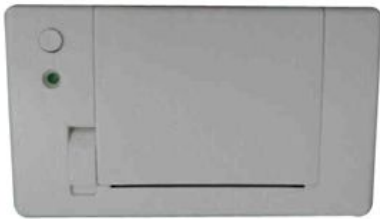


Embedded Printer DP-EH600 Technical Manual



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I : Introduction & Characteristic

1、 Introduction:

DP-EH600 embedded print module, by using the mature printer core and common MCU and devices, has the following characteristics:

- 1.1、 Print control board with built-in 24X24 GB18030 Chinese character and English font 12X24.
- 1.2、 Fast print speed, low noise
- 1.3、 Mechanical dimensions small, easy for users to install
- 1.4、 Stable performance, good compatibility
- 1.5、 Can be used in medical equipment, fire protection, industrial control and other instrumentation and other fields

2、 Characteristic:

Printing method	Thermal matrix printer
Printing paper	Thermal paper, paper width of 57.5 ± 0.5 , containing less than 15mm in diameter, outer diameter less than 30mm
Printing density	8 /mm, 384 in each row.
The print head life	50 kilometers
Effective print width	48mm
Working voltage	5.0~9.0V, average current 1~3A
Print speed	According to the different voltage, 5.0V voltage, the printing speed of 60mm/ seconds
Printing character	24X24 international one or two font, 12X24 standard ASCII code, and can to Chinese characters and character amplification 1-4 times print
Paper type	Thermal paper roll, 57mmX33mm
The paper change mode	Automatic paper change
Print buffer	16K
Interface form	The optional RS232 serial /TTL serial /USB interface
Working temperature	0-50° C
Relative humidity	10-80%
Size and shape	
Installation dimension	



II : Appearance Size Map

III: The Control Board Hardware Description

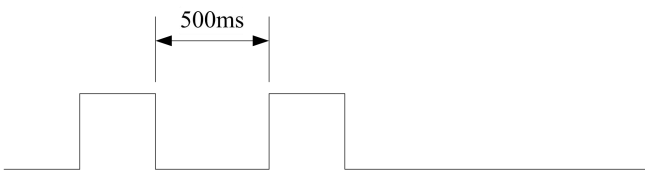
3.1、Print Test

After power on, hold down the K1 key board short contact, loosen, control panel will print a test page. There may be changes between different short-circuit point name.

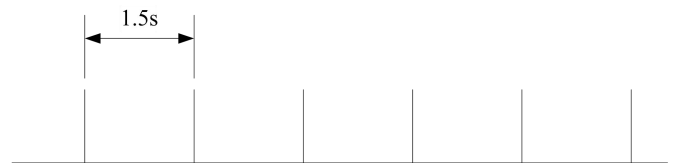
3.2、The lights flash

These graphs for thermal control panel LED waveform, vertical line represents the number of LED lights flash, 500ms represents a pause time, 400ms said light flashing time, says 1.5s LED flash to stop time.

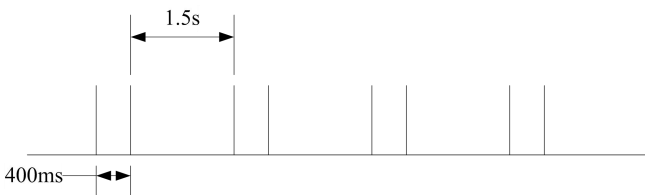
(1) Power on:



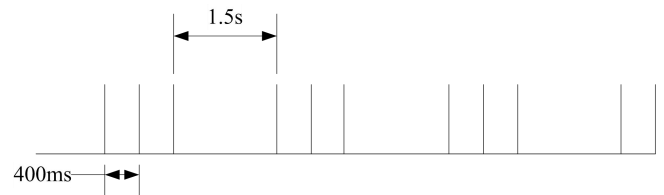
(2) Normal work:



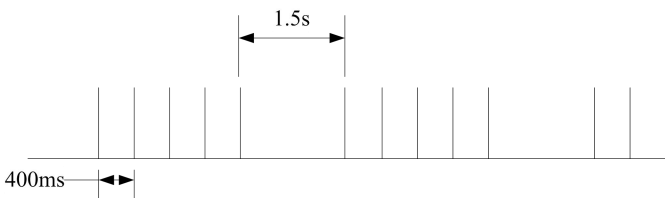
(3) Not detected printer:



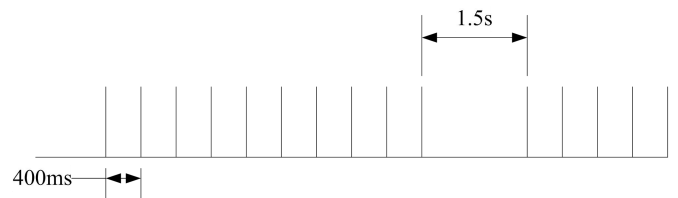
(4)The printer is out of paper:



(5) Heater overheating printer core:



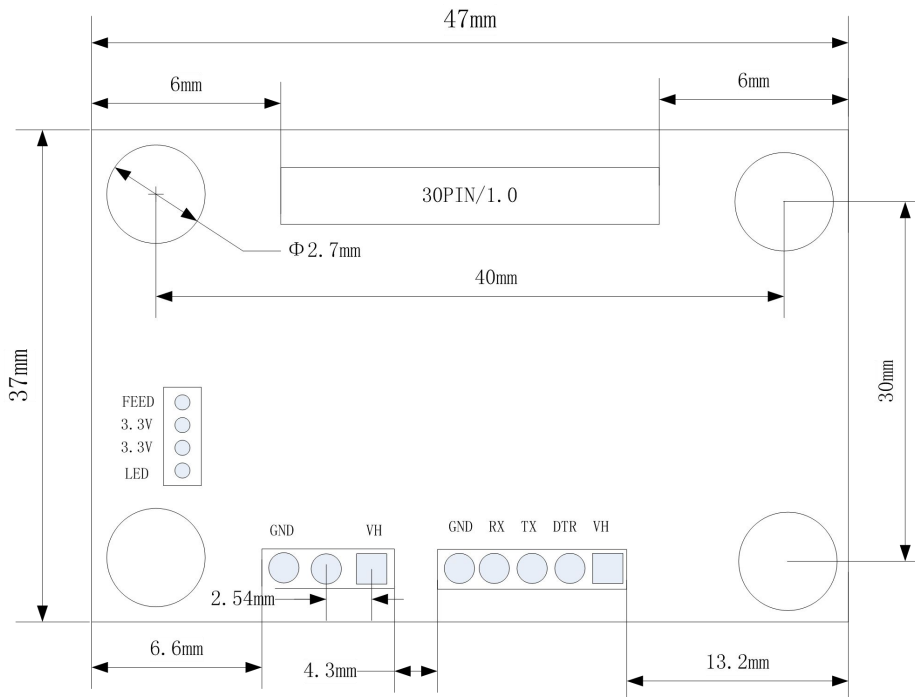
(6) Not detected Chinese font chip:



Initialization includes: the default value for each control codes, such as row spacing of 0, word spacing is 0, no binding length, vertical and horizontal tabulation tabulation value value is 0, the left and right limit Xiankuan width is 0, the default font magnification of 1, non

visual display.

3.3、 Drive plate size chart:



3.4、 Pin definition:

J5 Pin definition

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

Power supply is from 3.8V to 8.5V.

You can select RS232 or TTL before leaving factory, using TTL can save cost.

IV: The Control Board Software Description

4.1、The Command List

The command info	Command	Illustrate
The print command	LF	Print and wrap
	CR	Print and press enter.
	HT	Jump to the next position TAB
	ESC D n	Set the horizontal coordinates
	ESC J n	Print buffer data and paper n point
	ESC d n	Print buffer data and paper n
	ESC = n	Peripheral equipment
Formatting commands	ESC 2	Sets the default row spacing of 32 points
	ESC 3 n	Set the line spacing of N bit
	ESC a n	Set the alignment, alignment left, right, center alignment
	ESC S0	Set the double wide mode
	ESC DC4	Cancel double wide mode
	GS L nL nH	Set the left blank points
	ESC \$ nL nH	Set absolute print position
	ESC B n	Set the left spacing
Character set	ESC ! n	Set print character format:
	GS ! n	Heightening set font widening
	GS B	Cancel / set visual mode
	ESC V n	Setting / canceling 90 ° rotation mode
	ESC v n	To host transfer printer status
	ESC G n	Cancel / set overlapping mode
	ESC E n	Setting / canceling bold font
	ESC SP n	Set the right character spacing
	ESC { n	Set / character upside down to cancel
	ESC - n	Set underline the point height
	ESC % n	Setting / canceling custom user
	FS &	Selection of Chinese mode
	FS .	Cancel Chinese mode
	FS!	Set the print mode for Chinese characters
	ESC &	User defined character
	ESC ? n	The abolition of user defined characters
	ESC R n	The choice of international character set
	ESC t n	Select the character code table
Initialization commands	ESC @	Init printer
Status command	GS r n	Real time state
	GS a n	Enable / disable automatic upload status
	ESC *	Select the bitmap mode



Graphics settings command	GS *	Bitmap mode definition.
	GS /	Printing transmission bitmap
	GS v	Print raster bitmap
	FS p n m	Print NV bitmap
	FS q n	The definition of NV bitmap
Barcode setup command	GS H	Select the HRI print mode
	GS h	Set the bar code height
	GS w	Set the bar code width
	GS k	Barcode printing
	GS x	Set the bar code printed on the left spacing
The auxiliary function command	ESC 7 n1 n2 n3	Set the control parameters of the command
	ESC 8 n1 n2	Sleep parameters
	ESC 9 n	Selection of Chinese code format
	DC2 T	Self testing page print
	ESC c 5	Cancel / activation panel buttons (only for key)

4.2、Control Command

4.2.01、HT

[Name] Horizontal positioning

[Format] ASCII CODE HT

Sixteen hexadecimal code 09

Decimal code 9

[Description] Move the printing position to the next level positioning point position.

[Be careful] •If the next level positioning is not set position, the command is ignored.

- If the next level positioning points in print outside the region, the print position to the "print width +1".
- Through the ESC D command to set the horizontal positioning point position.
- Print position is located in the "received the command print width +1", the printer executes print buffer full print the current line, and at the beginning of the next line processing level positioning.

[Reference] ESC D

4.2.02、LF

[Name] Print and wrap

[Format] ASCII CODE LF

Sixteen hexadecimal code 0A

Decimal code 10

[Description] To print out the data in a print buffer, and according to the current row spacing, put forward a line of printing paper.



[Be careful] The command to print position is set to start position line.
 [Reference] ESC 2 , ESC 3

4.2.03、CR

[Name] Print and press enter.
 [Format] ASCII CODE CR
 Sixteen hexadecimal code 0D
 Decimal code 13
 [Description] Allow automatic paper feeding, this command and the LF command for the same function. Do not allow the automatic paper feeding, this command will be ignored.
 [Be careful] • The serial interface mode, the command line input Function is ignored.
 • Set the print start position as a starting point for the.
 [Reference] LF

4.2.04、ESC SP n

[Name] Set the right character spacing
 [Format] ASCII CODE ESC SP n
 Sixteen hexadecimal code 1B 20 n
 Decimal code 27 32 n
 [Range] $0 \leq n \leq 255$
 [Description] Spacing character on the right side of the [n x 0.125 mm].
 [Be careful] • For times wider pattern, the right character spacing is two times the normal mode. When the character is enlarged, the right character spacing is n times the normal mode.
 • This command does not affect the Chinese characters character set.
 • This command independent set value standard pattern in each mode.
 [Default value] n = 0

4.2.05、ESC ! n

[Command] Select the print mode
 [Format] ASCII CODE ESC ! n
 Sixteen hexadecimal code 1B 21 n
 Decimal code 27 33 n
 [Range] $0 \leq n \leq 255$
 [Description] By specifying the value choose print mode parameter n. To define the parameters of N are as follows:

Bit	Off / On	Sixteen hexadecimal code	Decimal code	Function
0	Off	00	0	Character font A (12 * 24).



	On	01	1	Character font B (9 * 17).
1	Off	00	0	Lift the visual mode.
	On	02	2	Set the visual mode.
2	Off	00	0	Lift the inversion model.
	On	04	4	Invert mode settings.
3	Off	00	0	Lift the bold pattern.
	On	08	8	Set in bold patterns.
4	Off	00	0	Release times higher mode.
	On	10	16	Setup times higher mode.
5	Off	00	0	Release times wider pattern.
	On	20	32	Setup times wider pattern.
6	Off	00	0	Remove delete line mode.
	On	40	64	Set delete line mode.
7	-	-	-	Not defined.

