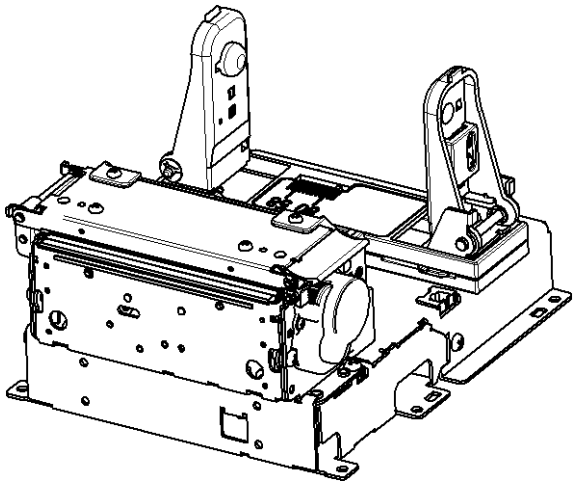
NPI

Command Reference

NP-3911E

3-inch Kiosk Printer



2020.02.02　3rd edition

All specifications described in this document are subject to change without prior notice.
Although we made assurance doubly sure in writing this command reference,
please contact us if you find any suspicious points, errors or what you noticed.

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1. Application

This document describes the commands and the character code tables of “NP-3911E”.
Please refer to Product Specifications of “NP-3911E” for specifications and precautions, etc.

[Notes]

- This document is a command reference.
- All specifications described in this document are subject to change for software change or improvement of this product.

2. Terms

1) Receiving buffer

- Indicates a buffer that receives data sent by the host and stores it as a received data.
- Received data is stored in this receiving buffer and then executed sequentially.

2) Line buffer

- Indicates a buffer that lays out and stores data for printing in the line mode.

3) Page buffer

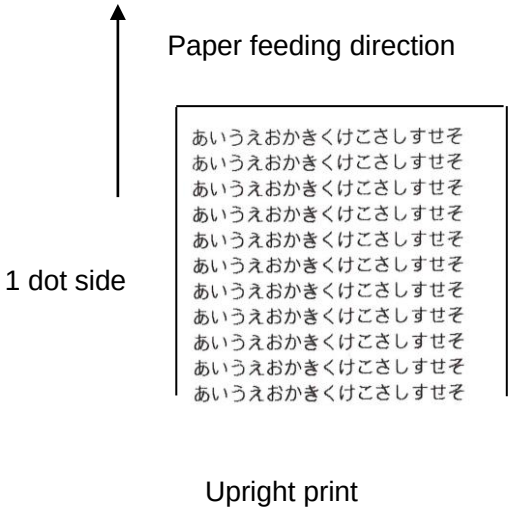
- Indicates a buffer that lays out and stores data for printing in the page mode.

4) Line mode and page mode

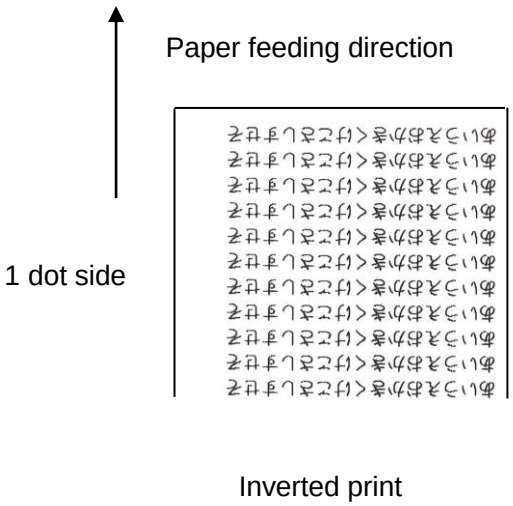
- Line mode (switchable by a command)
  This mode prints received data by each line every time.
  Printing is executed when the print condition is satisfied by the buffer full print made by overflows with character data to one line or by the line feed command, etc.

- Page mode (switchable by a command)
  This mode prints received data by each page.
  The command [Page buffer layout start / finish setting] 《ESC L **n**》 starts the page mode editing and the received data is allocated in the page buffer.
  Data is printed by using the command [Page print] 《ESC FF **n**》.

5) Upright print and inverted print



Upright print



Inverted print

6) LSB (least significant bit) and MSB (most significant bit)

・LSB the lowest bit of the data and MSB for the highest bit of the data.

7) Hexadecimal representation

・〔**〕h represents a hexadecimal number.

For example. 〔10〕h is "16" in decimal.

・If enclosed in "", it represents text data.

For example. "12345" is 〔31〕h+〔32〕h+〔33〕h+〔34〕h+〔35〕h.

3. Commands

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▲ is effective only when language font Japanese or Korean is selected.
■ is effective only when language font Japanese is selected.

3.2 Commands details

If there is a description regarding the operation when the command parameter is set to outside of the range of the domain, please follow the description. Operations are not guaranteed if an undefined control code or an undefined command is transmitted.

The printing result example is a sample and does not represent the actual printing result by the printer.

1) [Horizontal tab]《HT》

Name	[Horizontal tab]《HT》
Code	〔09〕h
Domain	No domain
Function	Moving the printing position to the next horizontal tab position.
Details	・Horizontal tab is set by the command [Horizontal tab position setting]《ESC D **n1 n2** --- NUL》. ・[Horizontal tab position] by the default setting is set with the intervals by 8 characters of Font A. They will be the position of 9th digit, 17th digit, 25th digit, 33rd digit and 41st digit. ・When the next [Horizontal tab] is not set, this command will be disregarded.
Sample code example	No horizontal tab Print data＋Print line feeding : "AAA"+〔0A〕h 《HT》 With horizontal tab : 〔09〕h Print data＋Print line feeding : "HT"+〔0A〕h
	Print result example : AAA HT

2) [Print and line feeding]《LF》

Name	[Print and line feeding]《LF》
Code	〔0A〕h
Domain	No domain
Function	Printing out data in the print line buffer and feeding lines based on preset line feed quantity.
Details	No details
Sample code example	《LF》 Print data＋Print line feeding : "AAAAA"+〔0A〕h Print data＋Print line feeding : "AAAAA"+〔0A〕h
	Print result example : AAAAA AAAAA

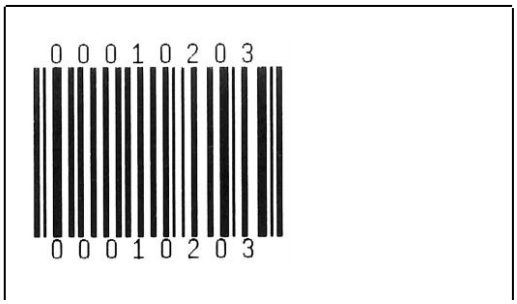
3) [Carriage return]《CR》

Name	[Carriage return]《CR》
Code	〔0D〕h
Domain	No domain
Function	This command is disregarded.
Details	No details

4) [Software reset]《DC1》

Name	[Software reset]《DC1》
Code	〔11〕h
Domain	No domain
Function	Restarting the firmware by the same process as the process during the power turning ON.
Details	・Since this command is stored in the internal receiving input buffer and will be executed sequentially, timing of receiving the command and execution differs. ・While the cutter is operating, software reset will be activated after the cutter operation finishes. ・If the printer is disabled by the command [Data input control] 《ESC = **n**》, this command will be disregarded and will not work.
Sample code example	Software reset : 《DC1》〔11〕h

5) [Barcode termination change]《ESC RS c **n**》

Name	[Barcode termination change]《ESC RS c **n**》
Code	〔1B〕h＋〔1E〕h＋〔63〕h＋**n**
Domain	〔**n**＝00，80〕h
Function	Changing the termination of the barcode to be printed by the command [Barcode print]《GS k **n Dn** NUL》 by "**n**".
Details	・"**n**" has the following meaning. **n** (hex) / Termination 00 / 〔00〕h 80 / 〔FF〕h ・Default value of "**n**" is 〔00〕h.
Sample code example	《GS》 《H》 《**n**》 Specifying the upper and lower HRI characters :〔1D〕h+〔48〕h+〔03〕h 《ESC》 《RS》 《c》 《**n**》 Changing the termination to〔FF〕h :〔1B〕h+〔1E〕h+〔63〕h+〔80〕h 《GS》 《k》 《**n**》 Barcode CODE128 printing :〔1D〕h+〔6B〕h+〔07〕h+ CODE C, Data 00010203 :〔7B〕h+〔43〕h+〔00〕h+〔01〕h+〔02〕h+〔03〕h+〔FF〕h
	Print result example : 

6) [Character right space amount setting]《ESC SP **n**》

Name	[Character right space amount setting]《ESC SP **n**》
Code	〔1B〕h＋〔20〕h＋**n**
Domain	〔00≦**n**≦20〕h
Function	Setting the right space amount of the character by dot (1/203 inch unit).
Details	・The amount of right space during the double width expansion mode will be the amount reflecting the expansion. ・Default value of "**n**" is 〔00〕h. ・[SP] indicates space.
Sample code example	《ESC》 《SP》 《**n**》 Specifying right space amount "0 dot" : 〔1B〕h+〔20〕h+〔00〕h Print data＋Print line feeding : "0dot"+〔0A〕h Specifying right space amount "12 dots" : 〔1B〕h+〔20〕h+〔0C〕h Print data＋Print line feeding : "12dots"+〔0A〕h
	Print result example : 0dot 12dots

7) [Specifying print modes all at once]《ESC ! **n**》

<table>
<tr><td>Name</td><td>[Specifying print modes all at once]《ESC ! n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔21〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Specifying the print modes all at once.</td></tr>
<tr><td>Details</td><td>・Each bit of “n” has the following meanings.
<table>
<tr><th rowspan="2">bit</th><th rowspan="2">Function</th><th colspan="2">Value</th></tr>
<tr><th>“0”</th><th>“1”</th></tr>
<tr><td>bit0</td><td rowspan="2">Character font</td><td colspan="2" rowspan="2">Font A (12x24 dots)：bit1 "0", bit0 "0"
Font B (9x17 dots)：bit1 "0", bit0 "1"
Font D (16x32 dots)：bit1 "1", bit0 "0"</td></tr>
<tr><td>bit1</td></tr>
<tr><td>bit2</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit3</td><td>Enhanced</td><td>RESET</td><td>SET</td></tr>
<tr><td>bit4</td><td>Double height</td><td>RESET</td><td>SET</td></tr>
<tr><td>bit5</td><td>Double width</td><td>RESET</td><td>SET</td></tr>
<tr><td>bit6</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit7</td><td>Underline</td><td>RESET</td><td>SET</td></tr>
</table>
・If double height and double width are set at the same time, character with double-height and double-width will be formed.
・All of the printed characters will be underlined except for the 90° clock-wise rotated characters and spaces created by [Horizontal tab]《HT》.
・Underline width is determined by the value set in [Underline set/reset]《ESC - n》. Default value is “1 dot” width.
・Enhanced print control is only effective during Kanji mode.
・Mixed different character sizes (e.g. double width and normal size, etc.) can be printed.
・Font B is effective only when selecting any of Code Page 437, domestic code table or Code Page 858 by the command [Character code table selection]《ESC t n》 in addition to selecting Japanese in language font.
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>《ESC》 《!》 《n》
Specifying Font A : 〔1B〕h+〔21〕h+〔00〕h
Print data＋Print line feeding : "Font A"+〔0A〕h

Specifying Font B : 〔1B〕h+〔21〕h+〔01〕h
Print data＋Print line feeding : "Font B"+〔0A〕h</td></tr>
<tr><td>Print result example :
Font A
Font B</td></tr>
</table>

8) [Absolute position setting]《ESC $ **n1 n2**》

Name	[Absolute position setting]《ESC $ **n1 n2**》
Code	〔1B〕h＋〔24〕h＋**n1**＋**n2**
Domain	〔00≦**n1**≦FF〕h, 〔00≦**n2**≦02〕h
Function	Specifying the print start position from the head of the line by the number of dots (by 1/203 -inch position).
Details	・The quotient obtained by dividing the value of numbers of dots by 256 shall be "**n2**" and the remainder by it shall be "**n1**". ・Print start position is after (**n1**＋**n2**×256) from the head of the line. ・Disregarding the setting exceeding the end of the line. ・When this command is received in the middle of the line, it will be effective even when it does not pass the current position.
Sample code example	《ESC》 《$》 《**n1**》 《**n2**》 Specifying “0 dot” to the absolute position set. : 〔1B〕h+〔24〕h+〔00〕h+〔00〕h Print data＋Print line feeding : "0dot"+〔0A〕h Specifying “60 dots” to the absolute position set. : 〔1B〕h+〔24〕h+〔3C〕h+〔00〕h Print data＋Print line feeding : "60dots"+〔0A〕h
	Print result example : 

9) ■[Download characters set specifying / releasing]《ESC % **n**》

<table>
<tr><td>Name</td><td>[Download characters set specifying / releasing]《ESC % n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔25〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Specifying / releasing the characters set to be downloaded.</td></tr>
<tr><td>Details</td><td>* It is effective only when Japanese is selected in language font.

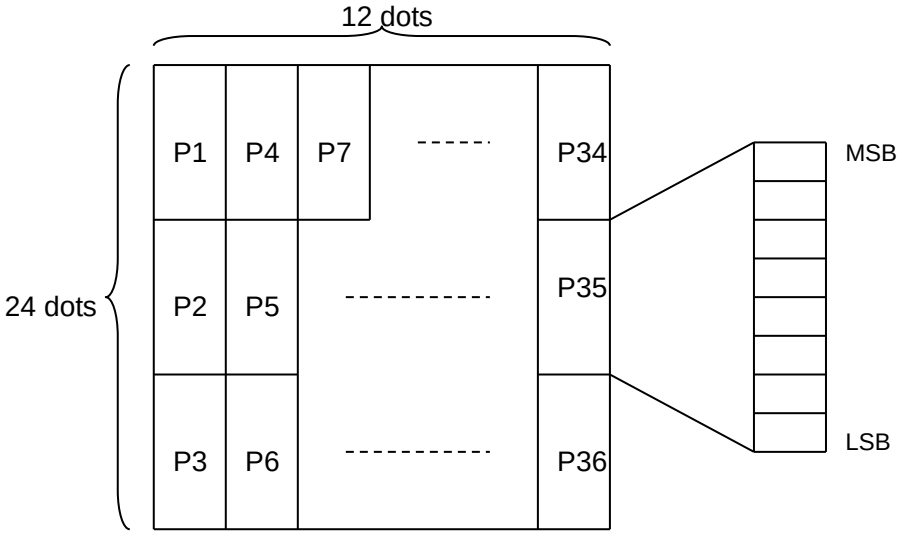
・Only least significant bit (bit0) is effective to “n”. “bit0” has the following meanings.
<table>
<tr><th>bit0</th><th>Function</th></tr>
<tr><td>“0”</td><td>Releasing download character set</td></tr>
<tr><td>“1”</td><td>Specifying download character set</td></tr>
</table>
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td>Sample code example</td><td>《ESC》 《%》 《n》
Specifying download character set： 〔1B〕h+〔25〕h+〔01〕h
Releasing download character set： 〔1B〕h+〔25〕h+〔00〕h</td></tr>
</table>

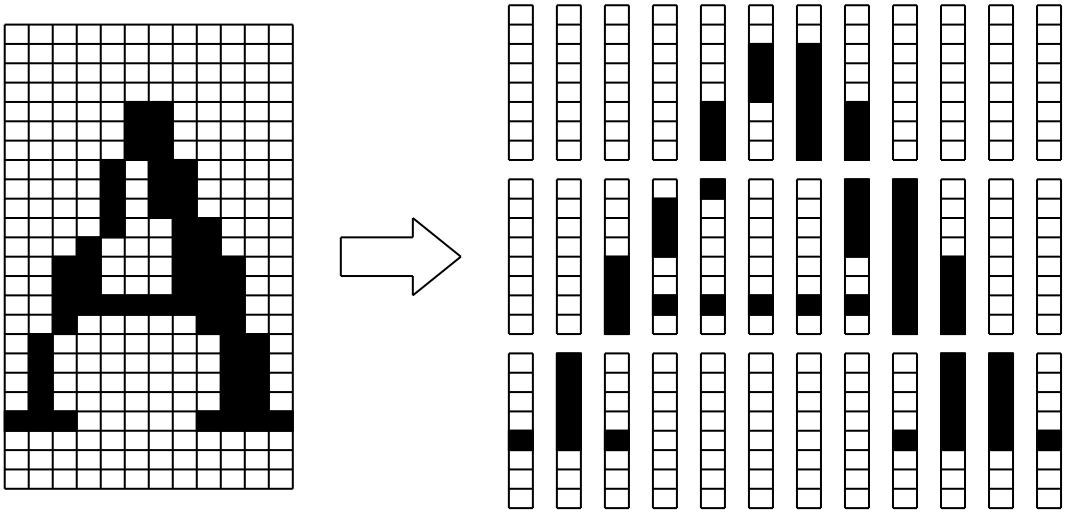
10)■[Download characters definition]《ESC & **s n m a Dn**》

Name	[Download characters definition]《ESC & **s n m a Dn**》
Code	〔1B〕h＋〔26〕h＋**s**＋**n**＋**m**＋**a**＋**Dn**
Domain	Font A / B〔**s**=03〕h, Font D〔**s**=04〕h,〔20≦**n**≦7E〕h,〔20≦**m**≦7E〕h, Font A〔01≦**a**≦0C〕h, Font B〔01≦**a**≦09〕h, Font D〔01≦**a**≦10〕h
Function	Defining the font style for download characters of alphanumeric characters.
Details	* It is effective only when Japanese is selected in language font. ・"**s**" indicates the number of bytes to be defined in vertical direction while "**a**" indicates the number of dots in horizontal direction. ・"**n**" indicates the start character code and "**m**" indicates end character code. (When defining only one character definition, "**n**"="**m**".) ・Definable characters are 95 characters of "〔20〕h to〔7E〕h" in ASCII code. ・"**Dn**" is the data to be defined and indicates the pattern on "**a**" dots are in the horizontal direction from the left end. Remaining pattern on the right side will be filled with space. ・Download characters once defined by this command remain valid until executing [Software reset]《DC1》or turning OFF the power. ・Redefinition only redefines the designated area. ・Please refer to the next page for reference.
Sample code example	《ESC》 《&》 《**s**》 《**n**》 《**m**》 《**a**》 Specifying Code〔20〕h :〔1B〕h+〔26〕h+〔03〕h+〔20〕h+〔20〕h+〔0C〕h Registered data :〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h 《ESC》 《%》 《**n**》 Specifying download characters set :〔1B〕h+〔25〕h+〔01〕h Code〔20〕h＋Print line feeding :〔20〕h+〔0A〕h
	Print result example : 

Reference

＜Reference＞
In case of Font A

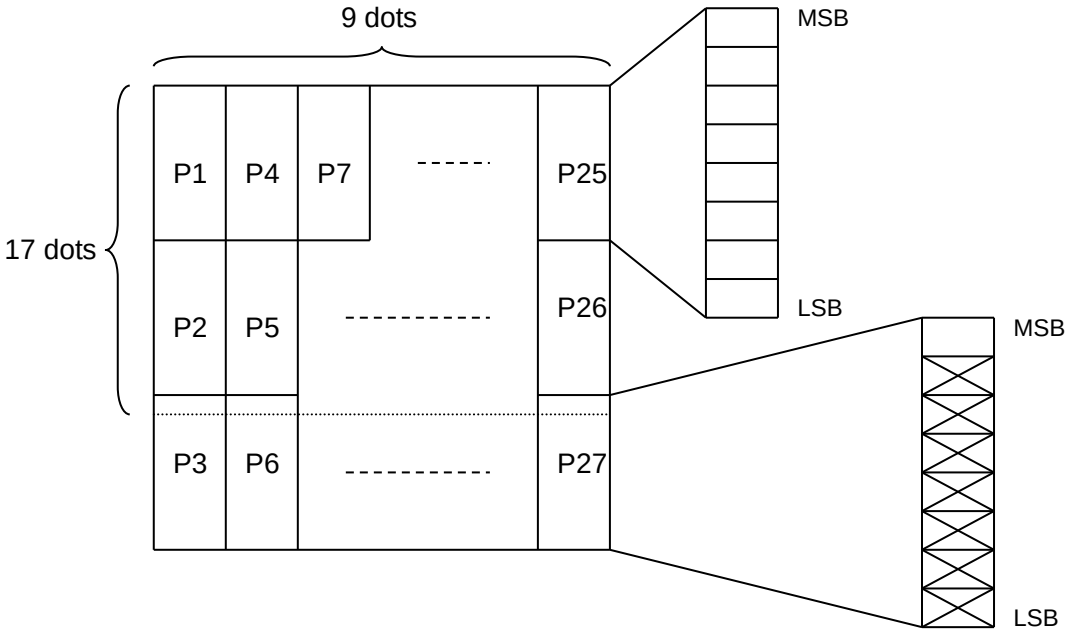


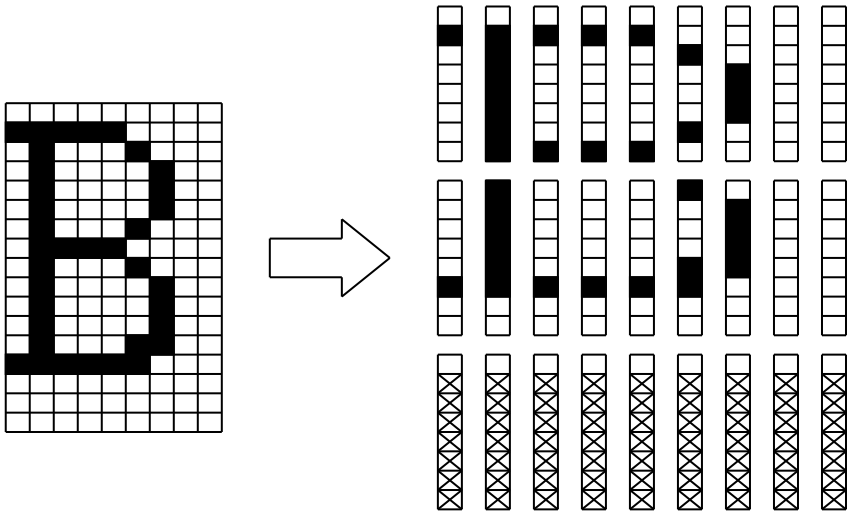


P1=〔00〕h,P4=〔00〕h,P7=〔00〕h,P10=〔00〕h,…
P2=〔00〕h,P5=〔00〕h,P8=〔0F〕h,P11=〔72〕h,…
P3=〔08〕h,P6=〔F8〕h,P9=〔08〕h,P12=〔00〕h,…

Reference

＜Reference＞
In case of Font B

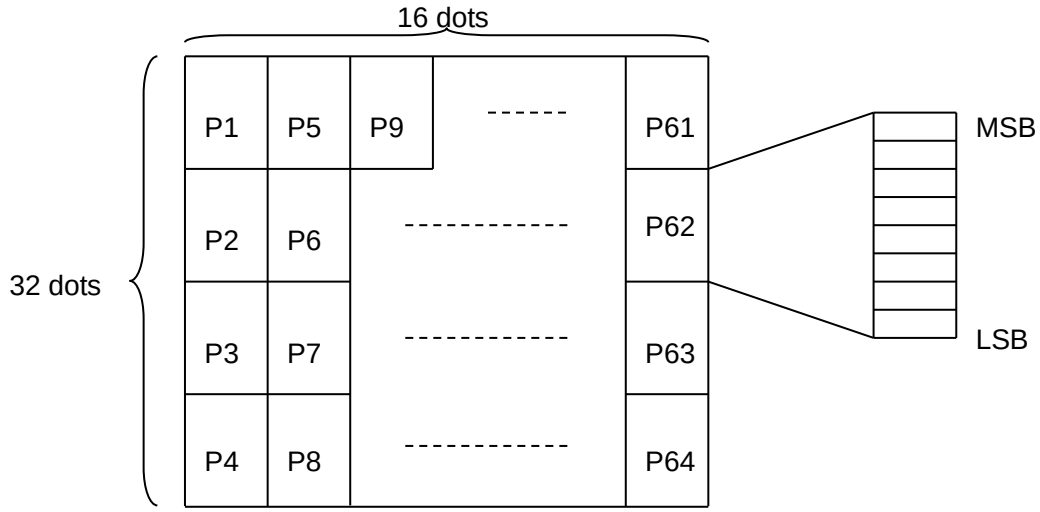


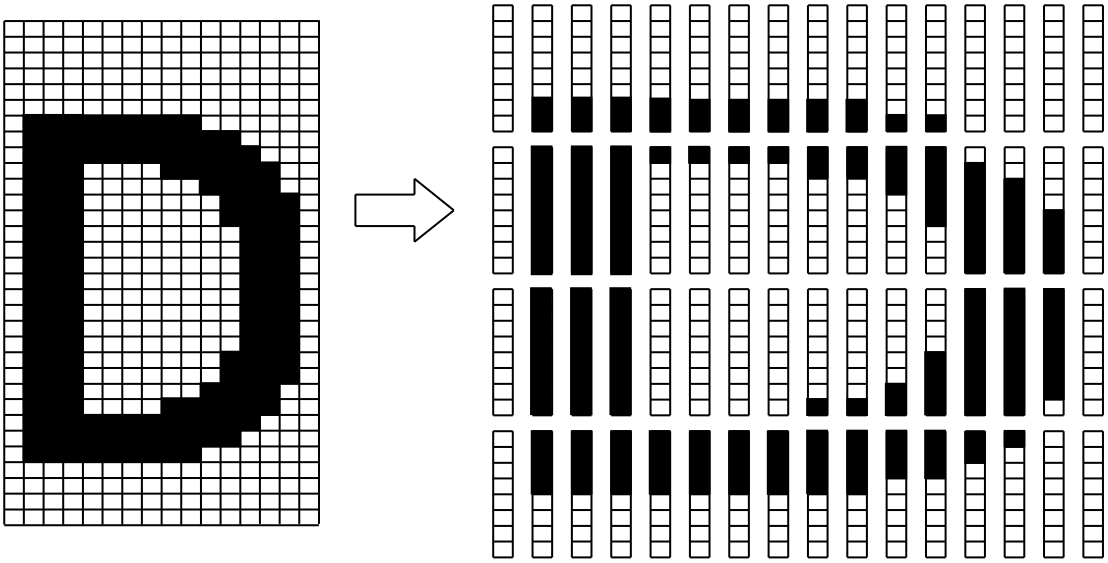


P1=〔40〕h,P4=〔7F〕h,P7=〔41〕h,P10=〔41〕h,…
P2=〔04〕h,P5=〔FC〕h,P8=〔04〕h,P11=〔04〕h,…
P3=〔00〕h,P6=〔00〕h,P9=〔00〕h,P12=〔00〕h,…

Reference

＜Reference＞
In case of Font D





P1=〔00〕h,P5=〔03〕h,P9 =〔03〕h,P13=〔03〕h,…
P2=〔00〕h,P6=〔FF〕h,P10=〔FF〕h,P14=〔FF〕h,…
P3=〔00〕h,P7=〔FF〕h,P11=〔FF〕h,P15=〔FF〕h,…
P4=〔00〕h,P8=〔F0〕h,P12=〔F0〕h,P16=〔F0〕h,…

11)[Bit image mode specifying]《ESC * **m n1 n2 Dn**》

<table>
<tr><td>Name</td><td>[Bit image mode specifying]《ESC * m n1 n2 Dn》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔2A〕h＋m＋n1＋n2＋Dn</td></tr>
<tr><td>Domain</td><td>〔m= described in the table below〕h,〔00≦n1≦FF〕h,〔00≦n2≦03〕h</td></tr>
<tr><td>Function</td><td>Printing the data as bit image with the resolution (bit image mode) designated by “m”.</td></tr>
<tr><td>Details</td><td>
・The quotient obtained by dividing the value of numbers of dots by 256 shall be "n2" and the remainder by it shall be "n1".
・Total print dots in bit image mode are n1＋(256×n2).
・If an image data (Dn) which exceeds the print area is input, exceeding data will be disregarded.
・Bit image data (Dn) makes a bit to be printed “1” and a bit not to be printed “0”.
・Bit image mode is described in the table below.
<table>
<tr><td rowspan="2">m (hex)</td><td rowspan="2">Bit image mode</td><td colspan="2">Vertical direction</td><td colspan="2">Horizontal direction</td></tr>
<tr><td>Dots quantity</td><td>Dots density</td><td>Dots density</td><td>Max. dots</td></tr>
<tr><td>00</td><td>8 dots single density</td><td>8</td><td>67DPI</td><td>101DPI</td><td>320</td></tr>
<tr><td>01</td><td>8 dots double density</td><td>8</td><td>67DPI</td><td>203DPI</td><td>640</td></tr>
<tr><td>20</td><td>24 dots single density</td><td>24</td><td>203DPI</td><td>101DPI</td><td>320</td></tr>
<tr><td>21, 23</td><td>24 dots double density</td><td>24</td><td>203DPI</td><td>203DPI</td><td>640</td></tr>
</table>
・ Please refer to the next page for the relationship between the bit image data and the printed dots.
</td></tr>
<tr><td>Sample code example</td><td>
《ESC》 《*》 《m》 《n1》 《n2》
m=〔00〕h, the number of dots “100” :〔1B〕h+〔2A〕h+〔00〕h+〔64〕h+〔00〕h

Bit image data : 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+…
(Omitted 100 bytes)

