Directories

1st

Chapter 1 General printing and setting command

1.1 ESC   SO

[Name] 【Setting the double width mode of characters】

[Format]   ASCII code   ESC   SO

Hexadecimal code   1B   0E

Decimal code   27   14

[Description] Setting the double width of character

After this command ,All character will be printed by double width.

After this command,it can be recovered the normal width by "carriage return" or the command of "DC4"

1.2 ESC   DC 4

[Name] 【 Cancel the Chinese characters double width mode】

[Format]   ASCII code   ESC   DC4

Hexadecimal code   1B   14

Decimal code   27   20

[Description] Cancel the double width setting of and character

After the SO command ,it can be recovered the normal printing width by this "DC4" command

1.3 ESC   SP   n

[Name] 【Setting the right side character spacing 】

[Format]   ASCII code   ESC   SP   n

Hexadecimal code   1B   20   n

Decimal code   27   32   n

[Range]   0≤n≤255 (Defaults value n= 0)

[Description] Setting the right side spacing of the characters to[n*0. 125m m]。

[Note]•For double width mode,The right side spacing of the character is the twice of the general mode .When the character is amplified, the right side character spacing is the n times of the general mode

•This command does not affect the setting of characters。

•This command can set the value standard patterns in each mode independent .

1.4 ESC $ nL   nH

[Name]【Setting the absolute print position 】

[Format]   ASCII code   ESC $ nL   nH

Hexadecimal code   1B   24   nL   nH

Decimal code   27   36   nL   nH

[Range]   0≤nL≤   55   0≤nH≤255

[Description]Setting the distance between the beginning of a line to the position of character

which will print..

[Note]The distance between the beginning of a line to the print position is [(nL+nH*256)*0.125mm]。

- The setting about the area outside the specific print area will be ignored.
- n the standard model ,using the horizontal motor unit-(x)。

[Reference] ESC \, GS $, GS \

1.5 ESC V   n

[Name]【set/cancel clockwise 90°rotating 】

[Format]   ASCII code   ESC   V   n

Hexadecimal Code   1B   56   n

Decimal Code   27   86   n

[Range]0≤n≤1,48≤n≤49

[Description] set/cancel clockwise 90°rotating

The use of n as shown below:

n   function

0, 48   cancel the clockwise 90°   rotation

1, 49   Start the clockwise 90°   rotation

[Note]•The command will affect the print under standard mode, and the set up is always valid.

        •The underline mode doesn't work for clockwise rotate 90°character under clockwise rotation 90°mode,the character print by double width and double height command is in the opposite direction to general case

[Default value]n=0

[Reference] ESC!, ESC-

1.6 ESC { n

[Name]【 Set/remove reverse print mode 】

[Format]   ASCII code   ESC   {   n

Hexadecimal code   1B   7B   n

Decimal Code   27   123   n

[Range] 0 ≤ n ≤ 255   [Default value]n=0

[Description] Set/remove reverse print mode

     when the least significant bit of n is 0，remove reverse print mode

     when the least significant bit of n is 1，start reverse print mode

[Note]• Only the least significant bit of n is effective.

        • The command is valid only when input at the beginning of a line in the standard model

The command won't affect the printing when in the page mode ,only change the internal flag bit

     •Under reverse print mode, the printer should rotated the line for 180 °   first, then start print.

  remove the reverse mode   Set the reverse mode

feed direction
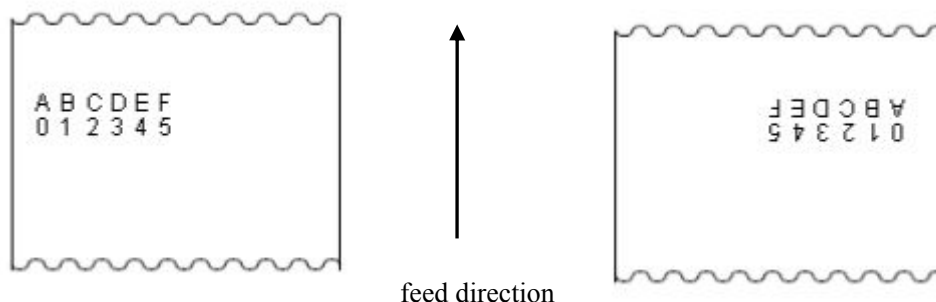
[Instance]

1.7   GS   !   n

[Name] 【 set the character size 】

[Format]   ASCII code   GS   !   n

Hexadecimal   1D   21   n

Decimal Code   29   33   n

[Range] 0≤ n ≤255 (1 ≤ vertical multiple ≤8, 1 ≤horizontal multiple ≤8)

[Description] Use 0 to 2bit set the height of character, and 4 to 7 bit to set the width of character, as shown below

bit	off/on	hexadecimal	decimal	function
0	Set the height of character, see chart 2			
1				
2				
3				
4	Set the width of character, see chart 1			
5				
6				
7				

Chart 1: setting the width of character

Hexadecimal	Decimal	Width/time
00	0	1
10	16	2
20	32	3
30	48	4
40	64	5
50	80	6
60	96	7
70	112	8

chart2:setting the height of character

Hexadecimal	Decimal	Height/time
00	0	1
01	01	2
02	02	3
03	03	4
04	04	5
05	05	6
06	06	7
07	07	8

[Note]•The command is valid for all characters except the HRI character (including English characters , numeric characters)

• This command will ignored if the n is outside the define range.

•Under standard mode, the feed direction is the vertical direction.But when character direction clockwise

•rotate 90,the relationship between the vertical direction and horizontal direction become upside.

•When the size of character is enlarged with different times in a line, all the characters in this line align along the baseline

•The ESC!Command can set or remove the double width mode and double height mode.The command

received last is set to effective.

[Default value]n=0

[Reference] ESC!

1.8 GS   L   nL   nH

[Name]   【Set the left margin】

[Format] ASCII code   GS   L   nL   nH

Hexadecimal code   1D   4C   nL   nH

Decimal Code   29   76   nL   nH

[Range]   0   ≤nL   ≤255 ; 0   ≤nH   ≤255 [Default value]nL=0,nH=0]

[Description]Set the left margin by nL and nH
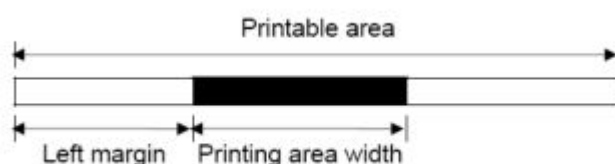
[Note]•Set the left margin to [(nL+nH*256)*0.125mm]。

•In standard mode, the command is valid only when processing it in the starting position of a line.

•This command is invalid when in page mode.

•If the set is outside the printable scope, then use the maximum printing unit.

[Reference] GS W

1.9 ESC   \   nL   nH

[Name] 【set up relative print position】

[Format] ASCII code   ESC   \   nL   nH

        Hexadecimal code   1B   5C   nL   nH

        Decimal Code   27   92   nL   nH

[Range]   0   ≤nL   ≤255 ; 0   ≤nH   ≤   255

[Description]Based on the current position, set the print starting position using horizontal or vertical motion unit

    This command sets the print position to the [nL+ nH * 256 (nL) * 0.125 mm] from the current position

[Note]•All the setting outside the printable area will be ignored。

    •When the N is specified to the right:nL+nH *256=N

    • When   the   N   is   specified   to   the   left   using   the   complement   of

65536:nL+nH*256=65536-N
•	Using the horizontal motor unit under standard mode
[Reference] ESC$

1.10 ESC   a   n

[Name]   【select the alignment 】

[Format]   ASCII code   ESC   a   n

Hexadecimal code   1B   61   n

Decimal Code   27   97   n

[Range]   0 ≤n ≤2,48 ≤n ≤50   [Default value]n=0

[Description] Aligning the data line according to the specified location by choose the number of n:

n	alignment
0,48	left aligned
1, 49	center
2, 50	Right aligned

[Note]•Under standard mode, this command is valid only when processing the beginning of a line

•The command executes aligned in print area。

•The command aligns blank areas according to HT, ESC $or ESC \。

1.11 ESC   !   n

[Name]   【Selecting print mode】

[Format] ASCII code   ESC   !   n

Hexadecimal code   1B   21   n

Decimal code   27   33   n

[Range]   0≤n≤255   [Default Value]n=0

[Description] Selecting the print mode according to the value of specified parameter n.

The parameter n is defined as follows:

Position	off/on	Hexadecimal code	Decimal code	function
0	off	00	0	Character fonts A (12*24)
	on	01	1	Character fonts B (9*17)
1	-	-	-	undefined
2	-	-	-	undefined
3	off	00	0	cancel bold mode
	on	08	8	Start bold mode
4	off	00	0	Cancel double height mode
	on	10	16	start double height mode
5	off	00	0	Cancel double width mode

	on	20	32	Start double width mode
6	-	-	-	undefined
7	off	00	0	Cancel underline mode
	on	80	128	Start underline mode

[Note] ·When choose the double width mode and double height mode at the same,the characters printed are the 4 times of the normal state.

