OCBP-M58 Mobile Print

Development Manual

2014/3/28

目录

1   Summary

1.1 Feature

Print Width   : 2 inches (58mm)
Machine compact size : 113mm (length) x82mm (W) x48mm (H)
Print speed   : 60mm / s (adjustable)
Display   : LED STATE/OLED LCD display (128x32)
Interface   :Supports serial, Bluetooth

1300mAh high-capacity lithium battery, intelligent fast charging
The whole low-power design
Supports text, image printing, support for uncommon characters printing, support one-dimensional, two-dimensional bar code printing

1.2 Description

OCBP-M58 printer is a printable 58mm paper width portable receipt printer, using high-performance 32-bit ARM microcontrollers. 1300mAh/7.4V large capacity lithium battery and the machine's low-power design, it can speed for a long time to print. It is built 32M large capacity FLASH memory, built-in GBK, BIG5 font; Also can print one-dimensional, two-dimensional bar code (QRCODE), patterns and other special content. Supports serial, USB, Bluetooth communication mode. OLED display clearly shows various printer status, provide a friendly interface. It is lightweight and durable, can use hand-held or hung on the waist.

1.3 Model

OCBP-M58 Bluetooth and USB models of printers.

Model	communication	Remarks
SP200/SP300_U	USB	SP200/SP300_U USB printing support driver WINDOWS
SP200/SP300_UB	USB + Bluetooth	SP200/SP300_UB USB + Bluetooth support WINDOWS driven printing, Bluetooth ESC / POS command Print
SP200/SP300_IOS	USB + Bluetooth	SP200/SP300_IOS is connect IOS

2 Technical Parameters

2.1 Technical Parameters

Printer parameters

Printing method	Thermal line
Roll width	58mm
Print width	48mm
Print speed	60mm/s ADJ
Resolution	203dpi
Font	ASCII（16x8、24x12）、GBK（16x16、24x24）、BIG5(16x16、24x24)
Printers core life	50km/100 million pulses
Command	ESC/POS
Print content	English, numbers, symbols, characters, graphics, one-dimensional bar codes, 2D barcodes

Print length on one charge	Next 12.5% print density can print 100-130m
Charging method	On/off charge
Charging time	2.5 hours
Communication Interface	
Wired interface	TTL/USB
Wireless Interface	Bluetooth V2.0 CLASS 2
Physical parameters	
Dimensions	113mm×82mm×48mm
Weight	246g(Including battery, excluding rolls)
Other features	
Paper loading	Manually loading paper
Status Indication	OLED display power shortage, Bluetooth status
Environment	Temperature -10 ° C ~ 50 ° C Humidity 20% to 85%
Charging environment	Temperature 5 ° C ~ 40 ° C Humidity 20% to 85%
Storage Environment	Temperature -20 ° C ~ 70 ° C Humidity 5% to 95%

2.2 Communication Interface

| Wired Interface	OTG / USB (to distinguish between different types of models)
Wireless Interfaces	Bluetooth 2.0

