

NHD-3.5-320240MF-VIDEO Board

V1.1

TFT Evaluation Video Board

NHD-	Newhaven Display
3.5-	3.5" Diagonal
320240-	320xRGBx240 pixels
MF-	Model
VIDEO-	Composite VIDEO input
V1.1-	Version 1.1

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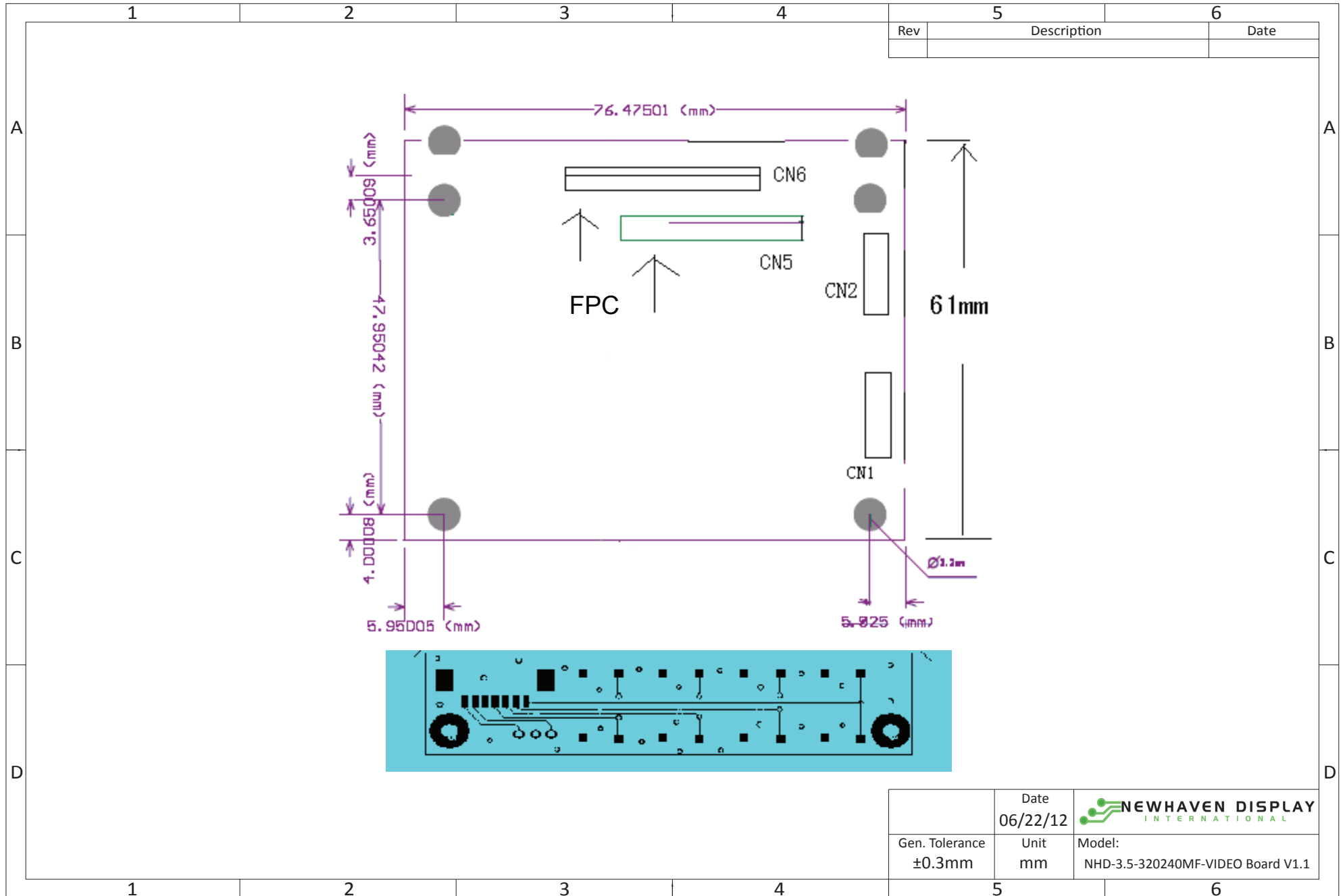
Document Revision History

Revision	Date	Description	Changed by
0	6/22/2012	Initial Release	AK


Functions and Features

- To use for testing, evaluating, or in final production with NHD-3.5-320240MF-A displays.

Mechanical Drawing




Rev	Description	Date

	Date 06/22/12	 NEWHAVEN DISPLAY INTERNATIONAL
Gen. Tolerance $\pm 0.3\text{mm}$	Unit mm	

Rev	Description	Date



	Date 06/22/12	 NEWHAVEN DISPLAY <small>INTERNATIONAL</small>
Gen. Tolerance ±0.3mm	Unit mm	

Pin Description

CN5 – 54pin output to display:

