Directory

1. Print test

After power on, press board K1 key short contact, loosen, the panel will print a test page.

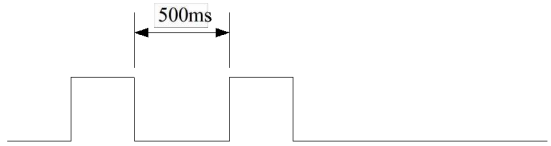
Name of short-circuit point there may be changes between different boards.

2. The indicator light flashing

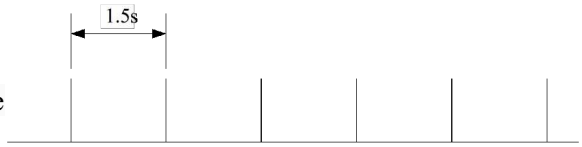
These on the graph is thermal control panel LED waveform, vertical line shows the number of LED lights flash, 500 ms to suspend time, a 400 ms said lights flash time, 1.5 s for the LED flash after the stop time.

Power on:

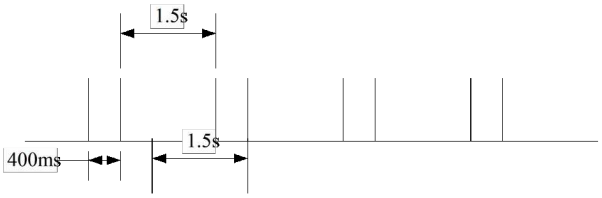
Normal work:



Not detected the printer:

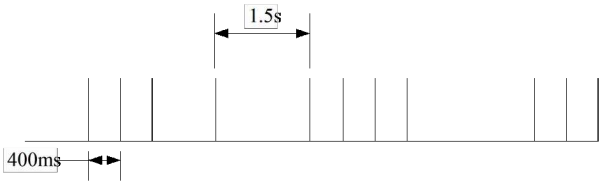


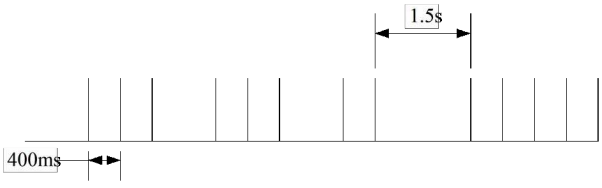
The printer paper out:



Printing machine heating piece of overheating:

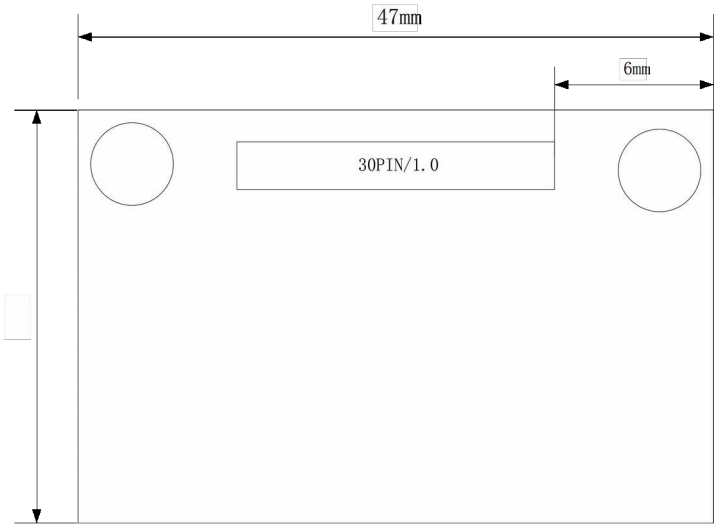
Chinese word stock chip was detected:





3.701 size chart:

4.Pin



definition：

J7 (Panel LED Indicators):

PIN NUMBER	SIGNAL NAME
1	LED1
2	+3.3V
3	+3.3V
4	KEY FEED

Power supply from 3.8 V to 8.5 V.

The factory before you can select the RS232, or TTL, using TTL can save more cost.

J5(Power supply connector and serial communication connector):

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

5. The list of commands

Command to query	command	instructions
Print command	LF	And print a newline
	CR	Print and press enter
	HT	Skip to the next TAB
	ESC D n	Set the horizontal coordinates
	ESC J n	Print the data buffer and paper n point line
	ESC d n	Print the data buffer and paper n line
	ESC = n	Set the peripherals
Format setup command	ESC 2	Set the default line spacing is 32 points
	ESC 3 n	Set the line spacing to n points
	ESC a n	Set alignment, left-aligned, right-aligned, center alignment
	ESC SO	Set up a double wide mode
	ESC DC4	Cancel the double wide mode
	GS L nL nH	Set the left blank points
	ESC $ nL nH	Set the absolute print position
	ESC B n	Set the left space
Character set command	ESC ! n	Set the print character format:
	GS ! n	Set the font widened mounts
	GS B	Cancel/set reverse mode
	ESC V n	Set/cancel 90 ° rotation mode
	ESC v n	To pass the host the printer status
	ESC G n	Cancel/set overlap model
	ESC E n	Set/cancel the bold
	ESC SP n	Set the right character spacing
	ESC { n	Sets the character upside down/cancelled
	ESC - n	Setting height underlined
	ESC % n	Set the custom user/cancelled
	FS &	Select Chinese pattern
	FS .	Cancel the Chinese model
	FS!	Set the print mode for Chinese characters
	ESC &	Define the user custom characters
	ESC ? n	Cancel the user-defined character
	ESC R n	Choose international character sets
	ESC t n	Select a character code table

Graphics Settings command	ESC *	Select a bitmap mode
	GS *	Define the bitmap mode
	GS /	Printed under the bitmap
	GS v	Print the specified width height bitmap
	FS p n m	Print NV bitmap
	FS q n	Define the NV bitmap
Initialize the command	ESC @	Printer initialization
status command	GS r n	Real-time status
	GS a n	Upload allowed/prohibited state automatically
Bar code set command	GS H	Choose the HRI print way
	GS h	Set the barcode height
	GS w	Set the barcode lateral width
	GS k	Print the barcode
	GS x	Set the bar code printing spacing on the left
Assist command	ESC 7 n1 n2 n3	Set the command control parameters
	ESC 8 n1 n2	Sleep parameters
	ESC 9 n	Select Chinese code format
	DC2 T	Print self-test page
	ESC c 5	Cancel/activate the panel buttons (only the keys)

6.Control command

HT

[name] level position

[form] ASCII HT

Hexadecimal code 09

Decimal code 9

[description] move print position to the next level of anchor point position.

[note] if not set, the next level of anchor point position, then the command is ignored.

If the next level, the position of the anchor point outside the print area, the print position move to the "print area width + 1".

• by ESC D command sets the position of horizontal anchor point.

, print position is located in the "print area width + 1" when receiving this command, printers print buffer full print the current line, and the beginning of the next line treatment.

[see] ESC D

LF

[name] and print a newline

[form] ASCII LF

Hexadecimal code 0 a

10 decimal code

[description] print to print the data in the buffer, and according to the current row spacing, the printing paper forward line.

[note] the command set print position to the beginning of a line of position.

With reference to ESC 2, ESC 3

CR

[name] print and press enter

[form] ASCII CR

Hexadecimal code 0 d

Decimal code 13

[description] allow automatically into the paper, the function of this command and LF command is the same.

Don't allow the auto feed, this command will be ignored.

[note] ▲ ⊢ for serial interface mode, the command of paper travel function is ignored.

▲ ⊢ set print starting position to the starting point.

[see] LF

ESC SP n

[name] is set on the right side of spacing between characters

[form] ASCII ESC SP n

Hexadecimal code 1 b 20 n

Decimal code 27 32 n

[range] 0 ＋ － n ＋ － 255

[description] set up characters on the right side of the spacing for [n] x 0.125 mm.

[note] ▲ － for times wider pattern, character spacing on the right side is the general mode of two times. When the character be amplified, character spacing on the right side is the general mode of n times.

▲ － the command does not affect the setting of Chinese characters.

▲ － the command independent value standard patterns in each mode.

[default] n = 0

ESC ! n

[form] ASCII ESC! n

Hexadecimal code 21 1 b n

Decimal code 27 to 33 n

[range] 0 ＋ － n ＋ － 255

[description] by specifying the value of the parameter n choose print mode. The parameter n are defined as follows:

Position	OFF / ON	Hex 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	Lifting anti-white mode.
	ON	02	2	Setting anti-white mode.
2	OFF	00	0	Lifted upside down mode。
	ON	04	4	Set upside down mode。
3	OFF	00	0	Lifting bold patterns.
	ON	08	8	Set bold patterns.
4	OFF	00	0	Lifting times higher mode.
	ON	10	16	Set times higher mode
5	OFF	00	0	Relieve double width mode.
	ON	20	32	Double-width mode.
6	OFF	00	0	Lifting strikethrough mode.
	ON	40	64	Set strikethrough mode.

7	-	-	-	Undefined.

ESC $ nL nH

[Name] Set absolute print position
[Format] ASCII code ESC $ nL nH
Hex 1B 24 nL nH
Decimal 27 36 nL nH
[Range] 0 ＋－nL ＋－255
0 ＋－nH ＋－255
[Description] a set distance from the beginning of the line to be printed character position.
▲－ distance from the beginning of the line to the print position to [(nL + nH × －256) × －0.125 mm].
[Note] ▲－ designated set outside the printable area is ignored.
▲－ horizontal motion unit (x) in the standard mode. 0.0
[Reference] ESC \, GS $, GS \

ESC B n

[Name] set the left spacing
[Format] ASCII code ESC B n
Hex 1B 42 n
Decimal 27 66 n
[Range] Default value 0
0 ≤ n ≤ 47

ESC % n

[Name] Select / cancel user-defined character sets

[Format] ASCII code ESC% n

Hex 1B 25 n

Decimal 27 37 n

[Range] 0 +-n +-255

[Description] to select or deselect the user-defined character set.

▲- When the n least significant bit is 0, the abolition of user-defined character set.

▲- When the LSB of n is 1, select the user-defined character set.

[Note] ▲- when cancel user-defined character set to automatically select the internal character set.

▲-n useful only the least significant bit.

[Default] n = 0

[Reference] ESC &, ESC?

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

[Name] to define user-defined characters

[Format] ASCII code ESC & y c1 c2 [x1 d1...d(y × x1)]...[xk d1...d(y × xk)]

Hex 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 font A (12×24))

0 ≤ d1 ... d(y ×xk) ≤ 255

[Description] Define user-defined characters.

▲-y specify the number of bytes in the vertical direction.

▲-c1 specify the starting character encoding, c2 specifies the

end of the character encoding.

▲-x specify the horizontal points.

[Note] range ▲- definable character encoding: from <20> H to <7E> H ASCII code (95 characters).

▲- definable continuous character encoding multiple characters. When you need only one character, so c1 = c2.

▲-d is dot data of characters. Point mode is horizontal starting from the left. The right of the remaining point blank.

▲- Define user-defined character data (y*x) bytes.

▲- print dots corresponding bit set to 1 or not printing dots corresponding bit is 0.

▲- The user can command a different font for each defined custom character mode. With ESC! Font setting.

▲- The user can not simultaneously define custom characters and downstream bitmaps. When this command is executed, the next pass bitmap is cleared.