3　Part name
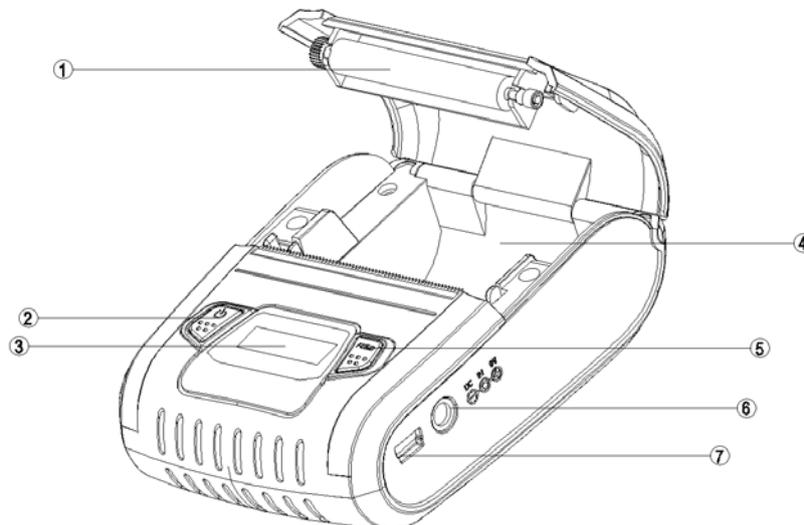
图 1　正面图

Front Part Names

1．Platen　　　　2．Power key　3．Instruction area or display　4．Paper warehouse

5．Feed key　　　6．Charging Interface　　　　　　　　7．USB
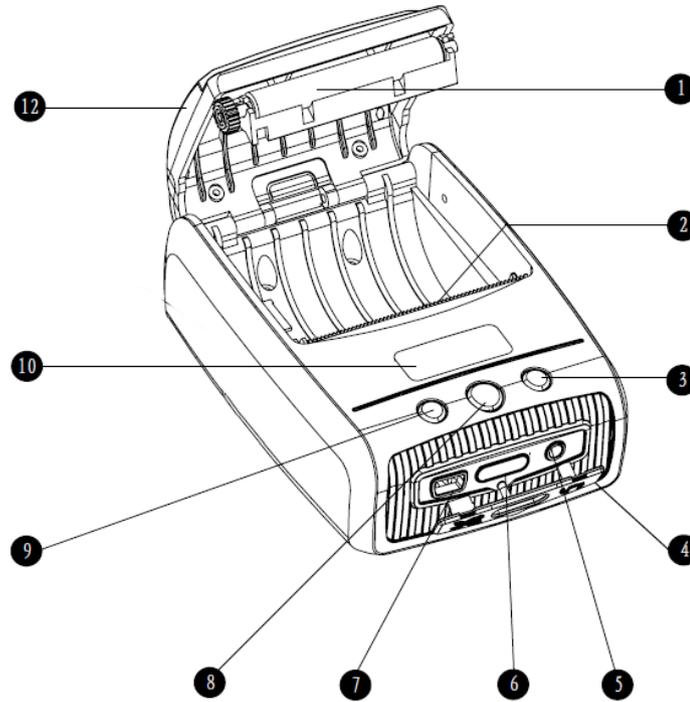
Front View

Part Names

1．Platen	2．Tear port	3．FEED button	9．Setting button
5．Power connector		7．RS232C/USB	8．Power button
	10．Display LCD		12. Paper cover

4 Description of the components

4.1 Thermal print head

Printing method	Thermal line printing
Print Points	384 dots / line
Point density	0.125mm (8 dots / mm)
Print Area	48mm
Paper width	58 mm±0.5mm
Paper Thickness	60~100μm

4.2 Charging Interface

The following is the charging port parameters

	Min	Typical	Max	Unit
Input DC voltage	9V	9V	9.5V	V
Recommended input voltage		9V		V
DC jack: Aperture		3.5		mm
DC jack: Pin		1.35		mm

Warning: Use only standard charger provided by our company, it may be dangerous or other unforeseeable consequences.

4.3 Display

Display：	OLED dot matrix

Color：	blue and white / black blue
Dots	128x32

5 Communication Interface

Printers provide two communication interfaces:
    1.Wired Interface: OTG port
    2.Wireless Interface: Bluetooth

5.1 OTG Serial ports

OCBP-M58 printer's USB electrical parameters in line with EIA / TIA-232F and CCITT V.28 / V.24 specifications. It is physically implemented by a standard 5 Pin MINI-USB socket.

USB can connect to WINDOWS, LINUX, Android (need to support OTG), and WINDOWS connection can install the drivers provided by our company to print.

