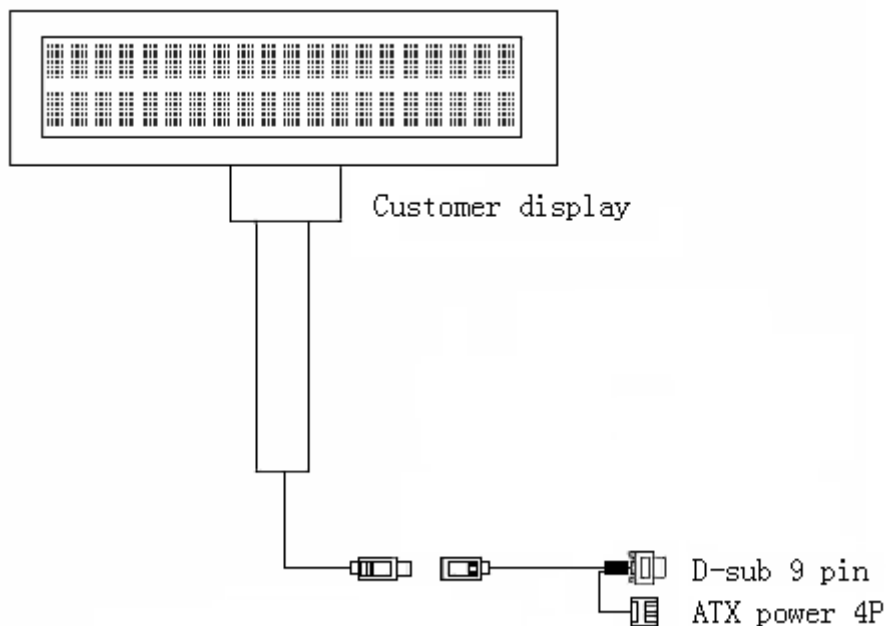


# ***User's Manual***

## **Models VFD220E**

### ***Vacuum Fluorescent Customer Display***



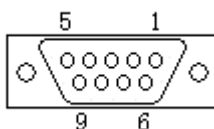
## **INTERFACE SPECIFICATIONS**

### **1. Communication**

The interface specification are based on EIA RS232C baud rate 9600 bps, 8 data bits, no parity, 1 stop bits.

### **2. RS232C Connector**

Connector type: D-sub 9 pin (Female)

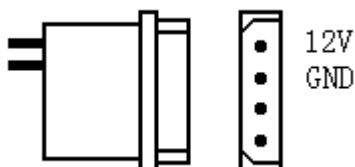


Pin number	Signal name	signal dirction DISPLAY-HOST
1	CD	-----
2	RXD	-----
3	TXD	<-----
4	DTR	-----

5	GND	<--->
6	DSR	----
7	RTS	----
8	CTS	----
9	RI	----

### 3. Power connector

Connector type:ATX POWER 4P(12V)



## General commands instruction set list:

### 1. STX B n

Name: select baud rate

ACSII: STX B n

Decimal: 002 066 n

Hex: 02H 42H n

Description: When the power is turned on, the default value of n is 0(set to 9600)

ASCII n	Decimal 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 C n

Name: select command set

ACSII: STX C n

Decimal: 002 067 n

Hex: 02H 43H n

Description: When the power is turned on, the default value of n is 0(set to CD5200/20)

ASCII n	Decimal n	Hex n	Command set
0	48	30H	CD5200/20
1	49	31H	ESC/POS

### 3. STX MD5 n

Name: select international fonts set

ACSII : STX MD5 n

Decimal: 002 005 n 48<=n<=60

Hex: 02H 05H n 30H<=n<=3CH

Description: select international fonts and stored in the internal EEPROM, the next power will continue to use this setting. When the power is turned on, the default value of n is A(set to U.S.A.)

ASCII n	Decimal n	Hex n	Country
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
A	58	3AH	DENMARKII
B	59	3BH	SLAVONIC
C	60	3CH	RUSSIA

select international fonts the character differences, please refer to the following:

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	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
FRANCE	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
GERMANY	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
U.K	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
DENMARKI	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
SWEDEN	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
ITALY	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
SPAIN	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
JAPAN	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
NORWAY	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
DENMARK II	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
SLAVONIC	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000
RUSSIA	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000	0000 0000 0000 0000

#### 4. STX MD6 n

Name: Select the Extended Character Font Table

ASCII : STX MD6 n

Decimal: 002 006 n 48<=n<=56

Hex: : 02H 06H n 30H<=n<=38H

Description: Select extended character font table and stored in the internal EEPROM, the next power will continue to use this setting. Use the font stored in 80H ... FFH.

