



Mobile Printer

Command Set

Rongta Technology (Xiamen) Group Co., Ltd.

www.rongtatech.com

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Command List

Type	Command	Name
Print Command	LF	Print and line feed
	CR	Print and carriage return
	HT	JMP to the next TAB position
	ESC D n	Set horizontal tab positions
	ESC J n	Print and Feed n dots paper
	ESC d n	Print and Feed n lines
Line spacing Command	ESC 2	Select default line spacing
	ESC 3 n	Set line spacing
	ESC a n	Select justification
	ESC \$ nL nH	Set absolute print position
Character Command	ESC ! n	Select print mode(s)
	ESC M	Select characters font
	GS ! n	Set or Cancel the double width and height
	GS B	Turn white/black reverse printing mode
	ESC V n	Turn 90°clockwise rotation mode on/off
	ESC G n	Turn on/off double-strike mode
	ESC E n	Set or Cancel bold font
	ESC SP n	Set the space between chars
	ESC - n	Set the underline dots(0,1,2)
	ESC % n	Select/Cancel user-defined characters
	ESC & n	Define user-defined characters
	ESC ? n	Cancel user-defined characters
Bit Image Command	FS 2	Define user-defined Kanji characters
	ESC *	Select bit-image mode
	GS *	Define downloaded bit image
	GS /	Print downloaded bit image
	GS „	Print line section on a horizontal
	FS p n m	Print NV bitmap
Init Command	FS q n	Define NV bitmap
	ESC @	Initialize printer
Bar Code Command	GS H	Select printing position of human readable characters
	GS h	Set bar code height
	GS w	Set bar code width
	GS f	Select font for HRI characters
	GS k	Print bar code
	GS k	Print QR code

QR Code Command	GS (k pL pH cn fn n1 n2 (fn=65)	QR mode set
	GS (k pL pH cn fn n1 n2 (fn=67)	Set width
	GS (k pL pH cn fn n1 n2 (fn=69)	Set the QR code correction level error
	GS (k pL pH cn fn m d1...dk (fn=80)	Store and receive QR code data in 2D barcode area
	GS (k pL pH cn fn m (fn=81)	Receive and print PDF417 data in 2D barcode area.
	GS (k pL pH cn fn m (fn=82)	Transfer QR code data type in 2D barcode area.

Control Commands

HT

[Name]	Horizontal tab	
[Format]	ASCII	HT
	Hex	09
	Decimal	9
[Description]	Moves the print position to the next horizontal tab position.	
[Notes]	<ul style="list-style-type: none"> ■ This command is ignored unless the next horizontal tab position has been set. ■ If the next horizontal tab position exceeds the printing area, the printer sets the printing position to [printing area width + 1]. ■ Horizontal tab positions are set with ESC D. ■ If this command is received when the printing position is at [printing area width + 1], the printer executes print buffer-full printing of the current line and horizontal tab processing from the beginning of the next line. 	
[Reference]	ESC D	

LF

[Name]	Print and line feed	
[Format]	ASCII	LF
	Hex	0A
	Decimal	10
[Description]	Prints the data in the print buffer and feeds one line, based on the	

current line spacing.

[Note] This command sets the print position to the beginning of the line.
[Reference] **ESC 2, ESC 3**

CR

[Name] Print and carriage return

[Format] ASCII CR
Hex 0D
Decimal 13

[Description] When automatic line feed is enabled, this command functions the same as **LF**; when automatic line feed is disabled, this command is ignored.

[Notes] disabled. With a serial interface, the command performs as if auto line feed is disabled.

- Sets the print starting position to the beginning of the line.

[Reference] **LF**

ESC SP n

[Name] Set right-side character spacing

[Format] ASCII ESC SP n
Hex 1B 20 n
Decimal 27 32 n

[Range] 0 n 255

[Description] Sets the right-side character spacing to [nX0.125mm]

[Notes] The right-side character spacing for double-width mode is twice the normal value. When characters are enlarged, the right-side character spacing is n times normal value.

- This command does not affect the setting of Kanji characters
- This command sets values independently in standard mode.

[Default] n = 0

ESC ! n

[Name] Select print mode(s)

[Format] ASCII ESC ! n
Hex 1B 21 n
Decimal 27 33 n

[Range] 0 n 255

[Description] Selects print mode(s) using n as follows:

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Character Font A (12×24).
	On	01	1	Character Font B (9×17).
1	Off	00	0	Turn white/black reverse printing mode not selected.
	On	02	2	Turn white/black reverse printing mode selected.
2	Off	00	0	Turn on/off upside-down printing mode not selected.
	On	04	4	Turn on/off upside-down printing mode selected.
3	Off	00	0	Emphasized mode not selected.
	On	08	8	Emphasized mode selected.
4	Off	00	0	Double-height mode not selected.
	On	10	16	Double-height mode selected.
5	Off	00	0	Double-width mode not selected.
	On	20	32	Double-width mode selected.
6	Off	00	0	Turn Deleteline mode on/off not selected.
	On	40	64	Turn Deleteline mode on/off selected.
7	-	-	-	Undefined.

ESC \$ nL nH

[Name]	Set absolute print position
[Format]	ASCII ESC \$ nL nH Hex 1B 24 nL nH Decimal 27 36 nL nH
[Range]	0 nL 255 0 nH 255
[Description]	Sets the distance from the beginning of the line to the position at which subsequent characters are to be printed. <ul style="list-style-type: none"> • The distance from the beginning of the line to the print position is $[(nL + nH \rightarrow 256) \rightarrow 0.125 \text{ mm}]$.
[Notes]	Settings outside the specified printable area are ignored. <ul style="list-style-type: none"> • In standard mode, the horizontal motion unit (x) is used.
[Reference]	ESC \, GS \$, GS \

ESC % n

[Name]	Select/cancel user-defined character set
[Format]	ASCII ESC % n Hex 1B 25 n Decimal 27 37 n
[Range]	0 n 255
[Description]	Selects or cancels the user-defined character set. <ul style="list-style-type: none"> • When the LSB of n is 0, the user-defined character set is canceled.

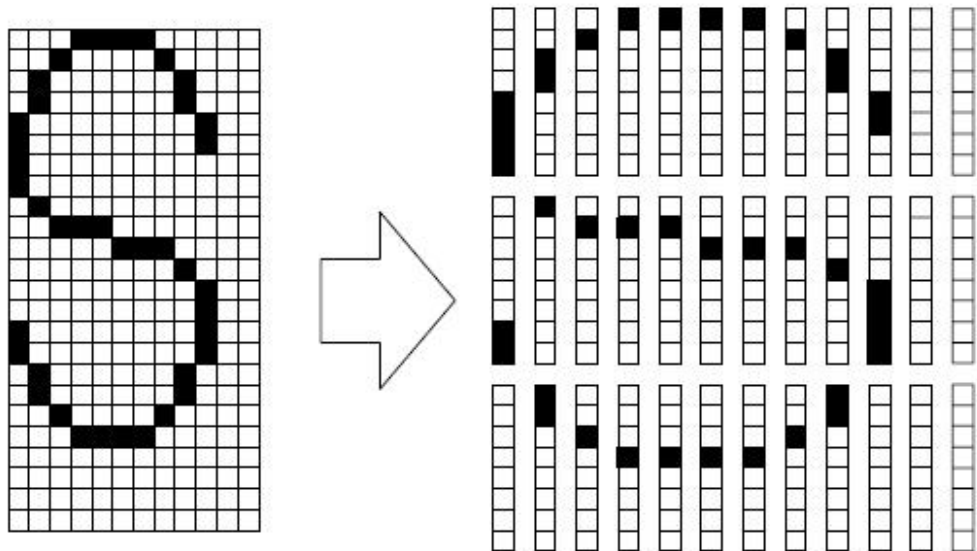
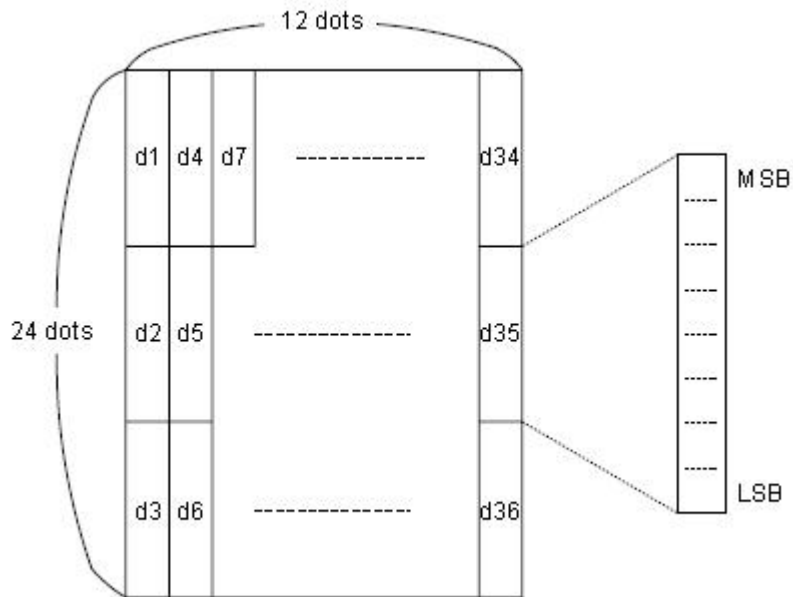


[Default] The internal character

set [Reference] **ESC %**, **ESC ?**

[Example]

- When Font A (12×24) is selected.



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

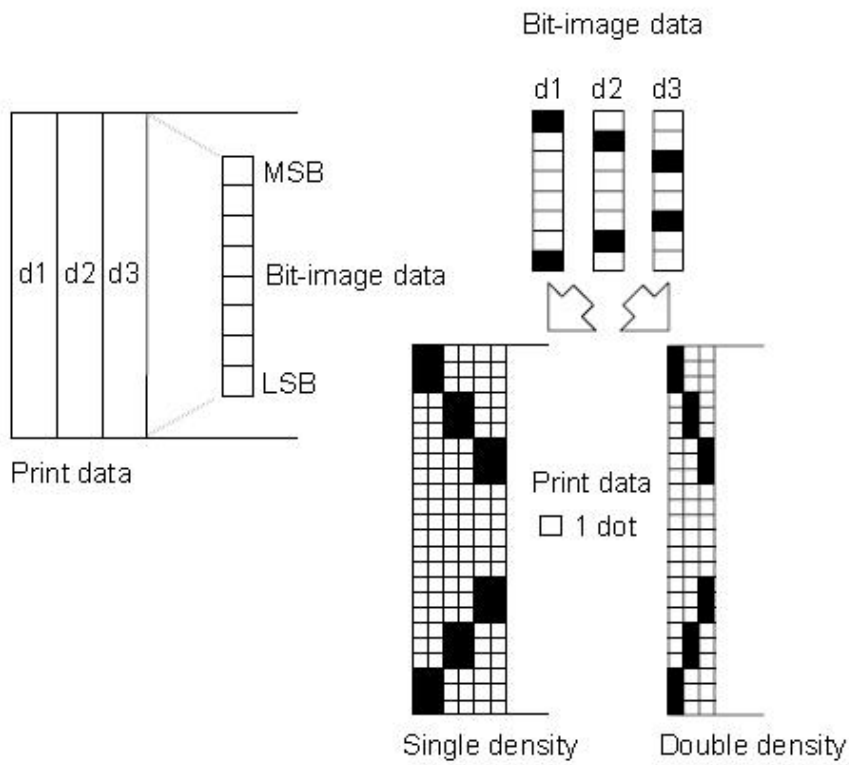
[Name] Select bit-image mode
 [Format] ASCII ESC m nL
 nH d1...dk Hex 1B 2A m nL nH
 d1...dk Decimal 27 42 m nL nH
 d1...dk

[Range] m = 0, 1, 32, 33
 0 nL 255
 0 nH 3
 0 d 255

[Description] Selects a bit-image mode using m for the number of dots specified by nL and nH, as follows:

