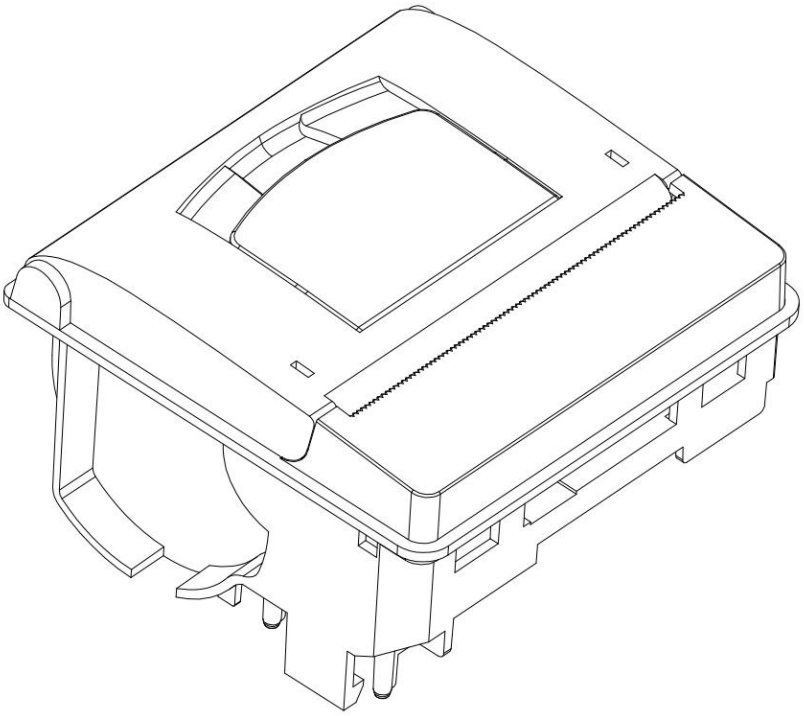
# HOP-ELM205
# Embedded Printer
# User Manual



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# 1. Product introduction

HOP-ELM205 is an embedded thermal receipt printer with small size, beautiful appearance, light weight, full functions, high speed, high definition, simple operation and convenient connection. It can be widely used to medical equipment, fire alarm control, industrial control and various other instruments to realize ticket bill printing.

The HOP-ELM205 supports Windows, Linux, Android and IOS systems. It can directly print a variety of font, Chinese characters and graphics

## Features

- Classic embedded design, buckle cover design
- Imported thermal print head with high reliability and long life
- Support multiple bitmaps (including NV Logo bitmap) storage and print
- Support multiple bar codes such as CODE128
- Support GB18030 large character library, both common words and uncommon words can be printed
- Support multiple international languages, support customized graphic printing
- Support ESC standard instruction set and factory-defined instruction set
- Support USB/serial interface,details see specification parameters
- Support Windows, Linux, Android and IOS systems
- Provide support for free on application development, support customization needs

## Application field

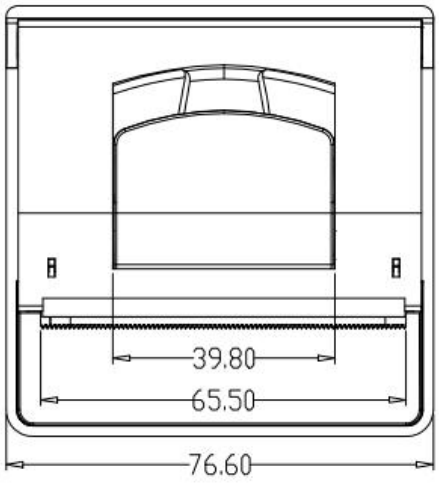
- Supermarkets, takeaways, restaurants (Reception and kitchen) bill printing
- Query, transaction and other service system ticket printing
- Sports, postal, aviation and other industries printing
- Data test printing in scientific research, medical, environmental protection and other industries

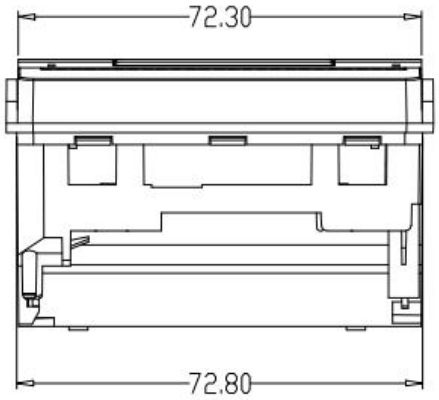
## Specifications

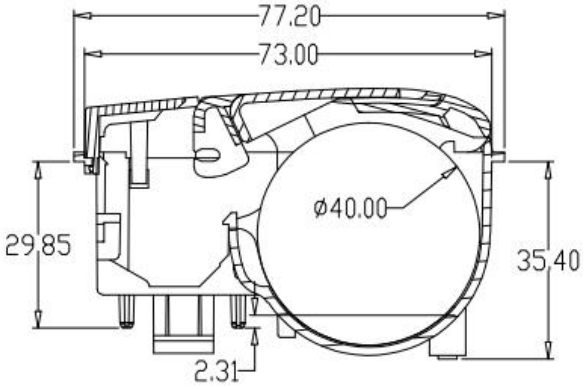
| | |
|---|---|
| Printing method | Line direct thermal |
| Print width | 48mm (paper width 57.5±0.5mm) |
| Print speed | 90mm/s(MAX) |
| Print density | 384 points / line (203 DPI) |
| Print life | >50k |

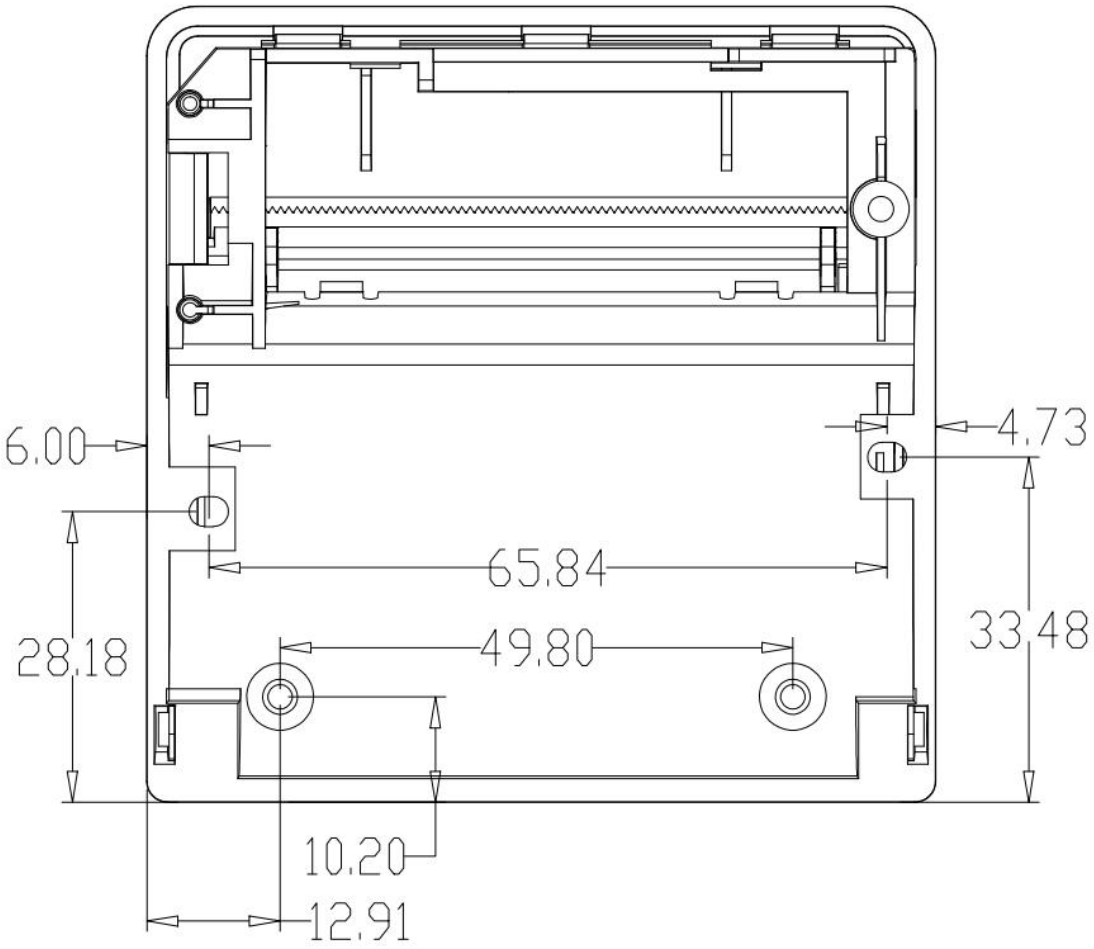
| | |
|---|---|
| Built-in characters | International Language : 192 international characters, 69 international code pages<br>Simplified Chinese: GB18030 GB font, support common words and uncommon words<br>Traditional Chinese: Big5 (optional)<br>Support for custom-defined characters and Chinese characters |
| Default line spacing | 3.75mm=30/203 inches, line spacing support is set in 1/230 inch increments |
| Print command | ESC/POS command (see programming manual for details) |
| Bar code system | UPC-A,UPC-E,CODE39,CODE93,CODABAR,CODE128,ITF,EAN 8(JAN8),EAN13(JAN13) |
| Print bitmap | Supports different density bitmap printing and NV Logo bitmap storage printing |
| Detection function | Photoelectric induction detect paper, thermal heat sensor protect print head |
| Operation instructions | Feed button , power indicator and error indicator |
| Print interface | USB2.0 (USB printing support)<br>RS232/TTL serial port (choose one) |
| Receive Cache | 4KBytes |
| Paper Requirements | Type: Thermal Roll Paper<br>Width: 57.5±0.5mm<br>Outer diameter: ≦40MM |
| Dimensions | 76.8MM*77.4MM*47.6MM (length * width * height) |
| Assembly size | 72.8MM*73.4MM*47.6MM (length * width * height) |
| Environmental requirements | Working environment: temperature 0 ~ 45 ° C, humidity 20% RH ~ 85% RH (no condensation)<br>Storage environment: temperature -20 ~ 60 ° C, humidity 5% RH ~ 95% RH (no condensation) |
| Power supply specification | Input voltage: 6-12V (voltage range depends on hardware version) |
| Reliability performance | MCBF > 5 million lines |

