

# 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
#	<b>RoHS Compliant</b>

### Newhaven Display International, Inc.

2661 Galvin Ct.

Elgin IL, 60124

Ph: 847-844-8795

Fax: 847-844-8796

[www.newhavendisplay.com](http://www.newhavendisplay.com)

[nhtech@newhavendisplay.com](mailto:nhtech@newhavendisplay.com)

[nhsales@newhavendisplay.com](mailto:nhsales@newhavendisplay.com)

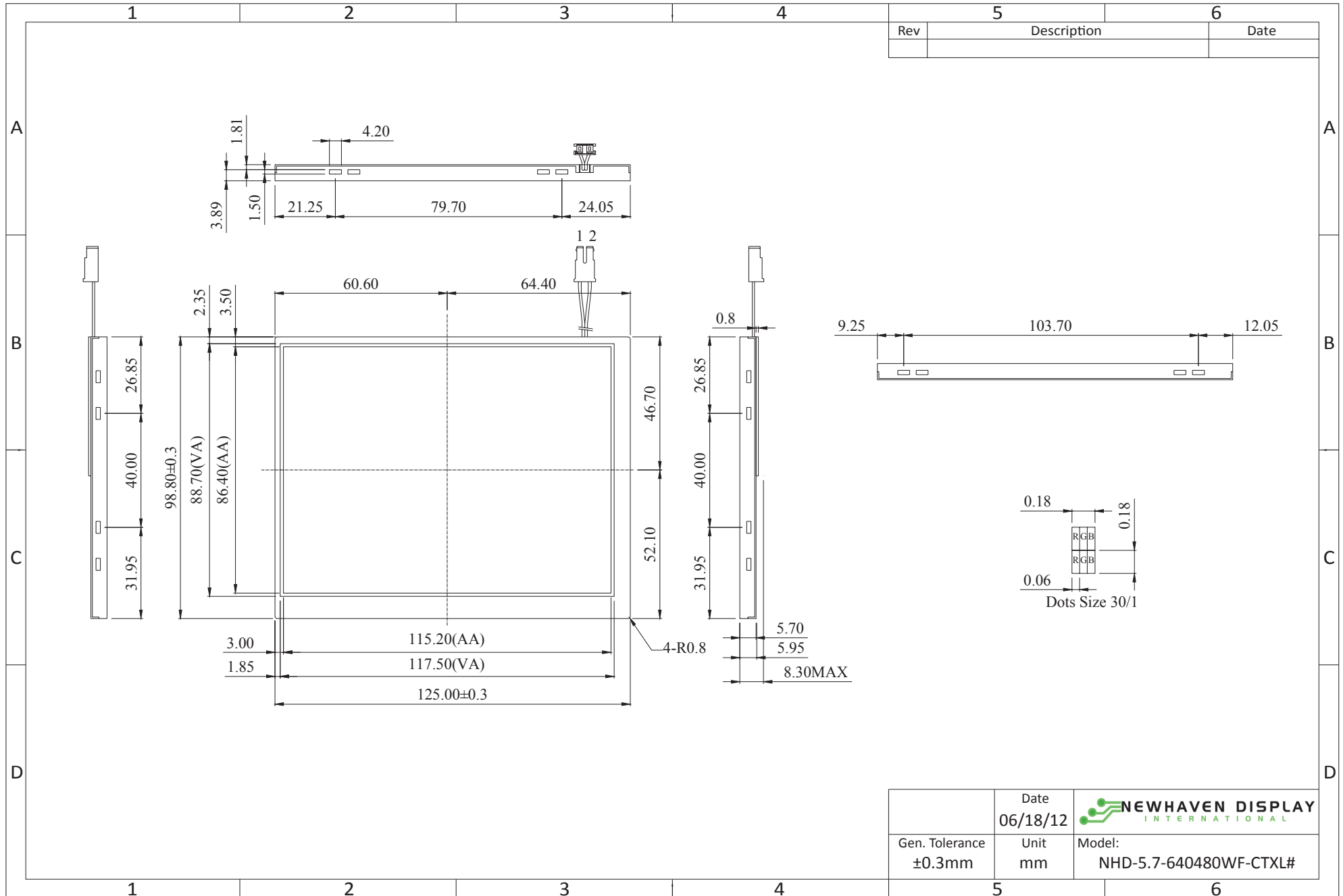
## Document Revision History

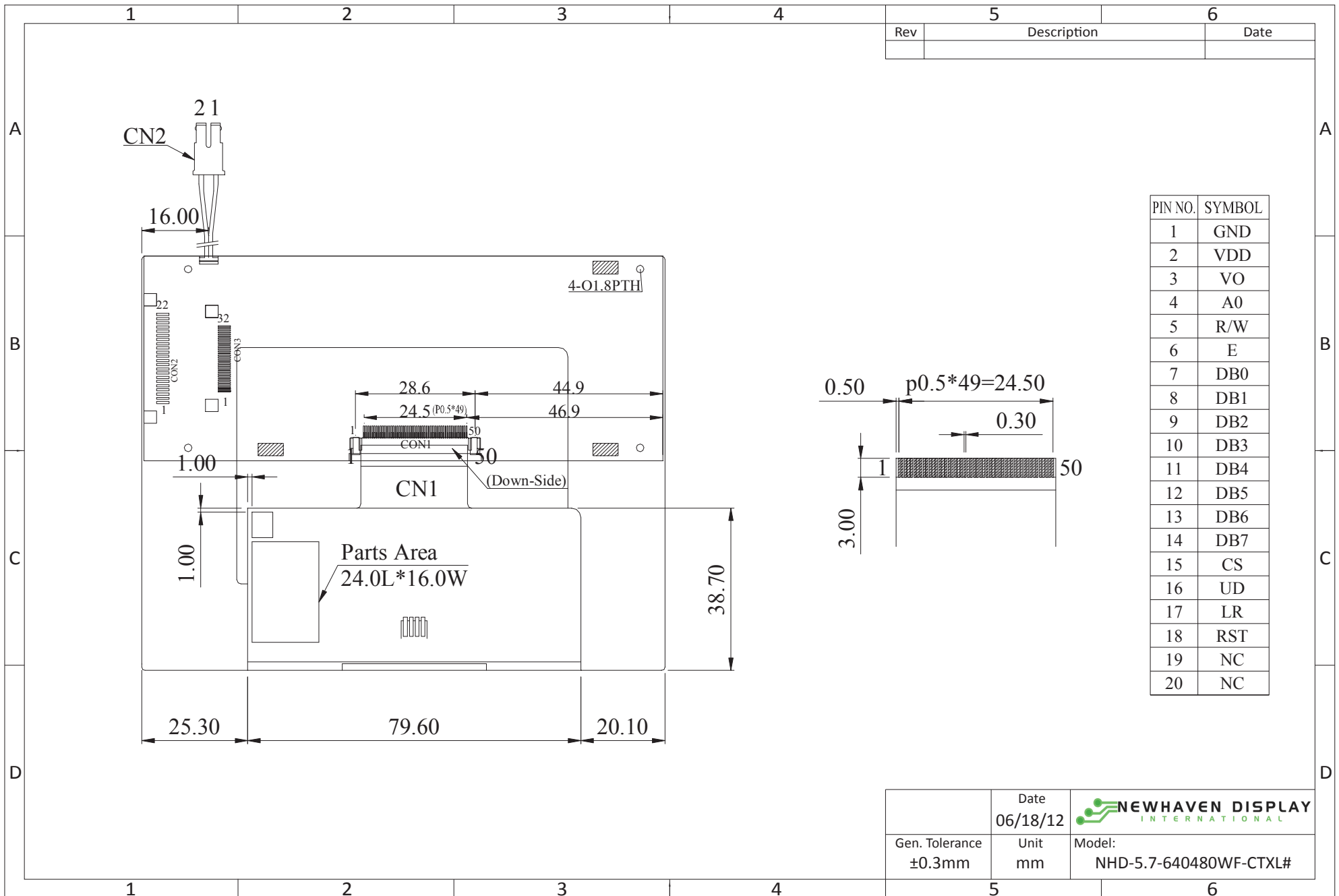
Revision	Date	Description	Changed by
0	3/9/2009	Initial Release	CL
1	6/18/2012	Pin description updated	AK
2	4/25/17	Optical Characteristics Updated	TM

## Functions and Features

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

# Mechanical Drawing





Rev	Description	Date

Gen. Tolerance	Date	 <b>NEWHAVEN DISPLAY</b> <small>INTERNATIONAL</small>
±0.3mm	06/18/12	
Unit	Model:	NHD-5.7-640480WF-CTXL#
mm		

PIN NO.	SYMBOL
1	GND
2	VDD
3	VO
4	A0
5	R/W
6	E
7	DB0
8	DB1
9	DB2
10	DB3
11	DB4
12	DB5
13	DB6
14	DB7
