E26/E27

Development Guide

VD2012-05-18

Beijing Bright Technology Development Co,.Ltd

REVISION SHEET

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Table of Contents

General Details

1.1 Specifications

Item		Specification
	Printing method	Dot matrix printing method
	Printing speed	60mm/s
	Resolution ration	203 dots/line(384 dots per line)
	Paper loading way	Easy paper loading
Printing	Character sets	Chinese、English
	Bar code	One dimension
	Sensor	Paper sensor
	Paper cutter	None
	Type	Plain paper
Paper	Width	58mm
	Diameter	Max 30mm
	Thickness	0.06~0.08mm
Communication	Interface	Serial
Power supply	Direct current	5~8.5V, 2A
Using	Temperature	-10~50℃（14~122℉）
	Humidity	10~90% RH （ non-condensing）

1.2 The buttons and Indicated Light

1.2.1、The buttons: the LF button and the SEL button. The LF button is also the indicator light, in the front of the printer. The SEL button is a interface where marked “SEL” in the panel

1.2.2、Indicator Light: the green light

State	
Keeping On	Printer is normal
flashing	Paper is lacking

1.2.3、The button function

Feed paper: After turning on the printer, press the LF button, the printer will feed paper.

Self Test：Press the LF button, do not release and repower the printer at the same time，and then the printer will print out the self-check scrip.

Setting: A、In the power-off state, press the SEL button, and repower the printer ,then the printer will print out a state scrip of setting.

B、 In the setting state, press the SEL button to select the different setting items.

C、 In the setting item state, press the LF button to select one setting item, and press the LF button to choose the value of the current setting item. Then press the SEL button to finish the current setting item and can select other setting items.

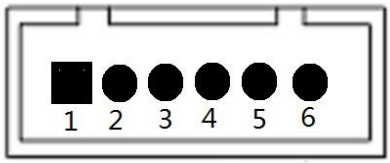
D、 The printer has to be repowered after setting.

number	Item	Item value					
			default				
1	set bps	1.1 4800	1.2 9600	1.3 19200	1.4 38400	1.5 57600	1.6 115200
2	set direction	2.1 direcion	2.2 direction				
3	set Font	3.1 8*16 dot	3.2 12*24 dot				
4	set gray	4.1 1	4.2 2	4.3 3	4.4 4	……	4.12 12
5	set speed	5.1 Speed Low	5.2 Speed Medium	5.3 Speed High			

Power & Communication Interface

Power & Interface

The power supply is DC 5.0~8.5V, 2A. The interface is 232 or TTL (refer to the printer model). The baud rate is 9600bps. Asynchronous frame format is 1 start bit, 8 data bits, and 1 stop bit. The definition of the serial interface is as follows:



pin	signal	explanation
1	VDC	The power supply is 5~8.5V
2	TXD	Printer transmits data to PC
3	RXD	Receiving data from PC
4	Busy	The signal is "MARK" indicates that the printer is busy now and cannot receive more data. The signal is "SPACE" indicates that the printer is ready now and can receive the data
5	GND	Grounding signal
6	The signal of open or close the printer.	The high level is closed, the low level is opened

Control Commands Details

1.1、【Print and line feed】

[Format] ASCII LF
Hex 0A
Decimal 10

[Description] Prints the data in the print buffer and feeds one line, based on the current line spacing.

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

1.2、【Print and carriage return】

[Format] ASCII CR
Hex 0D
Decimal 13

[Description] This command functions is the same as LF;

[Details] Set the print starting position to the beginning of the line.

1.3、【Initialize printer】

[Format] ASCII ESC @
Hex 1B 40
Decimal 27 64

[Description] Clears the data in the print buffer and resets the printer mode to the mode that was in effect when the power was turned on.

[Notes] The DIP switch settings are not checked again.
The data in the receive buffer is not cleared.

1.4、【Print and feed paper】

[Format] ASCII ESC J n
Hex 1B 4A n
Decimal 27 74 n

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

[Description] Prints the data in the print buffer and feeds the paper [n *0.125

mm].

[Notes] After printing is completed, this command sets the print starting position to the beginning of the line.

The paper feed amount set by this command does not affect the values set by ESC 2 or ESC 3.

1.5、【Print and feed n lines】

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

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

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

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

This command does not affect the line spacing set by ESC 2 or ESC 3.

1.6、【Select print mode(s)】

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

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

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

Bit	Function	Decimal	Hex
0	Font A（12*24）	0	00
	Font B（8*16）	1	01
1	undefined	-	-
2	undefined	-	-
3	undefined	-	-
4	Double-height mode not selected.	0	00
	Double-height mode selected	16	10
5	Double-width mode not selected.	0	00
	Double-width mode selected.	32	20
6	undefined	-	-
7	Underline mode not selected.	00	00
	Underline mode selected.	128	80

[Details] When both double-height and double-width modes are selected, quadruple-size characters are printed.

