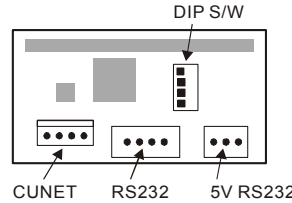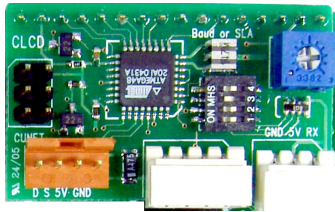COMFILE
TECHNOLOGY

CLCD User Manual

CLCD

CLCD-216 & 420
## Comfile CLCD Display Module

On the back of the CLCD, a control board is attached.   This control board receives CuNET (I2C) or RS232C signal and prints on the CLCD.
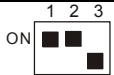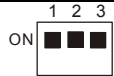
CLCD can communicate using I2C or RS232.   There are two RS232 connectors, one for 3pin 5V level signals and the other for 4 pin +/- 12V level signals.

CUNET   RS232   5V RS232
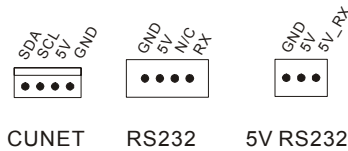
Use the DIP switch to set the I2C slave address.   The 4th DIP switch is not used.

DIP Switch	RS232 Baud rate	I2C Slave Address
ON 1 2 3	2400	0
ON 1 2 3	4800	1
ON 1 2 3	9600	2
ON 1 2 3	19200	3
ON 1 2 3	28800	4
ON 1 2 3	38400	5

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ON [1 2 3 dip switch: 1 on, 2 on, 3 off lower]	57600	6
ON [1 2 3 dip switch: 1 on, 2 on, 3 on]	115200	7

One of CUNET(I2C) or RS232 communication can be used.   If both are connected, please make sure when one of them is working, other is not.

The following is CLCD byte code:

Command	Example (hex)	Bytes	Execution Time	Explanation
ESC ' C'	1B 43	2	15mS	Clear screen. A 15ms delay must be given after this command.
ESC 'S'	1B 53	2		Cursor ON (Default)
ESC 's'	1B 73	2		Cursor OFF
ESC 'B'	1B 42	2		Backlight ON (Default)
ESC 'b'	1B 62	2		Backlight OFF
ESC 'H'	1B 48	2		LOCATE 0,0
ESC 'L' X Y	1B 4C xx yy	4	100 uS	Change the position of the cursor.
ESC 'D' 8byte	1B 44 Code 8bytes	11		Character code 8 through 15 is 8 custom characters that the user is free to create and use. This command will store the bitmap in this custom character memory area. Code : 8-15 Character code
1	01	1		Move to beginning of row 1
2	02	1		Move to beginning of row 2
3	03	1		Move to beginning of row 3
4	04	1		Move to beginning of row 4

If received data is not a command, the CLCD will display it on the screen.

When connecting RS232, maximum baud rate settings for 12V(4 pin) level is 38400bps. For 5V level (3 pin), up to 115200bps can be used.

The following is an example code when using the CB280 to connect to the CLCD module through CUNET protocol.   When you execute this program, CLCD will display increment of numbers.

The following is an example code when using the CB280 to connect to the CLCD module through CUNET protocol.   When you execute this program, CLCD will display increment of numbers.

* The slave address of CLCD and SET DISPLAY command should match.

```
Const Device = Cb280
Set Display 2,0,0,50          ' Set the SLAVE ADDRESS to 0 by manipulating the DIP switch.
Dim i As Integer
i=0
Delay 100                     ' Delay for start up of CLCD
Cls
Delay 200                     ' Delay for initializing and clearing CLCD
Csroff
Locate 5,2
Print "Start!!!"
Delay 500
Cls
Delay 100

Do
     Incr i
     Locate 0,0
     Print "COMFILE"
     Locate 0,1
     Print "CUBLOC ",Dec i
     Delay 100
Loop
```

The following is an example code when using the CB280 to connect to the CLCD module through raw I2C protocol.   When you execute this program, CLCD will display increment of numbers.

The slave address of CLCD and SET DISPLAY command should match.

```
Const Device = cb280

Dim ct As Integer

ct=0
Set I2c 9,8

      I2cstart
      'Set Slave address to 0 and Write Operation I2C
      If I2cwrite(&h70) = 1 Then Goto ERR
      'Clear Screen
      If I2cwrite(&h1b) = 1 Then Goto ERR
      If I2cwrite(&h43) = 1 Then Goto ERR

      'Turn off cursor
      If I2cwrite(&h1b) = 1 Then Goto ERR
      If I2cwrite(&h73) = 1 Then Goto ERR

      I2cstop

Do
      Delay 100
      I2cstart
         If I2cwrite(&h70) = 1 Then Goto ERR
         'Locate 0,0
         If I2cwrite(&h1b) = 1 Then Goto ERR
         If I2cwrite(&h48) = 1 Then Goto ERR
         'Print counter value
         If I2cwrite(Asc(Dec ct)) = 1 Then Goto ERR
      I2cstop
      Delay 500
      'increment counter value by 1
      Incr ct
Loop

ERR:
      Debug "ERROR!"
Return
```

The following is an example code when using the CB220 to connect to the CLCD module through RS232 protocol.   When you execute this program, the CLCD will display increment of numbers.

The baud rate of CLCD and SET DISPLAY command should match.   Otherwise you will get garbage values on the LCD when trying to print to it.

```
Const Device = CB220

'Make sure to set all the DIP switches on
'the back of the CLCD to ON
'Connect P11 (TX) of CB220 to RX pin of the CLCD.

'Set Display to CLCD/CVFD, 115200 bps, and 128 bytes of buffer
Set Display 2,1,115200,128
Dim ct As Long
ct=0

Do
      Locate 0,0
      Print Dec ct
      Incr ct
Loop
```

*Make sure GND is shared among the power supply for the display and the CB220, otherwise you will get garbage values on the LCD.

*The internal regulator of CB220 does not have enough power to the CB220, you will need a separate power supply or regulator to power the LCD.