<b>ASCII n</b>	<b>Decimal n</b>	<b>Hex n</b>	<b>Extended Character Font Table(80H...FFH)</b>
0	48	30H	U.S.A. and Standard Europe
1	49	31H	Katakana for Japan
2	50	32H	Multilingual
3	51	33H	Portuguese
4	52	34H	Canadian French
5	53	35H	Nordic
6	54	36H	SLAVONIC
7	55	37H	RUSSIA
8	56	38H	Turkish

# CD 5200/20

## commands instruction set list

### 1. ESC DC1

Name: Select overwrite mode

ACSII: ESC DC1

Decimal: 27 17

Hex: 1B 11

Description: In overwriting mode, entering a character code moves to the left end of the lower line when the cursor is at the right end of the upper line, and to the left end of the upper line when the cursor is at the right end of the lower line. When the power is turned on, this mode is selected defaultly.

### 2. ESC DC2

Name: Select vertical scroll mode

ACSII: ESC DC2

Decimal: 27 18

Hex: 1B 12

Description: In vertical scroll mode, entering a character code moves the cursor to the left end of the lower line when the cursor is at the right end of the upper line, scrolls the characters displayed on the lower line, and clears the lower line when the cursor is at the right end of the lower line. At this time the cursor is moved to the left end of the lower line.

### 3. ESC DC3

Name: Select horizontal scroll mode

ACSII: ESC DC3

Decimal: 27 19

Hex: 1B 13

Description: In horizontal scroll mode, entering a character code scrolls all displayed characters one character to the left, then displays the new character at the right end.

### 4. ESC Q A d1 d2 d3 ..... dn CR

Name: set the string display mode, write string to upper line

ACSII: ESC Q A d1 d2 d3 ..... dn CR

Decimal: 27 81 65 d1 d2 d3 ..... dn 13

Hex: 1B 51 41 d1 d2 d3 ..... dn 0D

Description: write string (d1 d2 d3 ..... dn) to upper line. 20H<=dn<=FFH, 1<=n<=20.

### 5. ESC Q B d1 d2 d3 ..... dn CR

Name: set the string display mode, write string to lower line

ACSII: ESC Q B d1 d2 d3 ..... dn CR

Decimal: 27 81 66 d1 d2 d3 ..... dn 13

Hex: 1B 51 42 d1 d2 d3 ..... dn 0D

Description: write string (d1 d2 d3 ..... dn) to lower line. 20H<=dn<=FFH, 1<=n<=20.

## **6. ESC Q D d1 d2 d3 ..... dn CR**

Name: upper line message scroll continuously

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

Decimal: 27 81 68 d1 d2 d3 ..... dn 13

Hex: 1B 51 44 d1 d2 d3 ..... dn 0D

Description : upper line message (d1 d2 d3 ..... dn) scroll continuously. 20H<=dn<=FFH, 1<= n<=20.

## **7. ESC [ D**

Name: move the cursor one character position to the left

ACSII: ESC [ D

Decimal: 27 91 68

Hex: 1B 5B 44

Description: When the cursor is at the left end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, it is moved to the right end of the lower line.

2) Vertical scroll mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, the display on the upper line is scrolled to the lower line and the upper line is cleared. At this time the cursor is moved to the right end of the upper line.

3) Horizontal scroll mode : All characters on the current line are scrolled on character to the right. The cursor is not moved, but the character area at the left end is cleared.

## **8. BS**

Name: move the cursor one character position to the left

ACSII: BS

Decimal: 8

Hex: 08

Description: When the cursor is at the left end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, it is moved to the right end of the lower line.

2) Vertical scroll mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, the display on the upper line is scrolled to the lower line and the upper line is cleared. At this time the cursor is moved to the right end of the upper line.

3) Horizontal scroll mode : All characters on the current line are scrolled one character to the right. The cursor is not moved, but the character area at the left end is cleared.

## **9. ESC [ C**

Name: move the cursor one character position to the right

ACSII: ESC [ C

Decimal: 27 91 67

Hex: 1B 5B 43

Description: When the cursor is at the right end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, it is moved to the left end of the upper line.

2) Vertical scroll mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, the display on the lower line is scrolled to the upper line and the lower line is cleared. At this time, the cursor is moved to the left end of the lower line.

3) Horizontal scroll line : All characters on the current line are scrolled one character to the left. The cursor is not moved, but the character area at the right end is cleared.