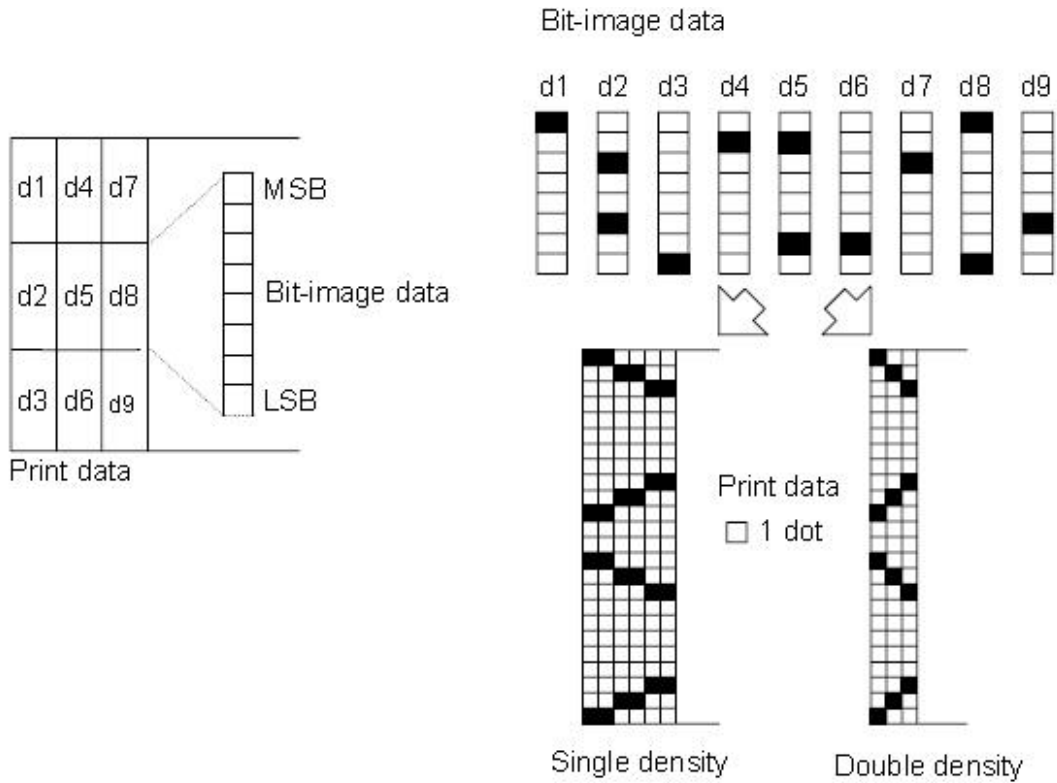
m	Mode	Vertical Direction		Horizontal Direction	
		Number of Dots	Dot Density	Dot Density	Number of Data (K)
0	8-dot single-density	8	67.7 dpi	101.6 dpi	$nL + nH \times 256$
1	8-dot double-density	8	67.7 dpi	203.2 dpi	$nL + nH \times 256$
32	24-dot single-density	24	203.2 dpi	101.6 dpi	$(nL + nH \times 256) \div 3$
33	24-dot double-density	24	203.2 dpi	203.2 dpi	$(nL + nH \times 256) \div 3$

- [Notes] If the value of m is out of the specified range, nL and nH the data following are processed as normal data.
- The nL and nH indicate the number of dots in the bit image in the horizontal direction. The number of dots is calculated by $nL + nH \times 256$.
 - If the bit-image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
 - d indicates the bit-image data. Set a corresponding bit to 1 to print a dot or to 0 not to print a dot.
 - After printing a bit image, the printer returns to normal data processing mode.
 - This command is not affected by print modes (emphasized, double-strike, underline, character size, or white/black reverse printing), except upside-down printing mode.
 - The relationship between the image data and the dots to be printed is described in Figure 3.11.3.
 - When 8-dot bit image is selected:



3.11.3

- When 24-dot bit image is selected:



3.11.3

ESC - n

[Name]	Turn underline mode on/off
[Format]	ASCII ESC - n Hex 1B 2D n Decimal 27 45 n
[Range]	0 n 2, 48 n 50
[Description]	Turns underline mode on or off, based on the following values n:

n	Function
0, 48	Turns off underline mode
1, 49	Turns on underline mode (1 dot thick)
2, 50	Turns on underline mode (2 dots thick)

[Notes]	<p>The printer can underline all characters (including right-side character spacing), but cannot underline the space set by HT.</p> <ul style="list-style-type: none">• The printer cannot underline 90° clockwise rotated characters and white/black inverted characters.• When underline mode is turned off by setting the value of n to 0 or 48, the following data is not underlined, and the underline thickness set before the mode is turned off does not change. The default underline thickness is 1 dot.• Changing the character size does not affect the current underline thickness.• Underline mode can also be turned on or off by using ESC !. Note, however, that the last received command is effective.
[Default]	n = 0
[Reference]	ESC !

ESC 2

[Name]	Select default line spacing
[Format]	ASCII ESC 2 Hex 1B 32 Decimal 27 50
[Description]	Selects 3.75 mm (30x0.125 mm) line spacing.
[Notes]	The line spacing can be set independently in standard mode.
[Reference]	ESC 3

ESC 3 n

[Name]	Set line spacing
[Format]	ASCII ESC 3 n Hex 1B 33 n Decimal 27 51 n
[Range]	0 n 255
[Description]	Sets the line spacing to [n÷0.125 mm].
[Notes]	The line spacing can be set independently in standard mode. <ul style="list-style-type: none">• In standard mode, the vertical motion unit (y) is used.
[Default]	n = 30
[Reference]	ESC 2

ESC ? n

[Name]	Cancel user-defined characters
[Format]	ASCII ESC ? n Hex 1B 3F n Decimal 27 63 n
[Range]	32 n 126
[Description]	Cancels user-defined characters.
[Notes]	This command cancels the patterns defined for the character codes specified by n. After the user-defined characters are canceled, the corresponding patterns for the internal characters are printed. <ul style="list-style-type: none">• This command deletes the pattern defined for the specified code in the font selected by ESC !.• If a user-defined characters have not been defined, the printer ignores this command.
[Reference]	ESC &, ESC %

ESC @

[Name]	Initialize printer
[Format]	ASCII ESC @ Hex 1B 40 Decimal 27 64
[Description]	Clears the data in the print buffer and resets the printer mode to the mode that were in effect when the power was turned on.
[Notes]	The DIP switch settings are not checked again. <ul style="list-style-type: none">• The data in the receive buffer is not cleared.

ESC D n1...nk NUL

[Name]	Set horizontal tab positions
[Format]	ASCII ESC D n1...nk NUL Hex 1B 44 n1...nk 00 Decimal 27 68 n1...nk 0
[Range]	1 n 255 0 k 32
[Description]	Sets horizontal tab positions. <ul style="list-style-type: none">• n specifies the column number for setting a horizontal tab position from the beginning of the line.• k indicates the total number of horizontal tab positions to be set. [Notes] The horizontal tab position is stored as a value of [character width × n]measured from the beginning of the line. The character width includes the right-side character spacing, and double-width characters are set with twice the width of normal characters.• This command cancels the previous horizontal tab settings.• When setting n = 8, the print position is moved to column 9 by sending HT.• Up to 32 tab positions (k = 32) can be set. Data exceeding 32 tab positions is processed as normal data.• Transmit [n]k in ascending order and place a NUL code 0 at the end. When [n]k is less than or equal to the preceding value [n]k-1, tab setting is finished and the following data is processed as normal data.• ESC D NUL cancels all horizontal tab positions.• The previously specified horizontal tab positions do not change, even if the character width changes.• The character width is memorized for each standard mode.
[Default]	The default tab positions are at intervals of 8 characters (columns 9, 17, 25,...) for Font A (12×24).
[Reference]	HT

ESC E n

[Name]	Turn emphasized mode on/off
[Format]	ASCII ESC E n Hex 1B 45 n Decimal 27 69 n
[Range]	0 n 255
[Description]	Turns emphasized mode on or off When the LSB of n is 0, emphasized mode is turned off. When the LSB of n is 1, emphasized mode is turned on.

[Notes]	Only the least significant bit of n is enabled.
	<ul style="list-style-type: none"> • This command and ESC ! turn on and off emphasized mode in the same way. Be careful when this command is used with ESC !.
[Default]	n = 0
[Reference]	ESC !

ESC G n

[Name]	Turn on/off double-strike mode												
[Format]	<table> <tr> <td>ASCII</td> <td>ESC</td> <td>G</td> <td>n</td> </tr> <tr> <td>Hex</td> <td>1B</td> <td>47</td> <td>n</td> </tr> <tr> <td>Decimal</td> <td>27</td> <td>71</td> <td>n</td> </tr> </table>	ASCII	ESC	G	n	Hex	1B	47	n	Decimal	27	71	n
ASCII	ESC	G	n										
Hex	1B	47	n										
Decimal	27	71	n										
[Range]	0 n 255												
[Description]	<p>Turns double-strike mode on or off.</p> <ul style="list-style-type: none"> • When the LSB of n is 0, double-strike mode is turned off. • When the LSB of n is 1, double-strike mode is turned on. 												
[Notes]	<p>Only the lowest bit of n is enabled.</p> <ul style="list-style-type: none"> • Printer output is the same in double-strike mode and in emphasized mode. 												
[Default]	n = 0												
[Reference]	ESC E												

ESC J n

[Name]	Print and feed paper												
[Format]	<table> <tr> <td>ASCII</td> <td>ESC</td> <td>J</td> <td>n</td> </tr> <tr> <td>Hex</td> <td>1B</td> <td>4A</td> <td>n</td> </tr> <tr> <td>Decimal</td> <td>27</td> <td>74</td> <td>n</td> </tr> </table>	ASCII	ESC	J	n	Hex	1B	4A	n	Decimal	27	74	n
ASCII	ESC	J	n										
Hex	1B	4A	n										
Decimal	27	74	n										
[Range]	0 n 255												
[Description]	Prints the data in the print buffer and feeds the paper [nX0.125 mm (0.0049")].												
[Notes]	<p>After printing is completed, this command sets the print starting position to the beginning of the line.</p> <ul style="list-style-type: none"> • The paper feed amount set by this command does not affect the values set by ESC 2 or ESC 3. • In standard mode, the printer uses the vertical motion unit (y). 												

ESC R n

[Name]	Select an international character set												
[Format]	<table> <tr> <td>ASCII</td> <td>ESC</td> <td>R</td> <td>n</td> </tr> <tr> <td>Hex</td> <td>1B</td> <td>52</td> <td>n</td> </tr> <tr> <td>Decimal</td> <td>27</td> <td>82</td> <td>n</td> </tr> </table>	ASCII	ESC	R	n	Hex	1B	52	n	Decimal	27	82	n
ASCII	ESC	R	n										
Hex	1B	52	n										
Decimal	27	82	n										
[Range]	0 n 15												

[Description] Selects an international character set *n* as follows::

n	Character set
0	U.S.A
1	France
2	Germany
3	U.K
4	Denmark I
5	Sweden
6	Italy
7	Spain I
8	Japan
9	Norway
10	Denmark II
11	Spain II
12	Latin America
13	Korea
14	Slovenia/Croatia
15	China

[Default] n = 0

ESC M n

[Name] Select character font

[Format] ASCII ESC M n
 Hex 1B 4D n
 Decimal 27 77 n

[Range] n

[Description] Selects the character font.

n	Function
0	Character Font A (12×24) selected.
1	Character Font B (9×17) selected.

[Notes] **ESC 2** can also select character font types. However the setting of the last received command is effective.

[Reference] **ESC ! ,ESC @**

ESC V n

[Name] Turn 90 clockwise rotation mode
on/off [Format] ASCII ESC V n
Hex 1B 56 n
Decimal 27 86 n
[Range] 0 n 1, 48 n 49
[Description] Turns 90 clockwise rotation mode
on/off n is used as follows:

n	Function
0,48	Turns off 90° clockwise rotation mode
1,49	Turns on 90 clockwise rotation mode

[Notes] This command affects printing in standard mode. However, the setting is always effective.