5.1.1 Appearance
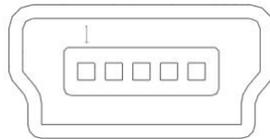
5.2 Bluetooth

OCBP-M58 Bluetooth printer provides a virtual serial port service (SPP) Bluetooth communication interface.
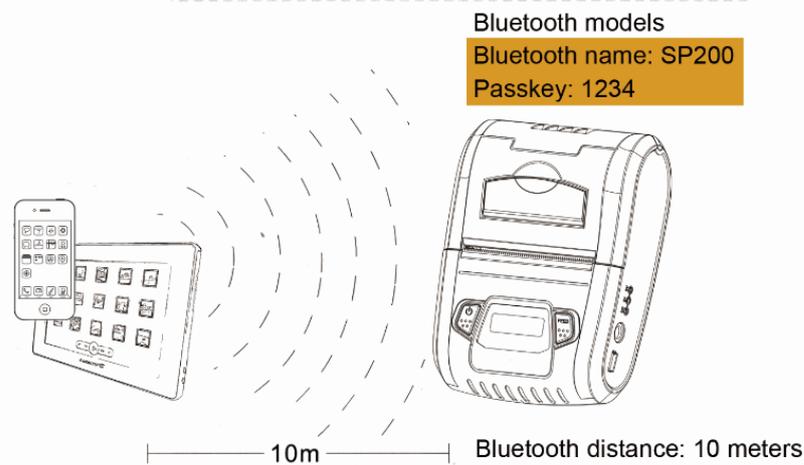
5.2.1 Bluetooth parameters

Bluetooth specification	Bluetooth V2.0
Frequency	2.4GHz
Transmission distance	Class2 （10m）
Bluetooth services	SPP (Serial Port service)
Bluetooth device type (COD)	00 00 00 (1)

Note (1): COD Type Settings section PC Bluetooth device properly, and we may not be able to connect a

printer. For details, please contact your supplier or contact us directly.

5.2.2 SPP parameters

Transfer Rate	115200bps (fixed)	
Data format	Start bit	1
Data word length	8	
Parity	None	
Stop bit：	1	

Note (1): Bluetooth printer using the Bluetooth protocol SPP communication mode automatic control flow control. The printer receives the data, after processing is complete, it will return the corresponding processing status.

6. Print Command

printer adopts ESC/POS compatible commands, the following table is the printing commands. They are classified according to their functions.

1	ESC @	Initialize printer
2	ESC J n	Print and feed paper for n vertical active units
3	ESC d n	Print and feed paper for n lines
4	ESC ! n	Set print mode
5	GS ! n	Set Font size
6	ESC M n	Set Font
7	ESC – n	Select/cancel underline print
8	ESC E n	Select / cancel bold patterns
9	ESC G n	Select / deselect the dual print mode
10	GS B n	Select / deselect black and white reverse printing mode
11	ESC V n	Select / deselect clockwise 90 degrees
12	ESC $ nL nH	Set absolute print position
13	ESC D n1...nk NUL	Set horizontal tab position
14	ESC 2	Set the default line spacing
15	ESC 3 n	Set the line spacing
16	ESC SP n	Setting the right spacing of characters
17	ESC a n	Select Alignment
18	GS L nL nH	Setting the left margin
19	FS ! n	NC
20	ESC * m nL nH d1... dk	Select the bitmap mode
21	GS h n	Select the bar code height
22	GS w n	Set bar width
23	GS k m d1...dk NUL②GS k m n d1...dn	Print barcodes

6.1 Command Details

6.1.1   ESC @

[Name]   : Initialize printer
[Format]   : ASCII ESC @
               Hexadecimal 1B 40
               Decimal 27 64
[Description] : Clear the data in the print buffer; Restore the default of each print command.
[Notice]   : If not restore to ex-factory setting, the default setting won't be changed.

6.1.2   ESC J n

[Name]   : Print and feed paper
[Format]   : ASCII ESC J n
               Hexadecimal 1B 4A n
               Decimal 27 74 n
[Description] : Feed paper for n vertical dot spacing.
[Range]   : $0 \leqslant n \leqslant 255$.
               • one vertical dot spacing is 0.125mm, below is the same.
[Reference]   : ESC d

6.1.3   ESC d n

[Name]   : Print and feed paper n lines
[Format]   : ASCII ESC d n
                    Hexadecimal 1B 64 n
                    Decimal 27 100 n
[Range]   : 0 ≤ n ≤ 255.
[Description]   : Print the data in the buffer and feed paper for n lines.
[Notice]   : Set the beginning of the line as the printing position by this command.
[Reference]   : ESC J