## **10. HT**

Name: move the cursor one character position to the right

ACSII: HT

Decimal: 9

Hex: 09

Description: When the cursor is at the right end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, it is moved to the left end of the upper line.

2) Vertical scroll mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, the display on the lower line is scrolled to the upper line and the lower line is cleared. At this time, the cursor is moved to the left end of the lower line.

3) Horizontal scroll line : All characters on the current line are scrolled one character to the left. The cursor is not moved, but the character area at the right end is cleared.

## **11. ESC [ A**

Name: move the cursor up one line

ACSII: ESC [ A

Decimal: 27 91 65

Hex: 1B 5B 41

Description: When the cursor is on the upper line, the operation of this command depends on the display mode, as follows:

- 1)Overwrite mode :The cursor is moved to the same column on the lower line.
- 2)Vertical scroll mode :The characters displayed on the upper line are scrolled to the lower line and the upper line is cleared. The cursor remains at the same position.
- 3)Horizontal scroll mode :The cursor is not moved.

## **12. ESC [ B**

Name: move the cursor down one line

ACSII: ESC [ B

Decimal: 27 91 66

Hex: 1B 5B 42

Description: When the cursor is on the lower line, the operation of this command depends on the display mode,as follows:

- 1)Overwrite mode :The cursor is moved to the same column on the upper line.
- 2)Vertical scroll mode :The characters displayed in the lower line are scrolled to the upper line and the lower line is cleared. The cursor remains at the same position.
- 3)Horizontal scroll mode :The cursor is not moved.

## **13. LF**

Name: move the cursor down one line

ACSII: LF

Decimal: 10

Hex: 0A

Description: When the cursor is on the lower line, the operation of this command depends on the display mode,as follows:

- 1)Overwrite mode :The cursor is moved to the same column on the upper line.
- 2)Vertical scroll mode :The characters displayed in the lower line are scrolled to the upper line and the lower line is cleared. The cursor remains at the same position.
- 3)Horizontal scroll mode :The cursor is not moved.

## **14. ESC [ H**

Name: move cursor to home position

ACSII: ESC [ H

Decimal: 27 91 72

Hex: 1B 5B 48

Description: Moves the cursor to the left-end position on the upper line (home position).Home position indicates the first column of the upper line.

## **15. HOM**

Name: move the cursor to the left-end position on the upper line (home position)

ACSII: HOM

Decimal: 11

Hex: 0B

## **16. ESC [ K**



Name: move the cursor to the 20th column of the lower line

ASCII: ESC [ K

Decimal: 27 91 75

Hex: 1B 5B 4B

### 17. ESC [ L

Name: move the cursor to left-most position on the current line

ASCII: ESC [ L

Decimal: 27 91 76

Hex: 1B 5B 4C

### 18. CR

Name: move the cursor to left-most position on the current line

ASCII: CR

Decimal: 13

Hex: 0D

### 19. ESC [ R

Name: move the cursor to the right-end position on the current line

ASCII: ESC [ R

Decimal: 27 91 82

Hex: 1B 5B 52

### 20. ESC l x y

Name: move cursor to specified position

ASCII: ESC l x y

Decimal: 27 108 x y

Hex: 1B 6C x y

Description: moves the cursor to the  $x$ th column on the  $y$ th line.  $1 \leq x \leq 20, y = 1, 2$

### 21. ESC @

Name: initialize display

ASCII: ESC @

Decimal: 27 64

Hex: 1B 40

Description: The software settings are reset to their power-on values. After initializing the display, the display screen is cleared and the cursor moves to the home position.

### 22. CLR

Name: clear display screen

ASCII: CLR

Decimal: 12

Hex: 0C

Description: Clear all the displayed characters. After this command is executed, the cursor

moves to the home position.

### 23. CAN

Name: clear cursor line, and clear string mode

ACSII: CAN

Decimal: 24

Hex: 18

Description: Clears the line containing the cursor. After this command is executed, the cursor moves to the left-end position on the current line.

### 24. ESC \* n

Name: brightness adjustment

ACSII: ESC \* n

Decimal: 27 42 n

Hex: 1B 2A n

Description: Sets the brightness of the vacuum fluorescent character display tube. n selects the percentage of brightness as follows:

n = 1, Brightness Level = 40 %

n = 2, Brightness Level = 60 %

n = 3, Brightness Level = 80 %

n = 4, Brightness Level = 100 %

When the power is turned on, n=4 is selected defaultly.

### 25. ESC \_ n

Name: set cursor ON/OFF

ACSII: ESC \_ n

Decimal: 27 95 n

Hex: 1B 5F n

Description: Turns the cursor on or off.

When n=0, the cursor is turned off.

