Pins

While the connectors are on the *back* side, they and some significant pins are labeled on the *front* side of the PCB (viewing side).

CN1 - 30 Pin Interface Connector

Pin	Name	Type	Description
1	C/$\overline{D}$	Input	Control/Data selection. 0 for control, 1 data.
2			
3	W$\overline{R}$	Input	Falling edge will latch address A[0-5] and data D[0-7].
4			
5	BUSY	Output	1 indicates device is busy with last operation; 0 indicates complete.
6	R$\overline{S}$T$\overline{}$	Input	0 resets device.
7	EN	Input	1 enables display. 0 shows blank screen.
8			
9			
10			
11			
12			
13	A5	Input	A[0-5] = 6 bit address bus.
14	A4	Input	
15	A3	Input	
16	A2	Input	
17	A1	Input	
18	A0	Input	
19	D0	Input	D[0-7] = 8 bit data bus.
20	D1	Input	
21	D2	Input	
22	D3	Input	
23	D4	Input	
24	D5	Input	
25	D6	Input	
26	D7	Input	
27			
28			
29			
30			

CN2 - 3 Pin Power Connector

Pin	Name
1	+5V Supply
2	T$\overline{}$E$\overline{}$S$\overline{}$T$\overline{}$
3	GND

The $\overline{TEST}$ pin is pulled up internally. For testing, connect to GND while powering up. Then the display will show all pixels lit (red+blue). For normal operation, connect to +5V or leave open while powering up. Then the display will show a random pattern according to the undefined state of the display buffer.

Interfacing the Display

Writing Data

Writing data is accomplished by setting $\overline{C}/D$ to 1, setting up values on address and data bus, and then toggling $\overline{WR}$ from 1 to 0 (falling edge).

Writing Control Codes

Writing control codes is accomplished by setting $\overline{C}/D$ to 0, setting up values on address and data bus, and then toggling $\overline{WR}$ from 1 to 0 (falling edge).

Display Buffer Arrangement

Writing data to addresses 0x00-0x13 and 0x20-0x33 will affect the displayed image. The data written to the range starting at 0x00 will affect the blue color of the pixels. The data written to the range starting at 0x20 will affect the red color of the pixels. Addresses 0x00 and 0x20 correspond to the leftmost pixel column of the display. Addresses 0x13 and 0x33 correspond to the rightmost pixel column of the display. The least significant bit of data corresponds to the topmost pixel row of the display. The most significant bit of data corresponds to the bottom pixel row of the display. A set bit in the data lights the pixel.

Column	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A5 (blue)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A5 (red)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
A3	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
A2	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
A1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
A0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

Row	Bit
0	D0
1	D1
2	D2
3	D3
4	D4
5	D5
6	D6
7	D7

Brightness Control

Brightness can be controlled by writing control code to address 0x3F. Only the two least significant bits d0 and d1 will be considered according to the following table:

d7	d6	d5	d4	d3	d2	d1	d0	Brightness
x	x	x	x	x	x	0	0	lowest
x	x	x	x	x	x	0	1	low
x	x	x	x	x	x	1	0	high
x	x	x	x	x	x	1	1	highest