When turn white/black reverse printing mode, the underline is not effective.

The thickness of the underline is changed with the character size.

ESC - n can also select or cancel the underline mode. However, the setting of the last received command is effective.

[Default] n = 0

1.7、【Select character font】

[Format]

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

[Range] n = 0, 1.

[Description] Select the character font.

n	Function
0	Select character font A（12*24）
1	Select character font B（8*16）

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

1.8、【Selects the Chinese character font.】

[Format]

ASCII	FS	&
Hex	1C	26
Decimal	28	38

[Description] Select the Chinese character font.

1.9、【Cancel the Chinese character font】

[Format]

ASCII	FS	.
Hex	1C	2E
Decimal	28	46

[Description] Select the Chinese character font.

1.10、【Select justification】

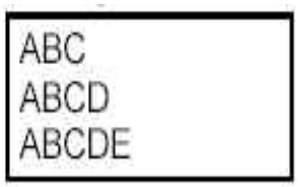
[Format] ASCII ESC a n
Hex 1B 61 n
Decimal 27 97 n
[Range] n=0, 1, 2
[Description] Align all the data in one line to the specified position.

n selects the justification as follows:

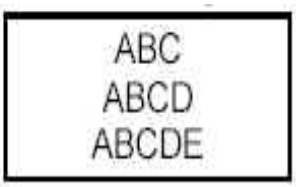
n	Justification
0	Left justification
1	Centering
2	Right justification

[Notes] The command is enabled only when processed at the beginning of the line in standard mode.
[Default] n = 0
[Example]

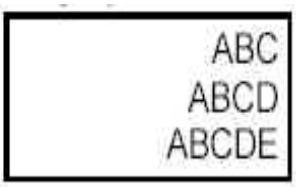
Left justification



Centering



Right justification



1.11、【Select default line spacing】

[Format] ASCII ESC 2
Hex 1B 32
Decimal 27 50
[Description] Select 3.75 mm (3 *0.125 mm) line spacing.
[Notes] The line spacing can be set independently in standard mode and in page mode.
[Reference] **ESC 3**

1.12、【Set line spacing】

[Format] ASCII ESC 3 n
Hex 1B 33 n
Decimal 27 51 n
[Range] 0 ≤ n ≤ 255
[Description] Set the line spacing to [n*0.125 mm].

[Default] n = 3

1.13、【Set right-side character spacing】

[Format]

ASCII	ESC	SP	n
Hex	1B	20	n
Decimal	27	32	n

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

[Description] Set the character spacing for the right side of the character to [n *0.125 mm].

[Default] n = 0

1.14、【Set left margin】

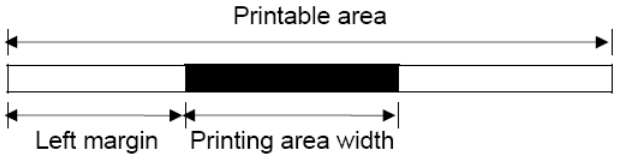
[Format]

ASCII	GS	L	nL	nH
Hex	1D	4C	nL	nH
Decimal	29	76	nL	nH

[Range] $0 \le nL \le 255$

$0 \le nH \le 255$

[Description] Set the left margin using nL and nH. The left margin is set to [(nL + nH × 256) × 0.125 mm].



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

The setting could not exceed the printable area.

[Default] nL = 0, nH = 0

1.15、【Set printing area width】

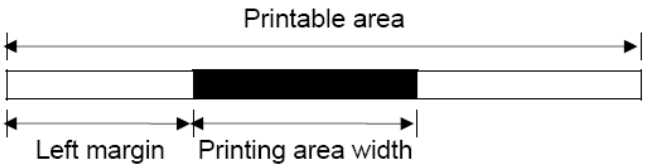
[Format]

ASCII	GS	W	nL	nH
Hex	1D	57	nL	nH
Decimal	29	87	nL	nH

[Range] $0 \le nL \le 255$

$0 \le nH \le 255$

[Description] Sets the printing area width to the area specified by nL and nH. The printing area width is set to [(nL + nH × 256) × 0.125mm]



[Notes] This command is effective only when processed at the beginning of the line.

The setting by **GS L** takes precedence over the setting by **GS W**. If the [left margin + printing area width] exceeds the printable area, the printer uses [Printable area width - left margin].

