
- Select the HRI character corresponding character printer does not print and shift character or code set.

	<ul style="list-style-type: none"> • The functional character of the HRI character is blank. • The control characters (<00>H? <1F>H and <7F>H) of the HRI character is blank. <p><Other > To confirm the reservation about spacing in the bar code. (according to different spacing bar code types are also different.)</p>
使用示例	<pre> 1b 40 1d 48 02 1d 68 64 1d 77 03 30 0D 0A 1d 6b 00 30 31 32 33 34 35 36 37 38 39 31 00 31 0D 0A 1d 6b 01 30 31 32 33 34 35 36 37 38 39 31 00 32 0D 0A 1d 6b 02 30 31 32 33 34 35 36 37 38 39 31 32 00 33 0D 0A 1d 6b 03 30 31 32 33 34 35 36 37 00 34 0D 0A 1D 6B 04 30 31 32 41 42 20 24 25 2B 2D 2E 2F 00 35 0D 0A 1d 6b 05 30 31 32 33 34 35 36 37 38 39 31 32 00 36 0D 0A 1d 6b 06 2D 31 32 42 24 2B 2D 2E 00 1d 6b 06 43 31 32 33 34 35 36 34 38 39 00 36 35 0D 0A 1d 6b 41 0c 31 32 33 34 35 36 37 38 39 30 31 32 36 36 0D 0A 1d 6b 42 0c 30 32 33 34 35 36 30 30 30 30 38 39 36 37 0D 0A 1d 6b 43 0c 30 32 33 34 35 36 30 30 30 30 38 39 36 38 0D 0A 1d 6b 44 08 30 32 33 34 35 36 30 30 36 39 20 20 4e 4f 20 24 25 2b 2d 2e 2f 31 32 33 34 35 36 30 30 0D 0A 1d 6b 45 11 4e 4f 20 24 25 2b 2d 2e 2f 31 32 33 34 35 36 30 30 37 30 20 20 20 30 32 33 34 35 36 30 30 C5 BC CA FD 0D 0A 1d 6b 46 09 30 31 32 33 34 35 36 30 30 37 31 0d 0a 1d 6b 47 05 32 33 34 35 36 37 32 0d 0a 1d 6b 48 0b 32 33 34 35 36 41 42 2e 2f 2b 2c 37 33 0d0a 1d 6b 49 0A 7B 42 4E 6F 2E 7B 43 0C 22 38 Code 128 : </pre>

	1b 40 1d 48 02 1d 68 64 1d 77 03 37 33 0d0a 1d 6b 49 0A 7B 42 4E 6F 2E 7B 43 0C 22 38
--	---

⑥QR code printing command

Set the QR code model type

Name	Set the QR code model type
Format	ASCII : GS (k pL pH cn fn n Decimal code : 29 40 107 pL pH cn fn n Sixteen hexadecimal code : 1D 28 6b pL pH cn fn n
Description	Set the QR code model type
Range	pL=3, pH=0 cn=49 fn=67 $0 \leq n \leq 16$
Default	n=3
Model	ALL
Be careful	Set the QR code image model to [n point × n point].
Using sample	None

Set QR code error correction level

Name	Set QR code error correction level		
Format	ASCII : GS (k pL pH cn fn n Decimal code : 29 40 107 pL pH cn fn n Sixteen hexadecimal code : 1D 28 6b pL pH cn fn n		
Description	Set QR code error correction level		
Range	pL=3, pH=0 cn=49 fn=69 $48 \leq n \leq 51$		
Default	n=48		
Model	ALL		
Be careful	Set QR code error correction level		
	n	Function	reference: recovery representative (%)
	48	Error correction level L	7
	49	Error correction level m	15
	50	Error correction level q	25
	51	Error correction level h	30