·The printer can underline every characters except the blank made by HT command and the characters Clockwise rotated90 °

·The thickness of underline is set by ESC, and independent on the size of characters.

·If there are some double height characters or higher character in a line, all characters in this line align

along the baseline alignment

·ESC M also can set the font type of characters,and the command set received finally is valid.

·ESC E also can set or cancel the bold mode,and the command set received finally is valid

·ESC -also can set or cancel the underline mode, and the command set received finally is valid

· GS !Also can set the size of characters, and the command set received finally is valid

· Bold mode is valid for both English characters,numeric characters and Chinese characters, and

·All of other print mode are valid only for English characters and numeric characters.

[Reference] ESC -,ESC E,GS !

1.12   ESC   E   n

[Name] 【Set/cancel bold print】

[Format] ASCII code   ESC   E   n

Hexadecimal Code   1B   45   n

Decimal Code   27   69   n

[Range]   0   ≤n   ≤255   [Default value]n=0

[Description] set/cancel bold print mode

when the least significant bit of n is 0，cancel bold print mode

when the least significant bit of n is 1，start bold print mode

[Note]·Only the least significant bit of n is allowed to use

·This command and ESC! set and remove bold print mode in the same way.Be careful When they are used at the same time.

[Reference] ESC!

1.13 ESC   G   n

[Name]   【Set/cancel overlapping print】

[Format] ASCII code   ESC   G   n

Hexadecimal Code   1B   47   n

Decimal Code   27   71   n

[Range] 0 ≤n ≤255 [Default value]n=0

[Description] set/cancel overlapping print mode

when the least significant bit of n is 0，cancel overlapping print mode

when the least significant bit of n is 1，start overlapping print mode

[Note]•only the least significant bit of n is allowed to use

·The output effect of the under overlap mode is the same as bold mode

[Reference] ESCE

1.14 ESC   @

[Name]   【Initialize the printer】

[Format]   ASCII code   ESC   @

Hexadecimal Code   1B   40

Decimal Code   27   64

[Description] Clear the data in the print buffer, reset the printer mode to the effective mode you can see when open the printer.

[Note]DIP switch settings will no longer be checking.

The data in receive and buffer section will not cleared.

1.15 ESC   -   n

[Name]   【Set/cancel underline 】

[Format]   ASCII Code   ES   -   n

Hexadecimal Code   1B   2D   n

Decimal Code   27   45   n

[Range]   0≤n≤2,48≤n≤50 [Default value]n=0

[Description]Set/cancel underline mode based on the value of n:

n	Function
0, 48	cancel underline mode
1, 49	Start underline mode(1 point of coarse)
2, 50	Start underline mode(2 point of coarse)

[Note] • Printers can print underline for all characters (including the interval on the left of character), except the blank set by HT

• The printer cannot print underline for the characters clockwise rotated90° and highlighted characters

•When cancel the underline mode by setting the value of n to 0 or 48 , the following data will be printed without underline, and the roughness of underline set before underline canceled will not change.The roughness of default underline is 1 point.

•The change of character size does not affect the roughness of current underlined.

•ESC! also can set or cancel the underline mode, and the command finally received is valid.

[Reference] ESC!

1.16 ESC   2

[Name] 【Select the default line spacing】

[Format]   ASCII code   ESC   2

Hexadecimal Code   1B   32

Decimal Code   27   50

[Description]Select the default line spacing to 3.75mm(30*0.125mm)。

[Note]Line spacing can be set independently among the standard model.

[Reference] ESC3

1.17 ESC   3   n

[Name] 【Set line spacing】

[Format]   ASCII code   ESC   3   n

Hexadecimal   1B   33   n

Decimal Code   27   51   n

[Range]   0≤n≤255 [Default line]n=30

[Description] set the line spacing to[n *0.125mm]。

[Note]•Line spacing can be set independently among the standard model and page setup

• Using the vertical motor unit (y) in the standard model.

[Reference] ESC2

1.18 ESC   D   n1...nk   NUL

[Name] 【Setting horizontal anchor point】

[Format] ASCII code   ESC   D   n1...nk   NUL

Hexadecimal Code   1B   44   n1...nk   00

Decimal Code   27   68   n1...nk   0

[Range]   1 ≤n ≤255;0 ≤k ≤32   [Default value]The default positioning location is the 8 characters intervals of type A (12 * 24) (column9,17,25...)。

[Description]Set up the horizontal positioning location n specify the beginning column number of a line to set the level position location.k present the total number of level positioning location will be set.

[Note] •The horizontal orientation position was stored as a value, and this value(=width of character*n) is measured from the beginning of a line. The character width including the space on the right side of the

characters, and the double width was set as twice as ordinary characters .

        •The command delete the horizontal positioning set before

        •When setting n= 8时,the print position will moved to the ninth column by t sending HT.

        • The limit of position is k=32,the date exceed 32 positioning location will be processed as common data 。

        • Placing a NUL code 0 at the end according to ascending order transmission [n] k ,when [n] k is less than or equal to the front [n], k - 1, positioning setting ended, and the subsequent data will be processed as normal data .

        •ESC D NUL cancel all the horizontal positioning location.

        • Even if the character width change, the horizontal positioning location specified before remains the same or standard type, the character width will remembered

[Reference] HT

1.19 ESC　d　n
[Name]　【Print and paper feed n line】
[Format] ASCII code　　　ESC　　d　　n
Hexadecimal code　　　　1B　　64　　n
Decimal Code　　　　　　27　　100　　n
[Range]　0　≤n　≤255
[Description]Print and output the data in the buffer, and paper feed n line.
[Note]•The command to set the starting point of line as print starting position
　　　•This command does not affect the line spacing set by the ESC 2 or ESC 3 command.
　　　•The max paper feed is 1016 mm(40 inch) If the specified paper feed (n´ line spacing) is more than 1016 mm (40 inches), the printer will feed only 1016 mm (40 inches).
[Reference] ESC2, ESC3

1.20 ESC　J　n
[Name]　【 Print and paper feed 】
[Format]　ASCII code　　ESC　　J　　n
Hexadecimal Code　　　　1B　　4A　　n
Decimal Code　　　　　　27　　74　　n
[Range]　0　≤　n　≤　255
[Description] print the data print buffer and paper feed　[n　×　0.125mm]。
[Note] • This command set the printer starting position to the beginning of line when the print finished.
　　　•The amount of feed set by this command does not affect the value set by ESC2 or ESC3
　　　•Under standard mode, printer use the vertical motor unit-(y)。

1.21 ESC　B　n　t
[Name]【buzzer call the printer to print the ticket】
[Format]　ASCII code　ESC　　B　　n　　　t
Hexadecimal Code　　　1B　　42　　n　　　t
Decimal Code　　　　　27　　66　　n　　　t
[Description]:When there is a receipt need to print ,the buzzer will prompt
[Note]• n is the number of times of the buzzer prompt .
　　　• T is the time of every alarm ,the time is (t x 50)ms.

1.22 ESC　C　m　t　n
[Name]【buzzer prompt and alarm light flash to call the print ticket】
[Format]　ASCII code　　　　ESC　　C　　m　　t　　n

Hexadecimal Code	1B	43	m	t	n
Decimal Code	27	67	m	t	n

[Description] When there is a receipt need to print,the buzzer will prompt and the alarm light will flash at the same time .

 [Note] • m is the number of times of the buzzer prompt .

• T is the time of every alarm ,the time is (t x 50)ms.