4.2.06、ESC \$ nL nH

[Name] Set absolute print position

[Format] ASCII CODE ESC \$ nL nH
 Sixteen hexadecimal code 1B 24 nL nH
 Decimal code 27 36 nL nH

[Range] $0 \leq nL \leq 255$
 $0 \leq nH \leq 255$

[Description] The settings from the start line to be between print character position distance.
 • From the beginning of a line to the printing position distance of $[(nL + nH \times 256) \times 0.125 \text{ mm}]$.

[Be careful] • The specified print outside the regional settings are ignored.
 • Using the horizontal movement in the standard model (x). 0.0

[Reference] ESC \ , GS \$, GS \

4.2.07、ESC B n

[Name] Set the left spacing

[Format] ASCII CODE ESC B n
 Sixteen hexadecimal code 1B 42 n
 Decimal code 27 66 n

[Range] The default value is 0
 $0 \leq n \leq 47$

4.2.08、ESC % n

[Name] Select / unselect user-defined character set

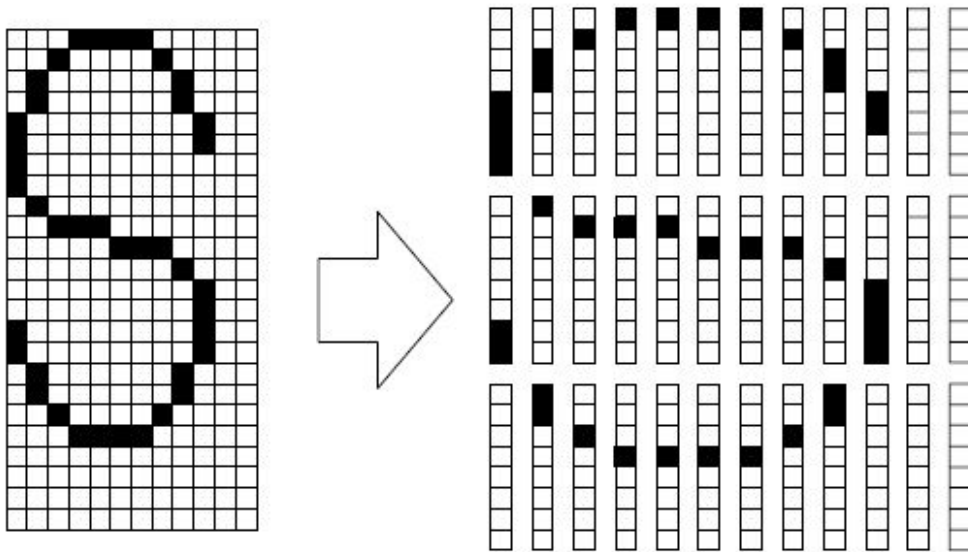
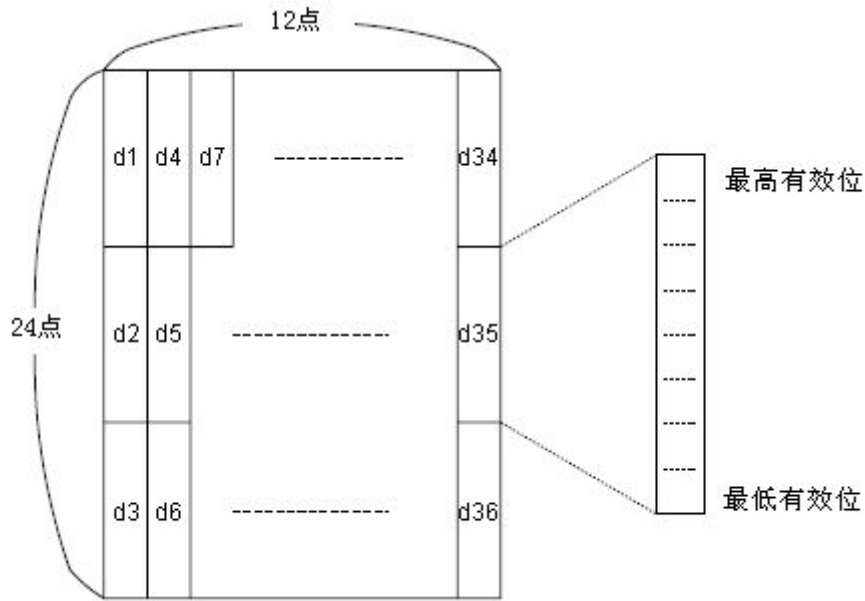


[Format]	ASCII CODE	ESC	%	n
	Sixteen hexadecimal code	1B	25	n
	Decimal code	27	37	n
[Range]	0 ≤ n ≤ 255			
[Description]	Select or cancel the user-defined character set.			
	<ul style="list-style-type: none">• When n's least significant bit is 0, the abolition of user defined character set.• When n's least significant bit is 1, select user defined character set.			
[Be careful]	<ul style="list-style-type: none">• When the abolition of user custom character set, select internal character set automatically.• n only the least significant bit of useful.			
[Default value]	n = 0			
[Reference]	ESC & , ESC ?			

4.2.09、ESC & y c1 c2 [x1 d1 ... d (yx1)] ... [xk d1 ... d(y x k)]

[Name]	User defined character				
[Format]	ASCII CODE	ESC &	y	c1	c2 [x1 d1...d(y × x1)]...[xk d1...d(y × xk)]
	Sixteen hexadecimal code	1B	26	y	c1 c2 [x1 d1...d(y × x1)]...[xk d1...d(y × xk)]
	Decimal code	27	38	y	c1 c2 [x1 d1...d(y × x1)]...[xk d1...d(y × xk)]
[Range]	y = 3				
	32 ≤ c1 ≤ c2 ≤ 126				
	0 ≤ x ≤ 12 (when setting the font A (12×24))				
	0 ≤ d1 ... d(y × xk) ≤ 255				
[Description]	User defined character.				
	<ul style="list-style-type: none">• y specifies the number of bytes in vertical direction.• c1 specifies the starting character encoding, c2 specifies the ending character encoding.• x specifies the number of horizontal direction.				
[Be careful]	<ul style="list-style-type: none">• To define the character code range: from <20>H to <7E>H ASCII code (95 characters).• Continuous character coding can define multiple characters. When only need one character, so that C1 = c2.• d is the data character. Model is the horizontal direction from the beginning on the left. The remaining point blank.• User defined character data (y x) bytes.• Set the print point of the corresponding bit is 1 or not to print the corresponding bit 0 point.• This command for each font definitions different user-defined character mode. Using ESC to set the font.• User defined characters and downloading bitmap could not be defined. When the command is executed, the bitmap is cleared.• In the case of user-defined character is clear:<ol style="list-style-type: none">1) Executive ESC @.2) Executive GS *.3) Executive ESC ?.4) Reset or Off printer closed power.				
[Default value]	The internal character set				
[Reference]	ESC % , ESC ?				
[Example]					

- When setting the font A (12 24) when.



d1 = <0F>H d4 = <30>H d7 = <40>H
d2 = <03>H d5 = <80>H d8 = <40>H
d3 = <00>H d6 = <00>H d9 = <20>H

4.2.10、ESC * m nL nH d1 . . . dk

[Name] Select the bitmap mode
[Format] ASCII CODE ESC * m nL nH d1...dk
Sixteen hexadecimal code 1B 2A m nL nH d1...dk
Decimal code 27 42 m nL nH d1...dk
[Range] m = 0, 1, 32, 33
0 ≤ nL ≤ 255
0 ≤ nH ≤ 3

$0 \leq d \leq 255$

[Description] Select the bitmap using M mode, the bitmap points specified by nL and nH, as shown below:

m	Pattern	The vertical direction		Horizontal direction	
		Point	The point density	The point density	The number of data (K)
0	8-point Single density	8	67.7 dpi	101.6 dpi	$nL + nH \times 256$
1	8-point Double density	8	67.7 dpi	203.2 dpi	$nL + nH \times 256$
32	24-point Single density	24	203.2 dpi	101.6 dpi	$(nL + nH \times 256) \times 3$
33	24-point Double density	24	203.2 dpi	203.2 dpi	$(nL + nH \times 256) \times 3$

[Be careful] • If the m value exceeds the specified range, then the nL and after the data is considered as normal data processing.

- NL and nH Horizontal direction bitmap Point, calculated by the $nL + nH * 256$ Point.
- If the bitmap data input beyond a line can be printed Point, then the excess data is ignored.
- Said D bitmap data. Set the corresponding bit is 1 to go to a certain point print, or set to 0 so as not to print a point.
- After printing a bitmap, the printer returned normal data processing mode.
- The command was not print mode (bold, underline, overlapping character size, or reverse print), unless it is printed upside down pattern.
- Figure 3.11.3 illustrates the?? between the image data and print dot Off system.
- When the 8- bitmap is selected:

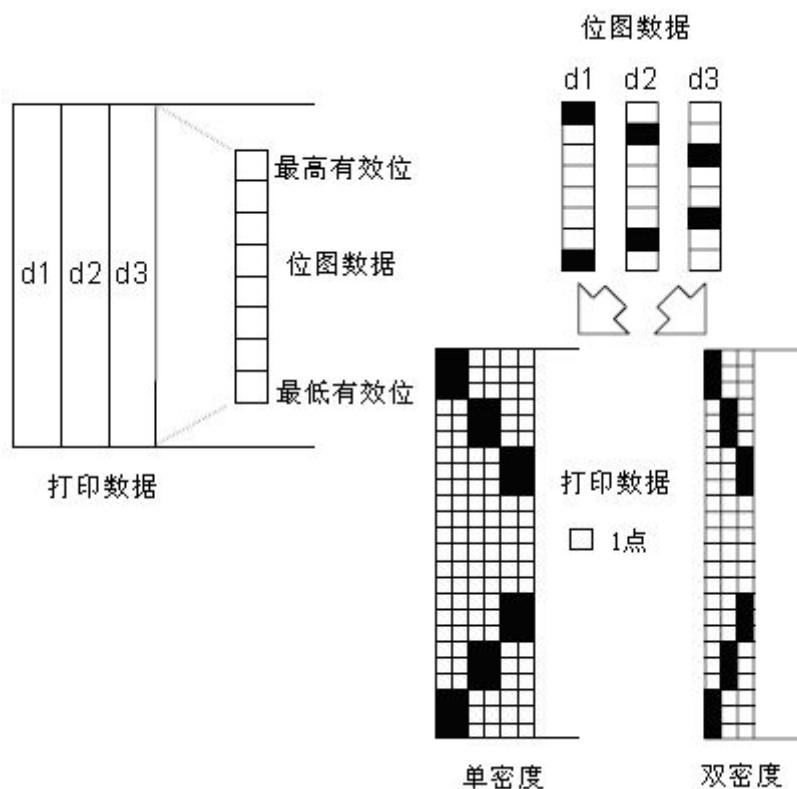
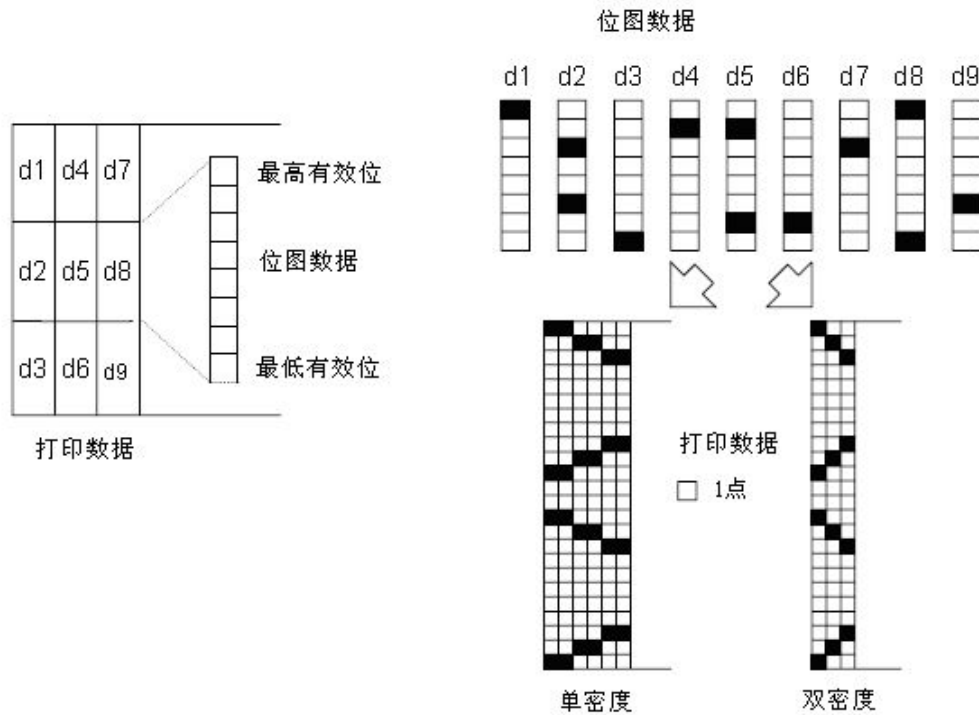


