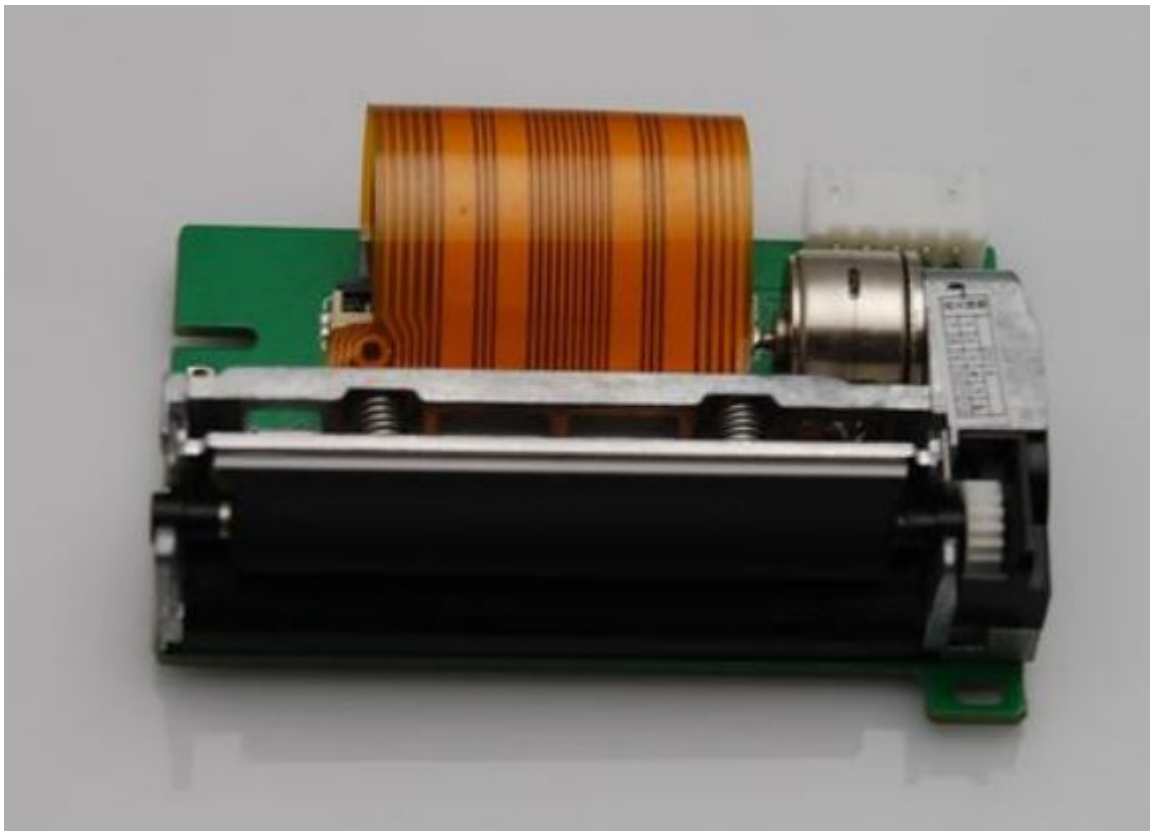
Built-in printer DP-48A series



Product Introduction:

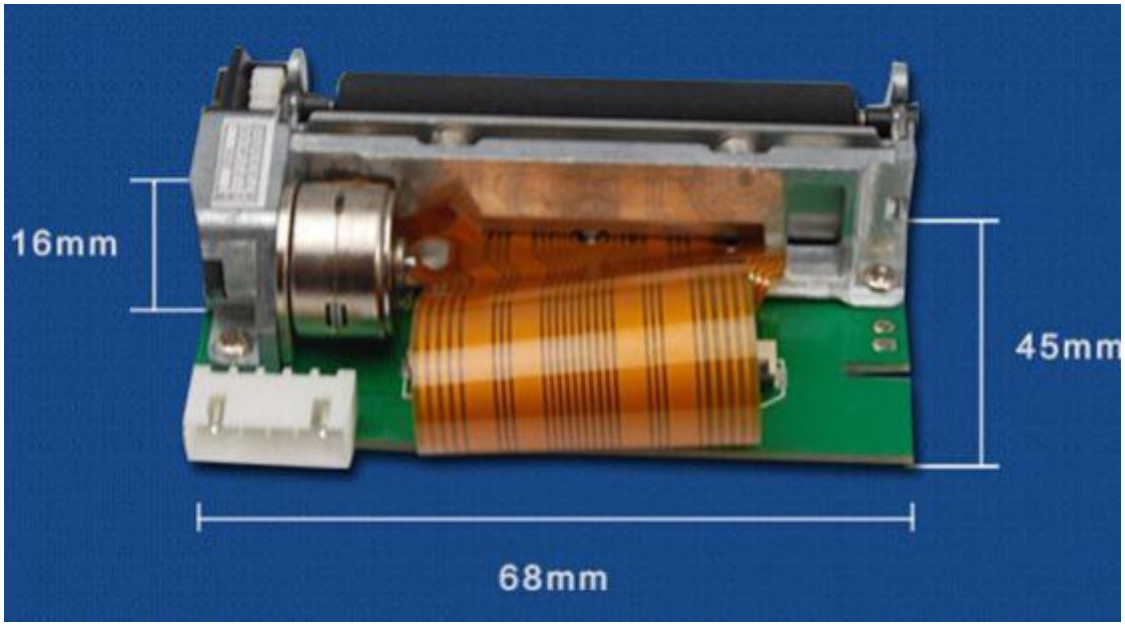
Embedded printer DP-48A adopts mature printing movement and commonly used single chip microcomputer and devices, with the following characteristics:
1.1, the printing control board built-in 24X24 GB18030 Chinese character library and 12X24 English character library;
1.2, printing speed up to 60MM/S, low noise;
1.3, small mechanical size, easy to embed in a variety of POS machines, mobile top-up machines and other equipment;
1.4, stable performance, good compatibility;
1.5, 58MM bill printing, convenient and fast, save cost; 1.6, easy paper structure design, more convenient to replace the paper roll;

Specification parameters:

series	Built-in printer DP-48A series	
Type number	DP-48A1	DP-48A2
Operating voltage	5~9V	5~9V
Communication interface	RS232 interface 5pin	TTL interface 5pin
Platform support		
Two-dimensional code	support	support
Black label detection	nonsupport	nonsupport
Print pattern	support	
Print curve	support	
Bar code	Supports EAN13, EAN8, CODE39, CODE93, CODE128, ITF, CODEBAR, UPC-A, UPC-E formats	
Printing method	Thermal dot matrix printing	
Print color	Black and white output	
resolution	203dpi 8 points /mm, 384 points per line	
Printing paper	Thermal paper roll	
Roll size	57MM±0.5MM (breadth) 0.05~0.10MM (thickness)	
Roll diameter	Unlimited (Design the most suitable roll volume according to the space of the equipment)	
Print life	50 km	
Print breadth	48mm	
Working current	Average 1.5A	
	200 point line /S (25MM/S) (voltage 5.0V)	
Print speed	450 points/SEC (56.25MM/S)(voltage 7.2V)	
Print character	560 point line /S (70MM/S) (voltage 8.0V)	
Changing mode	24X24 international first and second level character library, 12X24 standard ASCII code, and can	

	print Chinese characters and characters 1-4 times larger
Paper cutting mode	Manual paper changing
Print cache	Manual tearing
Paper missing detection	0-50°C
Operating temperature	10-80%
Relative humidity	68*45*16MM
Overall dimension	ESC/POS compliant instruction set (see Printer Instruction Set)
Print command	Natural quality
Appearance color	

Dimensions of DP-48A series:



Apparent dimension： 68*45*16MM

Printer Description：

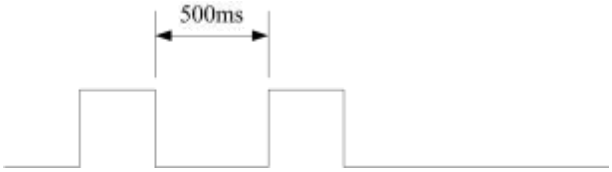
Print test：

Printing self-test page Method 1:

Press and hold the paper drive button on the driver board, then power on, release the button, you can print a test page.
Instructions:
DP-48A series has multiple versions to choose from, the voltage is 5~9V, so when printing the test page, it is necessary to meet the basic voltage of the selected printer, the working current to the printer should be controlled to about 2A is more stable, if you need to print graphics, it is necessary to increase the current to 3A is more reliable.

. Indicator status:
These pictures show the waveform of the LED on the thermal control panel, the vertical line indicates the number of LED lights flashing, 500ms indicates a pause time,400ms indicates the time when the light flashes, and 1.5s indicates the time when the LED stops after flashing.

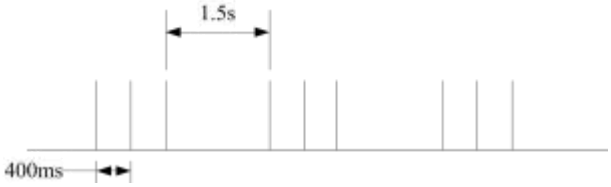
（1）Power On:



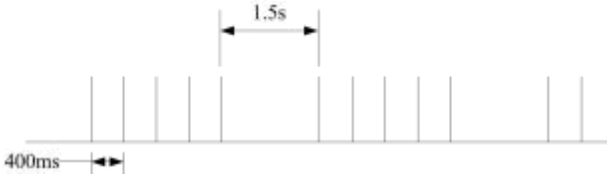
（2）normal Job:

（3）No printer detected:

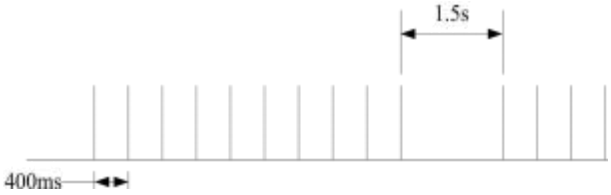
（4）Printer out of paper:



（5）Printing movement heating plate overheating:



（6）Chinese character library chip not detected:



The system is automatically initialized after being powered on. You can also send the Control command ESC@to initialize the system.

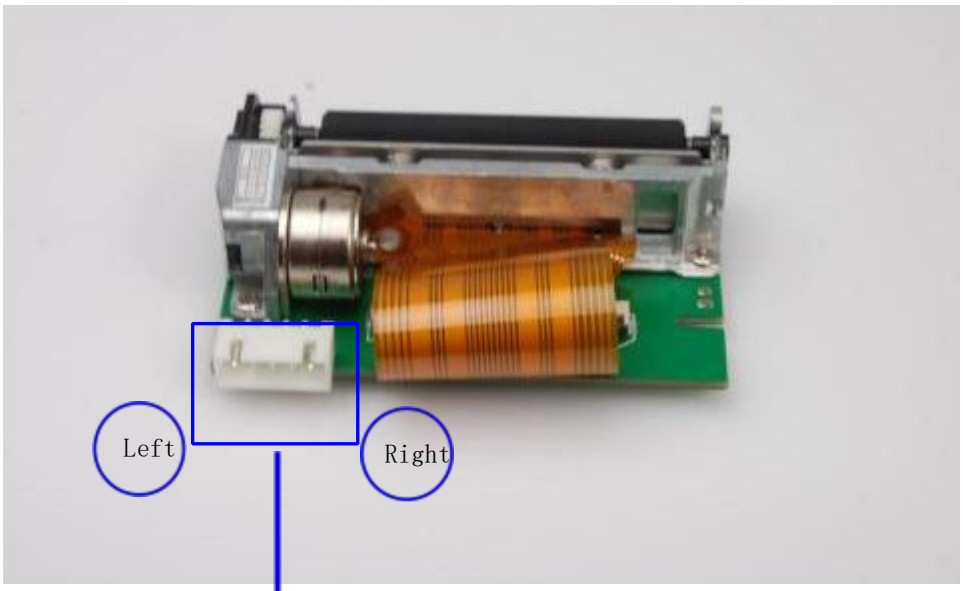
The initialization content includes: the default value of each control code, such as line spacing 0, word spacing 0, no binding length, vertical table value and horizontal table value 0, left and right width limit 0, default font magnification 1, non-white display, etc.

Drive board pin definition

DP-48A series

DP-48A1 and DP-48A2 driver board pin definitions

Interface: 5PIN seat for the power supply and communication interface, the drive board needs to supply voltage of 5~9V, current 1~2A, recommended to give the printer the best voltage 7.4V, current 2A, in the case of not printing graphics, the current generally fluctuates around 1A.



