

NHD-5.7-640480WF-CTXL#

TFT (Thin-Film-Transistor) Color Liquid Crystal Display Module

NHD-	Newhaven Display
5.7-	5.7" Diagonal
640480-	640xRGBx480 Pixels
WF-	Model
C-	Built-in driver + Controller
T-	White LED Backlight
X-	TFT
L-	6:00 Optimal View, Wide Temp
#	RoHS Compliant

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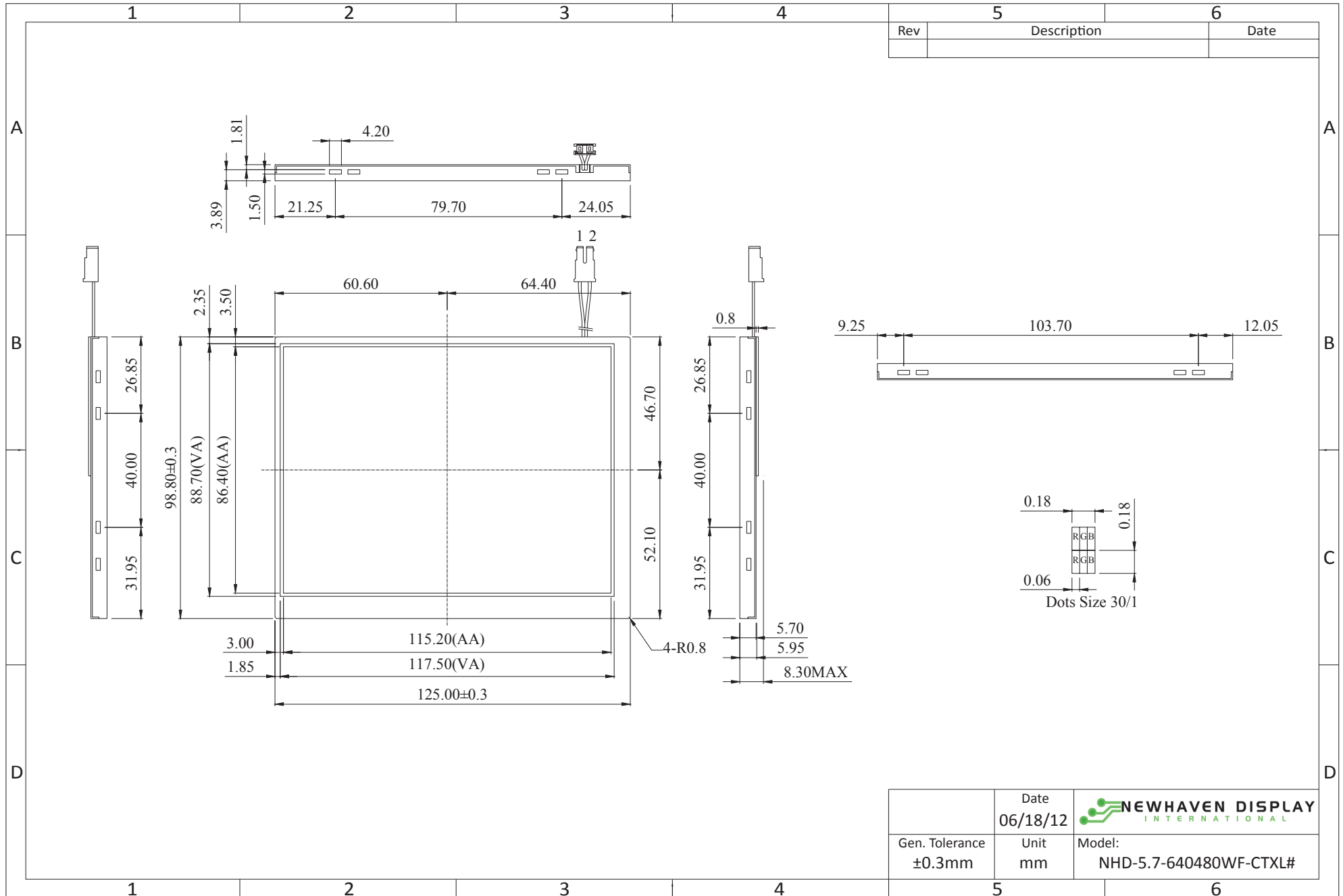
Document Revision History

Revision	Date	Description	Changed by
0	3/9/2009	Initial Release	CL
1	6/18/2012	Pin description updated	AK
2	4/25/17	Optical Characteristics Updated	TM