图 3.11.3

- When the 24- bitmap is selected:



Chat 3.11.3

4.2.11、ESC - n

[Name] Setting / removing underline

[Format] ASCII CODE ESC - n
 Sixteen hexadecimal code 1B 2D n
 Decimal code 27 45 n

[Range] $0 \leq n \leq 2, 48 \leq n \leq 50$

[Description] The following based on the n value, setting / removing underline mode:

n	Function
0, 48	Lift the underline mode
1, 49	Set underline mode (1 thick)
2, 50	Set underline mode (2 thick)

- [Be careful]
- The printer can print the underlined for all characters (including character margin), but except the blank HT settings.
 - the printer cannot give clockwise 90?? character and reverse character printing underline.
 - When by setting the n value of 0 or 48 lift underline mode, the data are not print underscore, and the underline settings before removing the underline model roughness does not change. The default underline thickness 1 points.
 - Change character size does not affect the underlined roughness.
 - ESC! Can also set or cancel the underline mode. But must pay attention, finally receiving commands are valid.



[Default value] n = 0
[Reference] ESC !

4.2.12、ESC 2

[Name] Select the default row spacing
[Format] ASCII CODE ESC 2
Sixteen hexadecimal code 1B 32
Decimal code 27 50
[Description] Select the row spacing of 3.75 mm (30 x 0.125 mm).
[Be careful] • The line spacing can be independently set in standard mode.
[Reference] ESC 3

4.2.13、ESC 3 n

[Name] Set line spacing
[Format] ASCII CODE ESC 3 n
Sixteen hexadecimal code 1B 33 n
Decimal code 27 51 n
[Range] $0 \leq n \leq 255$
[Description] Set the line spacing of [n 0.125 mm].
[Be careful] • The line spacing can be independently arranged in a standard mode and page mode.
• The use of vertical motion unit in the standard model (Y).
[Default value] n = 30
[Reference] ESC 2

4.2.14、ESC ? n

[Name] The abolition of user defined characters
[Format] ASCII CODE ESC ? n
Sixteen hexadecimal code 1B 3F n
Decimal code 27 63 n
[Range] $32 \leq n \leq 126$
[Description] The abolition of user defined characters.
[Be careful] • the command to terminate the use of the definition of style for character encoding, character encoding specified by n. In the user defined characters is cancelled, the internal character pattern corresponding to print.
• In ESC! Choose the font, the command to remove the specified encoding style definitions.
• If a user defined characters are not defined, the printer ignored the command.
[Reference] ESC & , ESC %



4.2.15、ESC @

[Name] Initialize printer

[Format] ASCII CODE ESC @
Sixteen hexadecimal code 1B 40
Decimal code 27 64

[Description] Remove the print data in the buffer, the effective mode reset the printer model to open the printer power supply.

[Be careful] • DIP拨动开关的设置不再被检查。
• In the receive buffer data will not be cleared.

4.2.16、ESC D n1 ... nk NUL

[Name] Set the horizontal position

[Format] ASCII CODE ESC D n1...nk NUL
Sixteen hexadecimal code 1B 44 n1...nk 00
Decimal code 27 68 n1...nk 0

[Range] $1 \leq n \leq 255$
 $0 \leq k \leq 32$

[Description] Set the horizontal position.

- n is used to set the horizontal position of the specified column number line start.
- k indicates the total amount will be set level position.

[Be careful] • Level position as a value is stored, the values for the character width \times n] [from line On was measured. The character width including right space character, and the times is two times the width of the wide character to ordinary character set.

- The command to remove the horizontal position prior to the setting of the.
- When setting $n = 8$, by sending a HT print position is moved to the ninth column.
- Can be set up to 32 position ($k = 32$). More than 32 position data are treated as ordinary data.
- According to the ascending order of transmission of [n]k and at the end of the placement of a NUL code 0.

When [n]k is less than or equal to the value of [n]k-1, location set to end, and the subsequent data according to the common data processing.

- ESC D NUL to cancel all horizontal position.
- Even if the character width, horizontal position previously specified also unchanged.
- For the standard type, character width is memory.

[Default value] The default position for the font A (12 * 24) of the 8 character spacing (9 17 25 ...).

[Reference] HT



4.2.17、ESC E n

[Name] Setting / removing bold print

[Format] ASCII CODE ESC E n
Sixteen hexadecimal code 1B 45 n
Decimal code 27 69 n

[Range] $0 \leq n \leq 255$

[Description] Setting or removing bold print mode.

When n's least significant bit is 0, lifting the bold print mode.

When n's least significant bit is 1, set in bold print mode.

[Be careful] • The lowest effective bit n only allows the use of

- The command ESC! Is set in the same way and lift the bold print mode. When the command and ESC at the same time, be careful.

[Default value] n = 0

[Reference] ESC !

4.2.18、ESC G n

[Name] Setting / removing overlapping print

[Format] ASCII CODE ESC G n
Sixteen hexadecimal code 1B 47 n
Decimal code 27 71 n

[Range] $0 \leq n \leq 255$

[Description] Setting or removing overlapping print mode.

- When the n of the least significant bit is 0, lifting the overlapped print mode.
- When the n of the least significant bit is 1, set of overlapping print mode.

[Be careful] • The lowest effective bit n only allows the use of.

- In an overlapping mode and bold mode printer output is the same.

[Default value] n = 0

[Reference] ESC E

4.2.19、ESC J n

[Name] Printing and paper

[Format] ASCII CODE ESC J n
Sixteen hexadecimal code 1B 4A n
Decimal code 27 74 n

[Range] $0 \leq n \leq 255$

[Description] Print print output buffer the data and feed [n × 0.125 mm].

[Be careful] • Print is finished, the command will start position printer settings for the starting point.

- Feeding amount of the command set is not affected by the ESC 2 or ESC 3 Command set.
- In the normal mode, the printer using vertical motor unit (Y).



4.2.20、ESC R n

[Name] The choice of international character set

[Format] ASCII CODE ESC R n
 Sixteen hexadecimal code 1B 52 n
 Decimal code 27 82 n

[Range] $0 \leq n \leq 13$

[Description] According to the table below to select n to set the value of the international character set

n	Character set
0	The United States
1	France
2	Germany
3	Britain
4	Denmark I
5	Sweden
6	Italy
7	The Spanish I
8	Japan
9	Norway
10	Denmark II
11	The Spanish II
12	Latin America
13	The Republic of Korea
14	Slovenia
15	China

[Default value] n = 0

4.2.21、ESC V n

[Name] Set / release clockwise rotation of 90°

[Format] ASCII CODE ESC V n
 Sixteen hexadecimal code 1B 56 n
 Decimal code 27 86 n

[Range] $0 \leq n \leq 1, 48 \leq n \leq 49$

[Description] Set / release clockwise 90° using a rotating n as follows:

n	Function
0,48	Lift the clockwise rotation of 90°
1,49	Set the clockwise rotation of 90°

- [Be careful]
- The command of printing in standard mode, and set up effective all the time.
 - When setting the underline mode, for clockwise rotation of 90°? The character, the printer does not underline.
 - In a clockwise 90° rotation mode, times and times wider command enlarged character direction and general mode times enlarged character width command in the opposite direction.

[Default value] n = 0

[Reference] ESC ! , ESC -



4.2.22、ESC v n

[Name] To host transfer printer status

[Format] ASCII CODE ESC v n
 Sixteen hexadecimal code 1B 76 n
 Decimal code 27 118 n

[Range] $0 \leq n \leq 1$, $48 \leq n \leq 49$

[Description] The return value is 1 bytes, where each bit representing different state:

Bit	Off / On	Sixteen hexadecimal code	Decimal code	Function
0	Off	00	0	The movement is not connected.
	On	01	1	Movement is connected.
1	-	-	-	Meaningless.
2	Off	00	0	A paper.
	On	04	4	Out of paper.
3	Off	00	0	Normal voltage.
	On	08	8	The voltage is higher than 9.5V.
4	-	-	-	Meaningless.
5	-	-	-	Meaningless.
6	Off	00	0	The normal temperature.
	On	40	64	The temperature exceeds 60 degrees.
7	-	-	-	Meaningless.

For example: the return of 0x04 represents the printer is out of paper

4.2.23、ESC a n

[Name] Select alignment

[Format] ASCII CODE ESC a n
 Sixteen hexadecimal code 1B 61 n
 Decimal code 27 97 n

[Range] $0 \leq n \leq 2$, $48 \leq n \leq 50$

[Description] A row of data according to specified position alignment
 To select the alignment with the following n:

n	Alignment
0, 48	Align left
1, 49	In the middle
2, 50	Align right

[Be careful] • Standard mode only in a row of the On before treatment, the command is available.



- The command performs alignment in the print area.
- The order according to the HT, ESC, or ESC, align the blank area.

[Default value] n = 0

[Example]

Align left	In the middle	Align right
<pre>ABC ABCD ABCDE</pre>	<pre>ABC ABCD ABCDE</pre>	<pre>ABC ABCD ABCDE</pre>

4.2.24、ESC SO n

[Name] Select times wider pattern

[Format] ASCII CODE ESC S0 n
Sixteen hexadecimal code 1B 0E n
Decimal code 27 14 n

[Description] Select times wider pattern, if cancel the times wider pattern, with the LF or DC4 command.

4.2.25、ESC DC4 n

[Name] Cancel times wider pattern

[Format] ASCII CODE ESC DC4 n
Sixteen hexadecimal code 1B 14 n
Decimal code 27 20 n

[Description] Cancel times wider pattern.

4.2.26、ESC d n

[Name] Printing and paper n

[Format] ASCII CODE ESC d n
Sixteen hexadecimal code 1B 64 n
Decimal code 27 100 n

[Range] $0 \leq n \leq 255$

[Description] Print to print the data in the buffer, and feed line n.

- [Be careful]
- The command set print starting position as the starting point for.
 - This command is not affected by the ESC spacing of 2 or 3 ESC command set.
 - Maximum feeding amount of 1016 mm {40 inch}. If the specified feeding amount (n?? line spacing) of more than 1016 mm {40 inch}, the printer only feed 1016 mm {40 inch}.

[Reference] ESC 2 , ESC 3

4.2.27、ESC t n

[Name] Select the character code table

[Format] ASCII CODE ESC t n



Sixteen hexadecimal code 1B 74 n

Decimal code 27 116 n

[Range] 0 ≤ n ≤ 5, 16 ≤ n ≤ 19, n = 255

[Description] 从字符代码表中选择页n。

N	Code page	N	Code page
0	CP437 [the United States of America, European standard]	26	Tai Wen
1	KataKana [Katakana]	27	CP720[Arabic]
2	CP850 [Multi language]	28	CP855
3	CP860 [Portuguese]	29	CP857[Turkish]
4	CP863 [Canada] - French	30	WCP1250[Central Europe]
5	CP865 [Western Europe]	31	CP775
6	WCP1251 [The Slavic language]	32	WCP1254[Turkish]
7	CP866 The Slavic 2	33	WCP1255[Hebrew]
8	MIK[The Slavic / Bulgaria]	34	WCP1256[Arabic]
9	CP755 [Eastern Europe, Latvia 2]	35	WCP1258[Vietnamese]
10	[Iran, Persia]	36	ISO-8859-2[Latin 2]
11	Retain	37	ISO-8859-3[Latin 3]
12	Retain	38	ISO-8859-4[Baltic languages]
13	Retain	39	ISO-8859-5[The Slavic language]
14	Retain	40	ISO-8859-6[Arabic]
15	CP862 [Hebrew]	41	ISO-8859-7[Greece]
16	WCP1252 [Latin 1]	42	ISO-8859-8[Hebrew]
17	WCP1253 [Greece]	43	ISO-8859-9[Turkish]
18	CP852 [Latin语 2]	44	ISO-8859-15[Latin 9]
19	CP858 [A variety of language Latin 1+ Europe.]	45	[Tai Wen 2]
20	Iran II [Persian]	46	CP856
21	Latvia	47	Cp874
22	CP864 [Arabic]		
23	ISO-8859-1 [Western Europe]		
24	CP737 [Greece]		
25	WCP1257 [The Baltic Sea]		

[Default value] n = 0

[Reference] The character code table

4.2.28、ESC { n

[Name] Set / release printed upside down pattern

[Format] ASCII CODE ESC { n

Sixteen hexadecimal code 1B 7B n

Decimal code 27 123 n

[Range] 0 ≤ n ≤ 255

[Description] To set or remove printed upside down pattern.