The pin definitions from left to right are:
DTR RXD TXD GND VH

CN2(Power and communication interface)	
Pin number	**Feature**
1	DTR (printer output) Fluid control
2	Receive data (Rxd, printer input)
3	Transmit data (Txd, printer output)
4	GND ground
5	VH power

Driver board software section description

Command list

NO	Command quick search	命令	说明
01	Print and feed instructions	LF	Printing paper
02		CR	Carriage return
03		ESC J n	Printing paper n dot
04		ESC d n	Printing paper n row
05	Print setup instruction	ESC 3 n	Set the line spacing to n points
06		ESC 2	Set line spacing to the default value
07		ESC $ nL nH	Set print position
08		GS L nL nH	Set the amount of left margin
09		ESC ! n	Set the character printing mode
10		GS ! n	Set character size
11		GS B n	Set and remove reverse white printing
12		ESC - n	Set and ununderline
13		ESC V n	Set and unprint 90 ° rotation
14		ESC a	Set print alignment (center, left, right)
15		FS &	Set Chinese character mode
16		FS .	Cancel kanji mode
17		FS ! n	Set Chinese character print mode combination
18		ESC % n	Select or Cancel the user-defined character set
19		ESC & y c1 c2 [x1 d1 ... d (yx1)] ... [xk d1 ... d(y x k)]	Define user-defined character sets
20		ESC ? n	Cancel User-defined character
21		ESC R n	Select an international character set
22		ESC t n	Select the character code page
23	Graphic print instruction	ESC * m Hl Hh [d]k	The figure is filled with vertical modulus data
24		GS v 0	Picture horizontal module data printing
25		GS * x y d1...d(x×y×8)	Define the down-pass bitmap
26		GS / m	Print the down-pass bitmap
27		FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n	Define the NV bitmap
28		FS p n m	Print the NV bitmap
29	Tabulating instruction	HT	Horizontal tabulation
30		ESC D [d]k NUL	Set the horizontal TAB position
31	One-dimensional barcode printing	GS H n	Set the 1D barcode Readable character (HRI) print position
32		GS h n	Set one-dimensional bar code height
33		GS w n	Set a one-dimensional bar code breadth

34	instructions	GS k m [d]k NUL	Printing 1D bar code
35	Two-dimensional code printing instruction	GS (k pL pH cn fn n	Set the module type of the QR code
36		GS (k pL pH cn fn n	Set the error correction level error of the QR code
37		GS (k pL pH cn fn m d1…dk	Store the QR code data into the QR code buffer
38		GS (k pL pH cn fn m	Print QR code
39		GS (GS (k pL pH cn fn m	Print graphic information for the QR code
40	Status query instruction	GS r n	Transfer state
41		DLE EOT n	Real-time transfer state
42	Other instructions	ESC @	Printer initialization
43		DC2 T	Print the self-test page

5.1 、Control command

5.1.01、LF

Name	Printing paper
Format	ASCII ： LF Decimal ： 10 Hex ： 0A
Description	Print the contents of the print cache, then set a line feed according to the current line spacing, and adjust the print position to the start of the next line
Description	No
Default	No
Support modal	All the model
Note	No
For example	No

5.1.02、CR

Name	Carriage return
Format	ASCII ： CR Decimal ： 13 Hex ： 0D
Description	The print position is adjusted to the starting position of the line, without line wrapping
Description	No
Default	No
Support modal	All the model
Note	After the carriage return command is executed, the new print data will overwrite the old data in the print cache in a bit-by-bit "or" manner
For example	No

5.1.03、ESC J n

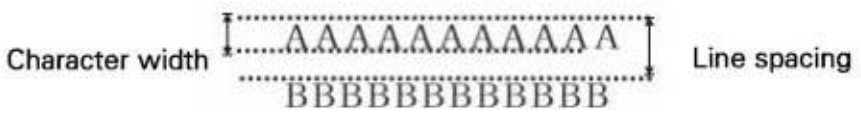
Name	Printing paper n 点
Format	ASCII ： ESC J n Decimal ： 27 74 n Hex ： 1B 4A n
Description	Print paper n points from the cache
Description	0 ≤ n ≤ 255
Default	No
Support modal	All the model
Note	When the print cache is empty, only n points are fed After this instruction is executed, the print position is moved to the starting position of the next line
For example	1b 40 30 31 32 1b 4a 10

5.1.04、ESC d n

Name	Printing paper n 行
Format	ASCII ： ESC d n Decimal ： 27 100 n Hex ： 1B 64 n
Description	The contents of the cache are printed paper n lines
Description	0 ≤ n ≤ 255
Default	No
Support modal	All the model
Note	This command sets the print start position to the line start
For example	1b 40 30 31 32 1b 64 01

5.1.05、ESC 3 n

Name	Set the line spacing to n points
Format	ASCII ： ESC 3 n Decimal ： 27 51 n Hex ： 1B 33 n
Description	Set the line spacing to n points
Description	0 ≤ n ≤ 255
Default	n = 33
Support modal	All the model

Note	The line spacing is shown as follows：  If the set line spacing is less than the maximum character height in a line, the line spacing is equal to the maximum character height. If ESC2, ESC@, the printer resets, or the printer is powered off, the line spacing is restored to the default value
For 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

5.1.06、ESC 2

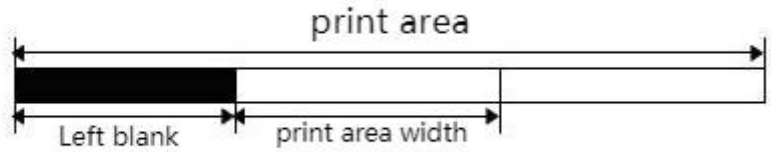
Name	Set line spacing to the default value
Format	ASCII ： ESC 2 Decimal ： 27 50 Hex ： 1B 32
Description	Set the line spacing to the default 33 points
Description	No
Default	No
Support modal	All the model
Note	Look at the ESC 3 instruction in detail If the line spacing is less than the maximum character height in a line, the line spacing is equal to the maximum character height. You can customize the line spacing using ESC 3
For example	No

5.1.07、ESC $ nL nH

Name	Set print position
Format	ASCII ： ESC $ nL nH Decimal ： 27 36 nL nH Hex ： 1B 24 nL nH
Description	Adjust the print position to the point (nL + nH × 256) away from the print start position

Description	0 ≤nL ≤255，0 ≤nH ≤255
Default	No
Support modal	All the model
Note	This command is only valid for this line. After line wrapping, the print position is reset to the print start position. If the print range is out of the print range, the print is moved to the next line
For example	1b 40 1b 24 08 00 30 31 32 0d 0a 30 31 32 0d 0a

5.1.08、GS L nL nH

Name	Set the amount of left margin
Format	ASCII ： GS L nL nH Decimal ： 29 76 nL nH Hex ： 1D 4C nL nH
Description	Set the amount of left margin为（nL + nH × 256）点
Description	0 ≤nL ≤255，0 ≤nH ≤255
Default	No
Support modal	All the model
Note	This command is only valid if the line is processed at the start position. The legend is shown as follows:  If the setting is outside the printable range, the maximum number of printable units is used
For example	1b 40 1d 4c 08 00 30 31 32 0d 0a 30 31 32 0d 0a

5.1.09、ESC ! n

Name	Set the character printing mode
Format	ASCII ： ESC ! n Decimal ： 27 33 n Hex ： 1B 21 n

Description	Set the character printing mode(Font, back white, inverted, bold, double height, double width, and underscore), the bits of parameter n are defined as follows: **Bit function value** **0 1**
	0 font normal Small character 1 reverse white Cancel Settings 2 inversion Cancel Settings 3 Rough look Cancel Settings 4 high Cancel Settings 5 wide Cancel Settings 6 Underline Cancel Settings 7 Not defined
Description	No
Default	n = 0
Support modal	All the model
Note	This command is valid for both Chinese and foreign fonts When ESC@, printer reset, power off, this instruction is invalid
For 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

5.1.10、GS ! n

Name	Set character size
Format	ASCII ： GS ! n Decimal ： 29 33 n Hex ： 1d 21 n
Description	Set the character size to 1-8x wide and 1-8x high The definition is as follows: Set character height with 0 to 3 bits and character width with 4 to 7 bits as shown below

Table 1
Character width setting

Hex	decimalism	breadth
00	0	1(common)
10	16	2(Double width)
20		

Table 2
Character height setting

Hex	decimalism	breadth
00	0	1(common)
01	1	2(Multiplicity of height)

	30 40 50 60 70	32	3	02	2	3
		48	4	03	3	4
		64	5	04	4	5
		80	6	05	5	6
		96	7	06	6	7
		112	8	07	7	8

Description	No
Default	n = 0
Support modal	All the model
Note	This command is valid for both Chinese and foreign fonts except HRI characters. When ESC@, the printer is reset, or the power is off, the Settings of this command are invalid
For example	1b 40 1d 21 11 30 31 32 0d 0a 30 31 32 0d 0a

5.1.11、GS B n

Name	Set and remove reverse white printing
Format	ASCII ： GS B n Decimal ： 29 66 n Hex ： 1d 42 n
Description	Set or disable the anti-white print mode. When the least significant bit of n is 0, the anti-white mode is turned off. When the least significant bit of n is 1, the anti-white mode is turned on.
Description	No
Default	n = 0
Support modal	All the model
Note	Only the lowest position of n is valid. This command is valid for both built-in characters and user-defined characters. When the anti-white mode is turned on, it also works on the white space set by the ESC SP. This command does not affect bitmaps, user-defined bitmaps, barcodes, HRI characters, and Spaces skipped by HT, ESC $. This command does not affect the line spacing. Anti-white mode takes precedence over underline mode. When the anti-white mode is set, even if the underline mode is turned on, it is disabled (but not cancelled). When ESC@, printer reset, power off, this instruction is invalid
For example	1b 40 1d 42 01 30 31 32 0d 0a 30 31 32 0d 0a

5.1.12、ESC - n

Name	Set and ununderline
Format	ASCII ： ESC - n Decimal ： 27 45 n Hex ： 1B 2D n

Description	Set/ununderline mode based on the following values of n:		
	n	Feature	
	0, 48	Ununderline mode	
	1, 49	Set underline mode (1 point thick)	
	2, 50	Set underline mode (2 dots bold)	
Description	0 ≤n ≤2, 48 ≤n ≤50		
Default	n = 0		
Support modal	All the model		
Note	The printer can print underscores for all characters (including the spacing to the right of the character), except for whitespace set by the HT. The printer cannot underline characters rotated 90 ° clockwise and anti-white characters. When the underline mode is ununderlined by setting the value of n to 0 or 48, the subsequent data is not underlined, and the thickness of the underline set before the underline mode is not changed. The default underscore thickness is 1 point. Changing the character size does not affect the thickness of the current underscore. Use ESC! Underline mode can also be set or deactivated. Note, however, that the last command received is valid.		
For 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		

5.1.13、ESC V n

Name	Set and unprint 90 ° clockwise rotation
Format	ASCII ： ESC V n Decimal ： 27 86 n Hex ： 1B 56 n
Description	Set or unprint 90 ° rotation. When n is equal to 0 or 48, the 90 ° rotation print is removed. When n is equal to 1 or 49, set 90 ° rotation to print.
Description	0 ≤n ≤1， 48 ≤n ≤49
Default	n = 0
Support modal	All the model
Note	When underline mode is set, the printer does not underline characters that are rotated 90 ° clockwise. In 90 ° clockwise rotation mode, the Multiplicity of height and Double width commands magnify characters in the opposite direction than the Multiplicity of heightDouble width commands magnify characters in normal mode. When ESC@, printer reset, power off, this instruction is invalid
For example	1b 40 1b 56 01 30 31 32 0d 0a 30 31 32 0d 0a

5.1.14、ESC a n

Name	Set print alignment (left, center, right)
Format	ASCII ： ESC a n Decimal ： 27 97 n Hex ： 1B 61 n
Description	If all the data in a row is aligned, the meaning of the n value is as follows: n — Mode 0, 48 — left 1, 49 — Mediate between two parties 2, 50 — right
Description	0 ≤n ≤2 或 48 ≤n ≤50
Default	n = 0
Support modal	All the model
Note	When ESC@, printer reset, power off, this instruction is invalid
For 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

5.1.15、FS &

Name	Set Chinese character mode
Format	ASCII ： FS & Decimal ： 28 38 Hex ： 1C 26
Description	Select Chinese character mode
Description	No
Default	No
Support modal	All the model
Note	When the Kanji character mode is selected, the printer processes all kanji codes, two bytes at a time. Process the kanji code in the order of the first byte and the second byte.
For 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

5.1.16、FS .