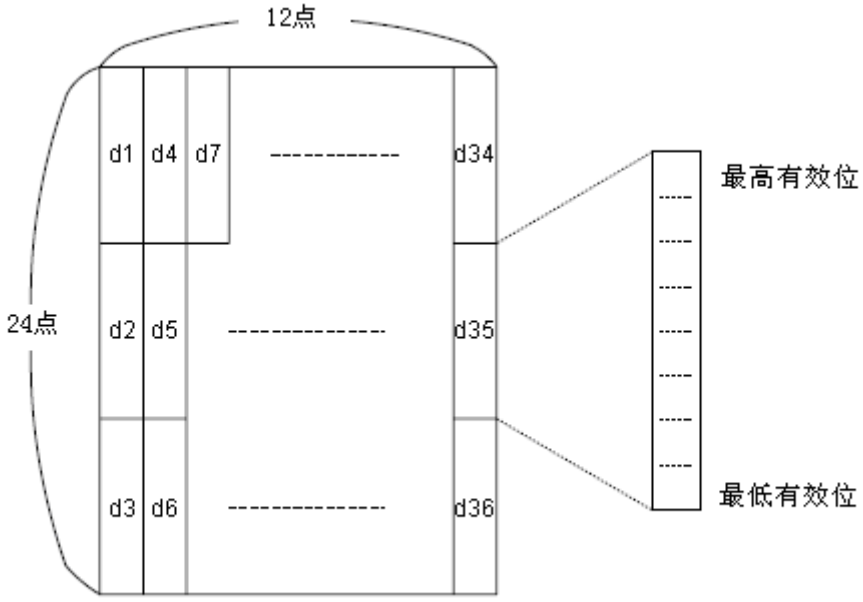
- In the following cases the user-defined characters are clear
  1) Perform ESC @.执行GS *。
  2) Perform ESC?.
  3)The printer reset or turn off the power.

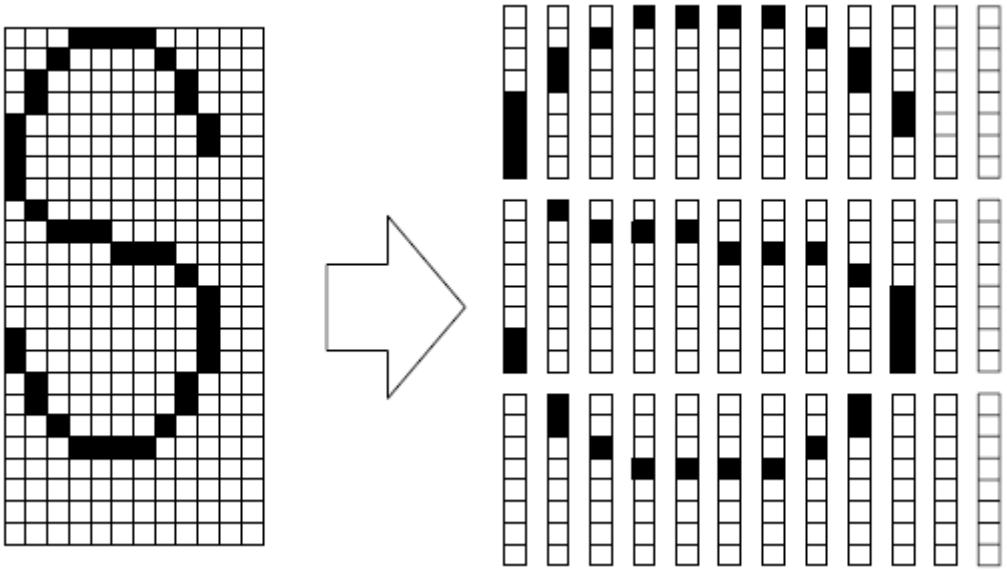
[Default] internal character set

[Reference] ESC%, ESC?

[Examples]

- When setting the 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 .

. . .

ESC * m nL nH d1 . . . dk

[Name] to select the bitmap mode

[Format] ASCII code ESC * m nL nH d1...dk

Hex code 1B 2A m nL nH d1...dk

Decimal code 27 42 m nL nH d1...dk

[Range] m = 0, 1, 32, 33

$0 \le nL \le 255$

$0 \le nH \le 3$

$0 \le d \le 255$

[Description] with m select bitmap pattern, the number of points specified by the bitmap nL and nH, as follows:

m	Mode	Vertically		Horizontal	
		Count	Point density	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	$n_L + n_H \times 256$
32	24- point single density	24	203.2 dpi	101.6 dpi	$(n_L + n_H \times 256) \times 3$
33	24- point double density	24	203.2 dpi	203.2 dpi	$(n_L + n_H \times 256) \times 3$

[note] being

- If the value of m data beyond the specified range, nL and after treated as routine data processing.
- nL and nH represents the horizontal upper figure points by nL + nH × 256 calculates the number of points。
- If the bitmap data input exceeds the number of points that can be printed on one line, then the excess data is ignored。
- d represents bitmap data. Set the corresponding bit to 1 to print a certain point, or set to 0 to not print a point。
- After printing a bitmap, the printer returns to normal data processing mode。
- This command does not print mode (overlap bold, underline, character size, or anti-white print) influence, unless it is upside-down printing mode.
- Figure 3.11.3 describes the relationship between the image data and the dot to be printed between the。
- When the 8-point bitmap is selected:

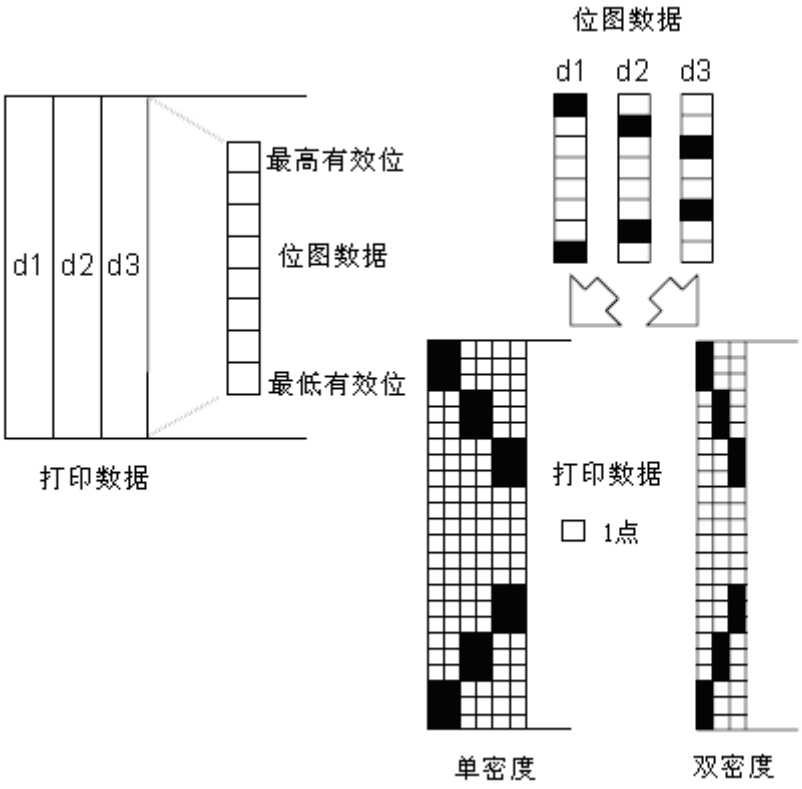


图3.11.3

- When the 24- point bitmap is selected:

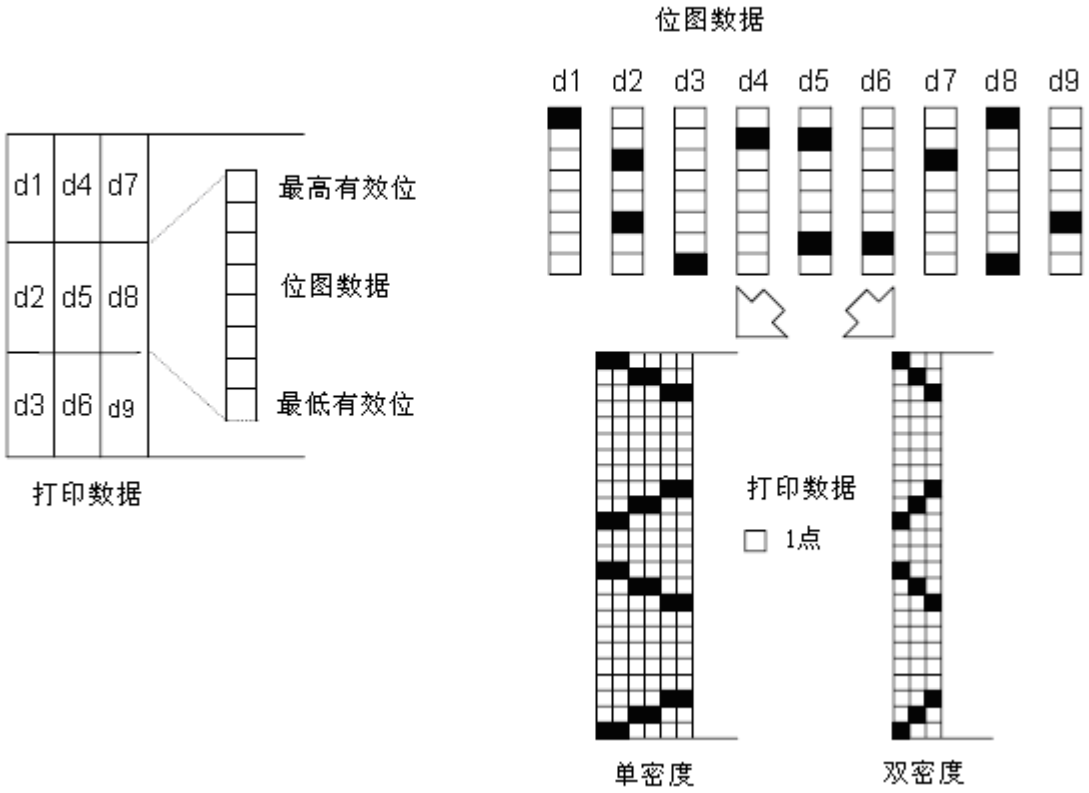


图3.11.3

ESC - n

[Name] set / release underscores

[Format] ASCII code ESC - n

Hex 1B 2D n

Decimal 27 45 n

[Range] 0 ≤n ≤2, 48 ≤n ≤50

[Description] Based on the following values of n, the set / release underline mode:

n	Function
0, 48	Lifting underline mode
1, 49	Setting underline mode (1poit coarse)
2, 50	Setting underline mode (2poit coarse)

[Note] ▲- The printer can print to all underscore characters (including the character to the right of the interval), but was set HT

Blank except home.

▲- The printer can not give clockwise 90› - characters and the underscore character printing anti-white.
▲- When by setting a value of 0 or 48 n lift underline mode, the subsequent data is not classified under Print
Line, and the thickness of the underline mode setting before releasing the underline is not changed. The default underline
Roughness of 1
▲- change the character size does not affect the thickness of the current underlined.
▲- Use ESC! You can also set or released underline mode. But to note that the last received command
Is effective.
[Default] n = 0
[Reference] ESC!

ESC 2

[Name] to select the default line spacing
[Format] ASCII code ESC 2
Hex 1B 32
Decimal 2750
[Description] Selects the line spacing to 3.75 mm (30 × 0.125 mm).
[Note] ▲- line spacing can be set independently in standard mode.
[Reference] ESC 3

ESC 3 n

[Name] set line spacing
[Format] ASCII code ESC 3 n
Hex 1B 33 n
Decimal 27 51 n
[Range] 0 ≤n ≤255
[Description] Set line spacing to [n ×0.125 mm]。
[note] ●Line spacing can be set independently in standard mode and page mode。
●Use the vertical motion unit in standard mode (y)。
[Defaults] n = 30
[Refer] **ESC 2**

ESC ? n

[Name] to cancel user-defined characters
[Format] ASCII code ESC? N
Hex 1B 3F n
Decimal 27 63 n
[范围] 32 ≤n ≤126
[Description] to cancel user-defined characters.
[Note] ▲- Use this command to terminate defined style for character encoding, character encoding specified by n. After a user-defined characters are canceled, the internal character corresponding print mode.
▲- with ESC! Select font, this command deletes the specified coding style definition.
▲- If a user is not defined custom character, the printer ignores the command.
[Refer] **ESC & , ESC %**

ESC @

Name] Initialize Printer
[Format] ASCII code ESC @
Hex 1B 40
Decimal code 2764
[Description] Clears the data in the print buffer, reset the printer mode to active mode when the power is turned on the printer.
[Note] ▲-DIP toggle switch settings are no longer checked.
▲- receive data in the buffer is not cleared.