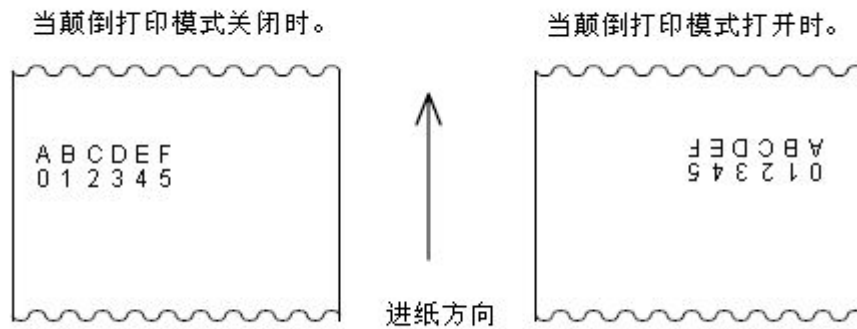
- When the least significant bit n is 0, Off closed printed upside down pattern.
- When the least significant bit n is 1, On printed upside down pattern.

[Be careful] • The lowest effective only n.

- This command only in the standard mode for a On at the beginning of input is valid.
- In reverse print mode, the printer will print first line rotation 180 ° then print.

[Default value] n = 0

[Example]



4.2.29、FS p n m

[Name] Print NV bitmap

[Format] ASCII CODE FS p n m
 Sixteen hexadecimal code 1C 70 n m
 Decimal code 28 112 n m

[Range] 1 ≤ n ≤ 255
 0 ≤ m ≤ 3 , 48 ≤ m ≤ 51

[Description] With the model of NV n m the specified bitmap print.

m	Pattern	The vertical point density	The horizontal point density
0, 48	Ordinary	203.2 dpi	203.2 dpi
1, 49	Double width	203.2 dpi	101.6 dpi
2, 50	Times higher	101.6 dpi	203.2 dpi
3, 51	4 times the size of	101.6 dpi	101.6 dpi

- n is the number of NV bitmap (commands defined by FS Q).
- m the specified bitmap mode.

[Be careful] • NV bitmap is a kind of definition in the non-volatile memory bitmap. FS Q FS P print

- The command is not available when the specified bitmap NV does not exist.
- In standard mode, only when there is no data print buffer, the command is available.
- This command is not affected by the print mode effects (in bold print, overlapping, underline, highlight character size, print or character 90?), except for the rotation printed upside down pattern.
- From the bitmap to print more than one line, beyond the data do not print.



- In general and double width mode, the command input n (n of NV bitmap height), at times and four times the size (the mode command feed point 2n, n of NV bitmap height), and ESC 2 or ESC 3 set row spacing without Off.
- Print bitmap, this command will print position is set in a line of 0n, and the subsequent data processing according to the common data.

[Reference] ESC *, FS q , GS / , GS v

4.2.30、FS q n [xL xH yL yH d1 ... dk] 1 ... [xL xH yL yH d1 ... dk] n

[Name] The definition of NV bitmap

[Format] ASCII CODE FS q n [xL xH yL yH d1...dk]1... [x L xH yL yH d1...dk]n
 Sixteen hexadecimal code 1C 71 n [xL xH yL yH d1...dk]1... [x L xH yL yH d1...dk]n
 Decimal code 28 113 n [xL xH yL yH d1...dk]1... [x L xH yL yH d1...dk]n

[Range] $1 \leq n \leq 255$
 $0 \leq xL \leq 255$
 $0 \leq xH \leq 3$ (When $1 \leq (xL + xH \times 256) \leq 1023$,
 $0 \leq yL \leq 255$)
 $0 \leq yH \leq 1$ (When $1 \leq (yL + yH \times 256) \leq 288$,
 $0 \leq d \leq 255$)
 $k = (xL + xH \times 256) \times (yL + yH \times 256) \times 8$

And the definition of data region = 192K bytes

[Description] The definition of NV bitmap using a specific n value.

- n specifies the definition of NV bitmap.
- xL, xH specifies the horizontal direction is defined in the NV bitmap point $(xL + xH \times 256) \times 8$.
- yL, yH specifies the vertical direction is defined in the NV bitmap for $(yL + yH \times 256) \times 8$.

[Be careful] • Frequently performs a write command may damage NV memory.

Therefore, a day of NV memory execution does not exceed 10 times the write operation.

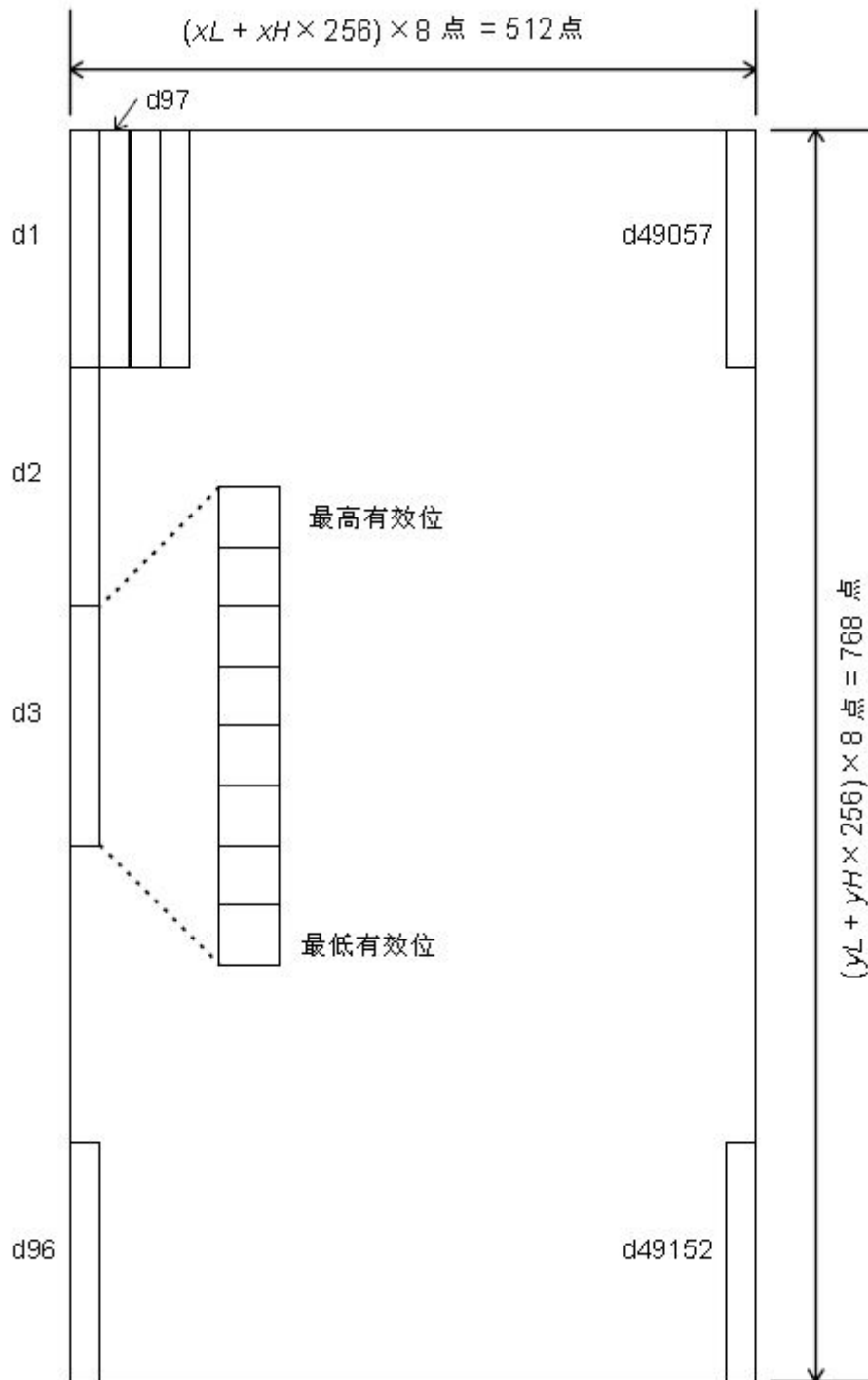
- In the process an image into the NV memory, printer performs a hardware reset operation
 Therefore, user defined characters, downloading bitmap should be defined after the completion of the command. The printer and print clear receive buffer, and reset to effectively while connecting the power supply mode. (does not support hardware reset interface)
- The command to cancel all has the commands defined NV bitmap.
- From this command On to start processing to complete the hardware reset, cannot perform mechanical operation (including when the cover when playing On initialization printhead position feed button feed etc.).
- During processing of this command, when the user NV memory write data printer is busy and stop receiving data. Therefore prohibited to transmit data during the execution of this order, including real-time command.
- NV bitmap is a kind of definition in the non-volatile memory bitmap. FS Q FS P print.
- In standard mode, this command only in a row before treatment is only effective On.
- 7 byte <FS this command YH> normal processing command is available.
- When the volume of data over the xL, X H, yL, yH defines the scope of the capacity, the printer will in the defined outside the scope of xL, xH, yL, yH defined.



- In the first group of bitmap, while xL, xH, yL, any parameter yH is beyond the scope of the definition, the command will be banned.
- In a group of bitmap non in the first set, when the printer meet xL, X H, yL, yH exceeds the defined range of circumstances, is to stop processing the command, and the 0n was written to the NV image. At this time, no definition of NV bitmap is prohibited (not defined, NV bitmap) but any previously defined is still valid.
- D said the definition of data. In the data (d), a 1 bits to specify a print and a 0 bit to specify a non printing dot.
- The command defines n number for the NV bitmap. The number from the bitmap 01H 0n was sequentially rise. So the first data set of [xL xH yL yH D1... Dk] NV bitmap 01H, finally a data set [xL xH yL yH D1... Dk] NV bitmap n. The total number and the FS P command to set the same amount NV bitmap.
- The definition of data a bitmap NV consists of the [xL xH yL yH D1... Dk]. Therefore, when only one NV bitmap n=1, printer only process data group [xL xH yL yH D1 dk] an... The printer to use the NV memory ([data: (xL xH * 256) x (yL yH * 256) 8] [header:4]) bytes.
- Defined area of this printer is 192K bytes (maximum). The command can define several bitmap, but does not define the total data volume [bitmap data + head] more than 192K bytes bitmap.
- Even if ASB is set, the printer while processing the command does not transmit ASB state or state detection.
- Once defined a NV bitmap, it can not be executed in ESC @ command, reset, power off the deleted.
- This command only execute NV bitmap definition, not performs the printing. NV bitmap printing is performed by the FS P command.

[Reference] FS p

[Example] 当 xL = 64, xH = 0, yL = 96, yH = 0



4.2.31、GS ! n

[Name] Set the font size

[Format] ASCII CODE GS ! n
 Sixteen hexadecimal code 1D 21 n
 Decimal code 29 33 n

[Range] $0 \leq n \leq 255$
 $(1 \leq \text{Vertical fold} \leq 8, 1 \leq \text{Horizontal expansion} \leq 8)$

[Description] With 0 to 2 bit character height 4 to 7 bit character width as shown below

位	Off / On	Hexadecimal	Decimal system	Function
0	The character height setting. See table 2.			
1				
2				
3				
4	The character width setting. See table 1.			
5				
6				
7				

table 1

The character width setting.

