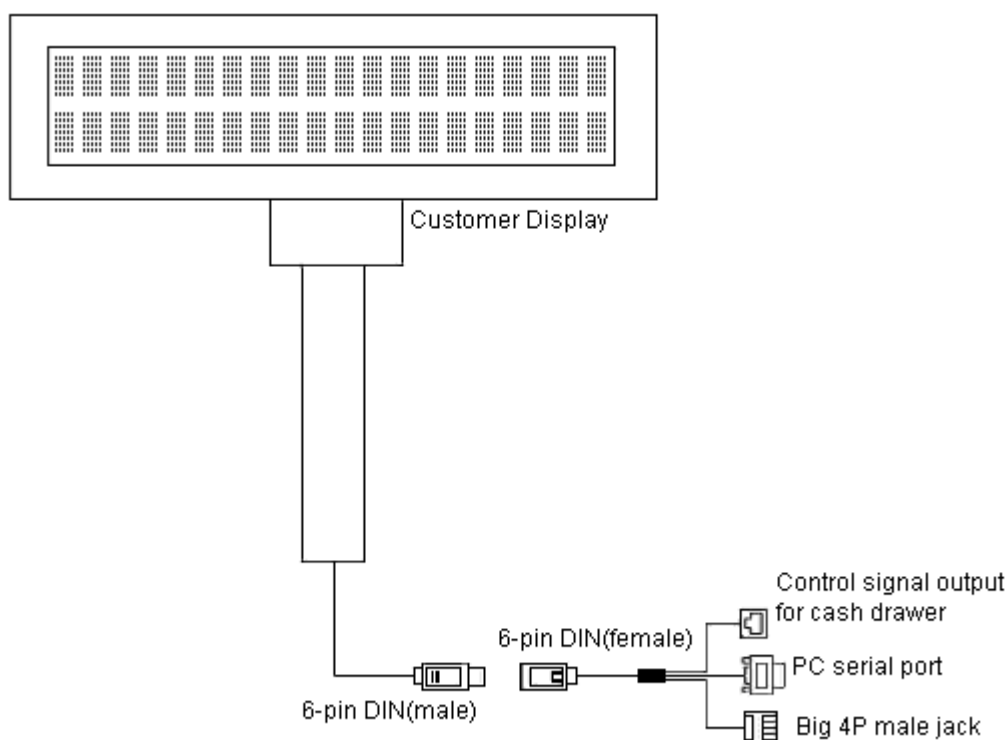


SUP220V Customer display

User's manual



VERSION 1.1.01

August 2010

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While all care has been taken to ensure the accuracy of this user manual, the continual development of this product may reflect some inaccuracies.

Sunphor takes no responsibility for the inaccuracies and will endeavour to update this user manual periodically. Further assistance can be supplied by your local dealer..

Specifications

MODEL	SUP220V
Display method	Vacuum fluorescent display
Display color	Blue green
Number of character	20 columns x 2 lines
Brightness	700 cd/m ²
Character font	5 x 7 dot matrix, comma, decimal point
Character size	9.2 x 5.25 mm
Character pitch	8.3mm
Code Page	PC-437 / 850 / 860 / 863/ 865, Slavonic, Russian, Katakana
Emulation	ESC/POS
Interface	RS-232 (with path through function), USB (optional)
Power Supply	12V DC
Power Consumption	4.5W
MTBF	25,000 hours
Dimensions	230(W) x 100(H) x 42(D) mm
Viewing angle	±30 degrees
Rotation angle	Maximum 270 degrees
Weight	0.9 Kg

Configuration:

1. Hardware configuration

- Interface : Serial port
- Baud rate : 9600 bit
- Parity bit : none
- Data bit : 8 bit
- Stop bit : 1 bit

2. Command sets: CD 5220-II and ESC/POS.

Send data to the serial interface for display, according to the system command details under the DOS or Windows mode.

3. No handshaking signal.

4. When in overwrite and vertical scroll modes, only could receive ≤200 bytes. If over 200 bytes, the data will be lost automatically.

When in horizontal scroll mode, only could receive ≤ 70 bytes. If over 70 bytes, the data will be lost automatically.

Download :

Under DOS mode, type **C:\>MODE COM1 9600,N,8,1**
C:\>TYPE CON>COM1

Type several bytes then press "enter", the bytes will appear in the customer display. Press Ctrl+C to return to DOS mode.