- When underline mode is turned on, the printer does not underline 90° clockwise-rotated characters.
- Double-width and double-height commands in 90 rotation mode enlarge characters in the opposite directions from double-height and double-width commands in normal mode.

[Default] n = 0 [Reference]
ESC I, ESC

ESC a n

[Name] Select justification
[Format] ASCII ESC a n
Hex 1B 61 n
Decimal 27 97 n
[Range] 0 n 2, 48 n 50
[Description] Aligns all the data in one line to the specified position.
n selects the justification as follows:

n	Justification
0,48	Left justification
1, 49	Centering
2, 50	Right justification

[Notes] The command is enabled only when processed at the beginning of the line in standard mode.

- This command executes justification in the printing area.
- This command justifies the space area according to **HT, ESC \$**.

[Default] n = 0

[Example]

Left justification

ABC
ABCD
ABCDE

Centering

ABC
ABCD
ABCDE

Right justification

ABC
ABCD
ABCDE

ESC d n

[Name] Print and feed n lines

[Format] ASCII ESC d n
Hex 1B 64 n
Decimal 27 100 n

[Range] 0 n 255

[Description] Prints the data in the print buffer and feeds n lines.

[Notes] This command sets the print starting position to the beginning of the line.

- This command does not affect the line spacing set by **ESC 2** or **ESC 3**.
- The maximum paper feed amount is 1016 mm (40 inches). If the paper feed amount (n line spacing) of more than 1016 mm (40 inches) is specified, the printer feeds the paper only 1016 mm (40 inches).

[Reference] **ESC 2, ESC 3**

ESC t n

[Name] Select character code table

[Format] ASCII ESC t n
Hex 1B 74 n
Decimal 27 116 n

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

[Description] Selects page n from the character code table.

N	Code Page	N	Code Page
0	CP437 [U.S.A., Standard Europe]	26	Thai
1	Katakana	27	CP720[Arabic]
2	CP850 [Multilingual]	28	CP855
3	CP860 [Portuguese]	29	CP857[Turkish]
4	CP863 [Canadian-French]	30	WCP1250[Central Europe]
5	CP865 [Nordic]	31	CP775
6	WCP1251 [Cyrillic]	32	WCP1254[Turkish]
7	CP866 Cyrillic #2	33	WCP1255[Hebrew]
8	MIK[Cyrillic/Bulgarian]	34	WCP1256[Arabic]
9	CP755 [East Europe, Latvian 2]	35	WCP1258[Vietnam]
10	Iran	36	ISO-8859-2[Latin 2]

11	reserve	37	ISO-8859-3[Latin 3]
12	reserve	38	ISO-8859-4[Baltic]
13	reserve	39	ISO-8859-5[Cyrillic]
14	reserve	40	ISO-8859-6[Arabic]
15	CP862 [Hebrew]	41	ISO-8859-7[Greek]
16	WCP1252 Latin I	42	ISO-8859-8[Hebrew]
17	WCP1253 [Greek]	43	ISO-8859-9[Turkish]
18	CP852 [Latina 2]	44	ISO-8859-15 [Latin 3]
19	CP858 Multilingual Latin I+Euro)	45	Thai2
20	Iran II	46	CP856
21	Latvian	47	Cp874

22	CP864 [Arabic]
23	ISO-8859-1 [West Europe]
24	CP737 [Greek]
25	WCP1257 [Baltic]

[Default] n = 0

[Reference] Character Code Tables

ESC { n

[Name] Turns on/off upside-down printing mode

[Format] ASCII ESC { n
Hex 1B 7B n
Decimal 27 123 n

[Range] 0 n 255

[Description] Turns upside-down printing mode on or off.

- When the LSB of n is 0, upside-down printing mode is turned off.
- When the LSB of n is 1, upside-down printing mode is turned on.

[Notes] Only the lowest bit of n is valid.

- This command is enabled only when processed at the beginning of a line in standard mode.
- In upside-down printing mode, the printer rotates the line to be printed by 180° and then prints it.

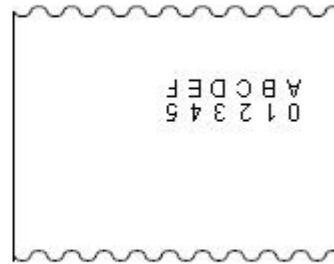
[Default] n = 0

[Example]

When upside-down printing mode is off.



When upside-down printing mode is on.



Paper feed direction

FS p n m

[Name] Print NV bit image

[Format] ASCII FS p n m
Hex 1C 70 n m
Decimal 28 112 n m

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

[Description] Prints NV bit image n using the mode specified by m.

m	Mode	Vertical Dot Density	Horizontal Dot Density
0, 48	Normal	203.2 dpi	203.2 dpi
1, 49	Double-width	203.2 dpi	101.6 dpi
2, 50	Double-height	101.6 dpi	203.2 dpi
3, 51	Quadruple	101.6 dpi	101.6 dpi

- n is the number of the NV bit image (defined using the **FS q** command).
 - m specifies the bit image mode.
- [Detail] NV bit image is a bit image defined in non-volatile memory by **FS q** and printed by **FS p**.
- This command is not effective when the specified NV bit image has not been defined.
 - In standard mode, this command is effective only when there is no data in the print buffer.
 - This command is not affected by print modes (emphasized, underline, character size, white/black reverse printing, or 90° rotated characters, etc.), except upside-down printing mode.
 - If the downloaded bit-image to be printed exceeds one line, the excess data is not printed.
 - This command feeds dots (for the height n of the NV bit image) in normal and double-width modes, and (for the height n/2 of the NV bit image) in double height and quadruple modes, regardless of

the line spacing specified by **ESC 2** or **ESC 3**.

- After printing the bit image, this command sets the print position to the beginning of the line and processes the data that follows as normal data.

[References] **ESC** , **FS q**, **GS /**

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

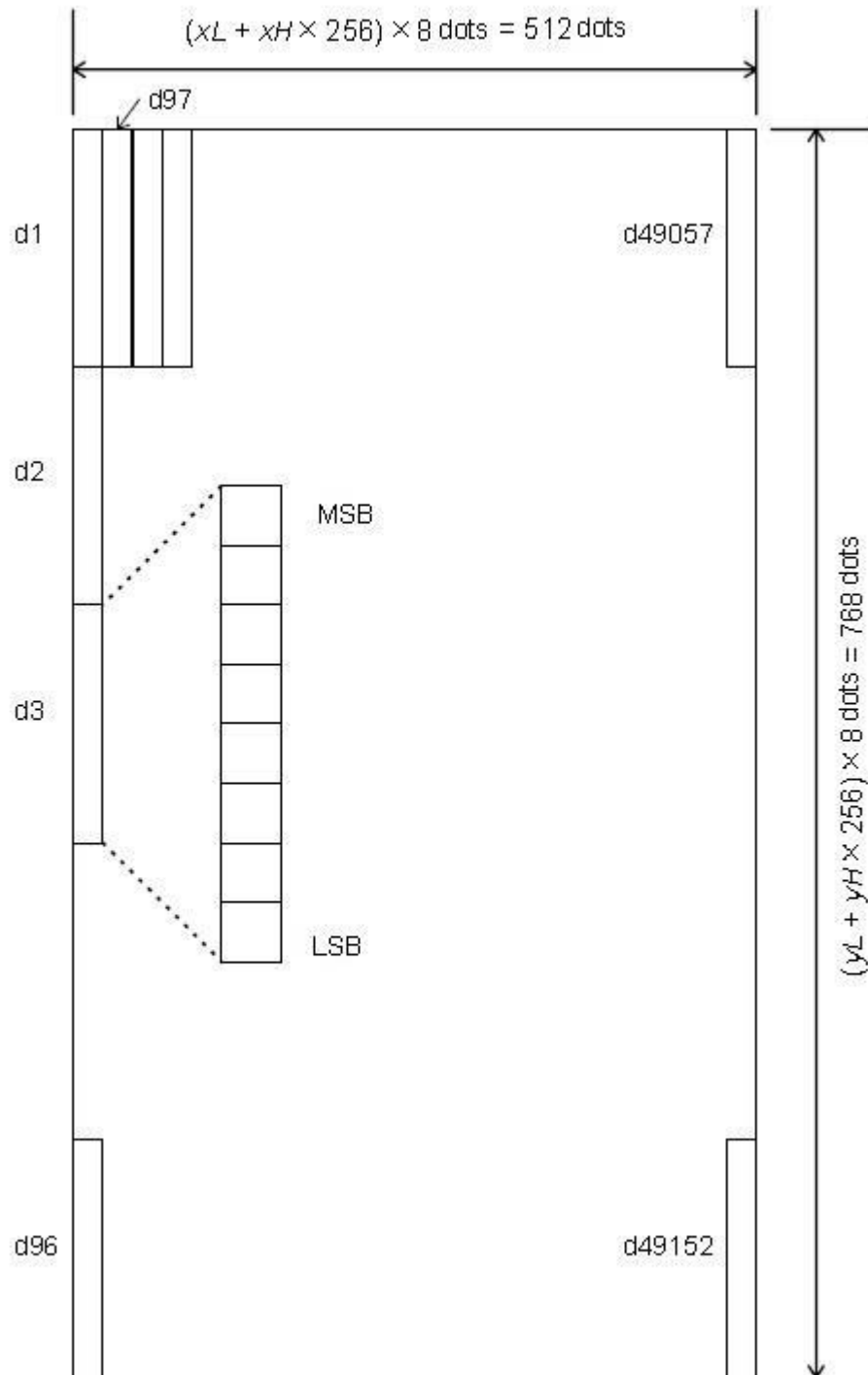
[Name]	Define NV bit image
[Format]	<p>ASCII FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n</p> <p>Hex 1C 71 n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n</p> <p>Decimal 28 113 n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n</p>
[Range]	<p>1 n 255</p> <p>0 xL 255</p> <p>0 xH 3 (when 1 (xL xH 256) 1023</p> <p>0 yL 255</p> <p>0 yL 1 (when 1 (yL yH 256) 288</p> <p>0 d 255</p> <p>k = (xL xH 256) (yL yH 256) 8 Total defined data area = 192Kbytes</p>
[Description]	<p>Define the NV bit image specified by n.</p> <ul style="list-style-type: none"> • n specifies the number of the defined NV bit image. • xL, xH specifies (xL xH 256) 8 dots in the horizontal direction for the NV bit image you are defining. • yL, yH specifies (yL yH 256) 8 dots in the vertical direction for the NV bit image you are defining.
[Notes]	<p>Frequent write command executions may damage the NV memory. Therefore, it is recommended to write the NV memory 10 times or less a day.</p> <ul style="list-style-type: none"> • The printer performs a hardware reset after the procedure to place the image into the NV memory. Therefore, user-defined characters, downloaded bit images should be defined only after completing this command. The printer clears the receive and print buffers and resets the mode to the mode that was in effect at power on. (this version is not support hardware reset) • This command cancels all NV bit images that have already been defined by this command. • From the beginning of the processing of this command till the finish of hardware reset, mechanical operations (including initializing the

position of the print head when the cover is open, paper feeding using the FEED button, etc.) cannot be performed.