Functions and Features

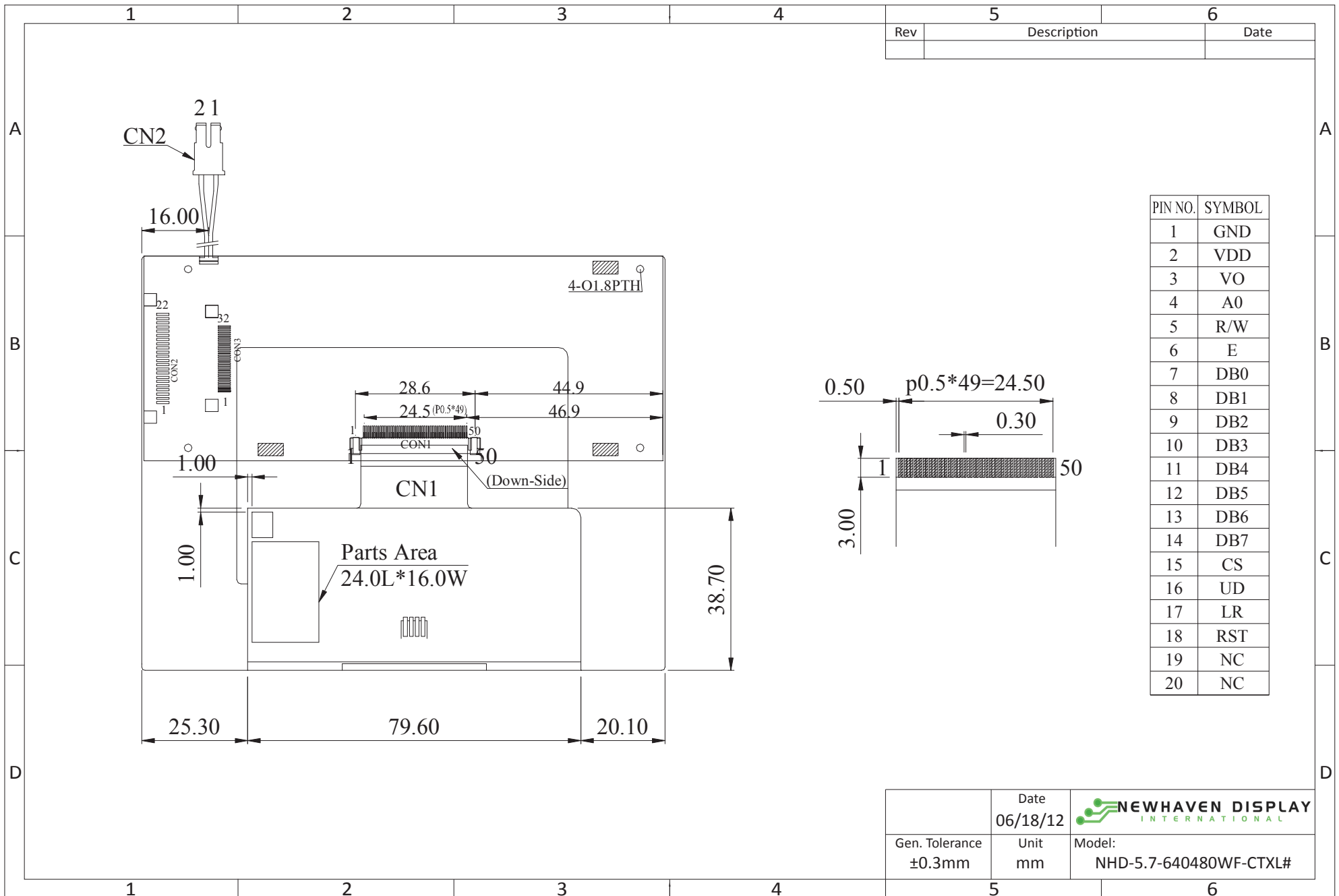
- 640xRGBx480 resolution
- LED backlight
- 8-bit parallel interface
- SSD1963 Controller


Mechanical Drawing



Rev	Description	Date

	Date 06/18/12	 NEWHAVEN DISPLAY <small>INTERNATIONAL</small>
Gen. Tolerance ±0.3mm	Unit mm	



	Date 06/18/12	 NEWHAVEN DISPLAY INTERNATIONAL
Gen. Tolerance ±0.3mm	Unit mm	

Pin Description

Note: CON2 has a 20-pin, 1.0mm pitch, Top-Contact FFC Connector. Pins 21 and 22 are not connected.