System command details :

1. STX B n / Set baud rate

ACSII Format : STX B n $0 \leq n \leq 5$

Dec. Format : [002][066] n $48 \leq n \leq 53$

Hex. Format : [02H][42H] n $30H \leq n \leq 35H$

Description: Change the system baud rate.

(Default baud rate after powering up : 9600bit/s)

ASCII n	Dec. n	Hex. n	Baud rate
0	48	30H	9600
1	49	31H	4800
2	50	32H	2400
3	51	33H	1200
4	52	34H	600
5	53	35H	300

2. STX M / Open cash drawer command

ACSII Format : STX M

Dec. Format : [002][077]

Hex. Format : [02H][4DH]

Description: Open the cash drawer through the command from customer display.

3. STX C n / Command type select

ACSII Format : STX C n $0 \leq n \leq 1$

Dec. Format : [002][067]n 48<=n<=49

Hex. Format : [02H][43H] n 30H<=n<=31H

Description: This command will change the command type and initialize the display

(Command set after powering up : CD5200)

ASCII n	Dec. n	Hex. n	Command type
0	48	30H	CD5200
1	49	31H	ESC/POS

4. STX S / Save data for demo display

ACSII Format: STX S

Dec. Format: [002][083]

Hex. Format: [02H][53H]

Description: Save demo message to EEPROM. The command is only available for the static state display mode, not for the scroll mode.

5. STX D n / Run demo message

ACSII Format: STX D n 0<=n<=1

Dec. Format: [002][068]n 48<=n<=49

Hex. Format: [02H][44H]n 30H<=n<=31H

Description: Run demo message which has been saved by command STX S to EEPROM
When n=0, the demo message will be displayed under overwrite mode;
When n=1, the demo message will be displayed under upper line scroll mode.

6. STX MD5 n / Select international character set

ACSII Format: STX MD5 n

Dec. Format: [002][005]n 48<=n<=60

Hex. Format: [02H][05H]n 30H<=n<=3CH

Description: Select the international character set. The setting function will be saved to EEPROM.

ASCII n	Dec. n	Hex. n	International font set
0	48	30H	U.S.A
1	49	31H	FRANCE
2	50	32H	GERMANY
3	51	33H	U.K
4	52	34H	DENMARKI
5	53	35H	SWEDEN
6	54	36H	ITALY
7	55	37H	SPAIN
8	56	38H	JAPAN

9	57	39H	NORWAY
:	58	3AH	DENMARKII
;	59	3BH	SLAVONIC
<	60	3CH	RUSSIA

International font set

	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA												
FRANCE												
GERMANY												
U.K												
DENMARKI												
SWEDEN												
ITALY												
SPAIN												
JAPAN												
NORWAY												
DENMARK II												
SLAVONIC												
RUSSIA												

CD 5220—II Standard Mode

1. ESC DC1 / Overwrite mode

ACSII Format : ESC DC1

Dec. Format : [027][017]

Hex. Format : [1BH][11H]

Description: Change the display mode to overwrite mode. In the mode, the cursor moves from left-most to right-most position of upper line, the move to the left-most position of lower line. When cursor moves from the right-most of lower line to left-most position of upper line, the former characters will be overwrite.

2. ESC DC2 / Vertical scroll mode

ACSII Format : ESC DC2

Dec. Format : [027][018]

Hex. Format : [1BH][12H]

Description: Change the display mode to vertical scroll mode. In this mode, the cursor moves from left-most to right-most position of upper line, then move to the left-most position of lower line. When the cursor move to the right-most of lower line, the characters in the lower line will scroll up to replace the characters in the upper line.

3. ESC DC3 / Horizontal scroll mode

ACSII Format : ESC DC3

Dec. Format : [027][019]

Hex. Format : [1BH][13H]

Description: Change the display mode to the horizontal scroll mode. In this mode, the cursor is off, the characters will push displayed from the right-most position of upper line.

4. ESC Q A d1d2d3.....dn CR / Upper line display

ACSII Format : ESC Q A d1d2d3.....dn CR

Dec. Format : [027][081][065]d1d2d3...dn[013]

Hex. Format : [1BH][51H][41H]d1d2d3...dn[0DH]

Description: In this mode, cursor is off, characters display d1 d2 d3....dn (1<= n<=20) in the upper line.