- During processing of this command, the printer is BUSY when writing data to the user NV memory and stops receiving data. Therefore it is prohibited to transmit the data, including real-time commands, during the execution of this command.
- NV bit image is a bit image defined in non-volatile memory by **FS q** and printed by **FS p**.
- In standard mode, this command is effective only when processed at the beginning of the line.
- This command is effective when 7 bytes <FS yH> of the command are processed normally.
- When the amount of data exceeds the capacity left in the range defined by xL, xH, yL, yH, the printer processes xL, xH, yL, yH out of the defined range.
- In the first group of NV bit images, when any of the parameters xL, xH, yL, yH is out of the definition range, this command is disabled.
- In groups of NV bit images other than the first one, when the printer encounters xL, xH, yL, yH out of the defined range, it stops processing this command and starts writing into the NV images. At this time, NV bit images that haven't been defined are disabled (undefined), but any NV bit images before that are enabled.
- The d indicates the definition data. In data (d) a 1 bit specifies a dot to be printed and a 0 bit specifies a dot not to be printed.
- This command defines n as the number of a NV bit image. Numbers rise in order from NV bit image 01H. Therefore, the first data group [xL xH yL yH d1...dk] is NV bit image 01H, and the last data group [xL xH yL yH d1...dk] is NV bit image n. The total agrees with the number of NV bit images specified by the command **FS p**.
- The definition data for an NV bit image consists of [xL xH yL yH d1...dk]. Therefore, when only one NV bit image is defined n=1, the printer processes a data group [xL xH yL yH d1...dk] once. The printer uses $([data: (xL \rightarrow 256) \times (yL \rightarrow 256) \rightarrow 8] + [header :4])$ bytes of NV memory.
- The definition area in this printer is a maximum of 192K bytes. This command can define several NV bit images, but cannot define bit image data whose total capacity [bit image data header] exceeds 192K bytes.
- The printer does not transmit ASB status or perform status detection during processing of this command even when ASB is specified.
- Once an NV bit image is defined, it is not erased by performing **ESC @**, reset, and power off.
- This command performs only definition of an NV bit image and does not perform printing. Printing of the NV bit image is performed by the **FS p** command.

[Reference] **FS p**

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



GS ! n

[Name] Select character size
 [Format] ASCII GS ! n
 Hex 1D 21 n
 Decimal 29 33 n
 [Range] 0 n 255

(1 £ Enlargement in vertical direction £ 8, 1 £ Enlargement in horizontal direction £ 8)

[Description] Selects the character height using bits 0 to 2 and selects the character width using bits 4 to 7, as follows:

Bit	Off/On	Hex	Decimal	Function
0				Character height selection. See Table 2.
1				
2				
3				
4				Character width selection. See Table 1.
5				
6				
7				

Table 1
Character Width Selection

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

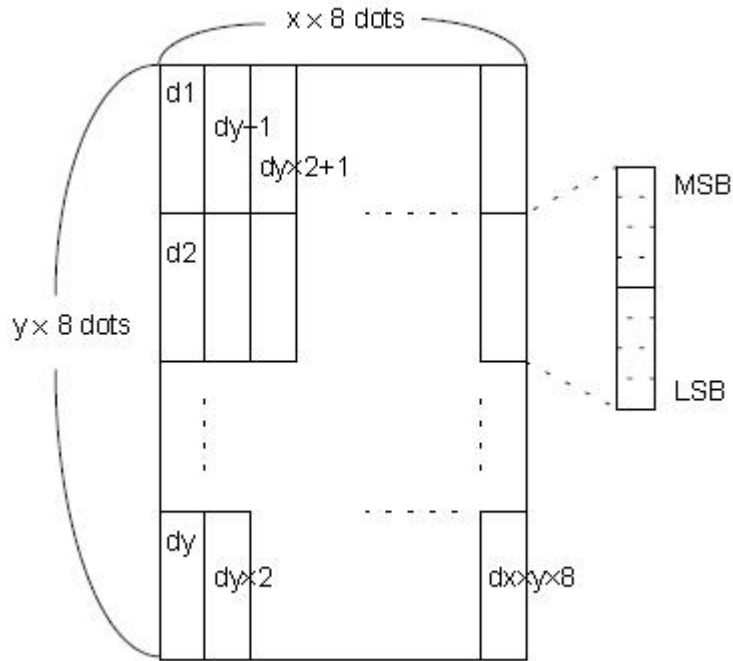
Table 2
Character Height

Hex	Decimal	Width
00	0	1(normal)
01	1	2(double-height)
02	2	3
03	3	4
04	4	5
05	5	6
06	6	7
07	7	8

[Notes]	<p>This command is effective for all characters (alphanumeric and Kanji), except for HRI characters.</p> <ul style="list-style-type: none"> • If n is outside the defined range, this command is ignored. • In standard mode, the vertical direction is the paper feed direction, and the horizontal direction is perpendicular to the paper feed direction. However, when character orientation changes in 90° clockwise-rotation mode, the relationship between vertical and horizontal directions is reversed. • When characters are enlarged with different sizes on one line, all the characters on the line are aligned at the baseline. • The ESC ! command can also turn double-width and double-height modes on or off. However, the setting of the last received command is effective.
[Default]	n = 0
[Reference]	ESC !

GS x y d1...d(x y 8)

[Name]	Define downloaded bit image
[Format]	<p>ASCII GS x y d1...d(xYyX8)</p> <p>Hex 1D 2A x y d1...d(xXyX8)</p> <p>Decimal 29 42 x y d1 ...d(xXyX8)</p>
[Range]	<p>1 x 255</p> <p>1 £ y £ 48 (where xXy £ 1536)</p> <p>0 d 255</p>
[Description]	<p>Defines a downloaded bit image using the number of dots specified by x and y.</p> <ul style="list-style-type: none"> • x specifies the number of dots in the horizontal direction. • y specifies the number of dots in the vertical direction.
[Notes]	<ul style="list-style-type: none"> • The number of dots in the horizontal direction is xX8; in the vertical direction it is yX8. • If xYy is out of the specified range, this command is disabled. • The d indicates bit-image data. Data (d) specifies a bit printed as 1 and not printed as 0. • The downloaded bit image definition is cleared when: <ol style="list-style-type: none"> 1) ESC @ is executed. 2) ESC & is executed. 3) Printer is reset or the power is turned off. • The following figure shows the relationship between the downloaded bit image and the printed data.



[Reference] **GS /**

GS / m

[Name] Print downloaded bit image

[Format] ASCII GS / m

Hex 1D 2F m

Decimal 29 47 m

[Range] 0 m 3, 48 m 51

[Description] Prints a downloaded bit image using the mode specified by m.
m selects a mode from the table below:

m	Mode	Vertical Dot Density	Horizontal Dot Density
0, 48	Normal	203.2 dpi	203.2 dpi
1, 49	Double-width	203.2 dpi	101.6 dpi
2, 50	Double-height	101.6 dpi	203.2 dpi
3, 51	Quadruple	101.6 dpi	101.6 dpi

[Notes] This command is ignored if a downloaded bit image has not been defined.

- In standard mode, this command is effective only when there is no data in the print buffer.
- This command has no effect in the print modes (emphasized, double-strike, underline, character size, or white/black reverse printing), except for upside down printing mode.
- If the downloaded bit-image to be printed exceeds the printable area, the excess data is not printed.

[Reference] **GS**

GS B n

[Name]	Turn white/black reverse printing mode			
[Format]	ASCII	GS	B	n
	Hex	1D	42	n
	Decimal	29	66	n
[Range]	0	n	255	
[Description]	Turns white/black reverse print mode on or off. <ul style="list-style-type: none">• When the LSB of n is 0, white/black reverse mode is turned off.• When the LSB of n is 1, white/black reverse mode is turned on.			
[Notes]	Only the lowest bit of n is valid. <ul style="list-style-type: none">• This command is available for built-in characters and user-defined characters.• When white/black reverse printing mode is on, it also applies to character spacing set by ESC SP.• This command does not affect bit images, user-defined bit images, bar codes, HRI characters, and spacing skipped by HT, ESC \$.• This command does not affect the space between lines.• White/black reverse mode has a higher priority than underline mode. Even if underline mode is on, it is disabled (but not canceled) when white/black reverse mode is selected.			
[Default]	n = 0			

GS f n

[Name]	Select font for Human Readable Interpretation (HRI) characters									
[Format]	ASCII	GS	f	n						
	Hex	1D	66	n						
	Decimal	29	102	n						
[Range]	n	1, 48, 49								
[Description]	Selects a font for the HRI characters used when printing a bar code. n selects a font from the following table:									
	<table border="1"><thead><tr><th>n</th><th>Font</th></tr></thead><tbody><tr><td>0,48</td><td>Font A (12 × 24)</td></tr><tr><td>1,49</td><td>Font B (9 × 17)</td></tr></tbody></table>				n	Font	0,48	Font A (12 × 24)	1,49	Font B (9 × 17)
n	Font									
0,48	Font A (12 × 24)									
1,49	Font B (9 × 17)									
[Notes]	HRI indicates Human Readable Interpretation. <ul style="list-style-type: none">• HRI characters are printed at the position specified by GS H.									
[Default]	n = 0									
[Reference]	GS H , GS k									

GS H n

[Name]	Select printing position for HRI characters			
[Format]	ASCII	GS	H	n
	Hex	1D	48	n
	Decimal	29	72	n
[Range]	0	n	3, 48	n 51
[Description]	Selects the printing position of HRI characters when printing a bar code. n selects the printing position as follows:			

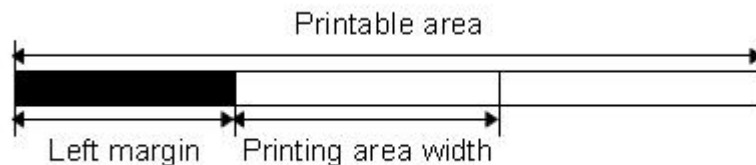
n	Printing position
0, 48	Not printed
1, 49	Above the bar code
2, 50	Below the bar code
3, 51	Both above and below the bar code

- HRI indicates Human Readable Interpretation.

[Notes]	HRI characters are printed using the font specified by
GS f [Default]	n = 0
[Reference]	GS f , GS k

GS L nL nH

[Name]	Set left margin			
[Format]	ASCII	GS	L	nL nH
	Hex	1D	4C	nL nH
	Decimal	29	76	nL nH
[Range]	0	nL	255	
	0	nH	255	
[Description]	Sets the left margin using nL and nH.			
	• The left margin is set to $[(nL + nH \times 256) \times 0.125 \text{ mm}]$.			



[Notes]	This command is effective only when processed at the beginning of the line in standard mode.
	• If the setting exceeds the printable area, the maximum value of the printable area is used.
[Default]	nL = 0, nH = 0

GS h n

[Name]	Select bar code height			
[Format]	ASCII	GS	h	n
	Hex	1D	68	n
	Decimal	29	104	n
[Range]	1	n	255	
[Description]	Selects the height of the bar code. n specifies the number of dots in the vertical direction.			
[Default]	n = 162			
[Reference]	GS k			

① GS k m d1...dk NUL ② GS k m n d1...dn

[Name]	Print bar code					
[Format]	① ASCII	GS	k	m	d1...dk	NUL
	Hex	1D	6B	m	d1...dk	00
	Decimal	29	107	m	d1...dk	0
	② ASCII	GS	k	m	n	d1...dn
	Hex	1D	6B	m	n	d1...dn
	Decimal	29	107	m	n	d1...dn
[Range]	① 0	m	6 (k and d depend on the bar code system used)			
	② 65	£m	73 (n and d depend on the bar code system used)			
[Description]	Selects a bar code system and prints the bar code. m selects a bar code system as follows:					

m	Bar Code System	Number of Characters	Remarks
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,
	5	ITF	1 k (even number) 48 d 57
②	6	CODABAR	1 k' 48 d 57, 65 d 68, 36,
	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,

70	ITF	1	n	255 (even number)	48	d	57
71	CODABAR	1	n	255	48	d	57, 65 68, 36,
72	CODE93	1	n	255	0	d	127
73	CODE128	2	n	255	0	d	127

[Notes for ①]

- This command ends with a NUL code.
- When the bar code system used is UPC-A or UPC-E, the printer prints the bar code data after receiving 12 bytes of bar code data and processes the following data as normal data.
- When the bar code system used is JAN13 (EAN13), the printer prints the bar code after receiving 13 bytes of bar code data and processes the following data as normal data.
- When the bar code system used is JAN8 (EAN8), the printer prints the bar code after receiving 8 bytes of bar code data and processes the following data as normal data.
- The number of data for the ITF bar code must be even numbers. When an odd number of bytes of data is input, the printer ignores the last received data.