1.23 ESC   p   m   t1   t2

[Name]【Open the cash drawer】

[Format]   ASCII code   ESC   p   m   t1   t2

            Hexadecimal Code   1B   70   m   t1   t2

                Decimal Code   27   112   m   t1   t2

[Description] The value of m：0,1,48,49, 0≤t1≤255, 0≤t2≤255,The output depends on the t1 and t2 by setting a pulse opened of the cash drawer and the Pin which specific by m:

m	Connect the pin
0,48	Pin 2 of the cash drawer socket
1,49	Pin 5 of the cash drawer socket

[Note]   • When the cash drawer opened,the time of the pulse high level is [t1×2ms],the time of pulse low level is[t2×2ms]；

• if t2 < t1,the low level is[t1×2ms]

1.24 ESC   M   n

[Name] 【Select the font types】

[Format]   ASCII code   ESC   M   n

Hexadecimal Code   1B   4D   n

Decimal Code   27   77   n

[Range]   n=0, 1, 48,49

[Description]Select the font types

The use of n as shown below:

n	function
0, 48	Choose font A(12*24)
1, 49	Choose font B(9*17)

1.25 ESC   c   3   n

[Name] 【Choose the printing paper sensor to output the signal of lack paper】

[Format]   ASCII code   ESC   c   3   n

Hexadecimal Code   1B   63   33   n

Decimal Code   27   99   51   n

[Description]：Choose the printing paper sensor to output the signal of lack paper

[Note] • 0≤n ≤255 [default value   n=15]

1.26 ESC   6   n

[Name] 【set whether clear the butter data when no paper】

[Format]   ASCII code   ESC   6   n

Hexadecimal Code   1B   36   n

  Decimal Code   27   54   n

[Description]:When there is no paper in the printer ,will set the value of n to determine whether clear the data in the buffer,

[Note]: •n=0，the printer will be stopped to print when no paper and at the same time ,the data in the buffer will be cleared

• n=1,the printer will be stopped to print when no paper,but the data in the buffer will be saved and will go on printing when there is paper again.

1.27 ESC   7   n

[Name] 【Choose DTR signal when no paper】

【Format】   ASCII code   ESC   7   n

Hexadecimal Code   1B   37   n

Decimal Code   27   55   n

[Description]: when there is no paper,set the value of n to set the DTR signal

[Description]: • n=0 ,when set no paper ,will not set DRT signal

• n=1,when set no paper ,set the DTR signal to busy status

1.28 ESC   c   5   n

[Name] 【permit/forbid button】

【Format】   ASCII code   ESC   c   5   n

Hexadecimal Code   1B   63   35   n

  Decimal Code   27   99   53   n

[Description]: according to the value of n to determine if permit or forbid the button

[Note]: • 0≤n ≤255,[default value ,n=0]

• n valid only when it is the lowest bite

• When the lowest bit of the n is 0 ,the button permitted

• When the lowest bit of the n is 1,the button forbidden

1.29 ESC   =   n

[Name] 【Choose printer】

【format】   ASCII code   ESC   =   n

Hexadecimal Code   1B   3D   n

Decimal Code   27   61   n

[Description]：According to the value of n（default value n=1）to choose the printer and see if it can receive the data which comes from the main computer

[Note]: · n=0,the printer was forbidden to receive the data

· n=1,the printer was allowed to receive the data 打印机允许接收数据；

· When the printer was forbidden ,Just execute the command of (DLE EOT, DLE ENQ, DLE DC4) ,Other commands all ignored

1.30   ESC   t   n

[Name] 【Choose the character code form】

【format】   ASCII code   ESC   t   n
Hexadecimal Code   1B   74   n
Decimal Code   27   116   n

[Description]：According to the value to choose the character code form

[Note]: · 0 ≤ n ≤ 10, 16 ≤ n ≤ 19；default value n=0

· the value of n listed as below：

n	Page
0	PC437[USA,Europe standard]
1	katakana
2	PC850[Multi-language,western Europe language]
3	PC860 [Portuguese]
4	PC863 [Canada-French]
5	PC865[Northern Europe,German--Germanic]
6	Western Europe （Latin I）
7	Greek
8	Hebrew
9	PC755:East Europe
10	Iran
11	PC775 [Baltic languages]
12	PC932 [Japanese]
13	PC949 [Korean]
14	PC950 [Traditional Chinese]
15	PC936 [Simplified Chinese]
16	WPC1252
17	PC866:Cyrillic*2
18	PC852:Latin2
19	PC858 [Western]
20	PC858 [Icelandic]
21	PC858 [Cyrillic/Russian]
22	PC858 [Cyrillic/Bulgarian]

1.31 GS   v   0   m   xl   xH   yL   yH   d1....dk

[Name] 【Print the grating bitmap】

【format】ASCII code   GS   v   0   m   xL   xH   yL   yH   d1...dk

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

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

[Range]   0≤m≤3   48≤ m≤ 51

  0 ≤ xL ≤   255

0 ≤xH ≤   255 , and 1 ≤(xL+xH*256) ≤128

0 ≤yL ≤255

0 ≤yH ≤8, and 1 ≤(yL+yH*256) ≤4095

0 ≤d ≤255

k=(xL+xH*256)*(yL+yH*256)(k≠0)

[Description] Print the grating bitmap by set the value of m ：

m	mode	Vertical point density **(DPI)**	Horizontal point density **(DPI)**
0,48	normal	200	200
1,49	Double width	200	100
2,50	Double height	100	200
3,51	Double width double height	100	100

(dpi:the print point/25.4mm{1inch})

    xL,xH,Set the bitmap data bytes of horizontal direction=(xL+xH   256)

    yL,yH,Set the bitmap data bytes of vertical direction=(yL+yH   256)

[Note]•In standard mode, the command is valid only when there is no data in printing buffer

    •For grating bitmap print, this command is not affected by print mode (character size, bold, overlapping, top down printing, underline, reverse print mode, etc.).

    •If the width of print section set by the GSL and GSW less than the minimum width, the printer will only narrow the problem line to the minimum width. For normal mode (m = 0,48) times and double height mode (m = 2, 50),minimum width is a bit, and for double width mode (m = 1,49) and four times size mode (m = 3 ,51),minimum width is two points.

    •The data outside the print area is read into, and is point to discard.

    •If subsequent characters print position is multiples of 8. The subsequent will bitmap print as a grating of print characters, the HT (horizontal TAB), ESC $(set absolutely print position) ESC \ (set the relative print position) and the GSL (set the left margin setting).

    •ESC a (alignment) set is also effective for grating bitmap.

    •When receives the command during the macro definition, the printer end the macro definition, and begin to execute the command.Should clear the definition of the command.

    •D represents the bitmap data.the point will printed set to 1, not printed set to 0

1.32 ESC   *   m   n   L nH d1...dk

[Name]   【Select the bitmap mode】

【format】   ASCII code   ESC   *   m n L nH   d1...dk

Hexadecimal code   1B   2Am   nL   nH   d1...dk

Decimal code 27   42m   nL   nH   d1...dk

[Range]m=0, 1, 32,33   0≤nL≤255

0≤nH≤3   0≤d≤255

[Description] using m to select the bitmap mode,the point of bitmap designated by the nL and nH, as shown below:

m	Mode	Vertical direction		Horizontal direction	
		Point	Point density	Point density	Number of data (K)
0	8-point single density	8	67 DPI	100DPI	nL + nH × 256
1	8-point dual density	8	67 DPI	200 DPI	nL + nH × 256
32	24-point single density	24	200DPI	100DPI	nL + nH × 256
33	24-point dual density	24	200DPI	200DPI	nL + nH × 256

dpi:print points/25.4mm(1inch)

[Note]•If the value of m beyond the specified scope, then the nL and later data will be processed as normal data,nL and nH represent the points of upper figure in horizontal direction,can calculate the points by nL+nH*256

•If the bitmap data input is beyond the limit of point a line can be printed, the beyond data will be ignored.

•d represents the bitmap data,set the corresponding bit to 1 to print one point，or set the corresponding bit to 0 to avoid print one point

•If the print width set by GSL and GSW is smaller than the requirement of date send by ESC＊, following perform will made for the smaller one (the width cannot beyond the maximum printing range) :

①expanded the width of the print area to the right to adapt the amount of data

②If the step (1) can not provide enough width fro data, then left edge will reduced to adapt to the data.for every point of date in the single density mode (m = 0, 32) , the printer will print two points, and for every point of data in the dual density model (m = 1) , the printer will print 1 point. these must be considered when calculating the amount of data that can printed in 1 line

•The printer will back to regular data processing mode after printing a bitmap

•This command is not influenced by print mode (bold, underline, size, or white printing), unless it is reverse print mode.

Followed diagram describe the relationship between the image data and the point printed.When the figure 8 - point is selected:

1.33 GS   *   x y d1...d(x × y × 8)

[Name] 【define the downloaded bitmap】

【format】 ASCII code   GS   *   x y d1...d(x × y × 8)

Hexadecimal code　　1D　　2A　　x y d1...d(x × y × 8)

Decimal Code　　29　　42　　x y d1...d(x × y × 8)

Description：define a downloaded bitmap,the points specified by x and y

‣ x is the Horizontal point of the specified bitmap ；

‣ y is vertical point of the specified bitmap

Note：[Range]：$1 \leqslant x \leqslant 255$, $1 \leqslant y \leqslant 48$；

$x \times y \leqslant 912$, $0 \leqslant d \leqslant 255$。

‣ Point on the cross of the bitmap is x × 8；Point of the longitudinal of the bitmap is y × 8.