[Default] nL=128，nH=1；

1.16、【Select character size】

[Format]	ASCII	GS	!	n
	Hex	1D	21	n
	Decimal	29	33	n

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

($1 \le$ vertical number of times ≤ 8, $1 \le$ horizontal number of times ≤ 8)

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

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

Table 1
Character Width Selection

Hex	Decimal	Width

Table 2
Character Height Selection

Hex	Decimal	Height

00	0	1（normal）	00	0	1（normal）
10	16	2（double-width）	01	1	2（double-height）
20	32	3	02	2	3
30	48	4	03	3	4
40	64	5	04	4	5
50	80	6	05	5	6
60	96	7	06	6	7
70	112	8	07	7	8

[Notes] If n is outside the defined range, this command is ignored.
In standard mode, the vertical direction is the paper feed direction.
When characters are enlarged with different sizes on one line, all the characters on the line are aligned at the baseline.
The **ESC !** command can also turn double-width and double-height modes on or off. However, the setting of the last received command is effective.

[Default] n = 0

1.17、【Set the gray degree】

Format: ASCII: ESC M n
Dec: 27 109 n
Hex: 1B 6D n

N ranges from 0 to 12, the larger of the n value, the darker the dot it is . The initial n=7. It is used to modify the final expression of different thermal paper roll.

1.18、【Turn underline mode on/off】

[Format] ASCII ESC - n
Hex 1B 2D n
Decimal 27 45 n

[Description] Turns underline mode on or off, based on the following values of n.
0: Turns off underline mode, 1: Turns on underline mode

[Notes] When turn white/black reverse printing mode, the underline is not effective.
Changing the character size can affect the current underline thickness.
Underline mode can also be turned on or off by using ESC !. Note, however, that the last received command is effective.

[Default] n = 0

1.19、【Turn white/black reverse printing mode】

[Format] ASCII GS B n
Hex 1D 42 n
Decimal 29 66 n

[Range] 0 ≤ n ≤ 255

[Description] Turn on or off white/black reverse printing mode. When the LSB of n is 0, white/black reverse mode is turned off. When the LSB of n is 1, white/black reverse mode is turned on.

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

When white/black reverse printing mode is on, it also applies to character spacing set by **ESC SP**.

This command does not affect bit images, user-defined bit images, **ESC $**, and **ESC **.

This command does not affect the space between lines.

White/black reverse mode has a higher priority than underline mode. Even if underline mode is on, it is disabled (but not canceled) when white/black reverse mode is selected.

[Default] n = 0

1.20、【Turns on/off upside-down printing mode】

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

[Range] 0 ≤ n ≤ 255

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

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

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

This command is enabled only when processed at the beginning of a line in standard mode.

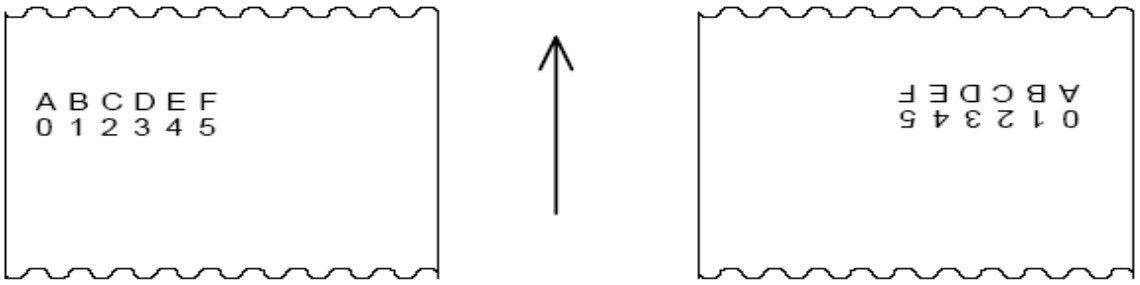
In upside-down printing mode, the printer rotates the line to be printed by 180 and then prints it.

[Default] n = 0

[Example]

When upside-down printing mode is off.

When upside-down printing mode is on.



1.21、【Transmit status】

[Format]	ASCII	FS	n	n
	Hex	1c	76	n
	Decimal	28	118	n

[Description] When n=0, transmits the paper status to cpu. After this command printer will send one byte through TXD. When the byte is 0x04, show that the paper is enough; when the byte is 0x55, show that the paper is lacking

1.22、【Set bar code width】

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

[Description] Set the horizontal size of the bar code.

n specifies the bar code width as follows:

n	The width of bar code （mm）
2	0.250
3（Default）	0.375
4	0.5

The bar code cannot be identified, when the width of bar code exceed the printable area.