Name	Cancel kanji mode

Format	ASCII ： FS . Decimal ： 28 46 Hex ： 1C 2E
Description	Cancel kanji mode
Description	No
Default	No
Support modal	All the model
Note	If the Chinese character mode is not selected, all character codes are treated as ASCII codes, one character at a time.
For example	No

5.1.17、ESC % n

Name	Select or Cancel the user-defined character set
Format	ASCII ： ESC % n Decimal ： 27 37 n Hex ： 1B 25 n
Description	Select or Cancel the user-defined character set If the least significant bit of n is 0, Cancel the user-defined character set. When the least significant bit of n is 1, the user-defined character set is selected.
Description	0 ≤ n ≤ 255
Default	0
Support modal	All the model
Note	When canceling a user-defined character set, the internal character set is automatically selected.
For example	No

5.1.18、FS ！ n

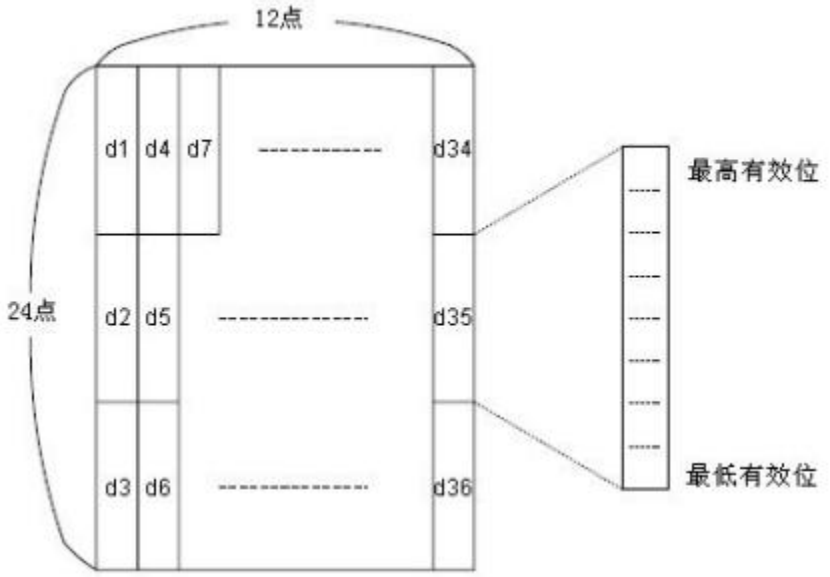
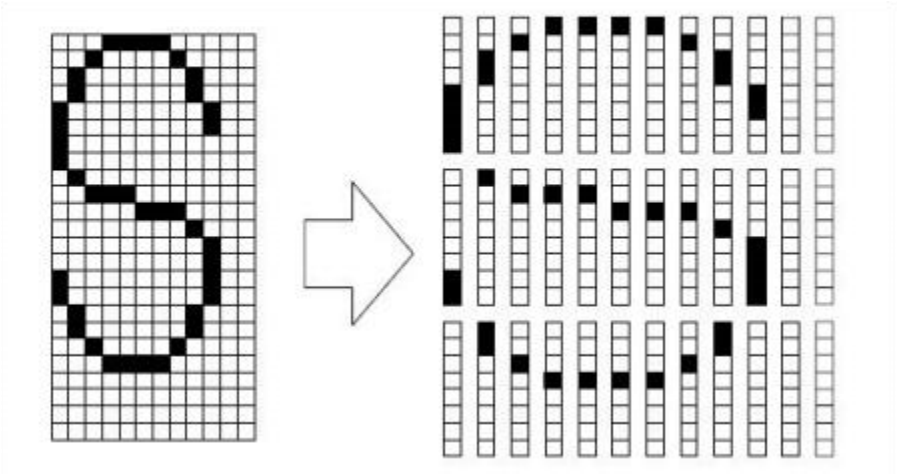
Name	Set Chinese character print mode combination
Format	ASCII ： FS ！ n decimalism ： 28 33 n Hex ： 1C 2 n 1
Description	Set the printing mode of Chinese characters
Description	0 ≤ n ≤ 255
Default	0
Support modal	All the model

location	Off/On	Hex	decimalism	ASB status
0	-	-	-	Not defined.
1	-	-	-	Not defined.
2	close	00	0	Double width mode is disabled.
	open	04	4	Double width mode is allowed.

<table>
<tr><td rowspan="2">Note</td><td colspan="5"><table>
<tr><td rowspan="2">3</td><td>close</td><td>00</td><td>0</td><td>Multiplicity of height mode is disabled.</td></tr>
<tr><td>open</td><td>08</td><td>8</td><td>Allows Multiplicity of height modes.</td></tr>
<tr><td>4</td><td>-</td><td>-</td><td>-</td><td>Not defined.</td></tr>
<tr><td>5</td><td>-</td><td>-</td><td>-</td><td>Not defined.</td></tr>
<tr><td>6</td><td>-</td><td>-</td><td>-</td><td>Not defined.</td></tr>
<tr><td rowspan="2">7</td><td>close</td><td>00</td><td>0</td><td>The underline mode is disabled.</td></tr>
<tr><td>open</td><td>80</td><td>128</td><td>Underline mode is allowed.</td></tr>
</table></td></tr>
<tr><td colspan="5">If the Chinese character mode is not selected, all character codes are treated as ASCII codes, one character at a time.
When Double width mode and Multiplicity of height mode are set at the same time (including right and left character spacing), a word of four times the size will be printed
Sign.
The printer can underline all characters (including the right and left character spacing), but cannot underline empty Spaces set by the HT command, and characters rotated 90 ° clockwise.
When some characters in a row are Multiplicity of height or higher, all characters in the row are aligned along the baseline. .Can use GS! The command contains Chinese characters. The Settings of the last received command are valid.</td></tr>
<tr><td>For example</td><td colspan="5">1B 40 1C 21 80 C9 C9 30 31 32 0D 0A</td></tr>
</table>

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

Name	Define user-defined character sets
Format	ASCII ： ESC & y c1 c2 [x1 d1 ... d (yx1)] ... [xk d1 ... d(y x k)] Decimal ： 27 38 y c1 c2 [x1 d1 ... d(yx1)] ...[xk d1 ... d(yxk)] Hex ： 1B 26 y c1 c2 [x1 d1...d(y x1)]...[xk d1...d(yxk)]
Description	Define user-defined characters. y Specifies the number of bytes in the vertical direction. .c1 Specifies the starting character encoding, c2 Specifies the end character encoding. . xk Specifies the number of points in the horizontal direction.
Description	The range of x and y corresponds to the internal font If a 6*12 font is selected, y = 2, 0 ≤ x ≤ 6 If a 12*24 font is selected, then y= 3, 0 ≤ x ≤ 12 32 ≤ c1 ≤ c2 ≤ 126 0 ≤ d1 ... d(y*xk) ≤255
Default	No
Support modal	All the model
Note	The range of character encodings can be defined: ASCII (95 characters) from <20>H to <7E>H. Can define a continuous character encoding of multiple characters. When only one character is needed, let c1 = c2. .d is the point data of the character. Point mode is horizontal starting from the left. The remaining points on the right are blank. The data that defines user-defined characters is (y*x) bytes. Set the corresponding bit of the print point to 1 or the corresponding bit of the non-print point to 0. This command can define a different user-defined character pattern for each font. Use ESC! Set the font.

	User-defined characters and down-pass bitmaps cannot be defined at the same time. When this command is executed, the down-passed bitmap is cleared. . User-defined characters are cleared in the following cases: Run esc@.
	Execute GS *. Run ESC? . The printer is reset or powered off. Illustration: When setting font A (12 24).   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 . . . .

For example	①y = 2 1B 40 1b 26 02 20 20 06 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 ②y = 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

5.1.20、ESC ? n

Name	Cancel User-defined character
Format	ASCII ： ESC ? n Decimal ： 27 63 n Hex ： 1B 3F n
Description	Cancel Specifies a user-defined character encoded by n
Description	32 ≤n ≤ 126
Default	No
Support modal	All the model
Note	This command terminates the use of the style defined for the character encoding, which is specified by n. After the user-defined character is cancelled, the rest of the characters are printed in the corresponding mode. Using ESC! In the selected font, the command removes the style defined for the specified encoding. If a user-defined character is not defined, the printer ignores the command.
For example	No

5.1.21、ESC R n

Name	Select an international character set
Format	ASCII ： ESC R n Decimal ： 27 82 n Hex ： 1B 52 n
	Select the value of n according to the following table to set the international character set

Description	n	Character set	n	Character set			
		America	8	Japan			
	0	France	9	Norse			
	1	Germany	1	Denmark II			
	2	Britain	0	Spain II			
	3	Denmark I	1	Latin America			
	4	Sweden	1	Korea			
	5	Italy	1	Slovenia			
	6	Spain I	1	China			
	7		2				
			1				
			3				
			1				
			4				
			1				
			5				
Description	0 ≤ n ≤ 15						
Default	0						
Support modal	All the model						
Note							
For 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						

5.1.22、ESC t n

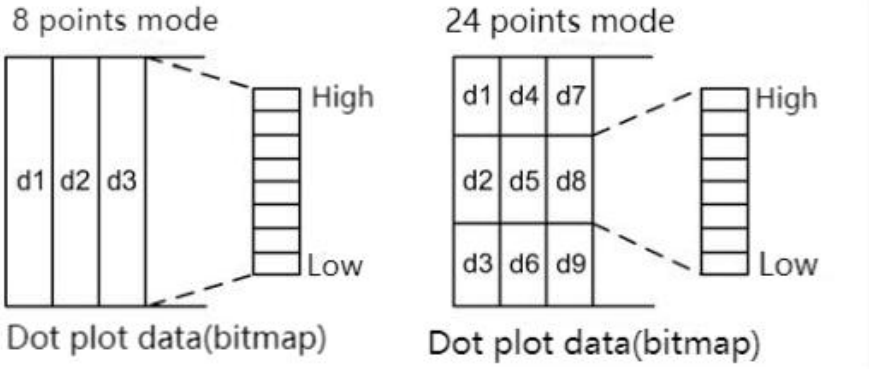
Name	Select the character code page
Format	ASCII ： ESC t n Decimal ： 27 116 n Hex ： 1B 74 n
Description	Select n from the character code page

	NO code page 0 CP437 [US, European standard] 1 KataKana [Katakana] 2 CP850 [Multilingual] 3 CP860 [Portugal] 4 CP863 [Canadian - French] 5 CP865 [Nordic] 6 WCP1251 [Slavic] 7 CP866 Slavs 2 8 MIK[Slavic/Bulgarian] 9 CP755 [Eastern Europe, Latvia 2] 10 [Iran, Persia] 11 Reservations 12 Reservations 13 Reservations 14 Reservations 15 CP862 [Hebrew] 16 WCP1252 [Latin 1] 17 WCP1253 [Greece] 18 CP852 [Latin 2] 19 CP858 [Multilingual Latin 1+ Eurons] 20 Iran II [Farsi] 21 Latvia 22 CP864 [Arabic] 23 ISO-8859-1 [Western Europe] 24 CP737 [Greece] NO code page 25 WCP1257 [Baltic Sea] 26 Thai 27 CP720[Arabic] 28 CP855 29 CP857[Turkish] 30 WCP1250[Central Europe] 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[Balo] 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[Latin 9] 45 [Thai 2] 46 CP856 47 Cp874 255 GBK2312
Description	0 ≤ n ≤ 255
Default	0
Support modal	All the model
Note	
For 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

5.1.23、ESC * m Hl Hh [d]k

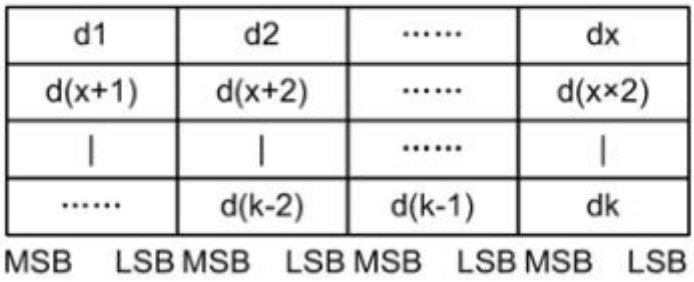
Name	The figure is filled with vertical modulus data
Format	ASCII ： ESC * m Hl Hh [d]k Decimal ： 27 42 m Hl Hh [d]k Hex ： 1B 2A m Hl Hh [d]k

Description	Print longitudinal mode-taking image data, and the parameter meanings are as follows: m is the point map format: m Mode Horizontal scale Vertical scale 0 8 point single density x 2 x 3 1 8 points double density x 1 x 3 32 24-point single density ×2 × 1
	33 24 points double density × 1 × 1 Hl and Hh are horizontal points (Hl+256×Hh) [d]k is the point plot data k indicates the number of bytes of dot plot data and does not participate in transmission
Description	XX58： m = 0、1、32、33 1 ≤ Hl + Hh × 256 ≤ 384 0 ≤ d ≤ 255 k = Hl + Hh × 256（当 m = 0、1） k = (Hl + Hh × 256) × 3（当 m = 32、33） XX80 ： m = 0、1、32、33 1 ≤ Hl + Hh × 256 ≤ 576 0 ≤ d ≤ 255 k = Hl + Hh × 256（当 m = 0、1） k = (Hl + Hh × 256) × 3（当 m = 32、33）
Default	No
Support modal	All the model

Note	The corresponding bit of [d] k means the point printing and the corresponding bit of 0 means the point does not print The portion of the horizontal image beyond the print area will be ignored The relationship between the dot plot data and the printing effect is as follows:  This instruction only fills the print cache. The printing of the image starts after receiving the print instruction, and the print cache is emptied after the image is printed If the image height required to print is large, it can be divided into several images with 8 (m = 0,1) or 24 (m = 32,33) points and printed respectively After filling the graphic data, you can continue to fill other information so that the drawing is printed with other information After filling the point map, ESC J (n = 24) instruction is generally used to print, or LF instruction to print, but LF instruction will trigger the paper feeding operation (according to the row spacing), making the multiple line image intermittent, can set the row spacing of 0, there will not be too much paper.(The pin printer will offset, if a line occurs in the middle, send data continuously)
For example	1B 40 1b 2a 00 0C 00 FF FF FF FF FF FF FF FF FF FF FF FF 1B 33 00 0A