ESC D n1 . . . nk NUL

[Name] to set the horizontal positioning point
[Format] ASCII code ESC D n1 ... nk NUL
Hex 1B 44 n1 ... nk 00
Decimal code 27 68 n1 ... nk 0
[Range] 1 ≤n ≤255
0 ≤k ≤32
[Description] Set horizontal tab positions.
▲-n specify the number of columns from the start line to set the position

of the horizontal position.
▲-k said it will be set to the total number of horizontal tab positions.
[Note] ▲- horizontal positioning as a value stored position, the value of [character width × n] is measured from the beginning of the line. The character width includes the right space character, and double-width characters are set to twice the width of an ordinary character.
▲- This command deletes a horizontal position before setting position.
▲- When setting n = 8, the print position by sending HT is moved to the ninth column.
▲- You can set up to 32 positioning position (k = 32). Than 32 measured position data is handled as normal data.
▲- ascending transmission [n] k and placed at the end of a NUL code 0. When the value of [n] k is less than or equal to the previous [n] when k-1, locating the end of the set, and the subsequent data as normal data.
▲-ESC D NUL cancels all horizontal tab positions.
▲- change even if the character width, previously specified horizontal tab positions are unchanged.
▲- For standard type, character width is memorized.
[Default] The default position for positioning font A (12 × 24) of the eight character spacing (column 91725 ...).
[Reference] HT

ESC E n

[Name] setting / releasing bold print
[Format] ASCII code ESC E n
Hex 1B 45 n
Decimal 27 69 n
[Range] 0 ≤ n ≤ 255
[Description] set or released in bold print mode.
When the LSB of n is 0, lifted in bold print mode.
When the LSB of n is 1, set in bold print mode.
[Note] ▲- n only allow the use of the least significant bit
▲- The command and ESC! Is set in the same way and lift the bold print mode. When this command and ESC! Simultaneously, be careful when.
[Default] n = 0
[Reference] ESC!

ESC G n

[Name] setting / releasing overlapping print
[Format] ASCII code ESC G n
Hex 1B 47 n
Decimal 27 71 n
[Range] 0 ≤ n ≤ 255
[Description] set or released overlap print mode.
LSB ▲- when n is 0, lifted overlap print mode.
▲- When the LSB of n is 1, set the overlap print mode.
[Note] ▲- only n least significant bits are allowed.
▲- In overlay mode and bold mode printer output is the same.
[Default] n = 0
[Reference] ESC E

ESC J n

[Name] Print and Paper
[Format] ASCII code ESC J n
Hex 1B 4A n
Decimal 27 74 n
[Range] 0 ≤ n ≤ 255
[Description] printout of the data in the print buffer and feeds the paper [n ▽-0.125 mm].
[Note] ▲- after printing, the command will be the starting location of the printer is set to line starting point.
▲- feed amount set by this command does not affect the value by ESC 2 or ESC 3 command set.
▲- In standard mode, the printer uses the vertical motion unit (y).

ESC R n

[Name] Select an international character set
[Format] ASCII code ESC R n
Hex 1B 52 n
Decimal 27 82 n
[Range] 0 ≤ n ≤ 13
[Description] in accordance with the following table to select the set value

of an international character set n

n	Character Set
0	USA
1	France
2	Germany
3	United Kingdom
4	Denmark I
5	Sweden
6	Italy
7	Spanish I
8	Japan
9	Norway
10	Denmark II
11	Spanish II
12	Latin America
13	Korea
14	Slovenia
15	China

[Defaults] n = 0

ESC V n

Name] Set / release clockwise rotation 90› -

[Format] ASCII code ESC V n

Hex 1B 56 n

Decimal 27 86 n

[Range] 0 ≤ n ≤ 1, 48 ≤ n ≤ 49

[Description] Set / release clockwise rotation 90›

n used as follows:

n	Function
0,48	Lifting clockwise rotation mode 90° 。
1,49	Set in a clockwise rotation mode 90° 。

[Note] ▲- affected by the command to print in standard mode, and the setting is always valid.

▲- When underline mode is set for clockwise rotation 90› character, the printer does not underlined.

▲- In 90› - clockwise rotation mode, double-height and double-width characters in order to enlarge the general direction of the quadruple-size mode command enlarge characters in the opposite direction.

[Default] n = 0

[Reference] ESC!, ESC-

ESC v n

[Name] transfer printer status to the host

[Format] ASCII code ESC v n

Hex 1B 76 n

Decimal 27 118 n

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

[Description] The return value is a byte, where each bit representing different states:

p	OFF / ON	Hex code	Decimal code	Function
0	OFF	00	0	Print mechanism is not connected。
	ON	01	1	Print mechanism is connected。
1	-	-	-	Pointless。
2	OFF	00	0	There are paper。
	ON	04	4	Out of Paper。
3	OFF	00	0	Voltage is normal。
	ON	08	8	Voltage higher than 9.5V。
4	-	-	-	Pointless。
5	-	-	-	Pointless。
6	OFF	00	0	Temperature is normal。
	ON	40	64	Temperature over 60 degrees。
7	-	-	-	Pointless。

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

ESC a n

[Name] to select the alignment

[Format] ASCII code ESC a n

Hex 1B 61 n

Decimal 27 97 n

[Range] 0 ≤ n ≤ 2, 48 ≤ n ≤ 50

[Description] aligned row of data in the specified location N to select the following alignment:

n	Align
0, 48	Left
1, 49	Center
2, 50	Align Right

[Note] under ▲ - standard mode only at the beginning of the processing line, the command is valid.

▲ - The command execution is aligned in the print area.

▲ - the order under HT, ESC $, or ESC \ align the blank area.

[Defaults] n = 0

[Examples]

Left	Center	Align Right
ABC	**ABC**	**ABC**
ABCD	**ABCD**	**ABCD**
ABCDE	**ABCDE**	**ABCDE**

ESC SO n

[Name] to select double-width mode

[Format] ASCII code ESC SO n

Hex 1B 0E n

Decimal 27 14 n

[Description] Selects double-width mode, such as to cancel the double-width mode, the required LF or DC4 command.

ESC DC4 n

[Name] to cancel double-width mode

[Format] ASCII code ESC DC4 n

Hex 1B 14 n

Decimal 27 20 n

[Description] Cancel double-width mode.

ESC d n

[Name] Print and feed n lines
[Format] ASCII code ESC d n
Hex 1B 64 n
Decimal 27 100 n
[Range] 0 ≤ n ≤ 255
[Description] data printout in the print buffer and feeds the paper n lines.
[Note] ▲- This command sets the print starting position is the starting point of the line.
▲- This command does not affect the line spacing by ESC 2 or ESC 3 command set.
▲- Maximum paper capacity of 1016 mm} {40 inches. If the specified amount of feed (n ▼- line spacing) over 1016 mm} {40 inches, the printer feed only 40 inches} {1016 mm.
[Reference] ESC 2, ESC 3

ESC t n

[Name] to select the character code table
[Format] ASCII code ESC t n
Hex 1B 74 n
Decimal 27 116 n
[Range] 0 ≤ n ≤ 5, 16 ≤ n ≤ 19, n = 255
[Description] Select a page n from the character code table。

N	code page	N	code page
0	CP437 [the United States, the European standard]	26	Thai
1	KataKana [katakana]	27	CP720[[Arabic]
2	CP850 [multilanguage]]	28	CP855
3	CP860 [Portugal]	29	CP857[[Turkish]
4	CP863 [Canada - French]]	30	WCP1250[Central Europe]
5	CP865 [Nordic]	31	CP775
6	WCP1251 [[Cyrillic]	32	WCP1254[Turkish]
7	CP866 Slavic 2	33	WCP1255[Hebrew]
8	MIK[Slavic / Bulgaria]	34	WCP1256[Arabic]
9	CP755 [Eastern Europe, Latvia 2]	35	WCP1258[Vietnamese]
10	[[Iran, Persian]	36	ISO-8859-2[Latin 2]
11	reserved	37	ISO-8859-3[Latin 3]

12	reserved	38	ISO-8859-4[[Baltic]
13	reserved	39	ISO-8859-5[[Cyrillic]
14	reserved	40	ISO-8859-6[Arabic]
15	CP862 [Hebrew]	41	ISO-8859-7[Greek]
16	WCP1252 [Latin 1]	42	ISO-8859-8[Hebrew]
17	WCP1253 [Greece]	43	ISO-8859-9[Turkish]
18	CP852 [[Latin 2]	44	ISO-8859-15[Latin 9]
19	CP858 [[1+ European languages Latin characters]	45	[Thai 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 [Baltic Sea]		

[缺省值] n = 0

[参照] 字符代码表

ESC { n

[Name] Set / release reversed print mode

[Format] ASCII code ESC {n

Hex 1B 7B n

Decimal 27 123 n

[Range] 0 ≤ n ≤ 255

[Description] or lift the reverse printing mode.

When the least significant bit ▲- n is 0, reverse printing mode off.

▲- When the LSB of n is 1, open the reverse printing mode.

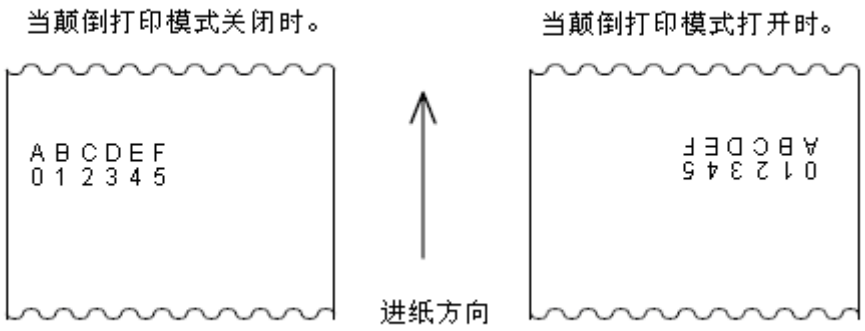
[Note] ▲- Only the lowest bit of n is valid.

▲- start typing the command line is valid only in standard mode.

▲- In the upside-down printing mode, the line printer to print the first 180 ° rotation before printing.

[Default] n = 0

[Examples]



FS p n m

[Name] print NV bit image
[Format] ASCII code FS p n m
Hex 1C 70 n m
Decimal code 28 112 n m
[Range] 1 ≤n ≤255
0 ≤m ≤3 , 48 ≤m ≤51
[Description] mode specified by m print NV bit image n。

m	Mode	Vertical point density	Horizontal dot density
0，48	General	203.2 dpi	203.2 dpi
1，49	Times the width	203.2 dpi	101.6 dpi
2，50	Times higher	101.6 dpi	203.2 dpi
3，51	Four times the size	101.6 dpi	101.6 dpi

- n is the number of NV bit image (defined with the FS q command)。
- m specify bitmap mode.

[Note] ▲-NV bitmap is a non-volatile memory is defined in the bitmap. FS p is defined by FS q Print
▲- When the specified NV bit image does not exist in the command is invalid.
▲- In standard mode, only when there is no data in the print buffer, the command is valid.
▲- print mode, except that the command is not affected (in bold print, overlap, underline, character size, anti-white print or characters 90›), rotation, reverse printing mode.

Downstream bitmap ▲- If you want to print more than one line, the excess data is not printed.

▲- under normal and double-width mode, the command feed point n (n is NV bitmap height) at times and four times the size of the pattern (the command feed 2n points, n for NV bitmap height), ESC 2 or ESC 3 and set line spacing is independent.

After ▲- print bitmap, this command will print position is set at the beginning of a line, and the subsequent data as normal data.