1.23、【Select bar code height】

[Format]	ASCII	GS	h	n
	Hex	1D	68	n
	Decimal	29	104	n
[Range]	$0 \le n \le 255$			

[Description] Select the height of the bar code.

n specifies the number of dots in the vertical direction.

[Default] n = 162

1.24、【Select printing position for HRI characters】

[Format]	ASCII	GS	H	n
	Hex	1D	48	n
	Decimal	29	72	n

[Description] Select the printing position of HRI characters when printing a bar code.

n selects the printing position as follows:

n	Printing position
0	Not printed
2	Below the bar code

HRI indicates Human Readable Interpretation.

[Notes] HRI characters are printed in centering.

[Default] n = 0

1.25、【Print bar code】

[Format]	ASCII	GS	k	m	n	d1...dn
	Hex	1D	6B	m	n	d1...dn
	Decimal	29	107	m	n	d1...dn

[Description] Selects a bar code system and prints the bar code.

m selects a bar code system and parameter n and d is selected by bar code system as follows:

n	Bar code system	n	D（bar code data）
67	EAN13	12≤n≤13	48≤d≤57
68	EAN8	7≤n≤8	48≤d≤57
69	CODE39	1≤n≤255	48≤d≤57，65≤d≤90，32,36,37,45,46,47
73	CODE128	1≤n≤255	0≤d≤127

[Description] Notice the numbers of each bar code. EAN-13、EAN_128、CODE_39 and EAN-8 barcode can generate parity bit automatically, user does not need to transmit that data.

The received data must be in the standard bar code set, if exceeding the

set, the command is in vain. The code set refer to the standard of the bar code.

CODE39 do not include extend code（EXTERN CODE 39）.

The head of CODE128 barcode data link must be CODE A, CODE B, or CODE C, inside of barcode, also user can switch to another coding. combination„{"and one character to define a new function. And transfer two "{"to define ASCII "{". as following:

ASCII	HEX	Function
{A	7B, 41	Select code A
{B	7B, 42	Select code B
{C	7B, 43	Select code C
{S	7B, 53	SHIFT
{1	7B, 31	FNC1
{2	7B, 32	FNC2
{3	7B, 33	FNC3
{4	7B, 34	FNC4

The information for CODE A、CODE B and CODE C refer to the appendix；

The bar code is in centering in default.

The printer just feed paper, when the width of bar code exceed the printable area.

1.26、【Select bit-image mode】

[Format] ASCII ESC ＊ m nL nH d1...dk
Hex 1B 2A m nL nH d1...dk
Decimal 27 42 m nL nH d1...dk

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

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

dpi: dots per 25.4 mm {1"}

m	mode	Vertical Direction		Horizontal Direction	
		Number of Dots	Dot Density	Dot Density	Number of Data（K）
0	8-dot single-density	8	67.7dpi	101.6dpi	nL+_nH*256
1	8-dot double-density	8	67.7dpi	203.2dpi	nL+_nH*256
32	24-dot single-density	24	203dpi	101.6dpi	(nL+_nH*256)*3
33	24-dot double-density	24	203dpi	203.2dpi	(nL+_nH*256)*3

[Notes] If the value of m is out of the specified range, nL and the data following are processed as normal data.

If the bit-image data input exceeds the number of dots to be printed on a line, the excess data is ignored.

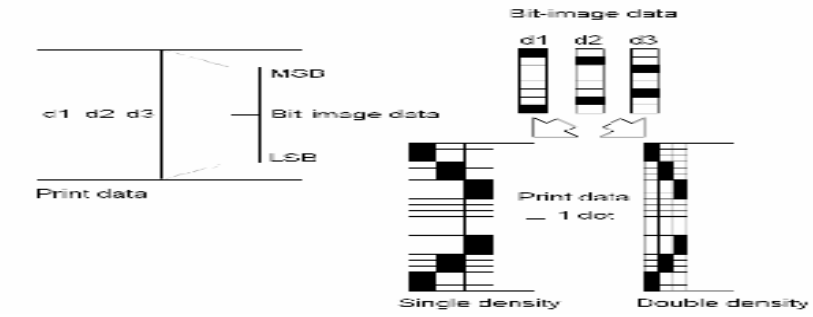
D indicates the bit-image data. Set a corresponding bit to 1 to print a dot or to0 not to print a dot.

If the width of the printing area set by **GS L** and **GS W** less than the width required by the data sent with the **GS** * command, the following will be performed on the line in question (but the printing cannot exceed the maximum printable area): ①The width of the printing area is extended to the right to accommodate the amount of data.②If step does not provide sufficient width for the data, the left margin is reduced to accommodate the data. For each bit of data in single-density mode (m = 0,), the printer prints two dots; for each bit of data in double-density mode (m = 1), the printer prints one dot. This must be considered in calculating the amount of data that can.