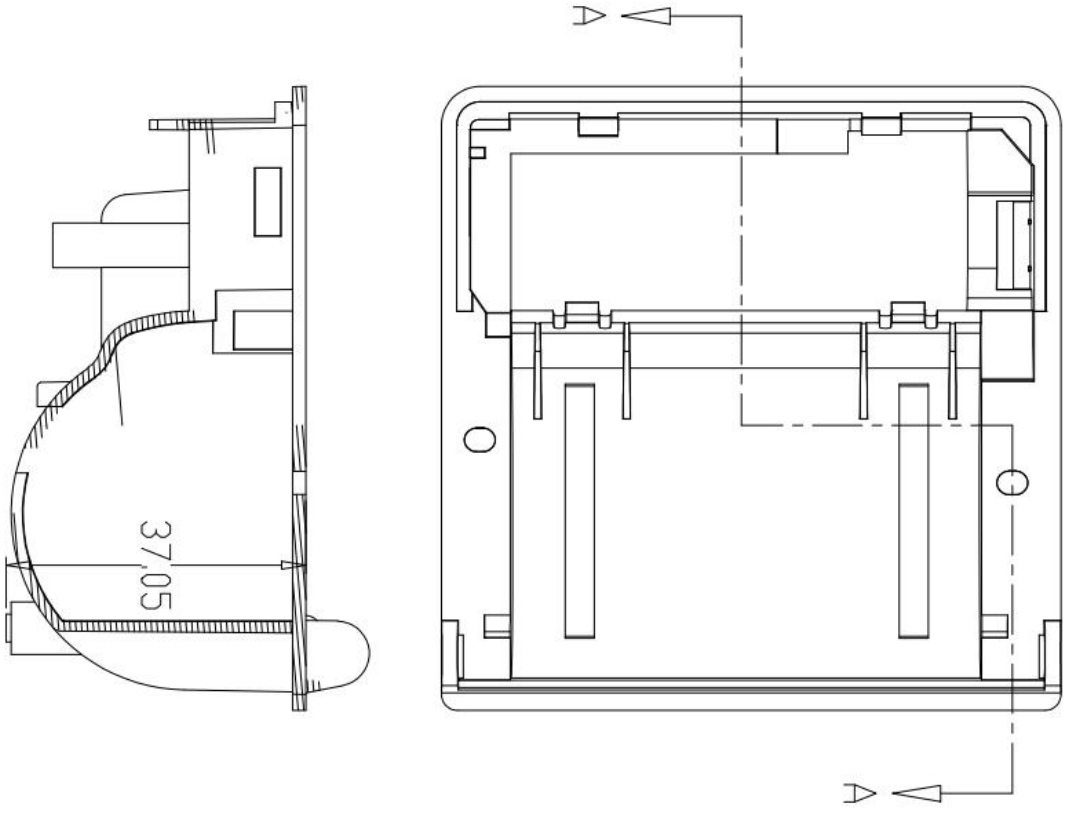
# Assembly Dimension



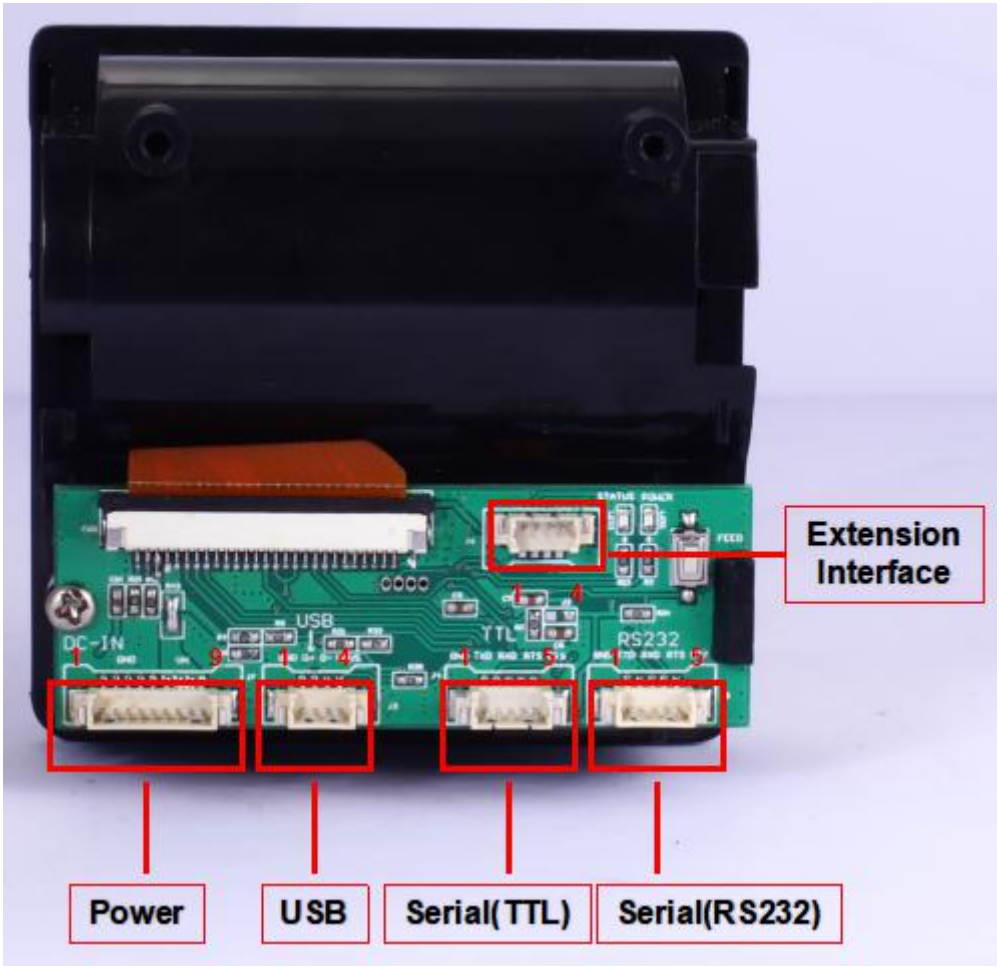




6.00
4.73
65.84
28.18
49.80
33.48
10.20
12.91


37.05

# 2. Pin Definition




2.1 Power Interface Definition

| Pin number | Signal name |
|---|---|
| 1.2.3.4.5 | GND |
| 6.7.8.9 | VIN(+12V) OR(6-9V) |

2.2 USB Interface Definition

| Pin number | Signal name | Illustration |
|---|---|---|
| 1 | GND | GND |
| 2 | D+ | Data line |
| 3 | D- | Negative data line |
| 4 | VUSB | +5V |

2.3 Serial(TTL&RS232) Interface Definition

| Pin number | Signal name | Function |
|---|---|---|
| 1 | GND | GND |
| 2 | TXD(Tx, Printer Output) | Output |
| 3 | RXD(Rx, Printer Input) | Input |
| 4 | RTS (Printer Output) | Output |
| 5 | CTS(Printer Output) | Output |

# 4 Instruction list

| | | |
|---|---|---|
| LF | Printing and paper feed | Printing and paper feed instructions |
| CR | Enter | |
| ESC J | Printing and paper feed n dot | |
| ESC d | Printing and paper feed n line | |
| ESC 3 | Set line spacing n dot | Print settings |
| ESC 2 | Set line spacing to default | |
| ESC $ | Set print position | |
| GS L nL nH | Set left blank | |
| ESC ! | Set character printing | |
| ESC M n | Select font | |
| GS ! n | Set character size | |
| GS B n | Set, remove white print | |
| ESC - n | Set, remove underline | |
| ESC V n | Set, release 90 degree rotary printing | |
| ESC a | Print alignment | |
| FS & | Set Chinese mod | |
| FS . | Cancel Chinese mode | |
| ESC R n | International character set | |
| ESC t n | Select character code page | |
| ESC * | Vertical data filling | Graphic print instruction |
| GS v 0 | Picture level model data printing | |
| FS q | Definition NV bitmap | |
| FS p n m | Print NV bitmap | |
| HT | Horizontal tabulation | Tab command |
| ESC D | Set tab position | |
| GS H | Set one dimensional bar code readable character（HRI）Printing position | One dimensional bar code print instruction |
| GS h | Set bar height | |
| GS w | Set bar width | |
| GS k | Print one-dimensional bar code | |
| DLE EOT n | Real-time transfer state | Status command |
| DLE ENQ n | Real time printer request | |

| | | |
|---|---|---|
| ESC @ | Initialization printer | Other instructions |
| DC2 T | Print page self testing | |

# 5 Detailed instructions

①Printing and paper feed instruction

## Printing and paper feed

| | |
|---|---|
| Instruction name | Printing and paper feed |
| Instruction code | ASCII ：LF<br>Decimal system ：10<br>Hexadecimal：0A |
| Function description | Print the contents of the cache, After that according to the current line spacing setting feed one line paper, and adjust the print position to the next line start position. |
| Parameter range | not have |
| Default value | not have |
| Support model | All models |
| Matters needing attention | not have |
| Use example | not have |