1.34 GS ／ m

[Name] 【Print the downloaded bitmap】

【format】　　ASCII code　GS　　／　　m

Hexadecimal code 1D　　2F　　m

Decimal Code　　29　　47　　m

Description：Print a downloaded bitmap,Print mode depend on （$0 \leqslant m \leqslant 3$, $48 \leqslant m \leqslant 51$）

Note：‣ m Choose the print mode as below:

M (value)	mode	longitudinal resolution (DPI)	transverse resolution (DPI)
0，48	normal	200	200
1，49	Double height	200	100
2，50	Double Width	100	200
3，51	Double height and Width	100	100

Chapter2 customize printing and setup command

2.1 ESC ＃ ＃ S T S N

[Name] 【Set the main board serial number】

【format】ASCII　　　　　ESC　＃　＃　S　　T　S　N　　len　X₁ X₂......Xₗₑₙ

Hexadecimal　　1B　　23　23　53　54　53　4E　　len　X₁ X₂......Xₗₑₙ

Description：Set control pane's mainboard serial number

Note：‣ Len　For length of serial number,1 byte

‣ X₁ X₂......Xₗₑₙ　For content of serial number　len byte（len is number of X）。

2.2 ESC ＃ ＃ S D A T

[Name] 【Set date of manufacture】

【format】 ASCII　　　　ESC ＃ ＃ S D A T　　　y1 y2 y3y4 m1 m2 d1 d2
　　　　　　Hexadecimal　　1B　23　23 53　44 41 54　　y1 y2 y3y4 m1 m2 d1 d2

Description：Set the mainboard's date of manufacture

Note：・y1 y2 y3y4 m1 m2 d1 d2 is stand for set manufactured date，
　　　　y1 y2 y3y4　　　　　for year
　　　　m1 m2　　　　　　for month
　　　　d1 d2　　　　　　for day

Eg：manufacture ate set on November 14, 2013, date format show as below：
　　　　1B 23 23 53 44 41 54　　32 30 31 33　31 31　31 34

2.3 ESC ＃ ＃ S T I F

[Name] 【 Set printer's interface】

【format】 ASCII　　ESC ＃ ＃ S T I F　　interface
　　　　　Hexadcimal　1B　23　23 53 54　49 46　　interface

Description：According interface's data to set printer's interface type

interface	interface data
USB	1
RS232	2
Parallel port	4
ETHERNET	8
BLUETOOTH	16

Note：　User choose corresponding interface data depends on above data-sheet to setting printer's interface type.

　　　Support multiple interface combination, each one can combined freely
　　　Eg: USB + RS232 ,　interface = 2+1=3

Eg：set the interface type as USB，data format show as bellow：
1B 23 23 53 54 49 46 01

2.4 ESC ＃ ＃S B D R

[Name] 【Set SERBAUD】

【format】 ASCII　　　ESC ＃ ＃ S B D R　　　　baudrate
　　　　　Hexadecimal　1B　23 23　53 42　44 52　　　baudrate

Description：Set SERBAUD，baudrate is parameter for baud rate 。

Note：Baudrate length is 4 byte，data store adopts little-endian model

Eg: Set baurate as 115200 （0x0001c200），sending data as follows：
1B 23 23 53 42 44 52　00 C2 01 00

2.5 ESC　#　#　S　T　ID　　id

[Name]　【Set printer's ID number 】

【format】　　ASCII code　　　ESC　#　#　S　T　I　D　id

　　　　　　　Hexadecimal code 1B　　23　23　53 54　49　　44　id

Description：set printer's ID number，id value is printer's ID NO.

Note：id is an unsigned long integer data consist by 4 byte, data store is little-endian model.

Eg: 0x12345678　byte order send to lower computer is 78 56 34 12。

Eg: Set　ID 10001　（0x000003E9），sending data as follows：

1B 23 23 53 54 49 44　E9 03 00 00

2.6 ESC　#　#　S　T　D　P　　n

[Name]　　　【Set printing density】

【format】　　ASCII code　　　ESC　#　#　S　T　D　P　　　n

　　　　　　　Hexadecimal code 1B　23 23　53 54　44　50　　　n

Description：according n date to adjust printing density,

　　　n　1byte,　0 ≤ n ≤ 39（39 is maxed density，that is the most black.)

Eg；printing density's level is 3, sending data as follows:

1B　23 23　53 54 44 50 03

2.7 ESC　#　#　B　D　I　T　　time

[Name]　　　【Set the aging test time】

【format】　　ASCII code　　ESC　#　#　B　D　I　T　　time

　　　　　　Hexadecimal code 1B　23 23　42　44 49 54　　　time

Description：set printer's aging time, time is for printer's aging time.

Note：time is an unsigned long integer data consist by 4 byte, data store is little-endian model, unit: seconds

Eg: 0x12345678 byte order send to lower computer is 78 56 34 12。

Eg: setting aging time as 60 （0x0000003c），sending data ad fllows：

1B 23 23　42 44 49 54　3c 00 00 00

2.8 ESC　#　#　S T S　P　　speed

[Name]　　【Set printing speed】

【format】　　ASCII code　　　ESC　#　#　S　T　S　P　n

　　　　　　　Hexadecimal code 1B　23　23　53　54 53 50　n

Description：　set printing speed, n 1byte,the corresponding relationship with speed is as follows:

n	speed
25	25 mmps
30	30 mmps
37	37 mmps

50	50 mmps
56	56 mmps
62	62.5 mmps
70	70 mmps
80	80 mmps
90	90mmps
100	100 mmps
120	120 mmps
150	150 mmps
180	180 mmps
200	200 mmps
220	220 mmps

Non-form data, invalid

Eg: setting print speed as 200 mmps，Sending as followsdo：

1B   23 23   53 54 53 50 c8

2.9 ESC # # D L S F

[Name] 【Download self checking message】

【format】   ASCII code   ESC   ## DLSF   len   X1 X2 ... X$_{len}$

Hexadecimal code 1B   23 23 44 4C 53 46   len   X1 X2 ... X$_{len}$

Description：Download self checking message

Note： • this order is used to download self checking message of pritner's module testing

• len length is 2byte，show the character string length of self checking message(length should less than 4000)

• X1 X2 ... X$_{len}$ is self checking content，length: len byte

2.10 ESC # # U P P G

[Name]   【Update process】

【format】   ASCII code   ESC # # U P P G checksum len   X1 X2 ... X$_{len}$

Hexadecimal code 1B   23 23 55 50 50   47 checksum   len   X1 X2 ... X$_{len}$

Description：update process

Note： • this order is for updata printer's operate process

• checksum 4 byte，is X1 X2 ... X$_{len}$ cumulative sum (little-endian model, if checksum > 0XFFFFFFFF，when overflow，keep low 4 byte)

• len length is 4 byte, means the character string length of self checking message(length should less than 256*1024)

• X1 X2 ... X$_{len}$ is content of update process, length is len type.

2.11 ESC # #S T B P n

[Name] 【set the buzzer Description】

【format】ASCII   ESC # # S T B P n

Description ：According n data to setting the buzzer

n   1byte ， Bit0--Bit7   Description as follows

Bit0	1，Enable order of tweet and set beep; 0， forbid function
Bit1	1，Enable lack of paper tweet; 0， forbid function
Bit2	1，Enable other error tweet; 0， forbid function
Bit3-Bit6	keep

2.12 ESC # # E A F B n

[Name] 【Enable self search black Mark Description】

【format】ASCII   ESC   #   #   E   A   F   B   n
          Hexadecimal code 1B   23   23   45   41   46   42   n

Description：this order is use to black Mark model, enable self searching black Mark model

         When printer's open shell become the close shell, if this Description open, it will self search black Mark and paper feed to printing position

Note：n   1BYTE，n==0x30，close
               n==0x31，open

2.13 ESC # # R E S D type len d0....dlen

[Name] 【multiple interface data forwarding order】

【format】ASCII   ESC # # R E S D byte len d0....dlen
          Hexadecimal code 1B   23   23 52   45 53 44 byte   len   d0....dlen

Description： multiple interface data forwarding order, type values corresponding interface as below sheet:

Interface	Values
USB	1， 0x31
RS232	2， 0x32
Parallel port	3， 0x33
ETHERNET	4， 0x34
USB&RS232 &ETHERNET	5， 0x35

Note： • len is data length；
       • d0....dlen is corresponding data.

2.14 ESC # # T D N A len d0....dlen

[Name] 【Set up manufacturer name】

【format】ASCII   ESC # # T D N A   len d0....dlen

Hexadecimal code 1B   23 23   54 44   4E 41   len d0....dlen

Description: set manufacturer name

Note：• len is used to setting length of manufacturer name, len <=40。

• d0....dlen is manufacturer name;

• when set succeed the buzzer will tweet and led indicator will flash.

