

measured

	display Pin #	Header	Header Pin #	Driver Header #	cd4050-1	cd4050-2	cd4050-3	cd4050-4
AR_VSS	-5V	1	A	35	NC			
"	"	2	B	35	NC			
"	"	3	A	36	NC			
"	"	4	B	34	NC			
AR_VDD	+5V	5	A	33	-5.1 purple			
"	"	6	B	33	-5.1 yellow			
"	"	7	A	34	-5.1 purple			
ARREF	open	8	B	32	5.2 purple			
"	"	9	A	31	5.2 orange			
"	"	10	B	31	5.2 yellow			
GND	—	11	A	32	? → looks like it could be an output voltage, so leave open.			
DDVDH	+5.0V	12	B	30	NC			
GND	—	13	A	29	NC			
GND	—	14	B	29	NC			
VCI	+2.8V	15	A	30	NC			
"	"	16	B	28	NC			
VCC	+3.0V	17	A	23	NC			
GND	—	18	B	23	ground blue			
NRESET	—	19	A	24	5.3 blue			
NCS	+3	20	B	22	ground blue			
SCL	+3	21	A	22	ground blue			
SDA	+3	22	B	21	2.8 orange			
DE	-5V	23	A	21	2.8 yellow			
VSYNC	—	24	B	21	NC			
HYSYNC	—	25	A	21	NC			
D-CLK	—	26	B	21	2.8 yellow			
		27	A	21	NC			
		28	B	21	NC			
		29	A	21	NC			
		30	B	21	NC			
		31	A	22	NC			
		32	B	20	2.8 yellow			
		33	A	19	ground purple			
		34	B	19	2.8 yellow			
		35	A	20	2.8 yellow			
		36	B	18	2.8 yellow			
		37	A	17	2.8 yellow			
		38*	B	17 ?	<--			
		39	A	18	37	<-- white		
		40	B	16	36	<-- white		
		41	A	15	25	<-- white		
		42	B	15	18	<--	14	
		43	A	16	21	<--	11	
		44	B	14	27	<-- Blue (black wires on breadboard)	9	
		45	A	13	29	<--	7	
		46	B	13	31	<--	5	
		47	A	14	32	<--	3	
		48	B	12	33	<--	14	
		49	A	11	34	<--	11	
		50	B	11	10	<--	9	
		51	A	12	11	<-- Green (green wires)	7	

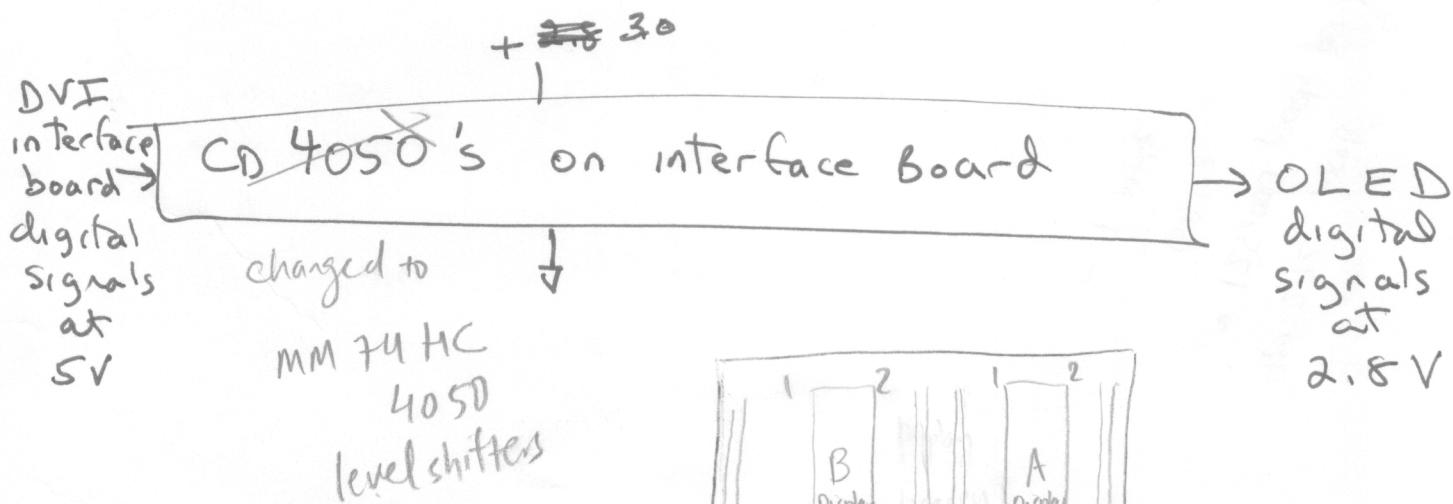
* Display pin 38 (B-17 header)
use negative OLED voltage rather
than driver header 35 (DE-HDR).

