CD210 Customer Display

User's Manual

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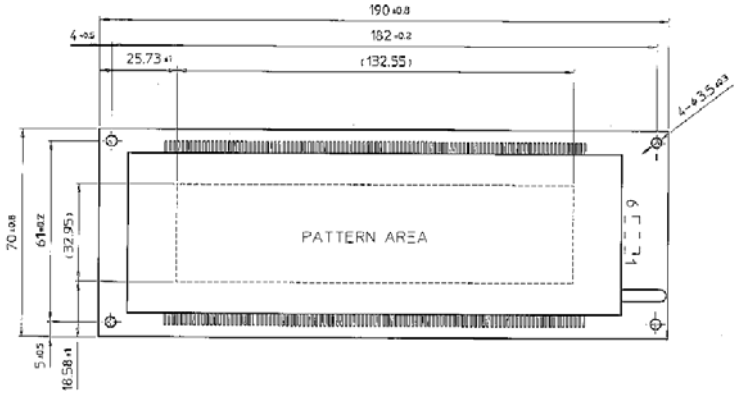
1. FEATURES

CD210 Customer Display is a device that used to display to the customers, which is a high luminance vacuum fluorescent display (VFD), equipped with 160*40dots. It realizes displaying numbers, characters, and Simplified Chinese GB2312 character. It can be applied in POS system, hospital, bus station, and so on.

2. DISPLAY LAYOUT



3. SPECIFICATION

- Outer Dimension: 90mm×70mm×30mm
- Display Area：132.5mm×32.9mm
- Color of Illumination：Green
- Luminance：typ. 350cd/m2
- Characters per row： 20 Number of

- rows: 2
- Display Character：GB2312 character （Chinese）, English, Japanese,
- Operating Voltage：12V±5%
- Operating Current：typ. 500Ma
- Interface：RS232C Serial communication baud rate：9600
- MTBF：50000 hours
- Power：6W

4. ENVIRONMENTAL CONDITION

- Operating Temperature: -0 ℃ - +70℃
- Storage Temperature：-20 ℃ - +70℃
- Operating Humidity: 10 - 90%
- Storage Humidity：0 - 90%

5. TESTING

CD210 is powered from Host computer through serial cable, if it is connected to DB9 connector, 9 pin will provide power; if it is connected to RJ45, 7pin and 8pin will provide power. The power configuration should be set on host, see the User's Guilder of Anypos.

The CD210 shall be powered by 12V self powered serial port. Check the voltage on the port before use it, otherwise, it may cause damage.

After completing the installation, it can be tested by a test program on the disk drive, follow the instruction on CHECK.

6. BASIC FUNCTION

6.1. Command

The followings are all the command of CD210.

No.	Command description	Command code
1	Set the baud rate	02H, 42H, br
2	The flush left display of the top line	1BH, 51H, 41H, d1, d2, d3…dn, 0DH
3	The flush left display of the bottom line	1BH, 51H, 42H, d1, d2, d3…dn, 0DH
4	The flush right display of the top line	1BH, 52H, 41H, d1, d2, d3…dn, 0DH
5	The flush right display of the bottom line	1BH, 52H, 42H, d1, d2, d3…dn, 0DH
6	Reset	1BH, 40H
7	All clear	0CH
8	Line clear	18H, ln
9	Back space without deleting	08H
10	Line feed	0AH
11	Carriage return	0DH
12	Display position	1BH, 5BH, (Py)H, 3BH, (Px)H, 48H
13	Dimming	1BH, 5CH, 3FH, 4CH, 44H, (Ps)H
14	Graphic display mode	1BH,5CH,3FH,4CH,47H Px,3BH,Py,3BH,Ph,3BH,Pw,3BH,Pd...

6.1.1. Set the baud rate（02H,42H,br）

This instruction can change system's baud rate.

The default value is 9600bit/s when power on.

br=30H=1200bit/s

br =31H=2400bit/s

br=32H=4800bit/s

br=33H=9600bit/s(default)

br=34H=19200bit/s

6.1.2. Set the display position

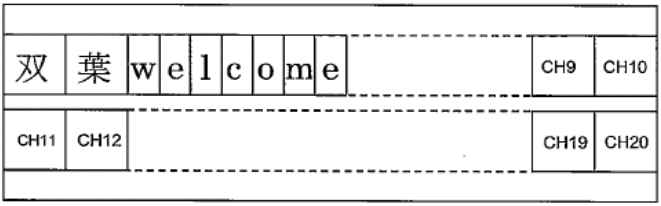
6.1.2.1. The flush left display of the top line

(1BH,51H, 41H,d1,d2,d3…dn,0DH)

Clear characters of top line and display the characters "dd2d3…dn" on the top line.

It will display the characters with flush left method. EX.)