5. ESC Q B d1d2d3.....dn CR / Lower line display

ACSII Format : ESC Q B d1d2d3...dn CR

Dec. Format : [027][081][066]d1d2d3...dn[013]

Hex. Format : [1BH][51H][42H]d1d2d3...dn[0DH]

Description: In this mode, cursor is off, characters display d1 d2 d3....dn (1<= n<=20) in the lower line.

6. ESC Q D d1 d2 d3dn CR / Upper line message scroll continuously

ACSII Format : ESC Q D d1 d2 d3....dn CR

Dec. Format : [027][081][068] d1d2d3...dn [013] 32<=dn<=255

Hex. Format : [1BH][51H][44H] d1d2d3...dn [0DH] 20H<=dn<=ffH

Description: Change the display mode to the horizontal scroll mode. In this mode, the cursor

is off, the characters will push displayed from left-most position of upper line.

7. ESC [D / Move cursor left

ACSII Format : ESC [D

Dec. Format : [027][091][068]

Hex. Format : [1BH][5BH][44H]

Description: When the cursor reached the left-end, this command operates differently depending on the display mode.

- a. Overwrite mode: When the cursor is at the left-end of lower line, it will continue to the right-end of upper line. When the cursor is at the left-end of upper line, it will continue to the right-end of lower line.
- b. Vertical scroll mode: When the cursor is at the left-end of the lower line, it will continue to the right-end of the upper line. When the cursor is at the left-end of upper line, the characters display on the upper line scroll to the lower line, and the upper line is cleared. The cursor will move to the right-end of upper line.
- c. Horizontal scroll mode: The cursor will remain stationary.

8. BS / Move cursor left

ACSII Format : BS

Dec. Format : [008]

Hex. Format : [08H]

Description: When the cursor reached the left-end, this command operates differently depending on the display mode.

- a. Overwrite mode: When the cursor is at the left-end of lower line, it will continue to the right-end of upper line. When the cursor is at the left-end of upper line, it will continue to the right-end of lower line.
- b. Vertical scroll mode: When the cursor is at the left-end of the lower line, it will continue to the right-end of the upper line. When the cursor is at the left-end of upper line, the characters display on the upper line scroll to the lower line, and the upper line is cleared. The cursor will move to the right-end of upper line.
- c. Horizontal scroll mode: The cursor will remain stationary.

9. ESC [C / Move cursor right

ACSII Format : ESC [C

Dec. Format : [027][091][067]

Hex. Format : [1BH][5BH][43H]

Description: When the cursor reached the right-end, this command operates differently depending on the display mode.

- a. Overwrite mode: When the cursor reached the right-end of the lower line, it will continue to the left-end of the upper line. When the cursor reached the right-end of the upper line, it will continue to the left-end of the lower line.
- b. Vertical scroll mode: When the cursor reached the right-end of the upper line, it will continue to the left-end of the lower line, and the characters display on the lower line scroll to the upper line, and the lower line is cleared. The cursor will move to the left-end of lower line.
- c. Horizontal scroll mode: The cursor will remain stationary.

10. HT / Move cursor right

ACSII Format : HT

Dec. Format : [009]

Hex. Format : [09H]

Description: When the cursor reached the right-end, this command operates differently depending on the display mode.

- a. Overwrite mode: When the cursor reached the right-end of the lower line, it will continue to the left-end of the upper line. When the cursor reached the right-end of the upper line, it will continue to the left-end of the lower line.
- b. Vertical scroll mode: When the cursor reached the right-end of the upper line, it will continue to the left-end of the lower line, and the characters display on the lower line are scroll to the upper line, and the lower line is cleared. The cursor will move to the left-end of lower line.
- c. Horizontal scroll mode: The cursor will remain stationary.

11. ESC [A / Move cursor up

ACSII Format : ESC [A

Dec. Format : [027][091][065]

Hex. Format : [1BH][5BH][41H]

Description: When the cursor is on the top line, this command operates differently depending on the display mode.

- a. Overwrite mode: The cursor is moved to the same column on the lower line.
- b. Vertical scroll mode: The characters display on the upper line are scrolled to the lower line, and the upper line is cleared. The cursor will remain at the same position.

c. Horizontal scroll mode: The cursor will remain stationary.

12. ESC [B / Move cursor down

ACSII Format : ESC [B

Dec. Format : [027][091][066]

Hex. Format : [1BH][5BH][42H]

Description : When the cursor reached the lower line, the command operates differently depending on the display mode.