Eg: sending data 0x1B 54 44 4E 41 03 41 41 41，manufacturer name be set as 3 byte length "AAA"

2.15 ESC # # M A N A len d0....dlen

[Name] 【Set up device name】

【format】ASCII   ESC # # M A N A   len d0....dlen

Hexadecimal code 1B   23 23   4D 41   4E 41   len d0....dlen

Description：set up device name

Note：• len is for set length of device name, len <=16；

• d0....dlen is device name；

• when set succeed the buzzer will tweet and led indicator will flash.

Eg: sending data 0x1B 4D 41 4E 41 03 41 41 41，device name will be set as 3 byte length"AAA"。

2.16 ESC # # S F Q R len d0....dlen

[Name] 【Set up self-checking page/QR printing message】

【format】ASCII   ESC # # SF QR len d0....dlen

Hexadecimal code 1B   53 46 51 52   len d0....dlen

Description：set printing self-checking QR code content

Note：• len is length for QR code content, len <60；

• d0....dlen is printing self-checking QR code content;

• when set succeed the buzzer will tweet and led indicator will flash.

2.17 ESC # # F E M C n

[Name] 【Enable multi-interface data mutual convert Description】

【format】ASCII   ESC # # F E M C n

Hexadecimal code 1B   23 23   46 45 4D   43   n

Description：Enable multi-interface data mutual convert Description.

n 1byte

n = 0x30	Forbid enable multi-interface data mutual convert Description
n = 0x31	Enable multi-interface data mutual

	convert Description

2.18 ESC　#　#　F　M　D　5　n

[Name] 【 Enable MD5 Description】

【format】ASCII　　　　ESC　#　#　F　M　D　5　　　n
　　　　　　Hexadecimal code1B　　23 23 46　4D　44　35　　　n
　　　　　Description：　enable MD5Description。

n 1byte

n = 0x30	Forbid MD5Description
n = 0x31	Enable MD5Description

2.19　ESC　#　#　F　T　K　T　n

[Name] 【Enable one ticket one control Description】

【format】ASCII　　　　ESC　#　#　F　T　K　T　　　n
　　　　　Hexadecimal code1B　　23 23　46 54　4B　54　　　n
　Description：　enable MD5Description。

n 1byte

n = 0x30	Forbid one ticket one control Description
n = 0x31	Enable one ticket one control Description

2.20 ESC　#　#　F　B　E　H　n

[Name] 【Enable black Mark positioning enhancement Description】

【format】ASCII　　　　ESC　#　#　F　B　E　H　n
　　　　　　Hexadecimal code1B　　23　23 46　42 45 48　n
　Description：　Enable black Mark positioning enhancement Description。

n 1byte

n = 0x30	Forbid black Mark positioning enhancement Description
n = 0x31	Enable black Mark positioning enhancement　Description

2.21 ESC　#　#　R　E　C　F

[Name] 【Recovery user default setting Description】

【format】ASCII　　　　ESC　#　#　R　E　C　F
　　　　　　Hexadecimal code1B　　23　23　52 45　43　46

24tł

Description： Recovering FLASH,user default setting data.

2.22 ESC ＃ ＃ F L L F

[Name] 【Open/close LF line feed Description】

【format】ASCII　　　　ESC ＃ ＃ F L L F n
　　　　　Hexadecimal code1B　23 23　　46 4c　4　46　n
Description：Open/close LF line feed Description。

　　　　　n 1byte

n = 0	Close LF linefeed Description
n =1	Open LF linefeed Description

2.23 ESC ＃ D

[Name] 【Print manufacture date, serial number, ID】

【format】ASCII　　ESC　　＃　　　D
　　　　　Hexadecimal　1B　　23　　44
Description：Print manufacture date, serial number, ID

2.24 ESC ＃ S

[Name] 【print main board serial number】

【format】ASCII　　ESC　　＃　　　S
　　　　　Hexadecimal　1B　　23　　53
　　　　　Decimal Code 27　　35　　83
Description：print main board serial number
Note：•sending data 0x1B 23 53，printer will print out current main board's serial number.

2.25 ESC ＃ V

[Name] 【print software version number】

【format】ASCII　　ESC　　＃　　　V
　　　　　Hexadecimal　1B　　23　　56
　　　　　Decimal Code　27　　35　　86
Description： print software version number.
Note： • sending data 0x1B 23 56，printer will printing out current software's version number.

2.26 ESC ＃ F

[Name] 【print Description list】

【format】ASCII　　ESC　　＃　　　F
　　　　　Hexadecimal　1B　　23　　46

Decimal Code 27   35   70

Description：Print Description list

Note：·sending data 0x1B 23 46，printer will printing out current printer's Description。

2.27   ESC   #   G

[Name]【Print switch state】

【format】ASCII   ESC   #   G

Hexadecimal 1B   23   47

Decimal Code 27   35   71

Description：print switch state

2.28 ESC   #   H

[Name] 【print language list】

【format】ASCII   ESC   #   H

Hexadecimal 1B   23   48

Decimal Code 27   35   72

Description：print language list

Note：·sending data 0x1B 23 48，printer will printing out current printer's supporting language list.

2.29   ESC   #   I

[Name] 【print manufacturer name】

【format】ASCII   ESC   #   I

Hexadecimal 1B   23   49

Decimal Code 27   35   73

Description：print manufacturer name

Note：·The printer is first powered up will clear the name of your memory manufacturers, vendors need to set up your printer name；

·sending data 0x1B 23 49，printer will print manufacturer name(not set the name will print blank)

2.30 ESC   #   J

[Name]   【print device name】

【format】ASCII   ESC   #   J

Hexadecimal 1B   23   4A

Decimal Code 27   35   74

Description：print device name

Note：·The printer is first powered up will clear the name of your memory device, vendors need to set up your printer name

·sending data 0x1B 23 4A，printer will print device name(not set the name will

print blank).

2.31 ESC # K

[Name] 【print concentration grade】

【format】 ASCII   ESC   #   K
      Hexadecimal 1B   23   4B
      Decimal Code 27   35   75
Description：print concentration grade

2.32 ESC # L

[Name] 【print the print head temperature】

【format】 ASCII   ESC   #   L
      Hexadecimal 1B   23   4C
      Decimal Code 27   35   76
Description：print the print head temperature

2.33 ESC # M

[Name] 【print printing speed】

【format】 ASCII   ESC   #   M
      Hexadecimal 1B   23   4D
      Decimal Code 27   35   77
Description：print printing speed

Chapter3   Black Mark instructions

3.1 [Name]   Start Using Black Mark Detection Description

【format】   hexadecimal 1F   1B   1F   80   04   05   06   44
Description：start using black Mark detection Description。
Note： • start using black Mark detection Description.The printercan detect the black Mark of the thermal paper.If use the paper without blackMark,the printer would send a buzzer alarm error .

3.2 [Name]　Close Black Mark Detection Description

【format】　hexadecimal　1F　1B　1F　80　04　05　06　66
Description：close black Mark detection Description.

3.3 [Name] Set The Maximum receipt Length Of Black Paper

【format】　hexadecima　1F　1B　1F　81　04　05　06　＋len
Description：Set the maximum length of black paper.
Note：·len is numerical value of setting maximum long ticket.
·len length is 2 bytes，it is the small end model.
For Example：data 0x1234 tobe sent next devincet the sequence of byte is 34 12.

3.4 [Name] Set The Maximum Width Of Black Mark

【format】　hexadecima 1F　1B　1F　82　04　05　06　＋len
Description：set the maximun width of black Mark
Note: ·len is the numerical value of the maximum width Mark
·len length is 2 bytes，it is the small end model.
For Example：data 0x1234 tobe sent next devincet the sequence of byte is 34 12.

3.5 [Name] Before to detect black Mark,print oradvance n step（step）

【format】　hexadecima 1D　54　1D　28　46　04　00　03　00　＋　n
Description：setting the printer before detection black Mark,to print advance n steps,Set to the starting position to print position.
Note：·n is the setting mumerical value，2 bytes length;
·For the forward distance is n/8(mm).

3.6 [Name] After detection the black Mark,advance n step（step）

【format】　hexadecima 1D　54　1D　28　46　04　00　01　00　＋　n
Description：setting the printer when it detaction the black Mark,advance n step，Set to the starting position to print position.
Note：·n is the setting mumerical value，2 bytes length;
·For the forward distance is n/8(mm).

3.7 [Name] Cutter location is detection black Mark advance n step (step)

【format】　hexadecima　　1D　54　1D　28　46　04　00　02　00　＋　N
Description：cutter location is seted on black Mark advance n step of the printer .
Note：·n is the setting mumerical value，2 bytes length;；
·For the forward distance is n/8(mm) .

3.8[Name] Paper Come Out To Next Loading Position To Print

【format】 hexadecima   1D   0C

Description：paper come out to next loading position to print .