6.1.4   ESC ! n

[Name]   : Select print mode
[Format]   : ASCII ESC ! n
                    Hexadecimal 1B 21 n
                    Decimal 27 33 n
[Description]   : Select print mode(s) using n as follows:

Bit	Value	Description
0	0	Undefined
1		Undefined
2		Undefined
3		Undefined
4	0	Cancel double height mode
	1	Select double height mode
5	0	Cancel double width mode
	1	Select double width mode
6	0	Cancel up-line mode
	1	Select up-line mode
7	0	Cancel underline mode
	1	Select underline mode

[Notice]   :

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

• When some characters in a line are double or more height, all the characters on the line are aligned at the baseline.

• ESC - can also turn on or off underline mode. However, the setting of the last received command is effective.

• ESC + can also select character size. However, the setting of the last received command is effective.

• This command is effective for both alphanumeric and Chinese character.

[Default]   : n = 0
[Reference]   : ESC -, ESC +
[Example]   :

If set font B with double width and underline, please select the command(HEX): 1B 21 A1

6.1.5   GS ! n

[Name]   : Select Font mode
[Format]   : ASCII GS ! n
                    Hexadecimal 1D 21 n
                    Decimal 29 33 n
[Description]   : Select print mode(s) using n as follows:

width			height		
HEX	Decimal	Size	HEX	Decimal	Size
00	0	1 x	00	0	1 x
10	16	2 x	01	1	2 x

[Notes] :

   • This command is for all characters (ASCII code characters and Chinese characters) are valid, except HRI characters.

   • If n is outside the specified range, this command is ignored.

   • In standard mode, the vertical paper feed direction is horizontal is perpendicular to the paper feed direction. But when the character is rotated clockwise 90 °, horizontal and vertical reversed.

   • In page mode, depending on the direction of the horizontal and vertical areas.

   • Magnification same line of characters is not the same for all characters to the bottom line alignment.

   • ESC! Commands can also select or cancel double-width and double-height characters, the last received command is valid.

[Default] :n = 0
[Reference] : ESC!

6.1.6   ESC - n

[Name]   : Select / cancel underline mode
[Format] : ASCII ESC - n
        Hex 1B 2D n
        Decimal 27 45 n
[Range]   :$0 \leqslant n \leqslant 2, 48 \leqslant n \leqslant 50$
[Description] :Select or cancel underline mode depending on the value of n:

n	Function
0,48	cancel underline mode
1,49	underline mode (1:00 W)
2,50	underline mode (2:00 W)

[Notes]   :

   • The printer can underline all the characters (including the right pitch), but does not include space set by HT.

   • underscore can not act in the next 90 ° clockwise and counter-significant characters.

   • When you cancel underline mode, the back of the characters are not underlined, underlined the width does not change. The default width is a little wide.

   • Changing the character size does not affect the current underline width.

   • Underline mode can also be! Set by ESC. The last command is executed effectively.

   • This command does not affect the setting kanji characters.

[Default] :n = 0
[Reference] :ESC!

6.1.7   ESC E n

[Name]   : select / deselect bold patterns
[Format] : ASCII ESC E n
        Hex 1B 45 n
        Decimal 27 69 n
[Range]   :$0 \leqslant n \leqslant 255$
[Description] : Select or cancel emphasized mode

When the LSB of n is 0, cancel bold patterns.

When the LSB of n is 1, choose bold patterns.

[Notes]   :

• n only the lowest bit is valid.

• ESC! Can also select / deselect bold mode, the last received command is valid.

[Default]   : n = 0

[Reference]   : ESC!

6.1.8   ESC G n

[Name]   :Select / deselect the dual print mode

[Format]   : ASCII ESC G n

Hex 1B 47 n

Decimal 27 71 n

[Range]   : 0 ⩽ n ⩽ 255

[Description]   : select / deselect the dual print mode.

• When the LSB of n is 0, double-strike mode.

• When the LSB of n is 1, double-strike mode.

[Notes]   : • n only the lowest bit is valid.

• This command has the same effect with bold prints.