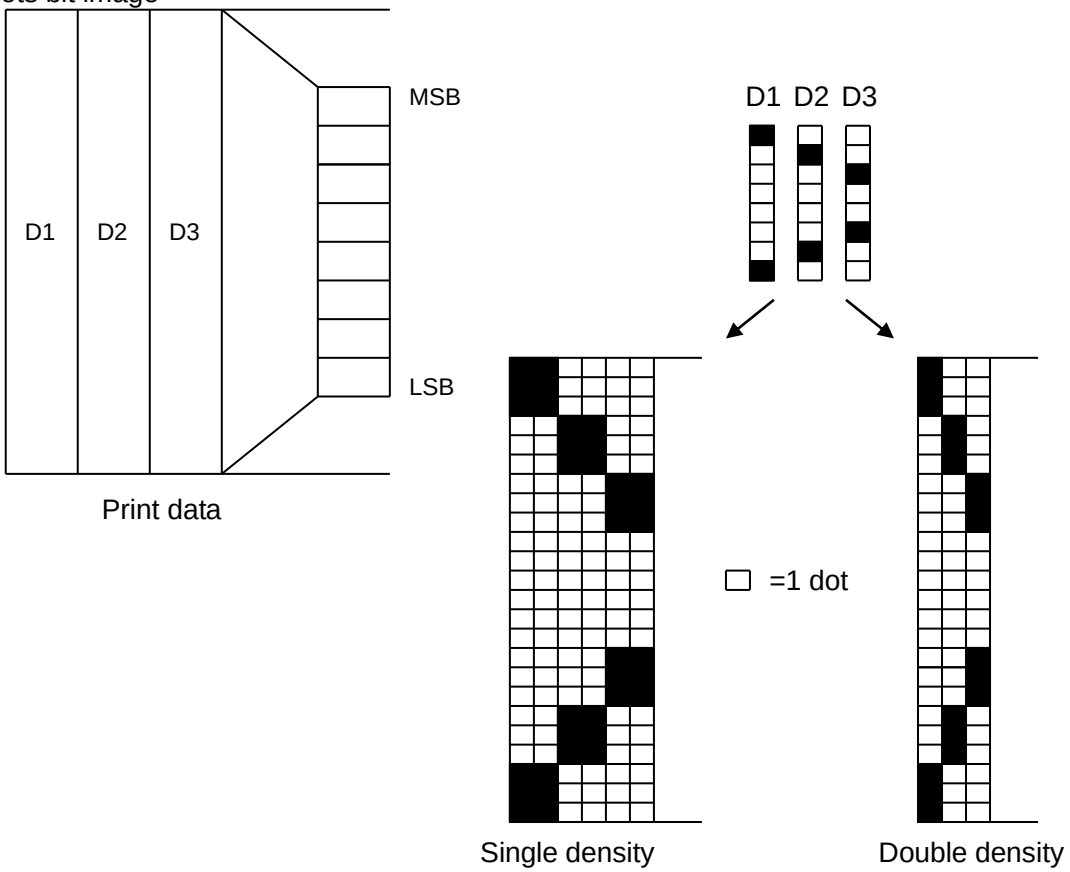
Printing “n” dots and paper feeding : 〔1B〕h+〔4a〕h +〔18〕h
</td></tr>
<tr><td></td><td>Print result example :

</td></tr>
</table>

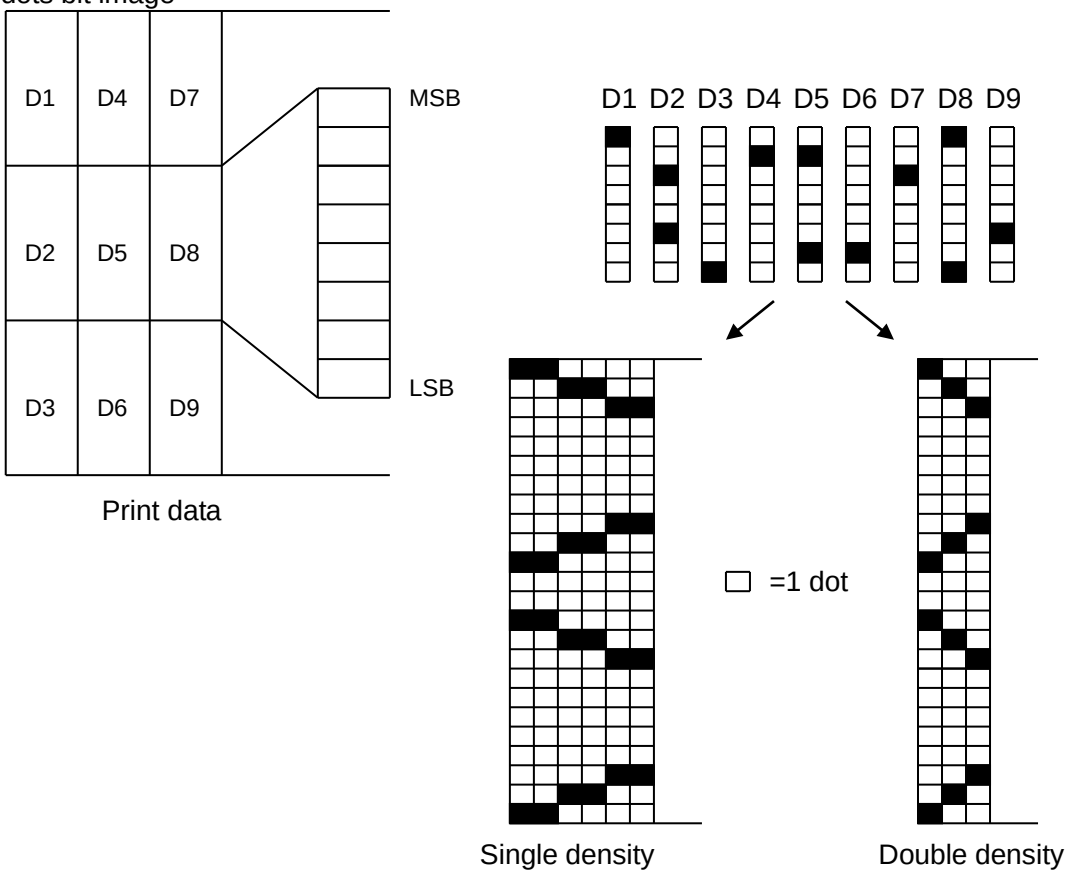
Reference

＜Relationship between the bit image data and the dots to be printed＞

・8 dots bit image



・24 dots bit image



12)[Underline specifying / releasing]《ESC - **n**》

<table>
<tr><td>Name</td><td>[Underline specifying / releasing]《ESC - n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔2D〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦02〕h</td></tr>
<tr><td>Function</td><td>Specifying / Releasing underline.</td></tr>
<tr><td>Details</td><td>・Underline is attached to the entire printing character width except for the area skipped by [Horizontal tab]《HT》. Furthermore, underline is not attached to 90° clockwise rotated characters.
・This command is not valid during Kanji mode.
・The types of underline designated by the value of “n” are described below.
<table>
<tr><th>n (hex)</th><th>Type</th></tr>
<tr><td>00</td><td>Releasing underline</td></tr>
<tr><td>01</td><td>Specifying one dot thickness underline</td></tr>
<tr><td>02</td><td>Specifying two dots thickness underline</td></tr>
</table>
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>《ESC》 《-》 《n》
Specifying one dot thickness underline : 〔1B〕h+〔2D〕h+〔01〕h
Print data＋Print line feeding : "1dot Line"+〔0A〕h

Specifying two dots thickness underline : 〔1B〕h+〔2D〕h+〔02〕h
Print data＋Print line feeding : "2dots Line"+〔0A〕h</td></tr>
<tr><td>Print result example :
<u>1dot Line</u>
<u>2dots Line</u></td></tr>
</table>

13)[1/6 inch line feeding amount specifying]《ESC 2》

Name	[1/6 inch line feeding amount setting]《ESC 2》
Code	〔1B〕h＋〔32〕h
Domain	No domain
Function	Setting the 1/6 inch line feeding amount.
Details	No details
Sample code example	Print data＋Print line feeding : "Default"+〔0A〕h Specifying a 102/203 inch line feeding amount :〔1B〕h+〔33〕h+〔66〕h Print data＋Print line feeding : "102/203 inch"+〔0A〕h 《ESC》 《2》 Setting a 1/6 inch line feeding amount :〔1B〕h+〔32〕h Print data＋Print line feeding : "1/6 inch"+〔0A〕h Print data＋Print line feeding : "1/6 inch"+〔0A〕h
	Print result example : Default 102/203 inch 1/6 inch 1/6 inch

14)[Line feeding amount setting at the smallest paper feeding pitch unit]《ESC 3 **n**》

Name	[Line feeding amount setting at the smallest paper feeding pitch unit]《ESC 3 **n**》
Code	〔1B〕h＋〔33〕h＋**n**
Domain	〔00≦**n**≦FF〕h
Function	Setting the line feeding amount for a line to **n**/300 inch.
Details	・Although setting under the value of character's height, it will execute line feeding for the amount of character's height. ・Default value of "**n**" is 〔22〕h (34 dots).
Sample code example	Print data＋Print line feeding : "Default"+〔0A〕h 《ESC》 《3》 《**n**》 Specifying a 102/203 inch line feeding amount :〔1B〕h+〔33〕h+〔66〕h Print data＋Print line feeding : "102/203 inch"+〔0A〕h Print data＋Print line feeding : "102/203 inch"+〔0A〕h
	Print result example : Default 102/203 inch 102/203 inch

15)[1/4 inch line feeding amount setting]《ESC 4》

Name	[1/4 inch line feeding amount setting]《ESC 4》
Code	〔1B〕h＋〔34〕h
Domain	No domain
Function	Setting the 1/4 inch line feeding amount.
Details	No details
Sample code example	Print data＋Print line feeding : "Default"+〔0A〕h Specifying a 102/203 inch line feeding amount :〔1B〕h+〔33〕h+〔66〕h Print data＋Print line feeding : "102/203 inch"+〔0A〕h 《ESC》 《4》 Specifying a 1/4 inch line feeding amount :〔1B〕h+〔34〕h Print data＋Print line feeding : "1/4 inch"+〔0A〕h Print data＋Print line feeding : "1/4 inch"+〔0A〕h
	Print result example : Default 102/203 inch 1/4 inch 1/4 inch

16)[Data input control]《ESC = **n**》

<table>
<tr><td>Name</td><td>[Data input control]《ESC = n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔3D〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Selecting the available device for data input from the host.</td></tr>
<tr><td>Details</td><td>・Each bit of “n” indicates below.
<table>
<tr><th rowspan="2">bit</th><th rowspan="2">Function</th><th colspan="2">Value</th></tr>
<tr><th>“0”</th><th>“1”</th></tr>
<tr><td>bit0</td><td>Printer</td><td>Ineffective</td><td>Effective</td></tr>
<tr><td>bit1</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit2</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit3</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit4</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit5</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit6</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit7</td><td>Undefined</td><td>-</td><td>-</td></tr>
</table>
・When the printer is not available, all received data are disregarded until the printer becomes available by this command.
・ If the printer is not available, the command [Software reset] 《DC1》 and the command [Printer initialization]《ESC @》 will not work because they will also be disregarded.
・Even if the printer is not available, its status may become busy depending on the printer operation.
・Default value of “n” is 〔01〕h (Valid).</td></tr>
<tr><td rowspan="2">Sample code example</td><td>《ESC》 《=》 《n》
Disabling the printer : 〔1B〕h+〔3D〕h+〔00〕h
Print data＋Print line feeding : "ESC = 00"+〔0A〕h

Enabling the printer : 〔1B〕h+〔3D〕h+〔01〕h
Print data＋Print line feeding : "ESC = 01"+〔0A〕h</td></tr>
<tr><td>Print result example : ESC = 01</td></tr>
</table>

17)[Printer initialization]《ESC @》

Name	[Printer initialization]《ESC @》
Code	〔1B〕h＋〔40〕h
Domain	No domain
Function	Clearing the data stored in the print line buffer and initializing the character editing setting and the barcode setting (to the default status).
Details	・Not clearing the data stored in the receiving buffer. ・Storing them in the receiving buffer and executing them sequentially. ・When the printer is not available by the command [Data input control] 《ESC = **n**》, this command will be disregarded and will not work.
Sample code example	Print data : "AAAAAAAAAA" 《ESC》 《@》 Printer initialization : 〔1B〕h+〔40〕h Print data＋Print line feeding : "@@@@@@@@@@"+〔0A〕h
	Print result example : @@@@@@@@@@

18)[Back feeding]《ESC B **n**》

Name	[Back feeding]《ESC B **n**》
Code	〔1B〕h＋〔42〕h＋**n**
Domain	〔00≦**n**≦FF〕h
Function	Feeding the paper to the reverse direction.
Details	・Specifying the feeding amount by "**n**" dot(s) line. In case of setting 〔00〕h, it will never be fed. ・Please DO NOT enter this command in a row for preventing paper jams. When feeding reversely more than 〔FF〕h dot(s), please use the command [Back feed (mm/unit)]《GS J **n**》. ・Some deviation may occur due to taking the backlash. ・If there is print data in the print line buffer, back-feed will be performed after printing them. ・Please DO NOT make the tip of paper exceed the limit of back-feed. (Please refer to 2.4 Cutter Specifications in the Product Specifications.)
Sample code example	Print data＋Print line feeding : "AAAAAAAAAA"+〔0A〕h 《ESC》 《B》 《**n**》 Back feed 68 dots : 〔1B〕h+〔42〕h+〔44〕h Print data＋Print line feeding : "ESC B 44"+〔0A〕h
	Print result example : ESC B 44 AAAAAAAAAA

19)[Horizontal tab position setting]《ESC D **n1 n2** --- NUL》

Name	[Horizontal tab position setting]《ESC D **n1 n2** --- NUL》
Code	〔1B〕h＋〔44〕h＋**n1**＋**n2**＋---＋〔00〕h
Domain	〔00≦**n**≦FF〕h
Function	Setting the horizontal tab position.
Details	・“**n**” indicates the digits from the beginning to the horizontal tab position. In this case, it shall be [**n**=tab set position -1]. ・“**k**” indicates the number of horizontal tabs to be set. ・The tab position is set at the point of “character width × “**n**”” from the beginning of the line. The character width includes the right space amount of the character in this case and it will be doubled when the double width enlargement is set. ・Max. 32 tab positions can be set and positions set exceedingly will be disregarded. ・”《ESC D NUL》” clears all tab positions having been set. The command [Horizontal tab]《HT》after clearing will be disregarded. ・Default setting has 32 set positions with the intervals by 8 Font A characters which will be the position of 9th digit, 17th digit , 25th digit, 33rd digit, 41st digit, … and 249th digit.
Sample code example	《ESC》 《D》 《**n1**》 《**n2**》 《NUL》 Setting Font A : 〔1B〕h+〔44〕h+〔05〕h+〔10〕h+〔00〕h Horizontal tab : 〔09〕h Print data : "AAA" Horizontal tab : 〔09〕h Print data＋Print line feeding : "AAA"+〔0A〕h
	Print result example : AAA AAA

20)[Enhanced print specifying / releasing]《ESC E **n**》

<table>
<tr><td>Name</td><td>[Enhanced print specifying / releasing]《ESC E n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔45〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Specifying / Releasing enhanced print.</td></tr>
<tr><td>Details</td><td>・Only LSB (least significant bit “bit0”) is available for “n”.
・“bit0” has the following meanings.
<table>
<tr><td>bit0</td><td>Descriptions</td></tr>
<tr><td>“0”</td><td>Releasing enhanced print</td></tr>
<tr><td>“1”</td><td>Specifying enhanced print</td></tr>
</table>
・When executing enhanced print, print result may be deformed.
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Print data＋Print line feeding： "AAAAA"+〔0A〕h

《ESC》 《E》 《n》
Specifying enhanced print ： 〔1B〕h+〔45〕h+〔01〕h
Print data＋Print line feeding： "ESC E 01"+〔0A〕h</td></tr>
<tr><td>Print result example ：
AAAAA
ESC E 01</td></tr>
</table>

21)[Double strike print specifying / releasing]《ESC G **n**》

<table>
<tr><td>Name</td><td>[Double strike print specifying / releasing]《ESC G n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔47〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Specifying / Releasing double strike print.</td></tr>
<tr><td>Details</td><td>・Only LSB (least significant bit “bit0”) is available for “n”.
・“bit0” has the following meanings.
<table>
<tr><td>bit0</td><td>Descriptions</td></tr>
<tr><td>“0”</td><td>Releasing double strike print</td></tr>
<tr><td>“1”</td><td>Specifying double strike print</td></tr>
</table>
・When selecting double strike print, print result may be deformed.
・Default value of “n” is〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Print data＋Print line feeding： "AAAAA"+〔0A〕h

《ESC》 《G》 《n》
Specifying double strike print： 〔1B〕h+〔47〕h+〔01〕h
Print data＋Print line feeding： "ESC G 01"+〔0A〕h</td></tr>
<tr><td>Print result example ：
AAAAA
ESC G 01</td></tr>
</table>

22)[Print and paper feeding by the smallest pitch unit]《ESC J **n**》

Name	[Print and paper feeding by the smallest pitch unit]《ESC J **n**》
Code	〔1B〕h＋〔4A〕h＋**n**
Domain	〔00≦**n**≦FF〕h
Function	Printing the data inside the print line buffer and feeding the paper by **n**/203 inch.
Details	・Line feeding amount does not remain. ・Beginning of the line shall be a next print starting position. ・Executing line feeding for the amount of character's height, even if the smaller value of character's height is set.
Sample code example	Print data : "AAAAA" 《ESC》 《J》 《**n**》 Printing 24 dots and paper feeding :〔1B〕h+〔4A〕h+〔18〕h Print data＋Print line feeding : "AAAAA"+〔0A〕h
	Print result example : AAAAA AAAAA

23)■[International characters selection]《ESC R **n**》

Name	[International characters selection]《ESC R **n**》
Code	〔1B〕h＋〔52〕h＋**n**
Domain	〔00≦**n**≦0C〕h
Function	Selecting the international characters.
Details	・Effective only when selecting either Code Page 437 or characters for Japanese code table by the command [Character code table selection]《ESC t **n**》in addition to selecting Japanese in language font. ・"**n**" has the following meanings.

n (hex)	Characters setting
00	U.S.A.
01	France
02	Germany
03	U.K.
04	Denmark Ⅰ
05	Sweden
06	Italy
07	Spain Ⅰ
08	Japan
09	Norway
0A	Denmark Ⅱ
0B	Spain Ⅱ
0C	Latin America

・Default value of "**n**" is 〔08〕h (Japan).
・Please refer to [4.4 International code table].

Sample code example

Print data＋Print line feeding : "default"+〔0A〕h
Print data＋Print line feeding : 〔23〕h+〔24〕h+〔40〕h+〔5B〕h+〔5C〕h+〔5D〕h+〔5E〕h+〔60〕h+〔7B〕h+〔7C〕h+〔7D〕h+〔7E〕h+〔0A〕h+〔0A〕h

《ESC》 《R》 《**n**》
International character U.K. : 〔1B〕h+〔52〕h+〔03〕h
Print data＋Print line feeding : "ESC R 03"+〔0A〕h
Print data＋Print line feeding : 〔23〕h+〔24〕h+〔40〕h+〔5B〕h+〔5C〕h+〔5D〕h+〔5E〕h+〔60〕h+〔7B〕h+〔7C〕h+〔7D〕h+〔7E〕h+〔0A〕h+〔0A〕h

Print result example :

```
default
#$@[¥]^`{¦}~

ESC R 03
£$@[\]^`{¦}~
```

24)[90° clockwise rotated characters specifying / releasing]《ESC V **n**》

<table>
<tr><td>Name</td><td>[90° clockwise rotated characters specifying / releasing]《ESC V n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔56〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦01〕h</td></tr>
<tr><td>Function</td><td>Specifying / Releasing 90°clockwise rotated characters.</td></tr>
<tr><td>Details</td><td>・When 90°clockwise rotated characters are set, “Underline setting” will be ineffective.
・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Descriptions</th></tr>
<tr><td>00</td><td>Releasing 90° clockwise rotated characters</td></tr>
<tr><td>01</td><td>Specifying 90° clockwise rotated characters</td></tr>
</table>
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Print data＋Print line feeding : "AAAAA"+〔0A〕h

《ESC》 《V》 《n》
Specifying 90° clockwise rotated : 〔1B〕h+〔56〕h+〔01〕h
Print data＋Print line feeding : "AAAAA"+〔0A〕h</td></tr>
<tr><td>Print result example :
</td></tr>
</table>

25)[Relative position setting]《ESC ¥ **n1 n2**》

Name	[Relative position setting]《ESC ¥ **n1 n2**》
Code	〔1B〕h＋〔5C〕h＋**n1**＋**n2**
Domain	〔00≦**n1**≦FF〕h, 〔00≦**n2**≦FF〕h
Function	Setting the print start position by the numbers of dots (1/203 inch unit) counted from the current position.
Details	・The quotient obtained by dividing the value of numbers of dots for the printing start position by 256 shall be “**n2**” and the remainder by it shall be “**n1**”. ・It will be moved from the current position to the right by specifying it with positive values and to the left by specifying it with negative values. ・“(**nL**＋**nH** ×256)” specifies plus “n” dots. ・When specifying “N” dot is set to the minus direction, the value is set by the complementary number of “N”. “N” dot = 65536 - “N” ・Setting exceeding the end of the line is disregarded.
Sample code example	Print data : "AAAAA" 《ESC》 《¥》 《**n1**》 《**n2**》 Specifying relative position -36 dots : 〔1B〕h+〔5C〕h+〔DC〕h＋〔FF〕h Print data ＋Print line feeding : "B"+〔0A〕h
	Print result example : AAAAA B

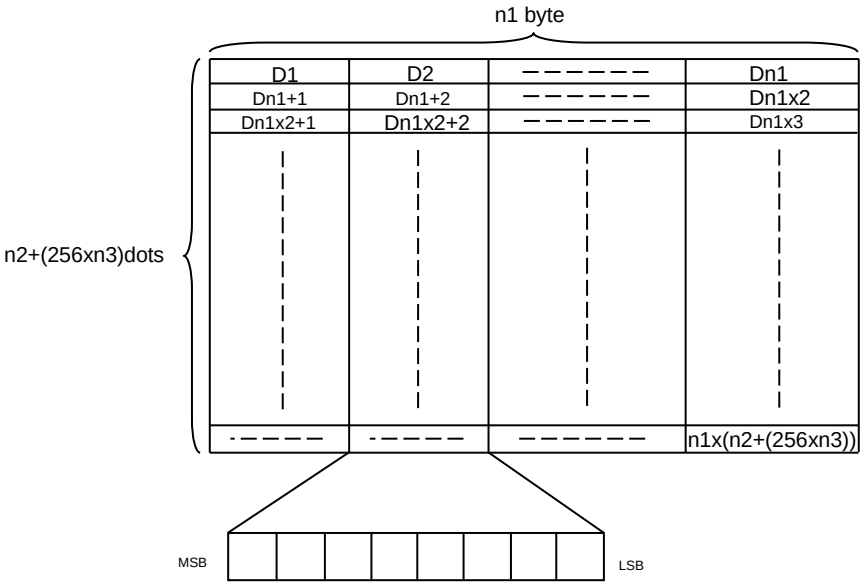
26)[Position alignment]《ESC a **n**》

<table>
<tr><td>Name</td><td>[Position alignment]《ESC a n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔61〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦02〕h</td></tr>
<tr><td>Function</td><td>Aligning the print data in a line at the designated position.</td></tr>
<tr><td>Details</td><td>・[Fixed bit image printing]《GS P n》 will be excluded.
・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Position</th></tr>
<tr><td>00</td><td>Left alignment</td></tr>
<tr><td>01</td><td>Centering</td></tr>
<tr><td>02</td><td>Right alignment</td></tr>
</table>
・Effective only when it is input at the beginning of the line.
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>《ESC》 《a》 《n》
Right alignment : 〔1B〕h+〔61〕h+〔02〕h
Print data＋Print line feeding : "right"+〔0A〕h

Centering : 〔1B〕h+〔61〕h+〔01〕h
Print data＋Print line feeding : "center"+〔0A〕h

Left alignment : 〔1B〕h+〔61〕h+〔00〕h
Print data＋Print line feeding : "left"+〔0A〕h</td></tr>
<tr><td>Print result example :
right
center
left</td></tr>
</table>

27)[Raster bit image]《ESC b **n1 n2 n3 Dn**》

Name	[Raster bit image]《ESC b **n1 n2 n3 Dn**》
Code	〔1B〕h＋〔62〕h＋**n1**＋**n2**＋**n3**＋**Dn**
Domain	〔01≦**n1**≦50〕h, 〔00≦**n2**≦FF〕h, 〔00≦**n3**≦FF〕h
Function	Printing the data by raster bit image.
Details	・"**Dn**" is raster bit image data. ・Printing raster bit image whose size is "**n1**" bytes wide and "**n2**+(256x**n3**)" dot lines height. ・ The number of total bytes of the requested raster bit image data (**Dn**) is {**n1**(**n2**+(256x**n3**)}. ・Raster bit image data (**Dn**) exceeding the print area will be disregarded. ・Regarding raster bit image data (**Dn**), "1" is for bits to be printed and "0" is for bits not to be printed. ・Relation between raster bit image data and printed dots are as follows.  ・Please be sure to add《ESC J〔00〕h》(〔1B〕h＋〔4A〕h＋〔00〕h) at the end of this command.
Sample code example	《ESC》 《b》 《**n1**》 《**n2**》 《**n3**》 Specifying raster bit image :〔1B〕h+〔62〕h+〔0C〕h+〔02〕h+〔00〕h Raster bit image data :〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ ESC J 〔00〕h :〔1B〕h+〔4A〕h+〔00〕h
	Print result example :

28)[FEED button effective / ineffective]《ESC c 5 **n**》

<table>
<tr><td>Name</td><td>[FEED button effective / ineffective]《ESC c 5 n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔63〕h＋〔35〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Enabling or disabling the FEED button.</td></tr>
<tr><td>Details</td><td>・Only LSB (least significant bit “bit0”) is available for “n”.
・“bit0” has the following meanings.
<table>
<tr><th>bit0</th><th>Descriptions</th></tr>
<tr><td>“0”</td><td>Enabling the FEED button</td></tr>
<tr><td>“1”</td><td>Disabling the FEED button</td></tr>
</table>
・Default value of “n” is〔00〕h.</td></tr>
<tr><td>Sample code example</td><td>《ESC》 《c》 《5》 《n》
Disabling the FEED button : 〔1B〕h+〔63〕h+〔35〕h+〔11〕h
Enabling the FEED button : 〔1B〕h+〔63〕h+〔35〕h+〔10〕h</td></tr>
</table>

29)[Print and "**n**" lines feeding]《ESC d **n**》

Name	[Print and "**n**" lines feeding]《ESC d **n**》
Code	〔1B〕h＋〔64〕h＋**n**
Domain	〔00≦**n**≦FF〕h
Function	Printing the data inside the print line buffer and feeding the paper for "**n**" lines.
Details	・Specified amount does not remain. ・Beginning of the line shall be the next printing start position. ・If there are print data, it definitely performs line feeding for the character's height. ・When "**n** line × line feed" amount is more than 100mm, line feeding amount will be 100mm.
Sample code example	Print data : "AAAAA" 《ESC》 《d》 《**n**》 Printing and feeding the paper for 5 lines : 〔1B〕h+〔64〕h+〔05〕h Print data＋Print line feeding : "BBBBB"+〔0A〕h
	Print result example : AAAAA BBBBB

30)[Presenter ejection / retraction mode selection]《ESC h **n**》

<table>
<tr><td>Name</td><td>[Presenter ejection / retraction mode selection]《ESC h n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔68〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦09〕h</td></tr>
<tr><td>Function</td><td>Selecting the presenter mode.</td></tr>
<tr><td>Details</td><td>・This command is effective only when the presenter (NPT-308) is used.
・“n” has the following meanings.
<table>
<tr><th>Presenter</th><th>n (hex)</th><th>Function (Mode)</th></tr>
<tr><td rowspan="10">NPT-308</td><td>00</td><td>Auto retraction</td></tr>
<tr><td>01</td><td>Auto ejection</td></tr>
<tr><td>02</td><td>Manual retraction</td></tr>
<tr><td>03</td><td>Manual ejection</td></tr>
<tr><td>04</td><td>Complete retraction</td></tr>
<tr><td>05</td><td>Complete ejection</td></tr>
<tr><td>06</td><td>Function OFF retraction</td></tr>
<tr><td>07</td><td>Function OFF ejection</td></tr>
<tr><td>08</td><td>Synchronic retraction</td></tr>
<tr><td>09</td><td>Synchronic ejection</td></tr>
</table>
・Default value of “n” is 〔00〕h.
・Please refer to “Description for NPT-308 operation mode” for details of each mode on next page.
・The function is automatically switched to “Function OFF mode” / “Synchronic mode” when printing length is more than 250mm.</td></tr>
<tr><td>Sample code example</td><td>《ESC》 《h》 《n》
Presenter manual retraction mode： 〔1B〕h+〔68〕h+〔02〕h</td></tr>
</table>

[Description for NPT-308 operation mode]

Mode	Clamp	Retraction condition	Ejection condition
Auto retraction	YES	FEED button ON	Receiving presenter ejection in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.
		Receiving presenter retraction in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.	
		Receiving print / paper feeding related command.	
		Elapsing time set by the command [Presenter auto ejection / retraction time setting] 《ESC r 1 **n**》.	
Auto ejection	YES	Receiving presenter retraction in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.	FEED button ON
			Receiving presenter ejection in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.
			Receiving print / paper feeding related command.
			Elapsing time set by the command [Presenter auto ejection / retraction time setting] 《ESC r 1 **n**》.
Manual retraction	YES	FEED button ON	Receiving presenter ejection in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.
		Receiving presenter retraction in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.	
		Receiving print / paper feeding related command.	
Manual ejection	YES	Receiving presenter retraction in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.	FEED button ON
			Receiving presenter ejection in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.
			Receiving print / paper feeding related command.
Complete retraction	NO	Full cut	-
Complete ejection	NO	-	Full cut
Function OFF retraction	NO	Full cut	-
Function OFF ejection	NO	-	Full cut
Synchronic retraction	YES	FEED button ON	Receiving presenter ejection in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.
		Receiving presenter retraction in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.	
		Receiving print / paper feeding related command.	
Synchronic ejection	YES	Receiving presenter retraction in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.	FEED button ON
			Receiving presenter ejection in the command [Presenter ejection / retraction] 《ESC r 0 **n**》.
			Receiving print / paper feeding related command.