After printing a bit image, the printer returns to normal data processing mode.

This command is not affected by print modes (underline, character size, or white/black reverse printing), except upside-down printing mode.

The relationship between the image data and the dots to be printed is described in Figure below:



8 dot bit image

24 dot bit image

1.27、【Define NV bit image】

[Format] ASCII FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk] n
Hex 1C 71 n [xL xH yL yH d1...dk]1...[xL xH yL yHd1...dk] n
Decimal 28 113 n [xL xH yL yH d1...dk]1...[xL xH yL yHd1...dk]n

[Description] Define the NV bit image specified by n.
n specifies the number of the defined NV bit image, n=1.
xL, xH specifies $(xL + xH \times 256) \times 8 \leqslant 384$ dots in the horizontal direction for the NV bit image you are defining $0 \leqslant xL \leqslant 255$, $0 \leqslant xH \leqslant 1$;

yL, yH specifies $(yL + yH \times 256) \times 8 \leqslant 24$, dots in the vertical direction for the NV bit image you are defining $0 \leqslant yL \leqslant 24$, yH=0;

$0 \leqslant d \leqslant 255$, $K=(xL+xH*256)*(yL+yH*256)*8$, the definition area is 1.66k bytes.

This command cancels all NV bit images that have already been defined by this command. The printer cannot redefine only one of several data definitions previously defined. In this case, all data needs to be sent again.

From the beginning of the processing of this command till the finish of reset, mechanical operations (including paper feeding etc.) cannot be performed.

During processing of this command, the printer is BUSY when writing data to the user NV memory and stops receiving data. Therefore it is prohibited to transmit the data, including real-time commands, during the execution of this command.

NV bit image is a bit image defined in non-volatile memory by **FS q** and printed by **FS p**.

This command is effective when 7 bytes <FS yH> of the command are processed normally.

When the amount of data exceeds the capacity left in the range defined by xL, xH, yL, yH, the printer processes xL, xH, yL, yH out of the defined range.

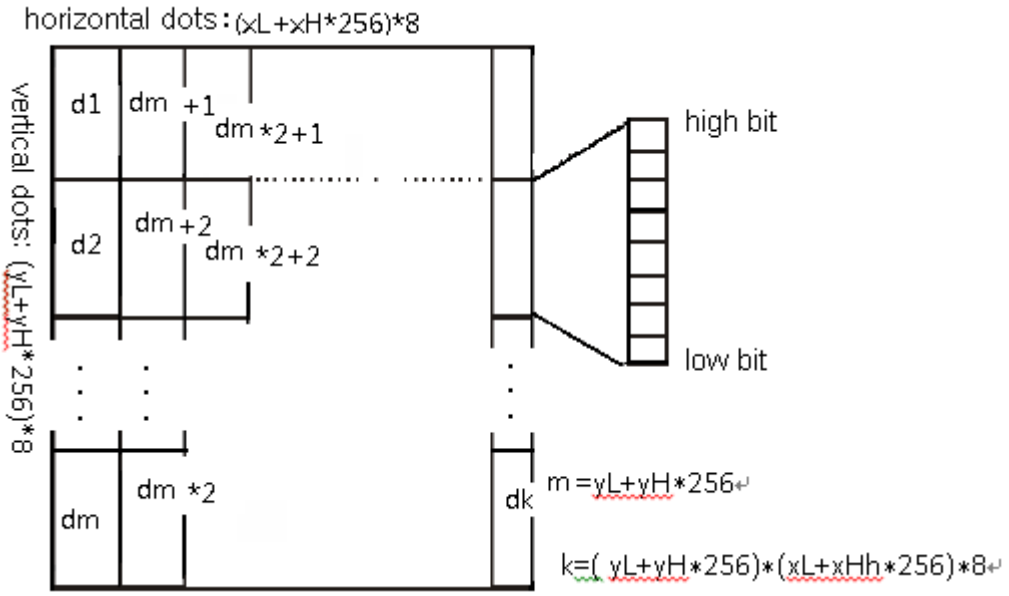
The d indicates the definition data. In data (d) a 1 bit specifies a dot to be printed and a 0 bit specifies a dot not to be printed.

The definition data for an NV bit image consists of [xL xH yL yH d1...dk]. Therefore, when only one NV bit image is defined n=1, the printer processes a data group [xL xH yL yH d1...dk] once. The printer uses ([data: $(xL + xH \times 256) \times (yL + yH \times 256) \times 8$] + [header :4]) bytes of NV memory.