[Default]   : n = 0

[Reference]   : ESC E

6.1.9   GS B n

[Name]   : Select / deselect black and white reverse printing mode

[Format]   : ASCII GS B n

Hexadecimal code 1D 42 n

Decimal 29 66 n

[Range]   : 0 ⩽ n ⩽ 255

[Description]   : select / deselect black and white reverse printing mode.

• When the LSB of n is 0, cancel reverse printing.

• When the LSB of n is 1, choose reverse printing.

[Notes]   :   n only the lowest bit is valid.

• This command (except through the HRI character) is valid for all characters.

• Select reverse printing, character spacing set by ESC SP command is also anti significant.

• This command does not affect bitmaps, custom bitmap, bar code, HRI characters, and blank by HT, ESC $, and ESC \ settings.

• This command does not affect the space between rows and rows.

• Black and white reverse printing mode higher priority than underline mode. In black and white reverse printing mode is selected, the underline mode does not work, the abolition of the anti-black and white display mode, set the underline mode to work.

[Default]   : n = 0

6.1.10   ESC V n

[Name]   Select / deselect clockwise 90 degrees

[Format]   ASCII ESC V n

Hex 1B 56 n

Decimal 27 86 n

[Range]   0 ⩽ n ⩽ 1, 48 ⩽ n ⩽ 49

[Description]   select / deselect clockwise 90 degrees

n values are as follows:

n	Function
0,48	cancel rotated 90 degrees clockwise pattern

1,49	rotated 90 degrees clockwise pattern selection

[Notes] • This command is valid only in standard mode.

• When underline mode, underscore can not be rotated 90 degrees clockwise, not underlined when printed.

• Clockwise rotation in the opposite direction and times width times the normal mode 90 degrees mode under.

[Default] n = 0

6.1.11   ESC $ nL nH

[Name]   Set absolute print position
[Format]   ASCII ESC $ nL nH
              Hex 1B 24 nL nH
              Decimal 27 36 nL nH
[Range]   0≤nL ≤ 255
              0 ≤nH≤255
[Description]

Sets the current position to the distance from the line (nL + nH × 256) × (horizontal or vertical motion unit) place.

[Note]

• If you set the print area outside the designated location, the command is ignored.

• horizontal and vertical motion unit set by GS P.

• Standard mode the horizontal motion unit under.

• In page mode, depending on the direction and the print start position of the print area to select the horizontal motion unit or vertical motion unit, its choice as follows:

1, when the print starting position by ESC T is set to the upper left or lower right corner of the printable area, the horizontal motion unit;

2, when the print starting position by ESC T is set to the lower left or right corner of the printable area, the use of longitudinal movement of the units;

[Reference]   ESC \, GS $, GS \, GS P

6.1.12   ESC D n1 ... nk NUL

[Name]   Set horizontal tab position
[Format]   ASCII ESC D n1 ... nk NUL
              Hex 1B 44 n1 ... nk 00
              Decimal 27 68 n1 ... nk 0
[Range]   1 ≤ n ≤ 255
              0 ≤ k ≤ 32
[Description] Set horizontal tab position.

• Set up by the beginning of the line n columns tab position.

• A total of k tabbing position.

[Notes]   • The horizontal tab position is calculated by the following formula:
Character width × n, character width includes the right spacing, if the character is a double-width, tabbing distance also will be doubled.

• This command cancels the previous horizontal tab settings.

• When n = 8, the current position of ninth column.

• Set up to 32 (k = 32) tabbing position, more than 32 of the tab position data is processed as normal data.

• tab positions in ascending order, ending character is NUL.

• When [n] k is less than or equal to the previous one [n] k -1 value, jumping end grid settings, the following data is processed as normal data.

• ESC D NUL cancels all horizontal tab positions.

• change the character width, tabbing previously specified location does not change.

• character width in standard mode and page mode are independent.

[Default]   setting is the default tabbing every eight standard ASCII characters (12 × 24) a tab position (column 9,17,25, ...).