Note：•The command to skip the current print position, paper feed directly to set down a black Mark starting position began to play print.

3.9 [Name] ESC ## SBCV Setting Black Mark Reference Voltage

【format】 ASCII   ESC   ##   SBCV   black lable vol

hexadecima 1B   23 23 52 42 43 56   black lable vol

Description：Setting Black Mark Reference Voltage.

Note： • black lable vol is setting voltage numerical value, unit mV(millivolt)；

• black lable volis 2 bytes，it is the small end model.

For Example：setting reference voltage of black Mark is 500mV，

Send data as following ： 1B 23 23 53 42 43 56 F4 01。

3.10 [Name] Paper Feed To The Black Mark

【format】   ASCII code   GS   FF

Hexadecimal code 1D   0C

Decimal Code   29   12

Description：black Mark pattern, paper feed to next starting location to print.

Note： • this ordain is valid on black Mark pattern .

•To change the ordain during it is executing ,if doesn't find the black Mark will issue a warning buzzer，ordain executing is finish.

Chapter 4   barcode printing command

4.1   GS   E   C

[Name]   barcode off/on command

【format】 ASCII   GS   E   C   mode

Hexadecimal   1D   45   43   mode

Decimal   29   69   67   mode

[Description]: Open or close the barcode printing function according to the mode value

mode=0, Close the barcode printing

mode=1, Open the barcode printing

4.2 GS   h   n

[Name]   Select the height of the barcode

【format】   ASCII   GS   h   n
               Hexadecimal   1D   68   n
                  Decimal   29   104   n

[Description]:Select the height of the barcode for n point

[Range]$1 \leqslant n \leqslant 255$ [Default value]n=162

4.3 GS   H   n

[Name] select the print position of HRI characters

【Format]】   ASCII code   GS   H   n
               Hexadecimal code   1D   48   n
               Decimal Code   29   72   n

[Range] $0 \leqslant n \leqslant 3, 48 \leqslant n \leqslant 51$ [Default value]n=0

[Description]Select the print position of HRI characters when print barcode

Using n to choose print positionas shown below.

n	Print position
0,48	Do not print
1,49	above the bar code
2,50	at the bottom of the barcode
3,51	above and below the bar code

HRI represents readable bar code corresponding characters.

[Note]Use the fonts specified by GS f to print HRI characters

[Reference] GS f,GS k

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

[Name]   Print bar code

【format】 ①ASCII code   GS   k   m   d1...dk   NUL
             Hexadecimal code   1D   6B   m   d1...dk   00
             Decimal Code   29   107   m   d1...dk   0

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

[Range]①$0 \leqslant m \leqslant 6$ (k and d depend on the used bar code system)
        ②$65 \leqslant m \leqslant 73$(n and d depend on the used bar code system)

[Description] Selected the barcode system and print the barcode.

Choosing the value of m to decide bar code system：

	m	Barcode system	number of characters	characters	note
①	0	UPC-A	11 ≤ k ≤ 12	0～9	48 ≤ d ≤ 57
	1	UPC-E	11 ≤ k ≤ 12	0～9	48 ≤ d ≤ 57
	2	JAN13(EAN13)	12 ≤ k ≤ 13	0～9	48 ≤ d ≤ 57
	3	JAN8(EAN8)	7≤ k ≤8	0～9	48 ≤ d ≤ 57
	4	CODE39	1 ≤ k ≤ 255	0～9, A～Z, SP, $, %, +, -, ., / *(start/end character)	48 ≤ d ≤ 57, 65 ≤ d ≤ 90, d = 32, 36, 37, 43 , 45,46,47 d=42(start/end character)
	5	ITF	1 ≤ n ≤255 （even number）	0～9	48 ≤ d ≤ 57
	6	CODABAR	1 ≤ k ≤ 255	0～9 A～D $, +, -, ., /,:	48 ≤ d ≤ 57, 65 ≤ d ≤ 68, d = 36, 43, 45, 46, 47,58，
②	65	UPC-A	11 ≤ k ≤ 12	0～9	48 ≤ d ≤ 57
	66	UPC-E	11 ≤ k ≤ 12	0～9	48 ≤ d ≤ 57
	67	JAN13(EAN13)	12 ≤ k ≤ 13	0～9	48 ≤ d ≤ 57
	68	JAN8(EAN8)	7≤ k ≤8	0～9	48 ≤ d ≤ 57
	69	CODE39	1 ≤ k ≤ 255	0～9, A～Z, SP, $, %, +, -, ., / *(start/end character)	48 ≤ d ≤ 57, 65 ≤ d ≤ 90, d = 32, 36, 37, 43 , 45,46,47 d=42(start/end character)
	70	ITF	1 ≤ n ≤255 (even number)	0～9	48 ≤ d ≤ 57
	71	CODABAR	1 ≤ k ≤ 255	0～9 A～D $, +, -, ., /,:	48 ≤ d ≤ 57, 65 ≤ d ≤ 68, d = 36, 43, 45, 46, 47,58，
	72	CODE93	1 ≤ k ≤ 255	NU～SP(7FH)	0 ≤ d ≤127
	73	CODE128	2 ≤ k ≤ 255	NU～SP(7FH)	0 ≤ d ≤127

[Note①] • The command is ended by NUL code

•When the using barcode system is UPC- A or UPC - E, the printer will print bar code after receiving 12

bytes data , and the subsequent data will be processed as normal data

•When the using barcode system is JAN13(EAN13) the printer will print bar code after receiving 13 bytes

data , and the subsequent data will be processed as normal data.

　　•When the using barcode system is JAN8(EAN8),the printer will print bar code after receiving 8 bytes data ,

and the subsequent data will be processed as normal data

　　•The number of ITF barcode data must be even.When an odd number of data input , the printers will ignore

the last data

　　[Note②]•n specified the bytes of barcode data, and printer will process the n bytes of data as a bar code data from

the next character

　　•If n is beyond the specified scope, the printer will stop the processing of the command, and the follow-up data will be processed as a common data .[pay attention of the standard mode]

　　•If d is beyond the specified scope, the printer will just feed and the subsequent data will be processed as normal data.

　　•If the dimension of horizontal direction is beyond the print area, the printer will just feed paper

　　•The command into the paper according to the requirement of the print bar code, regardless the line spacing set by the of ESC2 or ESC3

　　•The command is effective only when there is no data in the print buffer, when there is data in print buffer the subsequent data of m will be processed as normal data

　　•The command set the print position to the beginning of a line after print the barcode .

　　•This command is not affected by many print mode (bold print, overlapping, underline, character size,highlighting orcharacter 90 °), except the rotated and inverted print mode

　　•When using thermal Mark, if the height of bar code is not suitable for the current tag, then the extra part will be printed on the next Mark.

　　•When using CODE93 (m = 72) :The printer print a HRI character (□) in the beginning of the HRI string , as the starting word of HRI string

　　•The printer print a HRI character (□) in the ending of the HRI string , as the ending word of HRI string

　　•Printers print HRI character (□ + a literal characters) as control characters (00 <H> to < 1F> H and < 7 F>H) :

　　•Please consider the following factors about data transfer when the printer using CODE128 :

　　①The head of the barcode data string must must be the code set character (CODEA CODEB, or The CODEC) , used to select the code set firstly use

　　② using character "{" and" a character combinations to define the special characters.By transmitting "{" 2times to define ASCII characters" {".

Special characters	Data Transmitting		
	ASCII code	Hexadecim	Decimal
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

[Instance]Print the"No. 123456" instance data

In this instance, printer print "No." first with CODEB , then use the CODEC to print the following number :GS k73 09 32 33 34 35, 36, 78, 111, 4631

•If the bar code data string head is not the code set choose character, the printer will stop command processing, and

the follow-up data will processed as common data

•If the "{" and the subsequent characters combination do not apply to any special characters, the printer will stop command processing, and the follow-up data will processed as common data

•If the printer received any characters that cannot be used for special code set , the printer will stop command processing, and the follow-up data will processed as common data

•Printer does not print the corresponding characters to shift character or code set selected character

•The function character of HRI character is a space.

•The control characters (<> to < 1 > f H and H < 7 > f H) of HRI character is a space

<Other>Confirm keep spacing on the left and right of bar code around (the spacing is vary with the different

of bar code).

[Reference] GS H、GSf 、GS h、GSw

4.5 QR Code

[Name] Setting the size of the pixel

【format】 ASCII   ESC # # Q P I X   n

Hexadecimal code   1B 23 23 51 50 49 58 n

[Description] Setting the size of the pixel

[Note②] • n --- QR CODE size of the pixel,1byte.

[Range] • $1 \leqslant n \leqslant 24$.