When n=1, the cursor is turned on.

### 26. ESC f n

Name: select international fonts set

ACSII: ESC f n

Decimal: 27 102 n

Hex: 1B 66 n

Description: When the power is turned on, the default value of n is A (set to U.S.A.)

ASCII n	Decimal n	Hex n	Country
A	65	41H	U.S.A
D	68	44H	DENMARKI
E	69	45H	DENMARKII
F	70	46H	FRANCE
G	71	47H	GERMANY

I	73	49H	ITALY
J	74	4AH	JAPAN.
L	76	4CH	SLAVONIC
N	78	4EH	NORMAY
R	82	52H	RUSSIA
S	83	53H	SPAIN
U	85	55H	U.K.
W	87	57H	SWEDEN

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	□	□	□	□	□	□	□	□	□	□	□	□

## 27. ESC c n

Name: select fonts ,ASCII code or JIS code

ACSII: ESC c n

Decimal: 27 99 n

Hex: 1B 63 n

Description: When the power is turned on, the default value of n is A(set to U.S.A. and Standard Europe)

ASCII n	Decimal 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

# 扩展字符字体表

## Standard Europe

## 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																

































































































































扩展字符字体表  
Katakana

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																

扩展字符字体表  
SLAVONIC

## 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																

## 扩展字符字体表

## 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**

## **commands instruction set list**

### **1.    US   MD1**

Name: Select overwrite mode

ASCII: US   MD1

Decimal: 31   1

Hex: 1F   01

Description: In overwriting mode, entering a character code moves to the left end of the lower line when the cursor is at the right end of the upper line, and to the left end of the upper line when the cursor is at the right end of the lower line. When the power is turned on, this mode is selected defaultly.

### **2.    US   MD2**

Name: Select vertical scroll mode

ASCII: US   MD2

Decimal: 31   2

Hex: 1F   02

Description: In vertical scroll mode, entering a character code moves the cursor to the left end of the lower line when the cursor is at the right end of the upper line, scrolls the characters displayed on the lower line, and clears the lower line when the cursor is at the right end of the lower line. At this time the cursor is moved to the left end of the lower line.

### **3.    US   MD3**

Name: Select horizontal scroll mode

ASCII: US   MD3

Decimal: 31   3

Hex: 1F   03

Description : In horizontal scroll mode, entering a character code scrolls all displayed characters one character to the left, then displays the new character at the right end.

### **4.    BS**

Name: move the cursor one character position to the left

ASCII: BS

Decimal: 8

Hex: 08

Description: When the cursor is at the left end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, it is moved to the right end of the lower line.



2) Vertical scroll mode : When the cursor is at the end of the lower line, it is moved to the right end of the upper line. When it is at the end of the upper line, the display on the upper line is scrolled to the lower line and the upper line is cleared. At this time the cursor is moved to the right end of the upper line.

3) Horizontal scroll mode : All characters on the current line are scrolled one character to the right. The cursor is not moved, but the character area at the left end is cleared.

## **5. HT**

Name: move the cursor one character position to the right

ASCII: HT

Decimal: 9

Hex: 09

Description: When the cursor is at the right end of a line, the operation of this command depends on the display mode.

1) Overwrite mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, it is moved to the left end of the upper line.

2) Vertical scroll mode : When the cursor is at the right end of the upper line, it is moved to the left end of the lower line. When it is at the right end of the lower line, the display on the lower line is scrolled to the upper line and the lower line is cleared. At this time, the cursor is moved to the left end of the lower line.

3) Horizontal scroll line : All characters on the current line are scrolled one character to the left. The cursor is not moved, but the character area at the right end is cleared.

## **6. US LF**

Name: move the cursor up one line

ASCII: US LF

Decimal: 31 10

Hex: 1F 0A

Description: When the cursor is on the upper line, the operation of this command depends on the display mode, as follows:

1) Overwrite mode : The cursor is moved to the same column on the lower line.

2) Vertical scroll mode : The characters displayed on the upper line are scrolled to the lower line and the upper line is cleared. The cursor remains at the same position.

3) Horizontal scroll mode : The cursor is not moved.

## **7. LF**

Name: move the cursor down one line

ASCII: LF

Decimal: 10

Hex: 0A

Description: When the cursor is on the lower line, the operation of this command depends on the display mode, as follows:

1) Overwrite mode : The cursor is moved to the same column on the upper line.

2)Vertical scroll mode :The characters displayed in the lower line are scrolled to the upper line and the lower line is cleared. The cursor remains at the same position.

3)Horizontal scroll mode :The cursor is not moved.