Hexadecimal	Decimal system	Width
00	0	1(Ordinary)
10	16	2(Double width)
20	32	3
30	48	4
40	64	5
50	80	6
60	96	7
70	112	8

table 2

The character height setting

Hexadecimal	Decimal system	Width
00	0	1(Ordinary)
01	1	2(Double width)
02	2	3
03	3	4
04	4	5
05	5	6
06	6	7
07	7	8

[Be careful] • This command is available for all characters (English characters and Chinese characters) except HRI characters.

- If the N outside the defined range, the command is ignored.
- In standard mode, the The vertical direction refers to the paper feed direction. However, when the character direction clockwise 90°, Off The vertical direction and Horizontal development direction.
- When the characters in different size in a row, all of the characters in a line along the alignment.
- Use the ESC command can also play On! Or Off closed times wider and times higher mode. Finally the received command set.

[Default value] $n = 0$

[Reference] ESC !

4.2.32、GS * x y d1 . . . d (x × y × 8)

[Name] Definition of transmission bitmap

[Format] ASCII CODE GS * x y d1...d(x×y×8)
 Sixteen hexadecimal code 1D 2A x y d1...d(x×y×8)
 Decimal code 29 42 x y d1...d(x×y×8)

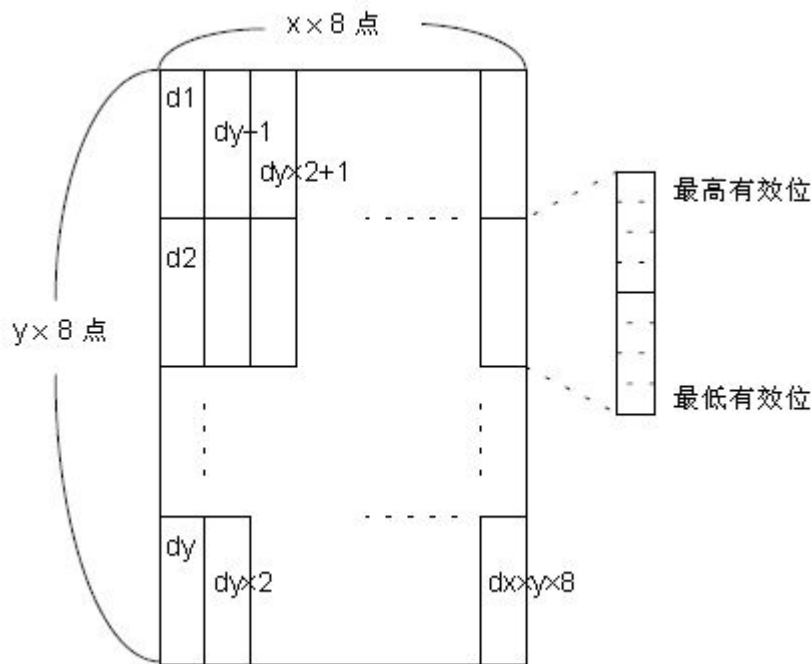
[Range] $1 \leq x \leq 255$
 $1 \leq y \leq 48$ ($x \times y \leq 1536$)
 $0 \leq d \leq 255$

[Description] Using X and y the specified point to define downloading bitmap.

- x The specified Horizontal direction Point.
- y The specified vertical direction Point.

[Be careful] • Horizontal directionPoint为x×8, The vertical directionPoint为 y×8.

- If the X * y exceeds the specified range, the command is prohibited.
- d said the bitmap data. Data (d) specify print is 1 not print position is 0.
- In the following cases clear pass bitmap defining:
 - 1) Executive ESC @.
 - 2) Executive ESC &.
 - 3) Reset or Off printer closed power.
- From the print data between bitmap and Off as shown below



[Reference] GS /

4.2.33、GS / m

[Name] Printing transmission bitmap

[Format] ASCII CODE GS / m
 Sixteen hexadecimal code 1D 2F m
 Decimal code 29 47 m

[Range] $0 \leq m \leq 3$, $48 \leq m \leq 51$

[Description] Print the specified by the M downlink bitmap.

M setting mode from the table below:

m	Pattern	The vertical point density	The horizontal point density
0, 48	Ordinary	203.2 dpi	203.2 dpi
1, 49	Double width	203.2 dpi	101.6 dpi
2, 50	Times higher	101.6 dpi	203.2 dpi
3, 51	Four times the size of	101.6 dpi	101.6 dpi

[Be careful] • If the bitmap data is not defined, the command is ignored.

- Standard mode, this command only when the effective data do not print buffer at.
- Print mode (bold, underline, overlapping, character size or reverse print) under the command is not available, except for reverse print mode.
- From the bitmap if will print more than the print area, beyond the data do not print.

[Reference] GS *

4.2.34、GS B n

[Name] Setting / removing white print mode

[Format] ASCII CODE GS B n
 Sixteen hexadecimal code 1D 42 n
 Decimal code 29 66 n

[Range] $0 \leq n \leq 255$

[Description] Setting or removing white print mode.

- When n's least significant bit is 0, visual mode Off closed.
- When n's least significant bit is 1, visual mode On.

[Be careful] • The lowest effective only n.

- The command were effective in the built-in and user-defined character character.
- When the visual mode when playing On, set it to ESC SP blank is valid.
- This command does not affect the bitmap, custom bitmap, bar code, HRI characters, and by HT skip space, ESC.
- This command does not affect the line spacing.
- Visual mode in preference to underline mode. When setting the visual mode, even if the underline mode On is prohibited (but not cancel).

[Default value] n = 0

4.2.35、GS H n

[Name] Select the print position HRI characters

[Format] ASCII CODE GS H n
 Sixteen hexadecimal code 1D 48 n
 Decimal code 29 72 n

[Range] $0 \leq n \leq 3, 48 \leq n \leq 51$

[Description] Print bar code print position HRI characters

N select the print position as shown below:

n	Print position
0, 48	Do 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

- HRI said the bar code can read the corresponding characters.

[Be careful] • Use the GS f specified HRI character font print.

[Default value] n = 0

[Reference] GS f , GS k

4.2.36、GS L n L n H

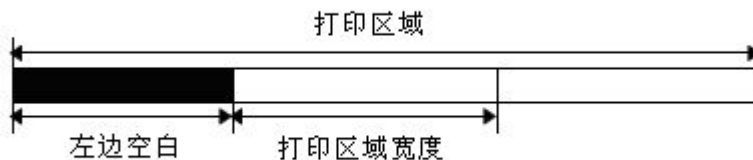
[Name] Set left blank amount

[Format] ASCII CODE GS L nL nH
 Sixteen hexadecimal code 1D 4C nL nH
 Decimal code 29 76 nL nH

[Range] $0 \leq nL \leq 255$
 $0 \leq nH \leq 255$

[Description] Set the left blank was measured by nL and nH.

- The left blank is set to $[(nL + nH * 256) \times 0.125 \text{ mm}]$.



[Be careful] • In standard mode, this command is available only in the starting position when processing line.

- If you set out of print range, maximum print units use.

[Default value] nL = 0, nH = 0

4.2.37、GS a n

[Name] Enable / disable automatic upload status

[Format] ASCII GS a n
 Sixteen hexadecimal code 1D 61 n
 Decimal code 29 97 n

[Range] $0 \leq n \leq 255$

Bit	Function	Value	
		0	1



0	-	-	-
1	-	-	-
2	Ban / allows to automatically upload status	Prohibited	Allow
3-4	-	-	-
5	Ban / allowable lack of control BUSY RTS=BUSY	Prohibited	Allow
6-7	-	-	-

[Description] When available, printer discovery state change, automatic transmission state to host.

4.2.38、GS h n

[Name] Set the height of bar code

[Format] ASCII CODE GS h n
 Sixteen hexadecimal code 1D 68 n
 Decimal code 29 104 n

[Range] $1 \leq n \leq 255$

[Description] Set the height of bar code.
 n Set the vertical direction Point.

[Default value] n = 162

[Reference] GS k

4.2.39、①GS k m d1...dk NUL②GS k m n d1...dn

[Name] Barcode printing

[Format] ①ASCII CODE GS k m d1...dk NUL
 Sixteen hexadecimal code 1D 6B m d1...dk 00
 Decimal code 29 107 m d1...dk 0
 ②ASCII CODE GS k m n d1...dn
 Sixteen hexadecimal code 1D 6B m n d1...dn
 Decimal code 29 107 m n d1...dn

[Range] ① $0 \leq m \leq 6$ (K and D depends on the use of bar code system)
 ② $65 \leq m \leq 73$ (N and D depends on the use of bar code system)

[Description] Select and print bar code bar code system.

M selected bar code system is as follows:

m	Bar code system	Number of characters	Remarks	
①	0	UPC-A	$11 \leq k \leq 12$	$48 \leq d \leq 57$
	1	UPC-E	$11 \leq k \leq 12$	$48 \leq d \leq 57$
	2	JAN13 (EAN13)	$12 \leq k \leq 13$	$48 \leq d \leq 57$
	3	JAN 8 (EAN8)	$7 \leq k \leq 8$	$48 \leq d \leq 57$
	4	CODE39	$1 \leq k'$	$48 \leq d \leq 57, 65 \leq d \leq 90, 32, 36, 37, 43, 45, 46, 47$
	5	ITF	$1 \leq k$ (even number)	$48 \leq d \leq 57$
	6	CODABAR	$1 \leq k'$	$48 \leq d \leq 57, 65 \leq d \leq 68, 36, 43, 45, 46, 47, 58$
②	65	UPC-A	$11 \leq n \leq 12$	$48 \leq d \leq 57$

66	UPC-E	$11 \leq n \leq 12$	$48 \leq d \leq 57$
67	JAN13 (EAN13)	$12 \leq n \leq 13$	$48 \leq d \leq 57$
68	JAN 8 (EAN8)	$7 \leq n \leq 8$	$48 \leq d \leq 57$
69	CODE39	$1 \leq n \leq 255$	$48 \leq d \leq 57, 65 \leq d \leq 90, 32, 36, 37, 43, 45, 46, 47$
70	ITF	$1 \leq n \leq 255$ (even number)	$48 \leq d \leq 57$
71	CODABAR	$1 \leq n \leq 255$	$48 \leq d \leq 57, 65 \leq d \leq 68, 36, 43, 45, 46, 47, 58$
72	CODE93	$1 \leq n \leq 255$	$0 \leq d \leq 127$
73	CODE128	$2 \leq n \leq 255$	$0 \leq d \leq 127$

[Be careful ①]

- The order by the end of the NUL code.
- When the bar code system used for UPC-A or UPC-E, the printer receives 12 byte data after the bar code printing bar codes and the subsequent data processing as general data.
- When the bar code system used for JAN13 (EAN13), the printer receives 13 byte data after the bar code printing bar codes and the subsequent data processing as general data.
- When the bar code system used for JAN8 (EAN8), the printer receives 8 byte data after the bar code printing bar codes and the subsequent data processing as general data.
- A number ITF barcode data must be an even number. When the input of an odd number of data, the printer to ignore the last received data.

[Be careful ②]

- n specifies the number of bytes of bar code data, and the printer from the next character of On was n bytes of data as a bar code data processing.
- If n exceeds the specified range, the printer to stop processing the command, and the subsequent data processing as general data.

[The standard mode of attention]

- If D exceeds the specified range, the printer just feed and the subsequent data processing as general data.
- If Horizontal direction size beyond the print area, just feed printer.
- The command to print bar code requirements for feed, regardless of ESC 2 or ESC 3 set line spacing.
- Only when no data print buffer, the command effectively. When printing data buffer when the printer will follow-up data processing of m as the common data.
- Print bar codes, the command will print position is set in a line from On.
- The command without printing mode (bold, underline, overlapping character size, white print or 90 characters? Rotation etc.) except impact printed upside down pattern.

A control character			The HRI character	A control character			The HRI character
ASCII CODE	Hexad ecima l	Decimal system		ASCII CODE	Hexad ecima l	Decimal system	
NUL	00	0	■U	DEL	10	16	■P
SOH	01	1	■A	DC1	11	17	■Q
STX	02	2	■B	DC2	12	18	■R
ETX	03	3	■C	DC3	13	19	■S
EOT	04	4	■D	DC4	14	20	■T

ENQ	05	5	■E	NAK	15	21	■U
ACK	06	6	■F	SYN	16	22	■V
BEL	07	7	■G	ETB	17	23	■W
BS	08	8	■H	CAN	18	24	■X
HT	09	9	■I	EM	19	25	■Y
LF	0A	10	■J	SUB	1A	26	■Z
VT	0B	11	■K	ESC	1B	27	■A
FF	0C	12	■L	FS	1C	28	■B
CR	0D	13	■M	GS	1D	29	■C
SO	0E	14	■N	RS	1E	30	■D
SI	0F	15	■O	US	1F	31	■E
				DEL	7F	127	■T

[Example] 打印 GS k 72 7 67 111 100 101 13 57 51



When using the ODE128 (m = 73) :

- On the E128 bar code and code table information, see Appendix D.
- In this printer using the CODE128, please consider the following factors Off in data transmission:
 - 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".