Pin No.	Symbol	External Connection	Function Description
1	LED-	Power Supply	Cathode for LED backlight
2	LED-	Power Supply	Cathode for LED backlight
3	LED+	Power Supply	Anode for LED backlight (19.2V @ 20mA)
4	LED+	Power Supply	Anode for LED backlight (19.2V @ 20mA)
5-7	NC	-	No Connect
8	/RESET	MPU	Reset signal
9	CS	MPU	Serial interface Chip Select (No connect)
10	SCL	MPU	Serial interface Clock (No connect)
11	SDI	MPU	Serial interface Data (No connect)
12-19	DB0-DB7	MPU	Blue signal data bus (B0~B7)
20-27	DB8-DB15	MPU	Green signal data bus (G0~G7)
28-35	DB16-DB23	MPU	Red signal data bus (R0~R7)
36	HSYNC	MPU	Horizontal Sync signal
37	VSYNC	MPU	Vertical Sync signal
38	DCLK	MPU	Dot Clock signal
39-40	NC	-	No Connect
41	VDD	Power Supply	Power for LCD and logic (3.3V)
42	VDD	Power Supply	Power for LCD and logic (3.3V)
43-51	NC	-	No Connect
52	DE	-	Data Enable signal
53	GND	Power Supply	Ground
54	GND	Power Supply	Ground

CN6 – 60pin output to display:

Pin No.	Symbol	External Connection	Function Description
1	LED-	Power Supply	Cathode for LED backlight
2	LED-	Power Supply	Cathode for LED backlight
3	LED+	Power Supply	Anode for LED backlight (19.2V @ 20mA)
4	LED+	Power Supply	Anode for LED backlight (19.2V @ 20mA)
5	GND	Power Supply	Ground
6	X1	Touch Panel	Right
7	Y1	Touch Panel	Bottom
8	X2	Touch Panel	Left
9	Y2	Touch Panel	Up
10	GND	Power Supply	Ground
11-13	NC	-	No Connect
14	RESET	MPU	Reset signal
15	CS	MPU	Serial interface Chip Select (No connect)
16	SCL	MPU	Serial interface Clock (No connect)
17	SDI	MPU	Serial interface Data (No connect)
18-19	NC	-	No Connect
20-25	DB0-DB5	MPU	Blue signal data bus (B0~B5)
26-27	NC	-	No Connect
28-33	DB8-DB13	MPU	Green signal data bus (G0~G5)
34-35	NC	-	No Connect

36-41	DB16-DB21	MPU	Red signal data bus (R0~R5)
42	HSYNC	MPU	Horizontal Sync signal
43	VSYNC	MPU	Vertical Sync signal
44	DCLK	MPU	Dot Clock signal
45-46	NC	-	No Connect
47	VDD	Power Supply	Power for LCD and logic (3.3V)
48	VDD	Power Supply	Power for LCD and logic (3.3V)
49-57	NC	-	No Connect
58	DE	-	Data Enable Signal
59	GND	Power Supply	Ground
60	GND	Power Supply	Ground

CN1/CN4 – Power and Video input, (input jacks included)

Pin No.	Symbol	External Connection	Function Description
1	VDD	Power Supply	+12V Power supply
2	GND	Power Supply	Ground
3	CVBS1	Video Source	CVBS1 input signal
4	AGND	Video Source	Input signal Ground
5	CVBS2	Video Source	CVBS2 input signal
6	AGND	Video Source	Input signal Ground

CN3 – On-Screen-Display keyboard input (keyboard included)

Pin No.	Symbol	External Connection	Function Description
1	Menu	-	Menu key
2	+	-	“+” key
3	-	-	“-” key
4	PWR	-	On/Off key
5	VSS	-	Ground
6	VDD	-	+3.3V Remote head supply
7	IR	-	Remote infrared signal

Controller Information

Built-in Bitek BIT1612 controller

Please download specification at http://www.newhavendisplay.com/app_notes/BIT1612.pdf

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	Top	Absolute Max	-12	-	+70	°C
Storage Temperature Range	Tst	Absolute Max	-20	-	+70	°C
Supply Voltage	VDD		6.0	12.0	16.0	V
Supply Current	IDD		100	120	140	mA

Quality Information

Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	+70°C , 96hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-20°C , 96hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (voltage & current) and the high thermal stress for a long time.	+70°C 96hrs	2
Low Temperature Operation	Endurance test applying the electric stress (voltage & current) and the low thermal stress for a long time.	-20°C , 96hrs	1,2
High Temperature / Humidity Operation	Endurance test applying the electric stress (voltage & current) and the high thermal with high humidity stress for a long time.	+60°C , 90% RH , 240hrs	1,2
Thermal Shock resistance	Endurance test applying the electric stress (voltage & current) during a cycle of low and high thermal stress.	20°C, 30min -> 25°C, 30min -> 60°C, 30min = 1 cycle 30 cycles	
Vibration test	Endurance test applying vibration to simulate transportation and use.	10-55Hz , 15mm amplitude. 60 sec in each of 3 directions X,Y,Z For 15 minutes	3
Static electricity test	Endurance test applying electric static discharge.	VS=800V, RS=1.5kΩ, CS=100pF One time	

Note 1: No condensation to be observed.

Note 2: Conducted after 4 hours of storage at 25°C, 0%RH.

Note 3: Test performed on product itself, not inside a container.

Precautions for using LCDs/LCMs

See Precautions at www.newhavendisplay.com/specs/precautions.pdf

Warranty Information and Terms & Conditions

http://www.newhavendisplay.com/index.php?main_page=terms