4.6 QR Code

[Name] setting size of the unit

【format】ASCII	GS	(	k	pL	pH	1	C	n
Hexadecimal code	1D	28	6B	03	00	31	43	n
Decimal Code	29	40	107	03	0	49	67	n

[Description] Setting QR CODE unit size

[Note]・n is the version NO. of QR CODE，determines the height and width of the QR CODE

[Range]・$1 \leqslant n \leqslant 16$.

4.7　QR Code

[Name]　setting the error correction level

【Format】ASCII	GS	(	k	pL	pH	1	E	n
Hexadecimal code	1D	28	6B	03	00	31	45	n
Decimal Code	29	40	107	03	0	49	69	n

[Description] setting the error correction level of QR CODE,n means:

n	Note	The proportion of error correction （%）
48	Level L	7
49	Level M	15
50	Level Q	25
51	Level H	30

4.8 QR Code

[Name]　transfer data to code buffer

【format】ASCII	GS	(	k	pL	pH	1	P	m	d0....dk
Hexadecimal code	1D	28	6B	03	00	31	50	m	d0...dk
Decimal Code	29	40	107	03	0	49	80	m	d0...dk

[Description] setting the error correction level

[Note]・pL pH, is the length of the following data, $4 \leqslant (pL + pH \times 256) \leqslant 2710$

　　　　$(pL + pH \times 256) = len + 3$，　len is the length of the code data
　　・m is fixed with 0x30
　　・d0...dk the k is bite code data,k = (pL + pH × 256) - 3

4.9 QR Code

[Name] print the 2d barcode with code buffer

【Format】ASCII	GS	(	k	pL	pH	1	Q	m
Hexadecimal code	1D	28	6B	03	00	31	51	m
Decimal Code	29	40	107	03	0	49	81	m

[Description] sprint the 2d barcode with code buffer

[Note]pL pH, is the length of data,$4 \leqslant (pL + pH \times 256) \leqslant 2710$

- m is fixed with 0x30

Chapter 5   Status reference command

5.1 GS a n

[Name]   【Printer Status Returns】

【Format】 ASCII Code	GS	a	n
Hex code	1D	61	n
Decimal code	29	97	n

n :rbitrary number

The printer returns a 4-byte status information, as follows

The first one byte			
Seat	Open/close	HEX	Status
Bit0-Bit1	0	00	No definition, fixed at 0
Bit2	1	04	No definition, fixed at 1
Bit3	0	00	The printer has a buffer, acceptable data
	1	08	The printer buffer is full, don't accept data
Bit4	1	10	No definition, fixed at 1
Bit5	0	00	Close
	1	20	Open
Bit6	0	00	Not take the paper by the FEED button
	1	40	taking a paper by the FEED button
Bit7	0	0	No definition, fixed at 0
The second byte			
Seat	Open/close	HEX	Status
Bit0-Bit2	0	00	No definition, fixed at 0
Bit3	0	00	Cutter normal
	1	08	Cutter error

Bit4	0	00	No definition, fixed at 0
Bit5	0	00	no automatic recovery error occurred
	1	20	can automatically restored error occurred
Bit6	0	00	Printer temperature is normal
	1	40	Printer overheating
Bit7	0	0	No definition, fixed at 0
The third byte			
seat	Open/close	HEX	Status
Bit0-Bit1	0	00	Not detected paper will do
	1	03	Nearly printer paper
Bit2-Bit3	0	00	The printer has a paper
	1	0c	Printer is out of paper
Bit4	0	00	No definition, fixed at 0
Bit5Bit6	-	--	No use
Bit7	0	00	No definition, fixed at 0
The fourth　byte			
seat	Open/close	HEX	Status
Bit0-Bit3	-	--	No use
Bit4	0	00	No definition, fixed at 0
Bit5-Bit6	-	--	No use
Bit7	0	00	No definition, fixed at 0

5.2 GS g 1

[Name] 【Returns printer density level】

【Format】　ASCII Code　　GS　　g　　1

　　　　　　　HEX code　　1D　　67　　31

　　　　　　　Decimal code　29　　103　　49

Features：Get printer density level

Explanation:This command will get a return value of type string after execution,level;

Level Range:0~3 ,The larger the value ,the greater the concentration (maximum concentration, darkest 3)

5.3 GS g 2

[Name] 【Returns printer speed】

【Format】　ASCII Code　　GS　　g　　2

　　　　　　　HEX code　　1D　　67　　32

　　　　　　　Decimal code　29　　103　　50

Features：Get the printer to print speed

Explanation:This command will get a return value of type string after execution, speed;

・speed value is:50、80、120、150、180、200、220

・speed:The larger the value, the faster print speed

・speed Returns a range of values of printer（50≤speed≤80，speed=80）

5.4   GS   g   3

[Name]   【Returns the current language type】

【Format】   ASCII Code   GS   g   3
                    HEX code   1D   67   33
                    Decimal code   29   103   51

Features：Returns the current language information

Explanation: This command will get a return value of type string after execution,Language;

language   The value corresponds to the type of language in the following table:

n	character set
0	USA
1	France
2	Germany
3	UK
4	Denmark
5	Sweden
6	Italy
7	Spain I
8	Japan
9	Norway
10	Denmark II
11	Spain II
12	Latin America
13	South Korea
14	Slovenia/ Croatia Dili Asia
15	China

5.5   GS   g   4

[Name]   【Black Mark parameter returns】

【Format】   ASCII Code   GS   g   4
                    HEX code   1D   67   34
                    Decimal code   29   103   52

Features：Black Mark parameter returns

Explanation: This command will get a return value of type string after execution;

The following are the possible return values and the corresponding black mark status:

return value	Black Mark Status
black Mark:　　disable	Black Mark is not enabled
black Mark:　　enable	Black Mark is enabled
BL ticket len:　　xxmm	Black Mark nominal length xx (mm)
black Mark wide: xxmm	Black Mark block width xx (mm)
print to bl:　　xxmm	Starting print to a black target distance of xx (mm)
cut to bl:　　xxmm	Cutter black mark for the distance to xx (mm)
BL set vol:　　xxmV	Black Mark set threshold voltage xx (mV)

5.6　　GS　g　5

[Name]　　【Returns the black mark sensor current detection voltage】

【Format】	ASCII Code	GS	g	5
	HEX code	1D	67	35
	Decimal code	29	103	53

Features: Returns the sensor current detection voltage.

Explanation: This command will get a return value of type string after execution, "BL current vol: d1d2"; d1d2 voltage is detected, the unit is V.

5.7　　GS　g　6

[Name]　　【Returns printer temperature】

【Format】	ASCII Code	GS	g	6
	HEX code	1D	67	36
	Decimal code	29	103	54

Features: Returns printer temperature

Explanation: This command will get a return value of type string after execution d1d2" ; d1d2 is detected by the temperature, in degrees Celsius.

5.8　　　GS　g　7

[Name]　　【Returns serial baud rate】

【Format】	ASCII Code	GS	g	7
	HEX code	1D	67	37
	Decimal code	29	103	55

Features：　Returns printer baud rate

Explanation ： This command will get a return value of type string after execution,"uart

baudrate: d1d2";   d1d2 baud rate is detected.

5.9   GS   g   8

[Name]   【Returns buzzer is enabled】

【Format】   ASCII Code   GS   g   8
               HEX code   1D   67   38
               Decimal code   29   103   56

Features：Returns buzzer enabled printer

Turned into a 1-byte variable, Bit0 - Bit7Features as follows

Bit0	1,ENABLE command and set the tone tweet	0,Disabled
Bit1	1, to enable the cutter after tweet	0,Disabled
Bit2	1, to enable tweet out of paper;	0,Disabled
Bit3	1, to enable other error tweet;	0,Disabled
Bit4-Bit7	Retention	

Explanation：This command will get a return value of type string after execution；
      Return value "beep: 0x0F" indicates Bit0 - Bit3 enabled;

5.10   GS   g   9

[Name]   【Reading the serial number】

【Format】ASCII Code   GS   g   9
          HEX code   1D   67   39
          Decimal code   29   103   57

Features：Read control panel motherboard serial number

Explanation：This command will get a return value of type string after execution, "sn: X1 X2 ...... Xlen"; X1 X2 ...... Xlen is the motherboard serial number to 0x00 for the terminator.

5.11   GS   g   a

[Name]   【Returns printer ID number】

【Format】ASCII Code   GS   g   a
          HEX code   1D   67   61
          Decimal code   29   103   97

Features：Two-way communication interface, return the printer ID number

Explanation：This command will get a return value of type string after execution, "ID: d1 d2 ... dn"; d1 d2 ... dn is the motherboard serial number.