15	CS
16	UD
17	LR
18	RST
19	NC
20	NC

## Pin Description

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

### CON2:

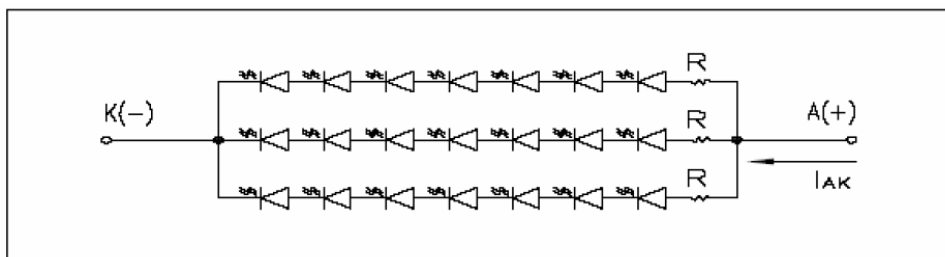
Pin No.	Symbol	External Connection	Function Description
1	GND	Power Supply	Ground
2	VCC	Power Supply	Power supply for LCD and logic (3.3V)
3	NC	-	No Connect
4	D/C#	MPU	Register Select signal – 0: Command, 1: Data
5	WR#	MPU	Active LOW Write signal, 8080 MPU interface
6	RD#	MPU	Active LOW Read signal, 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](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 <sup>st</sup>	R7	R6	R5	R4	R3	R2	R1	R0
	2 <sup>nd</sup>	G7	G6	G5	G4	G3	G2	G1	G0
	3 <sup>rd</sup>	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 <sup>2</sup>
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](http://www.newhavendisplay.com/specs/precautions.pdf)

## Warranty Information and Terms & Conditions

[http://www.newhavendisplay.com/index.php?main\\_page=terms](http://www.newhavendisplay.com/index.php?main_page=terms)