[Notes for ②]

- n indicates the number of bar code data bytes, and the printer processes n bytes from the next character data as bar code data.
- If n is outside the specified range, the printer stops command processing and processes the following data as normal data.

[Notes in standard mode]

- If d is outside the specified range, the printer only feeds paper and processes the following data as normal data.

- If the horizontal size exceeds printing area, the printer only feeds the paper.
- This command feeds as much paper as is required to print the bar code, regardless of the line spacing specified by **ESC 2** or **ESC 3**.
- This command is enabled only when no data exists in the print buffer. When data exists in the print buffer, the printer processes the data following m as normal data.
- After printing the bar code, this command sets the print position to the beginning of the line.
- This command is not affected by print modes (emphasized, double-strike, underline, character size, white/black reverse printing, or 90° rotated character, etc.), except for upside-down printing

Control character mode.			HRI character	Control character			HRI character
ASCII	Hex	Decimal		ASCII	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

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



When CODE128 (m = 73) is used:

- When using CODE128 in this printer, take the following points into account for data transmission:
 - ① The top of the bar code data string must be the code set selection character (CODE A, CODE B, or CODE C), which selects the first

code set.

- ② Special characters are defined by combining two characters "{" and one character. The ASCII character "{" is defined by transmitting "{" twice consecutively.

Specific character	Transmit data		
	ASCII	Hex	Decimal
SHIFT	{S	7B, 53	123,83
CODE A	{A	7B, 41	123,65
CODE B	{B	7B,42	123,66
CODE C	{C	7B,43	123,67
FNC1	{1	7B,31	123,49
FNC2	{2	7B,32	123,50
FNC3	{3	7B,33	123,51
FNC4	{4	7B,34	123,52
"{"	{{	7B,7B	123,123

[Example] Example data for printing "No. 123456"

In this example, the printer first prints "No." using CODE B, then prints the following numbers using CODE C.

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



- If the top of the bar code data is not the code set selection character, the printer stops command processing and processes the following data as normal data.
- If the combination of "{" and the following character does not apply any special character, the printer stops command processing and processes the following data as normal data.
- If the printer receives characters that cannot be used in the special code set, the printer stops command processing and processes the following data as normal data.
- The printer does not print HRI characters that correspond to the shift characters or code set selection characters.
- HRI character for the function character is space.
- HRI characters for the control character (<00>H to <1F>H and <7F>H) are space.

<Others> Be sure to keep spaces on both right and left sides of a bar code. (Spaces are different depending on the types of the bar code.)

[Reference] **GS H, GS h, GS w**

① GS k m v r d1...dk NUL ② GS k m v r nL nH d1...dn

[Name]	Print QR CODE
[Format]	①m=32 ASCII GS k m v r d1...dk NUL Hex 1D 6B mv r d1...dk 00 Decimal 29 107 m v r d1...dk 0 ②m=97 ASCII GS k m v r nL nH d1...dnHex 1D 6B mv r nL nH d1...dn Decimal 29 107 m v r nL nH d1...dn
[Range]	m=32 or 97 1 £v 17, 1 r 4
[Description]	v is DQCODE version number r=1 Error correction level is L r=2 Error correction level is M r=3 Error correction level is Q r=4 Error correction level is H nL, nH is the low and high of integer N,N is the printing bar code data length, Unit is bytes. When using the first kind of format, the command to 00 at the end, d1 ... dk is the bar code data. When using the second kind of format, printer to set N characters (d1...dn) behind nH as Bar code data.
[Note]	•Because the paper width is limited, the version number of QR CODE maximum is 20.

GS x n

[Name]	Set barcode printing left space
[Format]	ASCII GS x n Hex 1D 78 n Decimal 29 120 n
[Description]	The print bar code starting positions is: 0à255.

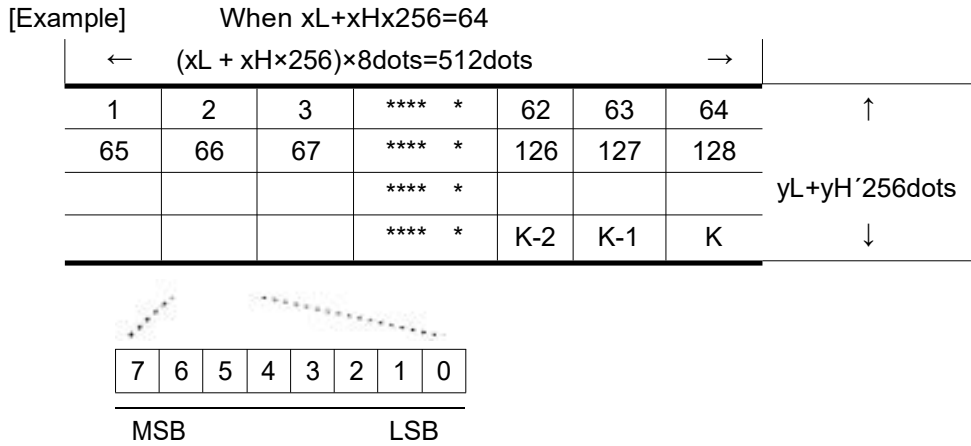
GS v 0 m xL xH yL yH d1....dk

[Name]	Print raster bit image									
[Format]	ASCII	GS	v	0	m	xL	xH	yL	yH	d1...dk
	Hex	1D	76	30	m	xL	xH	yL	yH	d1...dk
	Decimal	29	118	48	m	xL	xH	yL	yH	d1...dk
[Range]	0 £m	3, 48	£m	51						
	0	xL	255							
	0	xH	255 where 1	(xL + xH-256)				48		
	0	yL	255							
	0 £ yH £ 8 where 1 £	(yL + yH-256)	£ 4095							
	0	d	£255							
	k =	(xL + xH-256)	-(yL + yH-256)	(k ≠ 0)						
[Description]	Selects raster bit-image mode. The value of m selects the mode, as follows:									

m	Mode	Vertical Dot Density	Horizontal Dot Density
0, 48	Normal	203.2 dpi	203.2 dpi
1, 49	Double-width	203.2 dpi	101.6 dpi
2, 50	Double-height	101.6 dpi	203.2 dpi
3, 51	Quadruple	101.6 dpi	101.6 dpi

- xL, xH, select the number of data bytes (xL+xH×256) in the horizontal direction for the bit image.
- yL, yH, select the number of data bits (yL+yH×256) in the vertical direction for the bit image.

- [Notes]
- In standard mode, this command is effective only when there is no data in the print buffer.
 - This command is not affected by print modes (character size, emphasized, double-strike, upside-down, underline, white/black reverse printing, etc.) for raster bit image.
 - Data outside the printing area is read in and discarded on a dot-by-dot basis.
 - The position at which subsequent characters are to be printed for raster bit image is specified by **HT** (Horizontal Tab), **ESC \$** (Set absolute print position), and **GS L** (Set left margin). If the position at which subsequent characters are to be printed is a multiple of 8.
 - The **ESC a** (Select justification) setting is also effective on raster bit images.
 - d indicates the bit-image data. Setting a bit to 1 prints a dot and setting it to 0 does not print a dot.



GS w n

[Name] Set bar code width

[Format] ASCII GS w n
 Hex 1D 77 n
 Decimal 29 119 n

[Range] 2 n 6

[Description] Sets the horizontal size of the bar code.
 n specifies the bar code width as follows:

n	Module Width (mm) for Multi-level Bar Code	Binary-level Bar Code	
		Thin Element Width (mm)	Thick Element 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

- Multi-level bar codes are as follows:
UPC-A, UPC-E, JAN13 (EAN13), JAN8 (EAN8), CODE93, CODE128
- Binary-level bar codes are as follows:
CODE39, ITF, CODABAR

[Default] n = 3

[Reference] **GS k**

GS ‘

[Name] Print line section on a horizontal

[Format] ASCII GS „ n x1sL x1sH x1eL x1eH ... xnsL xnsH
 xneL xneH
 Hex 1D 27 n x1sL x1sH x1eL x1eH ... xnsL xnsH
 xneL xneH
 Decimal 29 39 n x1sL x1sH x1eL x1eH ... xnsL xnsH



xneL xneH

- [Range] $0 \leq n \leq 8$ [Description] Print amplification figure as shown below: The level of each curve segment by many (points can be regarded as segments of length 1) composition. The instructions for printing a line of n horizontal line segments, continuous use of the command the user can print out the required segments.
- xksL : The K line starting point is the low order of horizontal coordinate;
- xksH : The K line starting point is the high order of horizontal coordinate;
- xkeL : The K line end point is the low order of horizontal coordinate; xkeH : The K line end point is the high order of horizontal coordinate; Coordinates starting from the most left of printing area. The minimum is 0, maximum is 383, that $xkeL + xkeH * 256$ maximum is 383.
- The data of line does not need to according to arrange in sequential order;
- [Note] • When printing a point, $xkeL=xksL$, $xkeH=xksH$.

FS ! n

[Name] Set print mode(s) for Kanji characters

[Format] ASCII FS ! n
 Hex 1C 21 n
 Decimal 28 33 n

[Range] 0 n 255

[Description] Sets the print mode for Kanji characters, using n as follows:

Bit	Off/On	Hex	Decimal	Function
0	—	—	—	Undefined.
1	—	—	—	Undefined.
2	Off	00	0	Double-width mode is OFF.
	On	04	4	Double-width mode is ON.
3	Off	00	0	Double-height mode is OFF.
	On	08		Double-height mode is ON.
4	—	—	—	Undefined.
5	—	—	—	Undefined.
6	—	—	—	Undefined.
7	Off	00	0	Underline mode is OFF.
	On	80	128	Underline mode is ON.

- [Notes] When both double-width and double-height modes are set (including right - and left-side character spacing), quadruple-size characters are printed.
- The printer can underline all characters (including right- and left-side character spacing), but cannot underline the space set by HT and 90° clockwise-rotated characters.
 - When some of the characters in a line are double or more height, all

the characters on the line are aligned at the baseline.

- It is possible to emphasize the Kanji character using **GS !**; the setting of the last received command is effective.

[Default] n = 0
[Reference] **GS !**

FS &

[Name] Select Kanji character mode

[Format] ASCII FS &
Hex 1C 26
Decimal 28 38

[Description] Selects Kanji character mode.

[Notes] For Kanji model:

- When the Kanji character mode is selected, the printer processes all Kanji code as two bytes each.
- Kanji codes are processed in the order of the first byte and second byte.
- Kanji character mode is not selected when the power is turned on.

[Reference] **FS .**

FS .

[Name] Cancel Kanji character mode

[Format] ASCII FS .
Hex 1C 2E
Decimal 28 46

[Description] Cancels Kanji character mode.

[Notes] For Kanji model:

- When the Kanji character mode is not selected, all character codes are processed one byte at a time as ASCII code.
- Kanji character mode is not selected when the power is turned on.

[Reference] **FS &**

ESC = n

[Name] Set peripheral device [Format]

ASCII ESC = n
 Hex 1b 3d n
 Decimal 27 61 n

[Description] Set peripheral device:

Bit	Off/On	Hex	Decimal	Function
0	Off	00	0	Printer offline, not receive print data.
	On	01	1	Printer online, receive print data.
1-7	-	-	-	Undefined.

FS 2 c1 c2 d1...dk

[Name] Define user-defined Kanji characters

[Format] ASCII FS 2 c1 c2 d1...dk
 Hex 1C 32 c1 c2 d1...dk
 Decimal 28 50 c1 c2 d1...dk

[Range] c1 and c2 indicate character codes for the defined characters.

Model type	c1	c2
Chinese kanji supporting model	c1 = FEH	A1H c2 FEH

0 d 255

k = 32 (slip), k = 72 (paper roll)

[Description] Defines user-defined Kanji characters for the character codes specified by c1 and c2.

[Notes] c1 and c2 indicate character codes for the defined characters. c1 specifies for the first byte, and c2 for the second byte.