Special characters	Data transmission		
	ASCII CODE	Hexadecima l	Decimal system
SHIFT	{S	7B, 53	123,83
CODE A	{A	7B, 41	123,65
CODE B	{B	7B,42	123,66
CODE C	{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



- 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.
- HRI character corresponding character printer does not print and shift character or code set.
- The function characters in the HRI character is blank.
- Related control characters (<00>H to <1F>H and <7F>H) of the HRI character is blank.

<Others> To confirm the reservation about spacing in the bar code. (According to different spacing bar code types are also different.)

[Reference] GS H、GS h、GS w

4.2.40、GS x n

[Name] Set the bar code printed on the left spacing

[Format] ASCII GS x n
 Sixteen hexadecimal code 1D 78 n
 Decimal code 29 120 n

[Description] Bar code printing's starting position is: 0→255

4.2.41、GS r n

[Name] Transfer state

[Format] ASCII CODE GS r n
 Sixteen hexadecimal code 1D 72 n
 Decimal code 29 114 n

[Range] n = 1, 49

[Description] Transmitted by the N state n the specified as follows:

n	Function
1, 49	Transfer printing paper sensor

[Be careful] • When using 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 X X switch control, the printer to send only one byte, and does not confirm the DSR signal state.

- When the data 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 GS a activation state automatic reply to ASB On with GS R, distinguished transfer state and the ASB state must.

- State transfer are shown below:

Printing paper sensor (n = 1, 49):

Bit	Off / On	Hexadecimal	Decimal system	ASBState
0,1	-	-	-	Meaningless.
2,3	Off	00	0	Paper: paper enough as sensor.
	On	(0C)	(12)	Paper as sensor out of paper.
4	Off	00	0	Unused, fixed Off.
5,6	-	-	-	Not defined.
7	Off	00	0	Unused, fixed Off.

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.

[Reference] **GS a**

4.2.42、GS v 0 m xL xH yL yH d1 ... dk

[Name] Print raster bitmap

[Format] ASCII CODE GS v 0 m xL xH yL yH d1...dk
 Sixteen hexadecimal code 1D 76 30 m xL xH yL yH d1...dk
 Decimal code 29 118 48 m xL xH yL yH d1...dk

[Range] $0 \leq m \leq 3, 48 \leq m \leq 51$
 $0 \leq xL \leq 255$
 $0 \leq xH \leq 255$ In this $1 \leq (xL + xH \times 256) \leq 48$
 $0 \leq yL \leq 255$
 $0 \leq yH \leq 8$ In this $1 \leq (yL + yH \times 256) \leq 4095$
 $0 \leq d \leq 255$
 $k = (xL + xH \times 256) \times (yL + yH \times 256)$ ($k \neq 0$)

[Description] Set the raster bitmap mode. The value of M set model are as follows:

m	Pattern	The vertical point density	The horizontal point density
0, 48	Ordinary	203.2 dpi	203.2 dpi
1, 49	Double width	203.2 dpi	101.6 dpi
2, 50	Times higher	101.6 dpi	203.2 dpi
3, 51	Four times the size of	101.6 dpi	101.6 dpi

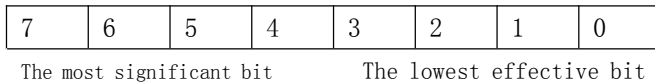
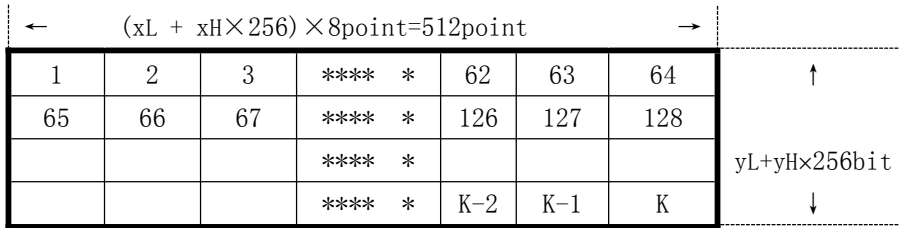
- xL, xH, a location map horizontal data bytes (xL+xH×256)。
- yL, yH, set the bitmap data bytes in vertical direction (yL+yH×256)。

[Be careful] • Standard mode, only when there is no data print buffer when the command effectively.
 • For raster bitmap print, this command is not affected by the impact of printing mode (character size, bold, overlapping, printed upside down, underline, highlight the print mode etc.).
 • If the print area width is set by the GS L is less than the minimum width, the printer will

only have the line extended to the minimum width. The minimum width of the common mode (m=0, 48) and times higher mode (m=2, 50) for a bit, the double width model (m=1, 49) and four times the size of model (m=3, 51) for two.

- Outside the printable area data is read, and point by point drop.
- If the print position subsequent characters are multiples of 8. Future will be as a raster bitmap print character printing device, the HT (horizontal tab), ESC \$(setting absolute print position,) and GS L (set the left margin setting).
- ESC a (set alignment) settings are valid also for raster bitmap.
- d specified bitmap data. Will print the bit is set to 1, not to print the bit is set to 0.

[Example] 当 $xL+xH \times 256=64$



4.2.43、GS w n

[Name] Set the bar width

[Format] ASCII CODE GS w n
 Sixteen hexadecimal code 1D 77 n
 Decimal code 29 119 n

[Range] $2 \leq n \leq 6$

[Description] Set the bar code level size.
 n set the bar widty as follow:

n	Multilevel code unit Width (mm)	Binary code	
		The narrow width (mm)	Wide width (mm)
2	0.250	0.250	0.625
3	0.375	0.375	1.000
4	0.560	0.500	1.250
5	0.625	0.625	1.625
6	0.750	0.750	2.000

- The following is a multi bar code:
 UPC-A, UPC-E, JAN13 (EAN13), JAN8 (EAN8), CODE93, CODE128
- The following is a binary code
 CODE39, ITF, CODABAR

[Default value] n = 3

[Reference] GS k

4.2.44、FS ! n

[Name] Set the print mode combination of Chinese characters

[Format] ASCII CODE FS ! n
 Sixteen hexadecimal code 1C 21 n
 Decimal code 28 33 n

[Range] $0 \leq n \leq 255$

[Description] Set up Chinese characters printing mode, the N settings are as follows

Bit	Off / On	Hexadecimal	Decimal system	ASB state
0	—	—	—	Not defined.
1	—	—	—	Not defined.
2	Off	00	0	No times wider pattern.
	On	04	4	Allow the times wider pattern.
3	Off	00	0	No times higher mode.
	On	08	8	Allow the times higher mode.
4	—	—	—	Not defined.
5	—	—	—	Not defined.
6	—	—	—	Not defined.
7	Off	00	0	Prohibition underscores mode.
	On	80	128	Allow the underline mode.

- [Be careful]
- At the same time set up times wider pattern and times higher mode (including right and left the character spacing), character will print four times the size of.
 - The printer can give all characters underlined (including right and left the character spacing), but can not be set to the HT command spaces, and clockwise rotated 90 ° character underline.
 - Some of the characters in a row for the times higher or more characters, the line all characters will be along the alignment.
 - You can use the GS command to write Chinese characters! Crude character, finally received the command set effective.

[Default value] n = 0

[Reference] GS !

4.2.45、FS &

[Name] Set the mode of Chinese characters

[Format] ASCII CODE FS &
 Sixteen hexadecimal code 1C 26
 Decimal code 28 38

[Description] Selection of Chinese characters character mode

[Be careful] The Chinese type:

- Choose Chinese characters character mode, printer handle all Chinese characters code, each two bytes.
- In the first byte, second bytes of code sequence processing of Chinese characters.
- When the power is on, the printer does not choose the mode of Chinese characters.



[Reference] FS .

4.2.46、FS .

[Name] Cancellation of Chinese characters

[Format] ASCII CODE FS .
 Sixteen hexadecimal code 1C 2E
 Decimal code 28 46

[Description] Cancel Chinese characters character mode

[Be careful] Chinese type:

- Not Chinese characters character mode choice, all character code as the ASCII CODE, every time a character processing.
- On power supply, the printer does not choose the mode of Chinese characters.

[Reference] FS &

4.2.47、ESC = n

[Name] Peripheral equipment

[Format] ASCII ESC = n
 Sixteen hexadecimal code 1b 3d n
 Decimal code 27 61 n

[Description] Set offline, online mode:

Bit	Off / On	Hexadecimal	Decimal system	ASB state
0	Off	00	0	The printer is in offline mode, do not accept the print data, offline indicator light.
	On	01	1	The printer is online mode, receiving print data and print.
1-7	-	-	-	Meaningless.

4.2.48、ESC 7 n1 n2 n3

[Name] Set print parameters

[Format] ASCII ESC 7 n1 n2 n3
 Sixteen hexadecimal code 1B 37 n1 n2 n3
 Decimal code 27 55 n1 n2 n3

[Description] 设 Set print up plus hot, heating time, interval time:

- n1 = 0-255 the most heated Point, 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 of the Point, maximum power current control board of large, fast printing speed.

The maximum heating of Point is $8 \times (n1+1)$;

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;

Explanation: "heating time", "the heating interval" control panel will be automatically adjusted according to input voltage.

4.2.49、ESC 8 n1 n2

[Name] Set the sleep parameters

[Format] ASCII ESC 8 n1 n2
Sixteen hexadecimal code 1B 38 n1 n2
Decimal code 27 56 n1 n2

[Description] Set free after much time, control panel to enter sleep time;
n1+n2×256 sleep latency, unit (10 ms), the default value of 0;
Value 0 is not sleep, not equal to 0 the minimum value is 200 milliseconds.
Go to sleep, the host must first send a byte of data (0xff) wake up control board, wait for 50 milliseconds after the On began to send the print command or data.

Note: this command is mainly used for battery powered systems, applications requiring low power consumption.

4.2.50、ESC 9 n

[Name] Selection of Chinese code format

[Format] ASCII ESC 9 n
Sixteen hexadecimal code 1B 39 n
Decimal code 27 57 n

[Description] Selection of Chinese code format, n value of the corresponding code is as follows:
0:GBK CODE
1:UTF-8 CODE
3:BIG5 Traditional code
This command does not support English version.

4.2.51、DC2 T

[Name] Self testing page print

[Format] ASCII DC2 T
Sixteen hexadecimal code 12 54
Decimal code 18 94

[Description] Self testing page print

4.2.52、ESC c 5 n(for buttons)

[Name] Cancel / activation panel key

[Format] ASCII ESC c 5 n
Sixteen hexadecimal code 1B 63 35 n
Decimal code 27 99 53 n

[Range] $0 \leq n \leq 255$

[Description] Cancel / activation panel key.
Minimum value is 0, cancel the panel key;



Minimum value is 1, the activation panel key.