Using sample	none
--------------	------

Store QR code data to QR code buffer

Name	Store QR code data to QR code buffer
Format	ASCII : GS (k pL pH cn fn m d1...dk Decimal code : 29 40 107 pL pH cn fn m d1...dk Sixteen hexadecimal code : 1D 28 6b pL pH cn fn m d1...dk
Description	Store QR code data to QR code buffer
Range	$4 \leq (pL + pH \times 256) \leq 7092$ ($0 \leq pL \leq 255, 0 \leq pH \leq 28$) cn=49 fn=80 m=48 $0 \leq d \leq 255$ $k = (pL + pH \times 256) - 3$
Default	none
Model	ALL
Be careful	Store QR code data (d1...dk) to QR code buffer ($(pL + pH \times 256) - 3$) bytes after m(d1...dk) as a picture data to be processed.
Using sample	none

QR code printing

Name	QR code printing
Format	ASCII : GS (k pL pH cn fn m Decimal code : 29 40 107 pL pH cn fn m Sixteen hexadecimal code : 1D 28 6b pL pH cn fn m
Description	QR code printing
Range	pL=3, pH=0 cn=49 fn=81 m=48
Default	None
Model	ALL
Be careful	QR code printing. User must consider the space of QR code image (the space of top & bottom and right & left is specified in specification)
Using sample	1b 40 1d 28 6b 03 00 31 43 03 1d 28 6b 03 00 31 45 30 1d 28 6b 06 00 31 50 30 41 42 43 1b 61 01 1d 28 6b 03 00 31 52 30 1d 28 6b 03 00 31 51 30

Set QR code graphics information

Name	Set QR code graphics information																																															
Format	ASCII : GS (k pL pH cn fn m Decimal code : 29 40 107 pL pH cn fn m Sixteen hexadecimal code : 1D 28 6b pL pH cn fn m																																															
Description	Set QR code graphics information The details about graphics information as shown below:																																															
	<table><tr><td>Send data</td><td>Sixteen hexadecimal code</td><td>Decimal code</td><td>Data type</td></tr><tr><td>Header</td><td>37H</td><td>55</td><td>1byte</td></tr><tr><td>Flag</td><td>36H</td><td>54</td><td>1byte</td></tr><tr><td>Width</td><td>30H-39H</td><td>48-57</td><td>1-5byte</td></tr><tr><td>Separator</td><td>1FH</td><td>31</td><td>1byte</td></tr><tr><td>Height</td><td>30H-39H</td><td>48-57</td><td>1-5byte</td></tr><tr><td>Separator</td><td>1FH</td><td>31</td><td>1byte</td></tr><tr><td>Fixed Value</td><td>31H</td><td>49</td><td>1byte</td></tr><tr><td>Separator</td><td>1FH</td><td>31</td><td>1byte</td></tr><tr><td>Other Information</td><td>30H or 31H</td><td>48 or 49</td><td>1byte</td></tr><tr><td>NUL</td><td>00H</td><td>0</td><td>1byte</td></tr></table>				Send data	Sixteen hexadecimal code	Decimal code	Data type	Header	37H	55	1byte	Flag	36H	54	1byte	Width	30H-39H	48-57	1-5byte	Separator	1FH	31	1byte	Height	30H-39H	48-57	1-5byte	Separator	1FH	31	1byte	Fixed Value	31H	49	1byte	Separator	1FH	31	1byte	Other Information	30H or 31H	48 or 49	1byte	NUL	00H	0	1byte
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	Other Information	30H or 31H	48 or 49	1byte																																												
	NUL	00H	0	1byte																																												
	Width and height data send:: the height and width of graphics data use point as unit.																																															
Other information transmit: “Sixteen hexadecimal code=30H/Decimal code=48” show data is not printed. “Sixteen hexadecimal code=31H/Decimal code=49” show data is not printed.																																																
Range	pL=3, pH=0 cn=49 fn=82 m=48																																															
Default	none																																															
Model	ALL																																															
Be careful	This command don’t print QR code image. User must consider the space of QR code image (the space of top &bottom and right & left is specified in specification)																																															
Using sample	None																																															

QR code printing

Name	QR code printing
Format	ASCII : GS k m v r nL nH d1...dk Decimal code : 29 107 97 v r nL nH d1...dk