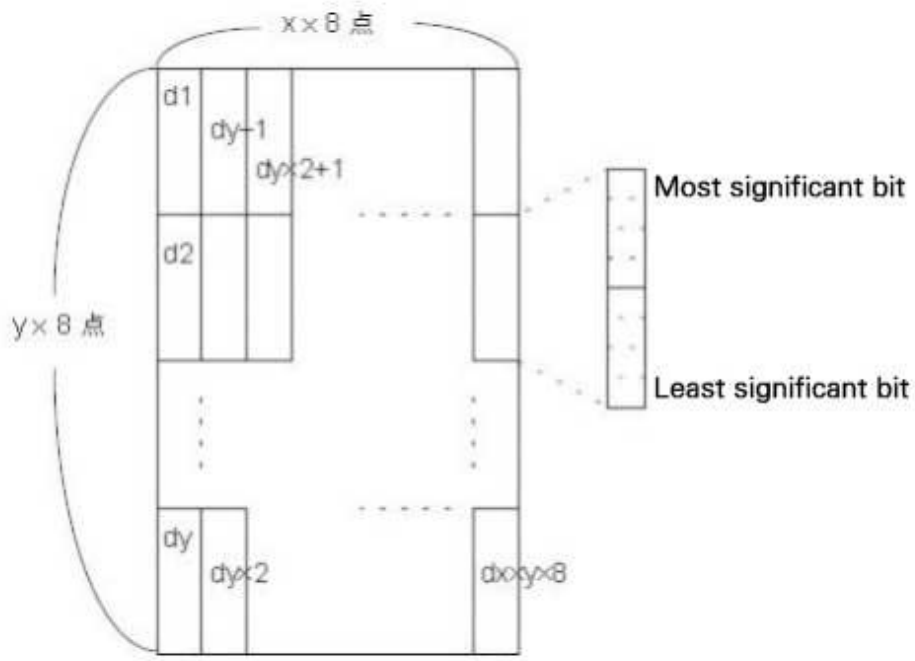
5.1.24、GS v 0

Name	Picture horizontal module data printing
Format	ASCII ： GS v 0 Decimal ： 29 118 48 m xL xH yL yH [d]k
	Hex ： 1D 76 30 m xL xH yL yH [d]k
Description	Print transverse mode-taking image data, and the parameter meanings are as follows: m is bitmap mode: m Mode Horizontal scale Vertical scale 0,48 normal x 1 x 1 1,49 Double width x 2 x 1 2,50 Multiplicity of height x 1 x 2 3,51 Double widthMultiplicity of height x 2 x 2 xL and xH are horizontal bytes (xL + xH × 256) yL and yH are vertical points (yL + yH × 256) [d]k is the point plot data k indicates the number of bytes of point map data. k is used for illustration and does not need to be transmitted

Description	XX58： 0 ≤m ≤3； 48 ≤m ≤51 1 ≤xL +xH×256 ≤48 0 ≤yL ≤255， 0 ≤yH ≤255 0 ≤d ≤255 k = (Hl + Hh×256)×(yL + yH×256) XX80 ： 0 ≤m ≤3； 48 ≤m ≤51 1≤xL + xH×256 ≤72 0 ≤yL ≤255， 0 ≤yH ≤255 0 ≤d ≤ 255 k = (Hl + Hh×256)×(yL + yH×256)
Default	No
Support modal	All the model
Note	The corresponding bit of [d] k means the point printing and the corresponding bit of 0 means the point does not print If the image level bytes exceed the print area, the excess will be ignored This instruction is executed to the image size, not affected by the row spacing of ESC 2 and ESC 3 After this instruction is executed, the print coordinates are reset to the left distance position, and the image content is emptied The relationship between the bitmap data and the printing effect is as follows:  This instruction has a printing function, while transmitting data while
For example	1B 40 1d 76 30 00 03 00 09 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

5.1.25、GS * x y d1...d(x×y×8)

Name	Define the down-pass bitmap
Format	ASCII ： GS * x y d1...d(x×y×8) Decimal ： 29 42 x y d1 ...d(x×y×8)
	Hex ： 1D 2A x y d1...d(x×y×8)
Description	Specify points with x and y to define the down-pass bitmap. x Specifies that the number of horizontal points is 8 x x. y Specifies that the number of vertical points is 8 x y.
Description	1 ≤x ≤255 1 ≤y ≤48 x*y ≤ 1536 0 ≤d ≤ 255
Default	No
Support modal	All the model

Note	If x*y exceeds the specified range, the command is disabled. d indicates bitmap data. Data (d) specifies that the print bit is 1 and the non-print bit is 0. . Clear the down-pass bitmap definition if: Run esc@. Run ESC &. The printer is reset or powered off. The relationship between the down-pass bitmap and the printed data is shown in the figure below 
For example	1B 40 1D 2A 03 03 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF 1D 2F 00

5.1.26、GS / m

Name	Print the down-pass bitmap
Format	ASCII ： GS / m Decimal ： 29 47 m Hex ： 1D 2F m
Description	Print the down-pass bitmap in the mode specified by m

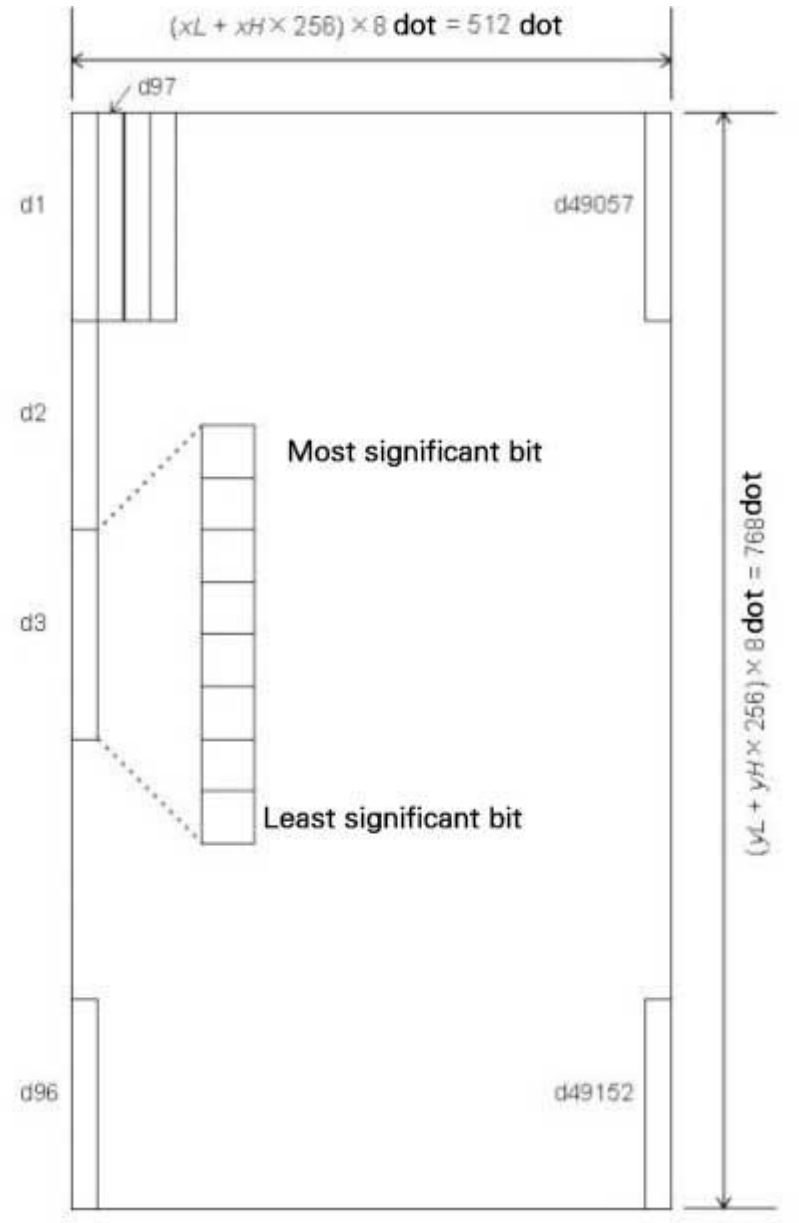
m	mode
0, 48	Normal
1, 49	Double width
2, 50	Multiplicity of height
3, 51	Double width

			、Multiplicity of height
Description	0 ≤m ≤3 48 ≤m ≤51		
Default	No		
Support modal	All the model		
Note	If the bitmap data is not defined, the command is ignored. In standard mode, this command is only valid if there is no data in the print buffer. This command takes No effect in print mode (bold, overlap, underscore, character size, or reverse white print), except in reverse print mode. If the down-pass bitmap to be printed exceeds the print area, the excess data is not printed.		
For example	No		

5.1.27 、 FS q n [xL xH yLyH d1...dk]1...[xL xH yLyH d1...dk]n

Name	Define the NV bitmap
Format	ASCII ： FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n Decimal ： 28 113 n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n Hex ： 1C 71 n [xL xH yLyH d1...dk]1...[xL xH yL yH d1...dk]n
Description	Define an NV bitmap with a specific value of n. .n Specifies the number of defined NV bitmaps. .xl, xH specifies the number of points in the horizontal direction for the NV bitmap in the definition as (xL+xH*256)*8. .yl, yH specifies the number of points in the vertical direction for the NV bitmap in the definition as (yL+yH*256)*8.
Description	1 ≤n ≤255 0 ≤xL ≤255 0 ≤ xH ≤3 (1 ≤(xL+xH*256) ≤1023) 0 ≤ yL ≤255） 0 ≤yH ≤1 (1 ≤(yL+yH*256) ≤288) 0 ≤ d ≤255） k = (xL+xH*256)*(yL+yH*256)*8 Sum defined data area = 192K bytes
Default	No
Support modal	All the model

Note	Frequent execution of write commands may corrupt NV memory. Therefore, it is recommended to perform no more than 10 writes to NV memory per day. After placing an image into NV memory, the printer performs a hardware reset operation. Therefore, the user defines the characters, and the down-pass bitmap should be defined after the completion of this command. Printer cleaning In addition to receiving and printing buffers, reset to the mode in effect when power is turned on. (Hardware reset interface not supported) This command cancels all NV bitmaps defined with this command. From the beginning of this command to the completion of the hardware reset, no mechanical operations (including the paper feed button used to initialize the print head position when the cover plate is opened, etc.) can be performed. During the processing of this command, the printer becomes busy while writing data to the user NV memory and stops receiving data. Therefore, data transfer, including real-time commands, is prohibited during the execution of this command. .NV bitmap is a bitmap defined in non-volatile memory. Define fP printing with Fq.
	In standard mode, this command is valid only at the beginning of a line. The command takes effect only after the seven bytes of the command <FS yH>normal are processed. When the amount of data exceeds the left capacity of the range defined by xL, xH, yL, yH, the printer will process the range defined by xL, xH, yL, yH outside the defined range. In the first set of bitmaps, when any parameter in xL, xH, yL, yH is outside the defined range, the command is prohibited. In a group of bitmaps that is not the first group, when the printer encounters xL, xH, yL, yH outside the defined range, it stops processing the command and starts writing the NV image. At this point, NV bitmaps that have not yet been defined are banned (undefined,) but any previously defined NV bitmaps are still valid. .d indicates the defined data. In data (d), a 1 bit specifies a point to be printed and a 0 bit specifies a point not to be printed. This command defines n as the number of NV bitmaps. The number rises sequentially from bitmap 01H. Therefore, the first data group [xL xH yL yH d1...dk] is NV bitmap 01H, and the last data group [xL xH yL yH d1...dk] is NV bitmap n. The total is consistent with the number of NV bitmaps set by the FS p command. The defining data of an NV bitmap consists of [xL xH yL yH d1...dk]. Therefore, when there is only one NV bitmap n=1, the printer processes the data group [xL xH yL yH d1...dk] only once. The printer uses ([data: (xL+xH *256)*(yL+yH*256)*8]+[header:4]) bytes of the NV store. The defined area in this printer is 192K bytes (Max). This command can define several bitmaps, but cannot define bitmaps whose total data capacity [bitmap data + headers] exceeds 192K bytes. Even if ASB is set, the printer does not transmit ASB status or perform status checks during the processing of the command. Once an NV bitmap is defined, it cannot be deleted by executing the ESc@command, reset, power off. This command only defines the NV bitmap and does not print it. The printing of the NV bitmap is performed using the FS p command. Diagram: When xL = 64, xH = 0, yL = 96, yH = 0

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

5.1.28、FS p n m

Name	Print the NV bitmap
Format	ASCII ： FS p n m Decimal ： 28 112 n m Hex ： 1C 70 n m

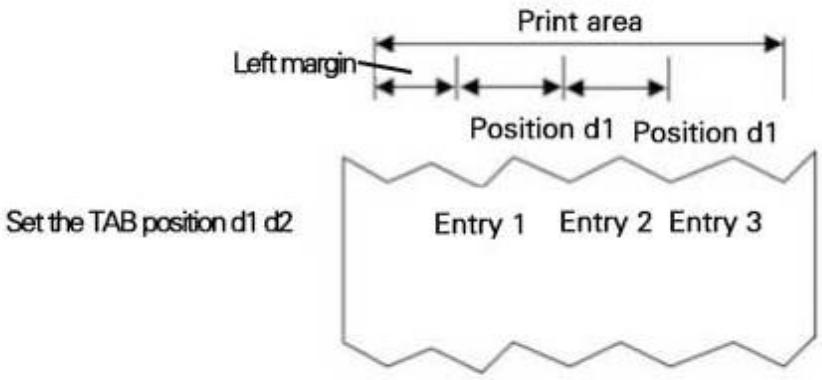
<table>
<tr><td>Description</td><td>Print the NV bitmap n with the mode specified by m
<table><tr><th>m</th><th>mode</th></tr><tr><td>0, 48</td><td>Normal</td></tr><tr><td>1, 49</td><td>Double width</td></tr><tr><td>2, 50</td><td>Multiplicity of height</td></tr><tr><td>3, 51</td><td>Double width 、Multiplicity of height</td></tr></table></td></tr>
<tr><td>Description</td><td>0 ≤m ≤3
48 ≤m ≤51 1
≤n ≤255</td></tr>
<tr><td>Default</td><td>No</td></tr>
<tr><td>Support modal</td><td>All the model</td></tr>
<tr><td>Note</td><td>n is the number of NV bitmaps (defined with the FS q command). .m Specifies the bitmap mode.
An NV bitmap is a bitmap defined in a non-volatile memory. Define FS p print with FS q. This command No takes effect when the specified NV bitmap does not exist.
In standard mode, this command is valid only if there is no data in the print buffer.
This command is not affected by print mode (bold print, overlap, underscore, character size, reverse white print, or character 90), rotation
Other than reverse print mode.
If more than one line of the down-pass bitmap is to be printed, the excess data is not printed.
In normal and Double width mode, the command feeds n points (n is the NV bitmap height), in Multiplicity of height and quadruple size mode (the command feeds 2n points, n is the NV bitmap height), It has No relation to the line spacing set by ESC 2 or ESC 3.
After the bitmap is printed, the command sets the printing position at the beginning of a line and processes subsequent data as normal data</td></tr>
<tr><td>For example</td><td>No</td></tr>
</table>