Once an NV bit image is defined, it is not erased by performing **ESC @**, reset, and power off.

This command performs only definition of an NV bit image and does not perform printing. Printing of the NV bit image is performed by the **FS p** command.

[Notes] Frequent write command executions by a NV memory write command may damage the NV memory. Therefore, it is recommended to write the NV memory 10 times or less a day.



1.28、【Print NV bit image】

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

[Range] $0 \le n \le 255$;

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

dpi: dots per 25.4 mm {1"}

m	Mode	Vertical Dot Density	Horizontal Dot Density
0	Normal	203.2 dpi	203.2 dpi
3	Quadruple	101.6 dpi	101.6 dpi

n is the number of the NV bit image (defined using the **FS q** command). *m* specifies the bit image mode.

[Details] NV bit image is a bit image defined in non-volatile memory by **FS q** and printed by **FS p**.

This command is not effective when the specified NV bit image has not been defined.

In standard mode, this command is effective only when there is no data in the print buffer.

This command is not affected by print modes, except upside-down printing mode and justification mode.

This command feeds dots (for the height *n* of the NV bit image) in normal and double-width modes, and (for the height $n \times 2$ of the NV bit image) in double-height and quadruple modes, regardless of the line spacing specified by

ESC 2 or **ESC 3**.

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

1.29、【Print raster bit image】

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

[Description] Select raster bit-image mode.

m=0, Vertical Dot Density：203.2dpi; Horizontal Dot Density：203.2dpi(dpi: dots per 25.4 mm {1"})

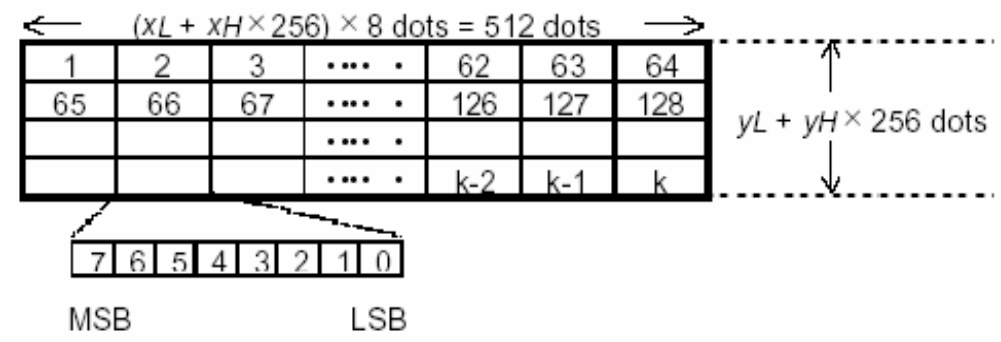
xl, xH select the number of data bytes (xL+xH*256) in the horizontal direction，0≤xL≤48，xH=0；yL, yH select the number of data bits (yL+yH*256) in the vertical direction, 0≤yL≤255, 0≤yH≤8, 1≤(yL+yH*256)≤2303；

0≤d≤255，k =(xL+xH*256)*(yL+yH*256)(k≠0)；

The d indicates the definition data. In data (d) a 1 bit specifies a dot to be printed and a 0 bit specifies a dot not to be printed.

The raster bit-image begin print from left (exceed the maximum printable area), the position is not affected by the print command.

[Example] xL+xH*256=64



1.30、【Select character font 1】

[Format] ASCII: ESC 6
Dec: 27 54
Hex: 1B 36

[Description] All character following this command is printer out

according the address in set 1. It contains 224 characters. Address rang from 20H to FFH and include ASCII character and many graphic symbols.

1.31、【Select character font 2】

[Format] ASCII: ESC 7
Dec: 27 55
Hex: 1B 37
[Description] All character following this command is printer out according the address in set 2. It contains 224 characters. Address rang from 20H to FFH and include German, French, Russian, Japanese, Katakana and so on.

1.32、【Select Superscript and Subscript Print】

[Format] ASCⅡ: FS r n
Dec: 28 114 n
Hex: 1c 72 n
[Description]This command is to select the position for superscript and subscript, n=0 is superscript and n= 1 is subscript. This command is effective only in use character font 1 or font 2.