	Sixteen hexadecimal code : 1D 6B 61 v r nL nH d1...dk
Description	<p>QR code printing</p> <p>v show QR code specification, v=0 show choosing QR code specification automatically</p> <p>r show error correction level</p> <p>nL nH show data length</p> <p>d1...dk show QR code data need printing</p>
Range	$0 \leq v \leq 17$ $1 \leq r \leq 4$ $k = nL + 256 * nH$
Default	none
Model	Portable printer
Be careful	QR code printing
Using sample	<p>1b 40</p> <p>1D 6B 61 08 02 08 00 30 31 32 33 34 35 36 37</p>

⑦State command

Transfer state

Name	Transfer state								
Format	<p>ASCII : GS r n</p> <p>Decimal code : 29 114 n</p> <p>Sixteen hexadecimal code : 1D 72 n</p>								
Description	<p>Transmitted by the N state n the specified as follows:</p> <table border="1"> <thead> <tr> <th>n</th><th>function</th></tr> </thead> <tbody> <tr> <td>1.49</td><td>Transfer printing paper sensor</td></tr> <tr> <td></td><td></td></tr> <tr> <td></td><td></td></tr> </tbody> </table>	n	function	1.49	Transfer printing paper sensor				
n	function								
1.49	Transfer printing paper sensor								
Range	n = 1, 49								
Default	None								
Model	ALL								
Be careful	<ul style="list-style-type: none"> When using the serial interface: If you set the DTR/DSR control, the printer in the confirmation of the host receives the data is ready (DSR signal SPACE), only to send a byte. If the host computer is not ready to receive data sent (DSR signal MARK), the printer waits until the host ready. If you set the XON/XOFF control, the printer to send only one byte, and does not confirm the DSR signal state. When data are generated in the print buffer, execute the command. So between the receiving the command and transmit state, there may be a time interval, depending on the buffer state. When using the GS a activation state automatic reply to ASB, use GS r transfer of state and the ASB state must separate. State transfer are shown below: 								

	Printing paper sensor status (n=1,49):			
	bit	Off/on	Sixteen hexadecimal code	ASB state
	0,1	-	-	-
	2,3	off	00	0
		on	(0C)	(12)
	4	off	00	0
	5,6	-	-	-
	7	off	00	0
Bit 2 and 3: printing paper as sensor to detect the printing paper to do, printer offline, and the command not implemented. The 2 and 3 do not transfer paper shortage state.				
Using sample	none			

Real-time transmission condition

Name	Real-time transmission condition
Format	ASCII : DLE EOT n Decimal code : 16 4 n Sixteen hexadecimal code : 10 04 n
Description	According to following parameters, real-time to transmit printer condition, parameters n is used to assign printer condition need transmit.: n = 1: transmit printer condition n = 2: transmit off-line condition n = 3: transmit error condition n = 4: transmit paper sensor condition
Range	$1 \leq n \leq 4$
Default	none
Model	ALL

Be careful

- when printer receive this command return to relative condition immediately
- this command do not insert to command sequence with two or more bytes as far as possible.
- Even if printer is set to ban by ESC=(select peripherals), this command is still valid.
- printer transmit advanced condition, each condition use 1 bytes data to express.
- printer transmission status is not confirmed whether the host receive.
- printer should execute immediately receiving this command.
- This command only effect for serials printer. Printer should execute immediately receiving this command at any condition.

n=1: printer condition

Bit	0/1	Sixteen hexadecimal code	Decimal code	function
0	0	00	0	Fixed is 0
1	1	02	2	Fixed is 1
2	0	00	0	Open One or two cashbox (the machine without cashbox is fixed 0)
	1	04	4	Close two cashbox
3	0	00	0	On-line
	1	08	8	Out -line
4	1	10	16	Fixed is 1
5, 6		--	--	undefined
7	0	00	00	Paper had cut
	1	80	96	Paper not cut