- a. Overwrite mode: The cursor is moved to the same column on the upper line.
- b. Vertical scroll mode: The characters display on the lower line are scrolled to the upper line, and the lower line is cleared. The cursor will remain at the same position.
- c. Horizontal scroll mode: The cursor will remain stationary.

13. LF / Move cursor down

ACSII Format : LF

Dec. Format : [010]

Hex. Format : [0AH]

Description : When the cursor reached the lower line, the command operates differently depending on the display mode.

- a. Overwrite mode: The cursor is moved to the same column on the upper line.
- b. Vertical scroll mode: The characters display on the lower line are scrolled to the upper line, and the lower line is cleared. The cursor will remain at the same position.
- c. Horizontal scroll mode: The cursor will remain stationary.

14. ESC [H / Move cursor to home position

ACSII Format : ESC [H

Dec. Format : [027][091][072]

Hex. Format : [1BH][5BH][48H]

Description : The cursor will be moved to the left position of the upper line.

15. HOM / Move cursor to home position

ACSII Format : HOM

Dec. Format : [011]

Hex. Format : [0BH]

Description : The cursor will be moved to the left position of the upper line.

16. ESC [K / Move cursor to bottom position

ACSII Format : ESC [K

Dec. Format : [027][091][075]

Hex. Format : [1BH][5BH][4BH]

Description : The cursor will be moved to the right-end position on the lower line.

17. ESC [L / Move cursor to left-most position

ACSII Format : ESC [L

Dec. Format: : [027][091][076]

Hex. Format : [1BH][5BH][4CH]

Description : The cursor will be moved to the left-end position of the current line.

18. CR / Move cursor to left-most position

ACSII Format : CR

Dec. Format : [013]

Hex. Format : [0DH]

Description : The cursor will be moved to the left-end position of the current line.

19. ESC [R / Move cursor to right-most position

ACSII Format : ESC [R

Dec. Format : [027][091][082]

Hex. Format : [1BH][5BH][52H]

Description : The cursor will be moved to the right-end position of the current line

20. ESC I x y / Move cursor to specified position

ACSII Format : ESC I x y Program conversion x , 1<=y<=2

Dec. Format : [027][108] x y 1<=x<=20 , 49<=y<=50

Hex. Format : [1BH][6CH]x y 1H<=x<=14H , 31H<=y<=32H

Description : The cursor will be moved to the X column on the y line.

21. ESC @ / Initialize display

ACSII Format : ESC @

Dec. Format : [027][064]

Hex. Format: : [1BH][40H]

Description : The data in the input buffer will be cleared and reset from default.

22. CLR / Clear display screen

ACSII Format : CLR

Dec. Format : [012]

Hex. Format : [0CH]

Description : All the display characters will be cleared.

23. CAN / Clear current line, and cancel string mode

ACSII Format : CLR

Dec. Format : [024]

Hex. Format : [18H]

Description : The current line is cleared, and the string mode is cancelled.

24. ESC * n / Brightness adjustment

ACSII Format : ESC * n 1<=n<=4

Dec. Format : [027][042]n 49<=n<=52

Hex Format : [1BH][2AH]n 31H<=n<=34H

Description : Adjust the brightness of the vacuum fluorescent display.

When n=1 , brightness=40%.

When n=2 , brightness=60%.

When n=3 , brightness=80%.

When n=4 , brightness=100%.

25. ESC _ n / Set cursor ON or OFF

ACSII Format : ESC _ n 0<=n<=1

Dec. Format : [027][095] n 48<=n<=49

Hex. Format : [1BH][5FH] n 30H<=n<=31H

Description: Set cursor On or OFF

When n=0 , cursor is OFF.

When n=1 , cursor is On.

26. ESC f n / Select international font

ACSII Format : ESC f n 0<=n<= <

Dec. Format : [027][102]n 48<=n<=60

Hex. Format : [1BH][66H]n 30H<=n<=3CH

INTERNATIONAL FONT

	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA												
FRANCE												
GERMANY												
U.K												
DENMARKI												
SWEDEN												
ITALY												
SPAIN												
JAPAN												
NORWAY												
DENMARK II												
SLAVONIC												
RUSSIA												

INTERNATIONAL FONT

	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA												
FRANCE												
GERMANY												
U.K												
DENMARKI												
SWEDEN												
ITALY												
SPAIN												
JAPAN												
NORWAY												
DENMARK II												
SLAVONIC												
RUSSIA												