Appendix

1、CODEA

Character	Transmit data		character	Transmit data		Character	Transmit data	
	Hex	Decimal		Hex	Decimal		Hex	Decimal
NUL	00	0	（	28	40	P	50	80
SOH	01	1	）	29	41	Q	51	81
STX	02	2	*	2A	42	R	52	83
ETX	03	3	+	2B	43	S	53	84
EOT	04	4	,	2C	44	T	54	85
ENQ	05	5	-	2D	45	U	55	86
ACK	06	6	.	2E	46	V	56	86
BEL	07	7	/	2F	47	W	57	87
BS	08	8	0	30	48	X	58	88
T	09	9	1	31	49	Y	59	89
LF	0A	10	2	32	50	Z	5A	90
VT	0B	11	3	33	51	[	5B	91
FF	0C	12	4	34	52	\	5C	92
CR	0D	13	5	35	53	]	5D	93
SO	0E	14	6	36	54	^	5E	94
SI	0F	15	7	37	55	_	5F	95
DLE	10	16	8	38	56	FNC1	7B,31	123,49
DC1	11	17	9	39	57	FNC2	7B,32	123,50
DC2	12	18	:	3A	58	FNC3	7B,33	123,51
DC3	13	19	;	3B	59	FNC4	7B,34	123,52
DC4	14	20	<	3C	60	SHIFT	7B,53	123,83
NAK	15	21	=	3D	61	CODEB	7B,42	123,66
SYN	16	22	>	3E	62	CODEC	7B,43	123,67
ETB	17	23	?	3F	63			
CAN	18	24	@	40	64			
EM	19	25	A	41	65			
SUB	1A	26	B	42	66			
ESC	1B	27	C	43	67			
FS	1C	28	D	44	68			
GS	1D	29	E	45	69			
RS	1E	30	F	46	70			
US	1F	31	G	47	71			
SP	20	32	H	48	72			
!	21	33	I	49	73			
"	22	34	J	4A	74			

#	23	35	K	4B	75			
$	24	36	L	4C	76			
%	25	37	M	4D	77			
&	26	38	N	4E	78			
'	27	38	O	4F	79			

2、CODEB

Character	Transmit		Character	Transmit		Character	Transmit	
	Hex	Decimal		Hex	Decimal		Hex	Decimal
SP	20	32	H	48	72	p	70	112
!	21	33	I	49	73	q	71	113
"	22	34	J	4A	74	r	72	114
#	23	35	K	4B	75	s	73	115
$	24	36	L	4C	76	t	74	116
%	25	37	M	4D	77	u	75	117
&	26	38	N	4E	78	v	76	118
'	27	39	O	4F	79	w	77	119
(	28	40	P	50	80	x	78	120
)	29	41	Q	51	81	y	79	121
*	2A	42	R	52	82	z	7A	122
+	2B	43	S	53	83	{	7B,7B	123,123
,	2C	44	T	54	84	|	7C	124
_	2D	45	U	55	85	}	7D	125
.	2E	46	V	56	86	—	7E	126
/	2F	47	W	57	87	DEL	7F	127
0	30	48	X	58	88	FNC1	7B,31	123,49
1	31	49	Y	59	89	FNC2	7B,32	123,50
2	32	50	Z	5A	90	FNC3	7B,33	123,51
3	33	51	[	5B	91	FNC4	7B,34	123,52
4	34	52	\	5C	92	SHIFT	7B,53	123,83
5	35	53	]	5D	93	CODEA	7B,41	123,65
6	36	54	^	5E	94	CODEC	7B,43	123,67
7	37	55	_	5F	95			
8	38	56	`	60	96			
9	39	57	a	61	97			
:	3A	58	b	62	98			
;	3B	59	c	63	99			
<	3C	60	d	64	100			
=	3D	61	e	65	101			
>	3E	62	f	66	102			
?	3F	63	g	67	103			

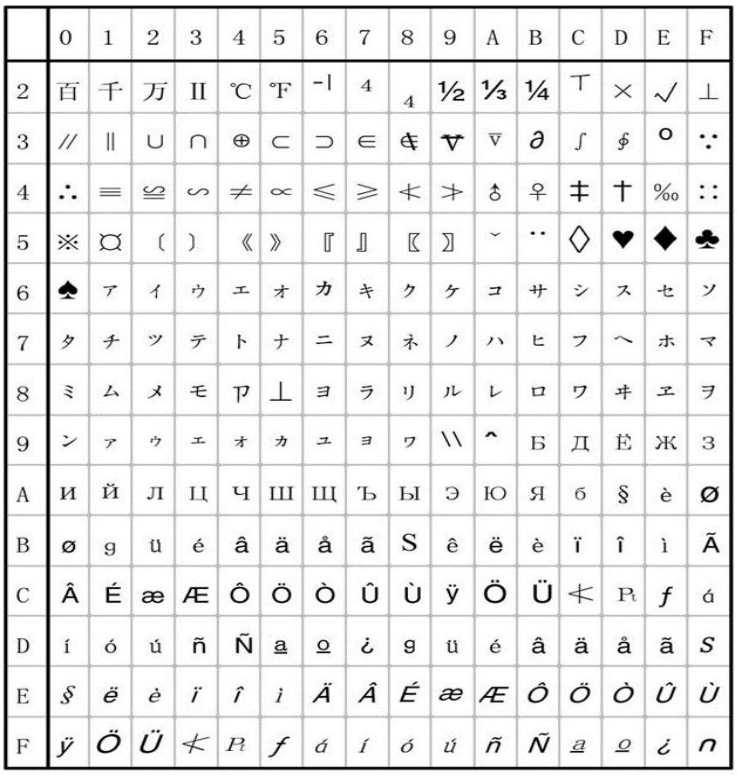
@	40	64	h	68	104			
A	41	65	i	69	105			
B	42	66	j	6A	106			
C	43	67	k	6B	107			
D	44	68	l	6C	108			
E	45	69	m	6D	109			
F	46	70	n	6E	110			
G	47	71	o	6F	111			