- d indicates the dot data. Set a corresponding bit to 1 to print a dot or to 0 to not print a dot.
- The user-defined Kanji characters is printed on the selected paper set by the **ESC c 1** command.

[Default] All spaces.

[Reference] **ESC c 1**

ESC c 5 n(for buttons)

[Name] Enable/disable panel buttons

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

[Range] 0 n 255

[Description] Enables or disables the panel buttons.

- When the LSB of n is 1, the panel buttons are enabled.



- When the LSB of n is 0, the panel buttons are disabled.

[Default] n = 0

DC2 T

[Name] Printing test page
 [Format] ASCII DC2 T
 Hex 12 54
 Decimal 18 94
 [Description] Printing test page

GS (k pL pH cn fn n1 n2 (fn=65)

[Name] QR mode set
 [Format] ASCII GS (k pL pH cn fn n1 n2
 Hex 1D 28 6b pL pH cn fn n1 n2
 Decimal 29 40 107 pL pH cn fn n1 n2
 [Range] pL=4, pH=0
 cn=49 fn=65
 n1=49,50
 n2=0
 [Description] Set QR code mode by n1.

n1	Function
49	Mode 1
50	Mode 2

GS (k pL pH cn fn n (fn=67)

[Name] Set width
 [Format] ASCII GS (k pL pH cn fn n
 Hex 1D 28 6b pL pH cn fn n
 Decimal 29 40 107 pL pH cn fn n
 [Range] pL=3, pH=0
 cn=49 fn=67
 0≠n≠16
 [Description] Set the QR code graphics module type to [n * n points]
 [Default] n = 3

GS (k pL pH cn fn n (fn=69)

[Name] Set the QR code correction level error
 [Format] ASCII GS (k pL pH cn fn n
 Hex 1D 28 6b pL pH cn fn n
 Decimal 29 40 107 pL pH cn fn n
 [Range] pL=3, pH=0
 cn=49 fn=69
 48≠n≠51
 [Default] n = 48
 [Description] Set the QR code correction level error.

n	Function	Reference: restore probably represent (%)
48	correction level error L	7
49	correction level error m	15
50	correction level error q	25
51	correction level error h	30

GS (k pL pH cn fn m d1 ... dk (fn=80)

[Name] Store and receive QR code data in 2D barcode area
 [Default] n = 48
 [Format] ASCII GS (k pL pH cn fn m d1...dk
 Hex 1D 28 6b pL pH cn fn m d1...dk
 Decimal 29 40 107 pL pH cn fn m d1...dk
 [Range] $4 \leq (pL + pH - 256) \leq (0 \leq pL \leq 255, 0 \leq pH \leq 28)$
 cn=49
 fn=80
 m=48
 $0 \leq d \leq 255$
 $k = (pL + pH - 256) - 3$
 [Default] n = 48
 [Description] Store QR code data in 2D barcode area.
 The bytes $(pL + pH - 256) - 3$ will be handled as graphic data after m(d1...dk).

GS (k pL pH cn fn m (fn=81)

[Name] Receive and print PDF417 data in 2D barcode area.
 [Default] n = 48
 [Format] ASCII GS (k pL pH cn fn m
 Hex 1D 28 6b pL pH cn fn m
 Decimal 29 40 107 pL pH cn fn m

[Range] pL=3, pH=0
 cn=49
 fn=81
 m=48

[Description] Receive and print PDF417 data in 2D barcode area. (The spacing upper and lower, left and right from the QR code graphics is specified in the specification.)

GS (k pL pH cn fn m (fn=82)

[Name] Transfer QR code data type in 2D barcode area.
 [Default] n = 48
 [Format] ASCII GS (k pL pH cn fn m
 Hex 1D 28 6b pL pH cn fn m
 Decimal 29 40 107 pL pH cn fn m

[Range] pL=3, pH=0
 cn=49
 fn=82
 m=48

[Description] Transfer QR code data type in 2D barcode area.

The following is the basic type of graphic type information:

Send data	Hex	Decimal	Data type
Header	37H	55	1byte
Flag	36H	54	1byte
Width	30H-39H	48-57	1-5byte
Separator	1FH	31	1byte
Height	30H-39H	48-57	1-5byte
Separator	1FH	31	1byte
Fixed Value	31H	49	1byte
Separator	1FH	31	1byte
Other Information	30H or 31H	48 or 49	1byte
NUL	00H	0	1byte

Send the width and height of the data:

- Graphic data width and height values is to point to the unit.

Send other information data:

- "Sixteen hexadecimal =30H/ decimal =48" indicates that the data can't be printed.
- "Sixteen hexadecimal =31H/ decimal =49" indicates that the data can't be printed.

[Description] Transfer QR code data type in 2D barcode area.

[Notice] This command does not print QR code pattern.

The user must consider the QR code space that the spacing upper and lower, left and right from the QR code graphics is specified in

the specification.

[QR Example] The QR code test data (Hex type)

1b 40

1d 28 6b 03 00 31 43 03

1b 40

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

The QR code test data (Hex type) 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

Illustration: 1b

40

To initialize the printer

1d 28 6b 03 00 31 43 03

Set the QR code graphic unit module to 3 point x 3 point.

1d 28 6b 03 00 31 45 30

Set the QR code check grade to L.

1d 28 6b 06 00 31 50 30 41 42 43

Send QR code data "ABC"

1b 61 01

Graphics set to the center.

1d 28 6b 03 00 31 52 30

Check the QR code data is normal.

1d 28 6b 03 00 31 51 30

Print QR code.

CODE PAGE

Page0 PC437Page3 CP860 [Portuguese]

Code page 437																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	²	ù	ä	þ	à	Ü	á	â	å	æ	ã	ï	î	ì	°	±
9_	´	Å	ç	ó	õ	ñ	ø	ö	û	ÿ	ú	ç	£	¤	Ps	f
A_	Ý	í	ó	ú	ø	Ñ	ª	º	¿	¬	½	¼	¡	«	»	
B_	†	‡	§		†	‡	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶
C_	L	⊥	⊥	†	†	†	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶
D_	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	■	■	■	⊥	⊥	
E_	α	β	Γ	Π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	ª	≡	≠			÷	≈	©.	.	√	n	²	■		

Page 1 Katakana

一	二	三	四	五	六	七	八	九	十	十一	十二	十三	十四	十五	十六
ト	チ	ツ	ト	□	一	丨	丨	𠃊	𠃊	𠃊	𠃊	𠃊	𠃊	𠃊	𠃊
」	。	丨	」	、	・	ヲ	ア	イ	ウ	エ	オ	ヤ	ユ	ヨ	ツ
一	ア	イ	ウ	エ	オ	カ	キ	ク	ケ	コ	サ	シ	ス	セ	ソ
夕	チ	ツ	テ	ト	ナ	ニ	ヌ	ネ	ノ	ハ	ヒ	フ	ヘ	ホ	マ
ミ	ム	メ	モ	ヤ	ユ	ヨ	ラ	リ	ル	レ	ロ	ワ	ヰ	〃	°
三	卩	卩	卩	▲	▲	▼	▼	♠	♥	♦	♣	●	○	/	\
X	円	年	月	日	時	分	秒	〒	市	区	町	村	人	☎	

Code page 850																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	²	ù	ä	þ	à	Ü	á	â	å	æ	ã	ï	î	ì	°	±
9_	´	Å	ç	ó	õ	ñ	ø	ö	û	ÿ	Ú	È	£	Â	Á	f
A_	á	í	ó	ú	ø	Ñ	ª	º	¿	®	¬	½	¼	ì	«	»
B_	†	‡	§		¡	-	®	¬	©	¶		¶	¶	¢	α	∟
C_	L	⊥	T		-	+	β	-	ℓ	ℓ	⊥	¶	¶	=	¶	α
D_	Æ	À	μ	¶	³		í	î	ï	∟	∟	■	■		ì	⊥
E_	Ó	Ä	Ô	Ò	Ô	Õ	ª	É	Ã	∅	Ù	x	ú	Û	-	'
F_	-	ª		¾	¶	§	÷	,	°	¨	.	¹	³	²	■	

Code page 860																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ç	ù	ä	þ	β	Ü	-	â	å	μ	ã	í	Ô	ì	-	®
9_	´	¬	³	ó	ô	ñ	ø	ö	ï	ÿ	Ú	¢	£	x	ℙ	Ó
A_	Ý	í	ò	÷	ø	Ñ	ª	º	¿	Ò	¬	½	¼	ì	«	»
B_	†	‡	§		¡	‡	¶	¶	¶	¶		¶	¶	¶	¶	∟
C_	L	⊥	T		-	+	¶	¶	ℓ	ℓ	⊥	¶	¶	=	¶	⊥
D_	⊥	¶	¶	ℓ	ℓ	¶	¶	¶	¶	∟	∟	■	■	■	∅	⊥
E_	Ω	Ä	Γ	Π		Σ	ª	σ	Υ	Θ	Ψ	ά	∞	U	É	∩
F_	≡	ª	≡	≠			÷	≈	©	.	.	√	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_	²	ù	ä	þ	®	Ü	µ	â	å	æ	ã	ï	î	–	¬	κ
9_	´	³	µ	ó	¶	ï	ø	ö	■	ô	ú	¢	£	×	Ù	f
A_		´	ó	ú	¨	¸	³	–	î	¬	¬	½	¼	¾	«	»
B_	†	‡	⌘		†	‡		π	¶			¶	¶	¶	¶	¶
C_	L	⊥	T	†	–	†	‡		⊥	¶		¶	¶	=	¶	¶
D_		¶	π	⊥	⊥	F	π		¶	⊥	⊥	⊥	⊥	⊥	⊥	⊥
E_	Ω	Ä	Γ	Π		Σ	ª	σ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	ª	≡	≠		J	÷	≈	©	.	.	√	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_	²	ù	ä	þ	à	Ü	á	â	å	æ	ã	ï	î	ì	°	±
9_	´	Å	ç	ó	õ	ñ	ø	ö	û	ÿ	É	£	Â	Þ	ƒ	
A_	Ý	í	ò	÷	ð	Ñ	µ	º	¾	¬	¨	¼	»	Θ	§	■
B_	†	‡	¶	˘	˘	©	÷	▷	▷	÷	∅	⊥	⊠	⊠	⊠	≈
C_	⊠	⊠	⊠	⊠	˘	⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠
D_	†	⊠	⊠	I	v	÷	//	⊠	⊠	⊠	π	⊠	⊠	⊠	⊠	⊠
E_	Ω	Ä	Γ	Π		Σ	ª	σ	Υ	Θ	Ψ	ά	∞	υ	ε	∩
F_	≡	±	≥	≤		J	÷	≈	°	.	.	√	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_	Ќ	ѐ		А	„	”	“	”	€	“	Љ	<	Њ	Ќ	Ћ	Ў
9_	Џ	“	”	„	•	-	-		™	Љ	>	Њ	Ќ	Ћ	Ў	Џ
A_		Й	Ў	Ј	■	Ω	¥	κ	ω	!	∅	§	”	-	®	İ
B_	°	±	І	і	ґ	а	¶	·	ё	№	Б	«	Ј	У	В	İ
C_	┌	ü	ó	ú	ώ	Ќ	ѐ	∅	Υ	Υ	ÿ	φ	ω	κ	φ	φ
D_	Ϛ	ϛ	Ϝ	ϝ	Ϟ	ϟ	Ϡ	ϡ	Ϣ	ϣ	ϣ	Ϥ	ϥ	Ϧ	ϧ	Ϩ
E_	Χ	χ	Ϭ	ϭ	Ϯ	ϯ	ϰ	ϱ	ϲ	Ј	θ	ε	ε	Ϯ	ρ	σ
F_	М	М	Р	О	С	Э	È	Ë	Ъ	Ґ	Є	Ѕ	І	Ї	Ј	Љ

Page7 pc866 Cyrillic #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_	Ë	è	Є	є	İ	ı	Ÿ	ÿ	°	·	·	√	№	α	■	