[Notes]

- “Clamp” indicates the presenter’s situation with which the paper remains and has not been pulled out yet.
  It will start immediately after cutting the paper.
- ”Function OFF” is the state with which the presenter’s functions are disabled by operating the presenter motor with synchronized with the paper feeding motor. However, since a paper detection processing and ejection / retraction processing functions are not disabled, paper detection error occurs when paper does not enter the presenter and presenter ejection error occurs when the paper is not ejected from the presenter.
- Paper detection will not be executed when fixed length paper is fed after opening / closing the cover.
- Paper detection error occurs when paper end occurs and there is no paper in the presenter. Since leaving a short strip of paper inside causes paper jams, please be sure to remove it after opening the cover.
- When printing or paper feeding is interrupted briefly by waiting for the data, etc. in “Function OFF” retraction mode, “Function OFF” ejection mode, synchronous retraction mode or synchronous ejection mode, printing or paper feeding may be disturbed in several dots lines at the start of printing.

31)[Full cut]《ESC i》

Name	[Full cut]《ESC i》
Code	〔1B〕h＋〔69〕h
Domain	No domain
Function	Executing full cut of the paper.
Details	・Only effective at the beginning of a line. ・Auto cutter control is set by the memory switch (DS1-7) . When the control is [Ineffective], this command will be disregarded. ・Please refer to “4.1.1 Switch setting” in the Product Specifications for details of the memory switch.
Sample code example	《ESC》 《i》 Full cut :〔1B〕h+〔69〕h

32)[Partial cut]《ESC m》

Name	[Partial cut]《ESC m》
Code	〔1B〕h＋〔6D〕h
Domain	No domain
Function	Executing partial cut of the paper.
Details	・Only effective at the beginning of a line. ・When using the presenter NPT-308, the paper cutting mode will be full cut automatically0 ・Auto cutter control is set by the dip switch (DS1-7). When the control is [Ineffective], this command will be disregarded. ・Please refer to “4.1.1 Switch setting” in the Product Specifications for details of the switches.
Sample code example	《ESC》 《m》 Partial cut :〔1B〕h+〔6D〕h

33)[Presenter ejection / retraction]《ESC r 0 **n**》

<table>
<tr><td>Name</td><td>[Presenter ejection / retraction]《ESC r 0 n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔72〕h＋〔30〕h＋ n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦01〕h</td></tr>
<tr><td>Function</td><td>Activating the presenter ejection / retraction movement.</td></tr>
<tr><td>Details</td><td>・This command is effective only when using the presenter (NPT-308).
・Once this command is received, ejection / retraction operation is executed after releasing the clamp status.
・It is effective only when selecting “Auto ejection / retraction” or “Manual ejection/retraction” mode and the printer is in clamp status.
<table>
<tr><th>n (hex)</th><th>Function</th></tr>
<tr><td>00</td><td>Presenter retraction</td></tr>
<tr><td>01</td><td>Presenter ejection</td></tr>
</table></td></tr>
<tr><td>Sample code example</td><td>《ESC》 《r》 《0》 《n》
Presenter retraction： 〔1B〕h+〔72〕h+〔30〕h+〔00〕h</td></tr>
</table>

34)[Presenter auto ejection / retraction time setting]《ESC r 1 **n**》

Name	[Presenter auto ejection / retraction time setting]《ESC r 1 **n**》
Code	〔1B〕h＋〔72〕h＋〔31〕h＋ **n**
Domain	〔00≦**n**≦3C〕h
Function	Setting the time from clamping status to auto ejection / retraction when auto ejection / retraction mode is selected.
Details	・This command is effective only when using the presenter (NPT-308). ・Time set by "**n**" is as follows. The time to auto ejection / retraction = **n** x 1.0 sec. ・Default value of "**n**" is 〔04〕h. (4 seconds) ・If the value of "**n**" is "〔3C〕h < "**n**", the previous setting is valid.
Sample code example	Presenter auto ejection / retraction time : setting to 3 sec. 《ESC》 《r》 《1》 《**n**》 〔1B〕h+〔72〕h+〔31〕h+〔03〕h

35)[Printer information transmission]《ESC s **n**》

<table>
<tr><td>Name</td><td>[Printer information transmission]《ESC s n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔73〕h＋n</td></tr>
<tr><td>Domain</td><td>〔n=01,02,03,04,05,06,07,08,09,14〕h</td></tr>
<tr><td>Function</td><td>Transmitting the printer information.</td></tr>
<tr><td>Details</td><td>・“n” and details of returned data are as follows.
<table>
<tr><th>n
(hex)</th><th>Printer information type</th><th>Returned data format</th><th>Returned data length</th></tr>
<tr><td>01</td><td>Extended status</td><td>Fixed-length hex data
(Status 1+ Status 2+
Status 3+ Status 4)</td><td>4 bytes</td></tr>
<tr><td>02</td><td>Model info.</td><td>Variable-length string (terminal NUL=〔00〕h)</td><td>Max. 32 bytes</td></tr>
<tr><td>03</td><td>F/W version info.</td><td>Fixed-length string</td><td>8 bytes</td></tr>
<tr><td>04</td><td>Boot version info.</td><td>Fixed-length string</td><td>8 bytes</td></tr>
<tr><td>05</td><td>Switch setting info.</td><td>Fixed-length hex data (DS1 setting+ MS1 setting+ MS2 setting+〔00〕h)</td><td>4 bytes</td></tr>
<tr><td>06</td><td>Number of dot lines being energized by the head</td><td>Fixed-length long numerical data</td><td>4 bytes</td></tr>
<tr><td>07</td><td>Total number of passed dot lines</td><td>Fixed-length long numerical data</td><td>4 bytes</td></tr>
<tr><td>08</td><td>Number of cuttings</td><td>Fixed-length long numerical data</td><td>4 bytes</td></tr>
<tr><td>09</td><td>User maintenance counter (Resettable counter)</td><td>Fixed-length long numerical data</td><td>4 bytes x 3 items + Backup 4 bytes</td></tr>
</table>
・Returned format
〔FF〕h ＋ n(*1) ＋ returned data
・*1 : It is “n” specified by the command.
・n〔=01〕h : The status returned with an extended status is the information at the time of transmitting standard status.
To obtain the latest extended status, please obtain it by using n =〔01〕h: extended status command after obtaining standard status by using the command “[Printer status transmission] 《ESC v》”.
・n〔=01〕h is effective only when the memory switch setting is set to the new status system setting.
・Please refer to [4.1.1 Switch setting] in the Product Specifications for switch details regarding the buttons.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>《ESC》 《s》 《n》
Specifying F/W version info. : 〔1B〕h+〔73〕h+〔03〕h</td></tr>
<tr><td>《n》 《V》 《e》 《r》 《.》 《1》
Reply data example :〔FF〕h+〔03〕h+〔56〕h+〔65〕h+〔72〕h+〔2E〕h+〔31〕h+
《.》 《0》 《0》
〔2E〕h+〔30〕h+〔30〕h</td></tr>
</table>

36)▲[Character code table selection]《ESC t **n**》

<table>
<tr><td>Name</td><td>[Character code table selection]《ESC t n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔74〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦07〕h</td></tr>
<tr><td>Function</td><td>Selecting the character code table.</td></tr>
<tr><td>Details</td><td>* It is effective only when language font Japanese or Korean is selected.

・“n” has the following meanings.
<table>
<tr><th rowspan="2">n (hex)</th><th colspan="2">Font table</th></tr>
<tr><th>Japanese</th><th>Korean</th></tr>
<tr><td>00</td><td>Code Page 437</td><td>Extended graphic characters set</td></tr>
<tr><td>01</td><td>Characters for Japanese code</td><td>Katakana characters set</td></tr>
<tr><td>02</td><td>Code Page 858</td><td>Code Page 858</td></tr>
<tr><td>03</td><td>Code Page 1250</td><td>Code Page 1250</td></tr>
<tr><td>04</td><td>Code Page 1251</td><td>Code Page 1251</td></tr>
<tr><td>05</td><td>Code Page 1252</td><td>Code Page 1252</td></tr>
<tr><td>06</td><td>Code Page 1254</td><td>Code Page 1254</td></tr>
<tr><td>07</td><td>User code page</td><td>User code page</td></tr>
</table>
・Default value of “n” is 〔01〕h (Characters for Japanese code).</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Print data＋Print line feeding ：〔F0〕h+〔F1〕h+〔F2〕h+〔F3〕h+〔F4〕h+〔F5〕h+〔F6〕h+〔F7〕h+〔F8〕h+〔F9〕h+〔FA〕h+〔FB〕h+〔FC〕h+〔FD〕h+〔FE〕h+〔0A〕h+〔0A〕h

《ESC》 《t》 《n》
Specifying Code Page 437 ：〔1B〕h+〔74〕h+〔00〕h
Print data＋Print line feeding ：〔F0〕h+〔F1〕h+〔F2〕h+〔F3〕h+〔F4〕h+〔F5〕h+〔F6〕h+〔F7〕h+〔F8〕h+〔F9〕h+〔FA〕h+〔FB〕h+〔FC〕h+〔FD〕h+〔FE〕h+〔0A〕h</td></tr>
<tr><td>Print result example ：</td></tr>
</table>

37)[Printer status transmission]《ESC v》

Name	[Printer status transmission]《ESC v》
Code	〔1B〕h＋〔76〕h
Domain	No domain
Function	Transmitting the current printer status.
Details	・Transmitted status is one byte data. Please refer to [4.2 Processing errors] in the Product Specifications.
Sample code example	Requesting printer status transmission： 《ESC》 《v》 〔1B〕h+〔76〕h
	Reply status example (Paper-out and paper near-end) ： 〔05〕h

38)[Inverted character specifying / releasing]《ESC { **n**》

<table>
<tr><td>Name</td><td>[Inverted character specifying / releasing]《ESC { n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔7B〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Specifying / Releasing inverted print function.</td></tr>
<tr><td>Details</td><td>・Only LSB (least significant bit “bit0”) is available for “n”.
・“bit0” has the following meanings.
<table>
<tr><td>bit0</td><td>Descriptions</td></tr>
<tr><td>“0”</td><td>Releasing inverted character</td></tr>
<tr><td>“1”</td><td>Specifying inverted character</td></tr>
</table>
・The command is only effective when it is assigned at the beginning of a line.
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Print data＋Print line feeding : "ABCDE"+〔0A〕h

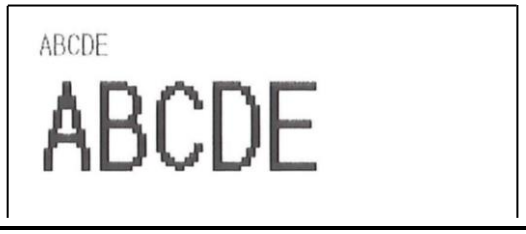
《ESC》 《{》 《n》
Specifying inverted character : 〔1B〕h+〔7B〕h+〔01〕h
Print data＋Print line feeding : "ABCDE"+〔0A〕h</td></tr>
<tr><td>Print result example :

</td></tr>
</table>

39)[Character size setting]《GS ! **n**》

<table>
<tr><td>Name</td><td>[Character size setting]《GS ! n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔21〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Setting the character size.</td></tr>
<tr><td>Details</td><td>・“n” specifies the vertical size by bit0, bit1, and bit2 and specifies the horizontal size by bit4, bit5, and bit6.
・Sizes specified by these bits are described in the below table.

Vertical size
<table>
<tr><th>bit0</th><th>bit1</th><th>bit2</th><th>Font size</th></tr>
<tr><td>“0”</td><td>“0”</td><td>“0”</td><td>Unchanged</td></tr>
<tr><td>“1”</td><td>“0”</td><td>“0”</td><td>Double height</td></tr>
<tr><td>“0”</td><td>“1”</td><td>“0”</td><td>3 times height</td></tr>
<tr><td>“1”</td><td>“1”</td><td>“0”</td><td>4 times height</td></tr>
<tr><td>“0”</td><td>“0”</td><td>“1”</td><td>5 times height</td></tr>
<tr><td>“1”</td><td>“0”</td><td>“1”</td><td>6 times height</td></tr>
<tr><td>“0”</td><td>“1”</td><td>“1”</td><td>7 times height</td></tr>
<tr><td>“1”</td><td>“1”</td><td>“1”</td><td>8 times height</td></tr>
</table>
Horizontal size
<table>
<tr><th>bit4</th><th>bit5</th><th>bit6</th><th>Font size</th></tr>
<tr><td>“0”</td><td>“0”</td><td>“0”</td><td>Unchanged</td></tr>
<tr><td>“1”</td><td>“0”</td><td>“0”</td><td>Double width</td></tr>
<tr><td>“0”</td><td>“1”</td><td>“0”</td><td>3 times width</td></tr>
<tr><td>“1”</td><td>“1”</td><td>“0”</td><td>4 times width</td></tr>
<tr><td>“0”</td><td>“0”</td><td>“1”</td><td>5 times width</td></tr>
<tr><td>“1”</td><td>“0”</td><td>“1”</td><td>6 times width</td></tr>
<tr><td>“0”</td><td>“1”</td><td>“1”</td><td>7 times widht</td></tr>
<tr><td>“1”</td><td>“1”</td><td>“1”</td><td>8 times width</td></tr>
</table>
・This setting will be effective for all characters except HRI characters.
・If character size is set by the command [Print mode at one time specifying] 《ESC ! n》, the command [Kanji print mode at one time specifying] 《FS ! n》 and the command [Double-height and double-width Kanji size specifying / releasing]《FS W n》, it will be the size which has been set lastly.
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td>Sample code example</td><td>Print data＋Print line feeding : "ABCDE"+〔0A〕h

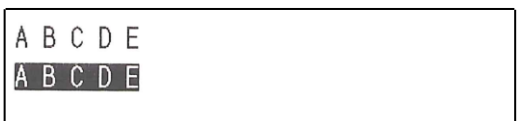
《GS》 《!》 《n》
Specifying vertical 4 times and horizontal 4 times : 〔1D〕h+〔21〕h+〔33〕h
Print data＋Print line feeding : "ABCDE"+〔0A〕h</td></tr>
<tr><td></td><td>Print result example :

</td></tr>
</table>

40) [Partition drive selection]《GS % **n**》

<table>
<tr><td>Name</td><td>[Partition drive selection]《GS % n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔25〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦03〕h</td></tr>
<tr><td>Function</td><td>Selecting the partition drive.</td></tr>
<tr><td>Details</td><td>・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Partition</th></tr>
<tr><td>01</td><td>Fixed no partition</td></tr>
<tr><td>02</td><td>Fixed dual partition</td></tr>
<tr><td>03</td><td rowspan="2">Optimization</td></tr>
<tr><td>00</td></tr>
</table>
・Default value of “n” is〔03〕h (Optimization).
・If it is out of range, it is disregarded and will not change the setting.</td></tr>
<tr><td>Sample code example</td><td>Selecting fixed dual partition : 《GS》 《%》 《n》
〔1D〕h+〔25〕h+〔02〕h</td></tr>
</table>

41) [Black and white reverse printing specifying / releasing]《GS B **n**》

<table>
<tr><td>Name</td><td>[Black and white reverse printing specifying / releasing]《GS B n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔42〕＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Specifying / Releasing black and white reverse printing.</td></tr>
<tr><td>Details</td><td>・Only LSB (least significant bit “bit0”) is available for “n”.
・“bit0” has the following meanings.
<table>
<tr><td>bit0</td><td>Function</td></tr>
<tr><td>“0”</td><td>Releasing black and white reverse printing</td></tr>
<tr><td>“1”</td><td>Specifying black and white reverse printing</td></tr>
</table>
・Black and white reverse printing is applicable to built-in characters and downloaded characters.
・Black and white reverse printing is also applied to the right side space of set character specified by [Character right space quantity setting] 《ESC SP n》. It does not affect the skipped space created by bit image, raster bit image, fixed bit image, barcode, HRI characters, the command [Horizontal tab], the command [Absolute position specifying] 《ESC $ n1 n2》 or the command [Relative position specifying] 《ESC ¥ n1 n2》.
・It does not affect to the spaces between lines.
・Since setting black and white reverse printing has higher priority than underline setting, underline will not be added to black and white reverse characters even when underline is set. However, underline setting remains effective.
・When black and white reverse printing is performed, printing result may be deformed.
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Print data＋Print line feeding : "A B C D E"+〔0A〕h

《GS》 《B》 《n》
Specifying black and white reverse printing : 〔1D〕h+〔42〕h+〔01〕h
Print data＋Print line feeding : "A B C D E"+〔0A〕h</td></tr>
<tr><td>Print result example :

</td></tr>
</table>

42) [Print start / finish setting]《GS G **n**》

Name	[Print start / finish setting]《GS G **n**》
Code	Please refer to details 1 and details 2.
Domain	Please refer to details 1 and details 2.
Function	Whether printing operation is finished or not can be judged by monitoring the “bit7” of the printer status.
Details 1	1. Print start / finish setting (**n** = 〔00〕h, 〔02〕h, 〔10〕h, 〔12〕h) (1) [Print start setting (without JOB ID)] Code：〔1D〕h＋〔47〕h＋〔02〕h Setting “1” to the “bit7” of the printer status. (2) [Print finish setting (without JOB ID)] Code：〔1D〕h＋〔47〕h＋〔00〕h Setting “0” to the “bit7” of the printer status. (3) [Print start setting (with JOB ID)] Code：〔1D〕h＋〔47〕h＋〔12〕h＋ID1＋ID2＋ID3＋ID4 Setting “1” to bit7 of printer status. ・Setting JOB ID (4 bytes). ・Holding the result of the logical sum from the start setting to the finish setting as a completion status. (4) [Print finish setting (with JOB ID)] Code：〔1D〕h＋〔47〕h＋〔10〕h Setting “0” to the “bit7” of the printer status. ・Transmitting the print finish notification with the following format. 〔FF〕h＋〔13〕h＋JOB ID (4 bytes)＋finish status (1 byte)＋backup (3 bytes)

<table>
<tr><td>Details 2</td><td>
2. Print start / finish setting (discarding the data when an error occurs)
(n = 〔00〕h, 〔01〕h, 〔10〕h, 〔11〕h)
・If a print stop error occurs during printing the data sandwiched between the print start setting and the print finish setting, the print data up to the print finish setting is disregarded.

(1) [Print start setting (discarding the data when an error occurs・without JOB ID)]
Code : 〔1D〕h＋〔47〕h＋〔01〕h
Setting “1” to the “bit7” of the printer status.

(2) [Print finish setting (discarding the data when an error occurs・without JOB ID)]
Code : 〔1D〕h＋〔47〕h＋〔00〕h
Setting “0” to the “bit7” of the printer status.

(3) [Print start setting (discarding the data when an error occurs・with JOB ID)]
Code : 〔1D〕h＋〔47〕h＋〔11〕h＋ID1＋ID2＋ID3＋ID4
Setting “1” to the “bit7” of the printer status.
・Setting JOB ID (4 bytes).
・Holding the result of the logical sum from the start setting to the finish setting as a completion status.

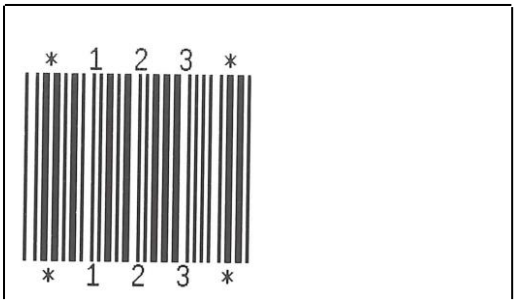
(4) [Print finish setting (discarding the data when an error occurs・with JOB ID)]
Code : 〔1D〕h＋〔47〕h＋〔10〕h
Setting “0” to the “bit7” of the printer status.
・Transmitting the print finish notification with the following format.
〔FF〕h＋〔13〕h＋JOB ID (4 bytes)＋completion status (1 byte)＋backup (3 bytes)
</td></tr>
<tr><td>Sample code example</td><td>
《GS》 《G》 《n》
Print start setting (disregarding data during errors) : 〔1D〕h+〔47〕h+〔21〕h

Print data＋Print line feeding : "AAAAA"+〔0A〕h
Print finish setting (disregarding data during errors) : 〔1D〕h+〔47〕h+〔20〕h

Print result example : AAAAA
</td></tr>
</table>

43) [Print position selection for HRI characters]《GS H **n**》

<table>
<tr><td>Name</td><td>[Print position selection for HRI characters]《GS H n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔48〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦03〕h</td></tr>
<tr><td>Function</td><td>Selecting the printing position of HRI characters when printing the barcode.</td></tr>
<tr><td>Details</td><td>・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Printing position</th></tr>
<tr><td>00</td><td>No printing</td></tr>
<tr><td>01</td><td>Above barcode</td></tr>
<tr><td>02</td><td>Under barcode</td></tr>
<tr><td>03</td><td>Both for above and under barcode</td></tr>
</table>
・HRI characters will be printed by the font selected by the command [Font selection for HRI characters]《GS f n》.
・Default value of “n” is〔00〕h.
・It never affects the character editing command (Double strike printing, inverted printing or underline, etc.).</td></tr>
<tr><td rowspan="2">Sample code example</td><td>《GS》 《H》 《n》
Setting HRI characters both for above and under : 〔1D〕h+〔48〕h+〔03〕h

Barcode printing : 〔1D〕h+〔6B〕h+〔04〕h+"*123*"+〔00〕h</td></tr>
<tr><td>Print result example :

</td></tr>
</table>

44) [Fixed bit image printing]《GS P **n**》

<table>
<tr><td>Name</td><td>[Fixed bit image printing]《GS P n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔50〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦02〕h</td></tr>
<tr><td>Function</td><td>Printing the printing data of registered bit image.</td></tr>
<tr><td>Details</td><td>・Selecting one of the three registered print patterns by specifying 00 to 02 values in “n”.
・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Printing pattern</th></tr>
<tr><td>00</td><td>Pattern 0</td></tr>
<tr><td>01</td><td>Pattern 1</td></tr>
<tr><td>02</td><td>Pattern 2</td></tr>
</table></td></tr>
<tr><td>Sample code example</td><td>Please refer to the next command [Fixed bit image registration]《GS T n》.</td></tr>
</table>

45) [Fixed bit image registration]《GS T **n**》

<table>
<tr><td>Name</td><td>[Fixed bit image registration]《GS T n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔54〕h＋n</td></tr>
<tr><td>Domain</td><td>〔n = 00,01,02,FF〕h</td></tr>
<tr><td>Function</td><td>Registering the print data of predetermined bit image.</td></tr>
<tr><td>Details</td><td>・3 patterns from pattern “0” to pattern ”2” can be registered.
・Max. 130K bytes for each pattern can be registered.
(Parts exceeding max. size will be discarded.)
Please refer to the following formula regarding the data size to be registered.
Print area (mm) × 1.48 × vertically counted number of dots of bit image
× the number of bit images
・Registered data will not be erased either by turning the power OFF/ON, by executing the command [Printer initialization]《ESC @》or by executing the command [Software reset]《DC1》.

“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Function</th></tr>
<tr><td>00</td><td>Starting pattern “0” registration</td></tr>
<tr><td>01</td><td>Starting registration of pattern “1”</td></tr>
<tr><td>02</td><td>Starting registration of pattern “2”</td></tr>
<tr><td>FF</td><td>Finishing registration</td></tr>
</table>
・When starting the registration in the middle of a line, the whole line will be registered.
・When finishing the registration in the middle of a line, the line will not be registered.
・Registration sequence is as follows. (For registering pattern to pattern “0”)
“GS　T　〔00〕h+ (Bit image data by ESC *)” x "n lines" + "GS　T　〔FF〕h"</td></tr>
<tr><td>Sample code example</td><td>《GS》　《T》　《n》
Starting registration of pattern “0” : 〔1D〕h+〔54〕h+〔00〕h

Bit image data by ESC * : 〔1B〕h+〔2A〕h+〔00〕h+〔64〕h+〔00〕h
m=〔00〕h, the number of dots 100
Bit image data : 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+…
(Omitted 100 bytes)
Print line feeding : 〔0A〕h

Finishing registration : 〔1D〕h+〔54〕h+〔FF〕h

《GS》　《P》　《n》
Print pattern “0” : 〔1D〕h+〔50〕h+〔00〕h</td></tr>
<tr><td></td><td>Print result example :</td></tr>
</table>

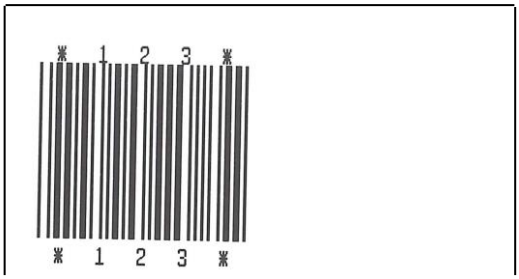
46) [Firmware download]《GS d **Dn**》

Name	[Firmware download]《GS d **Dn**》
Code	〔1D〕h＋〔64〕h＋**Dn**
Domain	No domain
Function	Downloading the printer firmware HEX file, rewriting the firmware according to it and restarting the printer.
Details	・"**Dn**" is the HEX code of firmware and it conforms to Intel HEX format. ・Please DO NOT rewrite carelessly. ・Please DO NOT turn OFF the power while it is being rewritten. ・Please rewrite the firmware at your own risk.
Sample code example	《GS》 《d》 Downloading the firmware :〔1D〕h+〔64〕h Sending the firmware file (Omitted)

47) [Font selection for HRI characters]《GS f **n**》

<table>
<tr><td>Name</td><td>[Font selection for HRI characters]《GS f n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔66〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦01〕h</td></tr>
<tr><td>Function</td><td>Selecting the font for HRI characters when printing the barcode.</td></tr>
<tr><td>Details</td><td>・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Font</th></tr>
<tr><td>00</td><td>Font A</td></tr>
<tr><td>01</td><td>Font B</td></tr>
</table>
・Default value of “n” is 〔00〕h.
・It never affects the character editing command (Double strike printing, Inverted printing or Underline, etc.).</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Setting HRI characters both for above and under :〔1D〕h+〔48〕h+〔03〕h

《GS》 《H》 《n》
Specifying HRI characters Font B :〔1D〕h+〔66〕h+〔01〕h

Barcode print :〔1D〕h+〔6B〕h+〔04〕h+"*123*"+〔00〕h</td></tr>
<tr><td>Print result example :
</td></tr>
</table>

48) [Barcode height specifying]《GS h **n**》

Name	[Barcode height specifying]《GS h **n**》
Code	〔1D〕h＋〔68〕h＋**n**
Domain	〔01≦**n**≦FF〕h
Function	Specifying the height of barcode by dots.
Details	・“**n**” indicates the number of dots counted vertically. ・Default value of “**n**” is 〔A2〕h (162 dots). ・The bar height of GS1 DataBar will not be less than the minimum height described in the barcode details specifications. ・When the bar is put to the area with more than 2 columns by GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional or GS1 DataBar Expanded Stacked, the height of one bar is 1/2 of the height specified by “**n**”. When 1/2 of the specified height is more than the minimum height and the bar takes 2 columns, the barcode height becomes "specified value “**n**” + separator" height.
Sample code example	Barcode print :〔1D〕h+〔6B〕h+〔04〕h+"*123*"+〔00〕h 《GS》 《h》 《**n**》 Specifying 100 dots height :〔1D〕h+〔68〕h+〔64〕h Barcode print :〔1D〕h+〔6B〕h+〔04〕h+"*123*"+〔00〕h Print result example : 162 dots height (Default value)  Specifying 100 dots height 

49) [Barcode print]《GS k **n Dn** NUL》

<table>
<tr><td>Name</td><td>[Barcode print]《GS k n Dn NUL》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔6B〕h＋n＋Dn＋〔00〕h</td></tr>
<tr><td>Domain</td><td>〔00≦n≦0E〕h</td></tr>
<tr><td>Function</td><td>Selecting the barcode symbology and printing the barcode.</td></tr>
<tr><td>Details</td><td>・Beginning of the line shall be a next printing start position.
・Selecting one of the following barcode symbology by the value of “n”.
<table>
<tr><th>n (hex)</th><th>Barcode symbology</th></tr>
<tr><td>00</td><td>UPC-A</td></tr>
<tr><td>01</td><td>UPC-E</td></tr>
<tr><td>02</td><td>JAN-13 (EAN-13)</td></tr>
<tr><td>03</td><td>JAN-8 (EAN-8)</td></tr>
<tr><td>04</td><td>CODE39</td></tr>
<tr><td>05</td><td>ITF</td></tr>
<tr><td>06</td><td>CODABAR (NW-7)</td></tr>
<tr><td>07</td><td>CODE128</td></tr>
<tr><td>08</td><td>CODE93</td></tr>
<tr><td>09</td><td>GS1 DataBar Omnidirectional</td></tr>
<tr><td>0A</td><td>GS1 DataBar Truncated</td></tr>
<tr><td>0B</td><td>GS1 DataBar Stacked</td></tr>
<tr><td>0C</td><td>GS1 DataBar Stacked Omnidirectional</td></tr>
<tr><td>0D</td><td>GS1 DataBar Limited</td></tr>
<tr><td>0E</td><td>GS1 DataBar Expanded (Stacked)</td></tr>
</table>
・“Dn” indicates the character code to be printed.
・When character code “Dn” is not printable character, the following data after “Dn” will be treated as normal print data.
・When selecting the barcode symbology which has the fixed number of printing characters, please be sure to make the number of characters equal to the number of printing characters.
・Barcode will not be printed when its horizontal data exceeds the length of a line except for GS1 DataBar Expanded.
・〔00〕h at the end of this command can be changed to〔FF〕h by the command [Barcode termination change]《ESC RS c n》.
・Please refer to [Barcode specifications details] for details of barcodes.</td></tr>
<tr><td>Sample code example</td><td>《GS》 《k》 《n》
Barcode CODE128 printing :〔1D〕h+〔6B〕h+〔07〕h+

CODE A, Data 123, NUL :〔7B〕h+〔41〕h+ "123"+〔00〕h</td></tr>
<tr><td></td><td>Print result example :
</td></tr>
</table>

[Barcode details specifications]

Name	Numbers of characters	Types of characters	Remarks
UPC-A	12	Numbers (0 to 9)	・Check digit that has been calculated inside the printer will be automatically added to 12th digit. ・Calculated value will be prioritized if numerical value differs from 12th digit.
UPC-E	8	Numbers (0 to 9)	・12 digits data will be compressed to 8 digits including the 8th digit automatically calculated in the printer for the check digit. in the printer. ・Calculated check digit will be prioritized if it is different from the number at the 12th digit.
JAN-13 (EAN-13)	13	Numbers (0 to 9)	・Check digit that has been calculated inside the printer will be automatically added to 13th digit. ・Calculated value will be prioritized if numerical value differs from 13th digit.
JAN-8 (EAN-8)	8	Numbers (0 to 9)	・Check digit that has been calculated inside the printer will be automatically added to 8th digit. ・Calculated value will be prioritized if numerical value differs from 8th digit.
CODE39	Flexible length	Numbers (0 to 9) Alphabet (A to Z) Marks ($%*+-./SPACE) Start / stop code (*)	・Please be sure to enter start / stop code “*”.
ITF	Even numbers	Numbers：0 to 9	・Odd numbers will not be printed.
CODABAR (NW-7)	Flexible length	Numbers (0 to 9) Marks ($+-./:) Start / stop code (ABCD) (abcd)	・Please be sure to enter start / stop code “*”. ・Although it can be printed out without start /stop code, reading it by scanner, etc. cannot be performed.
CODE93	Flexible length	Numbers (0 to 9) Alphabet (A to Z) (a to z) Control character (〔00〕h to 〔1F〕h) (〔7F〕h)	・"□" can be automatically added to before and after HRI characters. ・HRI characters for the control characters are printed with the combination of "■" and one alphabetic character. *1
CODE128	Please refer to CODE128 in [Barcode details specifications].		
GS1 DataBar	Please refer to GS1 DataBar in [Barcode details specifications].		