## Enter

| | |
|---|---|
| Instruction name | Enter |
| Instruction code | ASCII ：CR<br>Decimal system ：13<br>Hexadecimal ：0D |
| Function description | When the print buffer is not empty, the same with LF, otherwise no effect. |
| Parameter range | not have |
| Default value | not have |
| Support model | All models |
| Matters needing | not have |

| | |
|---|---|
| attention | |
| Use example | not have |

## Printing and paper feed n dot

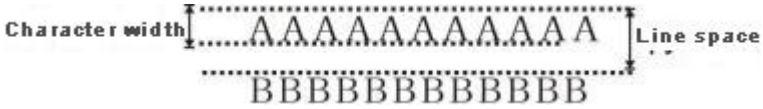
| | |
|---|---|
| Instruction name | Printing and paper feed n dot |
| Instruction code | ASCII ： ESC J n<br>Decimal system ： 27 74 n<br>Hexadecimal ： 1B 4A n |
| Function description | Print the contents of the cache and paper feed n dot |
| Parameter range | 0 ≤ n ≤ 255 |
| Default value | not have |
| Support model | All models |
| Matters needing attention | When the print buffer is empty，only paper feed n dot.<br>After the execution of this directive, adjust the print position to the next line start position. |
| Use example | 1b 40 30 31 32 1b 4a 10 |

## Printing and paper feed n line

| | |
|---|---|
| Instruction name | Printing and paper feed n line |
| Instruction code | ASCII ： ESC d n<br>Decimal system ： 27 100 n<br>Hexadecimal ： 1B 64 n |
| Function description | Print the contents of the cache and paper feed n line |
| Parameter range | 0 ≤ n ≤ 255 |
| Default value | not have |
| Support model | All models |
| Matters needing attention | This command sets the print start position as the starting point of the line. |
| Use example | 1b 40 30 31 32 1b 64 01 |

## ②Print settings instructions.

## Set line spacing n dot.

| | |
|---|---|
| Instruction name | Printing and paper feed n dot |
| Instruction code | ASCII ： ESC 3 n<br>Decimal system ： 27 51 n<br>Hexadecimal：1B 33 n |
| Function description | Set line spacing n dot. |
| Parameter range | 0 ≤ n ≤ 255 |
| Default value | n = 33 |
| Support mode | All models |
| Matters needing attention | The line spacing is shown as follows：<br>  <br><br>If the set line spacing is less than the maximum character height in a row, the row spacing is equal to the maximum character height.<br>If ESC 2, ESC @, printer reset, printer power off, line spacing restored to default. |
| Use example | 1b 40<br>1b 33 30<br>30 31 32 0d 0a<br>30 31 32 0d 0a<br>1b 32<br>30 31 32 0d 0a<br>30 31 32 0d 0a |

## Set line spacing to default

| | |
|---|---|
| Instruction name | Set line spacing to default |
| Instruction code | ASCII ： ESC 2<br>Decimal system ： 27 50<br>Hexadecimal ： 1B 32 |
| Function description | Set the line spacing to the default 33 dot |
| Parameter range | not have |
| Default value | not have |
| Support model | All models |
| Matters | For a detailed look at the ESC 3 line distance instruction. |

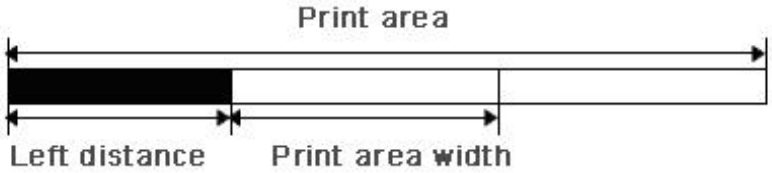
| | |
|---|---|
| needing attention | If the set line spacing is less than the maximum character height in a row, the row spacing is equal to the maximum character height. You can use ESC 3 custom line spacing. |
| Use example | not have |

## Set print position

| | |
|---|---|
| Instruction name | Set print position |
| Instruction code | ASCII ： ESC $ nL nH<br>Decimal system ： 27 36 nL nH<br>Hexadecimal ： 1B 24 nL nH |
| Function description | Adjust the print position to the starting position of the print (nL + nH * 256) |
| Parameter range | 0 ≤ nL ≤ 255，0 ≤ nH ≤ 255 |
| Default value | not have |
| Support mode | All models |
| Matters needing attention | This instruction is only on the line, after the print position is reset to the print start position.<br>Move beyond print range to next line print. |
| Use example | 1b 40 1b 24 08 00<br>30 31 32 0d 0a<br>30 31 32 0d 0a |

## Set left blank

| | |
|---|---|
| Instruction name | Set print position |
| Instruction code | ASCII ： GS L nL nH<br>Decimal system ： 29 76 nL nH<br>Hexadecimal ： 1D 4C nL nH |
| Function description | Set left blank（nL + nH × 256）dot |
| Parameter range | 0 ≤ nL ≤ 255，0 ≤ nH ≤ 255 |
| Default value | not have |
| Support mode | All models |
| Matters needing attention | This command is valid only at the start of a row.<br>The following illustration: |

| | |
|---|---|
| |  <br>If the setting is out of print range, use the maximum value of the printable unit. |
| Use example | 1b 40 1d 4c 08 00<br>30 31 32 0d 0a<br>30 31 32 0d 0a |

## Set horizontal and vertical movement units

| | |
|---|---|
| Instruction name | Set horizontal and vertical movement units |
| Instruction code | ASCII ：GS P x y<br>Decimal system ：29 80 x y<br>Hexadecimal：1D 50 x y |
| Function description | • The lateral movement units are set to 25.4/ x mm (1/ x inch) longitudinal moving units to be set to 25.4/ y mm (1/ y)<br>•When x and y are 0, X and y are set to default values. |
| Parameter range | $0 \leq x \leq 255, 0 \leq y \leq 255$ |
| Default value | x = 200, y = 380， At this point a moving unit is a print point. The transverse distance is about 1/8mm, and the vertical distance is about 1/15mm. |
| Support mode | 80XXX |
| Matters needing attention | • Mobile unit standard mode can be set, page mode can not be set.<br>• Perpendicular to the feed direction transverse to longitudinal feed direction.<br>• In standard mode, the following commands are either X or Y, even if the character is rotated (inverted or rotated 90 degrees)<br>①Command with X： ESC SP, ESC $, ESC \, FS S, GS L, GS W<br>②Command with Y：ESC 3, ESC J, GS V<br>• Under the age mode, use X or Y according to the regional direction and print start position.<br>①When the print start position is set to the upper left corner of the ESC T command (from the left to the right) or the lower right corner (from right to left):<br>Command with X： ESC SP, ESC $, ESC W, ESC \, FS S<br>Command with Y： ESC 3, ESC J, ESC W, GS $, GS \, GS V |

| | |
|---|---|
| | ②When the print start position is set up in the upper right corner of the ESC T command (from the top to bottom) or in the lower left corner (print direction from bottom to top)：<br>Command with X： ESC 3, ESC J, ESC W, GS $, GS \<br>Command with Y： ESC SP, ESC $, ESC W, ESC \,FS S, GS V<br>• This command does not affect other settings that were previously set.<br>• The smallest unit of movement is the result of the combined action of the command and other commands.<br>• One inch equals 25.4mm. |
| Use example | 1d 50 c8 c8<br>1B 4C<br>1B 57 30 00 00 00 78 00 30 00<br>1B 33 18<br>1B 57<br>30 31 32 30 31 32 30 31 32 

| | |
|---|---|
| | 30 31 32 0d 0a<br>1b 4d 02<br>30 31 32 0d 0a<br>1b 4d 03<br>30 31 32 0d 0a<br>1b 4d 04<br>30 31 32 0d 0a |

## Set character printing

| | |
|---|---|
| Instruction name | Set character printing |
| Instruction code | ASCII ： ESC ! n<br>Decimal system ： 27 33 n<br>Hexadecimal ： 1B 21 n |
| Function description | Set character printing（Font、reverse type、invert、bold、double-height、double width、 and underline）， Bit of parameter n<br>Defined as follows：<br>**Bit Function Val**<br>**0 1**<br>0 Word Model Normal Small character<br>1Undefinition<br>2Undefinition<br>3 Wide Volume Cancel Set<br>4 Double Height Cancel Set<br>5 Double Wide Cancel Set<br>6Undefinition<br>7 Underline Cancel Set |
| Parameter range | not have |
| Default value | n = 0 |
| Support mode | All models |
| Matters needing attention | This instruction is valid for both Chinese and foreign fonts<br>When ESC @, printer reset, power down, this instruction is set to fail. |
| Use example | 1B 40 1B 21 01 30 31 32 0D 0A<br>1B 40 1B 21 02 30 31 32 0D 0A<br>1B 40 1B 21 04 30 31 32 0D 0A<br>1B 40 1B 21 08 30 31 32 0D 0A<br>1B 40 1B 21 10 30 31 32 0D 0A<br>1B 40 1B 21 20 30 31 32 0D 0A<br>1B 40 1B 21 40 30 31 32 0D 0A<br>1B 40 1B 21 80 30 31 32 0D 0A |