608

52	B	10	12	<--		5
53	A	9	13	<--		3
54	B	9	14	<--	Green	14
55	A	10	15	<--		11
56	B	8	16	<--		9
57	A	7	17	<--		7
58	B	7	1	<--		5
59	A	8	3	<--		3
60	B	6	4	<--		14
61	A	5	5	<--		11
62	B	5	6	<--		9
63	A	6	7	<--		7
64	B	4	8	<--		5
65	A	3	9	<--		3

AR-VDD	+SV	66	B	3	5.2 yellow
"	"	67	A	4	5.2 orange
"	"	68	B	2	5.2 yellow
AR-VSS	-5V	69	A	1	-5.1 yellow
"	"	70	B	1	-5.1 yellow
"	"	71	A	2	-5.1 orange

Reel (red wires)



White wires:

H-SYNC,

V-SYNC,

D-CLK



34 pins

F=floating

8. Pin Assignment:

PIN	Symbol	I/O	Description	Remarks			
1	TP1	I	Touch panel P1	leave open			
2	TP2	I	Touch panel P2	leave open			
3	TP3	I	Touch panel P3.	leave open			
4	TP4	I	Touch panel P4	leave open			
5	AR_VSS _{-5.1V}	I	Negative voltage for OLED				
6	AR_VSS	I	Negative voltage for OLED				
7	AR_VSS	I	Negative voltage for OLED				
8	AR_VDD _{5.2V}	I	Positive voltage for OLED				
9	AR_VDD	I	Positive voltage for OLED				
10	AR_VDD	I	Positive voltage for OLED				
11	ARREF	I/O	Panel refers voltage of the regulator ARREF or external input voltage. (-8V~+8V)	0			
12	VGL -5.6V	I/O	Low Voltage output of regulator VGL or external input voltage. (-3V~8V)	0			
13	VGH 6.0V	I/O	High Voltage output of regulator VGH or external input voltage. (+3V~+8V)	0			
14	LVO -7.6V	I/O	Negative output voltage of the booster2. (-8.5V)	leave open			
15	C22N	I/O	Connect to the step-up circuit, capacitors according to the step-up factor. Leave this pin open if the internal step-up circuit is not used.				
16	C22P	I/O					
17	HVO 8.5V	I/O	Positive output voltage of the booster2. (8.5V)	leave open			
18	C21P	I/O	Connect to the step-up circuit, capacitors according to the step-up factor. Leave this pin open if the internal step-up circuit is not used.				
19	C21N	I/O					
20	C11N	I/O	Connect to the step-up circuit, 4capacitors according to the step-up factor. Leave this pin open if the internal step-up circuit is not used.				
21	C11P	I/O					
22	C12N	I/O					
23	C12P	I/O					
24	PVSS	P	Charge pump ground pin, it must connect to external ground.	✓			
25	DDVDH 5.3V	I/O	Output voltage of the booster1. (5.1V/6.0V)	leave open			
26	VSSA	P	Analog ground pin. It must connect to external ground.	✓			
27	VSSA	P	Analog ground pin. It must connect to external ground.	✓			
28	VCI 2.8V	P	A power supply for the Analog circuit. (2.7V~3.6V)	✓			
29	VCI	P	A power supply for the Analog circuit. (2.7V~3.6V)	✓			
30	VGAM1OUT	I/O	Output voltage of the VGAM1OUT regulator and used positive power of source driver. (4.8V/5.8V)				
F 4.9V	F 1.8V	I/O	Internal logic voltage input or output pin VDC_ENB=0, VDDD is output, please connect to 1uF capacitor.				
			<table border="1"> <tr> <td>VDC0</td> <td>VDDD</td> <td>Status</td> </tr> <tr> <td>0</td> <td>1.8V</td> <td>Normal display</td> </tr> </table>	VDC0	VDDD	Status	0
VDC0	VDDD	Status					
0	1.8V	Normal display					
31	VDDD	I/O					