5.1.29、HT

Name	Horizontal tabulation
Format	ASCII ： HT Decimal ： 9 Hex ： 09
Description	Move the print position to the next TAB position
Description	No
Default	No
Support modal	All the model

Note	The TAB position is set by ESC D If the TAB position is not set (default No horizontal TAB position), this instruction is treated as an LF instruction If the tabulation position is outside the print area, the coordinates are moved to the starting position of the next row (if the row is full, print and wrap the line）
For example	No

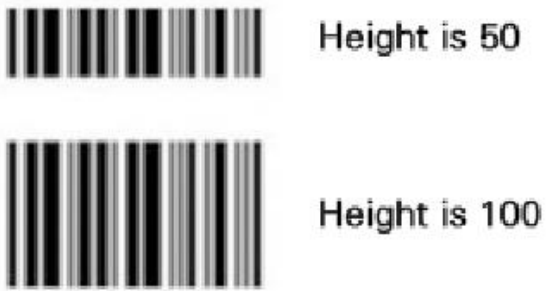
5.1.30、ESC D [d]k NUL

Name	Set the horizontal TAB position
Format	ASCII ： ESC D [d]k NUL Decimal ： 27 68 [d]k 0 Hex ： 1B 44 [d]k 00
Description	Set the horizontal TAB position. The meanings of the parameters are as follows: d1 ... dk: Horizontal table position, in 8 points, NULL as the end character
Description	XX58： 1 ≤d ≤46（d1 <d2 < …… dk ， 1 ≤k ≤ 16） XX80： 1 ≤d ≤70（d1 < d2 < …… dk ， 1 ≤k ≤ 16）
Default	[d]k = 0 (default No horizontal tabulating position)
Support modal	All the model
Note	The tabulation position is shown as follows:  Supports a maximum of 16 TAB positions Use this command to Cancel the setting k of the previous TAB position for schematic purposes, without transmission Transmission [d]k is considered terminated when it encounters NULL If dk is less than or equal to DK-1, it is regarded as the end, and the remaining data is regarded as ordinary data processing table location can be switched by HT When the left margin is changed, the tabulating position changes at the same time When ESC@, printer reset, power off, this instruction is invalid
For example	No

5.1.31、GS H n

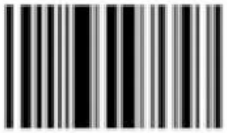
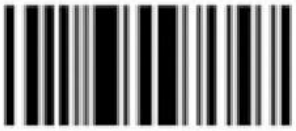
Name	Set the bar code Readable character (HRI) print position
Format	ASCII ： GS H n Decimal ： 29 72 n Hex ： 1D 48 n
Description	Set the printing position of the barcode readable character (HRI). The meaning of the parameter n is as follows: n Printing position 0, 48 do not print 1, 49 above the bar code 2, 50 below the bar code 3, 51 bar code above and below
Description	0 ≤n ≤3 或 48 ≤n ≤51
Default	n = 0
Support modal	All the model
Note	When ESC@, printer reset, power off, this instruction is invalid
For example	No

5.1.32、GS h n

Name	Set one-dimensional bar code height
Format	ASCII ： GS h n Decimal ： 29 104 n Hex ： 1D 68 n
Description	Set the bar code height to n. The meaning of parameter n is as follows: 
Description	1 ≤n ≤255
Default	n = 64
Support modal	All the model
Note	When ESC@, printer reset, power off, this instruction is invalid

5.1.33、GS w n

Name	Set a one-dimensional bar code breadth
Format	ASCII ： GS w n Decimal ： 29 119 n Hex ： 1D 77 n

Description	Set the bar code unit to n points. The meaning of parameter n is as follows:  Width of 3  Width of 4
Description	1 ≤ n ≤ 6
Default	n = 2
Support modal	All the model
Note	When ESC@, printer reset, power off, this instruction is invalid
For example	No

5.1.34、GS k m [d]k NUL

Name	Printing 1D bar code
Format	**(A)** ASCII ： GS k m [d]k NUL Decimal ： 29 107 m [d]k NUL Hex ： 1D 6B m [d]k NUL **(B)** ASCII ： GS k m n [d]k Decimal ： 29 107 m n [d]k Hex ： 1D 6B m n [d]k
Description	The meanings of each parameter are as follows: m indicates the encoding mode n is the length of the encoded data, used only in (B), the difference between (A) and (B) instruction is that the data segment of (A) ends with a NULL character, while (B) The barcode data is indicated by the length [d]k of the data k is the length of the barcode data, which is used to indicate that the relationship between the parameters does not need to be transmitted as shown in the following table: (Instruction A)

m	Coding system	Barcode data (SP indicates space)			
		Data length	k	Character set	Data (d)
0	UPC-A	immobilization	k = 11，12	0~9	48≤d≤57
1	UPC-E		6≤k≤8，k = 11，12	0~9	48≤d≤57 [当 k = 7,8,11,12 ，d1 = 48]
2	JAN13 (EAN13)	immobilization	k = 12，13	0~9	48≤d≤57
3	JAN8 (EAN8)	immobilization	k = 7，8	0~9	48≤d≤57

		4	CODE39	changeable	1≤k	0~9，A~Z SP，$，%，*，+，-，.，/	48≤d≤57，65≤d≤90，d = 32，36，37，42，43，45，46，47
		5	ITF (Interleaved 2 of 5)	changeable	2≤k≤255（Even number）	0~9	48≤d≤57
		6	CODABAR (NW-7)	changeable	1≤k	0~9，A~D，a~d $，+，-，.，/，：	48≤d≤57，65≤d≤68，97≤d≤100，d = 36，43，45，46，47，58 (65≤d1≤68，65≤dk≤68，97≤d1≤100，97≤dk≤100)
	(order B)						

m	Coding system	Barcode data (SP indicates space)			
		Data length	n	Character set	data（d）
65	UPC-A	immobilization	n = 11，12	0~9	48≤d≤57
66	UPC-E	immobilization	6≤n≤8，n = 11，12	0~9	48≤d≤57 [当 n = 7,8,11,12，d1 = 48]
67	JAN13 (EAN13)	immobilization	n = 12，13	0~9	48≤d≤57
68	JAN8 (EAN8)	immobilization	n = 7，8	0~9	48≤d≤57
69	CODE39	changeable	1≤n	0~9，A~Z SP，$，%，*，+，-，.，/	48≤d≤57，65≤d≤90，d = 32，36，37，42，43，45，46，47
70	ITF (Interleaved 2 of 5)	changeable	2≤n≤255（Even number）	0~9	48≤d≤57

		71	CODABAR (NW-7)	changeable	1≤n	0~9，A~D，a~d $，+，-，.，/，：	48≤d≤57，65≤d≤68，97≤d≤100，d=36，43，45，46，47，58 (65≤d1≤68，65≤dk≤68，97≤d1≤100，97≤dk≤100)
		72	CODE93	changeable	1≤n≤255	00H~7FH	0≤d≤127
		73	CODE12 8	changeable	1≤n≤255	00H~7FH C1H~C4H(FNC)	0≤d≤127 d=193，194,195,196
		74	UCC/EAN128	changeable	1≤n≤255	00H~7FH C1H~C4H(FNC)	0≤d≤127 d=193，194,195,196
Description	(A) 0 ≤m ≤6 (B) 65 ≤m ≤74						
Default	No						
Support modal	All the model						
Note	If the bar code breadth exceeds the printable area, the printer does not print the bar code This command is executed as required, and is not affected by the line spacing of ESC 2 and ESC 3. This command is not affected by ESC! Character style Settings are affected After this command is executed, the print position is restored to the print start position m Parameters 0 to 6(A) and 65 to 71(B) Select the same coding system, and the printing effect is the same. m Parameters 0 to 6(A) indicates that the barcode data ends with NULL m If the parameter is 65 to 74(B), the barcode data is represented by n. The data length is k. No transmission is required When printing UPCA (m = 0 or 65), note: Whether the input data length is 11 or 12, the check bit is automatically inserted or corrected Start, middle, and end characters are automatically inserted when printing UPCE (m = 1 or 66). Note: When the data length is 6, the system character (NSC) 0 is automatically inserted When the data length is 7, 8, 11, or 12, the first system character (NSC) d1 must be 0. Whether the data length is 6, 7, 8, 11, or 12, the check bit is automatically inserted or corrected Whether the input data length is 6, 7, 8, 11, or 12, the barcode readable character (HRI) only displays 6 as data, excluding the system character (NSC) and check code. The conversion relationship between transmitted data and printed data is as follows:							

Transmitted data										Printed data					
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 to 9, ensure that d7,d8,d9, and d10 are 0, and d11 is 5 to 9. The start and end characters are automatically inserted

When printing EAN13 (m = 2 or 67), note:

Whether the input data length is 12 or 13, the check bit is automatically inserted or corrected

Start character, middle separator, end character automatically inserted when printing EAN8 (m = 3 or 68), need to note:

Whether the input data length is 7 or 8, the check bit is automatically inserted or corrected

Start character, middle separator, end character automatically inserted when printing CODE39 (m = 4 or 69), note:

When d1 or dn is not the start/end character "*", encoder automatically inserts "*"

When "*" is encountered in the middle of data, the encoder regards it as the end character, and the rest data is treated as ordinary data processing; Check bits are not calculated and added automatically

When printing ITF25 (m = 5 or 70), note:

Start and end characters are inserted automatically

Check bits are not calculated and added automatically

When printing CODABAR (NW-7) (m = 6 or 71), note:

The start and end characters are not automatically inserted. You need to manually add them. The A to D or a to d parity bits are not automatically calculated or added

When you print CODE93 (m = 72), note that the start and end characters are inserted automatically

Two check codes are automatically calculated and inserted

When bar code Readable character (HRI) printing is set, no HRI character indicating start/end is set

When setting bar code Readable character (HRI) printing, the control character will be printed with a space instead of CODE128 (m = 73), note that:

The encoding system intelligently recognizes data and implements minimum length encoding, No need for the user to set Character set (including the initial Character set) or switch character sets

Function characters FNC1 to FNC4 Use C1H to C4H to enter the check bit to automatically calculate and add

When setting bar Code Readable Characters (HRI) to print, control characters and FNC1 to FNC4 are replaced with Spaces

When printing EAN128 (m = 74), note the basic structure as follows:

Initial character set	FNC 1	AI	Data section	Check bit A	Check bit B	End character
Automatic insertion		(d1...dk)			Automatic insertion	

The connection structure is as follows:

	<table><tr><td>Initial character set</td><td>FNC 1</td><td>AI</td><td>Data section</td><td>Check bit A</td><td>FNC 1</td><td>AI</td><td>Data section</td><td>Check bitA</td><td>Check bitB</td><td>End character</td></tr><tr><td colspan="2">Automatic insertion</td><td colspan="6">（d1...dk）</td><td colspan="2">Automatic insertion</td></tr></table> The encoding system intelligently recognizes data and implements minimum length encoding, No need for the user to set the Character set (including the start Character set) or switch the character set Function characters FNC1 to FNC4 Enter C1H to C4H AI in user input data does not need to be indicated by "(")", the coding system automatically inserts, and the no side will come out Wrong, such as: GS k 74 18 "019501234567890*", 01 is AI, the following is wrong: GS k 74 18 "(01)9501234567890*" When using the join structure, you need to insert FNC1 (C1H "Decimal = 193") as an example: GS k 74 18 "019501234567890*" 193 "029501234567890*" When setting bar code Readable Characters (HRI) to print, the control characters are replaced with Spaces, and FNC1~FNC4 is removed
For example	1b 40 1d 48 02 1d 6b 41 0c 31 32 33 34 35 36 37 38 39 30 31 32 1d 6b 42 0c 30 32 33 34 35 36 30 30 30 30 38 39 1d 6b 43 0c 30 32 33 34 35 36 30 30 30 30 38 39 1d 6b 44 08 30 32 33 34 35 36 30 30 1d 6b 45 08 30 32 33 34 35 36 30 30 1d 6b 46 08 30 32 33 34 35 36 30 30 1d 6b 47 08 41 32 33 34 35 36 30 41 1d 6b 48 08 41 30 32 33 34 35 36 41 1d 6b 49 08 41 30 32 33 34 35 36 41

5.1.35、GS (k pL pH cn fn n

Name	Set the module type of the QR code
Format	ASCII ：GS (k pL pH cn fn n Decimal ：29 40 107 pL pH cn fn n Hex ：1D 28 6b pL pH cn fn n
Description	Set the module type of the QR code
Description	pL=3, pH=0 cn=49 fn=67 0 ≤ n ≤ 16
Default	n=3
Support modal	All the model
Note	Set the type of the QR code graphics module to [n dot x n dot].
For example	No