## Set character size

<table>
<tr><td>Instruction name</td><td>Set character size</td></tr>
<tr><td>Instruction code</td><td>ASCII ： GS ! n<br>Decimal system ： 29 33 n<br>Hexadecimal ： 1d 21 n</td></tr>
<tr><td>Function description</td><td>Set character size is 1-8 times wide, 1-8 times higher.<br>Defined as follows:<br>Set the character height 4 to 7 bits with a height of between 0 and 3 bits.<br><br>Table 1 Character width setting<br><table><tr><th>Hexadeci-mal</th><th>Decim-al system</th><th>Width</th></tr><tr><td>00</td><td>0</td><td>1 (Normal)</td></tr><tr><td>10</td><td>16</td><td>2 (Double width)</td></tr><tr><td>20</td><td>32</td><td>3</td></tr><tr><td>30</td><td>48</td><td>4</td></tr><tr><td>40</td><td>64</td><td>5</td></tr><tr><td>50</td><td>80</td><td>6</td></tr><tr><td>60</td><td>96</td><td>7</td></tr><tr><td>70</td><td>112</td><td>8</td></tr></table><br>Table 2 Character height setting<br><table><tr><th>Hexadeci-mal</th><th>Decimal system</th><th>Height</th></tr><tr><td>00</td><td>0</td><td>1 (Normal)</td></tr><tr><td>01</td><td>1</td><td>2 (Double height)</td></tr><tr><td>02</td><td>2</td><td>3</td></tr><tr><td>03</td><td>3</td><td>4</td></tr><tr><td>04</td><td>4</td><td>5</td></tr><tr><td>05</td><td>5</td><td>6</td></tr><tr><td>06</td><td>6</td><td>7</td></tr><tr><td>07</td><td>7</td><td>8</td></tr></table></td></tr>
<tr><td>Parameter range</td><td>not have</td></tr>
<tr><td>Default value</td><td>n = 0</td></tr>
<tr><td>Support mode</td><td>All models</td></tr>
<tr><td>Matters needing attention</td><td>This directive is valid for both Chinese and foreign fonts except HRI characters.<br>When ESC @, printer reset, power down, this instruction is set to fail.</td></tr>
<tr><td>Use example</td><td>1b 40 1d 21 11<br>30 31 32 0d 0a</td></tr>
</table>

| | |
|---|---|
| | 30 31 32 0d 0a |

## Set, remove white print

| | |
|---|---|
| Instruction name | Set, remove white print |
| Instruction code | ASCII ： GS B n<br>Decimal system ： 29 66 n<br>Hexadecimal ： 1d 42 n |
| Function description | Set or release the white print mode.<br>When the least significant bit N 0, inverse mode is closed.<br>When the least significant bit n 1, open the inverse mode. |
| Parameter range | not have |
| Default value | n = 0 |
| Support mode | All models |
| Matters needing attention | Only the lowest bit of n is valid<br>This command is valid for both built-in and user-defined characters.<br>When the inverse mode is open, it is blank on the ESC set SP is also effective.<br>This command does not affect bitmap、user defined bitmap、bar code、HRI character、and the Space skipped by HT, ESC $。<br>This command does not affect line spacing.<br>Inverse mode prior to underline mode. When setting the visual mode, even if the open mode is also prohibited the underscore (but not cancel).<br>When ESC @, printer reset, power down, this instruction is set to fail. |
| Use example | 1b 40 1d 42 01<br>30 31 32 0d 0a<br>30 31 32 0d 0a |

## Set, remove underline

| | |
|---|---|
| Instruction name | Set, remove underline |
| Instruction code | ASCII ： ESC - n<br>Decimal system ： 27 45 n<br>Hexadecimal：1B 2D n |
| Function description | Based on the following n values, set / remove the underline mode：<br><br>n \| Function |

| | |
|---|---|
| | 0, 48 \| Remove the underline mode<br>1, 49 \| Set the underline mode (1 Point rough)<br>2, 50 \| Set the underline mode(2 Point rough) |
| Parameter range | 0 ≤ n ≤ 2, 48 ≤ n ≤ 50 |
| Default value | n = 0 |
| Support mode | All models |
| Matters needing attention | The printer can underline all characters (including the right side of the character), except for the blank set by the HT.<br>The printer can give clockwise 90 degrees of the characters and the reverse character print underlined.<br>When the n value is set to 0 or 48, the underline mode is removed, the following data is not printed,<br>And the roughness of the underline that is set before lifting the underline mode does not change.<br>The default underline is 1.<br>Changing the character size does not affect the coarseness of the current underline.<br>Use ESC, you can also set or remove the underline mode, but note that the last command is valid. |
| Use example | 1b 40 1b 2d 01<br>30 31 32 0d 0a<br>1b 40 1b 2d 02<br>30 31 32 0d 0a<br>1b 40 1b 2d 00<br>30 31 32 0d 0a |

## Set, release 90 degree rotary printing

| | |
|---|---|
| Instruction name | Set, release 90 degree rotary printing |
| Instruction code | ASCII ：ESC V n<br>Decimal system ：27 86 n<br>Hexadecimal：1B 56 n |
| Function description | Set, release 90 degree rotary printing.<br>When n is equal to 0 or 48, lift the 90 degree rotary printing.<br>When the n is equal to 1 or 49, set the 90 degree rotary printing. |
| Parameter range | 0 ≤ n ≤ 1， 48 ≤ n ≤ 49 |
| Default value | n = 0 |
| Support mode | All models |
| Matters needing attention | When the underline mode is set, the printer does not underline the character rotated 90 degrees clockwise<br>In the clockwise 90 degree rotation mode, double height and width is commanded that the direction enlarged |

| | |
|---|---|
| | character should be opposite to the command from the double height and width under the general mode.<br>When ESC @, printer reset, power down, this instruction is set to fail. |
| Use example | 1b 40 1b 56 01<br>30 31 32 0d 0a<br>30 31 32 0d 0a |

## Set print alignment mode

| | |
|---|---|
| Instruction name | Set print alignment mode （Left, Center, Right ） |
| Instruction code | ASCII ：ESC a n<br>Decimal system ：27 97 n<br>Hexadecimal：1B 61 n |
| Function description | Alignment of all data in a row, n value is as follows:<br>n model<br>0, 48 Left,<br>1, 49 Center<br>2, 50 Right |
| Parameter range | 0 ≤ n ≤ 2 or 48 ≤ n ≤ 50 |
| Default value | n = 0 |
| Support mode | All models |
| Matters needing attention | When ESC @, printer reset, power down, this instruction is set to fail. |
| Use example | 1B 40 1B 61 02<br>30 31 32 0D 0A<br>1B 40 1B 61 01<br>30 31 32 0D 0A<br>1B 40 1B 61 00<br>30 31 32 0D 0A |

## Set Chinese mode

| | |
|---|---|
| Instruction name | Set Chinese mode |
| Instruction code | ASCII ：FS &<br>Decimal system ：28 38<br>Hexadecimal：1C 26 |
| Function description | Select Chinese mode |
| Parameter range | not have |
| Default value | not have |

| | |
|---|---|
| Support mode | All models |
| Matters needing attention | When selecting a Chinese character pattern, the printer processes all Chinese characters, two bytes at a time.<br>In the order of the first byte and second byte handle the Chinese character code. |
| Use example | 1b 40 1C 26 B0 AE C9 CF D7 D4 BC BA 0d 0a<br>1C 2E B0 AE C9 CF D7 D4 BC BA 0d 0a |

## Cancel Chinese mod

| | |
|---|---|
| Instruction name | Cancel Chinese mode |
| Instruction code | ASCII ： FS .<br>Decimal system ： 28 46<br>Hexadecimal ： 1C 2E |
| Function description | Cancel Chinese mode |
| Parameter range | not have |
| Default value | not have |
| Support mode | All models |
| Matters needing attention | When you do not select the Chinese character pattern, all character code as a ASCII code, each character to deal with |
| Use example | not have |

## International character set

| | |
|---|---|
| Instruction name | International character set |
| Instruction code | ASCII ： ESC R n<br>Decimal system ： 27 82 n<br>Hexadecimal ： 1B 52 n |
| Function description | Set the international character set according to the value of N in the following table.<br><br>n Character set<br>0 U.S.A<br>1 France<br>2 Germany<br>3 Britain<br>4 Denmark I<br>5 Sweden<br>6 Italy<br>7 Spain I |

| | |
|---|---|
| | 8 Japan<br>9 Norway<br>10 Denmark II<br>11 Spain II<br>12 Latin America<br>13 Korea<br>14 Slovenia<br>15 China |
| Parameter range | 0 ≤ n ≤ 15 |
| Default value | 0 |
| Support mode | All models |
| Matters needing attention | Not have |
| Use example | 1B 40 1B 52 00<br>20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F 40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56 57 58 59 60 6A 6B 6C 6D 6E 6F 70 71 72 73 74 75 76 78 79 7A 7B 7C 7D 7E 0D 0A |

## Select character code page

| | |
|---|---|
| Instruction name | Select character code page |
| Instruction code | ASCII ：ESC t n<br>Decimal system ：27 116 n<br>Hexadecimal：1B 74 n |
| Function description | Select n from character code page<br><br>N code page<br>0 CP437 [U.S.A，European standard]<br>1 KataKana [Katakana]<br>2 CP850 [Multi language]<br>3 CP860 [Portugal]<br>4 CP863 [Canadian French]<br>5 CP865 [Northern Europe]<br>6 WCP1251 [Slavic]<br>7 CP866 Slavic2<br>8 MIK[Bulgarian / |