[Reference]   HT

6.1.13   ESC 2

[Name]   Set the default line spacing
[Format]   ASCII ESC 2
               Hex 1B 32
               Decimal 2750
[Description] Select the line spacing of about 3.75mm.
[Notes]   • line spacing in standard mode and page mode are independent.
[Reference]   ESC 3

6.1.14   ESC 3 n

[Name]   Set the line spacing
[Format]   ASCII ESC 3 n
               Hex 1B 33 n
               Decimal 27 51 n
[Range] $0 \leqslant n \leqslant 255$
[Description] Set the line spacing to [n × vertical or horizontal motion unit] inches.
[Notes]   • Set the line spacing in standard mode and page mode are mutually independent.
               • horizontal and vertical motion unit set by GS P, change this setting does not affect the current line spacing.
               • In standard mode, the vertical motion unit.
               • In page mode, depending on the direction and the print start position of the print area to select the horizontal motion unit or vertical motion unit, its choice as follows:
               1, when the print starting position by ESC T is set to the upper left or lower right corner of the printable area, use the vertical motion unit;
               2, when the print starting position by ESC T is set to the lower left or right corner of the printable area, the horizontal motion unit;
               • Maximum paper feed distance is 956 mm, if you exceed this distance, take the maximum distance.
[Default]   defaults row height of about 3.75mm.
[Reference]   ESC 2, GS P

6.1.15   ESC SP n

[Name]   Setting the right spacing of characters
[Format]   ASCII ESC SP n
               Hex 1B 20 n
               Decimal 27 32 n
[Range] $0 \leqslant n \leqslant 255$
               Right [Description] Set character spacing [n × horizontal motion unit or vertical motion unit] inches.
[Notes]   • When a character zoom, zoom right spacing along the same factor.
               • This command sets the value in the page mode and standard mode is independent.
               • horizontal or vertical motion unit is specified by GS P. Change the horizontal or vertical motion unit does not change the current right spacing.
               • GS P command can change the horizontal (and vertical) motion units. But the value is not less than the minimum horizontal movement amount, and it must be an even number of units of the minimum horizontal movement amount.
               • In standard mode, the horizontal motion unit.
               • In page mode, depending on the direction and the starting position of the area to choose to use the horizontal motion unit or vertical motion unit,
               Their choice as follows:
               1, when the print starting position by ESC T is set to the upper left or lower right corner of the printable area, the horizontal motion unit;

2, when the print starting position by ESC T is set to the lower left or right corner of the printable area, the use of longitudinal movement of the units;

• The maximum right spacing is 31.91 mm (255/203 inches). Set any more than this value are automatically converted to the maximum right spacing.

[Default]   n = 0
[Reference]   GS P

6.1.16   ESC a n

[Name]   Select Alignment
[Format]   ASCII ESC a n
              Hex 1B 61 n
              Decimal 27 97 n
[Range] $0 \leqslant n \leqslant 2, 48 \leqslant n \leqslant 50$
[Description] so that all print data arranged in a specified alignment.
              n values corresponding relationship with the alignment as follows:

n	Function
0,48	Left Justified
1,49	middle-aligned
2,50	Align Right

[Notes]   • This command is valid only first line in standard mode.
              • The command in page mode change only internal flag.
              • This command is executed to align the print area.
              • The command according to HT, ESC $ or ESC \ command to adjust the white space.
[Default]   n = 0
[Examples]

AAAAA	AAAAA	AAAAA
BBBB	BBBB	BBBB
CCC	CCC	CCC
DD	DD	DD

6.1.17   GS L nL nH

[Name]   Setting the left margin
[Format]   ASCII GS L nL nH
              Hex 1D 4C nL nH
              Decimal code 29 76 nL nH
[Range] $0 \leqslant nL \leqslant 255$
              $0 \leqslant nH \leqslant 255$
[Description] • nL and nH set with the left margin;
              • the left margin is set to [(nL + nH × 256) × horizontal motion unit]] in.
[Notes]   • In standard mode, this command is only the first line to be effective.
              • In page mode, this command is invalid, the command as a printer for ordinary character.
              • This command does not affect printing in page mode.
              • If you set exceeds the maximum available print width, then take the maximum available print width
              • horizontal and vertical motion units are set by GS P command to change the vertical and horizontal motion unit does not affect the current left margin.
[Default]   nL = 0, nH = 0
[Reference]   GS P, GS W