*1: CODE93 control characters' notation as HRI characters

ASCII	Hexadecimal	HRI characters	ASCII	Hexadecimal	HRI characters
NUL	00	■U	DLE	10	■P
SOH	01	■A	DC1	11	■Q
STX	02	■B	DC2	12	■R
ETX	03	■C	DC3	13	■S
EOT	04	■D	DC4	14	■T
ENQ	05	■E	NAK	15	■U
ACK	06	■F	SYN	16	■V
BEL	07	■G	ETB	17	■W
BS	08	■H	CAN	18	■X
HT	09	■I	EM	19	■Y
LF	0A	■J	SUB	1A	■Z
VT	0B	■K	ESC	1B	■A
FF	0C	■L	FS	1C	■B
CR	0D	■M	GS	1D	■C
SO	0E	■N	RS	1E	■D
SI	0F	■O	US	1F	■E
			DEL	7F	■T

[Barcode details specifications]

・CODE128

1. Overview

ASCII 128 characters (numbers, uppercase / lowercase alphabetical letters, symbols, control characters) can be represented and one bar pattern can represent numbers with two digits. The number of characters is variable and the stop code and the check digit will be added automatically.

2. Types of characters

・Code set A : ASCII characters in "〔00〕h to 〔5F〕h" can be represented.
・Code set B : ASCII characters in "〔20〕h to 〔7F〕h" can be represented.
・Code set C : Numbers with 2 digits (00 ~ 99) can be represented by one bar pattern.
・Special characters
(1) Start code / code selection character (CODE A, CODE B and CODE C)
The head of the barcode data has to be this character.
The code set can be changed in the middle of the data.
(2) Shift character (SHIFT)
Code set A : One character immediately after SHIFT is treated as a character from code set B.
Code set B : One character immediately after SHIFT is treated as a character from code set A.
Code set C : Not available
(3) Function characters (FNC1, FNC2, FNC3 and FNC4)
Use varies depending on applications.
“FNC1” can be used for code set C.

3. Detailed specifications

・Command execution is halted if the barcode data does not start with a “start code”.
・Command execution is halted if the combination of “{” and the next character does not fall under special characters.
・To use "{” as a character, please input ”“{{”([7B]h＋[7B]h)".
・Although the barcode will be printed when there are any characters which is not included in the selected code set, it cannot be read by a scanner, etc.
・To use〔00〕h as a code, please change the barcode termination character to〔FF〕h by the command [Barcode termination change]《ESC RS c **n**》.
・Specifications for HRI characters of control / special characters are described below.
(1) Control characters (〔00〕h to〔1F〕h,〔7F〕h)
A space is displayed.
(2) Start code / code selection character (CODE A, CODE B and CODE C)
Nothing is printed.
(3) Shift character (SHIFT)
Nothing is printed.
(4) Function characters (FNC1, FNC2, FNC3 and FNC4)
A space character is printed.

4. Character set table

Special characters

	ASCII	Hexadecimal
CODE A	{A	〔7B〕h＋〔41〕h
CODE B	{B	〔7B〕h＋〔42〕h
CODE C	{C	〔7B〕h＋〔43〕h
SHIFT	{S	〔7B〕h＋〔53〕h
FNC 1	{1	〔7B〕h＋〔31〕h
FNC 2	{2	〔7B〕h＋〔32〕h
FNC 3	{3	〔7B〕h＋〔33〕h
FNC 4	{4	〔7B〕h＋〔34〕h

[Barcode details specifications]

Code set A

HEX	0	1	2	3	4	5
0	NUL	DLE	SP	0	@	P
1	SOH	DC1	!	1	A	Q
2	STX	DC2	“	2	B	R
3	ETX	DC3	#	3	C	S
4	EOT	DC4	$	4	D	T
5	ENQ	NAK	%	5	E	U
6	ACK	SYN	&	6	F	V
7	BEL	ETB	‘	7	G	W
8	BS	CAN	(	8	H	X
9	HT	EM	)	9	I	Y
A	LF	SUB	*	:	J	Z
B	VT	ESC	+	;	K	[
C	FF	FS	,	<	L	¥
D	CR	GS	-	=	M	]
E	SO	RS	.	>	N	^
F	SI	US	/	?	O	_

Code set B

HEX	2	3	4	5	6	7
0	SP	0	@	P	`	p
1	!	1	A	Q	a	q
2	“	2	B	R	b	r
3	#	3	C	S	c	s
4	$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	‘	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	*	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	¥	l	|
D	-	=	M	]	m	}
E	.	>	N	^	n	~
F	/	?	O	_	o	DEL

Code set C

HEX	0	1	2	3	4	5	6
0	00	16	32	48	64	80	96
1	01	17	33	49	65	81	97
2	02	18	34	50	66	82	98
3	03	19	35	51	67	83	99
4	04	20	36	52	68	84	
5	05	21	37	53	69	85	
6	06	22	38	54	70	86	
7	07	23	39	55	71	87	
8	08	24	40	56	72	88	
9	09	25	41	57	73	89	
A	10	26	42	58	74	90	
B	11	27	43	59	75	91	
C	12	28	44	60	76	92	
D	13	29	45	61	77	93	
E	14	30	46	62	78	94	
F	15	31	47	63	79	95	

[Barcode details specifications]

GS1 DataBar

Name	Numbers of characters	Types of characters	Minimum height	Remarks
GS1 DataBar Omnidirectional	Not more than 13	Numbers (0 to 9)	33 modules ・In case of horizontal size＝3 33×3＝99 dots	Check digit calculated in the printer will be automatically added to 14th digit. When the number of input characters is less than 13, it is automatically filled with 0s from the first digit in order to make it 13 characters. HRI characters are automatically prefixed with “(01)”.
GS1 DataBar Truncated	Not more than 13	Numbers (0 to 9)	13 modules ・In case of horizontal size＝3 13×3＝39 dots	Check digit calculated in the printer will be automatically added to 14th digit. When the number of input characters is less than 13, it is automatically filled with 0s from the first digit in order to make it 13 characters. HRI characters are automatically prefixed with “(01)”.
GS1 DataBar Stacked	Not more than 13	Numbers (0 to 9)	Top : 5 modules SPR: 1 module Bottom: 7 modules ・In case of horizontal size＝3 Top :5×3＝15 dots SPR: 1×3＝3 dots Bottom: 7×3＝21 dots	Check digit calculated in the printer will be automatically added to 14th digit. When the number of input characters is less than 13, it is automatically filled with 0s from the first digit in order to make it 13 characters. HRI characters are automatically prefixed with “(01)”.
GS1 DataBar Stacked Omnidirectional	Not more than 13	Numbers (0 to 9)	Top : 33 modules SPR: 3 modules Bottom : 33 modules ・In case of horizontal size＝3 Top : 33×3＝99 dots SPR: 3×3＝9 dots Bottom: 33×3＝99 dots	Check digit calculated in the printer will be automatically added to 14th digit. When the number of input characters is less than 13, it is automatically filled with 0s from the first digit in order to make it 13 characters. HRI characters are automatically prefixed with “(01)”.
GS1 DataBar Limited	Not more than 13	Numbers (0 to 9)	10 modules ・In case of horizontal size＝3 10×3＝30 dots	Check digit calculated in the printer will be automatically added to 14th digit. When the number of input characters is less than 13, it is automatically filled with 0s from the first digit in order to make it 13 characters. HRI characters are automatically prefixed with “(01)”. The number that can be expressed is from 0 to 1,999,999,999,999.
GS1 DataBar Expanded (Stacked)	Variable-length (4 to 74)	ISO646 : ・Numbers (0 to 9) ・Alphabet (A to Z) (a to z) ・Space ・FNC1 ・20 marks	Per bar: 34 modules SPR: 3 modules ・In case of horizontal size＝3 1) In case of one bar 34×3＝102 dots	Up to 74 numbers or up to 41 letters can be encoded at maximum. 4 digits are required at minimum. If the horizontal size exceeds the print area, it will be printed in the area with multistage bars automatically. When the print area is less than 2 segments of the barcode, it will not be printed. HRI characters will not represent AI expression.

		(!,",%,&,',(、),*,+,-,.,/,: ,;,<,>,=,?,_)	2) In case of 3 bars 34×3＋3×3＋ 34×3＋3×3＋ 34×3＝324 dots	When AI expression is required with HRI characters, please create a character string with AI expression on the host side and print it before or after the barcode.

* Separator is described as "SPR".
* When the bar is put to the area with more than 2 stages by GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional or GS1 DataBar Expanded Stacked, the height of 1 stage will be 1/2 of the height specified by [Barcode height specifying] 《GS h **n**》. When 1/2 of the specified height is more than the minimum height and the bar is put into the area with 2 stages, "specified value + separator height" becomes the barcode height.

[Barcode details specifications]

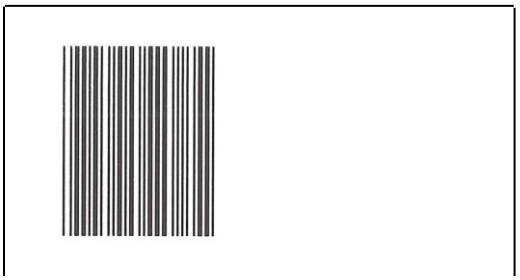
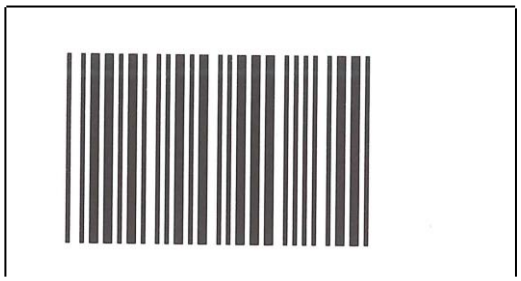
1. GS1 DataBar Expanded character set table

HEX	2	3	4	5	6	7
0	SP	0		P		p
1	!	1	A	Q	a	q
2	“	2	B	R	b	r
3	FNC1	3	C	S	c	s
4		4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	‘	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	*	:	J	Z	j	z
B	+	;	K		k	
C	,	<	L		l	
D	-	=	M		m	
E	.	>	N		n	
F	/	?	O	_	o	

50) [Auto-transmitting of printer status]《GS v NUL》

Name	[Auto-transmitting of printer status]《GS v NUL》
Code	〔1D〕h＋〔76〕h＋〔00〕h
Domain	No domain
Function	Transmitting the status automatically when the printer status is changed.
Details	・Status that will be transmitted [New status system]：Standard status 1 byte and extended status 4 bytes. [Old status system]：Standard status 1 byte. Please refer to “4.2 Processing errors” in the Product Specifications for the status details. Furthermore, please refer to “4.1.1 Switch setting” in the Product Specifications for the switch details. ・Once the setting is done, it is effective until executing the command [Software reset]《DC1》or turning OFF the power. ・This command is stored in the internal receiving input buffer and will be executed sequentially.
Sample code example	Automatic transmission setting : 《GS》 《v》 《NUL》 〔1D〕h+〔76〕h+〔00〕h
	Reply status example : 〔06〕h (Paper-out and thermal head cover open)

51)[Barcode horizontal size specifying]《GS w **n**》

Name	[Barcode horizontal size specifying]《GS w **n**》
Code	〔1D〕h＋〔77〕h＋**n**
Domain	〔02≦**n**≦04〕h
Function	Specifying the horizontal size for the barcode.
Details	・Default value of "**n**" is 〔03〕h.
Sample code example	Barcode print :〔1D〕h+〔6B〕h+〔04〕h+"*123*"+〔00〕h 《GS》 《w》 《**n**》 Specifying horizontal size 2 :〔1D〕h+〔77〕h+〔02〕h Barcode print :〔1D〕h+〔6B〕h+〔04〕h+"*123*"+〔00〕h 《GS》 《w》 《**n**》 Specifying horizontal size 4 :〔1D〕h+〔77〕h+〔04〕h Barcode print :〔1D〕h+〔6B〕h+〔04〕h+"*123*"+〔00〕h Print result example : Specifying horizontal size 3 (Default value)  Specifying horizontal size 2  Specifying horizontal size 4 

52) [Print density setting]《GS ~ **n**》

Name	[Print density setting]《GS ~ **n**》
Code	〔1D〕h＋〔7E〕h＋**n**
Domain	〔41≦**n**≦87〕h
Function	Setting the print density in the range from 65% to 135%.
Details	・Although the range by "**n**" starts at "〔41〕h (65%)" and ends at "〔87〕h (135%)", please set it from "〔41〕h (65%)" to "〔82〕h (130%)" in actual use. ・Default value of "**n**" is 〔64〕h (100%). ・When using this command during the command [Page buffer layout start / finish setting] 《ESC L **n**》, the setting will be disregarded.
Sample code example	《GS》 《~》 《**n**》 Setting 65% : 〔1D〕h+〔7E〕h+〔41〕h Print data＋Print line feeding : "65% Print"+〔0A〕h Setting 100% : 〔1D〕h+〔7E〕h+〔64〕h Print data＋Print line feeding : "100% Print"+〔0A〕h Setting 130% : 〔1D〕h+〔7E〕h+〔82〕h Print data＋Print line feeding : "130% Print"+〔0A〕h
	Print result example : 

53) [Cue operation]《GS FF **n**》

<table>
<tr><td>Name</td><td>[Cue operation]《GS FF n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔0C〕h＋ n</td></tr>
<tr><td>Domain</td><td>〔n=00,10,11〕h</td></tr>
<tr><td>Function</td><td>Executing the preset position correction feeding after detecting the mark.</td></tr>
<tr><td>Details</td><td>・Paper detection error occurs after feeding the paper by max. 160mm when the black mark is not detected.
・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Descriptions</th></tr>
<tr><td>00</td><td>Mark detection＋feeding to the print start position</td></tr>
<tr><td>10</td><td>Mark detection＋feeding to the cut position＋full cut</td></tr>
<tr><td>11</td><td>Mark detection＋feeding to the cut position＋partial cut</td></tr>
</table>
・Please DO NOT use “〔11〕 h” when the printer is only for full cut.</td></tr>
<tr><td>Sample code example</td><td>Mark detection＋ feeding to the cut position＋ full cut：
《GS》 《FF》 《n》
〔1D〕h+〔0C〕h+〔10〕h</td></tr>
</table>

54) [Mark detection method and position correction feeding amount setting]《GS (**m a n1 n2**》

<table>
<tr><td>Name</td><td>[Mark detection method and position correction feeding amount setting]《GS (m a n1 n2》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔28〕h＋m＋a＋n1＋n2</td></tr>
<tr><td>Domain</td><td>〔m=00,01〕h,〔a=00,01〕h,〔00≦n1≦FF〕h,〔00≦n2≦FF〕h</td></tr>
<tr><td>Function</td><td>Setting the mark detection method and the feeding amount for correcting the position.</td></tr>
<tr><td>Details</td><td>・“m”, “a”, “n1” and “n2” have the following meanings.
<table>
<tr><th colspan="2">Set item
m (hex)</th><th colspan="2">Detection method
a (hex)</th><th>Setting value
(n2*256+n1)</th></tr>
<tr><td rowspan="2">00</td><td rowspan="2">Feeding amount to the print start position</td><td>00</td><td>Upper edge</td><td rowspan="2">Setting a position from the mark detection position to the print start position by dots.</td></tr>
<tr><td>01</td><td>Lower edge</td></tr>
<tr><td rowspan="2">01</td><td rowspan="2">Feeding amount to the cut position</td><td>00</td><td>Upper edge</td><td rowspan="2">Setting a position from the mark detection position to the cut position by dots.</td></tr>
<tr><td>01</td><td>Lower edge</td></tr>
</table>
・Feeding amount is set by the dot with signed 16bit (-32767 to 32767), the upper bit is set by “n2” and the lower bit by “n1”.
・When feeding amount is set to negative values, please DO NOT make the tip of the paper exceed the limit of back-feed limitation. (Please refer to "2.4 Cutter Specifications" in the Product Specifications.)
・Default values are as follows.
<table>
<tr><th>Item</th><th>Detection method</th><th>Setting value</th></tr>
<tr><td>Print start position</td><td>Upper edge</td><td>220 dots (27.5mm between the guide sensor and the head)</td></tr>
<tr><td>Cut position</td><td>Upper edge</td><td>296 dots (37.0mm between the sensor and the cutter)</td></tr>
</table>
・Reference
<table>
<tr><th>Value (Reference)</th></tr>
<tr><td>88 dots (11.0mm between the sensor of mechanical side and the head)</td></tr>
<tr><td>164 dots (20.5mm between the sensor of mechanical side and the cutter)</td></tr>
</table></td></tr>
<tr><td>Sample code example</td><td>Setting the feeding amount to approx. 50mm to the cutting position by the lower edge detection. :
《GS》 《(》 《m》 《a》 《n1》 《n2》
〔1D〕h+〔28〕h+〔01〕h+〔01〕h+〔4E〕h+〔02〕h</td></tr>
</table>

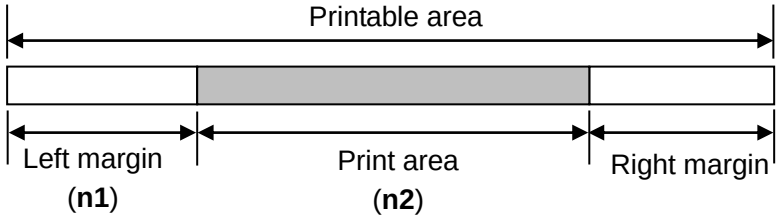
55) [Cueing setting initialization]《GS g 0》

<table>
<tr><td>Name</td><td>[Cueing setting initialization]《GS g 0》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔67〕h＋〔30〕h</td></tr>
<tr><td>Domain</td><td>No domain</td></tr>
<tr><td>Function</td><td>The cueing setting registered in non-volatile memory is initialized.</td></tr>
<tr><td>Details</td><td>・Parameters to be initialized and default values are as follows.
<table>
<tr><th>Parameter</th><th>Default value</th></tr>
<tr><td>Mark detection method and position correction feeding amount</td><td>・Print start position
Detection method＝Upper edge
Correction feeding amount＝220 dots
(27.5mm between the sensor and the head)
・Cut position
Detection method＝Upper edge
Correction feeding amount＝296 dots
(37.0mm between the sensor and the cutter)</td></tr>
<tr><td>Cueing process setting at paper loading</td><td>〔00〕h (Ineffective all)</td></tr>
</table>
・Please DO NOT turn OFF or reset power while registering non-volatile memory (ALARM is lighting.). Please DO NOT use this command frequently. Since the lifetime of non-volatile memory rewriting is 100,000 times, please be sure to make the number of registrations less than 100,000 times.</td></tr>
<tr><td>Sample code example</td><td>《GS》 《g》 《0》
Initializing the cue setting： 〔1D〕h+〔67〕h+〔30〕h</td></tr>
</table>

56) [Cueing process setting at paper loading]《GS m **n**》

<table>
<tr><td>Name</td><td>[Cueing process setting at paper loading]《GS m n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔6D〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Setting the cueing process when loading the roll paper.</td></tr>
<tr><td>Details</td><td>・Each of the bit “n” has the following meanings.
<table>
<tr><th rowspan="2">bit</th><th rowspan="2">Function</th><th colspan="2">Value</th></tr>
<tr><th>“0”</th><th>“1”</th></tr>
<tr><td>bit0</td><td>Cue operation after auto loading</td><td>Ineffective</td><td>Effective</td></tr>
<tr><td>bit1</td><td>Cue operation after thermal head cover open / close</td><td>Ineffective</td><td>Effective</td></tr>
<tr><td>bit2</td><td>Cue operation after the FEED switch is pushed</td><td>Ineffective</td><td>Effective</td></tr>
</table>
・This cue operation is same as the operation by 《GS FF〔10〕h》.
・Default value of “n” is〔00〕h.</td></tr>
<tr><td>Sample code example</td><td>《GS》 《m》 《n》
Registering cueing process： 〔1D〕h+〔6D〕h+〔01〕h</td></tr>
</table>

57) [Print area setting]《GS W **n1 n2**》

Name	[Print area setting]《GS W **n1 n2**》
Code	〔1D〕h＋〔57〕h＋**n1**＋**n2**
Domain	〔00≦**n1**≦4C〕h 〔04≦**n2**≦50〕h
Function	Setting the left margin of the printable area and the print area.
Details	・“**n1**”= left margin (mm) ・“**n2**”= print area (mm) ・“Right margin (mm)”= Paper width - (left margin＋print area) ・Please refer to the figure below.  ・Default value of “**n1**” is〔0E〕h (14mm) during DS1-8: ON and〔04〕h (4mm) during DS1-8: OFF. ・Default value of “**n2**” is〔34〕h (52mm) during DS1-8: ON and〔48〕h (72mm) during DS1-8: OFF. ・For details on left margin, print area, right margin and paper width, please refer to “2.3 Print area” in the Product Specifications.
Sample code example	Print data＋Print line feeding： "12345678901234567890123456789012345678901234567"+〔0A〕h 《GS》 《W》 《**n1**》 《**n2**》 Specifying left margin 1mm and print area 54mm： 〔1D〕h+〔57〕h+〔01〕h+〔38〕h Print data＋Print line feeding： "12345678901234567890123456789012345678901234567"+〔0A〕h
	Print result example ： 1234567890123456789012345678901234567 1234567890123456789012345678901234567

58) [Maximum printing speed setting]《GS S **n**》

<table>
<tr><td>Name</td><td>[Maximum printing speed setting]《GS S n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔53〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦04〕h</td></tr>
<tr><td>Function</td><td>Setting the maximum printing speed.</td></tr>
<tr><td>Details</td><td>・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Maximum printing speed</th></tr>
<tr><td>00</td><td>Max. 200mm / sec</td></tr>
<tr><td>01</td><td>Max. 150mm / sec</td></tr>
<tr><td>02</td><td>Max. 125mm / sec</td></tr>
<tr><td>03</td><td>Max. 100mm / sec</td></tr>
<tr><td>04</td><td>Max. 75mm / sec</td></tr>
</table>
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td>Sample code example</td><td>《GS》 《S》 《n》
Specifying the maximum printing speed to max.100mm / sec. :〔1D〕h+〔53〕h+〔03〕h</td></tr>
</table>

59) [Specifying Kanji print modes all at once]《FS ! **n**》

<table>
<tr><td>Name</td><td>[Specifying Kanji print modes all at once]《FS ! n》</td></tr>
<tr><td>Code</td><td>〔1C〕h＋〔21〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Specifying all Kanji print modes at one time.</td></tr>
<tr><td>Details</td><td>・“n” has the following meanings.
<table>
<tr><th rowspan="2">bit</th><th rowspan="2">Function</th><th colspan="2">Value</th></tr>
<tr><th>“0”</th><th>“1”</th></tr>
<tr><td>bit0</td><td rowspan="2">Kanji font</td><td colspan="2" rowspan="2">Kanji font A (24x24 dots)：bit1 "0",bit0 "0"
Kanji font A (24x24 dots)：bit1 "0",bit0 "1"
Kanji font D (32x32 dots)：bit1 "1",bit0 "0"</td></tr>
<tr><td>bit1</td></tr>
<tr><td>bit2</td><td>Double width</td><td>Releasing</td><td>Specifying</td></tr>
<tr><td>bit3</td><td>Double height</td><td>Releasing</td><td>Specifying</td></tr>
<tr><td>bit4</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit5</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit6</td><td>Undefined</td><td>-</td><td>-</td></tr>
<tr><td>bit7</td><td>Underline</td><td>Releasing</td><td>Specifying</td></tr>
</table>
・Specifying the double height and the double width simultaneously will make the cocharacter with the double height and the double width.
・When it is set, all printed characters will be underlined except for the 90° clock-wise rotated characters and spaces created by [Horizontal tab] 《HT》.
・Underline width is determined by the value set in [Underline specifying / releasing] 《ESC - n》. Default value is “1 dot” width.
・Characters mixed with different sizes of normal size, double height, double width or double height and double width can be printed.
・Combined printing with ANK characters is also available.
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td>Sample code example</td><td>Specifying Kanji mode : 〔1C〕h+〔26〕h
Print data＋Print line feeding : 〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h

Specifying double width, 《FS》 《!》 《n》
double height and underline : 〔1C〕h+〔21〕h+〔8C〕h
Print data＋Print line feeding : 〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h</td></tr>
<tr><td></td><td>Print result example :

</td></tr>
</table>

60) ▲[Kanji mode specifying]《FS &》

Name	[Kanji mode specifying]《FS &》
Code	〔1C〕h＋〔26〕h
Domain	No domain
Function	Specifying the Kanji mode.
Details	* It is effective only when Japanese or Korean is selected for language font. ・It will be ineffective when Kanji code system is Shift JIS. ・Default status is the status with Kanji mode released.
Sample code example	《FS》 《&》 Specifying Kanji mode : 〔1C〕h+〔26〕h Print data＋Print line feeding : 〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h
	Print result example : 亜唖娃阿哀

61) [Specifying / releasing underline to Kanji]《FS - **n**》

<table>
<tr><td>Name</td><td>[Specifying / releasing underline to Kanji]《FS - n》</td></tr>
<tr><td>Code</td><td>〔1C〕h＋〔2D〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦02〕h</td></tr>
<tr><td>Function</td><td>Specifying / Releasing underline to Kanji.</td></tr>
<tr><td>Details</td><td>・All printed Kanji characters will be underlined except for the 90° clockwise rotated characters and spaces created by the command [Horizontal tab]《HT》.
・This command is not effective when Kanji mode is released.
・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Function</th></tr>
<tr><td>00</td><td>Releasing underline to Kanji</td></tr>
<tr><td>01</td><td>Specifying one dot thickness underline to Kanji</td></tr>
<tr><td>02</td><td>Specifying two dots thickness underline to Kanji</td></tr>
</table>
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Specifying Kanji mode : 〔1C〕h+〔26〕h
Print data＋Print line feeding : 〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h

《FS》 《-》 《n》
Specifying one dot thickness : 〔1C〕h+〔2D〕h+〔01〕h
Print data＋Print line feeding : 〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h

《FS》 《-》 《n》
Specifying two dots thickness : 〔1C〕h+〔2D〕h+〔02〕h
Print data＋Print line feeding : 〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h</td></tr>
<tr><td>Print result example :

亜唖娃阿哀
亜唖娃阿哀
亜唖娃阿哀</td></tr>
</table>

62) ▲[Kanji mode releasing]《FS .》

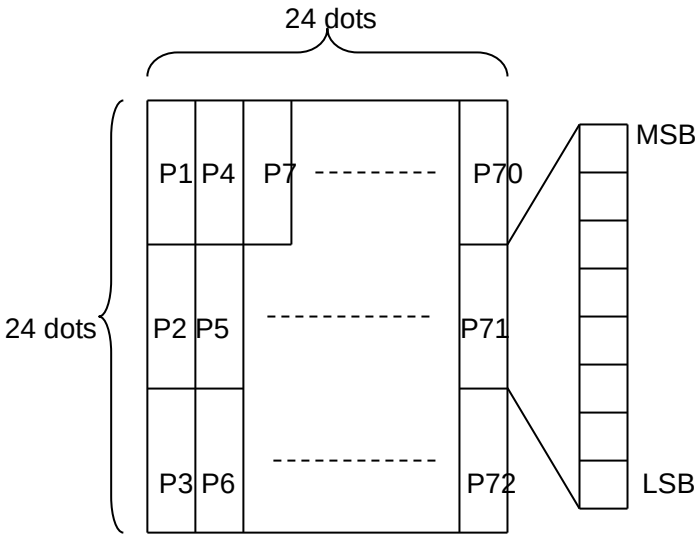
Name	[Kanji mode releasing]《FS .》
Code	〔1C〕h＋〔2E〕h
Domain	No domain
Function	Releasing Kanji mode.
Details	* It is effective only when Japanese or Korean is selected for language font. ・It will be ineffective when Kanji code system is Shift JIS. ・Default status is the status with Kanji mode released.
Sample code example	Specifying Kanji mode : 〔1C〕h+〔26〕h Print data＋Print line feeding : 〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h 《FS》 《.》 Releasing Kanji mode :〔1C〕h+〔2E〕h Print data＋Print line feeding : 〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h
	Print result example : 亜唖娃阿哀 0!0"0#0$0%