positive
negative

-8 → +8
-3 ~ -8



			1 2.5V OTP program	
32	VCC 2.8	P	A power supply for the Digital circuit. (1.5V~3.6V)	✓
33	VSSD	P	Digital ground pin. It must connect to external ground.	✓
34	NRESET	I	Reset pin. Setting either pin low initializes the LSI. Must be reset after power is supplied. (Normally pull high)	
35	NCS	I	Serial Interface chip enable pin. (Normally pull high)	
36	SCL	I	Serial Interface clock input pin. (Normally pull high)	
37	SDA	I	Serial Interface data line. (Normally pull high)	
38	DE	I	Negative voltage for OLED	
39	VSYNC	I	Frame synchronizing signal. If VSPL=0: Active low. If VSPL=1: Active high.	✓ A18 → 37
40	HSYNC	I	Line synchronizing signal. If HSPL=0: Active low. If HSPL=1: Active high.	✓ B16 → 36
41	DCLK	I	Dot clock signal. If DPL=0: Data are input on the rising edge of DOTCLK. If DPL=1: Data are input on the falling edge of DOTCLK.	✓ A15 → 25
42	D27	I	Digital data input. DX0 is LSB and DX7 is MSB. (Normally pull low)	
43	D26		1. If parallel RGB input mode is used, D0X, D1X, and D2X indicate R, G, and B data in turn.	
44	D25		2. If serial RGB or RGBD or CCIR601 or CCIR656 input mode is selected, only D07~D00 are used, and others short to GND.	
45	D24		DX7~DX0 has 8-bit width, respectively to compose 16,777,216 color and 256 gray scale of 1 pixel.	
46	D23			
47	D22			
48	D21			
49	D20			
50	D17			
51	D16			
52	D15			
53	D14		R: 65 - 58	
54	D13		G: 57 - 50	
55	D12		B: 49 - 42	
56	D11		10 12 15	
57	D10		9 11	
58	D07		6 7	
59	D06		5	
60	D05		2 3	
61	D04			

62	D03					
63	D02					
64	D01					
65	D00					
66	AR_VDD	I	Positive voltage for OLED			
X	67 AR_VDD	I	Positive voltage for OLED			
X	68 AR_VDD	I	Positive voltage for OLED			
X	69 AR_VSS	I	Negative voltage for OLED			
X	70 AR_VSS	I	Negative voltage for OLED			
X	71 AR_VSS	I	Negative voltage for OLED			

11-24-08

640 x 480 @ 60 Hz

~ 320000 pixels per frame @ 60 fps

~ 19.2 m pixels per second

~ 2 MHz

(Pin 1 - red
Pin 19 - ground)

- Looking at pins directly on Kit: Voltage signals look clean.
changing image on screen changes the signal on scope, which is good.

Looking at output on board (unloaded) is appreciably worse in signal quality. (pin 1 - red, pin 19 - ground.)

- Noise on scope signal is reflected in follower image on monitor when load circuit is attached.