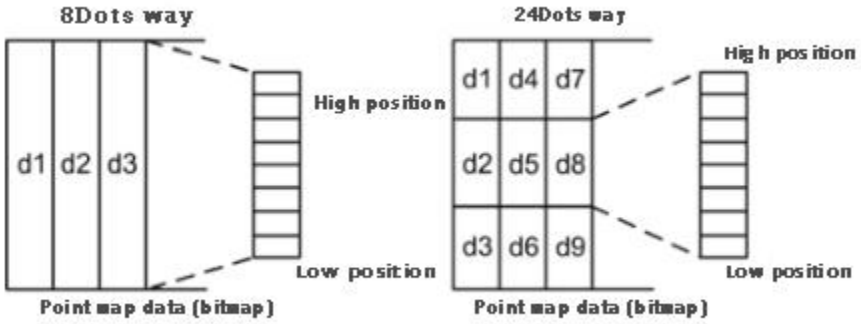
| | | |
|---|---|---|
| | | Slavic] |
| | 9 | CP755 [Eastern Europe, Latvia 2] |
| | 10 | [Iran, Persia] |
| | 11 | Retain |
| | 12 | Retain |
| | 13 | Retain |
| | 14 | Retain |
| | 15 | CP862 [Hebrew] |
| | 16 | WCP1252 [Latin1] |
| | 17 | WCP1253 [Greece] |
| | 18 | CP852 [Latin 2] |
| | 19 | CP858 [Multilingual Latin 1+ European symbols] |
| | 20 | Iran II [Persian] |
| | 21 | Latvia |
| | 22 | CP864[Arabic] |
| | 23 | ISO-8859-1 [Western Europe] |
| | 24 | CP737 [Greece] |
| | 25 | WCP1257 [The Baltic Sea] |
| | 26 | Thai |
| | 27 | CP720[Arabic] |
| | 28 | CP855 |
| | 29 | CP857[Turkish] |
| | 30 | WCP1250[central] |
| | 31 | CP775 |
| | 32 | WCP1254[Turkish] |
| | 33 | WCP1255[Hebrew] |
| | 34 | WCP1256[Arabic] |
| | 35 | WCP1258 [Vietnamese] |
| | 36 | ISO-8859-2[Latin 2] |
| | 37 | ISO-8859-3[Latin 3] |
| | 38 | ISO-8859-4[Baltic language] |
| | 39 | ISO-8859-5[Slavic] |
| | 40 | ISO-8859-6[Arabic] |
| | 41 | ISO-8859-7[Greek] |
| | 42 | ISO-8859-8[Hebrew] |
| | 43 | ISO-8859-9[Turkish] |
| | 44 | ISO-8859-15[Latin9] |

| | |
|---|---|
| | 45 [Thai2]<br>46 CP856<br>47 Cp874<br><br>255 GBK2312 |
| Parameter range | 0 ≤ n ≤ 255 |
| Default value | 0 |
| Support mode | All models |
| Matters needing attention | not have |
| Use example | 1B 40 1C 2E 1B 74 00<br>80 81 82 83 84 85 86 87 88 89 8A 8B 8C 8D 8E 8F 90 91 92 93 94 95 96 97 98 9A 9B 9C 9D 9E 9F A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE AF B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD BE BF C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 CA CB CC CD CE CF D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE DF E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC ED EE EF F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF 0D 0A |

## ③Graphic print instruction

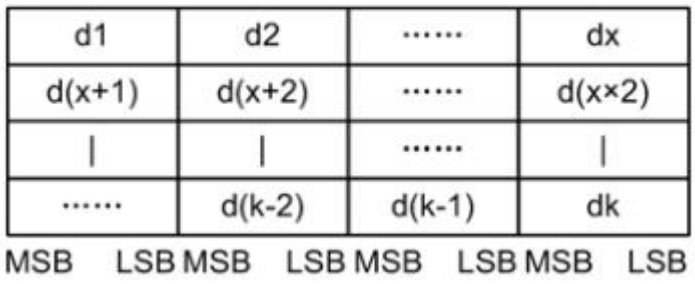
## Graphical vertical mode selection data fill

| | |
|---|---|
| Instruction name | Graphical vertical mode selection data fill |
| Instruction code | ASCII ：ESC * m Hl Hh [d]k<br>Decimal system ：27 42 m Hl Hh [d]k<br>Hexadecimal ：1B 2A m Hl Hh [d]k |
| Function description | Print longitudinal image data, the parameters are as follows：<br>M as a bitmap format：<br>m Pattern Horizontal proportion Vertical proportion<br>0 8dot single density ×2 ×3<br>1 8dot double density ×1 ×3<br>32 24dot single density ×2 ×1<br>33 24dot double density ×1 ×1<br>Hl, Hh for horizontal points（Hl＋256×Hh）<br>[d]k is the point data<br>K is used to indicate the number of bytes in the data point, not to transmit. |
| Parameter range | XX58：<br>m = 0、1、32、33<br>1 ≤ Hl + Hh × 256 ≤ 384<br>0 ≤ d ≤ 255 |

| | |
|---|---|
| | k = Hl + Hh × 256（ m = 0、1）<br>k = ( Hl + Hh × 256 ) × 3（ m = 32、33）<br>XX80：<br>m = 0、1、32、33<br>1 ≤ Hl + Hh × 256 ≤ 576<br>0 ≤ d ≤ 255<br>k = Hl + Hh × 256（ m = 0、1）<br>k = ( Hl + Hh × 256 ) × 3（ m = 32、33） |
| Default value | not have |
| Support mode | All models |
| Matters needing attention | [d]k corresponding to 1 points that the point of print, the corresponding bit is 0, then the point is not printed.<br>The part of the image that is horizontally out of print will be ignored.<br>The relationship between the point data and the printing effect is as follows:<br>  <br><br>This instruction is only filled with the print buffer. The image is printed only after the print command is received.<br>If you need to print the image height is large, you can first split into a number of height of 8 (M = 0,1) or (M = 32,33) points of the images were printed.<br>After filling the graphic data, you can continue to fill other information so that the graphics are printed with other information. After filling the point map, the general use of ESC J (n = 24) instructions for printing,You can also use the LF command to print, but the LF command will lead to feed operation (by spacing feed), multi line image discontinuity,You can set the line spacing is 0, not too much paper.<br>（Needle printer will be offset, if there is a break in the middle, please continue to send data） |
| Use example | 1B 40<br>1b 2a 00 0C 00 FF FF FF FF FF FF FF FF FF FF FF FF<br>1B 33 00<br>0A |

## Picture level model data printing

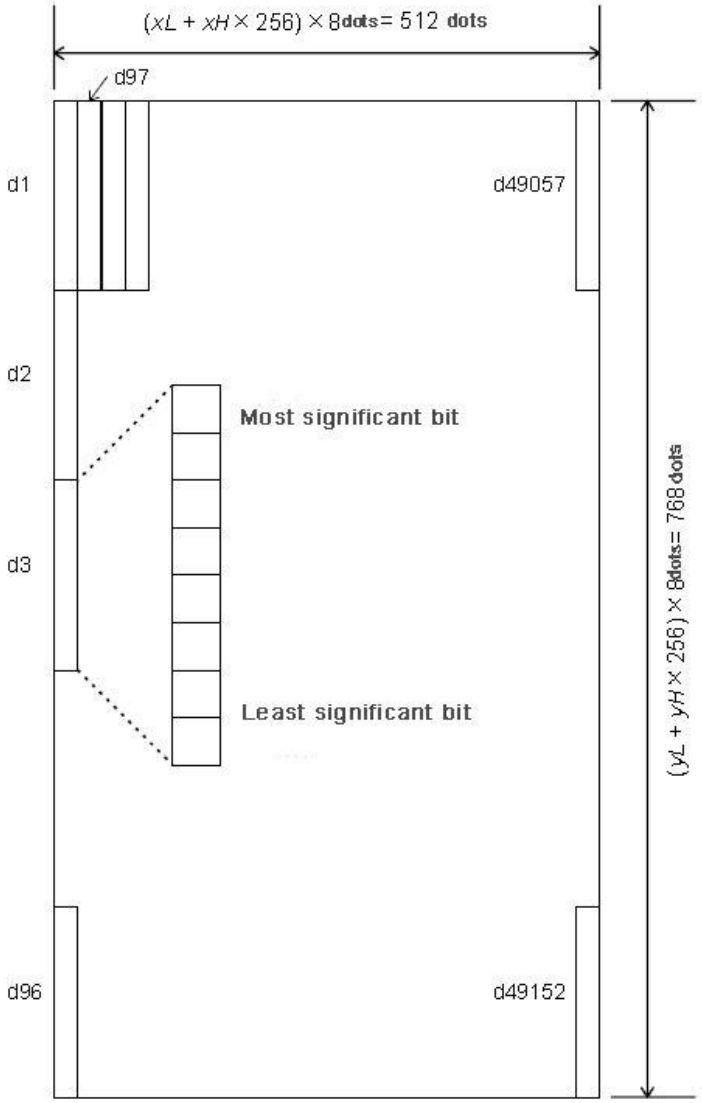
| | |
|---|---|
| Instruction name | Picture level model data printing |
| Instruction code | ASCII ： GS v 0<br>Decimal system ： 29 118 48 m xL xH yL yH [d]k<br>Hexadecimal ： 1D 76 30 m xL xH yL yH [d]k |
| Function description | Print the image data, and the parameters are as follows:<br>M bitmap mode:<br>m model Horizontal proportion Vertical proportion<br>0,48 normal × 1 × 1<br>1,49 double width × 2 × 1<br>2,50 double height × 1 × 2<br>3,51 double width and height × 2 × 2<br>XL, xH is the number of bytes in the horizontal direction（xL + xH × 256）<br>YL, yH for vertical direction points（yL + yH × 256）<br>[d]k is the point data.<br>K is the number of bytes of data points, K is used to indicate, without transmission. |
| Parameter range | XX58：<br>0 ≤ m ≤ 3；48 ≤ m ≤ 51<br>1 ≤ xL + xH×256 ≤ 48<br>0 ≤ yL ≤255，0 ≤ yH ≤255<br>0 ≤ d ≤ 255<br>k = (Hl + Hh×256)×(yL + yH×256)<br>XX80：<br>0 ≤ m ≤ 3；48 ≤ m ≤ 51<br>1≤ xL + xH×256 ≤ 72<br>0 ≤ yL ≤ 255，0 ≤ yH ≤ 255<br>0 ≤ d ≤ 255<br>k = (Hl + Hh×256)×(yL + yH×256) |
| Default value | not have |
| Support mode | All models |
| Matters needing attention | [d]k corresponding to 1 points that the point of print, the corresponding bit is 0, then the point is not printed.<br>If the number of bytes in the image level exceeds the print area, the excess portion will be ignored.<br>This instruction is executed according to the image size is not affected by the feed, ESC 2, ESC 3 line spacing effect.<br>After this command is executed, the print coordinates are reset to the left position, and the image content is empty.<br>The relationship between bitmap data and print results is as follows: |

| | |
|---|---|
| |  <br>This instruction has a printing function, the edge of the data side printing, no need to use the print command. |
| Use example | 1B 40<br>1d 76 30 00 03 00 09 00<br>FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF |