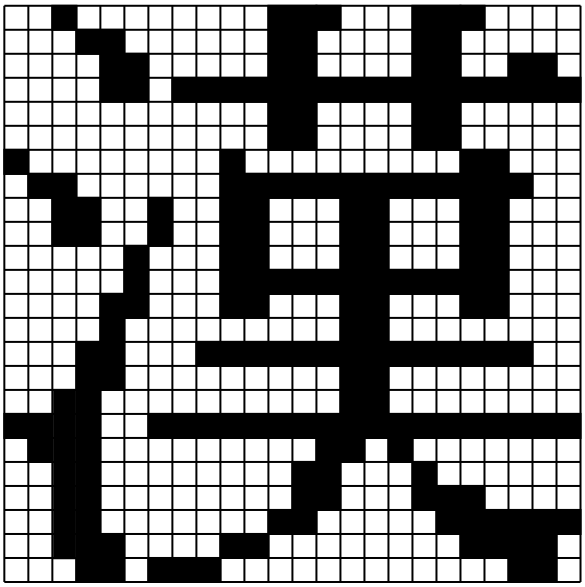
63) ■[Extended characters definition]《FS 2 **a1 a2 Dn**》

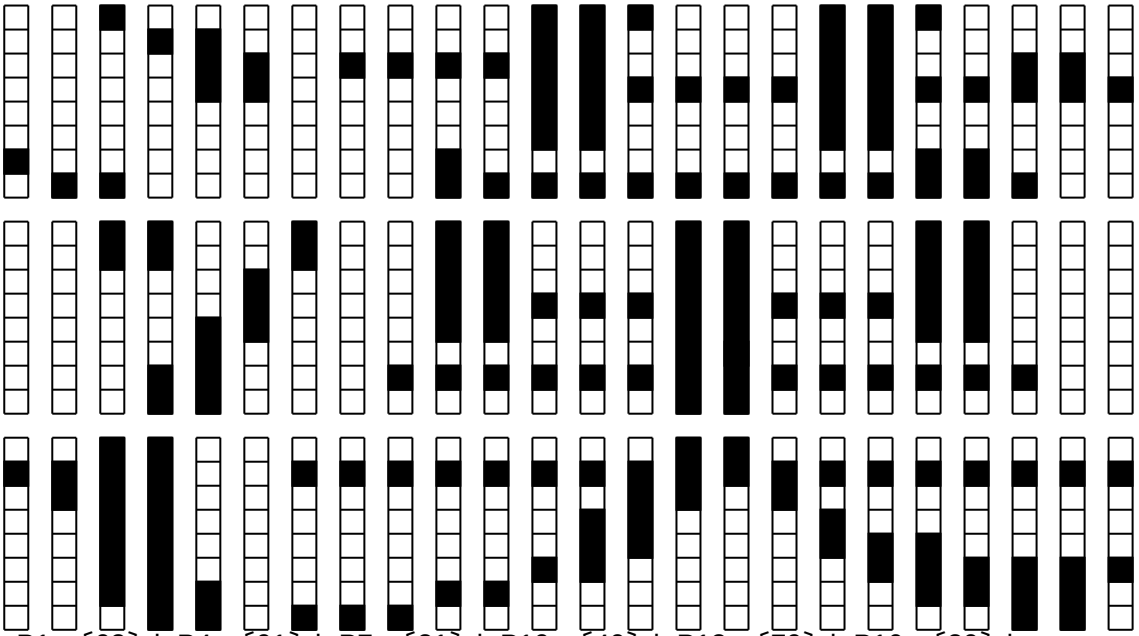
Name	[Extended characters definition]《FS 2 **a1 a2 Dn**》
Code	〔1C〕h＋〔32〕h＋**a1**＋**a2**＋**Dn**
Domain	JIS code system：〔**a1**=77〕h, 〔21≦**a2**≦7E〕h Shift JIS code system：〔**a1**=EC〕h, 〔40≦**a2**≦7E, 80≦**a2**≦9E〕h
Function	Defining extended Kanji characters.
Details	・94 characters can be defined. ・"**Dn**" is data to be defined. Data size will be 72 bytes (3 bytes (vertical) × 24 dots (horizontal)) for Kanji Font A and 128 bytes (4 bytes (vertical) × 32 dots (horizontal)) for Kanji Font D. ・The definition of Kanji Font A or Kanji Font D can be switched by specifying bit0 and bit1 of "**n**" (Kanji Font A / Kanji Font D) by the command [Kanji print mode at one time specifying] 《FS ! **n**》. ・Default status has spaces filled in all items. ・Once it is defined by this command, it is effective until executing the command [Software reset]《DC1》or turning OFF the power. ・Only specified area can be redefined. ・Please refer to <Reference> from the next page.
Sample code example	《FS》 《2》 《**a1**》 《**a2**》 Defining JIS code 7721 : 〔1C〕h+〔32〕h+〔77〕h+〔21〕h Registered data "**Dn**" : 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+ 〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h+〔FF〕h Specifying Kanji mode : 〔1C〕h+〔26〕h Print data＋Print line feeding : 〔77〕h+〔21〕h+〔0A〕h Print result example : ■

＜Reference＞

In case of Kanji Font A





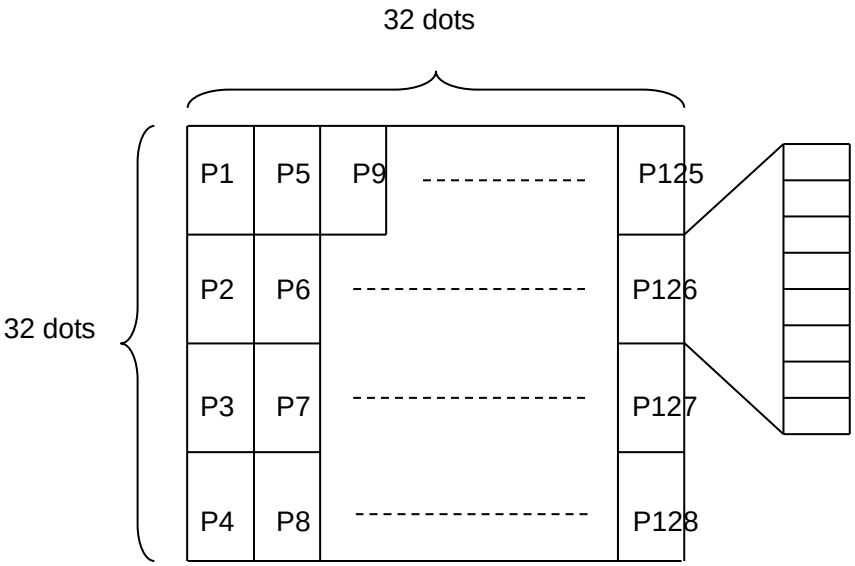


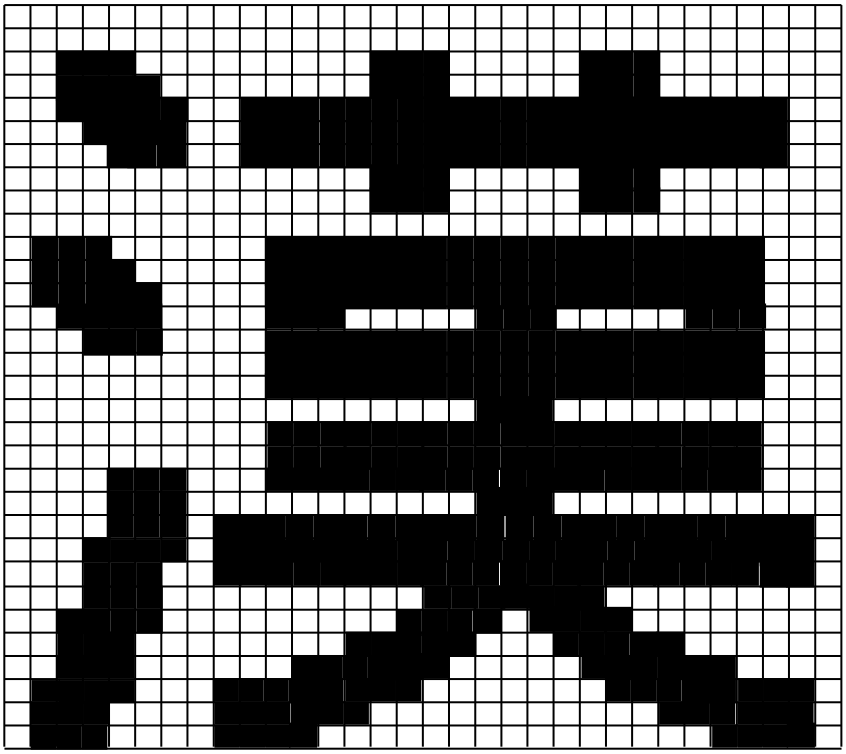
P1=〔02〕h,P4=〔01〕h,P7=〔81〕h,P10=〔40〕h,P13=〔70〕h,P16=〔30〕h,…

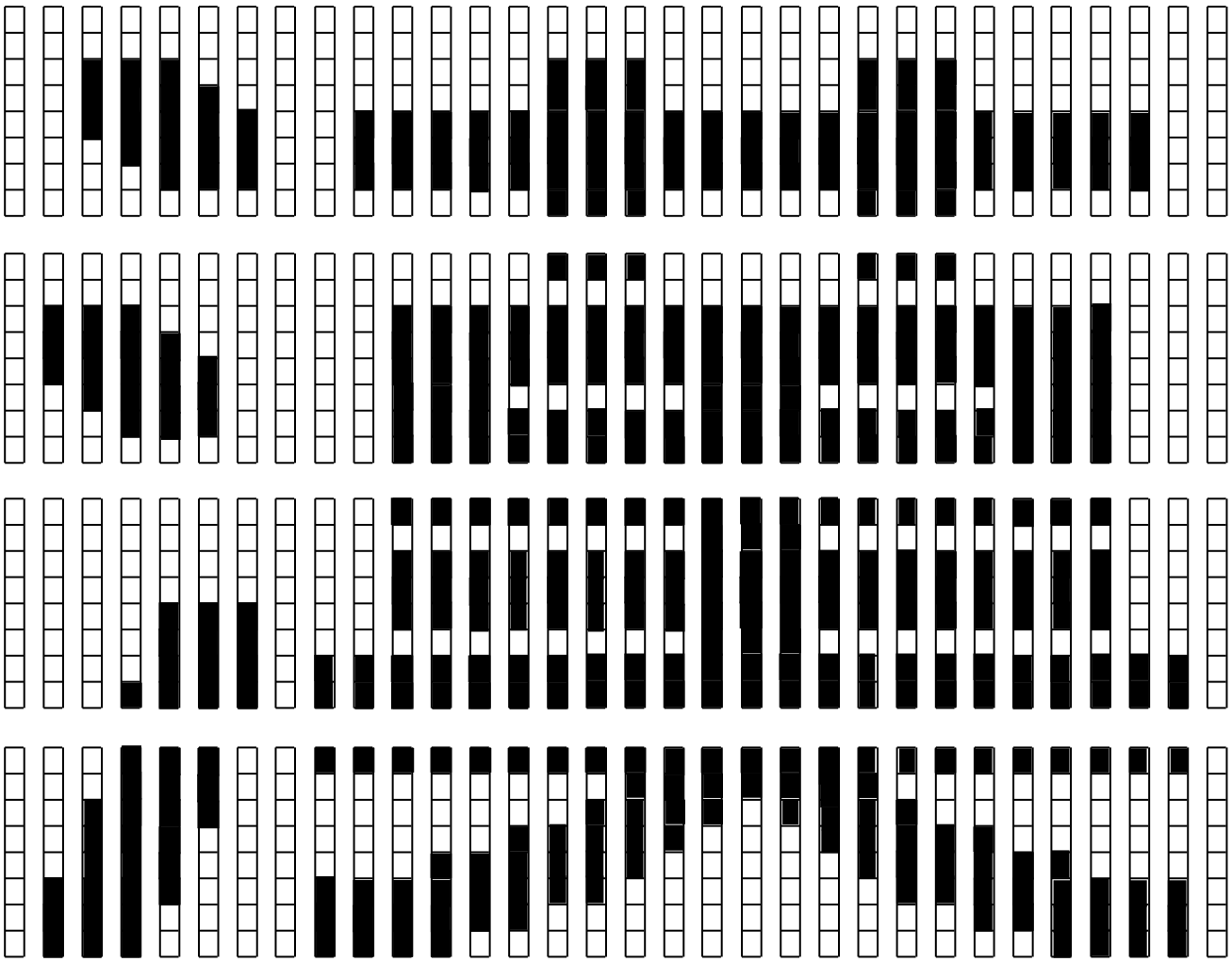
P2=〔00〕h,P5=〔00〕h,P8=〔C0〕h,P11=〔C3〕h,P14=〔0F〕h,P17=〔38〕h,…

P3=〔40〕h,P6=〔60〕h,P9=〔FE〕h,P12=〔FF〕h,P15=〔03〕h,P18=〔00〕h,…

＜Reference＞
In case of Font D



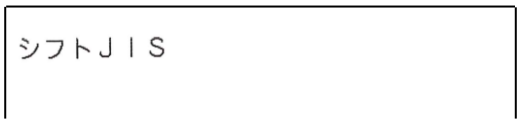




P1=〔00〕h,P5=〔00〕h,P9= 〔38〕h,P13=〔3C〕h,P17=〔3E〕h,P21=〔1E〕h,…
P2=〔00〕h,P6=〔38〕h,P10=〔3C〕h,P14=〔3E〕h,P18=〔1E〕h,P22=〔0E〕h,…
P3=〔00〕h,P7=〔00〕h,P11=〔00〕h,P15=〔01〕h,P19=〔0F〕h,P23=〔0F〕h,…
P4=〔00〕h,P8=〔07〕h,P12=〔3F〕h,P16=〔FF〕h,P20=〔FC〕h,P24=〔E0〕h,…

64) ■[Kanji code system selection]《FS C **n**》

<table>
<tr><td>Name</td><td>[Kanji code system selection]《FS C n》</td></tr>
<tr><td>Code</td><td>〔1C〕h＋〔43〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦01〕h</td></tr>
<tr><td>Function</td><td>Selecting Kanji code system.</td></tr>
<tr><td>Details</td><td>・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Code</th></tr>
<tr><td>00</td><td>JIS code</td></tr>
<tr><td>01</td><td>Shift JIS code</td></tr>
</table>
・Default status is the status specified by the memory switch (MS1-1).</td></tr>
<tr><td rowspan="2">Sample code example</td><td>《FS》 《C》 《n》
Selecting Shift JIS code :〔1C〕h+〔43〕h+〔01〕h

Print data＋Print line feeding :〔83〕h+〔56〕h+〔83〕h+〔74〕h+〔83〕h+〔67〕h+〔82〕h+〔69〕h+〔82〕h+〔68〕h+〔82〕h+〔72〕h+〔0A〕h</td></tr>
<tr><td>Print result example :

</td></tr>
</table>

65)[Special Kanji characters used for Japanese names selection]《FS D **n1 n2**》

<table>
<tr><td>Name</td><td>[Special Kanji characters used for Japanese names selection]《FS D n1 n2》</td></tr>
<tr><td>Code</td><td>〔1C〕h＋〔44〕h＋n1＋n2</td></tr>
<tr><td>Domain</td><td>〔00≦n1≦01〕h, 〔00≦n2≦01〕h</td></tr>
<tr><td>Function</td><td>Selecting special Kanji characters used for Japanese names.</td></tr>
<tr><td>Details</td><td>・It is effective only when Japanese is selected for language font.
・“n1” has the following meanings.
<table>
<tr><th>n1 (hex)</th><th>Function</th></tr>
<tr><td>00</td><td>Level-1, level-2 and level-3 Kanji set</td></tr>
<tr><td>01</td><td>Special Kanji characters used for Japanese names</td></tr>
</table>
・Default value of “n1” is 〔00〕h.
・When the extended characters are selected by the command [Selection of extra characters] 《FS E n1 n2》, characters of JIS codes “[7721] to [777E] h” and shift JIS codes “[EC40] to “[EC7E] / [EC80] to [EC9E] h” are printed as extended characters regardless of this setting.

・“n2” has the following meanings.
<table>
<tr><th>n2 (hex)</th><th>Save default</th></tr>
<tr><td>00</td><td>Unsaved</td></tr>
<tr><td>01</td><td>Saved</td></tr>
</table>
・When selecting “saving as default”, it is saved in the nonvolatile memory and it will be kept until it is reset at the next restarting.

[Notes]
・Please be careful not to use “saving as default” of this command so frequently since it will be cause of damaging the nonvolatile memory when registration to the non-volatile memory is frequently.
Please DO NOT turn off the power while this command is being executed. The nonvolatile memory and the printer may be damaged.
・If this command is used with "saving as default" while the presenter (NPT-308) is transporting the paper, paper transportation will be temporarily stopped.</td></tr>
<tr><td>Sample code example</td><td>Selecting1 level-1, level-2, and level-3 and saving as no default : 《FS》 《D》 《n1》 《n2》 〔1C〕h+〔44〕h+〔00〕h+〔00〕h

Selecting special Kanji characters used for Japanese name and saving as default : 〔1C〕h+〔44〕h+〔01〕h+〔01〕h</td></tr>
</table>

66)[Extended characters selection]《FS E **n1 n2**》

<table>
<tr><td>Name</td><td>[Extended characters selection]《FS E n1 n2》</td></tr>
<tr><td>Code</td><td>〔1C〕h＋〔45〕h＋n1＋n2</td></tr>
<tr><td>Domain</td><td>〔00≦n1≦01〕h, 〔00≦n2≦01〕h</td></tr>
<tr><td>Function</td><td>Selecting extended characters.</td></tr>
<tr><td>Details</td><td>・It is effective only when Japanese is selected for language font.
・“n1” has the following meanings.
<table>
<tr><th>n1 (hex)</th><th>Function</th></tr>
<tr><td>00</td><td>Level-3 Kanji</td></tr>
<tr><td>01</td><td>Extended characters</td></tr>
</table>
・Default value of “n1” is 〔00〕h.
・When extended characters are selected by this command , “JIS codes [7721] to [777E] h” and “shift JIS codes [EC40] to [EC7E] / [EC80] to [EC9E] h” are printed as extended characters.
・When special Kanji characters used for Japanese names are selected by the command [Special Kanji characters used for Japanese names selection] 《FS D n1 n2》 and they are set for level-3 Kanji, special Kanji characters used for Japanese names are prioritized and printed out.

・“n2” has the following meanings.
<table>
<tr><th>n2 (hex)</th><th>Save default</th></tr>
<tr><td>00</td><td>Unsaved</td></tr>
<tr><td>01</td><td>Saved</td></tr>
</table>
・When selecting “saving as default”, it is saved in the nonvolatile memory and it will be kept until it is reset at the next restarting.

[Notes]
・Please be careful not to use “saving as default” of this command so frequently since it will be cause of damaging the nonvolatile memory when registration to the non-volatile memory is frequently.
Please DO NOT turn off the power while this command is being executed. The nonvolatile memory and the printer may be damaged.
・If this command is used with "saving as default" while the presenter (NPT-308) is transporting paper, paper transportation will be temporarily stopped.</td></tr>
<tr><td>Sample code example</td><td>《FS》 《D》 《n1》 《n2》
Selecting level-3 Kanji and saving as no default : 〔1C〕h+〔45〕h+〔00〕h+〔00〕h

Selecting extended characters and saving as default : 〔1C〕h+〔45〕h+〔01〕h+〔01〕h</td></tr>
</table>

67) [Amount of spaces for Kanji characters]《FS S **n1 n2**》

Name	[Amount of spaces for Kanji characters]《FS S **n1 n2**》
Code	〔1C〕h＋〔53〕h＋**n1**＋**n2**
Domain	〔00≦**n1**≦20〕h, 〔00≦**n2**≦20〕h
Function	Specifying the amount of spaces in the right and the left of Kanji characters by the unit of dots.
Details	・“**n1**” specifies the left spaces amount. Default value of “**n1**” is〔00〕h. ・“**n2**” specifies the right spaces amount. Default value of “**n2**” is〔00〕h. ・When double width mode is selected, width of spaces will be 2 times wide.
Sample code example	Specifying Kanji mode :〔1C〕h+〔26〕h Print data＋Print line feeding :〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h 《FS》 《S》 《**n1**》 《**n2**》 Specifying left space 32 dots, right space 32 dots :〔1C〕h+〔53〕h+〔20〕h+〔20〕h Print data＋Print line feeding :〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h
	Print result example : 亜唖娃阿哀 亜 唖 娃 阿 哀

68) [Built-in language font switching]《FS T **n**》

<table>
<tr><td>Name</td><td>[Built-in language font switching]《FS T n》</td></tr>
<tr><td>Code</td><td>〔1C〕h＋〔54〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦03〕h</td></tr>
<tr><td>Function</td><td>Switching the built-in language font.</td></tr>
<tr><td>Details</td><td>・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Built-in language font</th></tr>
<tr><td>00</td><td>Japanese</td></tr>
<tr><td>01</td><td>Chinese</td></tr>
<tr><td>02</td><td>Korean</td></tr>
<tr><td>03</td><td>Greek</td></tr>
</table>
・Default value of “n” is the value specified by memory switches (MS1-2, MS1-3).
・By executing the command [Printer initialization]《ESC @》, this setting will be returned to the value specified by the memory switch (MS1-2, MS1-3).</td></tr>
<tr><td>Sample code example</td><td>《FS》 《T》 《n》
Switching the font to Korean： 〔1C〕h＋〔54〕h＋〔02〕h</td></tr>
</table>

69) [Double-height and double-width Kanji size specifying / releasing]《FS W **n**》

<table>
<tr><td>Name</td><td>[Double-height and double-width Kanji size specifying / releasing]《FS W n》</td></tr>
<tr><td>Code</td><td>〔1C〕h＋〔57〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦FF〕h</td></tr>
<tr><td>Function</td><td>Specifying / Releasing double-height and double-width Kanji characters.</td></tr>
<tr><td>Details</td><td>・Only LSB (least significant bit) (”bit0”) is available for “n”.
・The ways of controlling by the LSB “bit0” are described in the table below.
<table>
<tr><td>bit0</td><td>Function</td></tr>
<tr><td>“0”</td><td>Releasing double-height and double-width</td></tr>
<tr><td>“1”</td><td>Specifying double-height and double-width</td></tr>
</table>
・Default value of “n” is 〔00〕h.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Specifying Kanji mode :〔1C〕h+〔26〕h
Print data＋Print line feeding :〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+
〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h

《FS》 《W》 《n》
Specifying double-height and double-width :〔1C〕h+〔57〕h+〔01〕h

Print data＋Print line feeding :〔30〕h+〔21〕h+〔30〕h+〔22〕h+〔30〕h+〔23〕h+
〔30〕h+〔24〕h+〔30〕h+〔25〕h+〔0A〕h</td></tr>
<tr><td>Print result example :

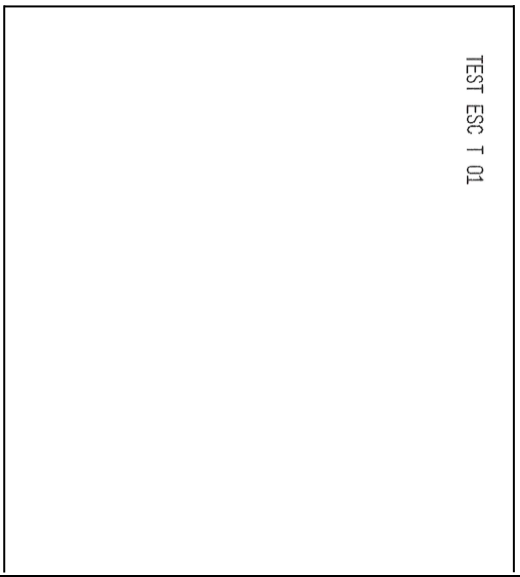
</td></tr>
</table>

70) [Page layout setting]《ESC T **Dt**》

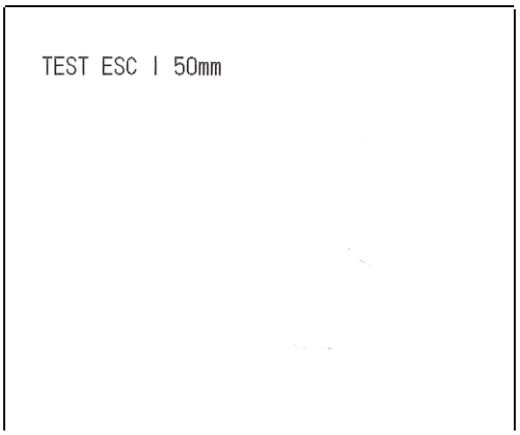
<table>
<tr><td>Name</td><td>[Page layout setting]《ESC T Dt》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔54〕h＋Dt</td></tr>
<tr><td>Domain</td><td>〔00≦Dt≦03〕h</td></tr>
<tr><td>Function</td><td>Setting the page direction.</td></tr>
<tr><td>Details</td><td>・This command is one of the commands related to the page layout.
・“Dt” has the following meanings.
<table>
<tr><th>Dt (hex)</th><th>Mode</th></tr>
<tr><td>00</td><td>Portrait mode (not rotated)</td></tr>
<tr><td>01</td><td>Landscape mode (90° rotated)</td></tr>
<tr><td>02</td><td>Portrait mode (180° rotated)</td></tr>
<tr><td>03</td><td>Landscape mode (270° rotated)</td></tr>
</table>
・Default value of “Dt” is〔00〕h. [Portrait mode (not rotated)]
・This command initializes the page length setting and the print area setting.
・If barcodes are printed on the landscape layout page, printing may be dragged and it may not be read. In this case, it is necessary to increase the horizontal size or reduce the printing speed.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Starting page buffer layout : 〔1B〕h+〔4C〕h+〔01〕h

《ESC》 《T》 《Dt》
Setting landscape mode (90° rotated) : 〔1B〕h+〔54〕h+〔01〕h
Print data＋Print line feeding : "TEST ESC T 01"+〔0A〕h

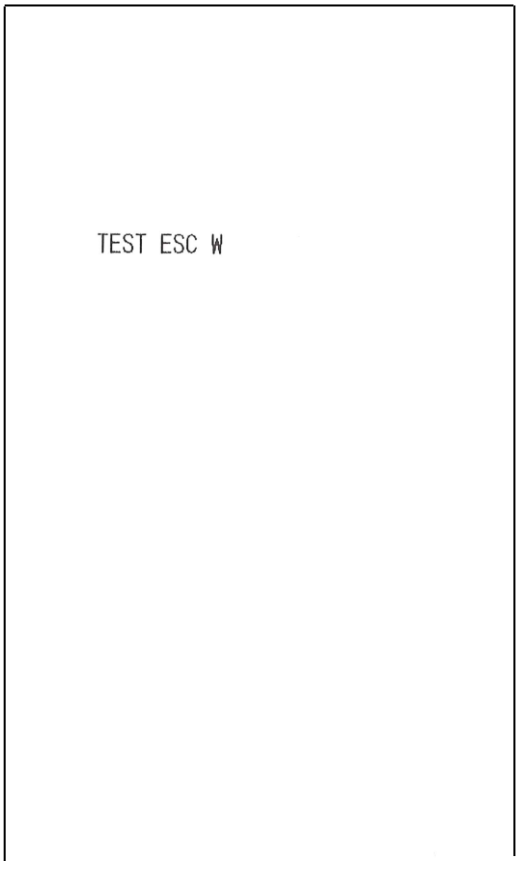
Finishing page buffer layout : 〔1B〕h+〔4C〕h+〔00〕h

Page print and clear : 〔0C〕h</td></tr>
<tr><td>Print result example :