n=2: transmit out-line status

bit	0/1	Sixteen hexadecimal code	Decimal code	function
0	0	00	0	Fixed is 0
1	1	02	2	Fixed is 1
2	0	00	0	Close on-housing
	1	04	4	Open on-housing
3	0	00	0	No press feeding key
	1	08	8	Press feeding key
4	1	10	16	Fixed is 1
5	0	00	0	Printer with paper
	1	20	32	Printer without paper
6	0	00	00	No error
	1	40	64	Have Error
7	0	00	0	Fixed

	n=3: transmit error status				
	bit	0/1	Sixteen hexadecimal code	Decimal code	function
	0	0	00	0	Fixed is 0
	1	1	02	2	Fixed is 1
	2		--	--	Undefined
	3	0	00	0	Cutter without error
		1	08	8	Cutter with error
	4	1	10	16	Fixed is 1
	5	0	00	0	No unrecoverable error
		1	20	32	Have unrecoverable error
	6	0	00	00	printer head temp and voltage is normal
		1	40	64	printer head temp or voltage exceed range
	7	0	00	0	Fixed is 0
	n=4: transmit paper sensor status				
	bit	0/1	Sixteen hexadecimal code	Decimal code	function
	0	0	00	0	Fixed is 0
	1	1	02	2	Fixed is 1
	2, 3	0	00	0	Have paper
		1	0C	12	Paper nearly
	4	1	10	16	Fixed is 1
	5, 6	0	00	0	Have paper
		1	60	96	No paper
	7	0	00	0	Fixed is 0
Using sample	10 04 01				
	10 04 02				
	10 04 03				
	10 04 04				

Real-time printer command

Name	Real-time printer command
Format	ASCII : DLE ENQ n Decimal code : 16 5 n

	Sixteen hexadecimal code : 10 05 n								
Description	<p>The printer response to the host request. Assign n as following request:</p> <table border="1"> <tr> <th>n</th><th>request</th></tr> <tr> <td>1</td><td>Recover from error and start printing from error line</td></tr> <tr> <td>2</td><td>Recover from error after clean receiving and printing buffer.</td></tr> <tr> <td></td><td></td></tr> </table>	n	request	1	Recover from error and start printing from error line	2	Recover from error after clean receiving and printing buffer.		
n	request								
1	Recover from error and start printing from error line								
2	Recover from error after clean receiving and printing buffer.								
Range	n = 1, 2								
Default	none								
Model	ALL								
Be careful	<p>Only when auto-cutter and opening housing have error, this command is valid.</p> <p>The printer will handle data when receiving this command.</p> <p>Even if printer at out-line, printing buffer is full or serial interface mode have error, this command also execute.</p> <p>Under parallel interface mode, this command will not execute.</p> <p>whenever you receive <10>H<05>H<n> ($1 \leq n \leq 2$) data sequence, will be sent condition.</p> <p>For example:</p> <p>ESC * m nL nH dk , d1 = <10>H, d2 = <05>H, d3 = <01>H</p> <p>In a command data with two or more bytes, this command is not used.</p> <p>For example:</p> <p>If want to send ESC 3n to printer, but before n send, DTR(response to host is DSR) will become MARK. Before n send, take place FLE ENQ 2 interrupt. DLE ENQ 2 code <10>H will be as ESC3 code <10>H to execute.</p> <p>DLE ENQ 2 allow printer recover from error condition after clean receiving buffer and printing buffer data. The printer store valid state setting when error occur. (like ESC !, ESC3, etc) can use this command and ESC@ initialize printer fully. In addition, this command only valid for recoverable error except printer head temp error.</p>								
Using sample	10 05 01								

Enable/disable automatic upload status (ASB)

Name	Enable / disable automatic upload status				
Format	ASCII : GS a n Decimal code : 29 97 n Sixteen hexadecimal code : 1d 61 n				
Description	Ban/allow ASB and use n designated condition as follows:				
	bit	Open/c lose	Sixteen hexadecimal code	Decimal code	ASB condition
	0	-	-	-	Undefined
	1	-	-	-	undefined
	2	Close	00	0	Ban Error condition
		Open	04	4	Allow Error condition