[The default] n = 0

The character code table

Page0 PC437 Page3 CP860 [Portuguese]

Code page 437																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
9_	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	¥	Ð	ƒ
A_	á	í	ó	ú	ñ	Ñ	ª	º	¿	¬	½	¼	¡	«	»	
B_	▒	▒	▒		H	±	H	¬	¬	H		¬	⌋	⌋	⌋	¬
C_	L	⊥	⊥	⊥	—	+	⊥	⊥	L	⊥	⊥	⊥	⊥	⊥	⊥	⊥
D_	⊥	⊥	⊥	L	L	⊥	⊥	⊥	⊥	⊥	⊥	■	■	■	■	■
E_	α	β	Γ	π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	±	≥	≤	∫	∫	÷	≈	°	•	•	√	n	²	■	

Page 1 Katakana




—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	+
⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
◻	◻	◻	◻	◻	◻	◻	◻	◻	◻	◻	◻	◻	◻	◻	◻
ア	イ	ウ	エ	オ	カ	キ	ク	ケ	コ	サ	シ	ス	セ	ソ	
タ	チ	ツ	テ	ト	ナ	ニ	ヌ	ネ	ノ	ハ	ヒ	フ	ヘ	ホ	マ
ミ	ム	メ	モ	ヤ	ユ	ヨ	ラ	リ	ル	レ	ロ	ワ	ヰ	ヱ	ヲ
㊦	㊦	㊦	㊦	▲	▲	▲	▲	♠	♥	♦	♣	●	○	/	\
ⓧ	円	年	月	日	時	分	秒	〒	市	区	町	村	人	☰	☷

Page2 PC850[Multilingual]




Code page 850																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
9_	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	f
A_	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
B_	☰	☷	☰		⊥	Á	Â	À	©	⊥		⊥	⊥	∅	¥	⊥
C_	⊥	⊥	⊥	⊥	—	+	ã	Ã	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
D_	ö	Ð	Ê	Ë	È	Ì	Í	Î	Ï	⊥	⊥	■	■	!	ì	■
E_	Ó	ß	Ô	Ò	Õ	µ	þ	ƒ	Ú	Û	Ù	ý	Ý	—	'	
F_	-	±	=	¾	¶	§	÷	¸	°	¨	•	¹	³	²	■	

Page3 PC860[Portuguese]

Code page 860																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ç	ü	é	â	ã	à	Á	ç	ê	Ê	è	Í	Ô	ì	Ã	Â

9	É	À	È	ô	õ	ò	Ú	ù	ì	Õ	Ü	ø	£	Ù	Þ	Ó
A	á	í	ó	ú	ñ	Ñ	ª	º	¿	Ò	¬	½	¼	¡	«	»
B					├	┤	├	┤	├	┤	├	┤	├	┤	├	┤
C	└	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌
D	└	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌
E	α	β	γ	π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F	≡	±	≥	≤	∫	∫	÷	≈	°	•	•	√	n	²	■	

Page4 PC863[Canadian-French]

Code page 863																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8	Ç	ü	é	â	Â	à	¶	ç	ê	ë	è	ï	î	=	À	§
9	É	È	Ê	ô	Ë	Ï	û	ù	α	Ô	Ü	ø	£	Ù	Û	f
A	ì	í	ó	ú	¨	,	³	¬	Î	¬	¬	½	¼	¾	«	»
B					├	┤	├	┤	├	┤	├	┤	├	┤	├	┤
C	└	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌
D	└	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌	┐	┌
E	α	β	γ	π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F	≡	±	≥	≤	∫	∫	÷	≈	°	•	•	√	n	²	■	

Page5 pc865[Nordic]

8_	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
9_	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	
A_	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
B_					┌	┐	└	┘	┌	┐	└	┘	┌	┐	└	┘
C_	┌	└	┐	┘	—	+	≠		└	┘	≡	≡	≡	=	≡	≡
D_	≡	≡	≡	└	┘	┐	┘	└	┘	└	┘	■	■	■	■	■
E_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
F_	Ë	ë	ε	ε	ï	ï	ÿ	ÿ	°	.	.	√	No.	∅	■	

Page8 MIK[Cyrillic/Bulgarian]

Code page MIK																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_																
B_																
C_	┌	└	┐	┘	—	+	≠		└	┘	≡	≡	≡	≡	≡	└
D_					┌			└	┘	└	┘	└	┘	└	┘	■
E_																∩
F_	≡				┌	┐							n		■	

Code page 755																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_																
B_					†	Ā		π	¶			¶	¶	¶	¶	¶
C_	L	⊥	⊥	⊥	—	+	ā		L	⊥	⊥	⊥	⊥	⊥	⊥	⊥
D_	Š	⊥	č	č	L	⊥	g	ī	ī	⊥	⊥	■	■	ū	ū	■
E_	p	c	т	y	φ	x	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
F_	Ē	ē	Ĝ	K	K	ı	ı	ž	ž	·	·	√	N	š	■	

Page10 Iran

Code page Iran																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	°	۱	۲	۳	۴	۵	۶	۷	۸	۹	،	—	? _F	آ	ئ	ء
9_	ا	ل	ب	ب	پ	پ	ت	ت	ث	ث	ج	ج*	چ _C *	چ	ح	ح
A_	خ	خ	د	ذ	ر	ز	ژ	س	س	ش	ش	ص	ص	ض	ض	ط
B_					†	†	†	¶	¶			¶		¶	¶	¶
C_	L	⊥	⊥	⊥	—	+	†	†	L	⊥	⊥	⊥	⊥	⊥	⊥	⊥
D_	⊥	⊥	⊥	L	L	⊥	⊥	⊥	⊥	⊥	⊥	■	■	■	■	■
E_	ظ	ع	ع	ع	ع	غ	غ	غ	غ	ف	ف	ق	ق	ک	ک	گ
F_	گ	ل	لا	ل	م	م	ن	ن	و	ه	ه	ه	ی	ی	ی	

Page15 CP862 [Hebrew]

Code page 862																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	א	ב	ג	ד	ה	ו	ז	ח	ט	י	כ	ל	מ	נ	ס	ע
9_	פ	צ	ק	ר	ש	ת	ך	ץ	גּ	דּ	טּ	כּ	לּ	מּ	נּ	סּ
A_	á	í	ó	ú	ñ	Ñ	ä	ö	¿	¬	½	¼	ı	«	»	
B_	⋯	⋮	⋭		†	‡	‖	⌈	⌋	‖	⌈	⌋	⌈	⌋	⌈	⌋
C_	L	⊥	T	†	—	†	‡	‖	⌈	⌋	‖	⌈	⌋	=	‖	⊥
D_	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	■	■	■	■	■	■
E_	α	β	Γ	Π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	±	≥	≤	∫	∫	÷	≈	°	•	•	√	n	²	■	




Page 16 PC1252 Latin 1

Code page 1252																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		,	f	„	…	†	‡	^	‰	Š	<	Œ		Ž	
9_		‘	’	“	”	•	—	—	~	™	š	>	œ		ž	ÿ
A_		ı	ø	£	α	¥		§	“	©	à	«	¬	—	®	—
B_	°	±	²	³	´	μ	¶	•	¸	¹	º	»	¼	½	¾	¿
C_	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D_	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
E_	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F_	ø	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

Page 17 WCP1253 [Greek]

Code page 1253																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		,	f	„	…	†	‡		‰		<				
9_		‘	’	“	”	•	–	—		™		>				
A_		“	À	£	α	¥		§	“	©		«	¬	-	®	—
B_	°	±	²	³	´	μ	¶	•	È	Ë	Ì	»	Ò	½	Υ	Ω
C_	Ï	À	B	Γ	Δ	E	Z	H	Θ	I	K	Λ	M	N	Ξ	O
D_	Π	P		Σ	T	Υ	Φ	X	Ψ	Ω	Ï	ÿ	ά	έ	ή	ί
E_	Û	α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο
F_	π	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	ï	ÿ	ó	ύ	ώ	

Page18 PC852

Code page 852																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ç	ü	é	â	ä	û	ć	ç	ı	ë	ő	ó	î	ž	Ä	Ć
9_	É	Ł	Í	Ô	Ö	Ĺ	ı	Ś	ś	Ö	Ü	Ť	ť	ł	×	Č
A_	á	í	ó	ú	Ą	ą	Ž	ž	Ę	ę		ż	Č	ş	«	»
B_					ı	Á	Â	Ě	Ş	ı		ı	ı	Ż	z	ı
C_	Ł	ł	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
D_	đ	Đ	Ď	Ě	d'	Ň	ı	ı	ě	ı	ı	ı	ı	ı	ı	ı
E_	Ó	β	Ô	Ń	ń	ň	Š	š	Ř	Ú	ř	Ů	ý	Ý	ı	ı
F_	-	”	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı

Page19 PC858 (Multilingual Latin I +Euro)

Code page 858																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å



9_																	
A_																	
B_						A	n							ō			
C_							ā										
D_	Š		č	Č	Ī	ī								ū	Ū		
E_																	
F_	Ē	ē	Ġ		K	ƒ	J	ž	Ž	ō				N	š		

Page22 CP864 [Arabic]

Code page 864																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	°	•	•	√	▒	—		+	+	⊥	⊥	⊥	⊥	⊥	⊥	⊥
9_	β	∞	φ	±	½	¼	≈	«	»	لأ	لا			لا	لا	
A_			ل	£	¤	ل		ل	ب	ت	ث	،	ج	ح	خ	
B_	•	١	٢	٣	٤	٥	٦	٧	٨	٩	ف	؛	س	ش	ص	؟
C_	¢	ء	آ	أ	ؤ	ع	ئ	ا	ب	ة	ت	ث	ج	ح	خ	د
D_	ذ	ر	ز	س	ش	ص	ض	ط	ظ	ع	غ	!	⌋	÷	×	ع
E_	_	ف	ق	ك	ل	م	ن	ه	و	ى	ي	ض	ع	غ	غ	ط
F_	س	س	ن	ه	ه	ى	ي	غ	ق	لآ	لآ	ل	ك	ي	■	

Page23 ISO-8859-1 [West Europe]

Code page 8859-1																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F



8_	€		II	III	IV		↑	↓		%	Š	<	Œ			
9_						V	VI				š	>	œ			ÿ
A_		ı	ø	£	¤	¥		§	¨	©	ª	«	¬	-	®	—
B_	°	±	²	³	”	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C_	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D_	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
E_	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F_	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

Page24 CP737 [Greek]

Code page 737																	
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F	
8_	A	B	Γ	Δ	E	Z	H	Θ	I	K	Λ	M	N	Ξ	Ο	Π	
9_	P	Σ	T	Υ	Φ	X	Ψ	Ω	α	β	γ	δ	ε	ζ	η	θ	
A_	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	ς	τ	υ	φ	χ	ψ	
B_	⋯	⋯	⋯		†	‡	‡	π	¶	‡		¶	¶	¶	¶	¶	¶
C_	L	⊥	T	†	-	†	‡	‡	⊥	¶	¶	¶	¶	=	¶	¶	
D_	⊥	¶	π	⊥	⊥	F	π	‡	‡	⊥	Γ	■	■	■	■	■	
E_	ω	ά	έ	ή	ϊ	ί	ό	ύ	ϋ	ώ	Α	Ε	Η	Ι	Ο	Υ	
F_	Ω	±	≥	≤	ï	ÿ	÷	≈	°	·	·	√	n	²	■		

Page25 WCP1257 [Baltic]

Code page 1257																	
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F	
8_	€		,		„	…	†	‡		%		<		¨	˘	¸	
9_		‘	’	“	”	•	-	-		™		>		—	˙		

A_			€	£	¤	¦	§	ø	©	®	«	¬	-	®	Æ
B_	°	±	²	³	´	µ	¶	·	ø¹	¸	»	¼	½	¾	æ
C_	À	Á	Â	Ã	Ä	Å	Æ	È	Č	É	Ž	Ê	Ë	Ĭ	Ł
D_	Š	Ń	Ň	Ó	Ô	Õ	Ö	×	Û	Ł	Ś	Ū	Ü	Ž	Ž
E_	ą	ı	ā	ć	ä	å	ę	ē	č	é	ž	è	ğ	ķ	ı
F_	š	ń	ň	ó	ô	õ	ö	÷	û	ł	ś	ū	ü	ž	ž

Page26 Thai

ร	๖	๗	๘	๙	๐	๑	๒	๓	๔	๕	๖	๗	๘	๙	๐
๑	๒	๓	๔	๕	๖	๗	๘	๙	๐	๑	๒	๓	๔	๕	๖
๗	๘	๙	๐	๑	๒	๓	๔	๕	๖	๗	๘	๙	๐	๑	๒
๓	๔	๕	๖	๗	๘	๙	๐	๑	๒	๓	๔	๕	๖	๗	๘
๕	๖	๗	๘	๙	๐	๑	๒	๓	๔	๕	๖	๗	๘	๙	๐
๗	๘	๙	๐	๑	๒	๓	๔	๕	๖	๗	๘	๙	๐	๑	๒
๐	๑	๒	๓	๔	๕	๖	๗	๘	๙	๐	๑	๒	๓	๔	๕

Page27 CP720[Arabic]

Code page 720																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_			é	â		à		ç	ê	ë	è	ï	î			
9_		س	°	ô	¤	—	û	ù	ء	آ	أ	ؤ	£	!	ئ	ا
A_	ب	ة	ت	ث	ج	ح	خ	د	ذ	ر	ز	س	ش	ص	«	»