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_	Ⓕ	Ⓖ	Ⓣ	Ⓣ	—	†	‖	‖	ℒ	℞	≡	Ⓣ	‖	=	‖	Ⓣ
D_	†	Ⓣ	▒		†	№	§	π	∟	└	Г	■	■	■	⊕	⊥
E_	α	β	Γ	π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	±	≥	≤		└	÷	≈	°	.	.	√	n	²	∇	

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	‖	ℒ	℞	≡	Ⓣ	‖	=	‖	⊥
D_	Š	Ⓣ	č	Č	ℒ	℞	g	ī	ī	└	Г	■	■	ū	Ū	■
E_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
F_	Ē	ē	G	K	K	!	Ł	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_	۰	۱	۲	۳	۴	۵	۶	۷	۸	۹	،	-	?_F	آ	ئ	ء
9_	ا	ا	ب	ب	پ	پ	ت	ت	ث	ث	ج	چ*	چ*_C	ح	ح	د
A_	خ	خ	د	ذ	ر	ز	ژ	س	س	ش	ش	ص	ص	ض	ض	ط
B_	†	‡	▣		†	‡	▣	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
C_	L	⊥	T	†	-	†	‡	▣	⋈	⋈	⋈	⋈	⋈	=	⋈	⋈
D_	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
E_	ظ	ع	ع	ع	ع	غ	غ	غ	غ	ف	ف	ق	ق	ک	ک	گ
F_	گ	ل	لا	لا	م	م	ن	ن	و	ه	ه	ه	ی	ی	ی	

Page15 CP862 [Hebrew]

Code page 862																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	א	ב	ג	ד	ה	ו	ז	ח	ט	י	ך	כ	ל	ם	נ	ן
9_	ג	ס	ע	ף	פ	ץ	צ	ק	ר	ש	ת	ף	£	¤	Ps	f
A_	Ý	í	ò	÷	ø	Ñ	μ	ο	¾	Γ	¨	¼	»	Θ	§	«
B_	†	‡	⊥	⋈	⋈	⊙	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
C_	⊗	⊗	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
D_	†	⋈	⋈	I	√	=	//	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈	⋈
E_	α	β	Γ	π	Σ	ζ	μ	η	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	±	≥	≤		J	÷	≈	°	.	.	√	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_	€		ll	f	”	...	†	‡	^	%	§	<	œ		ž	
9_		‘	’	“	”	•	Ř	ř	~	™	š	>	œ		ž	ÿ
A_		ı	ç	£	■	α	¥	κ	λ	ı	μ	§	¬	Ř	®	—
B_	°	±	²	³	´	à	¶	·	¸	¹	º	»	¼	½	¾	¿
C_	¬	—	®	—	°	±	¿	²	³	´	μ	¶	ı	ı	ı	ı
D_	À	Ñ	Ò	Ó	Ô	Õ	Ö	Á	Â	×	Ø	Ù	Ú	Û	Ä	ß
E_	Ü	Ý	Þ	ß	à	á	Â	â	ã	ä	å	æ	ì	í	î	ï
F_	Æ	ð	ñ	ò	ó	ô	õ	Ç	È	ö	÷	ø	ù	ú	É	û

Page 17 WCP1253 [Greek]

Code page 1253																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		ll	f	”	„	“	”		“		<				
9_		“	”	„	“	•	Ř	ř		™		>				
A_		“	À	£	■	α	¥	κ	λ	ı		§	“	—	®	—
B_	°	±	²	³	´	à	¶	·	È	Η	ı	»	Ό	½	Υ	Ω
C_	ı	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο
D_	Π	Ρ			Σ	Τ	Υ	Φ	Χ	Ψ	ı	ÿ	ά	έ	ή	ί
E_	ü	α	β	γ	δ	ε	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν
F_	π	ρ	ς	ς	σ	τ	υ	φ	χ	ψ	ı	ü	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	ù	ä	þ	à	ū	ć	â	⚡	æ	Ö	ö	î	Ž	°	Ć	
9_´	κ	í	ó	õ	Ł	ł	Ř	ř	Ö	Ú	Ť	ť	Ł	Á	Č	
A_Ý	í	ò	÷	Ą	ą	Ž	ž	Ę	ę		ż	Č	Ŝ	«	»	
B_†	‡	⦿		†	-	®	Ě	Ş	‡		⌈	⌋	Ž	ž	˘	
c_L	⊥	⊤	†	—	†	Ǻ	ǻ	ℒ	ℝ	ℒ	ℝ	ℒ	ℝ	=	ℒ	α
D_đ	Đ	Ď	¶	đ	Ň	í	î	ě	┘	┘	■	■	Ť	Ů	■	
E_Ó	Ä	Ô	Ł	ł	ń	ş	ş	œ	ø	æ	Û	ú	Û	š	´	η
F_-	“	”	˘	˘	§	÷	,	©	”	’	ú	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_²	ù	ä	þ	à	Ü	á	â	å	æ	ã	ï	î	ì	°	±	
9_´	Å	¿	ó	õ	ñ	ø	ö	û	Ö	Ú	È	£	Â	Á	f	
A_Ý	í	ò	÷	ø	Ñ	μ	ο	¾	®	”	¼	»	ì	«	»	
B_†	‡	⦿		†	-	®	¬	!	‡		⌈	⌋	¢	α	⌈	
c_L	⊥	⊤	†	—	†	β	—	ℒ	ℝ	ℒ	ℝ	ℒ	ℝ	=	ℒ	α
D_Æ	À	μ	¶	³	€	í	î	ï	┘	┘	■	■	!	ì	⊥	
E_Ó	Ä	Ô	Ò	ô	Õ	ª	É	Ã	Ø	Ù	x	ú	Û	—	’	
F_-	ª	ı	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	،	-	؟	آ	ئ	ء
9_	ا	ا	ب	ب	پ	پ	ت	ت	ث	ث	ج	ج	چ	چ	ح	ح
A_	خ	خ	د	د	ر	ر	ژ	س	س	ش	ش	ص	ص	ض	ض	ط
B_	†	‡	§		†	‡	§	¶	¶	§		¶			¶	¶
C_	L	L	T	T	-	†	‡	§	¶	¶		¶		¶	¶	¶
D_		¶	¶		¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶	¶
E_	ظ	ع	ع	ع	ع	غ	غ	غ	غ	ف	ف	ق	ق	ک	ک	گ
F_	گ	ل	لا	لا	م	م	ن	ن	و	ه	ه	ه	ی	ی	ی	

Page21 Latvian

Code page Latvian																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	A	B	V	Г	Д	Е	Ж	З	ИЙ	К	Л	М	Н	О	П	
9_	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
A_	a	b	v	г	д	е	ж	з	и й	к	л	м	н	о	п	
B_						▬		ņ						ņ		
C_							ā									
D_	š		č	č	ī	ī								€	₣	
E_	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
F_	đ	Ē	Ģ	К	К	Ķ	Ķ	Ž	Ž	ņ			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	∞	θ	±	½	¼	≈	«	»	لأ	لأ			لا	لا	
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_	ϕ	ء	آ	أ	ؤ	ع	ئ	ا	ب	ة	ت	ث	ج	ح	خ	د
D_	ذ	ر	ز	س	ش	ص	ض	ط	ظ	ع	غ		⌊	÷	×	ع
E_	-	ف	ق	ك	ل	م	ن	ه	و	ي	ي	عض	غ	غ	غ	م
F_	سـ	سـ	ن	ه	هـ	ي	ي	غ	ق	لأ	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		↑	↓		%	§	<	Œ			
9_						V	VI				§	>	œ			ÿ
A_		ı	ϕ	£	■	¤	¥	κ	”	©	ª	«	¬	·	®	¯
B_	°	±	²	³	”	ª	¶	·	¸	¹	º	»	¼	½	¾	¿
C_	¬	-	®	¯	°	±	¿	²	³	´	µ	¶	ì	í	î	ï
D_	À	Ñ	Ò	Ó	Ô	Õ	Ö	Á	Â	×	Ø	Ù	Ú	Û	Ä	ß
E_	Ü	Ý	Þ	ß	à	á	Å	â	ã	ä	å	æ	ì	í	î	ï
F_	Æ	ð	ñ	ò	ó	ô	õ	Ç	È	ö	÷	ø	ù	ú	É	û

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	Τ̄	ÿ	ά	έ	ή	ί	ü
A_	α	β	γ	δ	ε	ζ	η	π	ρ	ς	ς	σ	τ	υ	φ	χ
B_	†	‡	̄	˘	˙	⊙	÷	▷	◁	÷	⊖	⊠	⊡	⊢	⊣	⊤
C_	⊥	⊦	⊧	⊨	⊩	⊪	⊫	⊬	⊭	⊮	⊯	⊰	⊱	⊲	⊳	⊴
D_	†	‡	⊥	⊦	⊧	⊨	⊩	⊪	⊫	⊬	⊭	⊮	⊯	⊰	⊱	⊲
E_	Ψ	ά	έ	ή	ϊ	ί	ό	ύ	ϋ	ώ	À	É	Η	Ι	Ο	Υ
F_	Ω	±	≥	≤	ï	ÿ	÷	≈	°	.	.	√	n	²	∇	

Page25 WCP1257 [Baltic]

Code page 1257																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		,	”	...	†	‡		‰		<		”	˘		˙
9_		‘	’	“	”	•	Ř	ř		™		>		—		˘
A_			¢	£	¤		ı	κ	∅	ı	Ř	§	”	—	®	¿
B_	°	±	²	³	´	ˆ	μ	π	È	ı	ř	«	»	¼	½	Å
C_	Ą	Į	Ā	Ć	°	±	Ę	đ	Č	˘	Ž	È	Ģ	Ķ	Ī	Ļ
D_	Ş	Ł	ł	Ó	Ń	Õ	Ö	Á	Û	Ł	Ř	Ŧ	Ú	Ž	Ž	Ä
E_	ą	į	ā	ć	à	á	ę	ē	č	ä	ž	è	ģ	ķ	ī	ļ
F_	ş	ł	ł	ò	ñ	ô	ö	ç	û	ł	ř	ŧ	ù	ž	ž	˘

Page26 Thai

ก	ข	ฅ	ค	ด	ต	จ	ช	ซ	ฌ	ฎ	ฏ	ฐ	ฑ	ฒ	ณ	น
บ	ป	ผ	ฝ	ภ	ผ	ฝ	ภ	ผ	ฝ	ภ	ผ	ฝ	ภ	ผ	ฝ	ภ
ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด
ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด
ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด
ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด
ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด
ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด	ด

Page27 CP720[Arabic]

Code page 720																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_			ä	þ		Ü		â	å	æ	ã	ï	î			
9_		س	©	ô	¤	-	ø	ö	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_	†	⊠	⊠	I	√	≠	//	⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠	⊠
E_	خ	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	ђ	Ђ	џ	Џ	ю	Ј	џ	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	⊗	π	⊞	†	П	я	⊞
E_	Я	Р	р	с	С	т	Т	у	У	ж	Ж	в	В	ь	Ь	№
F_	Ѓ	ы	Ы	з	З	ш	Ш	э	Э	щ	Щ	ч	Ч	§	■	

Page29PC857[Turkish]

Code page 857																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	²	ù	ä	ƒ	à	Ü	á	â	å	æ	ã	ï	î	ı	°	±
9_	É	æ	Æ	ó	õ	ñ	ø	ö	ı	Ö	Ú	È	£	Â	Ŝ	ŝ
A_	Ý	í	ò	÷	ö	Ñ	Ğ	ğ	ı	®	¬	½	¼	ı	«	»
B_	†	‡	⊞		†	Á	Â	À	©	†	‡	†	‡	¢	¥	†
C_	ℒ	ℒ	†	†	—	†	ã	Ã	ℒ	†	ℒ	†	†	=	†	α
D_	°	ˆ	Ê	Ë	È		í	î	ï	†	†	■	■	ı	ı	⊞
E_	Ó	Ä	Ô	Ò	ô	Õ	ˆ		∅	Ù	x	ı	û	—	'	
F_	-	ˆ		¾	†	§	÷	,	©	ˆ	«	¹	³	²	■	