5.1.36、GS (k pL pH cn fn n

<table>
<tr><td>Name</td><td>Set the error correction level error of the QR code</td></tr>
<tr><td>Format</td><td>ASCII ： GS (k pL pH cn fn n
Decimal ： 29 40 107 pL pH cn fn n
Hex ： 1D 28 6b pL pH cn fn n</td></tr>
<tr><td>Description</td><td>Set the error correction level error of the QR code</td></tr>
<tr><td>Description</td><td>pL=3, pH=0</td></tr>
<tr><td></td><td>cn=49
fn=69
48 ≤ n ≤ 51</td></tr>
<tr><td>Default</td><td>n=48</td></tr>
<tr><td>Support modal</td><td>All the model</td></tr>
<tr><td>Note</td><td>Set the error correction level error of the QR code
<table>
<tr><td>n</td><td>Feature</td><td>Reference:
Approximate representation of recovery (%)</td></tr>
<tr><td>48</td><td>Error correction level error L</td><td>7</td></tr>
<tr><td>49</td><td>Error correction level error m</td><td>15</td></tr>
<tr><td>50</td><td>Error correction level error q</td><td>25</td></tr>
<tr><td>51</td><td>Error correction level error h</td><td>30</td></tr>
</table></td></tr>
<tr><td>For example</td><td>No</td></tr>
</table>

5.1.37、GS (k pL pH cn fn m d1…dk

<table>
<tr><td>Name</td><td>Store the QR code data into the QR code buffer</td></tr>
<tr><td>Format</td><td>ASCII ： GS (k pL pH cn fn m d1…dk
Decimal ： 29 40 107 pL pH cn fn m d1…dk
Hex ： 1D 28 6b pL pH cn fn m d1…dk</td></tr>
<tr><td>Description</td><td>Store the QR code data into the QR code buffer</td></tr>
<tr><td>Description</td><td>4 ≤ (pL + pH×256) ≤ 7092 (0 ≤ pL ≤ 255, 0 ≤ pH ≤ 28)
cn=49
fn=80
m=48
0 ≤ d ≤ 255
k = (pL + pH×256) - 3</td></tr>
<tr><td>Default</td><td>No</td></tr>
<tr><td>Support modal</td><td>All the model</td></tr>
<tr><td>Note</td><td>data for storing QR code (d1... dk) to QR code buffer.
(pL + pH×256)-3) bytes in m(d1... dk) after the data is processed as a graph.</td></tr>
<tr><td>For</td><td>No</td></tr>
</table>

example	

5.1.38、GS (k pL pH cn fn m

Name	Print QR code
Format	ASCII ：GS (k pL pH cn fn m Decimal ：29 40 107 pL pH cn fn m Hex ：1D 28 6b pL pH cn fn m
Description	Print QR code
Description	pL=3, pH=0 cn=49 fn=81 m=48
Default	No
Support modal	All the model
Note	Print QR code。 The user must consider the space of the QR code graph (the spacing above and below the QR code graph and the spacing left and right are specified in the specification).
For example	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

5.1.39、GS (k pL pH cn fn m

Name	Set the graphic information for the QR code
Format	ASCII ：GS (k pL pH cn fn m Decimal ：29 40 107 pL pH cn fn m Hex ：1D 28 6b pL pH cn fn m

<table>
<tr><td>Description</td><td>Set the graphic information for the QR code。
Here are the details of the graphic information:
<table>
<tr><td>Send data</td><td>Hex</td><td>decimalism</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>
breadth and height data sent:
The height and breadth values of the graph data are measured in points. Other information data send:
Hex =30H/decimalism=48 indicates that data is not printed. Hex =31H/decimalism=49 indicates that data is not printed.</td></tr>
<tr><td>Description</td><td>pL=3, pH=0
cn=49
fn=82
m=48</td></tr>
<tr><td>Default</td><td>No</td></tr>
<tr><td>Support modal</td><td>All the model</td></tr>
<tr><td>Note</td><td>This command does not Print a QR code graph.
The user must consider the space of the QR code graph (the spacing above and below the QR code graph and the spacing left and right are specified in the specification).</td></tr>
<tr><td>For example</td><td>No</td></tr>
</table>

5.1.40、GS r n

<table>
<tr><td>Name</td><td>Transfer state</td></tr>
<tr><td>Format</td><td>ASCII ： GS r n
decim ： 29 114 n
alism</td></tr>
<tr><td></td><td>Hex ： 1D 72 n</td></tr>
<tr><td>Description</td><td>Transmits the state specified by n, as follows:
<table>
<tr><td></td><td>n</td><td>status</td></tr>
<tr><td></td><td>1.49</td><td>Transfer paper sensor status</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Description</td><td>n = 1, 49</td></tr>
</table>

<table>
<tr><td>Default</td><td>No</td></tr>
<tr><td>Support modal</td><td>All the model</td></tr>
<tr><td>Note</td><td>When using a serial interface:
If the DTR/DSR control is set, the printer transmits only one byte after confirming that the host is ready to receive data (the DSR signal is SPACE). If the host computer is not ready to receive the send data(DSR signal MARK), the printer waits until the host is ready.
If XON/XOFF control is set, the printer transmits only one byte and does not acknowledge the DSR signal status.
This command is executed when data is generated in the print buffer. Therefore, there may be an interval between receiving the command and the Transfer state, depending on the state of the receiving buffer.
When using GSa to activate the automatic state recovery ASB, the state transmitted by GSA must be distinguished from the ASB state. The type of state transmitted is as follows:
Printer paper sensor status (n= 1, 49):
<table>
<tr><th>location</th><th>Off/On</th><th>Hex</th><th>decimalism</th><th>ASB status</th></tr>
<tr><td>0,1</td><td>-</td><td>-</td><td>-</td><td>No meaning.</td></tr>
<tr><td rowspan="2">2,3</td><td>close</td><td>00</td><td>0</td><td>Paper out sensor: Printing paper is sufficient.</td></tr>
<tr><td>open</td><td>(0C)</td><td>(12)</td><td>The sensor lacks paper.</td></tr>
<tr><td>4</td><td>close</td><td>00</td><td>0</td><td>If not used, the immobilization is close.</td></tr>
<tr><td>5,6</td><td>-</td><td>-</td><td>-</td><td>Not defined.</td></tr>
<tr><td>7</td><td>close</td><td>00</td><td>0</td><td>If not used, the immobilization is close.</td></tr>
</table>
Bits 2 and 3: When the sensor detects that the printer is out of paper, the printer goes offline and the command is not executed. Therefore bits 2 and 3 do not transmit a paper deficiency state.</td></tr>
<tr><td>For example</td><td>No</td></tr>
</table>

5.1.41、DLE EOT n

<table>
<tr><td>Name</td><td>Real-time Transfer state</td></tr>
<tr><td>Format</td><td>ASCII ： DLE EOT n
Decimal ： 16 4 n
Hex ： 10 04 n</td></tr>
<tr><td>Description</td><td>The printer state is transmitted in real time according to the following parameters, the parameter n is used to specify the printer state to be transmitted:
n = 1: transfer printer status n =2: transfer offline status
n =3: Transmission error status
n =4: transfer paper sensor status</td></tr>
<tr><td>Description</td><td>1 ≤n ≤4</td></tr>
<tr><td>Default</td><td>No</td></tr>
<tr><td>Support modal</td><td>All the model</td></tr>
</table>

<table>
<tr><td></td><td>• The printer returns the status immediately after receiving the command
• Try not to insert the command in a command sequence of 2 or more bytes.
• This command works even if the printer is disabled by the ESC=(Select peripherals) command.
• The printer transmits the current state, each state represented by 1 byte of data.
• The printer Transfer state does not confirm whether the host received it.
• The printer executes the command immediately after receiving it.
• This command is valid only for serial port printers. The printer executes this command as soon as it is received in any state. n=1: indicates the printer status
<table>
<tr><th>location</th><th>0/1</th><th>Hex code</th><th>Decimalism code</th><th>Feature</th></tr>
</table></td></tr>
</table>

Note

0	0	00	0	immobilization为0
1	1	02	2	immobilization为1
2	0	00	0	One or two money boxes open (For machines without a cash box, the locationimmobilization is zero)
	1	04	4	Both cash boxes are closed
3	0	00	0	on-line
	1	08	8	off-line
4	1	10	16	immobilization为1
5, 6		--	--	To be defined
7	0	00	00	The paper has been torn away
	1	80	96	The paper is not torn off

n=2：Transfer offline state

location	0/1	Hex code	decimalism code	Feature
0	0	00	0	immobilization为0
1	1	02	2	immobilization为1
2	0	00	0	Upper cover close
	1	04	4	Cover open
3	0	00	0	The paper key was not pressed
	1	08	8	Press the paper key
4	1	10	16	The immobilization is 1
5	0	00	0	The printer is not short of paper
	1	20	32	Printer out of paper
6	0	00	00	No error condition
	1	40	64	Error condition
7	0	00	0	immobilization为0

n=3：Transfer error state

location	0/1	Hex code	Decimalism code	Feature
0	0	00	0	immobilization为0
1	1	02	2	immobilization为1
2		--	--	To be defined
3	0	00	0	The cutter is not wrong
	1	08	8	The cutter is wrong
4	1	10	16	The immobilization is 1
5	0	00	0	No Unrecoverable error
	1	20	32	There is an unrecoverable error

	6	0	00	00	Print head temperature and voltage are normal
		1	40	64	Print head temperature or voltage is out of range
	7	0	00	0	immobilization为0

n=4：Transfer paper sensor status

location	0/1	Hex 码	decimalism码	Feature
0	0	00	0	immobilization为0
1	1	02	2	immobilization为1
2, 3	0	00	0	有纸
	1	0C	12	纸将近
4	1	10	16	immobilization为1
5, 6	0	00	0	有纸
	1	60	96	纸尽
7	0	00	0	immobilization为0

For example	10 04 01 10 04 02 10 04 03 10 04 04

5.1.42、ESC @

Name	Initialize printer
Format	ASCII ： ESC @ Decimal ： 27 64 Hex ： 1B 40
Description	Initialize the following for the printer: Clear print cache The default values of each parameter are restored
Description	No
Default	No
Support modal	All the model
Note	No
For example	No

5.1.43、DC2 T

Name	Print the self-test page
Format	ASCII ： DC2 T Decimal ： 18 94 Hex ： 12 54
Description	The printer prints a self-test page that contains the printer's program version, communication interface type, code page, and other data

Description	No
Default	No
Support modal	All the model
Note	No
For example	1B 40 12 54

Character code page

Select the character code table instruction: 1BH 74H nh, n=00H~30H

12*24

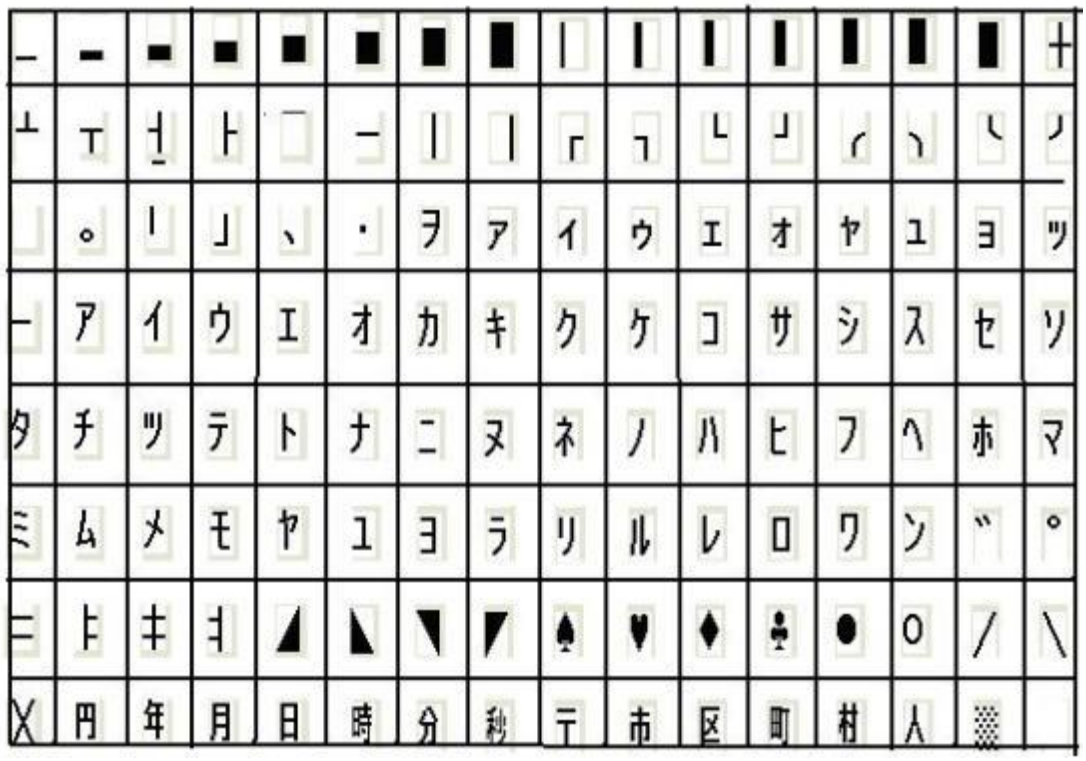
NO	代码页	Code Page
0	CP437 [美国，欧洲标准]	CP437 [U.S.A., Standard Europe]
1	KataKana [片假名]	Katakana
2	CP850 [多语言]	CP850 [Multilingual]
3	CP860 [葡萄牙]	CP860 [Portuguese]
4	CP863 [加拿大-法语]	CP863 [Canadian-French]
5	CP865 [北欧]	CP865 [Nordic]
6	WCP1251 [斯拉夫语]	WCP1251 [Cyrillic]
7	CP866 斯拉夫2	CP866 Cyrilliec #2
8	MIK[斯拉夫/保加利亚]	MIK[Cyrillic/Bulgarian]
9	CP755 [东欧，拉脱维亚 2]	CP755 [East Europe，Latvian 2]
10	[伊朗，波斯]	Iran
11	保留	reserve
12	保留	reserve
13	保留	reserve
14	保留	reserve
15	CP862 [希伯来]	CP862 [Hebrew]
16	WCP1252 [拉丁语 1]	WCP1252 Latin I
17	WCP1253 [希腊]	WCP1253 [Greek]
18	CP852 [拉丁语 2]	CP852 [Latina 2]
19	CP858 [多种语言拉丁语 1+欧元符]	CP858 Multilingual Latin Ⅰ+Euro)
20	伊朗Ⅱ[波斯语]	Iran II
21	拉脱维亚	Latvian
22	CP864 [阿拉伯语]	CP864 [Arabic]
23	ISO-8859-1 [西欧]	ISO-8859-1 [West Europe]
24	CP737 [希腊]	CP737 [Greek]
25	WCP1257 [波罗的海]	WCP1257 [Baltic]
26	泰文（与TM-88Thai character code 14同）	Thai
27	CP720[阿拉伯语]	CP720[Arabic]
28	CP855	CP855
29	CP857[土耳其语]	CP857[Turkish]
30	WCP1250[中欧]	WCP1250[Central Eurpoe]
31	CP775	CP775