</td></tr>
</table>

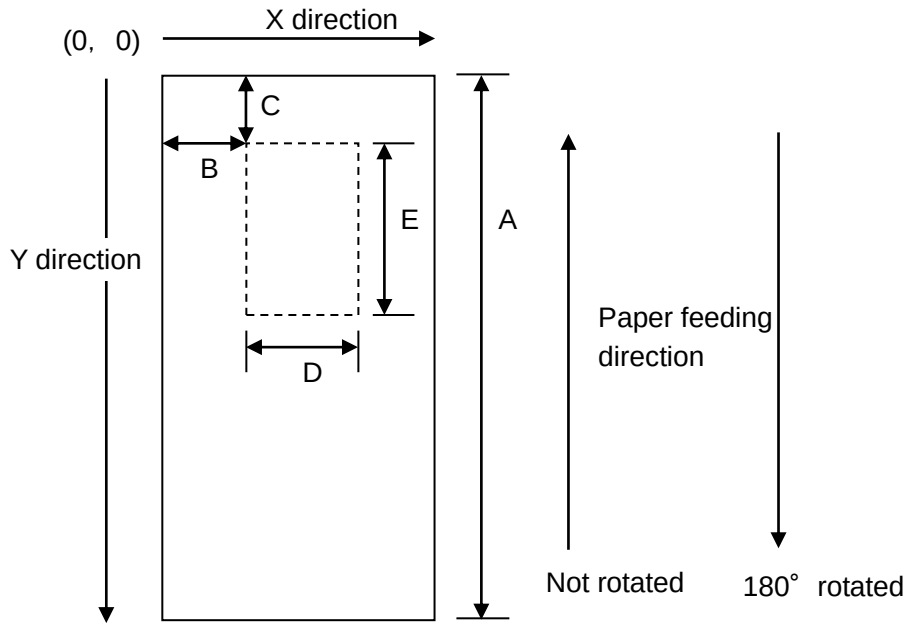
71) [Page length setting]《ESC l **Dl**》

Name	[Page length setting]《ESC l **Dl**》
Code	〔1B〕h＋〔6C〕h＋**Dl**
Domain	〔00≦**Dl**≦F0〕h
Function	Setting the page length.
Details	・This command is one of the commands related to the page layout. ・Paper feeding length during the page print can be changed by changing the page length. ・Specifying "**Dl**" by "mm" for the page length. ・Page length is the length to Y direction for the portrait setting and the length to X direction for the landscape setting. ・Initializing the page layout print area setting.
Sample code example	Starting page buffer layout : 〔1B〕h+〔4C〕h+〔01〕h 《ESC》 《l》 《**D1**》 Setting page length 50mm : 〔1B〕h+〔6C〕h+〔32〕h Print data＋Print line feeding : "TEST ESC l 50mm"+〔0A〕h Finishing page buffer layout : 〔1B〕h+〔4C〕h+〔00〕h Page print and clear : 〔0C〕h
	Print result example : 

72) [Page layout print area setting]《ESC W **Dl Dt Dw Dh**》

Name	[Page layout print area setting]《ESC W **Dl Dt Dw Dh**》
Code	〔1B〕h＋〔57〕h＋**Dl**＋**Dt**＋**Dw**＋**Dh**
Domain	〔00≦**Dl**≦FF〕h, 〔00≦**Dt**≦FF〕h, 〔00≦**Dw**≦FF〕h, 〔00≦**Dh**≦FF〕h
Function	Setting the print area of page layout.
Details	・This command is one of the commands related to the page layout. ・Specifying “**Dl**” for the left margin and “**Dt**” for the upper margin by “mm”. ・Specifying “**Dw**” for X print area and “**Dh**” for Y print area by “mm”. ・Only effective at the head of a line. ・Please refer to the page 96 (in case of the portrait page) and the page 97 (in case of the landscape page).
Sample code example	Starting page buffer layout : 〔1B〕h+〔4C〕h+〔01〕h Setting left margin 10mm, upper margin 20mm, X print area 40mm, and Y print area 50mm : 《ESC》 《W》 《**Dl**》 《**Dt**》 《**Dw**》 《**Dh**》 〔1B〕h+〔57〕h+〔0A〕h+〔14〕h+〔28〕h+〔32〕h Print data＋Print line feeding : "TEST ESC W"+〔0A〕h Finishing page buffer layout : 〔1B〕h+〔4C〕h+〔00〕h Page print and clear : 〔0C〕h
	Print result example : 

＜Portrait mode＞



Mark	Name	Minimum	Maximum	Default setting
A	Page length	4mm	240mm	240mm
B	Left margin	0mm	76mm	4mm (DS1-8: OFF)*1
				3mm (DS1-8: ON)*2
C	Upper margin	0mm	236mm	0mm
D	X print area	4mm	80mm	72mm (DS1-8: OFF)
				52mm (DS1-8: ON)
E	Y print area	4mm	240mm	240mm

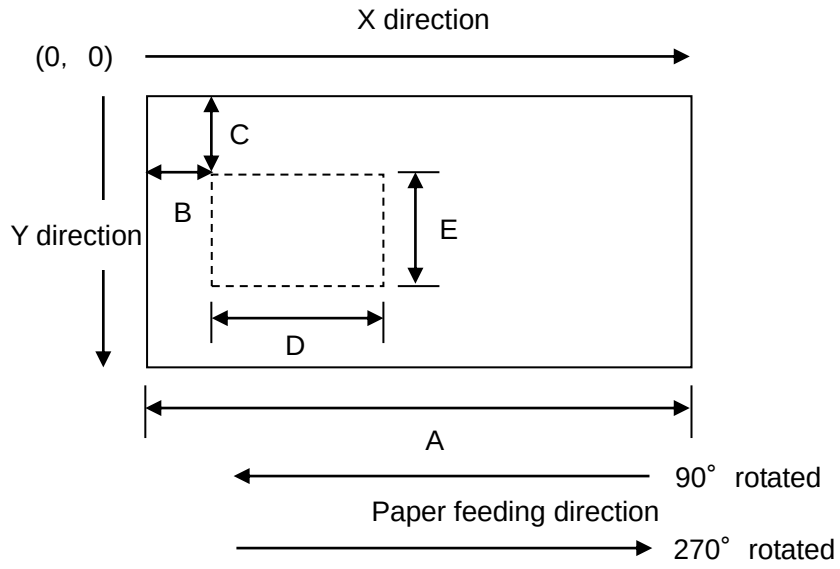
[Notes]

・Setting more than 3mm for the left / right margin is recommended. Please refer to “2.3 Print area” in the Product Specifications.

*1: Left margin value when using 80mm paper width.

*2: Left margin value when using the 58mm paper width.

＜Landscape mode＞



Mark	Name	Minimum	Maximum	Default setting
A	Page length	4mm	240mm	240mm
B	Left margin	0mm	236mm	0mm
C	Upper margin	0mm	76mm	4mm (DS1-8: OFF)*3
				3mm (DS1-8: ON)*4
D	X print area	4mm	240mm	240mm
E	Y print area	4mm	80mm	72mm (DS1-8: OFF)
				52mm (DS1-8: ON)

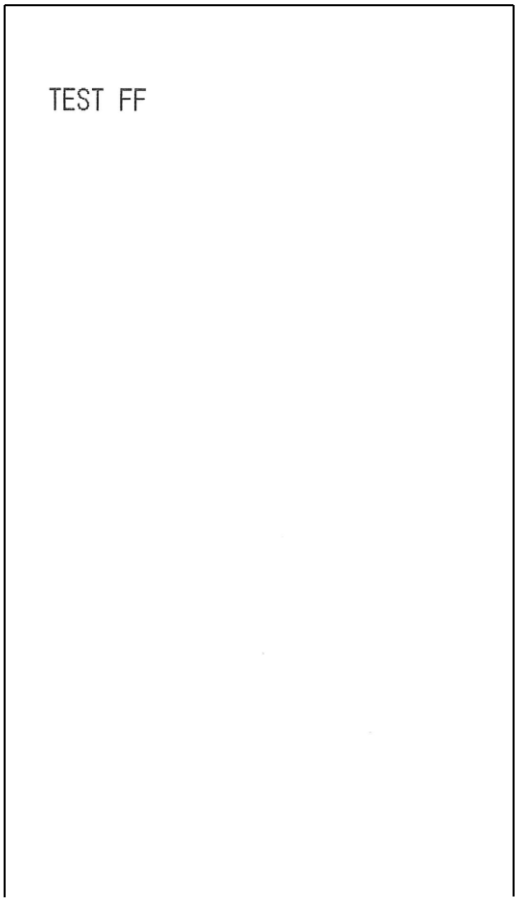
[Notes]

・Setting more than 3mm for the left / right margin is recommended. Please refer to “2.3 Print area” in the Product Specifications.

*3: Left margin value when using 80mm paper width.

*4: Left margin value when using 58mm paper width.

73) [Page print and clear]《FF》

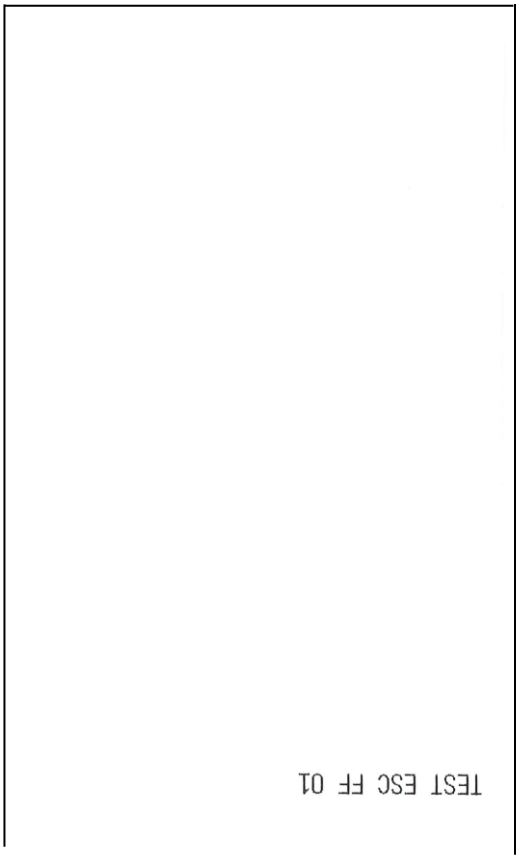
Name	[Page print and clear]《FF》
Code	〔0C〕h
Domain	No domain
Function	Clearing the page buffer after printing the contents in the page buffer.
Details	・This command is one of the commands related to page print.
Sample code example	Starting page buffer layout : 〔1B〕h+〔4C〕h+〔01〕h Print data＋Print line feeding : "TEST FF"+〔0A〕h Finishing page buffer layout : 〔1B〕h+〔4C〕h+〔00〕h 《FF》 Page print and clear : 〔0C〕h Page print : 〔1B〕h+〔0C〕h+〔00〕h
	Print result example : 

74) [Page print]《ESC FF **n**》

<table>
<tr><td>Name</td><td>[Page print]《ESC FF n》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔0C〕h＋n</td></tr>
<tr><td>Domain</td><td>〔00≦n≦01〕h</td></tr>
<tr><td>Function</td><td>Printing the contents in the page buffer.</td></tr>
<tr><td>Details</td><td>・This command is one of the commands related to page print.
・“n” has the following meanings.
<table>
<tr><th>n (hex)</th><th>Mode</th></tr>
<tr><td>00</td><td>Page print</td></tr>
<tr><td>01</td><td>Inverted page print</td></tr>
</table>
・Default value of “n” is 〔00〕h (Page print).
・Inverted page print prints 180° rotated page.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Starting page buffer layout : 〔1B〕h+〔4C〕h+〔01〕h

Print data＋Print line feeding : "TEST ESC FF 01"+〔0A〕h

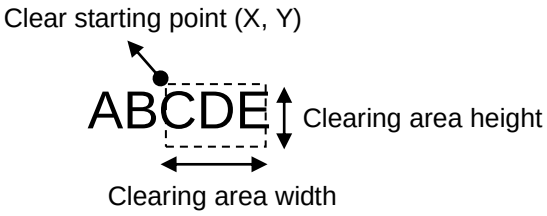
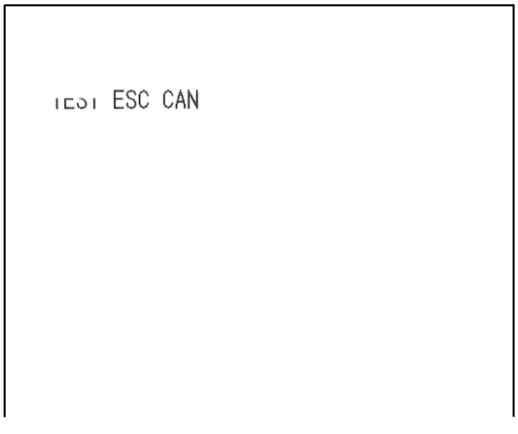
Finishing page buffer layout : 〔1B〕h+〔4C〕h+〔00〕h

《ESC》 《FF》
Page inverted printing : 〔1B〕h+〔0C〕h+〔01〕h</td></tr>
<tr><td>Print result example :

</td></tr>
</table>

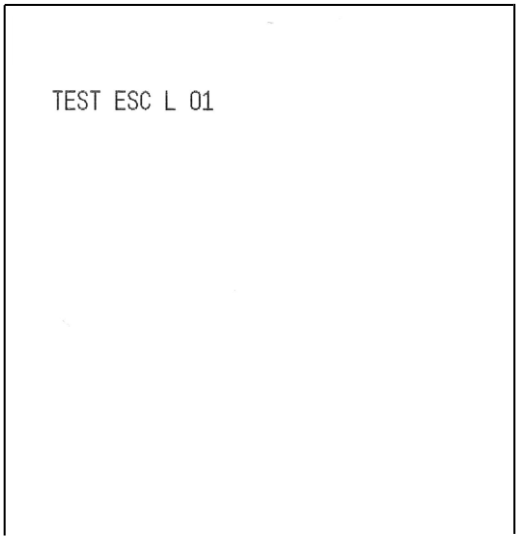
75) [Page buffer clear]《CAN》

Name	[Page buffer clear]《CAN》
Code	〔18〕h
Domain	No domain
Function	Clearing the page buffer.
Details	・This command is one of the commands related to page buffer clearing.
Sample code example	Starting page buffer layout : 〔1B〕h+〔4C〕h+〔01〕h Print data＋Print line feeding : "TEST CAN1"+〔0A〕h Finishing page buffer layout : 〔1B〕h+〔4C〕h+〔00〕h 《CAN》 Page buffer clear : 〔18〕h Starting page buffer layout : 〔1B〕h+〔4C〕h+〔01〕h Print data＋Print line feeding : "TEST CAN2"+〔0A〕h Finishing page buffer layout : 〔1B〕h+〔4C〕h+〔00〕h Page print and clear : 〔0C〕h
	Print result example : 

76) [Page buffer area clear]《ESC CAN **Dx1 Dx2 Dy1 Dy2 Dw1 Dw2 Dh1 Dh2**》

Name	[Page buffer area clear]《ESC CAN **Dx1 Dx2 Dy1 Dy2 Dw1 Dw2 Dh1 Dh2**》
Code	〔1B〕h+〔18〕h+**Dx1**+**Dx2**+**Dy1**+**Dy2**+**Dw1**+**Dw2**+**Dh1**+**Dh2**
Domain	Please refer to details.
Function	Clearing the designated area in the page buffer.
Details	・This command is one of the commands related to page buffer clearing. ・Specifying the dots for “clear starting point” by (**Dx2**×256＋**Dx1**) for X-axis coordinate, (**Dy2**×256＋**Dy1**) for Y-axis coordinate. ・Specifying the dots for “clear area” by (**Dw2**×256＋**Dw1**) for width, (**Dh2**×256＋**Dh1**) for height. ・Please specify the total value of the clearing starting coordinates (X: Y) and the clearing area (width and height) within 65535. (X-axis coordinate + width ≤ [FFFF] h: Y-axis coordinate + height ≦ [FFFF] h) ・The origin shall be upper-left corner of the print area. ・When “clearing starting point” is out of the print area, it will forcibly be shifted into the print area after clearing excessive coordinates to “0”. 
Sample code example	Starting page buffer layout : 〔1B〕h+〔4C〕h+〔01〕h Print data＋Print line feeding : "TEST ESC CAN"+〔0A〕h Finishing page buffer layout : 〔1B〕h+〔4C〕h+〔00〕h 《ESC》 《CAN》 《**Dx1**》 《**Dx2**》 《**Dy1**》 《**Dy2**》 Page buffer area clear : 〔1B〕h+〔18〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+ (X 0 coordinate, Y 0 coordinate, 52 dots width, 6 dots height) 《**Dw1**》 《**Dw2**》 《**Dh1**》 《**Dh2**》 〔34〕h+〔00〕h+〔06〕h+〔00〕h Page print and clear : 〔0C〕h
	Print result example : 

77) [Page buffer layout starting / finishing setting]《ESC L **n**》

Name	[Page buffer layout starting / finishing setting]《ESC L **n**》
Code	〔1B〕h＋〔4C〕h＋**n**
Domain	〔00≦**n**≦FF〕h
Function	Editing the page buffer by a way of 1 or 2.
Details 1	・This is the command related to editing the page. 1. Page buffer layout starting / finishing setting (**n**=〔00〕h, 〔01〕h) (1) [Page buffer layout starting setting] Code：〔1B〕h＋〔4C〕h＋〔01〕h Starting page buffer layout. ・Executing layout in line by line. ・Initializing layout position to upper-left of print area. (2) [Page buffer layout finishing setting] Code：〔1B〕h＋〔4C〕h＋〔00〕h Finishing page buffer layout. [Notes] ・Please refer to the next page.
Sample code example	《ESC》 《L》 《**n**》 Starting page buffer layout ： 〔1B〕h+〔4C〕h+〔01〕h (Edit 1) Print data＋Print line feeding： "TEST ESC L 01"+〔0A〕h Finishing page buffer layout： 〔1B〕h+〔4C〕h+〔00〕h (Edit 1) Page print and clear ： 〔0C〕h
	Print result example ： 

Details 2

2. Page buffer layout starting / finishing setting with specified coordinates
(**n**= 〔10〕 h, 〔11〕 h)

(1) [Setting the page buffer layout starting with specified coordinates]
Code : 〔1B〕 h＋ 〔4C〕 h＋ 〔11〕 h＋**Dx1**＋**Dx2**＋**Dy1**＋**Dy2**＋**Dt**＋**Dv**
Starting the page buffer layout from the set coordinates position.
- Setting dots for starting point with (**Dx2**×256＋**Dx1**) for X-axis coordinate and with (**Dy2**×256＋**Dy1**) for Y-axis coordinate.
- "**Dt**" sets rotation and "**Dv**" sets overlay.
- The origin shall be the upper-left corner of the print area.
- When "layout starting point" is out of the print area, it will forcibly shift into the print area.
- Executing layout object by object (character string, barcode, bit image and raster bit image). Excessive part from the print area will be discarded.
- Only the flag changes by the command [Position alignment]《ESC a **n**》.
- The command [Fixed bit image registration]《GS T **n**》 will be disregarded.
- "**Dt**" has the following meanings.

Dt (hex)	Mode
00	No rotation
01	Rotation of 90° clockwise

- "**Dv**" has the following meanings.

Dv (hex)	Mode
00	Overwriting background
01	Overlaying background

(2) [Setting the page buffer layout finishing with specified coordinates]
Code : 〔1B〕 h＋ 〔4C〕 h＋ 〔10〕 h
Finishing the page buffer layout with specified coordinates.

[Notes]
- Please refer to the page print sample on the next page.

Sample code example

Starting page buffer layout : 〔1B〕 h+ 〔4C〕 h+ 〔01〕 h
(Edit 1)
Print data＋Print line feeding : "1234567890"+ 〔0A〕 h
Finishing page buffer layout : 〔1B〕 h+ 〔4C〕 h+ 〔01〕 h
(Edit 1)

	《ESC》	《L》	《**n**》	《**Dx1**》	《**Dx2**》	《**Dy1**》
Starting page buffer layout :	〔1B〕 h+	〔4C〕 h+	〔11〕 h+	〔0A〕 h+	〔00〕 h+	〔0A〕 h+

(Edit 2)

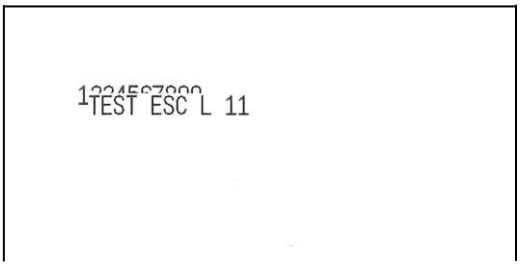
(X 10 coordinate, Y 10 coordinate,	《**Dy2**》	《**Dt**》	《**Dv**》
no rotation, overwriting background)	〔00〕 h+	〔00〕 h+	〔00〕 h

Print data＋Print line feeding : "TEST ESC L 11"+ 〔0A〕 h

	《ESC》	《L》	《**n**》
Finishing page buffer layout :	〔1B〕 h+	〔4C〕 h+	〔10〕 h

(Edit 2)
Page print and clear : 〔0C〕 h

Print result example :

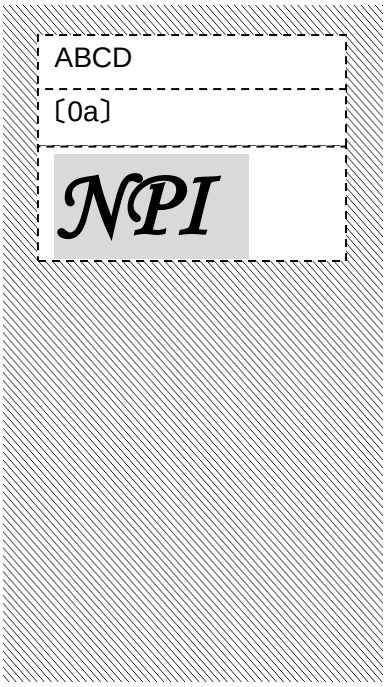


Details 3

・Page print sample：

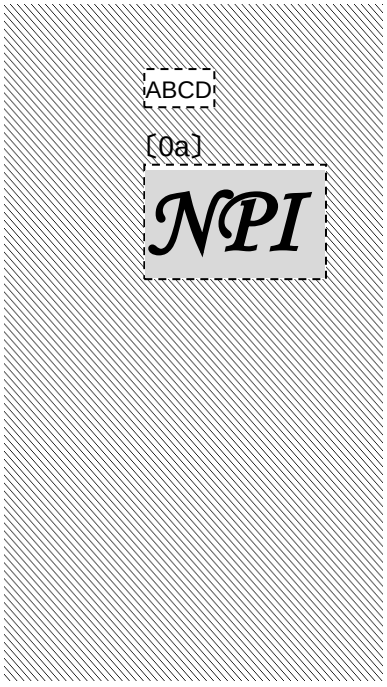
(1) Page layout setting (setting the page direction)
(2) Page layout print area setting
Left margin / Upper margin＝0mm
X print area＝80mm
Y print area＝160mm
(3) Starting page buffer layout
(4) Background image (bit image)
(5) Finishing page buffer layout
(6) Page layout print area setting (e.g. 1 / e.g. 2)
Left margin / Upper margin＝4mm
X print area＝72mm
Y print area＝152mm
(7) Starting page buffer layout (e.g. 1) / Starting page buffer layout with specified coordinates (e.g. 2)
(8) Character string “ABCD”＋〔0a〕h
(9)〔0a〕h
(10) LOGO image (bit image：NPI)
(11) Finishing page buffer layout (e.g. 1) / Finishing page buffer layout with specified coordinates set page buffer layout finish (e.g. 2)
(12) Page print

e.g. 1



・It will be overwritten to the print area because the layout is by lines.

e.g. 2



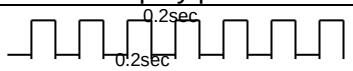
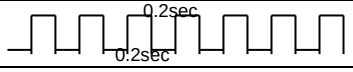
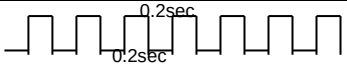
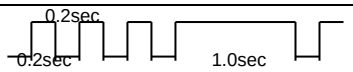
・It will be overwritten or overlaid to the height and the width of the object because it will be overlaid by objects.

78) [Back feeding (mm unit)]《GS J **n**》

Name	[Back feeding (mm unit)]《GS J **n**》
Code	〔1D〕h＋〔4A〕h＋**n**
Domain	〔00≦**n**≦FF〕h
Function	When this command is received, the paper is fed reversely.
Details	・Specifying the feeding amount "**n**" by mm. In case of setting 〔00〕h, it will never be fed. ・Some deviation may occur due to taking the backlash. ・If there is print data in the print line buffer, back-feed will be performed after printing them. ・Please DO NOT make the tip of paper exceed the back feeding limit. (Please refer to "2.4 Cutter Specifications" in the Product Specifications.)
Sample code example	5mm back feed : 《GS》 《J》 《**n**》 〔1D〕h+〔4A〕h+〔05〕h

79) [LED bezel setting]《GS l **n m**》

<table>
<tr><td>Name</td><td>[LED bezel setting]《GS l n m》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔6D〕h＋n＋m</td></tr>
<tr><td>Domain</td><td>〔n=00〕h、〔00≦m≦02〕h</td></tr>
<tr><td>Function</td><td>Setting emission patterns of LED lighting bezel.</td></tr>
<tr><td>Details</td><td>
・This command is effective only with LED lighting bezel (BEZ-330).
・“m” has the following meanings.
<table>
<tr><th>m (hex)</th><th>Function</th></tr>
<tr><td>00</td><td>Disabling emitting operation</td></tr>
<tr><td>01</td><td>LED (Blue) blinks under suspension of paper feeding with paper kept in a bezel sensor.
LED (Red) blinks during paper feeding with paper kept in a bezel sensor.</td></tr>
<tr><td>02</td><td>LED (Blue) blinks when there is no error except paper near end with paper kept in a bezel sensor.
LED (Red) blinks when there is an error except paper near end with paper kept in a bezel sensor.
LED (Red) lights or blinks synchronized with alarm lamp of operation panel when there is an error without paper in a bezel sensor.</td></tr>
<tr><td>03</td><td>Reserve</td></tr>
</table>
・Default value of “m” is 〔01〕h.
・This command is valid until executing the command [Software reset]《DC1》, RESET switch or turning OFF the power.
・The same movement as m=〔01〕h is operated when m=〔03〕h is designated.
・LED may black out once when this command is used with paper detected by the bezel sensor.

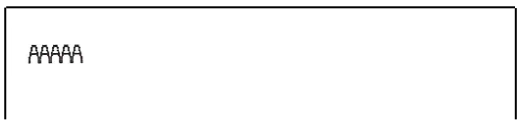
Emission patterns of LED lighting in case of m=〔01〕h
<table>
<tr><th>Printer status</th><th>Display pattern</th><th>Color</th></tr>
<tr><td>Feeding paper is not being executed with paper in a bezel sensor.</td><td>1
0
</td><td>Blue</td></tr>
<tr><td>Feeding paper is being executed with paper in a bezel sensor.</td><td>1
0
</td><td>Red</td></tr>
</table>
Emission patterns of LED lighting in case of m=〔02〕h
<table>
<tr><th>Printer status</th><th>Display pattern</th><th>Color</th></tr>
<tr><td>With paper in a bezel sensor
(Without an error other than paper near end)</td><td>1
0
</td><td>Blue</td></tr>
<tr><td>With paper in a bezel sensor
(With an error other than paper near end)</td><td>1
0
</td><td>Red</td></tr>
<tr><td>No paper in a bezel sensor
(With an error)</td><td>Please refer to “4.7 1) ALARM LED (red) [ALARM lamp]” in the Product Specifications.</td><td>Red</td></tr>
</table>
</td></tr>
<tr><td>Sample code example</td><td>Setting LED lighting bezel : 《GS》 《l》 《n》 《m》
〔1D〕h+〔6D〕h+〔00〕h+〔01〕h</td></tr>
</table>

80) [User code page registration]《GS & **n Dn**》

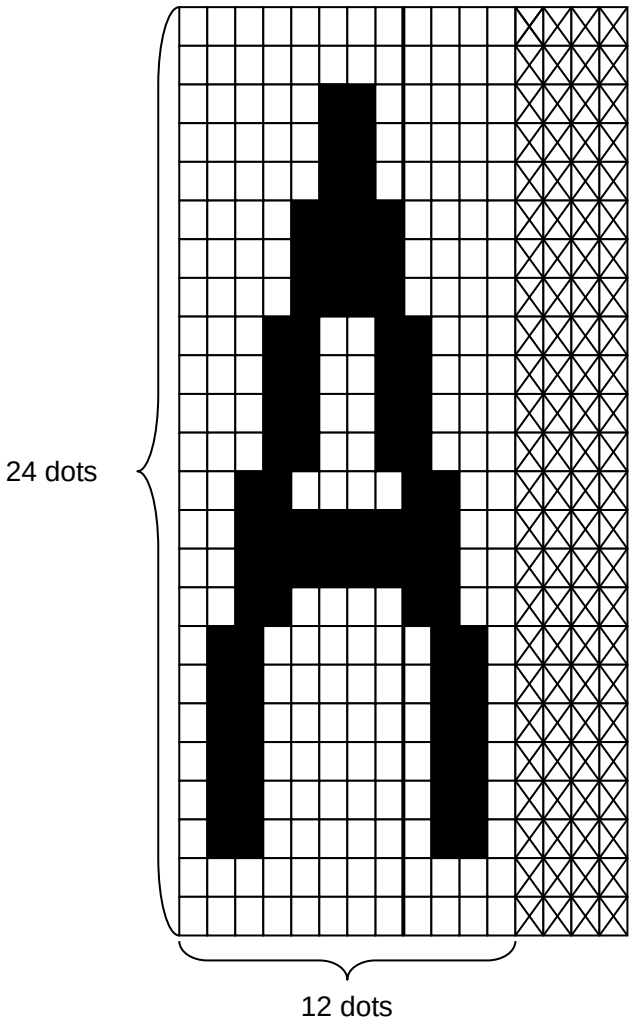
<table>
<tr><td>Name</td><td>[User code page registration]《GS & n Dn》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔26〕h＋n＋Dn</td></tr>
<tr><td>Domain</td><td>〔n=00, 01, 04〕h</td></tr>
<tr><td>Function</td><td>Registering user code pages.</td></tr>
<tr><td>Details</td><td>・Selecting the type of the font to be registered from the table below by specifying “n”.
<table>
<tr><th>n (hex)</th><th>Types of font</th></tr>
<tr><td>00</td><td>User Code Page Font A (12x24)</td></tr>
<tr><td>01</td><td>User Code Page Font B (9x17)</td></tr>
<tr><td>04</td><td>User Code Page Font D (16x32)</td></tr>
</table>
・“Dn” indicates registration font data. Data format is raster format.
Selecting〔00〕h for all data not being registered because data for 224 characters (14336 bytes in case of Font D or 10752 bytes in case of Font A / B) are always required.
Font D: [horizontally 2 bytes x vertically 32 bytes] x 224 characters (〔20〕h to〔FF〕h)
Font A / B: [horizontally 2 bytes x vertically 24 bytes] x 224 characters
(〔20〕h to〔FF〕h)
・They can be registered to〔7F〕h and〔FF〕h.
・Please refer to <Reference> from the next page.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>《GS》 《&》 《n》
Registering user code page Font B :〔1D〕h+〔26〕h+〔01〕h