27. ESC c n / Select extend font

ASCII Format: ESC c n 0<=n<=7

Dec. Format: [027][099] n 48<=n<=55

Hex. Format: [1BH][63H] n 30H<=n<=37H

Description: The extend fonts are saved in 80H...FFH

ASCII n	Dec. n	Hex. n	Character code table (80H...FFH)
A	64	41H	U.S.A. and Standard Europe
J	74	4AH	Katakana for Japan
L	76	4CH	SLAVONIC
R	82	52H	RUSSIA

Standard Europe

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80H																
90H																
A0H																
B0H																
C0H																
D0H																
E0H																
F0H																

Katakana

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80H																
90H																
A0H																
B0H																
C0H																
D0H																
E0H																
F0H																

SLAVONIC

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80H																
90H																
A0H																
B0H																
C0H																
D0H																
E0H																
F0H																

RUSSIA

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80H																
90H																
A0H																
B0H																
C0H																
D0H																
E0H																
F0H																

EPSON ESC/POS standard command details

1. US MD1 / Overwrite mode

ACSII Format: US MD1

Dec. Format: [031][001]

Hex. Format: [1FH][01H]

Description: Change the display mode to the overwrite mode. In this mode, the cursor will move rightward and begin from the upper left-end position. When the cursor reached the end of the upper line, the cursor will move down to the bottom left-end position to continue. When the cursor reached the end of the bottom line, it will move up to the upper left-end position and overwrite the previous characters.

2. US MD2 / Vertical scroll mode

ACSII Format: US MD2

Dec. Format: [031][002]

Hex. Format: [1FH][02H]

Description: Change the display mode to the vertical scroll mode. In this mode, the cursor will move rightward. The cursor will begin from the upper left-end position until it reached the end of the upper line. The data will scroll the bottom line up to replace the upper line, the cursor will then move down to the bottom left-end position to continue until it reached the end of the bottom line.

3. US MD3 / Horizontal scroll mode

ACSII Format: US MD3

Dec. Format: [031][003]

Hex. Format: [1FH][03H]

Description: Change the display mode to the horizontal scroll mode. In this mode, the characters will push displayed from the right-most position of the line where cursor is.

4. BS / Move cursor left

ACSII Format: BS

Dec. Format: [008]

Hex. Format: [08H]

Description: The cursor can be on or off by command: US C n.

When the cursor reached the left-end, this command operates differently depending on the display mode.

- a. Overwrite mode: When the cursor is at the left-end of lower line, it will continue to the right-end of upper line. When the cursor is at the left-end of upper line, it will continue to the right-end of lower line.
- b. Vertical scroll mode: When the cursor is at the left-end of the lower line, it will continue to the right-end of the upper line. When the cursor is at the left-end of upper line, the characters display on the upper line scroll to the lower line, and the upper line is cleared. The cursor will move to the right-end of upper line.
- c. Horizontal scroll mode: The cursor will remain stationary.

5. HT / Move cursor right

ACSII Format: HT

Dec. Format: [009]

Hex. Format: [09H]

Description: The cursor can be on or off by the command: US C n.

When the cursor reached the left-end, this command operates differently depending on the display mode.

- a. Overwrite mode: When the cursor is at the left-end of lower line, it will continue to the right-end of upper line. When the cursor is at the left-end of upper line, it will continue to the right-end of lower line.
- b. Vertical scroll mode: When the cursor is at the left-end of the lower line, it will continue to the right-end of the upper line. When the cursor is at the left-end of upper line, the characters display on the upper line scroll to the lower line, and the upper line is cleared. The cursor will move to the right-end of upper line.
- c. Horizontal scroll mode: The cursor will remain stationary in the right-end position.

6. US LF / Move cursor up

ACSII Format: US LF

Dec. Format: [031][010]

Hex. Format: [1FH][0AH]

Description: The cursor can be on or off by the command: US C n.

When the cursor is on the top line, this command operates differently depending on the display mode.

- a. Overwrite mode: The cursor is moved to the same column on the lower line.
- b. Vertical scroll mode: The characters display on the upper line are scrolled to the lower line, and the upper line is cleared. The cursor will remain at the same position.
- c. Horizontal scroll mode: The cursor will remain stationary.

7. LF / Move cursor down

ACSII Format: LF

Dec. Format: [010]

Hex. Format: [0AH]

Description: The cursor can be on or off by the command: US C n.

When the cursor reached the lower line, the command operates differently depending on the display mode.