6.1.18   ESC * m nL nH d1 ... dk

[Name]   Select the bitmap 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

                $0 \leqslant nL \leqslant 255$

                $0 \leqslant nH \leqslant 3$

                $0 \leqslant d \leqslant 255$

[Description]   Selects specified by m a bit map mode, the bitmap points by nL and nH determine:

m	mode	Longitudinal		Transverse	
		point	Resolution	Resolution	Data count（k）
0	8 point	8	67 DPI	100 DPI	$nL + nH \times 256$
1	8 point	8	67 DPI	200 DPI	$nL + nH \times 256$
31	24 point	24	200 DPI	100 DPI	$(nL + nH \times 256) \times 3$
32	24 point	24	200 DPI	200 DPI	$(nL + nH \times 256) \times 3$

 [dpi: Point /25.4mm{1 "}]

[Note]   • If the value of m beyond the specified range, nL and subsequent data is processed as normal data.

                • Landscape prints dots determined by nL and nH, the total number of points for nL + nH × 256.

                • Bitmap beyond the current part of the region is cut off.

                • d is the data of the bitmap. Each bit of data is a print of this point, for 0 does not print.

                • After the bitmap data transmission is completed, the printer returns to normal data processing mode.

                • In addition to the inverted mode, this command is not affected by print modes (bold, double printing, underline, character zoom and anti significant).

                • If GS L and GS W set the print range is wider than the width of hours with the ESC * command to send the requested data, perform the following actions on the offending line (but can not exceed the maximum printable print range):

                    1, the width of the print area to the right extended to accommodate the amount of data.

                    2, if the step width ¬ not provide enough data, then the left edge is reduced to accommodate the data.

                • Data and relationships to be printed points are as follows:

Select 8 point density:

Single density   Dual density

Select 24 point density:
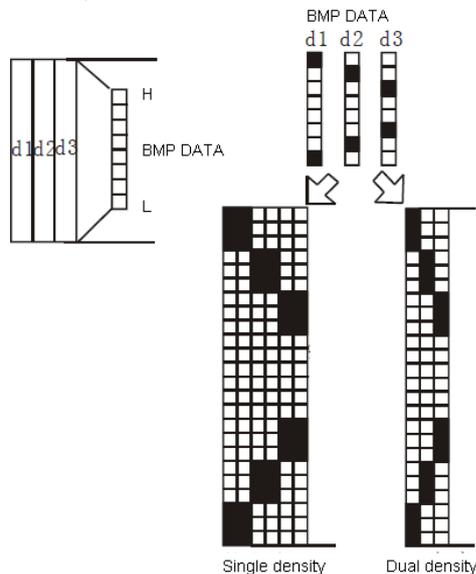
Single-density   double-density
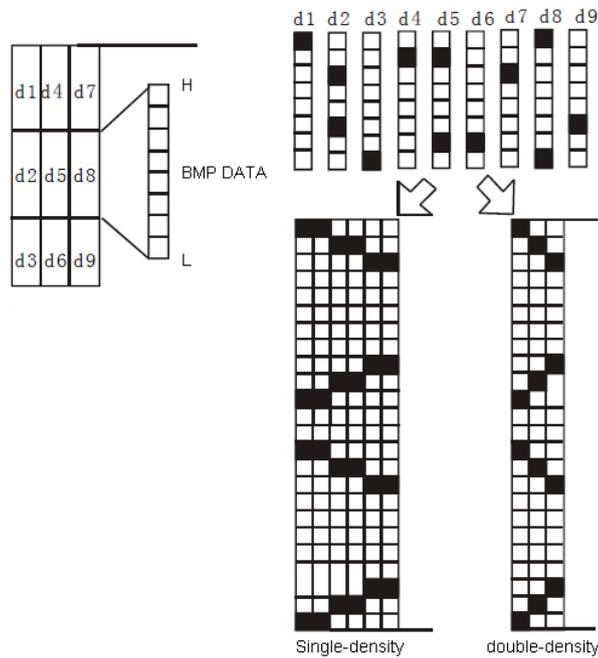
6.1.19   GS h n