## **8. CR**

Name: move the cursor to left-most position on the current line

ACSII: CR

Decimal: 13

Hex: 0D

## **9. US CR**

Name: move the cursor to the right-end position on the current line

ACSII: US CR

Decimal: 31 13

Hex: 1F 0D

## **10. HOM**

Name: move the cursor to the left-end position on the upper line (home position)

ACSII: HOM

Decimal: 11

Hex: 0B

## **11. US B**

Name: move the cursor to the 20th column of the lower line

ACSII: US B

Decimal: 31 66

Hex: 1F 42

## **12. US \$ x y**

Name: move cursor to specified position

ACSII: US \$ x y

Decimal: 31 36 x y

Hex: 1F 24 x y

Description: moves the cursor to the  $x$ th column on the  $y$ th line.  $1 \leq x \leq 20, y=1,2$

## **13. ESC @**

Name: initialize display

ACSII: ESC @

Decimal: 27 64

Hex: 1B 40

Description: The software settings are reset to their power-on values. After initializing the display, the display screen is cleared and the cursor moves to the home position.

## **14. CLR**



Name: clear display screen

ASCII: CLR

Decimal: 12

Hex: 0C

Description: Clear all the displayed characters. After this command is executed, the cursor moves to the home position.

## 15. CAN

Name: clear cursor line, and clear string mode

ASCII: CAN

Decimal: 24

Hex: 18

Description: Clears the line containing the cursor. After this command is executed, the cursor moves to the left-end position on the current line.

## 16. US C n

Name: set cursor ON/OFF

ASCII: US C n

Decimal: 31 67 n

Hex: 1F 43 n

Description: Turns the cursor on or off.

When n = 0, the cursor is turned off.

When n = 1, the cursor is turned on.

## 17. US . n

Name: display char 'n' and '.'

ASCII: US . n

Decimal: 31 46 n

Hex: 1F 2E n

Description: 20H ≤ n ≤ FFH

## 18. US , n

Name: display char 'n' and ','

ASCII: US , n

Decimal: [031][044]n

Hex: [1FH][2CH]n

Description: 20H ≤ n ≤ FFH

## 19. US ; n

Name: display char 'n' and ';'

ASCII: US ; n

Decimal: 31 59 n

Hex: 1F 3B n

Description: 20H ≤ n ≤ FFH

## 20. US X n

Name: brightness adjustment

ACSII: US X n

Decimal: 31 42 n

Hex: 1F 2A n

Description: Sets the brightness of the vacuum fluorescent character display tube. n selects the percentage of brightness as follows:

n = 1, Brightness Level = 40 %

n = 2, Brightness Level = 60 %

n = 3, Brightness Level = 80 %

n = 4, Brightness Level = 100 %

When the power is turned on, n = 4 is selected defaultly.

## 21. US E n

Name: Sets or cancels the blink interval of the display screen

ACSII: US E n

Decimal: 31 69 n

Hex: 1F 45 n

Description: n specifies the blink interval. When n = 0, the display is kept on (cancels blinking).

When n = FF Hex (255 decimal), the display is turned off but the contents of the display are maintained.

When the power is turned on, n = 0 is selected defaultly.

## 22. ESC R n

Name: select international fonts set

ACSII: ESC R n

Decimal: [027][082]n 32 ≤ n ≤ 44

Hex: [1BH][52H]n 00H ≤ n ≤ 0CH

Description: When the power is turned on, the default value of n is SPACE (set to U.S.A.)

Decimal n	Hex n	Country
0	00H	U.S.A
1	01H	FRANCE
2	02H	GERMANY
3	03H	U.K.
4	04H	DENMARKI
5	05H	SWEDEN
6	06H	ITALY
7	07H	SPAIN
8	08H	JAPAN.
9	09H	NORMAY
10	0AH	DENMARKII
11	0BH	SLAVONIC
12	0CH	RUSSIA

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												

23. ESC t n

Name: select fonts ,ASCII code or JIS code

ACSII: ESC t n

Decimal: [027][116] n

Hex: [1BH][74H] n

Description： When the power is turned on, the default value of n is 0(set to U.S.A. and Standard Europe)

Decimal	n	Hex	n	character code table(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

## 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																

## 扩展字符字体表

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																



## 扩展字符字体表

Multilingual

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

## 扩展字符字体表

## Portuguese

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

## 扩展字符字体表

### Canadian French

## Canadian French

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

## 扩展字符字体表

Nordic

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



扩展字符字体表  
SLAVONIC

## 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																

## 扩展字符字体表

## 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																