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

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

[Name] to define NV bit image

[Format] ASCII code FS q n [xL xH yL yH d1...dk]1...[x L xH yL yH d1...dk]n

Hex 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] $1 \le n \le 255$

$0 \le xL \le 255$

$0 \le xH \le 3$ (当 $1 \le (xL + xH \times 256) \le 1023$,

$0 \le yL \le 255$)

$0 \le yH \le 1$ (当 $1 \le (yL + yH \times 256) \le 288$,

$0 \le d \le 255$)

$k = (xL + xH \times 256) \times (yL + yH \times 256) \times 8$

And meter data defined area = 192K bytes

[Description] is defined by specific values of n NV bitmap.

Specify the number of ▲-n defined NV bit image.

▲-xL, xH specify the horizontal direction is defined in the NV bit image dots (xL +-xH ▼-256) ▼-8.

▲-yL, yH specifies the vertical direction is the definition of NV bitmap dots (yL +-yH ▼-256) ▼-8.

[Note] ▲-- frequently write command may be damaged NV memory. Therefore, it is recommended to perform no more than 10 times a day, write the NV memory.

▲-- after an image into NV memory process, the printer performs a hardware reset

Therefore, user-defined characters, download bitmap should be defined after the completion of the command. Printer clear

In addition to receiving and print buffer and resets when power efficient model.

(Does not support hardware reset interface)

▲- The command cancels all defined by this command NV bitmap.

▲- begin processing this command to complete the hardware reset period, you can not perform the mechanical operations (including when to initiate a print head position when the cover is opened into the paper with the paper feed button).

▲- During this command processing, when writing data to the user NV memory printer is busy and stop receiving data. Therefore forbidden to transmit data during the execution of this command, including real-time command.

▲-NV bitmap is a non-volatile memory is defined in the bitmap. FS p is defined by FS q print.

▲- In standard mode, this command is only active when the start processing line.

Command is only valid after 7 bytes ▲- the command <FS◤yH> normal processing.

▲- When the amount of data exceeds xL, x H, yL, yH left side capacity defined range, the printer will handle out of the range defined by xL, xH, yL, yH range defined.

▲- In the first group bitmap, when xL, xH, yL, yH any parameter range defined, the command is disabled.

▲- In the first group of a group of non-bitmap, when the printer encounters xL, x H, yL, yH circumstances beyond the scope of the definition, then stop processing the command, and start writing NV image. At this point, there is no definition of NV bitmap is prohibited (undefined) but any previously defined NV bit image is still valid.

▲-d define data representation in the data (d), and a one of a specified point to be printed and a 0 to specify a point not print.

▲- The command n is defined as the number of NV bitmap. The number rose from bitmap 01H sequentially. Therefore, the first data set [xL xH yL yH d1 ... dk] is NV bit image 01H, the last data set [xL xH yL yH d1 ... dk] is NV bit image n. The total number of FS p command to set the number of NV bitmap consistent.

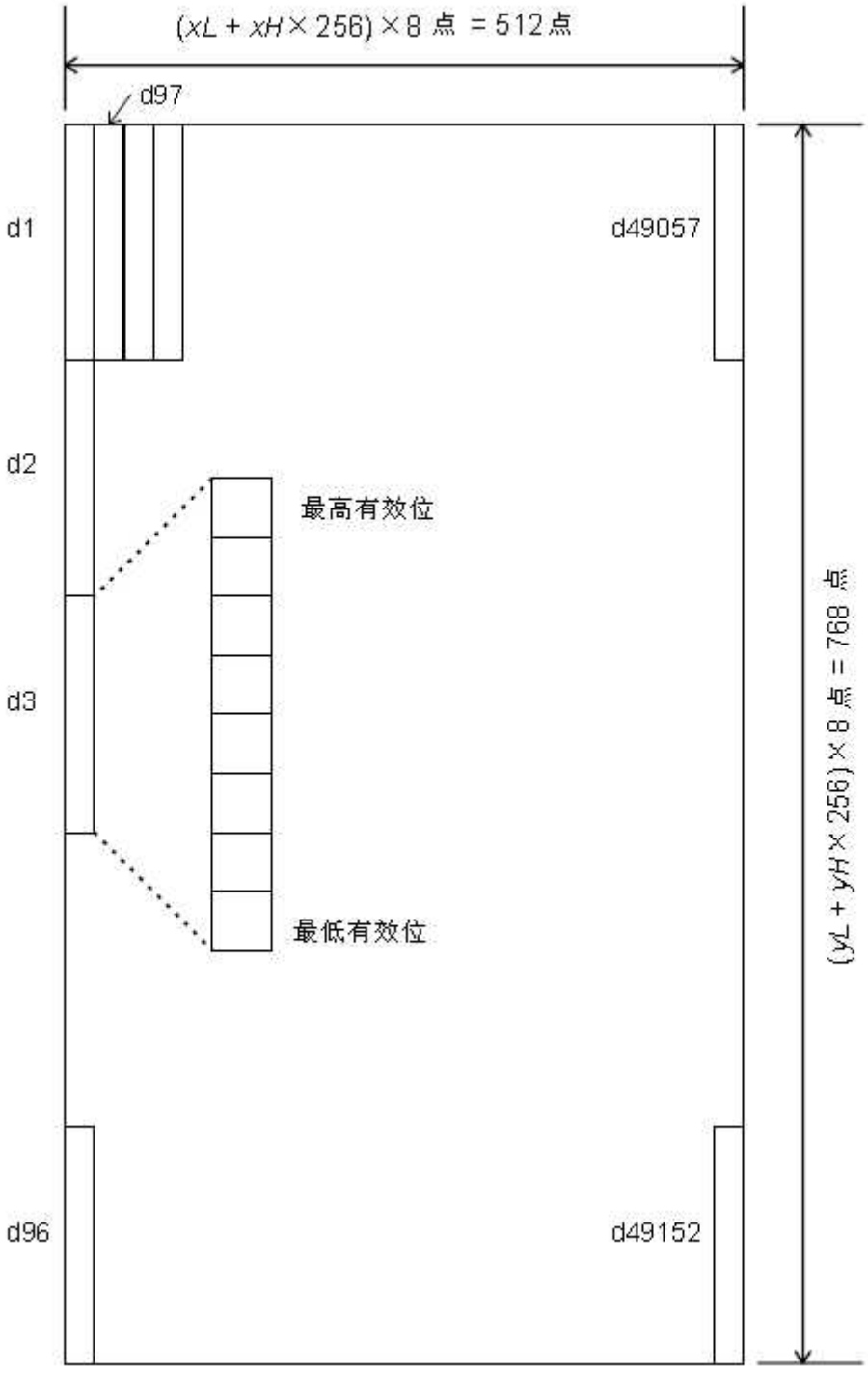
▲- a definition of NV bit image data by [xL xH yL yH d1 ... dk] components. Thus, when only one NV bitmap when n = 1, the printer only the data set is processed [xL xH yL yH d1 ... dk] once. The printer uses NV memory ([data: (xL +-xH × 256) × (yL +-yH × 256) × -8] +- [header: 4]) bytes.

▲- The printer defined area for 192K bytes (maximum). This command can define several bitmaps, but you can not define the total data capacity [bitmap data + head] than 192K bytes of bitmap.

- even set ASB, printer during the processing of the command does not convey the ASB status or to perform stateful inspection.
- Once you define a NV bit image, it can not be executed ESC @ command, reset, power outages are deleted.
- The command is executed only defines NV bitmap printing is not performed. Print NV bit image is executed by FS p command.

[Refer] **FS p**

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



GS ! n

[Name] set the character size

[Format] ASCII code GS! N

Hex 1D 21 n

Decimal code 29 33 n

[Range] 0 ≤n ≤255

(1 ≤Vertical multiples ≤8, 1 ≤Multiple levels ≤8)

[Description] set with 0-2 4-7 character height width character set as follows

P	OFF / ON	Hex	Decimal	Function
0	Character height settings. Table 2.			
1				
2				
3				
4	Character width setting. Table 1.			
5				
6				
7				

表 1

Character width setting.

Hex	Decimal	Width
00	0	1(普通)
10	16	2(倍宽)
20	32	3
30	48	4
40	64	5
50	80	6
60	96	7
70	112	8

表 2

Character height settings

Hex	Decimal	Width
00	0	1(普通)
01	1	2(倍高)
02	2	3
03	3	4
04	4	5
05	5	6
06	6	7
07	7	8

[Note] ▲- this command for all the characters (alphanumeric characters and Chinese characters) except for HRI characters are valid.

▲- If n is outside the defined range, the command is ignored.

▲- In standard mode, the vertical direction means the feed direction. However, when the characters clockwise direction 90›, the relationship between the vertical and horizontal direction is reversed.

▲- When the character in different sizes amplification in a row, all of the characters in a row along the baseline alignment.

▲- with ESC! Command can turn on or off the double-width and double-height mode. The last set of the received command is valid.

[Default] n = 0

[Reference] ESC!

GS * x y d1 . . . d(x×y×8)

[Name] definition transfer bitmaps

[Format] ASCII code GS * x y d1...d(x×y×8)

Hex code 1D 2A x y d1...d(x×y×)

Decimal code 29 42 x y d1 ...d(x×y×8)

[Range] 1 ≤x ≤255

1 ≤y ≤48 (x×y ≤1536)

0 ≤d ≤255

[Description] with x and y specify the number of points to define the downstream bitmaps.

▲-x specify the horizontal points.

▲-y designated points in the vertical direction.

[Note] ▲- horizontal dots x × 8, vertical dots y × 8.

▲- If x × y exceeds the specified range, the command is disabled.

▲-d represents bitmap data. Data (d) specifies the bit for a bit to 0 does not print.

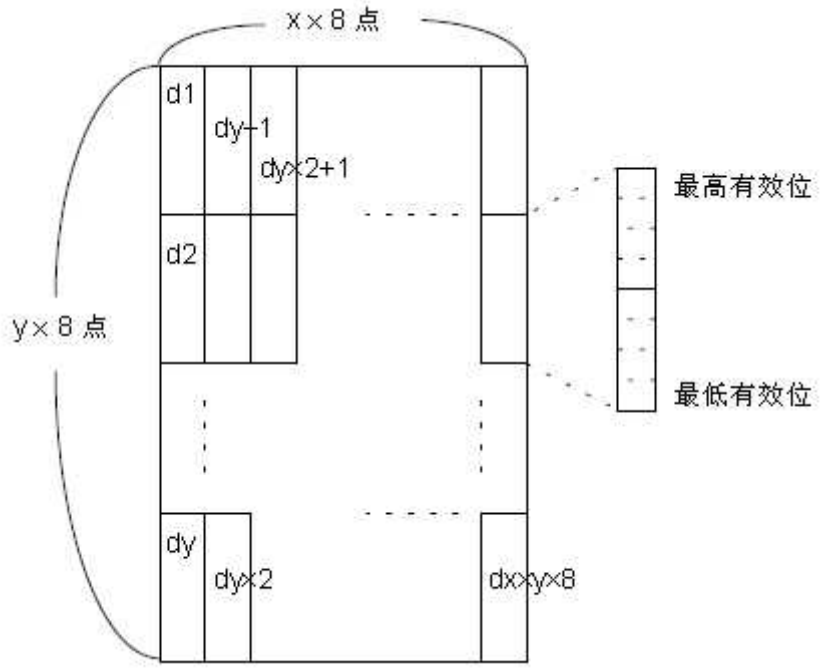
▲- Clear downstream bitmap is defined in the following cases:

1) Perform ESC @.

2) the implementation of ESC &.

3) The printer is reset or turn off the power.