32	WCP1254[土耳其语]	WCP1254[Turkish]
33	WCP1255[希伯来语]	WCP1255[Hebrew]
34	WCP1256[阿拉伯语]	WCP1256[Arabic]
35	WCP1258[越南语]	WCP1258[Vietnam]
36	ISO-8859-2[拉丁语2]	ISO-8859-2[Latin 2]
37	ISO-8859-3[拉丁语3]	ISO-8859-3[Latin 3]
38	ISO-8859-4[波罗的语]	ISO-8859-4[Baltic]
39	ISO-8859-5[斯拉夫语]	ISO-8859-5[Cyrillic]
40	ISO-8859-6[阿拉伯语]	ISO-8859-6[Arabic]
41	ISO-8859-7[希腊语]	ISO-8859-7[Greek]
42	ISO-8859-8[希伯来语]	ISO-8859-8[Hebrew]
43	ISO-8859-9[土耳其语]	ISO-8859-9[Turkish]
44	ISO-8859-15[拉丁语9]	ISO-8859-15 [Latin 3]
45	[泰文2]	Thai2
46	CP856	CP856
47	CD874	CD874

Page0 PC437Page3 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	¢	£	¥	Pts	ƒ
A_	á	í	ó	ú	ñ	Ñ	ª	º	d	⌐	¬	½	¼	i	«	»
B_	▒	▓	顯	┤	ᗡ	弓	{	刁	刁	彳	ı	刁	斗	〗	彐	刁
C_	L	工	T	卜	—	+	F	卜	L	F	工	T	F	=	卡	工
D_	工	亍	T	L	匕	F	Γ	+	卡	亅	厂	■	■	ı	▌	■
E_	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	ϕ	ε	∩
F_	三	±	≥	≤	⌠	⌡	÷	≈	°	·	·	√	ⁿ	²	■	

Page 1 Katakana



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	d	®	¬	»	幺	¡	«	»
B_	▒	▓	顯	┤	ɗ	Á	Â	À	©	彳	ı	刁	斗	¢	¥	刁
C_	L	工	T	卜	—	+	ã	Ã	L	F	工	T	F	=	卡	姨
D_	ð	Ð	Ê	Ë	È	ı	Í	Î	ï	⌋	厂	■	▄	¦	ì	▀

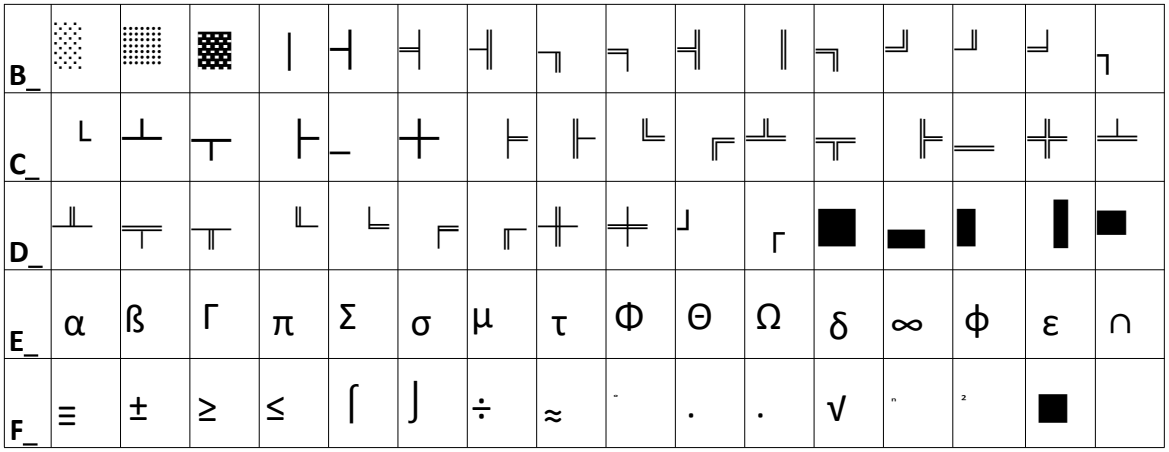
E_	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý	-	’
F_	-	±	‗	¾	¶	§	÷	¸	°	¨	·	¹	³	²	■	

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	¢	£	Ù	₧	Ó
A_	á	í	ó	ú	ñ	Ñ	ª	º	¿	Ò	¬	½	¼	¡	«	»
B_	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
C_	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D_	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	█	▄	▌	▐	▀
E_	α	ß	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	¤	Ô	Ü	¢	£	Ù	Û	ƒ
A_	¦	´	ó	ú	¨	¸	³	¯	Î	⌐	¬	½	¼	¾	«	»



Page5 pc865[Nordic]

Code page 865															
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9_	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	Pts	ƒ
A–	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	¤
B–	░	▒	▓	|	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
C_	└	┴	┬	├	–	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D_	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▀	▄	▌	▐	▬
E–	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	ⁿ	²	■	NBSP

Page6 pc1251 [Cyrillic]

Code page 1251																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
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B_	°	±	І	і	ґ	µ	¶	·	ё	№	є	»	ј	Ѕ	ѕ	ї
C_	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
D_	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
E_	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
F_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я

Page7 pc866 Cyrilliec #2

Code page 866																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
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
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Page8 MIK[Cyrillic/Bulgarian]

Code page MIK																
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Page9 CP755

Code page 755															
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
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	Я
A_	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
B_	▒	▒	▒	│	┤	Ā	╢	╕	╕	╢	╖	╕	╜	╜	╜	┐
C_	└	┴	┬	├	─	+	ā	╟	└	╒	┴	┬	╒	=	╪	┴
D_	Š	┬	Č	č	└	╒	ģ	Ī	ī	┘	┌	▀	▄	ū	Ū	▀
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Page10 Iran

Code page Iran

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A_	خ	خ	د	ذ	ر	ز	ژ	س	س	ش	ش	ص	ص	ض	ض	ط
B_	▒	▓	顯	┃	d	弓	{	ㄱ	ㄱ	ㄱ	ㅣ	ㄱ		』	ㅋ	ㄱ
C_	L	工	T		ㅏ	—	+	F	ㅏ	L	F	工	T	F	=	卡	工
D_	工	亍	T	L	匕	F	Γ	+	卡	ㅣ	厂	■	▄	ㅣ	▌	■
E_	ظ	ع	ع	ـ	ـ	غ	غ	غ	غ	ف	ف	ق	ق	ک	ک	گ
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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	ך	כ	ל	ם	מ	ן
9_	נ	ס	ע	ף	פ	ץ	צ	ק	ר	ש	ת	¢	£	¥	Pts	ƒ
A_	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	»
B_	▒	▓	▩	┃	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
C_	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D_	╨	╤	╥	╙	╘	╒	╓	╫	≠	┘	┌	▌	▄	▌	▌	■
E_	α	β	Γ	Π	Σ	σ	R	τ	Φ	Θ	Ω	δ	∞	ϕ	ε	∩
F_	≡	±	≥	≤	⌠	∫	÷	≈	°	∙	·	√	n	2	■	NBSP

Page 16 PC1252 Latin 1

Code page 1252																
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C_	À	A	岔	岔	岔	員	压	G	玄	氲	岔	兹	主	壬	仝	士
D_	曰	衍	ð	6	δ	δ	δ	×	⑦	门	勺	δ	门	Y	卫	β
E_	主	主	文	主	关	员	况	≤	仑	∈	∈	谷	入	1	仝	ï
F_	杀	文	ò	6	δ	谷	δ	÷	⑦	文	爻	谈	议	爻	fi	爻

Page 17 WCP1253 [Greek]

Page18

PC852

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9_		、	l	八	”	•	_	—		侧		>				
A_	NBSP	¨	冷	钅	及	¥	{	§	¨	⑥		《	氚	SHY	®	—
B_	°	±	2	3	/	R	攵	·	弼	H	T	泌	O	圻	Y	Ω
C_	℃	A	B	Γ	Δ	E	Z	H	Θ	工	K	Λ	M	N	E	O
D_	Π	P		Σ	T	Y	Φ	X	Ψ	Ω	士	Y	&	ε	i	〔
E_	ΰ	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	ü	ó	ύ	ώ	

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	ů	ć	ç	ł	ë	Ő	ő	î	Ź	Ä	
9_	É	Ĺ	í	ô	ö	Ľ	ľ	Ś	ś	Ö	Ü	Ť	ť	Ł	×	
A_	á	í	ó	ú	Ą	ą	Ž	ž	Ę	ę	¬	ź	Č	ş	«	—
B_	░	▒	▓	│	┤	Á	Â	Ě	Ş	╣	║	╗	╝	Ż	ż	Ω
C_	└	┴	┬	├	─	┼	Ă	ă	╚	╔	╩	╦	╠	═	╬	O
D_	đ	Đ	Ď	Ë	ď	Ň	Í	Î	ě	┘	┌	▉	▄	Ţ	Ů	ĺ
E_	Ó	ß	Ô	Ń	ń	ň	Š	š	Ŕ	Ú	ŕ	Ű	ý	Ý	ţ	o
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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_	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	ƒ
A_	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
B_	░	▒	▓	│	┤	Á	Â	À	©	╣	║	╗	╝	¢	¥	┐
C_	└	┴	┬	├	─	┼	ã	Ã	╚	╔	╩	╦	╠	═	╬	¤
D_	ð	Ð	Ê	Ë	È	€	Í	Î	Ï	┘	┌	▉	▄	¦	Ì	▀
E_	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý		´
F_		±	‗	¾	¶	§	÷	¸	°	¨	˙	¹	³	²	■	

Page20 Iran II

Code page Iran II																
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8_	۰	۱	۲	۳	۴	۵	۶	۷	۸	۹	،	۰	؟F	آ	ئ	ء
9_	ا	ا	ب	ب	پ	پ	ت	ت	ث	ث	ج	ج*	چC*	چ	ح	ح
A_	خ	خ	د	ذ	ر	ز	ژ	س	س	ش	ش	ص	ص	ض	ض	ط
B_	▒	▒	▓		┤	┤	┤	┐	┐	┤	‖	┐		┘	┘	┐
C_		┴	┬	├	─	┼	├	├	┴	┌	┴	┬	├	═	╪	┴
D_	┴	┬	┬	└	┴	┌	┌	╪	┼	┘	┌	■	▬	▮	▮	■
E_	ظ	ع	ع	ـع	ـع	غ	غ	غ	غ	ف	ف	ق	ق	ک	ک	گ
F_	گ	ل	لا	ل	م	ـم	ن	ن	و	ه	ھ	ه	ـی	ی	ی	

Page21 Latvian

Code page Latvian																
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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	Я
A_	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
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E_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ь	ь	э	ю	я

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Page22 CP864 [Arabic]

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9_	β	∞	ϕ	±	½	¼	≈	«	»	لأ	لأ			لا	لا	
A_	NBSP	SHY		£	¤	أ		€	ا	ب	ت	ث	،	ج	ح	خ
B_	٠	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_	ـ	ف	ق	ك	ل	م	ن	ه	و	ى	ي	ض	ع	غ	غ	م
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Page23 ISO-8859-1 [West Europe]

Code page 8859-1																
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8_																
9_																
A_	NBSP	¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	SHY	®	¯
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																
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9_	Ρ	Σ	Τ	Υ	Φ	Χ	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_	▒	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
C_	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D_	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	■	▄	▌	▐	▀
E_	ω	ά	έ	ή	ϊ	ί	ό	ύ	ϋ	ώ	Ά	Έ	Ή	Ί	Ό	Ύ
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Page25 WCP1257 [Baltic]