5.12　　GS　g　b

[Name]　【Return to the factory date】

【Format】ASCII Code　GS　　　　g　　　b

　　　　　　HEX code　　1D　　　67　　　62

　　　　　　Decimal code　　29　　　103　　　98

Features：Reading the manufacture date

Explanation:This command will get a return value of type string after execution, "product date: YYYYMMDD";

　　　　YYYY represents the year, MM is the month, DD is the day.

　　　　For example: October 1, 2013, data　　Data Format: product date: 20130301

5.13　　GS　g　c

[Name]　【Returns whether to open the automatic cutter Reset Features】

【Format】ASCII Code　　　　GS　　　g　　c

　　　　　　HEX code　　　1D　　67　　63

　　　　　　Decimal code　　29　　103　　99

Features：Reset Features automatic cutter returns on state

Explanation：This command will get a return value of type string after execution;

The return value is "cut auto reset: enable" means the automatic cutter reset Features open;

The return value is "cut auto reset: disable" means the automatic cutter reset Features prohibited.

5.14　　GS　g　d

[Name]　　【Returns whether to open the barcode Features】

【Format】ASCII Code　　　GS　　　g　　d

　　　　　HEX code　　1D　　67　　64

　　　　　Decimal code　　29　　103　　100

Features：Returns on state barcode Features

Explanation：This command will get a return value of type string after execution;

　　　　The return value is "code: enable" indicates barcode Features open;

　　　　The return value is "code: disable" indicates barcode Features banned.

5.15　　GS　g　e

[Name]　【Before returning to take the paper away from the cutter】

【Format】ASCII Code　　　　GS　　　g　　e

　　　　　　HEX code　　　1D　　67　　65

　　　　　　Decimal code　　29　　103　　101

Features：Before returning to take the paper away from the cutter

Explanation：This command will get a return value of type string after execution;"feed before cut: d1d2"; d1d2 is feed paper distance, in millimeters.

5.16 GS g f

[Name] 【**Returns printer software version number**】

【Format】 ASCII Code GS g f
HEX code 1D 67 66
Decimal code 29 103 102

Features:Returns the printer's current software version number, the return value type to a string

Explanation：This command will get a return value of type string after execution; "feed before cut: d1d2"; d1d2 is the version number.

5.17 GS g g

[Name] 【**Returns the vendor name**】

【Format】 ASCII Code GS g g
HEX code 1D 67 67
Decimal code 29 103 103

Features：Returns the vendor name

Explanation：This command will get a return value of type string after execution,"factory: d1 ... dn";

D1 ... dn is the vendor name;

N represents the string length n bytes.

5.18 【GS g h】

[Name] **Returns the machine name**

【Format】 ASCII Code GS g h
HEX code 1D 67 68
Decimal code 29 103 104

Features：Returns the machine name

Explanation：This command will get a return value of type string after execution,"machine: d1 ... dn";

D1 ... dn is the name of the machine;

N represents the string length ,n bytes.

Chapter 6 MD5 Encryption instruction

6.1 MD5 encryption Explanation

MD5 Encryption is primarily used in machine and software bundle.

MD5 Encryption is primarily composed of three parts

- Downloadable write-only ID, write-only ID can only be written, can not be read
  Up to 8 Bytes.

The factory default is "12344321",

● Random key before acquiring MD5 data, you need to download a random secret key；
Up to 16 Bytes.
On power-up random key length 0

● MD5 return value from write-only ID and random key, synthesized a new file, the new file after the operation output of the 16-byte MD5 cipher text message.

6.2 ESC   #   #   W   O   I D   len   D1....D8

[Name]   Download Write-only ID

【Format】ASCII   ESC   #   #   W   O   I   D   len   D1....D$_{len}$
         Hex   1B   23 23   57   4F   49   44   len   D1....D$_{len}$

Features： Download a write-only ID, for MD5 encryption
         Len Write only ID length

Explanation： • D1....D$_{len}$ is the download the write-only ID。

For example, downloading write only ID is "1234" data, The hexadecimal data is sent to the printer is 1B   23   23   57   4F   49   44   04   31   32   33   34

6.3 ESC   #   #   R   O   I   D

[Name]   Gain write-only ID

【Format】ASCII   ESC   #   #   R   O   I   D
         Hex   1B   23   23 52   4F   49   44

Features： Communication port return value write-only ID, 8BYTE。

Return：ROID：len   D1.....D$_{len}$
         The length is len bytes
         D1.....D$_{len}$ ，write-only ID。

6.4 ESC   #   #   D   L   P   W   D1....D8

[Name]   Download random key

【Format】ASCII   ESC   #   #   D   L   P   W   len   D1....D$_{len}$
         Hex   1B   23   23   44   4C   50   57   len   D1....D$_{len}$

Features： Download random key for MD5 encryption
            Len is length for Random key

Explanation： D1....D$_{len}$ is the download random key, the length is   len bytes.

For example, downloading random key is "5678" data, The hexadecimal data is sent to the printer is 1B   23   23   44   4C   50   57   04   35   36   37   38

6.5 ESC # # G M D 5

[Name]   **MD5 encrypted data acquisition**

【Format】ASCII   ESC   #   #   G   M   D   5

               Hex   1B   23   23   47   4D   44   35

Features：Write only get MD5 encrypted ID.

【Return Value】16 byte, The write-only ID and a random code through MD5 cryptographic operation and production data

Explanation：the default write-only ID: "12344321"；

Chapter 7. language setting command

7.1 ESC # # SLAN n

[Name]   **setting language**

【format】ASCII   ESC   #   #   S   L   A   N   n

            Hex code   1B   23   23   53   4C   41   4E   n

【Range】 $0 \leq n \leq 128$

【Description】 Choose the n from the character code

n	Code page
0	PC437 [American/European standard]
1	katakana
2	PC850 [Multi language,Western European]
3	PC860 [Portugal]
4	PC863 [Canada-French]
5	PC865 [German-Germanic]
6	PC1252 [West Europe]
7	PC737 [Greek]
8	PC862 [Hebrew]
9	CP755 [East Europe]
10	Iran
11	CP775 [balto-Slavic]
12	CP932 [Japanese]
13	CP949 [Korean]
14	CP950 [Chinese traditional]
15	CP936 [Simplified Chinese]
16	PC1252[western European-Latin 1]
17	PC866 [Cyrillice*2]
18	PC852 [Latin2]
19	PC858 [Western European language]

20	CP861 [Icelandic]
21	CP866 [Cyrillic/Russian]
22	CP855 [Cyrillic/Bulgarian]
23	CP857 [Turkish]
24	CP864 [Arabic]
25	CP869 [Greek]
26	
27	
28	
29	
30	
31	
32	CP874 [Thailand]
33	CP1250[middle European Latin-2]
34	CP1251[Cyrillic/Russian]
35	CP1252[Western European-Latin1]
36	CP1253[Greek]
37	CP1254[Turkish]
38	CP1255[Hebrew]
39	CP1256[Arabic]
40	CP1257[Baltic]
41	CP1258[Vietnamese]

 Remark:

*CP932,   Japanese Shift-JIS，   **For example**：Japanese*

*CP936, Simplified GBK.   **For example**:Chinese (China),*
Chinese(Hongkong),Chinese(singapore)

*CP949,   Korean，   **For example**: Korean*

CP950, Chinese traditional Big5,For example:Chinese(TaiWan) Chinese(Macao)

 *CP874,   Thai   **For example** :Thai Language*

*CP1250,Middle Europe   **For example** :Czech,*
Hungarian,Polish,Romania,Croatian,Slovak,Albania,Slovenia,Serbian(Latin)

*CP1251,   Cyrillic，   **For example**:Bulgarian,Russian,*
Ukrainian, Belgium, Macedonian (FYROM), Kazakh, Kyrgyz, Tatar, Mongolian,
Azerbaijani, Uzbek, Serbian

*CP1252,   Western Europe(Latin I)，   **For example**：Catalan, Danish, German,*
English, Spanish, Finnish, French, Icelandic, Italian, Dutch, Norwegian, Portuguese,
Indonesian, Bashi Ke language, Afrikaans, Faroese, Malay language, Swahili, Galician,
Swedish

*CP1253,   Greek，   **For example**: Greek*

*CP1254,   Turkey，   **For example**:Turkish,Azeri, Uzbek*

*CP1255,   Hebrew，   **For example**:Hebrew*

*CP1256,   Arabic，   **For example**:Urdu, Persian, Arabic (Iraq,*
Egypt, Libya, Algeria, Morocco, Tunisia, Oman, Yemen, Syria, Jordan, Lebanon, Kuwait,

UAE, Bahrain, Qatar)

    *CP1257,   Baltic,   ***For example:****Estonian, Latvian,*
Lithuanian,

    *CP1258,   Vietnamese，   ***For example*** *:Vietnamese*