Biography relationship between bitmap and print data as shown below under ▲-



[参照] GS /

GS / m

[Name] Print downstream bitmaps
[Format] ASCII code GS / m
Hex 1D 2F m
Decimal code 29 47 m
[范围] 0 ≤m ≤3, 48 ≤m ≤51
[Description] mode specified by m print downstream bitmaps.
m setting mode from the following table:

m	mode	Vertical point density	Horizontal dot density
0, 48	common	203.2 dpi	203.2 dpi
1, 49	Times the width	203.2 dpi	101.6 dpi
2, 50	Times higher	101.6 dpi	203.2 dpi
3, 51	Four times the size of the	101.6 dpi	101.6 dpi

Note] ▲- If the bitmap data is not defined, the command is ignored.
▲- under standard mode, this command is valid only when there is no data in the print buffer.
▲- print mode (bold, overlapping, underline, character size or anti-white print) under the command is invalid, except for reverse printing mode.
▲- If the next bit image will be printed over the print area, the excess data is not printed.
[Reference] GS *

GS B n

[Name] setting / releasing anti-white printing mode
[Format] ASCII code GS B n
Hex 1D 42 n
Decimal code 29 66 n
[Range] 0 ≤n ≤255
[Description] set or released anti-white printing mode.
▲- When the LSB of n is 0, the reverse mode off.

▲- When the LSB of n is 1, the anti-white mode is turned on.

[Note] ▲- Only the lowest bit of n is valid.

▲- The command built-in character, and user-defined characters are valid.

▲- When the reverse mode is turned on, it blank ESC SP setting effective.

▲- 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 in preference to underline mode. When setting the anti-white mode, even open also underline mode is disabled (but not canceled).

[Default] n = 0

GS H n

[Name] Select printing position of HRI characters

[Format] ASCII code GS H n

Hex 1D 48 n

Decimal code 29 72 n

[Range] 0 ≤n ≤3, 48 ≤n ≤51

[Select printing position of HRI characters description] when printing barcodes

n Select printing position as shown below:

n	Print Position
0,48	not print
1,49	In the top of the bar code
2,50	In the bottom of the bar code
3,51	Above and below the bar code

- HRI said that can read bar codes corresponding characters.

[note] - Specified by GS f font print HRI characters。

[Defaults] n = 0

[Refer] **GS f , GS k**

GS L n L n H

[Name] set the left margin amount

[Format] ASCII code GS L nL nH

Hex 1D 4C nL nH

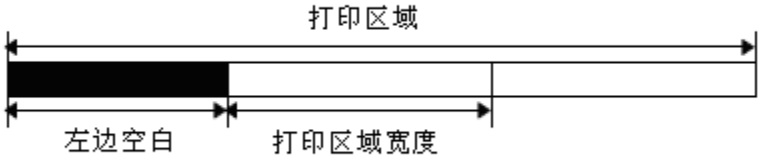
Decimal code 29 76 nL nH

[Range] 0 ≤nL ≤255

0 ≤ nH ≤ 255

[Description] by nL and nH set amount left blank.

▲- amount left blank to [(nL + nH × 256) × 0.125 mm].



[Note] ▲- In standard mode, this command is valid only when processing a row starting position.

▲- If outside the printable area, then use the maximum printable units.

[Default] nL = 0, nH = 0

GS a n

[Name] enable / disable status automatically uploaded

[Format] ASCII GS a n

Hex 1D 61 n

Decimal code 29 97 n

[Range] 0 ≤ n ≤ 255

位	Function	Value	
		0	1
0	-	-	-
1	-	-	-
2	Disable / enable the state to automatically upload	禁止	允许
3-4	-	-	-
5	Disable / enable control out of paper BUSY RTS = BUSY	禁止	允许
6-7	-	-	-

[Description] When active, the printer status changes found, then automatically sent to the host state。

GS h n

Name] Set the bar code height

[Format] ASCII code GS h n
Hex 1D 68 n
Decimal code 29 104 n
[Range] 1 +-n +-255
[Description] set the bar code height.
n set of points in the vertical direction.
[Default] n = 162
[Reference] GS k

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

[Name] print barcodes
[Format] ①ASCII code GS k m d1...dk NUL
Hex code 1D 6B m d1...dk 00
Decimal code 29 107 m d1...dk 0
②ASCII GS k m n d1...dn
Hex code 1D 6B m n d1...dn
Decimal code 29 107 m n d1...dn
[Range] ① 0 ≤ m ≤ 6 (k and d depends on the bar code system used)
2 65 ≤ m ≤ 73 (n and d depends on the bar code system used)
[Description] selected barcode system and print barcodes.
m selected bar code system as follows:

m		Barcode System	The number of characters	Remark
①	0	UPC-A	11 ≤ k ≤ 12	48 ≤ d ≤ 57
	1	UPC-E	11 ≤ k ≤ 12	48 ≤ d ≤ 57
	2	JAN13 (EAN13)	12 ≤ k ≤ 13	48 ≤ d ≤ 57
	3	JAN 8 (EAN8)	7 ≤ k ≤ 8	48 ≤ d ≤ 57
	4	CODE39	1 ≤ k′	48 ≤ d ≤ 57, 65 ≤ d ≤ 90, 32, 36, 37, 43, 45, 46, 47
	5	ITF	1 ≤ k (even number)	48 ≤ d ≤ 57
	6	CODABAR	1 ≤ k′	48 ≤ d ≤ 57, 65 ≤ d ≤ 68 , 36, 43, 45, 46, 47, 58
②	65	UPC-A	11 ≤ n ≤ 12	48 ≤ d ≤ 57
	66	UPC-E	11 ≤ n ≤ 12	48 ≤ d ≤ 57
	67	JAN13 (EAN13)	12 ≤ n ≤ 13	48 ≤ d ≤ 57
	68	JAN 8 (EAN8)	7 ≤ n ≤ 8	48 ≤ d ≤ 57
	69	CODE39	1 ≤ n ≤ 255	48 ≤ d ≤ 57, 65 ≤ d ≤ 90, 32, 36, 37, 43, 45, 46, 47
	70	ITF	1 ≤ n ≤ 255 (even number)	48 ≤ d ≤ 57

	71	CODABAR	1 ≤ n ≤ 255	48 ≤ d ≤ 57, 65 ≤ d ≤ 68 , 36, 43, 45, 46, 47, 58
	72	CODE93	1 ≤ n ≤ 255	0 ≤ d ≤ 127
	73	CODE128	2 ≤ n ≤ 255	0 ≤ d ≤ 127

[note ①]

- The order by the end of the NUL code。
- When the bar code system after use of UPC-A or UPC-E, the printer receives 12 bytes of bar code data to print bar codes and subsequent data as normal data.

▲- When the bar code system used is JAN13 (EAN13), the printer after receiving 13 bytes to print bar codes and bar code data subsequent data as normal data.

▲- When the bar code system used is JAN8 (EAN8), the printer receives 8 bytes of bar code data to print bar codes and subsequent data as normal data.

Number ▲-ITF barcode data must be even. When the input data is an odd number, the printer ignores the last received data.

[Note ②]

Specify the number of bytes of data ▲-n barcode, and the printer will start from the next character n bytes of data as bar code data processing.

▲- If n is outside the specified range, the printer stops processing the command, and the subsequent data as normal data.

[Note] Standard Mode

▲- If d exceeds the specified range, the printer just feed and subsequent data as normal data.

▲- If the horizontal size exceeds the printing area, the printer just feed.

▲- The command according to the requirements of the feed to print bar codes, regardless of ESC 2 or ESC 3 set line spacing.

▲- only when no data in the print buffer, the command is valid. When the print buffer has data printer m subsequent data processing as normal data.

After ▲- print bar codes, the command will print position is set at the beginning of the line.

▲- except for the command from the print mode (overlap bold, underline, character size, anti-white print or characters 90› rotation, etc.) affect the reverse printing mode.

Control characters			HRI 字符	Control characters			HRI 字符
ASCII 码	Hex	Decimal		ASCII 码	Hex	Decimal	
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

[

Examples] Print GS k 72 7 67 111 100 101 13 57 51

When using CODE128 (m = 73):

▲- CODE128 barcodes and coding table information, see Appendix D.

▲- When this printer uses CODE128, please consider the following factors regarding data transfer:

① barcode data string head shall be required to select the character set encoding (CODE A, CODE B, or CODE C), is used to select the code set used first.

② with the characters "{" and a combination of characters to define the special characters. By continuously transferred twice, "{" is defined ASCII character "{."

Special characters	Transmission of data		
	ASCII	Hex	Decima
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

[Examples] Print "No. 123456" instance data

In this example, the printer prints with CODE B "No.", then use the CODE C print the following figures.

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

● If the head of the bar code data string is not coded character set selection, the printer stops command processing, And subsequent data processing as normal data.

▲ – If the combination "{" and subsequent characters do not apply to any special characters, the printer stops command processing, and subsequent data as normal data.

▲ – If the printer receives a specially coded character set can not be used, the printer stops command processing, and subsequent data as normal data.

▲ – printer does not print and shift character or code set selected character corresponding HRI characters.

▲ – the function character of HRI character is a space.

▲ – the control characters (00 < > to < 1 > f H and H < 7 > f H) of HRI character is a space.

< > other confirm keep distance between the left side of the bar code. Different spacing (according to the type of bar code is different also.)

With reference to GS, GS H H, GS w

GS x n

[Name] Set barcode printing left the pitch

[Format] ASCII GS x n

Hex 1D 78 n

Decimal code 29 120 n

Starting position [description] print bar codes are: 0255

GS r n

[Name] delivery status
[Format] ASCII code GS r n
Hex 1D 72 n
Decimal code 29 114 n
[Range] n = 1, 49
[Description] transfer specified by n n state as follows:

n	Function
1,49	Transfer paper sensor status

[Note] ▲- When using the serial interface:
If set DTR / DSR control, the printer is ready to receive data to identify the host after (DSR signal is SPACE), transmit only one byte. If the host computer is not ready to receive transmitted data (DSR signal is MARK), the printer waits until the host is ready.
If set XON / XOFF control, only one byte transfer printer, without acknowledgment DSR signal status.
▲- When the data generated in the print buffer, execute the command. Thus between the receiving and transmitting the command state, there may be a time interval, depending on the status of the receive buffer.
▲- activate automatically when using the GS a reply ASB state, the state transferred by GS r and ASB status must be distinguished.
▲- state transfer types are as follows:

Paper sensor status (n = 1, 49):

P	OFF / ON	Hex	Decimal	ASB status
0,1	-	-	-	Pointless
2,3	OFF	00	0	Paper end sensor: paper adequate。
	ON	(0C)	(12)	Make paper out of paper sensor。
4	OFF	00	0	Unused fixed Off。
5,6	-	-	-	Undefined。
7	OFF	00	0	Unused fixed Off。.

Bits 2 and 3: paper end sensor detects paper to make the printer goes offline, and the command is not executed. Therefore, bits 2 and 3 are not transferred out of paper condition.
[Reference] GS a

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

Hex 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 ≤m ≤3, 48 ≤m ≤51

0 ≤xL ≤255

0 ≤xH ≤255 在此 1 ≤(xL + xH×256) ≤48

0 ≤yL ≤255

0 ≤yH ≤8 在此 1 ≤(yL + yH ×256) ≤4095

0 ≤d ≤255

k = (xL + xH ×256) ×(yL + yH×256) (k ≠0)

[Description] Sets raster bitmap mode. m value setting mode as follows:

m	Mode	Vertical point density	Horizontal dot density
0, 48	General	203.2 dpi	203.2 dpi
1, 49	Times the width	203.2 dpi	101.6 dpi
2, 50	Times higher	101.6 dpi	203.2 dpi
3, 51	Four times the size of the	101.6 dpi	101.6 dpi

- xL, xH, set horizontally bitmap data bytes (xL + xH▽256)。
- yL, yH, Setting the bitmap vertically number of data bytes (yL+yH×256)。

[Note] under ▲- standard mode only when no data in the print buffer command is valid。

- For raster bitmap printing, the printing mode command is not affected (character size, bold, overlapping, reverse printing, underline, highlight the print mode, etc.).

▲- If set by GS L print area width is less than the minimum width, the printer will have problems extend only to the minimum line width. The minimum width for normal mode (m = 0, 48) and double-height mode (m = 2, 50) is a bit of double-width mode (m = 1, 49), and four times the size of the mode (m = 3, 51) for two points.