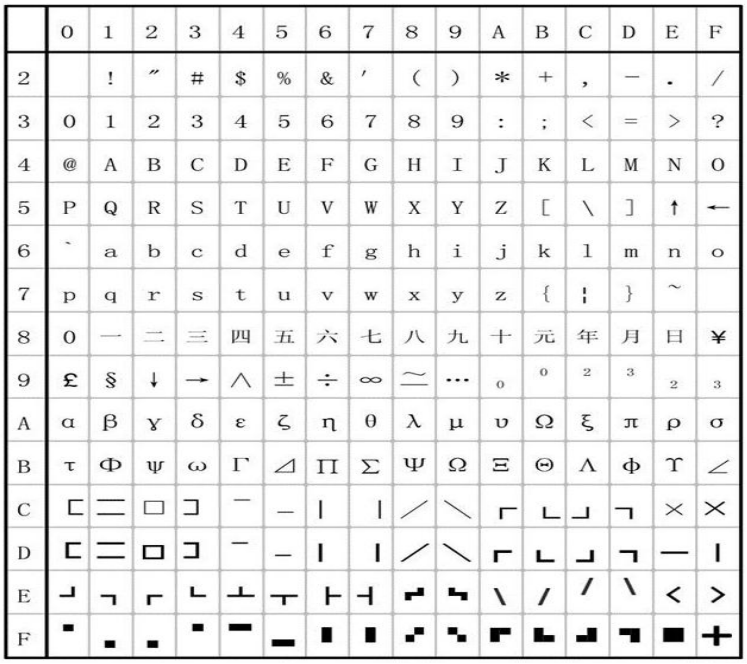
3、CODEC

Character	Transmit data		Character	Transmit data		Character	Transmit data	
	Hex	Decimal		Hex	Decimal		Hex	Decimal
00	00	0	40	28	40	80	50	80
01	01	1	41	29	41	81	51	81
02	02	2	42	2A	42	82	52	82
03	03	3	43	2B	43	83	53	83
04	04	4	44	2C	44	84	54	84
05	05	5	45	2D	45	85	55	85
06	06	6	46	2E	46	86	56	86
07	07	7	47	2F	47	87	57	87
08	08	8	48	30	48	88	58	88
09	09	9	49	31	49	89	59	89
10	0A	10	50	32	50	90	5A	90
11	0B	11	51	33	51	91	5B	91
12	0C	12	52	34	52	92	5C	92
13	0D	13	53	35	53	93	5D	93
14	0E	14	54	36	54	94	5E	94
15	0F	15	55	37	55	95	5F	95
16	10	16	56	38	56	96	60	96
17	11	17	57	39	57	97	61	97
18	12	18	58	3A	58	98	62	98
19	13	19	59	3B	59	99	63	99
20	14	20	60	3C	60	FCN1	7B,31	123,49
21	15	21	61	3D	61	CODEA	7B,41	123,65
22	16	22	62	3E	62	CODEB	7B,42	123,66
23	17	23	63	3F	63			
24	18	24	64	40	64			
25	19	25	65	41	65			
26	1A	26	66	42	66			
27	1B	27	67	43	67			
28	1C	28	68	44	68			

29	1D	29	69	45	69			
30	1E	30	70	46	70			
31	1F	31	71	47	71			
32	20	32	72	48	72			
33	21	33	73	49	73			
34	22	34	74	4A	74			
35	23	35	75	4B	75			
36	24	36	76	4C	76			
37	25	37	77	4D	77			
38	26	38	78	4E	78			
39	27	39	79	4F	79			

4、Character font 1&2





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