## Define NV bitmap

| | |
|---|---|
| Instruction name | Define NV bitmap |
| Instruction code | ASCII ： FS q n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n<br>Decimal system ： 28 113 n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n<br>Hexadecimal ： 1C 71 n [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]n |
| Function description | Defines a NV bitmap with a specific n value.<br>N specifies the number of NV bitmaps defined<br>XL, xH for the definition of the NV bitmap to specify the number of points in the horizontal direction (xL+xH*256) *8.<br>YL, yH for the definition of the NV bitmap to specify the number of points in the vertical direction (yL+yH*256) *8. |
| Parameter range | 1 ≤ n ≤ 255<br>0 ≤ xL ≤ 255<br>0 ≤ xH ≤ 3<br>(1 ≤ (xL+xH*256) ≤ 1023)<br>0 ≤ yL ≤ 255）<br>0 ≤ yH ≤ 1<br>(1 ≤ (yL+yH*256) ≤ 288)<br>0 ≤ d ≤ 255）<br>k = (xL+xH*256)*(yL+yH*256)*8<br>Total defined data area = 64K bytes |
| Default value | not have |
| Support mode | All models |
| Matters needing attention | Frequent execution of write commands maybe damage NV storage.<br>Therefore, it is recommended that one day be performed on the NV storage for no more than 10 write operation. |

| | |
|---|---|
| | After an image is placed in the NV storage, the printer performs a hardware reset operation.<br>Therefore, the user - defined character, the next - pass bitmap should be defined after completion of the command. Printer clear receive and print buffer, and reset to the effective mode when connect to the power supply.<br>（Hardware reset interface not supported）<br>This command cancels all NV bitmaps that have been defined with this command.<br>Mechanical operation cannot be performed during the processing of this command until the hardware reset is completed.（Including when the cover is open initialize the print head position paper feed button etc.)<br>During this command processing, the printer is busy and stops receiving data when writing data to the user's NV memory.<br>Therefore, it is forbidden to transfer data during execution of this command, including real-time commands.<br>A NV bitmap is a bitmap defined in a non-volatile memory.<br>Using FS Q definition FS P printing.<br>In standard mode, the command is valid only when a row is started.<br>The order of the 7 bytes of the <FS~yH> is normally processed after the command is valid.<br>When the amount of data exceeds the xL, x, yL, yH defined by the range of the left capacity,The printer will handle the range defined by xL, xH, yL, and yH beyond the defined scope.<br>In the first set of bitmaps, When xL, xH, yL, and yH are out of bounds for any parameter, the command is disabled.<br>In a group of bitmaps that are not the first group,When the printer encounters xL, xH, yL, yH beyond the defined range, The command is stopped and then start to write the NV image. Now,The NV bitmap that has not been defined is not available (undefined), But any previously defined NV bitmap is still valid.<br>D represents the definition of data, In data (d), a 1 bit specifies a point to be printed and a 0 bit specifies a point that is not printed.<br>This command defines n as the number of NV bitmaps.The number starts from the bitmap 01H order.<br>So the first data set [xL xH yL yH d1...dk] is the NV bitmap of 01H ，the last data set [xL xH yL yH d1...dk] is the NV bitmap of n .The total number is consistent with the number of FS P commands set in the NV bitmap.<br>The definition of a NV bitmap data is composed of [xL xH yH D1... Dk] yL. So, when only one NV bitmap is n=1, the printer only processes the data set [xL xH yH D1 yL dk] at a time. |

| | |
|---|---|
| | The printer uses NV memory ([data: (xL+xH *256) * (yL+yH*256) * *8]+[header:4]) bytes.<br>The definition of this printer is 192K bytes (max). The command can define several bitmaps, but can not define the total data capacity [bitmap data + head] more than 192K bytes of the bitmap.<br>Even if the ASB is set, the printer does not transmit the ASB state or the execution state detection during processing the command.<br>Once a NV bitmap is defined, it cannot be executed by the ESC @ command, reset, and power down.<br>This command executes only the definition of the NV bitmap, and the printing of the.NV bitmap that does not execute is performed by the FS P command.<br>Graphic： xL = 64, xH = 0, yL = 96, yH = 0<br>  <br> |
| Use example | 1B 40<br>1C 71 01 03 00 03 00<br>FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF |

| | |
|---|---|
| | FF FF FF

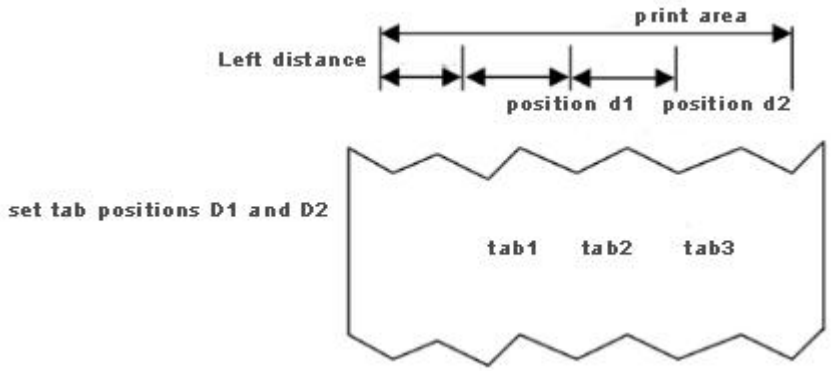
④Tab command

## Horizontal tabulation

| | |
|---|---|
| Instruction name | Horizontal tabulation |
| Instruction code | ASCII ：HT<br>Decimal system ：9<br>Hexadecimal：09 |
| Function description | Move the printing position to the next tab position |
| Parameter range | not have |
| Default value | not have |
| Support mode | All models |
| Matters needing attention | Tab position set by ESC D<br>This command will be treated as a LF instruction if the tab position is not set (the default level is not a tab stop)<br>If the tab position exceeds the print area, the coordinates will be moved to the start of the next line newline) |
| Use example | Not have |

## Setting level tab position

| | |
|---|---|
| Instruction name | Setting level tab position |
| | ASCII ：ESC D [d]k NUL<br>Decimal system ：27 68 [d]k 0<br>Hexadecimal ：1B 44 [d]k 00 |
| Function description | Set the horizontal tab position, the parameters are as follows:<br>d1 ... dk：Setting level tab position，Take 8 points for unit. NULL is the end symbol |
| Parameter range | XX58：1 ≤ d ≤ 46（d1 <d2 < …… dk ，1 ≤ k ≤ 16）<br>XX80：1 ≤ d ≤ 70（d1 < d2 < …… dk ，1 ≤ k ≤ 16） |
| Default value | [d]k = 0（Default no level tab position） |
| Support mode | All models |
| Matters needing attention | Tab position is as follows: |

| | |
|---|---|
| |  <br>Maximum support 16 tab position setting.<br>Use this command to cancel the previous tab location settings.<br>K is for the use of signs, without transmission.<br>When the transmission [d]k encounters NULL, it is regarded as the end.<br>If DK is less than or equal to DK-1, it is regarded as the end, and the remaining data is treated as ordinary data.<br>Tab position can be switched by HT.<br>When the left margin changes, the tab position changes.<br>When ESC @, printer reset, power down, this instruction is set to fail. |
| Use example | not have |

## ⑤Dimension bar code printing command

### Select the print position HRI characters

| | |
|---|---|
| Name | Select the print position HRI characters |
| Format | ASCII ： GS H n<br>Decimal code ： 29 72 n<br>Sixteen hexadecimal code ： 1D 48 n |
| Description | Print bar code print position HRI characters<br>n Select the print position as shown below:<br>n print position<br>0，48 not print<br>1，49 in the bar code<br>2，50 in the code below<br>3，51 in the upper part and the lower part of the bar code |
| Range | 0 ≤ n ≤ 3 or 48 ≤ n ≤ 51 |
| Default | n = 0 |
| Model | ALL |
| Be careful | When ESC @, printer reset, power down, the set of the command is failure |
| Using sample | none |
| Instruction | Set barcode readable character (HRI) print position |

| name | |
|---|---|
| Instruction code | ASCII ： GS H n<br>Decimal system ： 29 72 n<br>Hexadecimal ： 1D 48 n |
| Description | Print bar code print position HRI characters<br>n Select the print position as shown below:<br>n print position<br>0，48 not print<br>1，49 in the bar code<br>2，50 in the code below<br>3，51 in the upper part and the lower part of the bar code |
| Range | 0 ≤ n ≤ 3 or 48 ≤ n ≤ 51 |
| Default | n = 0 |
| Model | ALL |
| Be careful | When ESC @, printer reset, power down, the set of the command is failure |
| Using sample | none |

## Set the height of bar code

| Name | Set the height of bar code |
|---|---|
| Format | ASCII ： GS h n<br>Decimal code ： 29 104 n<br>Sixteen hexadecimal code ： 1D 68 n |
| Description | Set the height of bar code. n set the vertical point<br> |
| Range | 1 ≤ n ≤ 255 |
| Default | n = 64 |
| Model | ALL |
| Be careful | When ESC @, printer reset, power down, the set of the command is failure |
| Using sample | none |

## Set the bar width

| Name | Set the bar width |
|---|---|
| Format | ASCII ： GS w n<br>Decimal code ： 29 119 n<br>Sixteen hexadecimal code ： 1D 77 n |
| Description | Set the bar code level size. n set the bar width |

| | |
|---|---|
| | Width 3<br> Width 4 |
| Range | 1 ≤ n ≤ 6 |
| Default | n = 2 |
| Model | ALL |
| Be careful | When ESC @, printer reset, power down, the set of the command is failure |
| Using sample | none |