- a. Overwrite mode: The cursor is moved to the same column on the upper line.
- b. Vertical scroll mode: The characters display on the lower line are scrolled to the upper line, and the lower line is cleared. The cursor will remain at the same position.
- c. Horizontal scroll mode: The cursor will remain stationary.

8. CR / Move cursor to home position

ACSII Format: CR

Dec. Format: [013]

Hex. Format: [0DH]

Description: The cursor will move to the left-end position of the current line.

The cursor can be on or off by the command: US C n.

9. US CR / Move cursor to right-most position of the current line

ACSII Format: US CR

Dec. Format: [031][013]

Hex. Format: [1FH][0DH]

Description: The cursor can be on or off by the command: US C n.

10. HOM / Move cursor to the left-most position of the upper line

ACSII Format: HOM

Dec. Format: [011]

Hex. Format: [0BH]

Description: The cursor can be on or off by the command: US C n.

11. US B / Move cursor to the right-most position of the lower line

ACSII Format: US B

Dec. Format: [031][066]

Hex. Format: [1FH][42H]

Description: The cursor can be on or off by the command: US C n.

12. US \$ x y / Move the cursor to the specified position

ACSII Format: US \$ x y x is set by programme , $1 \leq y \leq 2$

Dec. Format: [031][036] x y $1 \leq x \leq 20$, $49 \leq y \leq 50$

Hex. Format: [1FH][24H]x y $1H \leq x \leq 14H$, $31H \leq y \leq 32H$

Description: The cursor can be on or off by the command: US C n.

The cursor will be moved to the x column on the y line.

13. ESC @ / Initialize display

ACSII Format: ESC @

Dec. Format: [027][064]

Hex. Format: [1BH][40H]

Description : Initialize display, set display mode as overwrite mode.

Cursor off, maximum brightness, clear screen and move cursor to left-end of upper line.

14. CLR / Clear display screen

ACSII Format: : CLR

Dec Format : [012]

Hex Format : [0CH]

Description : Cleared all characters, and moved cursor to the left-end of upper line , Different from initialization , this command won't reset display to default .

15. CAN / Clear current line, and cancel string mode

ACSII Format : CAN

DEC Format : [024]

Hex Format : [18H]

Description : Clear current line , and move the cursor to the left-end of upper line . The cursor is default for invisible . Perform "US C n" command to turn it on/off.

16. US C n Set the state of cursor

ACSII Format : US C n 0<=n<=1

Dec Format : [031][067] n 48<=n<=49

Hex Format : [1FH][43H] n 30H<=n<=31H

Description: turn cursor on/off

n = 0, off

n = 1, on.

17. US @ Initialize display

ACSII Format: ESC @

Dec. Format: [027][064]

Hex. Format: [1BH][40H]

Description : Display the process of test .

18. ESC T h m Display time

ACSII Format: ESC T h m

Dec. Format: [027][084]h m 0<=h<=24 ; 0<=m<=60

Hex. Format: [1BH][54H]h m 00H<=h<=18H ; 00H<=m<=3CH

Description :Display preset time on lower line , and time automatically from a preset time . When an command use lower line , timing paused , perform command “US U” could continue to time.

19. US U continue to display time

ACSII Format: US U

Dec. Format: [031][085]

Hex. Format: [1FH][55H]

Description : continue display the time which is set by command “ESC T h m”.

20. US . n Display character n , and turn the point of the character on

ACSII Format: US . n

Dec. Format: [031][046]n 32<=n<=255

Hex. Format: [1FH][2EH]n 20H<=n<=FF

Description : Display character n , and turn the point of the character on.

21. US , n Display character n , and turn the comma of the character on

ACSII Format: US , n

Dec. Format: [031][044]n 32<=n<=255

Hex. Format: [1FH][2CH]n 20H<=n<=FF

Description : Display character n , and turn the comma of the character on.

22. US ; n Display character n , and turn the semicolon of the character on

ACSII Format: US ; n

Dec. Format: [031][059]n 32<=n<=255

Hex. Format: [1FH][3BH]n 20H<=n<=FF

Description : Display character n , and turn the semicolon of the character on.

23. US # n m Turn Triangle descriptor on lower line off

ACSII Format: US # n m

Dec. Format: [031][035]n m n=0,1 ; 1<=m<=20

Hex. Format: [1FH][23H]n m n=00H,01H ; 01H<=m<=14H

Description : Turn Triangle descriptor on lower line off.