	3	Close	00	0	Ban printing paper roll sensor status
		open	08	8	Allow printing paper roll sensor status
	4-7	-	-	-	undefined
Range	0≤n≤255				
Default	none				
Model	ALL				
Be careful	<p>If any condition is allowed above chart, so when executing this command ,printer transfer status. Once allowed condition has change, the printer transfer status automatically. Because each condition transmission express the current state, banned item can be changed.</p> <p>If all the condition be banned, also banned ASB function.</p> <p>If allowed to ASB as the default setting, so that when the printer can receive and transmit printer data for the first opening time, the printer will transfer status.</p> <p>When transfer the following four bytes, don't have to determine whether the host is ready to receive data.</p> <p>Four bytes must be continuous , except XOFF code。</p> <p>Because the command data are executed after it is performed in receiving buffer area.</p> <p>When using DLE EOT, must distinguish from the condition of these command transmission and ASB status.</p>				
Using sample	1D 61 08				

⑧Other command

Initialize printer

Name	Initialize printer
Format	ASCII : ESC @ Decimal code : 27 64 Sixteen hexadecimal code : 1B 40
Description	The content of initialize printer: Remove the print data in the buffer, the effective mode reset the printer model to open the printer power supply.
Range	none
Default	none
Model	ALL
Be careful	none
Using sample	none

Self testing page print

Name	Self testing page print
Format	ASCII : DC2 T

	Decimal code : 18 94 Sixteen hexadecimal code : 12 54
Description	Self testing page print
Range	none
Default	none
Model	ALL
Be careful	none
Using sample	1B 40 12 54

Set print parameters

Name	Set print parameters
Format	ASCII : ESC 7 n1 n2 n3 Decimal code : 27 55 n1 n2 n3 Sixteen hexadecimal code : 1B 37 n1 n2 n3
Description	Set print up plus hot, heating time, interval time: n1 = 0-255 the most heated points, unit (8dots), the default value of 9 (80 points); n2 = 0-255 heating time, unit (10us), the default value of 80; n3 = 0-255 heating time interval, the unit (10us), the default value of 2; The heating point, maximum power current control board of large, fast printing speed. The maximum heating points was $8 * (n1+1)$ The longer heating time, print density high, the printing speed is slower. The heating time is too short, it may be print blank; The longer the interval, printing more clearly, the printing speed is slow;
Range	
Default	none
Model	ALL
Be careful	"heating time", "the heating interval" control panel will be automatically adjusted according to input voltage.
Using sample	Heating point: 80点, heating time: 800us, the heating interval 200us。 1B 40 1B 37 09 50 02 12 54 Heating point: 80点, heating time: 1600us, heating interval 200us。 1B 40 1B 37 09 A0 02 12 54 It obviously to see that the longer the interval, printing more clearly.

Cashbox impulse (Only For Drawer)

Name	Cashbox impluse
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Format	ASCII : ESC p m t1 t2 Decimal code : 27 112 m t1 t2 Sixteen hexadecimal code : 1B 70 m t1 t2						
Description	Output impulse (impulse is designated by t1 and t2) to m specified pin						
Range	m=0,1,48,49 $0 \leq t1 \leq 255$ $0 \leq t2 \leq 255$						
Default	none						
Model	ALL						
Be careful	1、cashbox pin designated by m <table border="1" data-bbox="493 629 1340 768"> <thead> <tr> <th>m</th><th>function</th></tr> </thead> <tbody> <tr> <td>0,48</td><td>Cashbox open/close (link pin2)</td></tr> <tr> <td>1,49</td><td>Cashbox open/close (link pin5)</td></tr> </tbody> </table> 2、When cashbox open is $[t1 \times 2ms]$ and is $[t2 \times 2ms]$ on close time。 3. if $t2 < t1$, it is $[t1 \times 2ms]$ on close time。	m	function	0,48	Cashbox open/close (link pin2)	1,49	Cashbox open/close (link pin5)
m	function						
0,48	Cashbox open/close (link pin2)						
1,49	Cashbox open/close (link pin5)						
Using sample	1B 40 1B 70 00 60 60 1B 70 01 60 60						