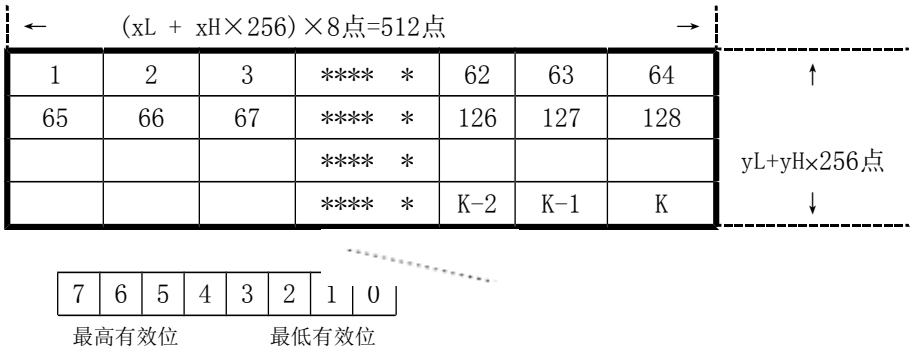
▲- print data is read into the outside area, and are discarded by point.

▲- If the print position subsequent character is a multiple of 8. Follow-up will be printed as raster bitmap characters print set, by HT (horizontal tab), ESC $ (Set absolute print position) and GS L (set the left margin setting).

▲-ESC a (set Alignment) setting is also valid for the raster bitmap.

▲-d specified bitmap data. Point set to be printed as a not printed dot is set to 0.

[Examples] when xL+xH×256=64



GS w n

[Name] Set the bar widt

[Format] ASCII code GS w n

Hex code 1D 77 n

Decimal code 29 119 n

[Range] 2 ≤n ≤6

[Description] Set the horizontal size of the barcode。

n Setting the bar width as follows:

n	Multi-level bar code unit Width (mm)	Binary Barcode	
		Narrow width (mm)	Wide strip 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-level bar codes:
  UPC-A, UPC-E, JAN13 (EAN13), JAN8 (EAN8), CODE93, CODE128
- 以下是二进制条形码：
  CODE39, ITF, CODABAR

[Default] n = 3

[Reference] GS k

FS ! n

[Name] Set Chinese character print mode

[Format] ASCII code FS ! n
Hex code 1C 21 n
Decimal code 28 33 n
[Range] 0 ≤n ≤255
[Description] Chinese character printing mode, n is set as follows

p	OFF / ON	Hex	Decimal	ASB status
0	—	—	—	Undefined。
1	—	—	—	Undefined。
2	OFF	00	0	Prohibit double-width mode。
	ON	04	4	Allow double width mode.
3	OFF	00	0	Prohibit times higher mode.
	ON	08	8	Allow times higher mode。
4	—	—	—	Undefined。。
5	—	—	—	Undefined。。
6	—	—	—	Undefined。
7	OFF	00	0	Underline mode is prohibited.
	ON	80	128	Allow underline mode.

[Under the Note] ▲- while double-width mode and set times higher modes (including the right and left side character spacing), four times the size of the printed characters.
▲- printer can give all the characters plus the underscore (including the right and left side character spacing), but can not give the space HT command set, as well as 90 ° clockwise rotation of the character is underlined.
▲- row when certain characters or more times a character, all of the characters in the line along the baseline for
Qi.
▲- You can use the GS! Command crude write kanji characters, set last received command is effective.
[Default] n = 0
[Reference] GS!

FS &

[Name] setting Kanji mode
[Format] ASCII code FS &
Hexadecimal code 1C 26
Decimal code 2838
[Description] Selects Kanji character mode
[Note] The Chinese Type:
When ▲- select Chinese character mode, the printer handles all the kanji

code, every two bytes.

▲- the first byte, the second byte characters sequential processing code.

▲- When the power is turned on, the printer does not select Chinese character mode.

[Reference] FS.

FS .

[Name] to cancel kanji characters

[Format] ASCII code FS.

Hexadecimal code 1C 2E

Decimal code 2846

[Description] Cancel Kanji character mode

[Note] Chinese type:

When ▲- Kanji character mode is not selected, all the ASCII character codes are as per a character processing.

▲- When the power is turned on, the printer is not selected kanji mode.

[Reference] FS &

ESC = n

[Name] Set Peripherals

[Format] ASCII ESC = n

Hex 1b 3d n

Decimal 27 61 n

[Description] set offline, online mode:

p	OFF / ON	Hex	Decimal	ASB status
0	OFF	00	0	The printer is in offline mode, does not accept print data while offline indicator light.
	ON	01	1	he printer is in online mode, accept print data and print.
1-7	-	-	-	Pointless。

ESC 7 n1 n2 n3

[Name] Set the print parameters
[Format] ASCII ESC 7 n1 n2 n3
Hex 1B 37 n1 n2 n3
Decimal code 27 55 n1 n2 n3
[Description] set up to add hotspots to print, heating time interval:
n1 = 0-255 points maximum heating unit (8dots), the default value 9 (80 points);
n2 = 0-255 heating time units (10us), the default value 80;
n3 = 0-255 interval heating unit (10us), the default value of 2;
Heating points more than the maximum current consumption of large control panel, print speed. The maximum heating dots 8 × (n1 + 1);
The longer the heating time, the print black high, the slower the print speed. Heating time is too short, it may appear to print blank;
The longer the interval, the more clear print, printing slows down;
Description: "heating time", "heating interval" control panel will automatically be adjusted according to the input voltage.

ESC 8 n1 n2

[Name] Set the sleep parameters
[Format] ASCII ESC 8 n1 n2
Hex 1B 38 n1 n2
Decimal code 27 56 n1 n2
[Description] how much idle time, the control panel into sleep time;
n1 + n2 × 256 sleep latency, the unit (10 milliseconds), the default value of 0;
A value of 0 means no sleep equal, not equal to 0, the minimum is 200 milliseconds.
After entering the sleep, the host must send a byte of data (0xff) wake panel, wait for 50 milliseconds before starting to send print command or data.
Description: This command is mainly used in battery-powered systems that require low power applications。

ESC 9 n

[Name] Chinese code format
[Format] ASCII ESC 9 n

Hex 1B 39 n

Decimal 27 57 n

[Description] Selects Chinese encoding format, n values correspond coded as follows:

0: GBK encoding

1: UTF-8 encoding

3: BIG5 Traditional coding

English version does not support this command.

DC2 T

[Name] to print a self-test page

[Format] ASCII DC2 T

Hexadecimal code 1254

Decimal code 1894

[Description] Print a self-test page

ESC c 5 n(for buttons)

[Name] to cancel / Activates panel key

[Format] ASCII ESC c 5 n

Hex 1B 63 35 n

Decimal code 27 99 53 n

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

[Description] Cancel / activation panel keys.

LSB is 0, the abolition of the panel buttons;

LSB is 1, the activation panel keys.

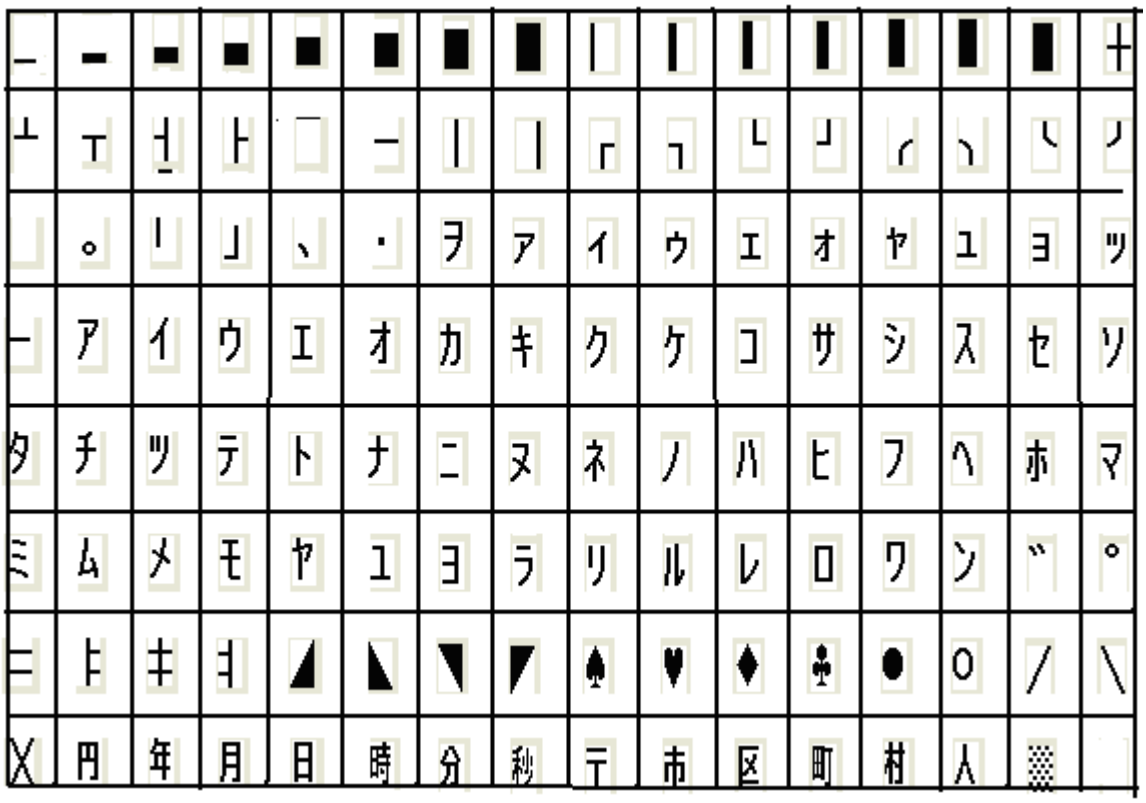
[Default] n = 0

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	¢	£	¥	₱	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	■	

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	×	ƒ
A_	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
B_	░	▒	▓	│	┤	Á	Â	À	©	╣	║	╗	╝	¢	¥	┐
C_	└	┴	┬	├	─	┼	ã	Ã	╚	╔	╩	╦	╠	═	╬	¤
D_	ð	Ð	Ê	Ë	È	ı	Í	Î	Ï	┘	┌	█	▄	¦	Ì	▀
E_	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý	¯	´

F_		±	‗	¾	¶	§	÷	¸	°	¨	·	¹	³	²	■	

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	«	»
B_	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
C_	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D_	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	█	▄	▌	▐	▀

E_	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	±	≥	≤	⌠	⌡	÷	≈	°	•	·	√	n	2	■	

Page5 pc865[Nordic]

Code page 865															
	_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_	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
C_	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D_	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	█	▄	▌	▐	▀
E_	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	ϕ	ε	∩
F_	≡	±	≥	≤	⌠	⌡	÷	≈	°	•	·	√	n	2	▌	

Page6 pc1251 [Cyrillic]

Code page 1251																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ђ	Ѓ	‚	ѓ	„	…	†	‡	€	‰	Љ	‹	Њ	Ќ	Ћ	Џ
9_	ђ	‘	’	“	”	•	-	—		™	љ	›	њ	ќ	ћ	џ
A_		Ў	ў	Ј	¤	Ґ	¦	§	Ё	©	Є	«	¬	-	®	Ї
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
F_	Ё	ё	Є	є	Ї	ї	Ў	ў	°	∙	·	√	№.	¤	■	

Page8 MIK[Cyrillic /Bulgarian]

Code page MIK																
	_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_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
C_	└	┴	┬	├	─	┼	┤	‖	└	┌	┴	┬	├	═	┼	┐