Page30 WCP1250[Central Eurpoe]

Code page-1250															
	—0	—1	—2	—3	—4	—	—6	—7	—8	—9	—	—	—	—	—
8_	€		,		”	...	†	‡		‰	§	<	Ř	Ť	Ž
9_		‘	’	“	”	•	Ř	ř		™	§	>	ř	ť	ž
A_		˘	˙	Ł	■	Ą	ı	κ	λ	ı	Ŝ	§	¨	–	®
B_	°	±	˘	Ł	˘	˘	¶	·	˘	˘	˘	»	˘	˘	˘
C_	Ř	Á	Â	Ă	Ä	Í	Ć	Ç	Ĉ	É	Ę	Ë	Ě	Í	Î
D_	Đ	Ń	Ñ	Ó	Ô	Õ	Ö	Á	Ŕ	Û	Ú	Û	Ü	Û	Ť
E_	œ	Ý	Ɔ	ă	à	í	ć	â	č	ä	ę	æ	ě	í	î
F_	đ	ı	ń	ò	ó	õ	ö	ç	ŕ	ü	÷	ů	ù	û	š

Page31 CP775

Code page 775																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ć	ù	ä	ā	à	ğ	á	ć	Ł	Ē	Ř	ř	Ť	Ž	°	±
9_	˘	Å	č	η	õ	Ğ	ç	Ř	ř	Ö	Ú	È	£	Â	Á	■
A_	Ā	Ť	ò	Ž	ž	ž	˘	¥	ı	®	¨	¼	»	Ł	§	«
B_	†	‡	Ť	˘	˘	˘	Ą	Č	Ę	É	˘	˘	˘	ı	Š	˘
C_	⊗	⊗)	⊗	˘	˘	Û	Ŧ	ı	˘	˘	˘	⊗	˘	⊗	Ž
D_	ą	č	ę	é	ı	ş	ú	ł	ž	⊗	π	⊗	⊗	⊗	⊗	⊗
E_	Ó	Ä	Ń	Ł	ô	õ	˘	ı	ı	ı	ı	ı	ı	đ	ł	’
F_	Ř	±	Ŕ	¾	¶	§	÷	”	°	·	·	1	3	2	∇	

Page32 WCP1254[Turkish]

Code page-1254																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		,	f	”	”	“	”	^	“	§	<	œ			
9_		‘	’	“	”	•	Ř	ř	~	™	§	>	œ			ÿ
A_		ı	ç	£	■	¥	¥	κ	λ	!	μ	§	¨	-	®	—
B_	°	±	²	³	´	¶	·	¸	¹	º	»	¼	½	¾	¿	
C_	¬	-	®	—	°	±	¿	²	³	´	μ	¶	ı	ı	ı	ı
D_	Ğ	Ñ	Ò	Ó	Ô	Õ	Ö	Á	Â	×	Ø	Ù	Ú	İ	Ŝ	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	ș	û

Page33 WCP1255[Hebrew]

Code page-1255																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€		,	f	”	...	†	‡	^	%oo		<				
9_		‘	’	“	”	•	Ř	ř	~	™		>				
A_		ı	ç	£		¥	ı	§	¨	©	×	«	¬	Ř	®	—
B_	°	±	²	³	´	μ	¶	·	¸	¹	÷	»	¼	½	¾	¿
C_																-
D_				:	ן	ן	”	’	”							
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		f	”	”	“	”	^	“	ٹ	<	Œ	چ	ژ	ڈ
9_	گ	‘	’	“	”	•	Ř	ř	ك	™	ڑ	>	œ			ں
A_		،	¢	£	■	¤	¥	κ	λ	!	ھ	§	”	-	®	©
B_	°	±	≥	≤	ˆ	α	μ	¶	-	¹	؛	«	»	¼	½	?
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	x	ط	ظ	ع	غ	-	ف	ق	ك
E_	Ü	ل	þ	م	ن	ه	و	ç	ã	ä	å	æ	ى	ي	î	ï
F_				ô			÷		ö		ø	ù				ے

Page35 WCP1258[Vietnam]

Code page-1258																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	€			f	”	”	“	”	^	“		<	Œ			
9_		“	”	”	“	•	-	-	~	™		>	œ			ÿ
A_		Θ	¢	£	■	¤	¥	κ	λ	!	μ	§	”	-	®	©
B_	°	±	≥	≤	ˆ	α	μ	¶	-	¹	º	«	»	¼	½	¾
C_	¬	-	®	Ă	°	±	¿	²	³	´	μ	¶		í	î	ï
D_	Đ	Ñ		Ó	Ô	Ơ	Ö	Á	Â	x	Ø	Ù	Ú	Ư		ß
E_	Ü	Ý	þ	ă	à	á	Ă	â	ã	ä	å	æ		í	î	ï
F_	đ	ð		ò	ó	ơ	õ	ç	è	ö	÷	ø	ù	ư	đ	û

Page36 ISO-8859-2[Latin 2]

Code page-8859-2																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_																
9_																
A_		À	Á	Â	Ã	Ä	Å	Ā	Ă	Ą	Ȧ	Ž	–	Ž	Ž	
B_	°	ą	ć	č	ĉ	ċ	ċ	ċ	ċ	ċ	ċ	ċ	ċ	ċ	ċ	ċ
C_	œ	–	®	Ä	°	κ	Ć	²	Č	´	Ę	¶	Ě	Í	Î	Ď
D_	Đ	Ł	Ń	Ó	Ô	Ö	Á	Ŕ	Ū	Ø	Ŭ	Ú	Û	Ũ	Š	Ä
E_	œ	Ý	Ɔ	ă	à	í	ć	â	č	ä	ę	æ	ě	í	î	ď
F_	đ	ł	ń	ò	ó	ö	ç	ř	ū	÷	ű	ù	û	š	·	

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	ı	£	■		Ĥ	κ	ˆ	ı	Ŝ	Ĝ	Ĵ	Ŕ		Ž
B_	°	ħ	ı	₺	◼	ˆ	â	ˆ	ˆ	ı	ŝ	ğ	ĵ	¼		ž
C_	¬	–	®		°	Ĉ	Ĉ	²	³	´	μ	¶	ı	ı	ı	ı
D_		Ñ	Ò	Ó	Ô	Ğ	Ö	Á	Ĝ	×	Ø	Ù	Ú	Û	Ś	ß
E_	Ü	Ý	Ɔ		à	ć	ĉ	â	ã	ä	å	æ	ı	ı	ı	ı
F_		đ	ñ	ò	ó	ğ	ö	ç	ğ	ö	÷	ø	ù	û	ś	·

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	Ķ	Ŕ	ᄡ	Ī	Ļ	Ķ	Λ	Ş	đ	Ģ	Ŕ	-	Ž	ˉ
B_	°	ą	ķ	ŕ	ᄢ	ī	ļ	ķ	λ	ş	ē	ģ	ţ	ŋ	ž	η
C_	Ā	-	®	ˉ	°	±	¿	¡	č	´	Ę	Ų	É	Í	Î	Ī
D_	Đ	Ł	Ņ	Ų	Ô	Õ	Ö	Á	Â	Û	Ø	Ù	Ú	Ť	Ʀ	ß
E_	ā	ý	ņ	ŗ	à	á	â	ı	č	ä	ę	æ	é	í	î	ī
F_	đ	ł	ņ	ŗ	ó	ô	õ	ç	è	ù	÷	ø	ù	ť	Ʀ	·

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_		ω	Ϛ	ϛ	Ϝ	Υ	Ι	Ī	Ј	Љ	Њ	Ћ	Ќ	Ŕ	Ŗ	Ÿ
B_	̄	ü	ó	ú	ώ	Ϛ	ϛ	Ϝ	Υ	Υ	ÿ	ϕ	ω	Ϛ	ϛ	Ϝ
C_	Ϛ	ϛ	Ϝ	ϝ	Ϟ	ϟ	Ϡ	ϡ	Ϣ	ϣ	ϣ	Ϥ	ϥ	Ϧ	ϧ	Ϩ
D_	Ϙ	ϙ	Ϛ	ϛ	Ϝ	ϝ	Ϟ	ϟ	Ϡ	ϡ	Ϣ	ϣ	Ϥ	ϥ	Ϧ	ϧ
E_	М	м	Р	р	С	с	ѐ	ё	ѣ	ѓ	є	ѕ	і	ї	Ј	Љ
F_	№	Ѓ	Ѕ	А	Б	В	і	ї	ј	љ	њ	ќ	ќ	ѣ	ѣ	ѣ

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_					ﺍ								،	ﺭ		
B_												؛				؟
C_		ﺀ	ﺁ	ﺃ	ﺍ	ﺇ	ﺏ	ﺑ	ﺓ	ﺕ	ﺗ	ﺙ	ﺝ	ﺡ	ﺦ	ﺩ
D_	ﺫ	ﺭ	ﺯ	ﺱ	ﺶ	ﺺ	ﻅ	ﻆ	ﻊ	ﻐ						،
E_	-	ﻑ	ﻖ	ﻙ	ﻝ	ﻡ	ﻥ	ﻩ	ﻭ	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_		‘	’	£			¡	§	¨	©	.	«	¬	ﺭ		—
B_	°	±	²	³	´	ˆ	À	Π	Έ	Η	ΐ	»	Ό	½	Υ	Ω
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	ΐ	ÿ	ά	έ	ή	ί
E_	ÿ	α	β	γ	δ	ε	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν
F_	π	ξ	ο	ζ	η	υ	θ	χ	ψ	ω	ί	ÿ	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_																ı
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_		ı	¢	£	¤	¥	¦	§	¨	©	ª	«	¬		®	¯
B_	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C_	¬	-	®	¯	°	±	¸	²	³	´	µ	¶	ı	ı	ı	ı
D_	Ĝ	Ñ	Ò	Ó	Ô	Õ	Ö	Á	Â	×	Ø	Ù	Ú	İ	Ŝ	ß
E_	Ü	Ý	Þ	ß	à	á	Â	â	ã	ä	å	æ	ì	í	î	ï
F_	ğ	đ	ò	ó	ô	õ	ö	÷	ø	ö	÷	ø	ù	ı	ŝ	û

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
C_	ℒ	⊥	⊤	⊢	—	⊕	∥	⊥	⊞	⊚	⊛	⊜	⊝	⊞	⊟	⊠
D_	†	‡	⋄	⋆	№	§	π	⋈	⋊	Г	■	■	■	⊙	⊚	
E_	α	β	Γ	π	Σ	σ	μ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F_	≡	±	≥	≤	∫	∫	÷	≈	°	·	·	√	n	²	∇	

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Code page 874																
	_0	_1	_2	_3	_4	_5	_6	_7	_8	_9	_A	_B	_C	_D	_E	_F
8_	Ђ					...										
9_		‘	’	“	”	•	—	—								
A_																
B_																
C_																
D_																
E_														°		
F_																

International Character Set

Country	ASCII Code(Hex)											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
U.S.A.	#	\$	@	[\]	^	`	{		}	~
France	#	\$	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
U.K.	£	\$	@	[\]	^	`	{		}	~
Denmark I	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì
Spain I	Pt	\$	@	ı	Ñ	ı	^	`	¨	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	ı	Ñ	ı	é	`	í	ñ	ó	ú
Latin	#	\$	á	ı	Ñ	ı	é	ü	í	ñ	ó	ú
Korea	#	\$	@	[₩]	^	`	{		}	~
Slovenia/Croatia	#	\$	Ť	Š	Đ	Ć	Ĉ	ț	š	đ	ć	ĉ
China	#	¥	@	[\]	^	`	{		}	~

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Rongta Technology (Xiamen) Group Co., Ltd.

ADD: No. 889 Xinmin Avenue, Tongan District, Xiamen, China

WEB: www.rongtatech.com

TEL: 0086-592-5666129 FAX: 0086-592-5659169