[Name]   Select the bar code height
[Format]   ASCII GS h n
               Hexadecimal code 1D 68 n
               Decimal 29 104 n
[Range]   1 ≤ n ≤ 255
[Description] Select barcode height. Barcode height of n points.
[Default]   n = 162
[Reference]   GS k

6.1.20   GS w n

[Name]   Set bar width
[Format]   ASCII GS w n
               Hexadecimal code 1D 77 n
               Decimal 29 119 n
[Range]   2 ≤ n ≤ 6
[Description] Set barcode module width transverse
               N specifies the bar code width horizontal modules:

| n | Single basic module width (mm) | Double the width of the base module | |
		Narrow base module (mm)	wide base module (mm)
2	0.25	0.25	0.625
3	0.375	0.375	1.0
4	0.5	0.5	1.25
5	0.625	0.625	1.625
6	0.75	0.75	1.875

- One basic module barcode as follows:
  UPC-A, UPC-E, JAN13 (EAN13), JAN8 (EAN8), CODE93, CODE128
- Two basic modules Code as follows: CODE39, ITF, CODABAR

[Default]   n = 3
[Reference]   GS k

6.1.21   GS k

[Name]   Print barcodes

[Format]

①🔲 ASCII yards GS k m d1 ... dk NUL
    Hex 1D 6B m d1 ... dk 00
    Decimal code 29 107 m d1 ... dk 0

② ASCII yards GS k m n d1 ... dn
    Hex 1D 6B m n d1 ... dn
    Decimal code 29 107 m n d1 ... dn

[Range]

①🔲 $0 \leqslant m \leqslant 6$ (k and d ranges are determined by the bar code type)

② $65 \leqslant m \leqslant 73$ (k and d ranges are determined by the bar code type)

[Description]   to select a barcode type and print barcodes.

m used to select the barcode type, as follows:

4: CODE39

73: CODE128

[Examples]   for example, print "No. 123456"

In this example, the printer prints "No." using CODE B, followed by CODE C print the rest of the numbers:

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

• If you are not in the forefront of the character set selection bar code data, the printer will stop processing this command, and the rest of the data as normal data.

• If "{" and followed it's a combination of the specified character is not above that, the printer stops processing this command, and the rest of the data as normal data.

• If the printer receives a character is not the barcode character set data, the printer stops processing this command, and the rest of the data as normal data.

• When the printer to print HRI characters do not print shift characters and character sets to select the data.

HRI characters • functional character is not printed.

• Control characters (<00> H to <1F> H and <7F> H) of HRI characters not printed; <Other> must ensure barcode left

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

[Name]   Print raster bitmap

[Format]   ASCII GS v 0 m xL xH yL yH d1 ... dk

Hexadecimal code 1D 76 30 m xL xH yL yH d1 ... dk

Decimal code 29 118 48 m xL xH yL yH d1 ... dk

[Range] $0 \leqslant m \leqslant 3, 48 \leqslant m \leqslant 51$

$0 \leqslant xL \leqslant 255$

$0 \leqslant xH \leqslant 255$

$0 \leqslant yL \leqslant 255$

$0 \leqslant d \leqslant 255$

$k = (xL + xH \times 256) \times (yL + yH \times 256)$ $(k \neq 0)$

[Description]   print raster bitmap m value by selecting raster bitmap mode:

• xL, xH represents the horizontal direction bit map (xL + xH × 256) bytes

• yL, yH said vertical bitmap points (yL + yH × 256)

[Notes]   • In standard mode, the printer only when the command buffer is no data to be effective.

• Character enlarged, bold, double printing, upside-down printing, underline, black and white display, such as anti-printing mode for the command is invalid.

• Bitmap part beyond the printable area is not printed.

• ESC a (choose the alignment mode) is valid for raster bitmap.

- During macro definition, the command will stop the macro definition and execution of the command. This command is not part of the macro definition.
- d on behalf of bitmap data. Corresponding bits of each byte is a means print this point, do not print this point is zero.

[Example] When xL + xH × 256 = 64