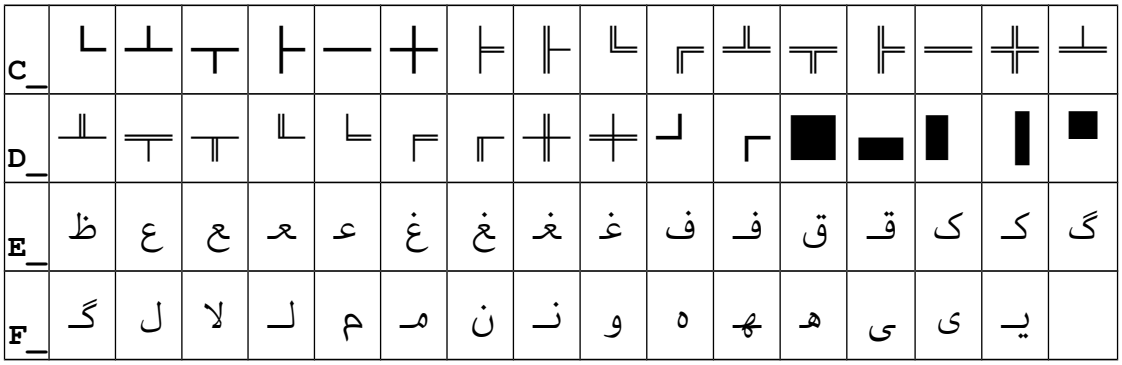
D_	▒	▒	▓	│	┤	№	§	╕	╜	╛	┌	■	▬	▮	▌	■
E_	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	n	2	■	

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⊏	■
E_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
F_	Ē⊏	ē⊏	Ģ⊏	К	K⊏	ļ⊏	Ļ⊏	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	،	ـ	؟F	آ	ئـ	ء
9_	ا	ـا	ب	بـ	پ	پـ	ت	تـ	ث	ثـ	ج	جـ*	چC*	چ	ح	حـ
A_	خ	خـ	د	ذ	ر	ز	ژ	س	سـ	ش	شـ	ص	صـ	ض	ضـ	ط
B_	▒	▒	▓	│	┤	⊣	╢	╖	╕	╣	║	╗		╝	╜	┐



Page15 CP862 [Hebrew]

Code page 862																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	א	בּ	גּ	דּ	הּ	וּ	זּ	חּ	טּ	יּ	ךּ	כּ	לּ	מּ	נּ	ן
9_	ס	ע	ף	פּ	ץ	צּ	ק	רּ	שׁ	תּ	¢	£	¥	₧	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	■	

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_	€		‚	ƒ	„	…	†	‡	ˆ	‰	Š	‹	Œ		Ž	
9_		‘	’	“	”	•	–	—	˜	™	š	›	œ		ž	Ÿ
A_		¡	¢	£	¤	¥	¦	§	¨	©	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

Page 17 WCP1253 [Greek]

Code page **1253**																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		‚	ƒ	„	…	†	‡		‰		‹				
9_		‘	’	“	”	•	–	—		™		›				

A_		΅	Ά	£	¤	¥	¦	§	¨	©		«	¬	-	®	―
B_	°	±	²	³	΄	μ	¶	·	Έ	Ή	Ί	»	Ό	½	Ύ	Ώ
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	

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	ů	ć	ç	ł	ë	Ő	ő	î	Ź	Ä	Ć
9_	É	Ĺ	í	ô	ö	Ľ	ľ	Ś	ś	Ö	Ü	Ť	ť	Ł	×	Č
A_	á	í	ó	ú	Ą	ą	Ž	ž	Ę	ę	¬	ź	Č	ş	«	»
B_	░	▒	▓	│	┤	Á	Â	Ě	Ş	╣	║	╗	╝	Ż	ż	┐
C_	└	┴	┬	├	─	┼	Ă	ă	╚	╔	╩	╦	╠	═	╬	¤
D_	đ	Đ	Ď	Ë	ď	Ň	Í	Î	ě	┘	┌	█	▄	Ţ	Ů	▀
E_	Ó	ß	Ô	Ń	ń	ň	Š	š	Ŕ	Ú	ŕ	Ű	ý	Ý	ţ	´
F_		˝	̨	ˇ	˘	§	÷	¸	°	¨	˙	ű	Ř	ř	■	

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**																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	۰	۱	۲	۳	۴	۵	۶	۷	۸	۹	،	ـ	؟	آ	ئـ	ء
9_	ا	ـا	ب	بـ	پ	پـ	ت	تـ	ث	ثـ	ج	جـ	چ	چـ	ح	حـ
A_	خ	خـ	د	ذ	ر	ز	ژ	س	سـ	ش	شـ	ص	صـ	ض	ضـ	ط
B_	▒	▒	▓	┃	┤	╡	╢	╖	╕	╣	║	╗		╝	╜	┐
C_	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D_	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	■	▬	▮	▌	▀
E_	ظ	ع	عـ	ـعـ	ـع	غ	غـ	ـغـ	ـغ	ف	فـ	ق	قـ	ک	کـ	گ
F_	گـ	ل	لا	لـ	م	مـ	ن	نـ	و	ه	هـ	ھ	ی	ی	یـ	

Page21 Latvian

Code page Latvian																
	_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_						A		ם						Õ ם		

C_							ā ⊏									
D_	Š ⊏		č ⊏	Č ⊏	Ī ⊏	ī								ū ⊏	Ū ⊏	
E_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
F_	Ē ⊏	ē ⊏	Ģ ⊏	к	K ⊏	⌠	⌡	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⊏	ﻹ⊏			ﻻ⊏	ﻵ⊏	
A_			⊏آ	£⊏	¤⊏	⊏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
F_	⊏ـّ سد	سد	⊏ن	⊏ه	⊏ه	⊏ى	⊏ي	⊏غ	⊏ق	⊏ﻵ	⊏ﻷ	⊏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_		¡⊏	¢⊏	£⊏	¤⊏	¥⊏	¦⊏	§⊏	¨⊏	©⊏	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]

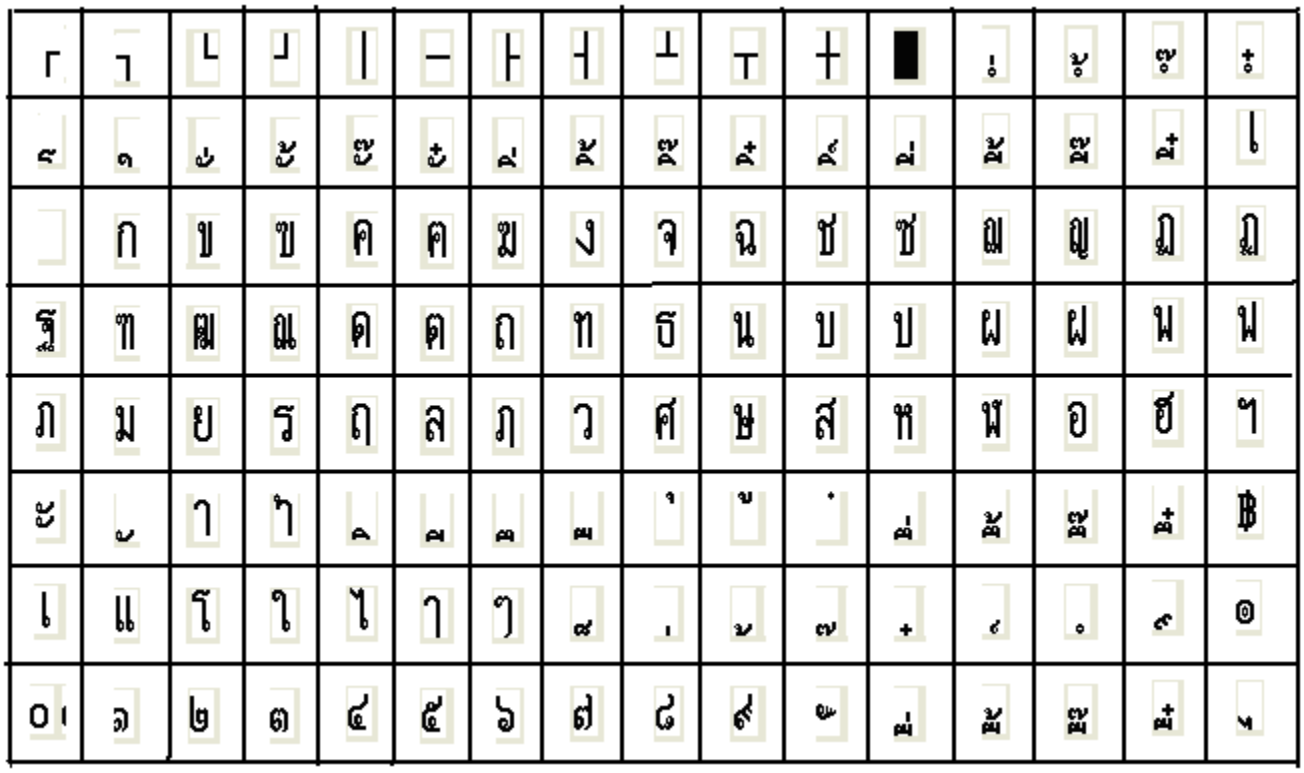
Code page 737																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F

8_	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο	Π
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
F_	Ώ	±	≥	≤	Ϊ	Ϋ	÷	≈	°	·	·	√	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_	€		‚		„	…	†	‡		‰		‹		¨	ˇ	¸
9_		‘	’	“	”	•	–	—		™		›		¯	˛	
A_			¢	£	¤		¦	§	Ø	©	Ŗ	«	¬	-	®	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
D_	Š	Ń	Ņ	Ó	Ō	Õ	Ö	×	Ų	Ł	Ś	Ū	Ü	Ż	Ž	ß
E_	ą	į	ā	ć	ä	å	ę	ē	č	é	ź	ė	ģ	ķ	ī	ļ
F_	š	ń	ņ	ó	ō	õ	ö	÷	ų	ł	ś	ū	ü	ż	ž	˙

Page26 Thai



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_		ـ	°	ô⊏	¤⊏	ـ⊏	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⊏
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_	ђ⊏	Ђ⊏	ѓ⊏	Ѓ⊏	ё⊏	Ё⊏	є⊏	Є⊏	ѕ⊏	Ѕ⊏	і⊏	І⊏	ї⊏	Ї⊏	ј⊏	Ј⊏
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	№
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	İ	Ö	Ü	ø	£	Ø	Ş	ş
A_	á	í	ó	ú	ñ	Ñ	Ğ	ğ	¿	®	¬	½	¼	¡	«	»
B_	▒	▒	▓	|	┤	Á	Â	À	©	╣	║	╗	╝	¢	¥	┐
C_	└	┴	┬	├	─	┼	ã	Ã	╚	╔	╩	╦	╠	═	╬	¤
D_	º	ª	Ê	Ë	È		Í	Î	Ï	┘	┌	▀	▄	¦	Ì	▀
E_	Ó	ß	Ô	Ò	õ	Õ	µ		×	Ú	Û	Ù	ì	ÿ	¯	´
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	Ź
9_		‘	’	“	”	•	–	—		™	š	›	ś	ť	ž	ź
A_		ˇ	˘	Ł	¤	Ą	¦	§	¨	©	Ş	«	¬		®	Ż
B_	°	±	˛	ł	´	µ	¶	·	¸	ą	ş	»	Ľ	˝	ľ	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
F_	đ	ń	ň	ó	ô	ő	ö	÷	ř	ů	ú	ű	ü	ý	ţ	˙