24. US X n Adjust brightness

ACSII Format: US X n

Dec. Format: [027][042]n $1 \leq n \leq 4$

Hex. Format: [1BH][2AH]n $01H \leq n \leq 04H$

Description : Adjust brightness of screen.

n = 1 , brightness = 40%

n = 2 , brightness = 60%

n = 3 , brightness = 80%

n = 4 , brightness = 100%

25. US E n Set frequency of coruscating

ACSII Format: US E n

Dec. Format: [027][069]n $0 \leq n \leq 255$

Hex. Format: [1BH][45H]n $00H \leq n \leq FFH$

Description : Set flickering frequency of cursor . When execute this command , screen will flicker as the frequency of n , the greater , time slot of on/off is larger . If set to 0 , stop flickering.

26. ESC W n s x1 y1 x2 y2 Set the range of display screen

ACSII Format: ESC W n s x1 y1 x2 y2

Dec. Format: [027][087]n s x1 y1 x2 y2

 $1 \leq n \leq 4 ; s = 0 , 1 ; 1 \leq x1 \leq x2 \leq 20 ; 1 \leq y1 \leq y2 \leq 2$

Hex. Format: [1BH][57H]n s x1 y1 x2 y2

 $01H \leq n \leq 04H ; s = 00H , 01H ; 01H \leq x1 \leq x2 \leq 20H ; 01H \leq y1 \leq y2 \leq 02H$

Description: :Set display range of screen . After setting , received characters will display in this area.

27. ESC R n Select Table of International Font

ACSII Format: ESC R n

Dec. Format: [027][082]n $32 \leq n \leq 44$

Hex. Format: [1BH][52H]n $20H \leq n \leq 2CH$

Description: : Table International Font.

Dec n	Hex n	Table International Font
32	20H	U.S.A
33	21H	FRANCE
34	22H	GERMANY
35	23H	U.K.
36	24H	DENMARKI
37	25H	SWEDEN
38	26H	ITALY
39	27H	SPAIN
40	28H	JAPAN.
41	29H	NORMAY
42	2AH	DENMARKII
43	2BH	SLAVONIC
44	2CH	RUSSIA

Differences of International Font are describing as below figure:

国际字符码表（主要列出不同的内容）

	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
FRANCE	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
GERMANY	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
U.K	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
DENMARKI	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
SWEDEN	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
ITALY	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
SPAIN	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
JAPAN	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
NORWAY	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
DENMARK II	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
SLAVONIC	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
RUSSIA	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□

28. ESC t n Select Table of External Font

ACSII Format: ESC t n

Dec. Format: [027][116] n 0<=n<=7

Hex. Format: [1BH][74H] n 00H<=n<=07H

Description: : Select Table of External Font . Fonts are saved from 80H to FFH

DEC n	HEX n	Table of External Font (80H...FFH)
0	00H	U.S.A. and Standard Europe
1	01H	Katakana for Japan
2	02H	Multilingual
3	03H	Portuguese
4	04H	Canadian French
5	05H	Nordic
6	06H	SLAVONIC
7	07H	RUSSIA

Table of External Font is describing as below figure :

扩展字符字体表

Standard Europe

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
80H	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
90H	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
A0H	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
B0H	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
C0H	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
D0H	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
E0H	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
F0H	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□

EPSON ESC/POS command list :

Command	Code description(hex)	Description
HT	09H	Move cursor right
BS	08H	Move cursor left
US LF	1FH 0AH	Move cursor up
LF	0AH	Move cursor down
US CR	1FH 0DH	Move cursor to right-most position
CR	0DH	Move cursor to left-most position
HOM	0BH	Move cursor to home position
US B	1FH 42H	Move cursor to right-end position
US \$ x y	1FH 24H x y 1H<=x<=14H ; 31H<=y<=32H	Move cursor to specified position
CLR	0CH	Clear display screen, cursor move to home position
CAN	18H	Clear cursor line, cursor move to left-most position
US X n	1FH 58H n 1H<=n<=4H	Brightness adjustment
US E n	1F 45H n 0<=n<=FFH	Blink display screen
ESC @	1BH 40H	Initialize display
ESC R n	1BH 52H n 30H<=n<=3CH	Select international character set
US MD1	1FH 01H	Overwrite mode
US MD2	1FH 02H	Vertical scroll mode
US MD3	1FH 03H	Horizontal scroll mode