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9_		‘	’	“	”	•	–	—		™		›		¯	˛	
A_	NBSP		¢	£	¤		¦	§	Ø	©	Ŗ	«	¬	SHY	®	Æ
B_	°	±	²	³	´	µ	¶	·	ø	¹	ŗ	»	¼	½	¾	æ
C_	Ą	Į	Ā	Ć	Ä	Å	Ę	Ē	Č	É	Ź	Ė	Ģ	Ķ	Ī	Ļ
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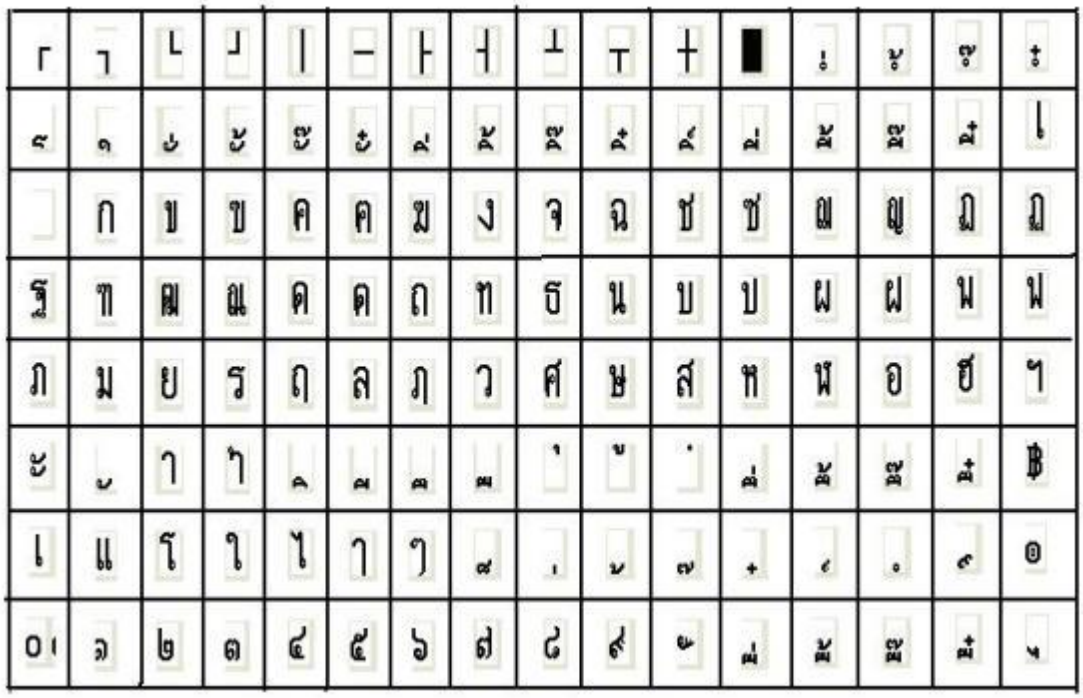
Page26 Thai



Page27 CP720[Arabic]

Code page 720																
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9_		ّ	ْ	ô	¤	·	û	ù	ء	آ	أ	ؤ	£	إ	ئ	ا
A_	ب	ة	ت	ث	ج	ح	خ	د	ذ	ر	ز	س	ش	ص	«	»
B_	▒	▒	▓	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐	
C_	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D_	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▉	▃	▌	▐	▀
E_	ض	ط	ظ	ع	غ	ف	µ	ق	ك	ل	م	ن	ه	و	ى	ي
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Page28 CP855

Code page 855															
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9_	љ	Љ	њ	Њ	ћ	Ћ	ќ	Ќ	ў	Ў	џ	Џ	ю	Ю	ъ	Ъ
A_	а	А	б	Б	ц	Ц	д	Д	е	Е	ф	Ф	г	Г	«	»
B_	░	▒	▓	│	┤	х	Х	и	И	╣	║	╗	╝	й	Й	┐
C_	└	┴	┬	├	─	┼	к	К	╚	╔	╩	╦	╠	═	╬	¤
D_	л	Л	м	М	н	Н	о	О	п	┘	┌	█	▄	П	я	▀
E_	Я	р	Р	с	С	т	Т	у	У	ж	Ж	в	В	ь	Ь	№
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Page29 PC857[Turkish]

Code page 857																
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9_	É	æ	Æ	ô	ö	ò	û	ù	İ	Ö	Ü	ø	£	Ø	Ş	ş
A_	á	í	ó	ú	ñ	Ñ	Ğ	ğ	¿	®	¬	½	¼	¡	«	»
B_	░	▒	顯	│	ɗ	Á	Â	À	©	彳	ı	刁	斗	¢	¥	刁
C_	L	工	┬	ㅏ	—	+	ã	Ã	L	F	工	┬	F	═	卡	姨
D_	◦	ª	Ê	Ë	È	Ç	Í	Î	ï	┘	厂	■	▄	¦	Ì	▀
E_	Ó	ß	Ô	Ò	õ	Õ	µ	Ç	×	Ú	Û	Ù	ì	ÿ	-	’
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Page30 WCP1250[Central Eurpoe]

Code page-1250																
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D_	Đ	Ń	Ň	Ó	Ô	Ő	Ö	×	Ř	Ů	Ú	Ű	Ü	Ý	Ţ	ß
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Page31 CP775

Code page 775																
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A_	Ā	Ī	ó	Ż	ż	ź	”	¦	©	®	¬	½	¼	Ł	«	»
B_	░	▒	▓	│	┤	Ą	Č	Ę	Ė	╡	╢	╖	╕	Į	Š	┐
C_	L	┴	┬	├	─	┼	Ų	Ū	╘	╒	╧	╤	╞	═	╬	Ž
D_	ą	č	ę	ė	į	š	ų	ū	ž	┘	┌	■	▄	▌	▐	▀
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Page32 WCP1254[Turkish]

Code page-1254																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
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9_		‘	’	“	”	•	–	—	~	™	š	›	œ			Ÿ
A_	NBSP	¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	SHY	®	¯
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
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Page33 WCP1255[Hebrew]

Code page-1255																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
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9_		‘	’	“	”	•	–	—	~	™		›				
A_	NBSP	¡	¢	£	₪	¥	¦	§	¨	©	×	«	¬	SHY	®	¯
B_	°	±	²	³	´	µ	¶	·	¸	¹	÷	»	¼	½	¾	¿
C_	ְ	ֱ	ֲ	ֳ	ִ	ֵ	ֶ	ַ	ָ	ֹ		ֻ	ּ	ֽ	־	ֿ
D_	׀		ׁ	ׂ	׃	װ	ױ	ײ	׳	״						
E_	א	ב	ג	ד	ה	ו	ז	ח	ט	י	ך	כ	ל	ם	מ	ן
F_	נ	ס	ע	ף	פ	ץ	צ	ק	ר	ש	ת			LRM	RLM	

Page34 WCP1256[Arabic]

Code page-1256																
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9_	گ	‘	’	“	”	•	–	—	ک	™	ڑ	›	œ	ZWNJ	ZWJ	ں
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D_	ذ	ر	ز	س	ش	ص	ض	×	ط	ظ	ع	غ	ـ	ف	ق	ك
E–	à	ل	â	م	ن	ه	و	ç	è	é	ê	ë	ى	ي	î	ï
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Page35 WCP1258[Vietnam]

Code page-1258																
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9_		‘	’	“	”	•	–	—	˜	™		›	œ			Ÿ
A_	NBSP	¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	SHY	®	¯
B_	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C_	À	Á	Â	Ă	Ä	Å	Æ	Ç	È	É	Ê	Ë	̀	Í	Î	Ï
D_	Đ	Ñ	̉	Ó	Ô	Ơ	Ö	×	Ø	Ù	Ú	Û	Ü	Ư	~	ß
E_	à	á	â	ă	ä	å	æ	ç	è	é	ê	ë	́	í	î	ï
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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_	NBSP	Ą	˘	Ł	¤	Ľ	Ś	§	¨	Š	Ş	Ť	Ź	SHY	Ž	Ż
B_	°	ą	˛	ł	´	ľ	ś	ˇ	¸	š	ş	ť	ź	˝	ž	ż
C_	Ŕ	Á	Â	Ă	Ä	Ĺ	Ć	Ç	Č	É	Ę	Ë	Ě	Í	Î	Ď
D_	Đ	Ń	Ň	Ó	Ô	Ő	Ö	×	Ř	Ů	Ú	Ű	Ü	Ý	Ţ	ß
E_	ŕ	á	â	ă	ä	ĺ	ć	ç	č	é	ę	ë	ě	í	î	ď
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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
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A_	NBSP	Ħ	˘	£	¤		Ĥ	§	¨	İ	Ş	Ğ	Ĵ	SHY		Ż
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D_		Ñ	Ò	Ó	Ô	Ġ	Ö	×	Ĝ	Ù	Ú	Û	Ü	Ŭ	Ŝ	ß
E_	à	á	â		ä	ċ	ĉ	ç	è	é	ê	ë	ì	í	î	ï
F_		ñ	ò	ó	ô	ġ	ö	÷	ĝ	ù	ú	û	ü	ŭ	ŝ	˙

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
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9_																
A_	NBSP	Ą	ĸ	Ŗ	¤	Ĩ	Ļ	§	¨	Š	Ē	Ģ	Ŧ	SHY	Ž	‑

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D_	Đ	Ņ	Ō	Ķ	Ô	Õ	Ö	×	Ø	Ų	Ú	Û	Ü	Ũ	Ū	ß
E_	ā	á	â	ã	ä	å	æ	į	č	é	ę	ë	ė	í	î	ī
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Page39 ISO-8859-5[Cyrillic]

Code page-8859-5															
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9_																
A_	NBSP	Ё	Ђ	Ѓ	Є	S	І	Ї	Ј	Љ	Њ	Ћ	Ќ	SHY	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
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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
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9_																
A_	NBSP				¤								،	SHY		
B_												؛				؟
C_		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					
E_	٠	ف	ق	ك	ل	م	ن	ه	و	ى	ي	◌ً	◌ٌ	◌ٍ	◌َ	◌ُ
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Page41 ISO-8859-7[Greek]

Code page-8859-7																
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9_																
A_	NBSP	‘	’	£	€	₯	¦	§	¨	©	ͺ	«	¬	SHY		―
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C_	ΐ	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο
D_	Π	Ρ		Σ	Τ	Υ	Φ	Χ	Ψ	Ω	Ϊ	Ϋ	ά	έ	ή	ί
E_	ΰ	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	ϊ	ϋ	ό	ύ	ώ	

Page42ISO-8859-8[Hebrew]

Code page-8859-8																
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9_																
A_	NBSP		¢	£	¤	¥	¦	§	¨	©	×	«	¬	SHY	®	¯
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C_																
D_																‗
E_	א	ב	ג	ד	ה	ו	ז	ח	ט	י	ך	כ	ל	ם	מ	ן

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Page43 ISO-8859-9[Turkish]

Code page-8859-9																
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8_																
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A_	NBSP	¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	SHY	®	¯
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E_	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
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Page44 ISO-8859-15[Latin 3]

Code page-8859-15																
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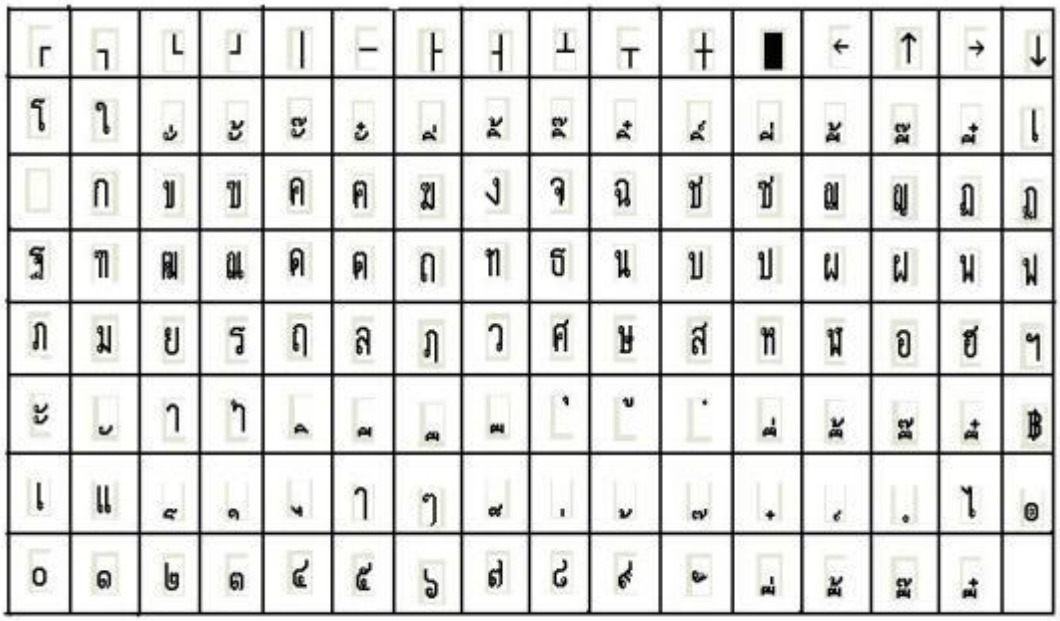
C_	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D_	Đ	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
E_	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F_	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

Page45 Thai2



Page46 CP856()

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9_	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
A_	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
B_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
C_	└	┴	┬	├	─	┼	┤	│	└	┌	┴	┬	├	═	╬	┐
D_	▒	▒	▒	|	┤	№	§	┐	┘	┌	■	▬	▮	▌	■	
E_	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
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Page47 Cp874

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B_	ฐ	ฑ	ฒ	ณ	ด	ต	ถ	ท	ธ	น	บ	ป	ผ	ฝ	พ	ฟ
C_	ภ	ม	ย	ร	ฤ	ล	ฦ	ว	ศ	ษ	ส	ห	ฬ	อ	ฮ	ฯ
D_	ะ	ั	า	ำ	ิ	ี	ึ	ื	ุ	ู	ฺ					฿
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F_	๐	๑	๒	๓	๔	๕	๖	๗	๘	๙	๛					NBSP