1BH, 51H, 41H, CBH, ABH, D2H, B6H, 77H, 65H, 6CH, 63H, 6FH, 6DH, 65H, 0DH

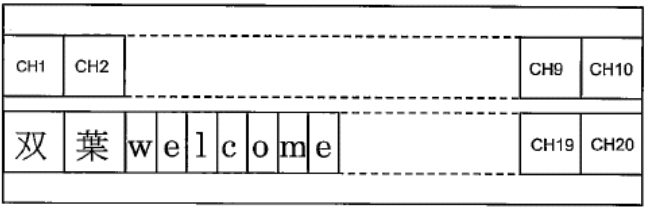


6.1.2.2. The flush left display of the bottom-line

（1BH, 51H, 42H, d1, d2, d3…dn,0DH)

Clear characters of bottom line and display the characters "dd2d3…dn" on the bottom-line.

It will display the characters with flush left method. Ex. 1BH, 51H, 42H, CBH, ABH, D2H, B6H, 77H, 65H, 6CH, 63H, 6FH, 6DH, 65H, 0DH



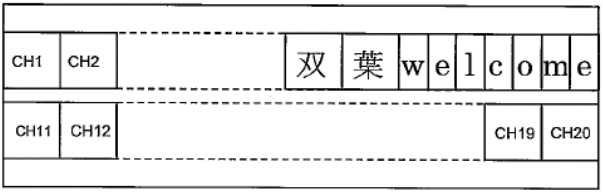
6.1.2.3. The flush right display of the top line

(1BH,52H,41H,d1,d2,d3…dn,0DH)

Clear characters of top line and display the characters "dd2d3…dn" on the top line.

It will display the characters with flush right method.

Ex.) 1BH, 52H, 41H, CBH, ABH, D2H, B6H, 77H, 65H,6CH,63H,6FH,6DH,65H,0DH

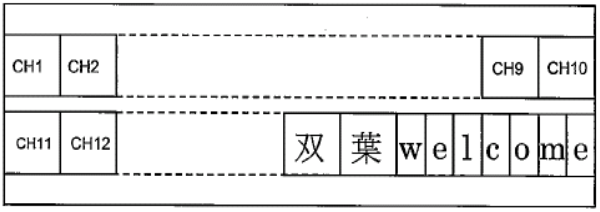


6.1.2.4. The flush right display of the bottom line (1BH,52H,42H,d1,d2,d3…dn,0DH)

Clear characters of bottom line and display the characters "dd2d3…dn" on the bottom-line.

It will display the characters with flush method.

Ex.) 1BH, 52H, 42H, CBH, ABH, D2H, B6H,77H,65H,6CH,63H,6FH,6DH,65H,0DH



6.1.3. All clear (0CH)

All the displayed character is erased. The write-in position is not changed.

6.1.4. Line clear(18H,ln)

Clear the characters on the n line. The write-in is not

changed.

ln=31H=TopLine

ln=32H=BottomLine

6.1.5. Display position (1BH, 5BH, (Py)H, 3BH, (Px)H, 48H)

- y=31H=TopLine
- Py=32H=BottomLine
- Px=31H to32H,30=digit
- The other data is ignored

6.1.6. Graphic display mode (1BH, 5C, 3FH, 4CH, 47H Px, 3BH, Ph, 3BH, Pw, 3BH, Pd…)

Px=The Display postion 0~159 (30H~31H, 35H, 39H)

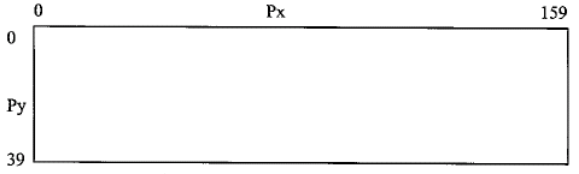
Py=The Display Postion 0~39(30H~33H,39H)

Ph=The height 1~40(31H~34H,30H)

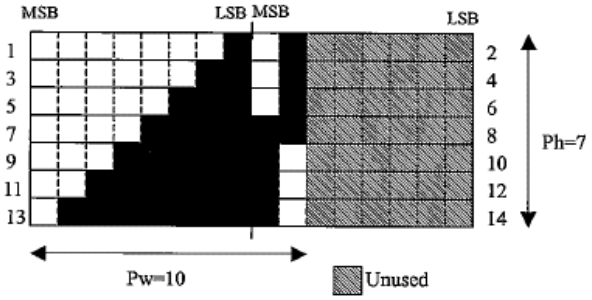
Pw=The width 1~160(31H~31H,36H,30H)

Pd=The display data (one byte HEX code)

The display position



The display image (Ex.)



Ph=7(37H), Pw=10(31H, 30H),
Pd=

1 byte	(01H)	2 byte	(40H)
3	(03H)	4	(40H)
5	(07H)	6	(40H)
7	(0FH)	8	(C0H)
9	(1FH)	10	(80H)
11	(3FH)	12	(80H)
13	(7FH)	14	(80H)