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	ģ	å	ć	ł	ē	Ŗ	ŗ	ī	Ź	Ä	Å
9_	É	æ	Æ	ō	ö	Ģ	¢	Ś	ś	Ö	Ü	ø	£	Ø	×	¤
A_	Ā	Ī	ó	Ż	ż	ź	”	¦	©	®	¬	½	¼	Ł	«	»
B_	░	▒	▓	│	┤	Ą	Č	Ę	Ė	╣	║	╗	╝	Į	Š	┐
C_	└	┴	┬	├	─	┼	Ų	Ū	╚	╔	╩	╦	╠	═	╬	Ž
D_	ą	č	ę	ė	į	š	ų	ū	ž	┘	┌	█	▄	▌	▐	▀
E_	Ó	ß	Ō	Ń	õ	Õ	µ	ń	Ķ	ķ	Ļ	ļ	ņ	Ē	Ņ	’
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_	€		‚	ƒ	„	…	†	‡	ˆ	‰	Š	‹	Œ			
9_		‘	’	“	”	•	–	—	˜	™	š	›	œ			Ÿ
A_		¡	¢	£	¤	¥	¦	§	¨	©	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_	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
	€		‚	ƒ	„	…	†	‡	ˆ	‰		‹				

8_																
9_		‘⊏	’⊏	“⊏	”⊏	•⊏	–⊏	—⊏	˜⊏	™⊏		›⊏				
A_		¡⊏	¢⊏	£⊏	₪⊏	¥⊏	¦⊏	§⊏	¨⊏	©⊏	×⊏	«⊏	¬⊏	⊏	®⊏	¯⊏
B_	°⊏	±⊏	²⊏	³⊏	´⊏	µ⊏	¶⊏	·⊏	¸⊏	¹⊏	÷⊏	»⊏	¼⊏	½⊏	¾⊏	¿⊏
C_	◌ְ⊏	◌ֱ⊏	◌ֲ⊏	◌ֳ⊏	◌ִ⊏	◌ֵ⊏	◌ֶ⊏	◌ַ⊏	◌ָ⊏	◌ֹ⊏		◌ֻ⊏	◌ּ⊏	◌ֽ⊏	◌־⊏	◌ֿ⊏
D_	׀⊏	◌ׁ⊏	◌ׂ⊏	׃⊏	וּ⊏	וִ⊏	יִ⊏	׳⊏	״⊏							
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⊏					

Page34 WCP1256[Arabic]

Code page-1256																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€	پ	‚	ƒ	„	…	†	‡	ˆ	‰	ٹ	‹	Œ	چ	ژ	ڈ
9_	گ	‘	’	“	”	•	–	—	ک	™	ڑ	›	œ			ں
A_		،	¢	£	¤	¥	¦	§	¨	©	ھ	«	¬		®	¯
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	ـ	ف	ق	ك
E_	à	ل	â	م	ن	ه	و	ç	è	é	ê	ë	ى	ي	î	ï
F_	ً⊏	ٌ⊏	ٍ⊏	َ⊏	ô	ُ	ِ	÷	ّ	ù	ْ	û	ü			ے

Page35 WCP1258[Vietnam]

Code page-1258																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€⊏		‚⊏	ƒ⊏	„⊏	…⊏	†⊏	‡⊏	ˆ⊏	‰⊏		‹⊏	Œ			

9_		‘	’	“	”	•	–	—	˜	™		›	œ			Ÿ
A_		¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	-	®	¯
B_	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C_	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	̀	Í	Î	Ï
D_	Ð	Ñ	̃	Ó	Ô	Ơ	Ö	×	Ø	Ù	Ú	Û	Ü	Ư	̃	ß
E_	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	́	í	î	ï
F_	đ	ñ	̣	ó	ô	ơ	ö	÷	ø	ù	ú	û	ü	ư	đ	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_		Ą	˘	Ł	¤	Ľ	Ś	§	¨	Š	Ş	Ť	Ź	-	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
F_	đ	ń	ň	ó	ô	ő	ö	÷	ř	ů	ú	ű	ü	ý	ţ	˙

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	˘	£	¤		Ĥ	§	¨	İ	Ş	Ğ	Ĵ	–		Ż

B_	°	ħ	²	³	´	µ	ĥ	·	¸	ı	ş	ğ	ĵ	½		ż
C_	À	Á	Â		Ä	Ċ	Ĉ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
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
8_																
9_																
A_		Ą	ĸ	Ŗ	¤	Ĩ	Ļ	§	¨	Š	Ē	Ģ	Ŧ	-	Ž	¯
B_	°	ą	˛	ŗ	´	ĩ	ļ	ˇ	¸	š	ē	ģ	ŧ	Ŋ	ž	ŋ
C_	Ā	Á	Â	Ã	Ä	Å	Æ	Į	Č	É	Ę	Ë	Ė	Í	Î	Ī
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
F_	đ	ņ	ō	ķ	ô	õ	ö	÷	ø	ų	ú	û	ü	ũ	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	S	I	Ї	J	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_	№	ё	ђ	ѓ	є	ѕ	і	ї	ј	љ	њ	ћ	ќ	§	ў	џ

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_					¤								،	ـ		
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_	ـ	ف	ق	ك	ل	م	ن	ه	و	ى	ي	◌ً◌	◌ٌ◌	◌ٍ◌	◌َ◌	◌ُ◌
F_	◌ِ◌	◌ّ◌	◌ْ◌													

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_		‘	’	£			¦	§	¨	©	ͺ	«	¬	―		―
B_	°	±	²	³	΄	΅	Ά	·	Έ	Ή	Ί	»	Ό	½	Ύ	Ώ

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	ί	ϋ	ό	ύ	ώ	

Page42 ISO-8859-8[Hebrew]

Code page-8859-8																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_			¢	£	¤	¥	¦	§	¨	©	×	«	¬		®	¯
B_	°	±	²	³	´	µ	¶	·	¸	¹	÷	»	¼	½	¾	
C_																
D_																‗
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					

Page43 ISO-8859-9[Turkish]

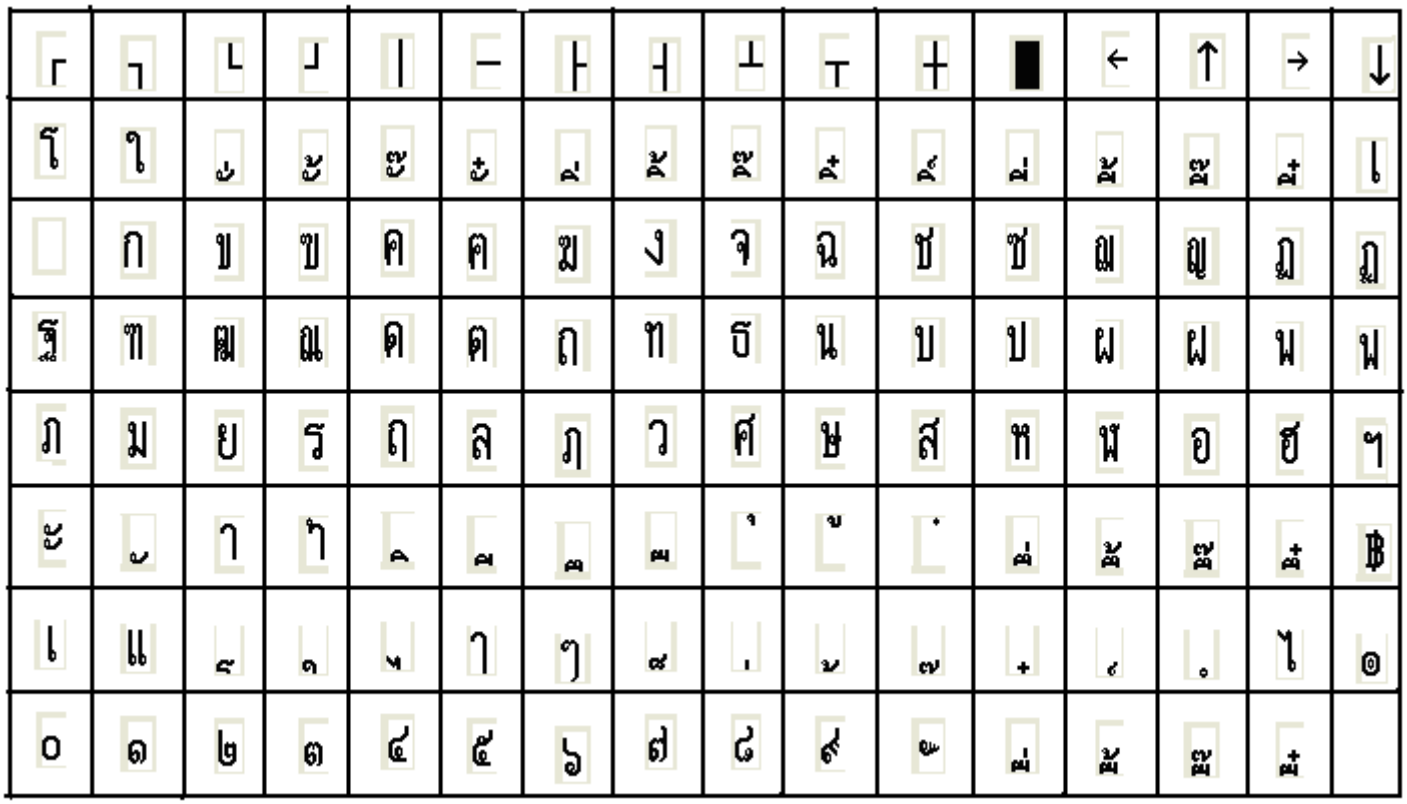
Code page-8859-9																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_		¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬		®	¯
B_	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿

C_	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D_	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

Page44 ISO-8859-15 **[Latin 3]**

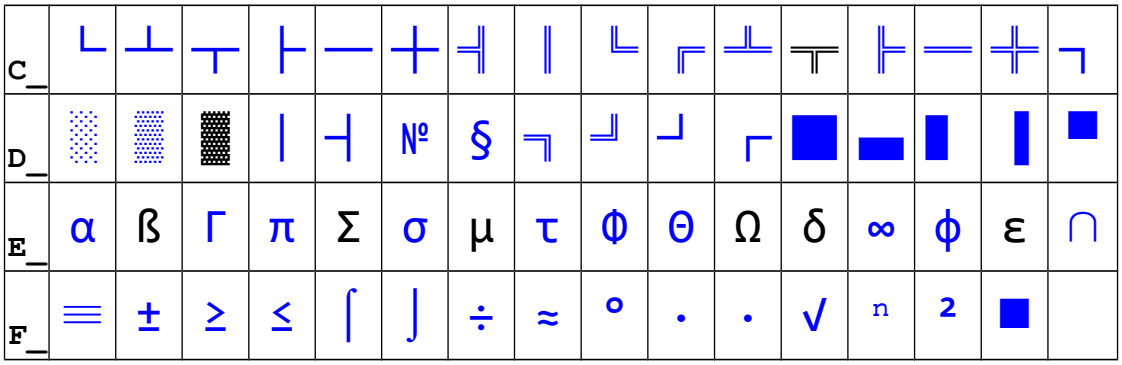
Code page-8859-15																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_		¡	¢	£	€	¥	Š	§	š	©	ª	«	¬	–	®	¯
B_	°	±	²	³	Ž	µ	¶	·	ž	¹	º	»	Œ	œ	Ÿ	¿
C_	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D_	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
E_	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F_	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

Page45 Thai2



Page46 CP856()

Code page 856															
	_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_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я



Page47 Cp874

Code page 874															
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ђ					…										
9_		‘	’	“	”	•	–	—								
A_		ก	ข	ฃ	ค	ฅ	ฆ	ง	จ	ฉ	ช	ซ	ฌ	ญ	ฎ	ฏ
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	ิ	ี	ึ	ื	ุ	ู	ฺ					฿
E_	เ	แ	โ	ใ	ไ	ๅ	ๆ	็	่	้	๊	๋	์	๎	๏	๐
F_	๐	๑	๒	๓	๔	๕	๖	๗	๘	๙	๚	๛				

3.2.2 国际字符集

County	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	$	@	¡	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	¡	Ñ	¿	é	`	í	ñ	ó	ú
Latin	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
Korea	#	$	@	[	₩	]	^	`	{	|	}	~
Slovenia/Croatia	#	$	Ž	Š	Ď	Ć	Č	ž	š	ď	ć	č
China	#	¥	@	[	\	]	^	`	{	|	}	~