## Barcode printing

| Name | Barcode printing |
|---|---|
| Format | **(A)** ASCII ： GS k m [d]k NUL<br>Decimal code ： 29 107 m [d]k NUL<br>Sixteen hexadecimal code ： 1D 6B m [d]k NUL<br>**(B)** ASCII ： GS k m n [d]k<br>Decimal code ： 29 107 m n [d]k<br>Sixteen hexadecimal code ： 1D 6B m n [d]k |
| Description | Print barcode, the parameters are shown below:<br>m is encoder mode<br>n is length of coded data，only (B) use，the difference between (A) and (B) is the ending method that the data segment of (A) end of NULL code， but the (B) end of the length of the command data<br>[d]k is code data<br>k is length of the bar code data, used to indicate not transmission.<br>The relationship between parameters as system：<br>**(command A)** |

| m | Bar code system | Bar code data（SP = space） | | | |
|---|---|---|---|---|---|
| | | Data length | k | Character set | data（d） |
| 0 | UPC-A | fixed | k = 11，12 | 0~9 | 48≤d≤57 |
| 1 | UPC-E | fixed | 6≤k≤8，<br>k = 11，12 | 0~9 | 48≤d≤57<br>[ k = 7,8,11,12，<br>d1 = 48 ] |
| 2 | JAN13 (EAN13) | fixed | k = 12，13 | 0~9 | 48≤d≤57 |
| 3 | JAN8 (EAN8) | fixed | k = 7，8 | 0~9 | 48≤d≤57 |
| 4 | CODE39 | changeable | 1≤k≤255 | 0~9，A~Z<br>SP，$，%，+， | 48≤d≤57，<br>65≤d≤90， |

| | | | | | |
|---|---|---|---|---|---|
| | | | | -，.，/ | d = 32，36，37，42，43，45，46，47 |
| 5 | ITF (Interleaved 2 of 5) | changeable | 2≤k≤255（even number） | 0~9 | 48≤d≤57 |
| 6 | CODABAR (NW-7) | changeable | 1≤k | 0~9，A~D，a~d $，+，-，.，/，: | 48≤d≤57，65≤d≤68，97≤d≤100，d = 36，43，45，46，47，58 (65≤d1≤68，65≤dk≤68，97≤d1≤100，97≤dk≤100) |

**(command B)**

| m | Bar code system | Bar code data（SP=space） | | | |
|---|---|---|---|---|---|
| | | Data length | n | Character set | data（d） |
| 65 | UPC-A | fixed | n = 11，12 | 0~9 | 48≤d≤57 |
| 66 | UPC-E | fixed | 6≤n≤8，n = 11，12 | 0~9 | 48≤d≤57 [当 n = 7,8,11,12，d1 = 48 ] |
| 67 | JAN13 (EAN13) | fixed | n = 12，13 | 0~9 | 48≤d≤57 |
| 68 | JAN8 (EAN8) | fixed | n = 7，8 | 0~9 | 48≤d≤57 |
| 69 | CODE39 | changeable | 1≤n≤255 | 0~9，A~Z SP，$，%,+，-，.，/ | 48≤d≤57，65≤d≤90，d = 32，36，37，42，43，45，46，47 |
| 70 | ITF (Interleaved 2 of 5) | changeable | 1≤n≤255（even number） | 0~9 | 48≤d≤57 |
| 71 | CODABAR (NW-7) | changeable | 1≤n≤255 | 0~9，A~D，a~d $，+，-，.，/，: | 48≤d≤57，65≤d≤68，97≤d≤100，d = 36，43，45，46，47，58 (65≤d1≤68， |

<table>
<tr><td></td><td>
<table>
<tr><td></td><td></td><td></td><td></td><td></td><td>65≤dk≤68，<br>97≤d1≤100，<br>97≤dk≤100)</td></tr>
<tr><td>72</td><td>CODE93</td><td>change able</td><td>1≤n≤255</td><td>00H~7FH</td><td>0≤d≤127</td></tr>
<tr><td>73</td><td>CODE128</td><td>change able</td><td>2≤n≤255</td><td>00H~7FH</td><td>0≤d≤127</td></tr>
<tr><td>74</td><td>UCC/EAN128</td><td>change able</td><td>2≤n≤255</td><td>00H~7FH<br>C1H~C4H(FNC )</td><td>0≤d≤127<br>d = 193，<br>194,195,196</td></tr>
</table>
</td></tr>
<tr><td>Range</td><td>(A) 0 ≤ m ≤ 6<br>(B) 65 ≤ m ≤ 74</td></tr>
<tr><td>Default</td><td>none</td></tr>
<tr><td>Model</td><td>ALL</td></tr>
<tr><td>Be careful</td><td>If bar code width exceeds the specified range, the printer can’t execute bar code printing.<br>The command to print bar code requirements for feed, regardless of ESC 2 or ESC 3 set line spacing.<br>This command is not affected by ESC! Character style.<br>Print bar codes, the command will print position is set at the start of a line.<br>When m:0-6(A)& 65-71(B) choose the same bar code system, the printing effect is the same.<br>m= 0-6(A), the code by the end of NULL code.<br>m= 65-74(A), the code use n to express data length<br>k Used for illustration, no transmission required<br>k use to indicate not transmission<br>When printing UPCA(m=0 or 65，need noted：<br>Regardless of the input data length is 11 or 12, check bit will automatically insert or error correction。<br>The starting character, middle separator character, terminator inserted automatically.<br>When printing UPCE(m=1 or 66), need noted:<br>When data length is 6, system character(NSC)0 insert automatically<br>When data length is 7,8,11,12, the first system character (NSC)d1 must be 0<br>Regardless of input data length is 6,7,8,11 or 12, check bit will insert or error correction automatically.<br>Regardless of input data length is 6,7,8,11or 12, barcode readable characters(HRI) only show 6 bits of data, not include system (NSC) and check code;<br>The transformation relationship of transmission data and printing data is as follows:</td></tr>
</table>

| The data transfered | | | | | | | | | | The data printed | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d2 | d3 | d4 | d5 | d6 | d7 | d8 | d9 | d10 | d11 | d1 | d2 | d3 | d4 | d5 | d6 |
| 0~9 | 0~9 | 0 | 0 | 0 | - | - | 0~9 | 0~9 | 0~9 | d2 | d3 | d9 | d10 | d11 | 0 |
| 0~9 | 0~9 | 1 | 0 | 0 | - | - | 0~9 | 0~9 | 0~9 | d2 | d3 | d9 | d10 | d11 | 1 |
| 0~9 | 0~9 | 2 | 0 | 0 | - | - | 0~9 | 0~9 | 0~9 | d2 | d3 | d9 | d10 | d11 | 2 |
| 0~9 | 0~9 | 3~9 | 0 | 0 | - | - | - | 0~9 | 0~9 | d2 | d3 | d4 | d10 | d11 | 3 |
| 0~9 | 0~9 | 0~9 | 1~9 | 0 | - | - | - | - | 0~9 | d2 | d3 | d4 | d5 | d11 | 4 |
| 0~9 | 0~9 | 0~9 | 0~9 | 1~9 | - | - | - | - | 5~9 | d2 | d3 | d4 | d5 | d6 | d11 |

When d6 is 1-9, it should ensure d7,d8,d9,d10 is 0, d11 is 5-9.

The Start character and terminator insert automatically.

When print EAN13（m = 2 or 67）, need noted：

Regardless of input data length is 12 or 13, check bits insert or error correction automatically.

The starting character, middle separator character, terminator inserted automatically.

When print EAN8（m = 3 or 68）, need noted：

Regardless of input data length is 7 or 8, check bits insert or error correction automatically.

The starting character, middle separator character, terminator inserted automatically.

When print CODE39（m = 4 or 69）时, need noted：

When d1 or dn is not starting character/ terminator “*”, coder insert “*” automatically.

When data meet “*”, coder see it as the terminator, the other data as a common data to process;

Check code do not calculate and add automatically

When print ITF25（m = 5 or 70）, need noted：

The Start character and terminator insert automatically.

Check code do not calculate and add automatically.

When print CODABAR（NW-7）（m = 6 or 71）, need noted：

The Start character and terminator do not insert automatically, need user add manually, the range is “A”～“D” or “a”～“d”

Check code do not calculate and add automatically.

Print CODE93（m = 72）， need noted：

The Start character and terminator insert automatically.

Two check code calculate and add automatically.

When setting code readable character（HRI）to print, not setting any HRI code to show begin/end.

When setting code readable character（HRI）to print,control code is replaced by space.

When using the CODE128 (M = 73)：

On the CODE128 bar code and code table information, see Appendix D.

In the printer when you use CODE128, please consider the following factors on data transfer:

① The bar code data string head have to choose coded character set (CODE A, CODE B, or CODE C), is used to select the first use of the code set.

② The character "{" and a combination of characters to define the special characters. Through the continuous transmission of two "ASCII" {{"definition of character".

**ASCII** code, Sixteen hexadecimal code, Decimal code

| Special characters | Data transmission | | |
|---|---|---|---|
| | ASCII code | | ASCII code |
| SHIFT | {S | 7B,53 | 123，83 |
| CODEA | {A | 7B,41 | 123，65 |
| CODEB | {B | 7B,42 | 123，66 |
| CODEC | {C | 7B,43 | 123，67 |
| FNC1 | {1 | 7B,31 | 123，49 |
| FNC2 | {2 | 7B,32 | 123，50 |
| FNC3 | {3 | 7B,33 | 123，51 |
| FNC4 | {4 | 7B,34 | 123，52 |
| “{” | {{ | 7B,7B | 123，123 |

[Example] Print "instance data No. 123456."

In this case, the printer first by using the CODE B print "No.", and then use the CODE C to print the following numbers.