Registered data (1 character)
:〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+
〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+〔00〕h+
〔3C〕h+〔00〕h+〔7E〕h+〔00〕h+〔C3〕h+〔00〕h+〔C3〕h+〔00〕h+
〔C3〕h+〔00〕h+〔C3〕h+〔00〕h+〔C3〕h+〔00〕h+〔FF〕h+〔00〕h+
〔FF〕h+〔00〕h+〔C3〕h+〔00〕h+〔C3〕h+〔00〕h+〔C3〕h+〔00〕h+
〔C3〕h+〔00〕h+〔C3〕h+〔00〕h+〔C3〕h+〔00〕h+〔C3〕h+〔00〕h

Registered data requires 224 characters. (Omitted)

Specifying user code page :〔1B〕h+〔74〕h+〔07〕h+
Specifying Font B :〔1B〕h+〔21〕h+〔01〕h
Print data＋Print line feeding :〔20〕h+〔21〕h+〔22〕h+〔23〕h+〔24〕h+〔0A〕h</td></tr>
<tr><td>Print result example :
</td></tr>
</table>

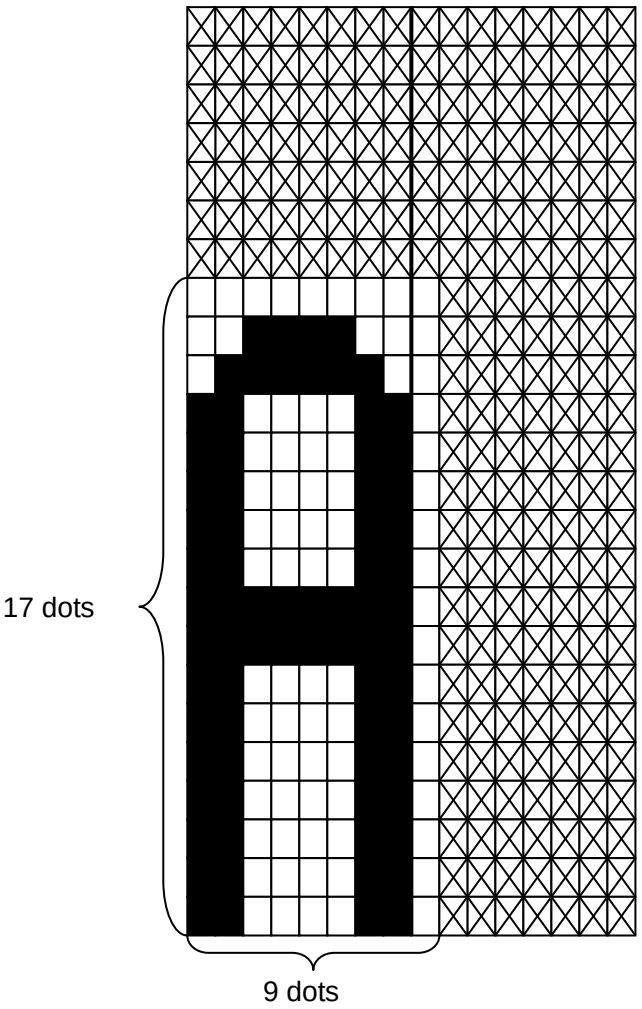
＜Reference＞
In case of Font A



d1 = 〔00〕 h, d2 = 〔00〕 h
d3 = 〔00〕 h, d4 = 〔00〕 h
d5 = 〔06〕 h, d6 = 〔00〕 h
d7 = 〔06〕 h, d8 = 〔00〕 h
d9 = 〔06〕 h, d10= 〔00〕 h
d11= 〔0F〕 h, d12= 〔00〕 h
d13= 〔0F〕 h, d14= 〔00〕 h
d15= 〔0F〕 h, d16= 〔00〕 h
d17= 〔19〕 h, d18= 〔80〕 h
d19= 〔19〕 h, d20= 〔80〕 h
d21= 〔19〕 h, d22= 〔80〕 h
d23= 〔19〕 h, d24= 〔80〕 h
d25= 〔30〕 h, d26= 〔C0〕 h
d27= 〔3F〕 h, d28= 〔C0〕 h
d29= 〔3F〕 h, d30= 〔C0〕 h
d31= 〔30〕 h, d32= 〔C0〕 h
d33= 〔60〕 h, d34= 〔60〕 h
d35= 〔60〕 h, d36= 〔60〕 h
d37= 〔60〕 h, d38= 〔60〕 h
d39= 〔60〕 h, d40= 〔60〕 h
d41= 〔60〕 h, d42= 〔60〕 h
d43= 〔60〕 h, d44= 〔60〕 h
d45= 〔00〕 h, d46= 〔00〕 h
d47= 〔00〕 h, d48= 〔00〕 h

☒ : Since these are dummy data cells, please fix them by 0 when registering it.

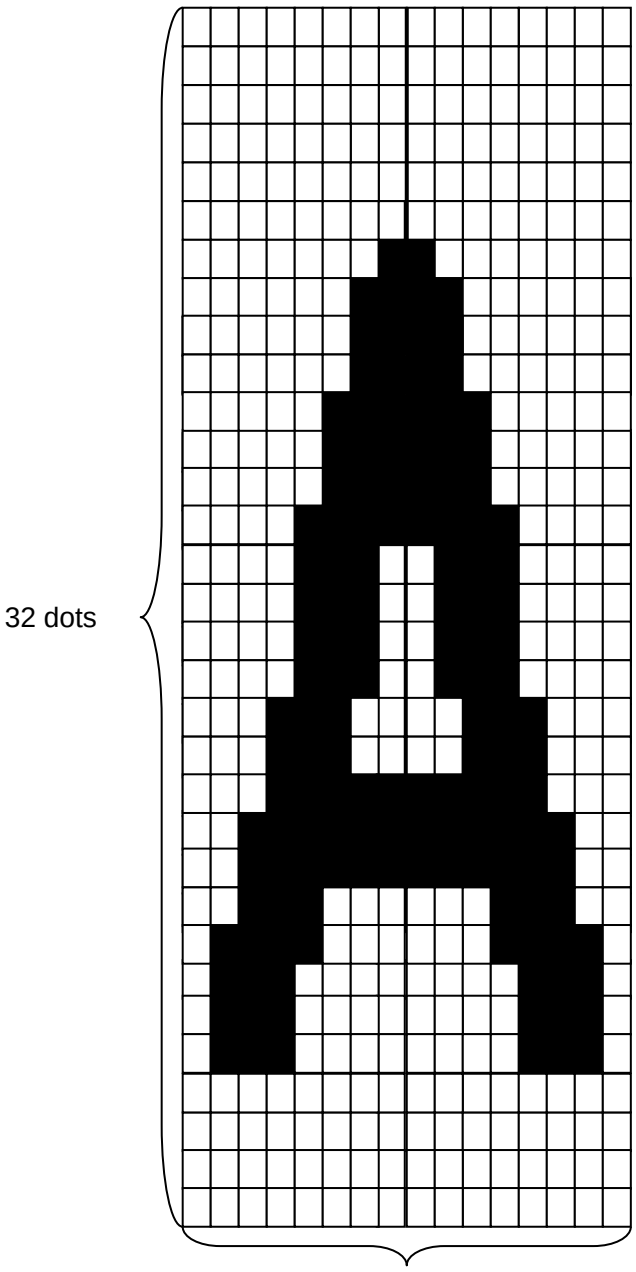
＜Reference＞
In case of Font B



d1 = 〔00〕 h, d2 = 〔00〕 h
d3 = 〔00〕 h, d4 = 〔00〕 h
d5 = 〔00〕 h, d6 = 〔00〕 h
d7 = 〔00〕 h, d8 = 〔00〕 h
d9 = 〔00〕 h, d10= 〔00〕 h
d11= 〔00〕 h, d12= 〔00〕 h
d13= 〔00〕 h, d14= 〔00〕 h
d15= 〔00〕 h, d16= 〔00〕 h
d17= 〔3C〕 h, d18= 〔00〕 h
d19= 〔7E〕 h, d20= 〔00〕 h
d21= 〔C3〕 h, d22= 〔00〕 h
d23= 〔C3〕 h, d24= 〔00〕 h
d25= 〔C3〕 h, d26= 〔00〕 h
d27= 〔C3〕 h, d28= 〔00〕 h
d29= 〔C3〕 h, d30= 〔00〕 h
d31= 〔FF〕 h, d32= 〔00〕 h
d33= 〔FF〕 h, d34= 〔00〕 h
d35= 〔C3〕 h, d36= 〔00〕 h
d37= 〔C3〕 h, d38= 〔00〕 h
d39= 〔C3〕 h, d40= 〔00〕 h
d41= 〔C3〕 h, d42= 〔00〕 h
d43= 〔C3〕 h, d44= 〔00〕 h
d45= 〔C3〕 h, d46= 〔00〕 h
d47= 〔C3〕 h, d48= 〔00〕 h

☒ : Since these are dummy data cells, please fix them by 0 when registering it.

＜Reference＞
In case of Font D



d1 = 〔00〕 h, d2 = 〔00〕 h
d3 = 〔00〕 h, d4 = 〔00〕 h
d5 = 〔00〕 h, d6 = 〔00〕 h
d7 = 〔00〕 h, d8 = 〔00〕 h
d9 = 〔00〕 h, d10= 〔00〕 h
d11= 〔00〕 h, d12= 〔00〕 h
d13= 〔01〕 h, d14= 〔80〕 h
d15= 〔03〕 h, d16= 〔C0〕 h
d17= 〔03〕 h, d18= 〔C0〕 h
d19= 〔03〕 h, d20= 〔C0〕 h
d21= 〔07〕 h, d22= 〔E0〕 h
d23= 〔07〕 h, d24= 〔E0〕 h
d25= 〔07〕 h, d26= 〔E0〕 h
d27= 〔0F〕 h, d28= 〔F0〕 h
d29= 〔0E〕 h, d30= 〔70〕 h
d31= 〔0E〕 h, d32= 〔70〕 h
d33= 〔0E〕 h, d34= 〔70〕 h
d35= 〔0E〕 h, d36= 〔70〕 h
d37= 〔1C〕 h, d38= 〔38〕 h
d39= 〔1C〕 h, d40= 〔38〕 h
d41= 〔1F〕 h, d42= 〔F8〕 h
d43= 〔3F〕 h, d44= 〔FC〕 h
d45= 〔3F〕 h, d46= 〔FC〕 h
d47= 〔38〕 h, d48= 〔1C〕 h
d49= 〔78〕 h, d50= 〔1E〕 h
d51= 〔70〕 h, d52= 〔0E〕 h
d53= 〔70〕 h, d54= 〔0E〕 h
d55= 〔70〕 h, d56= 〔0E〕 h
d57= 〔00〕 h, d58= 〔00〕 h
d59= 〔00〕 h, d60= 〔00〕 h
d61= 〔00〕 h, d62= 〔00〕 h
d63= 〔00〕 h, d64= 〔00〕 h

81) [Split QR codes printing (Model 2)]《GS Q **S E V**》

Name	[Sprit QR codes printing (Model 2)]《GS Q **S E V**》
Code	〔1D〕h＋〔51〕h＋**S**＋**E**＋**V**＋**n1**＋**n2**+**Dn**
Domain	〔01≦**S**≦14〕h, 〔00≦**E**≦03〕h, 〔00≦**V**≦28〕h
Function	Printing Sprit QR codes (Model 2).
Details 1	Description regarding parameters (1) **S**: Module size ・Specifying the size of one QR code module by the number of dots of the printer. ・Selectable size is between 1 and 20 dots. ・The size of one side of QR code to be printed can be obtained by the following calculation. QR code printing size (Dot) = number of modules x module size ・When invalid size is specified, it will become 4 dots. (Readability is not guaranteed for module sizes 1, 2 and 3 because of the resolution of this printer mechanism.) (2) **E**: Error correction level ・Selecting the error correction level for recovering symbols. ・Selectable values are as below. ・When invalid value is selected, error correction level will be “L”.

E	Error correction level	Recovering ability (%)
0	L	7
1	M	15
2	Q	25
3	H	30

(3) **V**: Model number (version)
・Specifying the number of QR code modules by the model number.
・Selectable model number is between 0 and 40.
・Model number 0 specifies the version which has the smallest number of modules for the number of data automatically.
・When model number other than 0 is set, it will be split QR codes.
・Relational expression between the model number and the number of modules is as follows.
Module number = model number x 4 + 17
・When invalid value is specified , model number will be 0 (automatically).
・If character string over capacity of selected model number is assigned, it will be split QR codes.
・Split QR codes can be divided into up to 16 pieces data. The data capacity for one QR code at this time is approx. 2 bytes smaller than normal QR because there is a split QR codes controlling part.
・For the maximum data capacity of split QR codes, please refer to [Model number and split QR codes data capacity].

(4) **n1 n2**: The number of data bytes
・Specifying the number of data bytes (**n2** x256＋**n1**).

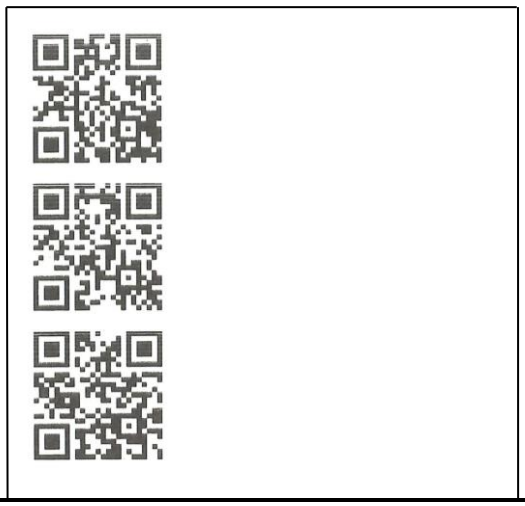
(5) **Dn**: Character string data
・Specifying the character code to be printed.

<table>
<tr><td>Details 2</td><td>[Notes]
・QR code printing will not be done if generated QR code exceeds the print area.
・The amount of paper feeding will be the amount for the QR code height regardless of line feeding amount set by the command [1/6 inch line feed amount specifying] 《ESC 2》 or the command [Line feeding amount specifying by the smallest paper feeding pitch unit] 《ESC 3 n》, etc.
・When printing data is in the print line buffer, QR code printing will be operated after printing the data.
・It never affects the character editing command (Inverted printing, enhanced printing or underline, etc.).
・The command [Print area setting] 《GS W n1 n2》 and the command [Position alignment] 《ESC a n》 are effective. (The command [Absolute position specifying] 《ESC $ n1 n2》 and the command [Relative position setting] 《ESC ¥ n1 n2》 are ineffective.)</td></tr>
<tr><td rowspan="2">Sample code example</td><td>(1) S : Module size 5 dots ＝〔05〕h
(2) E : Error correction level L＝〔00〕h
(3) V : Version 2＝〔02〕h
(4) n1 n2 : The number of data bytes 64 bytes setting＝〔40〕h＋〔00〕h
(5) Dn : Character string data
"NIPPON PRINTER ENGINIEERING INC. http://www.primex.co.jp/nei"

[Notes]
・Data enclosed in "" is character data.

Specifying above 《GS》 《Q》 《S》 《E》 《V》 《n1》 《n2》
(1) to (4) : 〔1D〕h＋〔51〕h＋〔05〕h＋〔00〕h＋〔02〕h＋〔40〕h＋〔00〕h

Character string data :
"NIPPON PRINTER ENGINIEERING INC."
〔93〕h＋〔FA〕h＋〔96〕h＋〔7B〕h＋〔83〕h＋〔76〕h＋〔83〕h＋〔8A〕h＋
〔83〕h＋〔93〕h＋〔83〕h＋〔5E〕h＋〔83〕h＋〔47〕h＋〔83〕h＋〔93〕h＋
〔83〕h＋〔57〕h＋〔83〕h＋〔6A〕h＋〔83〕h＋〔41〕h＋〔83〕h＋〔8A〕h＋
〔83〕h＋〔93〕h＋〔83〕h＋〔4F〕h＋〔8A〕h＋〔94〕h＋〔8E〕h＋〔AE〕h＋
〔89〕h＋〔EF〕h＋〔8E〕h＋〔D0〕h＋

"http://www.primex.co.jp/nei"
〔20〕h＋〔68〕h＋〔74〕h＋〔74〕h＋〔70〕h＋〔3A〕h＋〔2F〕h＋〔2F〕h＋
〔77〕h＋〔77〕h＋〔77〕h＋〔2E〕h＋〔70〕h＋〔72〕h＋〔69〕h＋〔6D〕h＋
〔65〕h＋〔78〕h＋〔2E〕h＋〔63〕h＋〔6F〕h＋〔2E〕h＋〔6A〕h＋〔70〕h＋
〔2F〕h＋〔6E〕h＋〔65〕h＋〔69〕h</td></tr>
<tr><td>Print result example :
</td></tr>
</table>

[Model number and split QR codes data capacity (Model number 1 to 20)]

Model number (Version)	Error correction level	The number of data bytes	Split QR codes data maximum capacity	Model number (Version)	Error correction level	The number of data bytes	Split QR codes data maximum capacity
1	L	17	240	11	L	321	2552
	M	14	192		M	251	1992
	Q	11	144		Q	177	1400
	H	7	80		H	137	1080
2	L	32	480	12	L	367	2555
	M	26	384		M	287	1995
	Q	20	288		Q	203	1407
	H	14	192		H	155	1071
3	L	53	816	13	L	425	2538
	M	42	640		M	331	1974
	Q	32	480		Q	241	1434
	H	24	352		H	177	1050
4	L	78	1216	14	L	458	2280
	M	62	960		M	362	1800
	Q	46	704		Q	258	1280
	H	34	512		H	194	960
5	L	106	1664	15	L	520	2590
	M	84	1312		M	412	2050
	Q	60	928		Q	292	1450
	H	44	672		H	220	1090
6	L	134	2112	16	L	586	2336
	M	106	1664		M	450	1792
	Q	74	1152		Q	322	1280
	H	58	896		H	250	992
7	L	154	2280	17	L	644	2568
	M	122	1800		M	504	2008
	Q	86	1260		Q	364	1448
	H	64	930		H	280	1112
8	L	192	2470	18	L	718	2148
	M	152	1950		M	560	1674
	Q	108	1378		Q	394	1176
	H	84	1066		H	310	924
9	L	230	2508	19	L	792	2370
	M	180	1958		M	624	1866
	Q	130	1408		Q	442	1320
	H	98	1056		H	338	1008
10	L	271	2421	20	L	858	2568
	M	213	1899		M	666	1992
	Q	151	1341		Q	482	1440
	H	119	1053		H	382	1140

[Model number and split QR codes data capacity (Model number 21 to 40)]

Model number (Version)	Error correction level	The number of data bytes	Split QR codes data maximum capacity	Model number (Version)	Error correction level	The number of data bytes	Split QR codes data maximum capacity
21	L	929	2781	31	L	1840	1838
	M	711	2127		M	1452	1450
	Q	509	1521		Q	1030	1028
	H	403	1203		H	790	788
22	L	1003	2002	32	L	1952	1950
	M	779	1554		M	1538	1536
	Q	565	1126		Q	1112	1110
	H	439	874		H	842	840
23	L	1091	2178	33	L	2068	2066
	M	857	1710		M	1628	1626
	Q	611	1218		Q	1168	1166
	H	461	918		H	898	896
24	L	1171	2338	34	L	2188	2186
	M	911	1818		M	1722	1720
	Q	661	1318		Q	1228	1226
	H	511	1018		H	958	956
25	L	1273	2542	35	L	2303	2301
	M	997	1990		M	1809	1807
	Q	715	1426		Q	1283	1281
	H	535	1066		H	983	981
26	L	1367	2730	36	L	2431	2429
	M	1059	2114		M	1911	1909
	Q	751	1498		Q	1351	1349
	H	593	1182		H	1051	1049
27	L	1465	2926	37	L	2563	2561
	M	1125	2246		M	1989	1987
	Q	805	1606		Q	1423	1421
	H	625	1246		H	1093	1091
28	L	1528	1526	38	L	2699	2697
	M	1190	1188		M	2099	2097
	Q	868	866		Q	1499	1497
	H	658	656		H	1139	1137
29	L	1628	1626	39	L	2809	2807
	M	1264	1262		M	2213	2211
	Q	908	906		Q	1579	1577
	H	698	696		H	1219	1217
30	L	1732	1730	40	L	2953	2951
	M	1370	1368		M	2331	2329
	Q	982	980		Q	1663	1661
	H	742	740		H	1273	1271

82) [QR code printing (Model2)]《ESC q **S E V M**》

<table>
<tr><td>Name</td><td>[QR code printing (Model2)]《ESC q S E V M》</td></tr>
<tr><td>Code</td><td>〔1B〕h＋〔71〕h＋S＋E＋V＋M＋n1＋n2+Dn</td></tr>
<tr><td>Domain</td><td>〔01≦S≦14〕h,〔00≦E≦03〕h,〔V=00〕h,〔M=00〕h</td></tr>
<tr><td>Function</td><td>Printing QR code (Model2).</td></tr>
<tr><td>Details 1</td><td>
Descriptions regarding parameters

(1) S: Module size
・Specifying the size of one QR code module by the number of dots of the printer.
・Selectable size is between 1 and 20 dots.
・When invalid size is specified, it will become 4 dots. (Readability is not guaranteed for module sizes 1, 2 and 3 because of the resolution of this printer mechanism.)

(2) E: Error correction level
・Selecting the error correction level for recovering symbols.
・Selectable values are as below.
・When invalid value is selected, error correction level will be “L”.
<table>
<tr><th>E</th><th>Error correction level</th><th>Recovering ability (%)</th></tr>
<tr><td>0</td><td>L</td><td>7</td></tr>
<tr><td>1</td><td>M</td><td>15</td></tr>
<tr><td>2</td><td>Q</td><td>25</td></tr>
<tr><td>3</td><td>H</td><td>30</td></tr>
</table>
(3) V: Model number (version)
・Model number 0 is fixed (automatically).

(4) M: Masking pattern
・It is fixed to the masking pattern “0” (optimized).

(5) n1 n2: The number of data bytes
・Please specify the number of data bytes (n2 x256＋n1).
</td></tr>
</table>

Details 2	(6) **Dn**: Character string data ・Setting the character code to be printed. ・Kanji data should be input by using the shift JIS code. [Notes] ・QR code printing will not be done if generated QR code exceeds the print area. ・The amount of paper feeding will be the amount for the QR code height regardless of line feeding amount set by the command [1/6 inch line feed amount specifying] 《ESC 2》 or the command [Line feeding amount specifying by the smallest paper feeding pitch unit] 《ESC 3 **n**》, etc. ・When printing data is in the print line buffer, QR code printing will be operated after printing the data. ・It never affects the character editing command (Inverted printing, enhanced printing or underline, etc.). ・The command [Print area setting] 《GS W **n1 n2**》 and the command [Position alignment] 《ESC a **n**》 are effective. (The command [Absolute position specifying] 《ESC $ **n1 n2**》 and the command [Relative position setting] 《ESC ¥ **n1 n2**》 are ineffective.)

Sample code example

(1) **S** : Module size 5 dots ＝〔05〕h
(2) **E** : Error correction level L＝〔00〕h
(3) **V** : Model number (version) 0 (automatically)＝〔00〕h
(4) **M** : Masking pattern 1＝〔01〕h
(5) **n1 n2** : The number of data bytes　64 bytes setting＝〔40〕h＋〔00〕h
(6) **Dn** : Character string data
"NIPPON PRINTER ENGINIEERING INC. http://www.primex.co.jp/nei"

[Notes]
・Data enclosed in "" is character data.

	《ESC》	《q》	《**S**》	《**E**》	《**V**》	《**M**》
Specifying above (1) to (5) :	〔1B〕h＋	〔71〕h＋	〔05〕h＋	〔00〕h＋	〔00〕h＋	〔01〕h

《**n1**》	《**n2**》
＋〔40〕h＋	〔00〕h＋

Character string data of (6) :
"NIPPON PRINTER ENGINIEERING INC."
〔93〕h＋〔FA〕h＋〔96〕h＋〔7B〕h＋〔83〕h＋〔76〕h＋〔83〕h＋〔8A〕h＋
〔83〕h＋〔93〕h＋〔83〕h＋〔5E〕h＋〔83〕h＋〔47〕h＋〔83〕h＋〔93〕h＋
〔83〕h＋〔57〕h＋〔83〕h＋〔6A〕h＋〔83〕h＋〔41〕h＋〔83〕h＋〔8A〕h＋
〔83〕h＋〔93〕h＋〔83〕h＋〔4F〕h＋〔8A〕h＋〔94〕h＋〔8E〕h＋〔AE〕h＋
〔89〕h＋〔EF〕h＋〔8E〕h＋〔D0〕h＋

"http://www.primex.co.jp/nei"
〔20〕h＋〔68〕h＋〔74〕h＋〔74〕h＋〔70〕h＋〔3A〕h＋〔2F〕h＋〔2F〕h＋
〔77〕h＋〔77〕h＋〔77〕h＋〔2E〕h＋〔70〕h＋〔72〕h＋〔69〕h＋〔6D〕h＋
〔65〕h＋〔78〕h＋〔2E〕h＋〔63〕h＋〔6F〕h＋〔2E〕h＋〔6A〕h＋〔70〕h＋
〔2F〕h＋〔6E〕h＋〔65〕h＋〔69〕h

Print result example :



83) [Micro QR code printing]《GS R **S E**》

<table>
<tr><td>Name</td><td>[Micro QR code printing]《GS R S E》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔52〕h＋S＋E＋n＋Dn</td></tr>
<tr><td>Domain</td><td>〔01≦S≦14〕h, 〔00≦E≦02〕h</td></tr>
<tr><td>Function</td><td>Printing micro QR code.</td></tr>
<tr><td>Details</td><td>Descriptions regarding parameters

(1) S: Module size
・Specifying the size of one QR code module by the number of dots of the printer.
・Selectable size is between 1 and 20 dots.
・When invalid size is specified, it will become 4 dots. (Readability is not guaranteed for module sizes 1, 2 and 3 because of the resolution of this printer mechanism.)

(2) E: Error correction level
・Selecting the error correction level for recovering symbols.
・Selectable values are as below.
・When invalid value is selected, error correction level will be “L”.
<table>
<tr><th>E</th><th>Error correction level</th><th>Recovering ability (%)</th></tr>
<tr><td>0</td><td>L</td><td>7</td></tr>
<tr><td>1</td><td>M</td><td>15</td></tr>
<tr><td>2</td><td>Q</td><td>25</td></tr>
</table>
(3) n: The number of data bytes
・Specifying the number of data bytes.
・For the maximum data capacity of micro QR, please refer to [Micro QR data capacity].
・Optimum model number is automatically set based on the number of characters and error correction level.

(4) Dn: Character string data
・Specifying the character code to be printed.
・Available characters are “0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ $% * +-. /:”.

[Notes]
・QR code printing will not be done if generated QR code exceeds the print area.
・The amount of paper feeding will be the amount for the QR code height regardless of line feeding amount set by the command [1/6 inch line feed amount specifying] 《ESC 2》 or the command [Line feeding amount specifying by the smallest paper feeding pitch unit] 《ESC 3 n》, etc.
・When printing data is in the print line buffer, QR code printing will be operated after printing the data.
・It never affects the character editing command (Inverted printing, enhanced printing or underline, etc.).
・The command [Print area setting] 《GS W n1 n2》 and the command [Position alignment] 《ESC a n》 are effective. (The command [Absolute position specifying] 《ESC $ n1 n2》 and the command [Relative position setting] 《ESC ¥ n1 n2》 are ineffective.)</td></tr>
<tr><td>Sample code example</td><td>Printing micro QR code ：〔1D〕h+〔52〕h+〔04〕h+〔00〕h+〔04〕h+"A123"</td></tr>
</table>

	Print result example : 

[Micro QR data capacity]

Model number (Version)	Error correction level	The number of data bytes
M2	L	6
	M	5
M3	L	14
	M	11
M4	L	21
	M	18
	Q	13

84) [PDF417 module width size specifying]《GS n **n**》

Name	[PDF417 module width size specifying]《GS n **n**》
Code	〔1D〕h＋〔6E〕h＋**n**
Domain	〔02≦**n**≦04〕h
Function	Specifying PDF417 module width size.
Details	・Default value of "**n**" is 〔03〕h. ・When it is out of range, it will be disregarded and not changed.
Sample code example	Please refer to the sample code example of the command [PDF417 printing]《GS p **e h nl nh [d]k**》.

85) [PDF417 printing]《GS p **e h nl nh [d]k**》

<table>
<tr><td>Name</td><td>[PDF417 printing]《GS p e h nl nh Dn》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔70〕h＋e＋h＋nl＋nh＋Dn</td></tr>
<tr><td>Domain</td><td>〔00≦e≦08〕h, e=〔FF〕h, 〔00≦h≦06〕h, 〔01≦(nh×256＋nl)≦0A96〕h</td></tr>
<tr><td>Function</td><td>Printing PDF417.</td></tr>
<tr><td>Details</td><td>
Descriptions regarding parameters

(1) e: Error correction level
・PDF417 contains from 2 to 512 error correction code words corresponding to the error correction level.
・When it is out of range, it will be “〔00〕h”.
・Selectable values are as below.
<table>
<tr><th>e (hex)</th><th>Function</th><th>Number of error correction code words</th></tr>
<tr><td>00</td><td>Error correction level 0</td><td>2</td></tr>
<tr><td>01</td><td>Error correction level 1</td><td>4</td></tr>
<tr><td>02</td><td>Error correction level 2</td><td>8</td></tr>
<tr><td>03</td><td>Error correction level 3</td><td>16</td></tr>
<tr><td>04</td><td>Error correction level 4</td><td>32</td></tr>
<tr><td>05</td><td>Error correction level 5</td><td>64</td></tr>
<tr><td>06</td><td>Error correction level 6</td><td>128</td></tr>
<tr><td>07</td><td>Error correction level 7</td><td>256</td></tr>
<tr><td>08</td><td>Error correction level 8</td><td>512</td></tr>
<tr><td>FF</td><td>Automatic setting</td><td>Automatic</td></tr>
</table>

(2) h：The ratio for height
・This value indicates how many times of the module width size length of the height for a layer has.
・When it is out of range, it will be “〔03〕h”.