CON2:

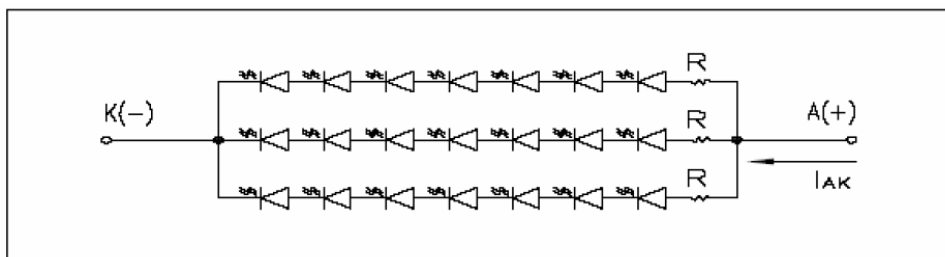
Pin No.	Symbol	External Connection	Function Description
1	GND	Power Supply	Ground
2	VCC	Power Supply	Power supply for LCD and logic (3.3V)
3	NC	-	No Connect
4	D/C#	MPU	Register Select signal – 0: Command, 1: Data
5	WR#	MPU	Active LOW Write signal, 8080 MPU interface
6	RD#	MPU	Active LOW Read signal, 8080 MPU interface
7-14	[DB0-DB7]	MPU	Bi-directional data bus lines
15	CS#	MPU	Active LOW Chip Select signal
16	U/D	MPU	Scan direction 1: Up, 0: Down
17	R/L	MPU	Scan direction 1: Right, 0: Left
18	RES#	MPU	Active LOW Reset signal
19	NC	-	No Connect
20	NC	-	No Connect

Recommended LCD connector: 1.0mm pitch 20-Conductor FFC. Molex p/n 52746-2070

Backlight:

Pin No.	Symbol	External Connection	Function Description
1	VCC	Power Supply	LED Anode (60mA @ 23.1V)
2	VCC	Power Supply	LED Cathode

Backlight connector: JST p/n: BHSR-02VS-1 **Mates with:** JST p/n: SM 02B-BHSS-1



Controller Information

Built-in SSD1963 controller.

Please download specification at http://www.newhavendisplay.com/app_notes/SSD1963.pdf

8080 Mode Interface:

The 8080 mode MPU interface consists of CS#, D/C, RD#, WR#, and DB[7:0]. This interface uses WR# to define a write cycle and RD# to define a read cycle. If the WR# goes LOW when the CS# signal is LOW, the data or command will be latched into the system at the rising edge of WR#. Similarly, the read cycle will start when RD# goes LOW and end at the rising edge of RD#. See the SSD1963 datasheet for detailed timing diagrams.

Command Instructions:

See the SSD1963 datasheet for the Instruction Table and Command Descriptions.

Pixel Data Format:

Interface	Cycle	D[7]	D[6]	D[5]	D[4]	D[3]	D[2]	D[1]	D[0]
8 bits	1 st	R7	R6	R5	R4	R3	R2	R1	R0
	2 nd	G7	G6	G5	G4	G3	G2	G1	G0
	3 rd	B7	B6	B5	B4	B3	B2	B1	B0

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	Top	Absolute Max	-20	-	+70	°C
Storage Temperature Range	Tst	Absolute Max	-30	-	+80	°C
Supply Voltage	VCC	-	3.0	3.3	3.6	V
Supply Current	ICC	VCC=3.3	-	190	250	mA
Backlight Supply Current	IB	-	-	60	-	mA
Backlight Supply Voltage	VBL	-	-	23.1	24.5	V
Backlight Lifetime		-	10,000	25,000	-	Hr

Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle – Top		Cr ≥ 10	-	40	-	°
Viewing Angle – Bottom		Cr ≥ 10	-	60	-	°
Viewing Angle – Left		Cr ≥ 10	-	60	-	°
Viewing Angle – Right		Cr ≥ 10	-	60	-	°
Contrast Ratio	Cr	-	150	250	-	
Luminance	YL	-	250	300	-	cd/m ²
Response Time (rise)	Tr	-	-	25	40	ms
Response Time (fall)	Tr	-	-	25	40	ms

Quality Information

Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	+80°C , 200hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C , 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (voltage & current) and the high thermal stress for a long time.	+70°C 200hrs	2
Low Temperature Operation	Endurance test applying the electric stress (voltage & current) and the low thermal stress for a long time.	-20°C , 200hrs	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 , 96hrs	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,5min -> 70°C,30min = 1 cycle 10 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