B					┆	≡	≡	π	π	≡	≡	π	π	π	π
C	L	L	T	┆	-	+	≡	≡	≡	≡	≡	≡	≡	≡	≡
D	≡	≡	π	L	L	F	π	≡	≡	J	Г	■	■	■	■
E	ض	ط	ظ	ع	غ	ف	μ	ق	ك	ل	م	ن	ه	و	ى
F	≡	'	'	'	'	'	'	≈	°	•	•	√	n	2	■

Page28 CP855

Code page 855																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8	ћ	ћ	і	і	ё	Ё	є	Є	s	S	і	I	ї	ї	ј	J
9	љ	Љ	њ	Њ	ћ	ћ	ќ	Ќ	ђ	Ђ	џ	Џ	ю	Ю	ь	Ь
A	а	А	б	Б	ц	Ц	д	Д	е	Е	ф	Ф	г	Г	«	»
B					┆	х	Х	и	И	≡	≡	π	π	й	Й	г
C	L	L	T	┆	-	+	к	К	л	Л	≡	≡	≡	≡	=	≡
D	л	Л	м	М	н	Н	о	О	п	Ј	Г	■	■	П	я	■
E	Я	Р	р	с	С	т	Т	у	У	ж	Ж	в	В	ь	Ь	№
F	-	ы	Ы	з	З	ш	Ш	э	Э	щ	Щ	ч	Ч	§	■	

Page29 PC857[Turkish]

Code page 857																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	I	Ä	Å

9_	É	æ	Æ	ô	ö	ò	û	ù	ï	ö	ü	ø	£	Ø	§	§
A_	á	í	ó	ú	ñ	Ñ	Ğ	ğ	ı	®	¬	½	¼	ı	«	»
B_	⋮	⋮	⋮		⊥	Á	Â	À	©	⊥		⊥	⊥	€	¥	⊥
C_	L	⊥	⊥	⊥	⊥	+	ã	Ã	L	⊥	⊥	⊥	⊥	⊥	⊥	⊙
D_	°	°	Ê	Ë	È		Í	Î	Ï	⊥	⊥	■	■		Ì	■
E_	Ó	β	Ô	Ò	Õ	Õ	μ		×	Ú	Û	Ù	ì	ÿ	ˉ	´
F_	-	±		¾	¶	§	÷	,	°	¨	•	¹	³	²		■

Page30 WCP1250[Central Eurpoe]

Code page-1250																
	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
8_	€		,		„	…	†	‡		‰	Š	<	Ś	Ť	Ž	Ž
9_		‘	’	“	”	•	—	—		™	š	>	ś	ť	ž	ž
A_		˘	˘	ł	α	Ą	ı	§	¨	©	§	«	¬	-	®	Ž
B_	°	±	˘	ł	´	μ	¶	•	˘	ą	§	»	ł	¨	ř	ž
C_	Ř	Á	Â	Ǻ	Ǻ	Ć	Č	Č	É	Ę	Ë	Ě	Í	Î	Ď	
D_	Đ	Ń	Ň	Ó	Ô	Õ	Ö	×	Ř	Ů	Ú	Ů	Ü	Ý	Ť	β
E_	ř	á	â	ǻ	ǻ	ć	č	č	é	ę	ë	ě	í	î	ď	
F_	ř	ń	ň	ó	ô	õ	ö	÷	ř	ů	ú	ů	ü	ý	ť	•

Page31 CP775

Code page 775																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ć	ü	é	ā	ä	ğ	å	ć	ł	ē	Ŕ	ŕ	ī	Ž	Ä	Å
9_	É	æ	Æ	ō	ö	Ğ	ø	Ś	ś	Ö	Ü	ø	£	Ø	×	α

A_	Ā	ī	ó	ž	ž	ž	”		©	®	¬	½	¼	ł	«	»
B_	☐	☐	☐		†	À	Č	È	É	‖	‖	¶	¶	‡	Š	‡
C_	L	⊥	⊥	†	—	†	Ů	Ů	ℒ	ℒ	⊥	⊥	‖	=	‖	ž
D_	ą	č	ę	è	ı	š	ı	ū	ž	⌋	⌋	■	■	■	■	■
E_	Ó	ß	ō	ń	õ	õ	μ	ń	Ɔ	Ɔ	Ł	Ł	ŋ	Ē	Ŋ	'
F_	—	±	“	¾	¶	§	÷	„	°	•	•	1	3	2	■	

Page32 WCP1254[Turkish]

Code page-1254																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		,	f	„	…	†	‡	^	%	Š	<	Œ			
9_		‘	’	“	”	•	—	—	~	™	š	>	œ			ÿ
A_		i	ç	£	¤	¥		§	¨	©	à	«	¬	-	®	—
B_	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C_	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D_	Ğ	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	İ	Ş	ß
E_	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F_	ğ	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ı	ş	ÿ

Page33 WCP1255[Hebrew]

Code page-1255																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		,	f	„	…	†	‡	^	%		<				
9_		‘	’	“	”	•	—	—	~	™		>				
A_		i	ç	£	¤	¥		§	¨	©	×	«	¬	-	®	—

B_	°	±	²	³	´	μ	¶	·	¸	¹	÷	»	¼	½	¾	¿
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D_		.	.	:				'	''							
E_	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
F_																

Page34 WCP1256[Arabic]

Code page-1256																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€	پ	,	f	„	…	†	‡	^	%	ط	<	œ	چ	ژ	ڈ
9_	گ	‘	’	“	”	•	-	-	ك	™	ڑ	>	œ			س
A_		،	ø	£	¤	¥		§	¨	©	د	«	¬	-	®	-
B_	°	±	²	³	´	μ	¶	·	¸	¹	:	»	¼	½	¾	¿
C_	ه	ء	آ	أ	ؤ	إ	ئ	ا	ب	ة	ت	ث	ج	ح	خ	د
D_	ذ	ر	ز	س	ش	ص	ض	×	ط	ظ	ع	غ	-	ف	ق	ك
E_	à	ا	â	م	ن	ه	و	ç	è	é	ê	ë	ى	ي	î	ï
F_																

Page35 WCP1258[Vietnam]

Code page-1258																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		,	f	„	…	†	‡	^	%		<	œ			
9_		‘	’	“	”	•	-	-	~	™		>	œ			ÿ
A_		ı	ø	£	¤	¥		§	¨	©	à	«	¬	-	®	-
B_	°	±	²	³	´	μ	¶	·	¸	¹		»	¼	½	¾	¿

C_	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	`	Í	Î	Ï
D_	Ð	Ñ	ˆ	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	~	ß
E_	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	´	í	î	ï
F_	đ	ñ	.	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	ÿ	

Page36 ISO-8859-2 [Latin 2]

Code page-8859-2																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_		À	ˆ	Ł	Ǫ	Ĺ	Ś	§	¨	Š	Ş	Ť	Ž	-	Ž	Ž
B_	°	à	ˆ	ł	ǫ	ĺ	ś	§	¨	š	ş	ť	ž	˝	ž	ž
C_	Á	Â	Ã	Ä	Å	Ć	Č	Ç	Č	É	Ę	Ë	Ě	Í	Î	Ď
D_	Ð	Ñ	Ñ	Ó	Ô	Õ	Ö	×	Ř	Ů	Ú	Û	Ü	Ý	ı	ß
E_	á	â	ã	ä	å	ć	č	ç	č	é	ę	ë	ě	í	î	ď
F_	đ	ń	ň	ó	ô	õ	ö	÷	ř	ů	ú	û	ü	ý	ı	·

Page37 ISO-8859-3 [Latin 3]

Code page-8859-3																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_		Ħ	ˆ	£	Ǫ		Ĥ	§	¨	İ	Ş	Ğ	Ĵ	-		Ž
B_	°	ħ	ˆ	£	ǫ		ĥ	§	¨	ı	ş	ğ	ĵ	½		ž
C_	À	Á	Â		Ä	Ć	Ĉ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D_		Ñ	Ò	Ó	Ô	Ğ	Ö	×	Ĝ	Ù	Ú	Û	Ü	Ŭ	Ŝ	ß

E_	à	á	â		ä	ć	ê	ç	è	é	ê	ë	ì	í	î	ï
F_		ñ	ò	ó	ô	ğ	ö	÷	ô	ù	ú	û	ü	ÿ	š	·

Page38 ISO-8859-4[Baltic]

Code page-8859-4																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_		Ą	К	Ŕ	Ꞥ	İ	Ł	Ś	ˆ	Š	Ē	Ģ	Ʀ	-	Ž	—
B_	°	ą	к	ŕ	ꞥ	ı	ł	ś	˘	š	ē	ģ	ŗ	ƣ	ž	⸗
C_	Ā	Á	Â	Ã	Ä	Å	Æ	ı	č	É	Ě	Ď	Ě	Í	Î	Ī
D_	Ā	Ā	Ā	Ā	Ā	Ā	Æ	ı	č	É	Ě	Ď	Ě	Í	Î	Ī
E_	ā	á	â	ã	ä	å	æ	ı	č	é	ě	ď	ě	í	î	ī
F_	ā	ā	ā	ā	ā	ā	æ	ı	ø	ų	ú	û	ü	ÿ	ū	·

Page39 ISO-8859-5[Cyrillic]

Code page-8859-5																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_		Ё	Ђ	Ѓ	Є	Ѕ	І	İ	Ј	Љ	Њ	Ћ	Ќ	-	Ў	Џ
B_	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
C_	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
D_	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
E_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я

F_	No	ë	ñ	í	e	s	i	ï	j	љ	њ	ћ	ќ	§	ŷ	ұ
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Page40 ISO-8859-6[Arabic]

Code page-8859-6																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_					Ⲁ								‘	—		
B_												:				؟
C_		ء	آ	أ	ؤ	!	ئ	ا	ب	ة	ت	ث	ج	ح	خ	د
D_	ذ	ر	ز	س	ش	ص	ض	ط	ظ	ع	غ					،
E_	—	ف	ق	ك	ل	م	ن	ه	و	ى	ي	=	²		’	°
F_	·	ˆ	˚													

Page41 ISO-8859-7[Greek]

Code page-8859-7																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_		‘	’	£				§	¨	©	¸	«	¬	—		—
B_	°	±	²	³	´	˘	À	·	È	Η	Ι	»	Ό	½	Υ	Ω
C_	İ	A	B	Γ	Δ	E	Z	H	Θ	I	K	Λ	M	N	Ξ	O
D_	Π	P		Σ	T	Υ	Φ	X	Ψ	Ω	İ	ÿ	ά	έ	ή	ί
E_	Û	α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο
F_	π	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	ί	ÿ	ό	ύ	ώ	

A_																
B_																
C_	L	┌	┐	└	┘	+	≡		┌	┐	└	┘	+	≡	└	
D_	▒	▒	▒		└			└	└	└	└	■	■	■	■	
E_																∩
F_	≡				┌	┐						n		■		

Page47 Cp874

Code page 874																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	฿					...										
9_		'	'	“	”	•	—	—								
A_		ก	ข	ช	ค	ด	ต	ถ	ง	จ	ฉ	ช	ช	ณ	ญ	ฎ
B_		ฐ	ฑ	ฒ	ณ	ด	ต	ถ	ท	ธ	น	บ	ป	ผ	ฝ	พ
C_		ภ	ม	ย	ร	ฤ	ล	ภ	ว	ศ	ษ	ส	ห	ฬ	อ	ฮ
D_		ะ	ั	า	ำ	ิ	ี	ึ	ุ	,	ุ	.				฿
E_		เ	แ	โ	ใ	ไ	า	ำ	ั	ิ	ึ	ุ	.	°	°	°
F_		๐	๑	๒	๓	๔	๕	๖	๗	๘	๙	๐	๑			

3.2.2 国际字符集

Country	ASCII Code(Hex)											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
U.S.A.	#	\$	@	[\]	^	`	{		}	~



France	#	\$	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
U.K.	£	\$	@	[\]	^	`	{		}	~
Denmark I	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì
Spain I	Pt	\$	@	í	Ñ	¿	^	`	¨	ñ	}	~
Japan	#	\$	@	[¥]	^	`	{		}	~
Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark II	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Spain II	#	\$	á	í	Ñ	¿	é	`	í	ñ	ó	ú
Latin	#	\$	á	í	Ñ	¿	é	ü	í	ñ	ó	ú
Korea	#	\$	@	[₩]	^	`	{		}	~
Slovenia/Croatia	#	\$	Ž	Š	Đ	Ć	Č	ž	š	đ	ć	č
China	#	¥	@	[\]	^	`	{		}	~