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

CODE 128:

1b 40 1d 48 02 1d 68 64 1d 77 03

1d 6b 49 0A 7B 42 4E 6F 2E 7B 43 0C 22 38

- If the bar code data string head not code set select the character, the printer stop command processing, and the subsequent data processing as general data.
- If ″{″ and subsequent characters are not applicable to any special characters, the printer stop command processing, and the subsequent data processing as general data.
- If the printer received cannot be used for special code set of characters, the printer stop command processing, and the subsequent data processing as general data.
- Select the HRI character corresponding character printer does not print and shift character or code set.

| | |
|---|---|
| | • The functional character of the HRI character is blank.<br>• The control characters (<00>H? <1F>H and <7F>H) of the HRI character is blank.<br>< Other > To confirm the reservation about spacing in the bar code. (according to different spacing bar code types are also different. ) |
| Use example | 1b 40 1d 48 02 1d 68 64 1d 77 03<br>30 0D 0A<br>1d 6b 00 30 31 32 33 34 35 36 37 38 39 31 00<br>31 0D 0A<br>1d 6b 01 30 31 32 33 34 35 36 37 38 39 31 00<br>32 0D0A<br>1d 6b 02 30 31 32 33 34 35 36 37 38 39 31 32 00<br>33 0D 0A<br>1d 6b 03 30 31 32 33 34 35 36 37 00<br>34 0D 0A<br>1D 6B 04 30 31 32 41 42 20 24 25 2B 2D 2E 2F 00<br>35 0D 0A<br>1d 6b 05 30 31 32 33 34 35 36 37 38 39 31 32 00<br>36 0D 0A<br>1d 6b 06 2D 31 32 42 24 2B 2D 2E 00<br>1d 6b 06 43 31 32 33 34 35 36 34 38 39 00<br><br>36 35 0D 0A<br>1d 6b 41 0c 31 32 33 34 35 36 37 38 39 30 31 32<br>36 36 0D 0A<br>1d 6b 42 0c 30 32 33 34 35 36 30 30 30 30 38 39<br>36 37 0D 0A<br>1d 6b 43 0c 30 32 33 34 35 36 30 30 30 30 38 39<br>36 38 0D 0A<br>1d 6b 44 08 30 32 33 34 35 36 30 30<br>36 39 20 20 4e 4f 20 24 25 2b 2d 2e 2f 31 32 33 34 35 36 30 30 0D 0A<br>1d 6b 45 11 4e 4f 20 24 25 2b 2d 2e 2f 31 32 33 34 35 36 30 30<br>37 30 20 20 20 30 32 33 34 35 36 30 30 C5 BC CA FD 0D 0A<br>1d 6b 46 09 30 31 32 33 34 35 36 30 30<br>37 31 0d 0a<br>1d 6b 47 05 32 33 34 35 36<br>37 32 0d 0a<br>1d 6b 48 0b 32 33 34 35 36 41 42 2e 2f 2b 2c<br>37 33 0d0a<br>1d 6b 49 0A 7B 42 4E 6F 2E 7B 43 0C 22 38<br><br>**Code 128 ：**<br>1b 40 1d 48 02 1d 68 64 1d 77 03 |

| | |
|---|---|
| | 37 33 0d0a<br>1d 6b 49 0A 7B 42 4E 6F 2E 7B 43 0C 22 38 |

## ⑥State command

### Real-time transmission condition

| Name | Real-time transmission condition |
|---|---|
| Format | ASCII ：DLE EOT n<br>Decimal code ：16 4 n<br>Sixteen hexadecimal code ：10 04 n |
| Description | According to following parameters, real-time to transmit printer condition, parameters n is used to assign printer condition need transmit.:<br>n = 1：tansmit printer condition<br>n = 2：transmit off-line condition<br>n = 3：transmit error condition<br>n = 4：transmit paper sensor condition |
| Range | 1 ≤ n ≤ 4 |
| Default | none |
| Model | ALL |

Be careful

• when printer receive this command return to relative condition immediately
• this command do not insert to command sequence with two or more bytes as far as possible.
• Even if printer is set to ban by ESC=(select peripherals),this command is still valid.
• printer transmit advanced condition, each condition use 1 bytes data to express.
• printer transmission status is not confirmed whether the host receive.
• printer should execute immediately receiving this command.
• This command only effect for serials printer. Printer should execute immediately receiving this command at any condition.

n=1：printer condition

| Bit | 0/1 | Sixteen hexadecimal code | Decimal code | function |
|---|---|---|---|---|
| 0 | 0 | 00 | 0 | Fixed is 0 |
| 1 | 1 | 02 | 2 | Fixed is 1 |
| 2 | 0 | 00 | 0 | Open One or two cashbox (the machine without cashbox is fixed 0 |
| | 1 | 04 | 4 | Close two cashbox |
| 3 | 0 | 00 | 0 | On-line |
| | 1 | 08 | 8 | Out -line |
| 4 | 1 | 10 | 16 | Fixed is 1 |
| 5, 6 | | -- | -- | undefined |
| 7 | 0 | 00 | 00 | Paper had cut |
| | 1 | 80 | 96 | Paper not cut |

n=2：transmit out-line status

| bit | 0/1 | Sixteen hexadecimal code | Decimal code | function |
|---|---|---|---|---|
| 0 | 0 | 00 | 0 | Fixed is 0 |
| 1 | 1 | 02 | 2 | Fixed is 1 |
| 2 | 0 | 00 | 0 | Close on-housing |
| | 1 | 04 | 4 | Open on-housing |
| 3 | 0 | 00 | 0 | No press feeding key |
| | 1 | 08 | 8 | Press feeding key |
| 4 | 1 | 10 | 16 | Fixed is 1 |
| 5 | 0 | 00 | 0 | Printer with paper |
| | 1 | 20 | 32 | Printer without paper |
| 6 | 0 | 00 | 00 | No error |
| | 1 | 40 | 64 | Have Error |

| | | | | | |
|---|---|---|---|---|---|
| | 7 | 0 | 00 | 0 | Fixed |

n=3：transmit error status

| bit | 0/1 | Sixteen hexadecimal code | Decimal code | function |
|---|---|---|---|---|
| 0 | 0 | 00 | 0 | Fixed is 0 |
| 1 | 1 | 02 | 2 | Fixed is 1 |
| 2 | | -- | -- | Undefined |
| 3 | 0 | 00 | 0 | Cutter without error |
| | 1 | 08 | 8 | Cutter with error |
| 4 | 1 | 10 | 16 | Fixed is 1 |
| 5 | 0 | 00 | 0 | No unrecoverable error |
| | 1 | 20 | 32 | Have unrecoverable error |
| 6 | 0 | 00 | 00 | printer head temp and voltage is normal |
| | 1 | 40 | 64 | printer head temp or voltage exceed range |
| 7 | 0 | 00 | 0 | Fixed is 0 |

n=4：transmit paper sensor status

| bit | 0/1 | Sixteen hexadecimal code | Decimal code | function |
|---|---|---|---|---|
| 0 | 0 | 00 | 0 | Fixed is 0 |
| 1 | 1 | 02 | 2 | Fixed is 1 |
| 2， | 0 | 00 | 0 | Have paper |
| 3 | 1 | 0C | 12 | Paper nearly |
| 4 | 1 | 10 | 16 | Fixed is 1 |
| 5， | 0 | 00 | 0 | Have paper |
| 6 | 1 | 60 | 96 | No paper |
| 7 | 0 | 00 | 0 | Fixed is 0 |

| | |
|---|---|
| Using sample | 10 04 01<br>10 04 02<br>10 04 03<br>10 04 04 |

## Real-time printer command

| | |
|---|---|
| Name | Real-time printer command |
| Format | ASCII ： DLE ENQ n<br>Decimal code ： 16 5 n |

<table>
<tr><td></td><td>Sixteen hexadecimal code ： 10 05 n</td></tr>
<tr><td>Description</td><td>The printer response to the host request. Assign n as following request：
<table>
<tr><td>n</td><td>request</td></tr>
<tr><td>1</td><td>Recover from error and start printing from error line</td></tr>
<tr><td>2</td><td>Recover from error after clean receiving and printing buffer.</td></tr>
<tr><td></td><td></td></tr>
</table></td></tr>
<tr><td>Range</td><td>n = 1, 2</td></tr>
<tr><td>Default</td><td>none</td></tr>
<tr><td>Model</td><td>ALL</td></tr>
<tr><td>Be careful</td><td>Only when auto-cutter and opening housing have error, this command is valid.<br>The printer will handle data when receiving this command.<br>Even if printer at out-line, printing buffer is full or serial interface mode have error, this command also execute.<br>Under parallel interface mode, this command will not execute.<br>whenever you receive <10>H<05>H<n> (1≤n≤2) data sequence, will be sent condition.<br>For example:<br>ESC * m nL nH dk , d1 = <10>H, d2 = <05>H, d3 = <01>H<br>In a command data with two or more bytes, this command is not used.<br>For example：<br>If want to send ESC 3n to printer, but before n send, DTR(response to host is DSR) will become MARK. Before n send, take place FLE ENQ 2 interrupt. DLE ENQ 2 code <10>H will be as ESC3 code <10>H to execute.<br>DLE ENQ 2 allow printer recover from error condition after clean receiving buffer and printing buffer data. The printer store valid state setting when error occur.(like ESC !， ESC3, etc) can use this command and ESC@ initialize printer fully. In addition, this command only valid for recoverable error except printer head temp error.</td></tr>
<tr><td>Using sample</td><td>10 05 01</td></tr>
</table>

# ⑦Other command

## Initialize printer

| Name | Initialize printer |
|---|---|
| Format | ASCII ： ESC @<br>Decimal code ： 27 64<br>Sixteen hexadecimal code ： 1B 40 |
| Description | The content of initialize printer：<br>Remove the print data in the buffer, the effective mode reset the printer model to open the printer power supply. |
| Range | none |
| Default | none |
| Model | ALL |

| | |
|---|---|
| Be careful | none |
| Using sample | none |

## Self testing page print

| | |
|---|---|
| Name | Self testing page print |
| Format | ASCII ： DC2 T<br>Decimal code ： 18 94<br>Sixteen hexadecimal code ： 12 54 |
| Description | Self testing page print |
| Range | none |
| Default | none |
| Model | ALL |
| Be careful | none |
| Using sample | 1B 40 12 54 |