(3) nl nh：The number of data bytes
・Please specify the number of data bytes (n2 x 256＋n1).
・When the number of data bytes is 2711 or more, the specified amount of the following data is disregarded and this command will become invalid.

(4) Dn：Character string data
・Please specify the character code to print.
・Please enter Kanji data with shift JIS code.

[Notes]
・When generated PDF417 symbol exceeds the print area, PDF417 will not be printed.
・The amount of paper feeding will be the amount of PDF417 height regardless of line feeding set by the command [1/6 inch line feed amount specifying]《ESC 2》or the command [Line feeding amount specifying by the smallest paper feeding pitch unit]《ESC 3 n》, etc.
・When printing data is in the print line buffer, PDF417 printing will be operated after printing the data.
・It never affects the character editing command (Inverted printing, enhanced printing or underline, etc.).
・The command [Print area setting]《GS W n1 n2》 and the command [Position alignment]《ESC a n》are effective. (The command [Absolute position setting]《ESC $ n1 n2》 and the command [Relative position setting]《ESC ¥ n1 n2》 are ineffective.)
</td></tr>
</table>

Sample code example

(1) **e**: Error correction level (“e=〔FF〕h” is set automatically.)
(2) **h**: The ratio for height (3 times＝〔03〕h)
(3) **nl nh**: The number of data bytes (64 bytes setting＝〔40〕h＋〔00〕h)
(4) **Dn**: Character string data
"NIPPON PRINTER ENGINIEERING INC. http://www.primex.co.jp/nei"

[Notes]
・Data enclosed in "" is character data.

《GS》 《p》 《**e**》 《**h**》 《**nl**》 《**nh**》
Specifying above (1) to (3) : 〔1D〕h＋〔70〕h＋〔FF〕h＋〔03〕h＋〔40〕h＋〔00〕h＋

Character string data of (4) :
"NIPPON PRINTER ENGINIEERING INC."
〔93〕h＋〔FA〕h＋〔96〕h＋〔7B〕h＋〔83〕h＋〔76〕h＋〔83〕h＋〔8A〕h＋
〔83〕h＋〔93〕h＋〔83〕h＋〔5E〕h＋〔83〕h＋〔47〕h＋〔83〕h＋〔93〕h＋
〔83〕h＋〔57〕h＋〔83〕h＋〔6A〕h＋〔83〕h＋〔41〕h＋〔83〕h＋〔8A〕h＋
〔83〕h＋〔93〕h＋〔83〕h＋〔4F〕h＋〔8A〕h＋〔94〕h＋〔8E〕h＋〔AE〕h＋
〔89〕h＋〔EF〕h＋〔8E〕h＋〔D0〕h＋

"http://www.primex.co.jp/nei"
〔20〕h＋〔68〕h＋〔74〕h＋〔74〕h＋〔70〕h＋〔3A〕h＋〔2F〕h＋〔2F〕h＋
〔77〕h＋〔77〕h＋〔77〕h＋〔2E〕h＋〔70〕h＋〔72〕h＋〔69〕h＋〔6D〕h＋
〔65〕h＋〔78〕h＋〔2E〕h＋〔63〕h＋〔6F〕h＋〔2E〕h＋〔6A〕h＋〔70〕h＋
〔2F〕h＋〔6E〕h＋〔65〕h＋〔69〕h

Print result example :



86) [Memory switch setting and set contents printing]《GS M **n d1 d2**》

Name	[Memory switch setting and printing]《GS M **n d1 d2**》
Code	〔1D〕h＋〔4D〕h＋**n**＋**d1**＋**d2**
Domain	〔00≦**n**≦01〕h, 〔00≦**d1**≦FF〕h, 〔00≦**d2**≦FF〕h
Function	Setting the memory switches (MS1 and MS2) or printing set contents of the dip switch (DS1) and the memory switches (MS1 and MS2).

Details 1

・“**n**” has the following meanings.

n (hex)	Function
00	Printing the dip switch (DS1) and the memory switches (MS1 and MS2) setting contents
01	Setting the memory switches (MS1 and MS2)

・When **n** = 01 is set, **d1** (memory switch MS1) and **d2** (memory switch MS2) can be set.
・When memory switches have been set, set contents including the dip switch (DS1) are printed and then software reset operation is performed automatically to enable settings.
・When each switch setting contents is printed, specified character decoration remains effective only with specified enhanced printing and “upright + font A” characters will be printed. After that, the software is reset automatically.
・“**d1**” specifies the memory switch MS1 settings by bytes.
・“**d2**” specifies the memory switch MS2 settings by bytes.
・Each bit of **d1** and **d2** has the following meanings.

d1 (Memory switch MS1)

bit	Switch No.	Value	
		“0”	“1”
bit0	MS1-1	OFF	ON
bit1	MS1-2	OFF	ON
bit2	MS1-3	OFF	ON
bit3	MS1-4	OFF	ON
bit4	MS1-5	OFF	ON
bit5	MS1-6	OFF	ON
bit6	MS1-7	OFF	ON
bit7	MS1-8	OFF	ON

[Notes]
・For details and precautions for each switch, please refer to “4.1.1 Switch setting” in the Product Specifications. Please turn OFF the reserved switch.

Details 2

d2 (Memory switch MS2)

bit	Switch No.	Value	
		"0"	"1"
bit0	MS2-1	OFF	ON
bit1	MS2-2	OFF	ON
bit2	MS2-3	OFF	ON
bit3	MS2-4	OFF	ON
bit4	MS2-5	OFF	ON
bit5	MS2-6	OFF	ON
bit6	MS2-7	OFF	ON
bit7	MS2-8	OFF	ON

[Notes]

・For details and precautions for each switch, please refer to "4.1.1 Switch setting" in the Product Specifications. Please turn OFF the reserved switch.

Sample code example

Setting the memory switches
MS1-1 to MS1-8:OFF
MS2-1 to MS2-8:OFF :

《GS》 《M》 《**n**》 《**d1**》 《**d2**》
〔1D〕 h+〔4D〕 h+〔01〕 h+〔00〕 h+〔00〕 h

87)[Driving history update]《GS L **n**》

<table>
<tr><td>Name</td><td>[Driving history update]《GS L n》</td></tr>
<tr><td>Code</td><td>〔1D〕h＋〔4C〕h＋n</td></tr>
<tr><td>Domain</td><td>〔n =00,A5,5A,AA〕h</td></tr>
<tr><td>Function</td><td>Rewriting and updating the following driving history counters written and saved in EEPROM with the latest ones in the memory.
<table>
<tr><td></td><td>Driving history counter type</td></tr>
<tr><td>1</td><td>Number of dot lines being energized by the head</td></tr>
<tr><td>2</td><td>Total number of passed dot lines</td></tr>
<tr><td>3</td><td>Number of cuts</td></tr>
</table>
・There are two kinds of counters for each counter. One cannot be reset to 0 and the other is user maintenance counter which can be reset to 0.</td></tr>
<tr><td>Details</td><td>・“n” has the following meanings.
<table>
<tr><td>n (hex)</td><td>Function</td></tr>
<tr><td>00</td><td>Updating all counters (*1) to the latest value.</td></tr>
<tr><td>A5</td><td>Resetting the number of dot lines being energized by the head in user maintenance counter into 0 and updating the others (*1) to the latest values.</td></tr>
<tr><td>5A</td><td>Resetting the total number of passed dot lines in user maintenance counter into 0 and updating the others (*1) to the latest values.</td></tr>
<tr><td>AA</td><td>Resetting the number of cuts in user maintenance counter into 0 and updating the others (*1) to the latest values.</td></tr>
</table>
・When it is out of the range, it will be disregarded.
・Even if this command is not executed, all counters (*2) will be updated automatically every 30 cuts.

*1: For both the counter which cannot be reset to 0 and the user maintenance counter which can be reset to 0.</td></tr>
<tr><td rowspan="2">Sample code example</td><td>Updating all user maintenance counters to the latest values : 《GS》 〔1D〕h+ 《L》 〔44〕h+ 《n》 〔00〕h

Obtaining user maintenance counter information : 《ESC》 〔1B〕h+ 《s》 〔73〕h+ 《n》 〔09〕h</td></tr>
<tr><td>Print result example : No example</td></tr>
</table>

3.3 Initializing operation

Command No.	Command name, etc.		Turning the power on / At resetting operation / Command [Software reset] 《DC1》	Command [Printer initialization]《ESC @》
-	Cutter operation		Initializing operation	No operation
-	Receiving buffer		Clearing	Not clearing
-	Page mode laying out buffer		Clearing	Not clearing
-	Print buffer		Clearing	Clearing
5)	Barcode termination change		Clear = 〔00〕h	Clear = 〔00〕h
6)	Character right space amount setting		Clear = 〔00〕h	Clear = 〔00〕h
7)	Print mode batch setting	Character font	〔00〕h = Font A	〔00〕h = Font A
		Enhanced	Releasing	Releasing
		ANK double height	Releasing	Releasing
		ANK double width	Releasing	Releasing
		ANK underline setting	Releasing	Releasing
8)	Absolute position specifying		Releasing	Releasing
9)	Download characters set specifying / releasing		Releasing	Releasing
10)	Download characters definition		Clearing	Not clearing
12)	Underline specifying / releasing		Releasing	Releasing
14)	Line feeding amount setting by the smallest paper feeding pitch		〔22〕h = 34 dots line = 4.25mm	〔22〕h = 34 dots line = 4.25mm
19)	Horizontal tab position setting		The intervals by 8 characters of Font A	The intervals by 8 characters of Font A
20)	Enhanced print specifying / releasing		Releasing	Releasing
21)	Double strike print specifying / releasing		Releasing	Releasing
23)	International characters selection		〔08〕h = Japan	〔08〕h = Japan
24)	90°clockwise rotated characters specifying / releasing		Releasing	Releasing
25)	Relative position setting		Releasing	Releasing
26)	Position alignment		〔00〕h = Left alignment	〔00〕h = Left alignment
28)	FEED switch effective / ineffective		〔00〕h = Effective	〔00〕h = Effective

[Notes]

・If the command [Data input control] 《ESC = **n**》 is selected and the printer is disabled, the command [Software reset]《DC1》 and the command [Printer initialization] 《ESC @》 will be disregarded and will not work.

Command No.	Command name, etc.		Turning the power on / At resetting operation / Command [Software reset] 《DC1》	Command [Printer initialization]《ESC @》
30)	Presenter ejection / retraction mode selection		〔00〕h = Auto retraction	The set value remains.
34)	Presenter auto ejection / retraction time setting		〔04〕h = 4 seconds	The set value remains.
36)	Character code table selection		〔01〕h = Characters for Japanese code table	〔01〕h = Characters for Japanese code table
38)	Inverted character specifying / releasing		Release	Releasing
39)	Font size setting		〔00〕h = Same magnification of vertical and horizontal size	〔00〕h = Same magnification of vertical and horizontal size
40)	Partition drive selection		〔03〕h = Optimization	The set value remains.
41)	Black and white reverse printing specifying / releasing		Releasing	Releasing
42)	Print start / finish setting		Releasing	The set value remains.
43)	Print position selection for HRI characters		〔00〕h = Not printing	〔00〕h = Not printing
45)	Fixed bit image registration		Not deleting	Not deleting
47)	Font selection for HRI characters		〔00〕h = Font A	〔00〕h = Font A
48)	Barcode height specifying		〔A2〕h = 162 dots	〔A2〕h = 162 dots
50)	Auto-transmitting of printer status		Ineffective	The set value remains.
51)	Barcode horizontal size specifying		〔03〕h	〔03〕h
52)	Print density setting		〔64〕h = 100%	The set value remains.
54)	Mark detection method and position correction feeding amount setting		Print start 88 dots Cut position 164 dots (*1)	The set value remains.
56)	Cueing process setting at paper loading	Cue operation after auto loading	Ineffective (*1)	The set value remains.
		Cue operation after thermal head cover open / close	Ineffective (*1)	The set value remains.
		Cue operation after the FEED switch is pushed	Ineffective (*1)	The set value remains.
57)	Print area setting		576 dots (DS1-8: OFF) *2 416 dots (DS1-8: ON) *2	576 dots (DS1-8: OFF) *2 416 dots (DS1-8: ON) *2
58)	Maximum printing speed setting		〔00〕h = Max. 200mm / sec	The set value remains.

*1：When using the driver, it is the value saved in “Saving black mark settings in printer settings”.

*2：Please refer to “4.1.1 Switch setting” in the Product Specifications for DS1-8 setting.

Command No.	Command name, etc.		Turning the power on / At resetting operation / Command [Software reset] 《DC1》	Command [Printer initialization]《ESC @》
59)	Kanji print mode at one time specifying	Kanji font	Kanji Font A	Kanji Font A
		Kanji double width	Releasing	Releasing
		Kanji double height	Releasing	Releasing
		Kanji underline specifying / releasing	Releasing	Releasing
60)	Kanji mode specifying		Releasing	Releasing
61)	Kanji underline specifying / releasing		Releasing	Releasing
63)	Extended characters definition		Releasing	The set value remains.
64)	Kanji code system selection		Memory switch (MS1-1) setting	Memory switch (MS1-1) setting
65)	Special Kanji characters used for Japanese names selection		Last registered selection (*3)	The set value remains. (*3)
66)	Extended characters selection		Last registered selection	The set value remains.
67)	Amount of spaces for Kanji characters		〔00〕h = right / left sides spaces	〔00〕h = right / left sides spaces
68)	Built-in language font switching		Memory switches (MS1-2 and MS1-3) setting	Memory switches (MS1-2 and MS1-3) setting
69)	Double-height and double-width Kanji size specifying / releasing		Releasing	Releasing
70)	Page layout setting		〔00〕h = Portrait mode (not rotated)	The set value remains.
71)	Page length setting		240mm	The set value remains
72)	Page layout print area setting		Default value	The set value remains.
75)	Page buffer clear		Clearing	Not clearing
76)	Page buffer area clear		Clearing	Not clearing
77)	Page buffer layout starting / finishing setting		Releasing	The set value remains.
80)	User code page registration		Not deleting	Not deleting
84)	PDF417 module width size specifying		〔03〕h	〔03〕h
86)	Memory switch setting and printing		Not deleting	Not deleting

*3：When extra character is selected, the extra character is overridden.

4. Character code table

4.1 Characters for Japanese code table

HEX	BIN	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0000	NUL		SP	0	@	P	`	p	_	┴	SP	―	タ	ミ	ニ	X
1	0001		DC1	!	1	A	Q	a	q	▂	┬	。	ア	チ	ム	ト	円
2	0010			"	2	B	R	b	r	▃	┤	「	イ	ツ	メ	ナ	年
3	0011		DC3	#	3	C	S	c	s	▄	├	」	ウ	テ	モ	ヨ	月
4	0100			$	4	D	T	d	t	▅	‾	、	エ	ト	ヤ	◢	日
5	0101			%	5	E	U	e	u	▆	―	・	オ	ナ	ユ	◣	時
6	0110			&	6	F	V	f	v	▇	│	ヲ	カ	ニ	ヨ	◥	分
7	0111			'	7	G	W	g	w	▇	│	ァ	キ	ヌ	ラ	◤	秒
8	1000			(	8	H	X	h	x	▏	┌	イ	ク	ネ	リ	♠	〒
9	1001	HT		)	9	I	Y	i	y	▌	┐	ウ	ケ	ノ	ル	♥	市
A	1010	LF		*	:	J	Z	j	z	▌	└	エ	コ	ハ	レ	♦	区
B	1011		ESC	+	;	K	[	k	{	▌	┘	オ	サ	ヒ	ロ	♣	町
C	1100	FF	FS	,	<	L	¥	l	¦	▌	┌	ャ	シ	フ	ワ	●	村
D	1101	CR	GS	-	=	M	]	m	}	▐	┐	ュ	ス	ヘ	ン	○	人
E	1110		RS	.	>	N	^	n	~	▐	└	ョ	セ	ホ	゛	／	▒
F	1111			/	?	O	_	o	SP	┼	┘	ッ	ソ	マ	゜	\	SP

[Notes]

- [SP] indicates space.
- [CR] is disregarded.
- Printer operation cannot be guaranteed if the undefined code is transmitted to the printer.
- Please DO NOT send codes that are not described in the Specifications to the printer.
- This code table describes the simplified symbols and does not represent the actual printing result by the printer.

4.2 Code Page 437

HEX	BIN	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
1	0001		DC1	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	ß	±
2	0010			"	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
3	0011		DC3	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
4	0100			$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
5	0101			%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
6	0110			&	6	F	V	f	v	å	û	ª	╢	╞	╓	µ	÷
7	0111			'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
8	1000			(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
9	1001	HT		)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	●
A	1010	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B	1011		ESC	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
C	1100	FF	FS	,	<	L	¥	l	|	î	£	¼	╝	╠	▄	∞	n
D	1101	CR	GS	−	=	M	]	m	}	ì	¥	¡	╜	═	▌	φ	²
E	1110		RS	.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	∈	■
F	1111			/	?	O	_	o	SP	Å	f	»	┐	╧	▀	∩	SP

[Notes]

- [SP] indicates space.
- [CR] is disregarded.
- Printer operation cannot be guaranteed if the undefined code is transmitted to the printer.
- Please DO NOT send codes that are not described in the Specifications to the printer.
- This code table describes the simplified symbols and does not represent the actual printing result by the printer.

4.3 Code Page 858

HEX	BIN	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	-
1	0001		DC1	!	1	A	Q	a	q	ü	æ	í	▒	┴	Ð	ß	±
2	0010			"	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	=
3	0011		DC3	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
4	0100			$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
5	0101			%	5	E	U	e	u	à	ò	Ñ	Á	┼	€	Õ	§
6	0110			&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
7	0111			'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
8	1000			(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
9	1001	HT		)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
A	1010	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	-
B	1011		ESC	+	;	K	[	k	{	ï	ø	½	╗	╦	■	Ù	¹
C	1100	FF	FS	,	<	L	\	l	|	î	£	¼	╝	╠	▄	ý	³
D	1101	CR	GS	-	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	²
E	1110		RS	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	■
F	1111			/	?	O	_	o	SP	Å	ƒ	»	¬	¤	■	´	SP

[Notes]

- [SP] indicates space.
- [CR] is disregarded.
- Printer operation cannot be guaranteed if the undefined code is transmitted to the printer.
- Please DO NOT send codes that are not described in the Specifications to the printer.
- This code table describes the simplified symbols and does not represent the actual printing result by the printer.

4.4 International characteres code table

n	Character set	23h	24h	40h	5Bh	5Ch	5Dh	5Eh	60h	7Bh	7Ch	7Dh	7Eh
00h	U.S.A.	#	$	@	[	\	]	^	`	{	¦	}	~
01h	France	#	$	à	°	ç	§	^	`	é	ù	è	¨
02h	Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
03h	U.K.	£	$	@	[	\	]	^	`	{	¦	}	~
04h	Denmark Ⅰ	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
05h	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
06h	Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
07h	Spain Ⅰ	₧	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
08h	Japan	#	$	@	[	¥	]	^	`	{	¦	}	~
09h	Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
0Ah	Denmark Ⅱ	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
0Bh	Spain Ⅱ	#	$	á	¡	Ñ	¿	é	`	í	ñ	ó	ú
0Ch	Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú

[Notes]

- This code table describes the simplified symbols and does not represent the actual printing result by the printer.

4.5 Code Page 1250

	HEX	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	€	SP	SP	°	Ŕ	Đ	ŕ	đ
1	0001		DC1	!	1	A	Q	a	q	SP	‘	ˇ	±	Á	Ń	á	ń
2	0010			"	2	B	R	b	r	,	’	˘	˛	Â	Ň	â	ň
3	0011		DC3	#	3	C	S	c	s	SP	“	Ł	ł	Ă	Ó	ă	ó
4	0100			$	4	D	T	d	t	„	”	¤	´	Ä	Ô	ä	ô
5	0101			%	5	E	U	e	u	…	•	Ą	µ	Ĺ	Ő	Í	ő
6	0110			&	6	F	V	f	v	†	–	¦	¶	Ć	Ö	ć	ö
7	0111			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8	1000			(	8	H	X	h	x	SP	SP	¨	¸	Č	Ř	č	ř
9	1001	HT		)	9	I	Y	i	y	‰	™	©	ą	É	Ů	é	ů
A	1010	LF		*	:	J	Z	j	z	Š	š	Ş	ş	Ę	Ú	ę	ú
B	1011		ESC	+	;	K	[	k	{	<	>	«	»	Ë	Ű	ë	ű
C	1100	FF	FS	,	<	L	\	l	|	Ś	ś	¬	L’	Ě	Ü	ě	ü
D	1101	CR	GS	–	=	M	]	m	}	Ť	ť	-	˝	Í	Ý	í	ý
E	1110		RS	.	>	N	^	n	~	Ž	ž	®	l’	Î	Ţ	î	ţ
F	1111			/	?	O	_	o	SP	Ź	ź	Ż	ż	Ď	ß	ď	˙

[Notes]

- [SP] indicates space.
- [CR] is disregarded.
- Printer operation cannot be guaranteed if the undefined code is transmitted to the printer.
- Please DO NOT send codes that are not described in the Specifications to the printer.
- This code table describes the simplified symbols and does not represent the actual printing result by the printer.

4.6 Code Page 1251

	HEX	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	Ђ	ђ	SP	°	А	Р	а	р
1	0001		DC1	!	1	A	Q	a	q	Ѓ	‘	ў	±	Б	С	б	с
2	0010			"	2	B	R	b	r	,	’	Ў	І	В	Т	в	т
3	0011		DC3	#	3	C	S	c	s	ѓ	“	Ј	і	Г	У	г	у
4	0100			$	4	D	T	d	t	„	”	¤	ґ	Д	Ф	д	ф
5	0101			%	5	E	U	e	u	…	•	Ґ	µ	Е	Х	е	х
6	0110			&	6	F	V	f	v	†	–	¦	¶	Ж	Ц	ж	ц
7	0111			'	7	G	W	g	w	‡	—	§	·	З	Ч	з	ч
8	1000			(	8	H	X	h	x	€	SP	Ё	ё	И	Ш	и	ш
9	1001	HT		)	9	I	Y	i	y	‰	™	©	№	Й	Щ	й	щ
A	1010	LF		*	:	J	Z	j	z	Љ	љ	Є	є	К	Ъ	к	ъ
B	1011		ESC	+	;	K	[	k	{	<	>	«	»	Л	Ы	л	ы
C	1100	FF	FS	,	<	L	\	l	|	Њ	њ	¬	Ј	М	Ь	м	ь
D	1101	CR	GS	-	=	M	]	m	}	Ќ	ќ	-	Ѕ	Н	Э	н	э
E	1110		RS	.	>	N	^	n	~	Ћ	ћ	®	ѕ	О	Ю	о	ю
F	1111			/	?	O	_	o	SP	Џ	џ	Ї	ї	П	Я	п	я

[Notes]

- [SP] indicates space.
- [CR] is disregarded.
- Printer operation cannot be guaranteed if the undefined code is transmitted to the printer.
- Please DO NOT send codes that are not described in the Specifications to the printer.
- This code table describes the simplified symbols and does not represent the actual printing result by the printer.

4.7 Code Page 1252

HEX	BIN	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	€	SP	SP	°	À	Ð	à	ð
1	0001		DC1	!	1	A	Q	a	q	SP	‘	¡	±	Á	Ñ	á	ñ
2	0010			"	2	B	R	b	r	,	’	¢	²	Â	Ò	â	ò
3	0011		DC3	#	3	C	S	c	s	ƒ	“	£	³	Ã	Ó	ã	ó
4	0100			$	4	D	T	d	t	„	”	¤	´	Ä	Ô	ä	ô
5	0101			%	5	E	U	e	u	…	•	¥	µ	Å	Õ	å	õ
6	0110			&	6	F	V	f	v	†	–	¦	¶	Æ	Ö	æ	ö
7	0111			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8	1000			(	8	H	X	h	x	ˆ	˜	¨	¸	È	Ø	è	ø
9	1001	HT		)	9	I	Y	i	y	‰	™	©	¹	É	Ù	é	ù
A	1010	LF		*	:	J	Z	j	z	Š	š	ª	º	Ê	Ú	ê	ú
B	1011		ESC	+	;	K	[	k	{	<	>	«	»	Ë	Û	ë	û
C	1100	FF	FS	,	<	L	\	l	|	Œ	œ	¬	¼	Ì	Ü	ì	ü
D	1101	CR	GS	-	=	M	]	m	}	SP	SP	-	½	Í	Ý	í	ý
E	1110		RS	.	>	N	^	n	~	Ž	ž	®	¾	Î	Þ	î	þ
F	1111			/	?	O	_	o	SP	SP	Ÿ	¯	¿	Ï	ß	ï	ÿ

[Notes]

- [SP] indicates space.
- [CR] is disregarded.
- Printer operation cannot be guaranteed if the undefined code is transmitted to the printer.
- Please DO NOT send codes that are not described in the Specifications to the printer.
- This code table describes the simplified symbols and does not represent the actual printing result by the printer.

4.8 Code Page 1253

HEX	BIN	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0000	NUL		SP	0	@	P	`	p	€	SP	SP	°	ΐ	Π	ϋ	π
1	0001		DC1	!	1	A	Q	a	q	SP	‘	΅	±	Α	Ρ	α	ρ
2	0010			”	2	B	R	b	r	’	’	Ά	²	Β	SP	β	ς
3	0011		DC3	#	3	C	S	c	s	ƒ	“	£	³	Γ	Σ	γ	σ
4	0100			$	4	D	T	d	t	„	”	¤	΄	Δ	Τ	δ	τ
5	0101			%	5	E	U	e	u	…	•	¥	µ	Ε	Υ	ε	υ
6	0110			&	6	F	V	f	v	†	–	¦	¶	Ζ	Φ	ζ	φ
7	0111			'	7	G	W	g	w	‡	—	§	·	Η	Χ	η	χ
8	1000			(	8	H	X	h	x	SP	SP	¨	Έ	Θ	Ψ	θ	ψ
9	1001	HT		)	9	I	Y	i	y	‰	™	©	Ή	Ι	Ω	ι	ω
A	1010	LF		*	:	J	Z	j	z	SP	SP	SP	Ί	Κ	Ϊ	κ	ϊ
B	1011		ESC	+	;	K	[	k	{	<	>	«	»	Λ	Ϋ	λ	ϋ
C	1100	FF	FS	,	<	L	\	l	|	SP	SP	¬	Ό	Μ	ά	μ	ό
D	1101	CR	GS	–	=	M	]	m	}	SP	SP	-	½	Ν	έ	ν	ύ
E	1110		RS	.	>	N	^	n	~	SP	SP	®	Ύ	Ξ	ή	ξ	ώ
F	1111			/	?	O	_	o	SP	SP	SP	―	Ώ	Ο	ί	ο	SP

[Notes]

- [SP] indicates space.
- [CR] is disregarded.
- Printer operation cannot be guaranteed if the undefined code is transmitted to the printer.
- Please DO NOT send codes that are not described in the Specifications to the printer.
- This code table describes the simplified symbols and does not represent the actual printing result by the printer.

4.9 Code Page 1254

	HEX	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
HEX	BIN	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0	0000	NUL		SP	0	@	P	`	p	€	SP	SP	°	À	Ğ	à	ğ
1	0001		DC1	!	1	A	Q	a	q	SP	‘	¡	±	Á	Ñ	á	ñ
2	0010			"	2	B	R	b	r	‚	’	¢	²	Â	Ò	â	ò
3	0011		DC3	#	3	C	S	c	s	ƒ	“	£	³	Ã	Ó	ã	ó
4	0100			$	4	D	T	d	t	„	”	¤	´	Ä	Ô	ä	ô
5	0101			%	5	E	U	e	u	…	•	¥	µ	Å	Õ	å	õ
6	0110			&	6	F	V	f	v	†	–	¦	¶	Æ	Ö	æ	ö
7	0111			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8	1000			(	8	H	X	h	x	ˆ	˜	¨	¸	È	Ø	è	ø
9	1001	HT		)	9	I	Y	i	y	‰	™	©	¹	É	Ù	é	ù
A	1010	LF		*	:	J	Z	j	z	Š	š	ª	º	Ê	Ú	ê	ú
B	1011		ESC	+	;	K	[	k	{	‹	›	«	»	Ë	Û	ë	û
C	1100	FF	FS	,	<	L	\	l	|	Œ	œ	¬	¼	Ì	Ü	ì	ü
D	1101	CR	GS	-	=	M	]	m	}	SP	SP	-	½	Í	İ	í	ı
E	1110		RS	.	>	N	^	n	~	SP	SP	®	¾	Î	Ş	î	ş
F	1111			/	?	O	_	o	SP	SP	Ÿ	¯	¿	Ï	ß	ï	ÿ

[Notes]

- [SP] indicates space.
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- Printer operation cannot be guaranteed if the undefined code is transmitted to the printer.
- Please DO NOT send codes that are not described in the Specifications to the printer.
- This code table describes the simplified symbols and does not represent the actual printing result by the printer.