

# NHD-7.0-800480WF-ATXI#-T

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

NHD-	Newhaven Display
7.0-	7.0" Diagonal
800480-	800xRGBx480 pixels
WF-	Model
A-	Built-in driver / No Controller
T-	White LED backlight
X-	TFT
I-	6:00 view, Wide Temp
#-	<b>RoHS Compliant</b>
T-	Touch Panel

**Newhaven Display International, Inc.**

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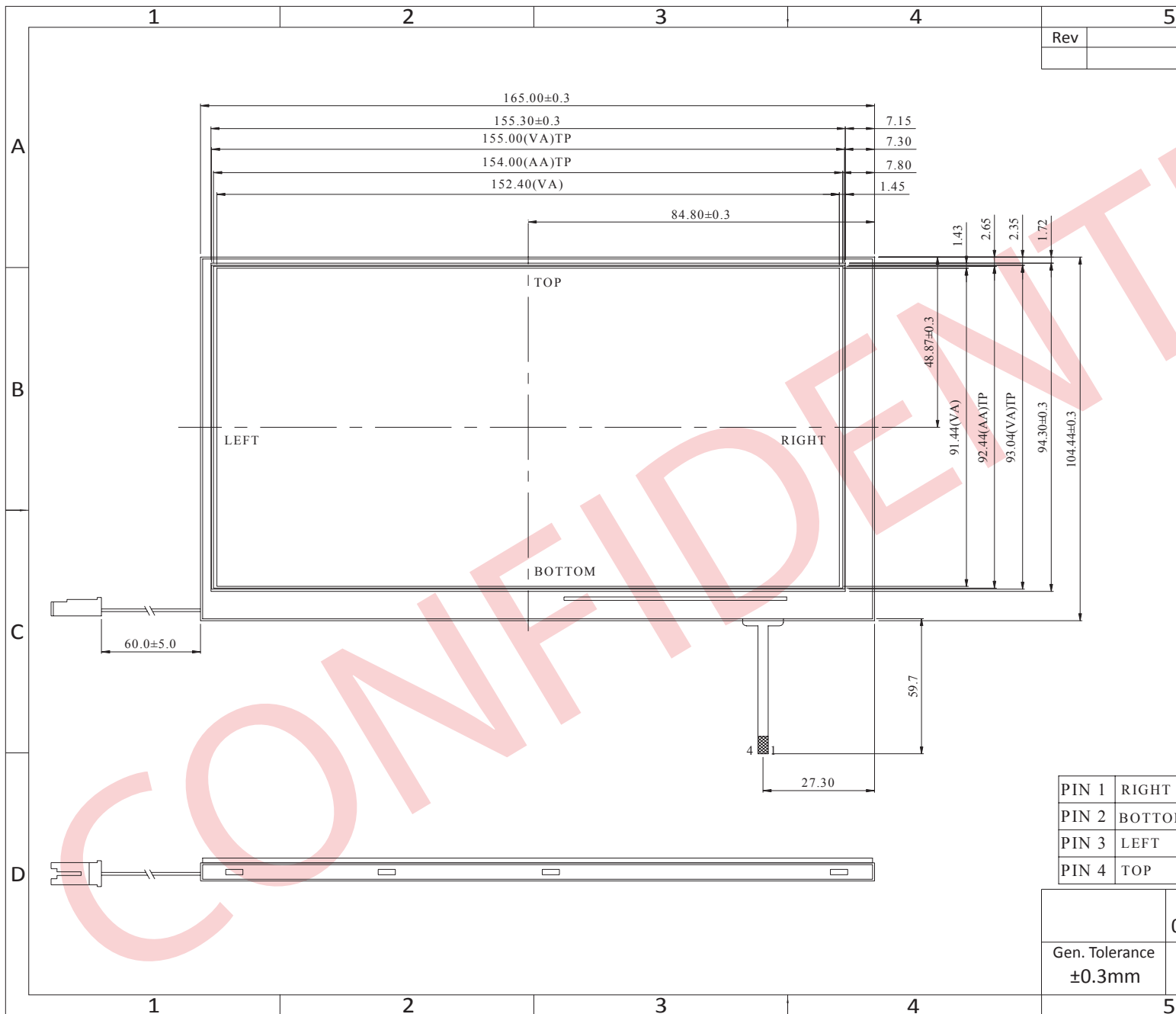
## Document Revision History

Revision	Date	Description	Changed by
0	9/13/2011	Initial Release	-
1	10/7/2011	Backlight and Touch Panel pin descriptions added	AK
2	8/8/2013	Updated Functions and Features, Mechanical Drawing and Optical Characteristics.	JN
3	9/19/2013	Mechanical Drawing updated.	JN

## Functions and Features

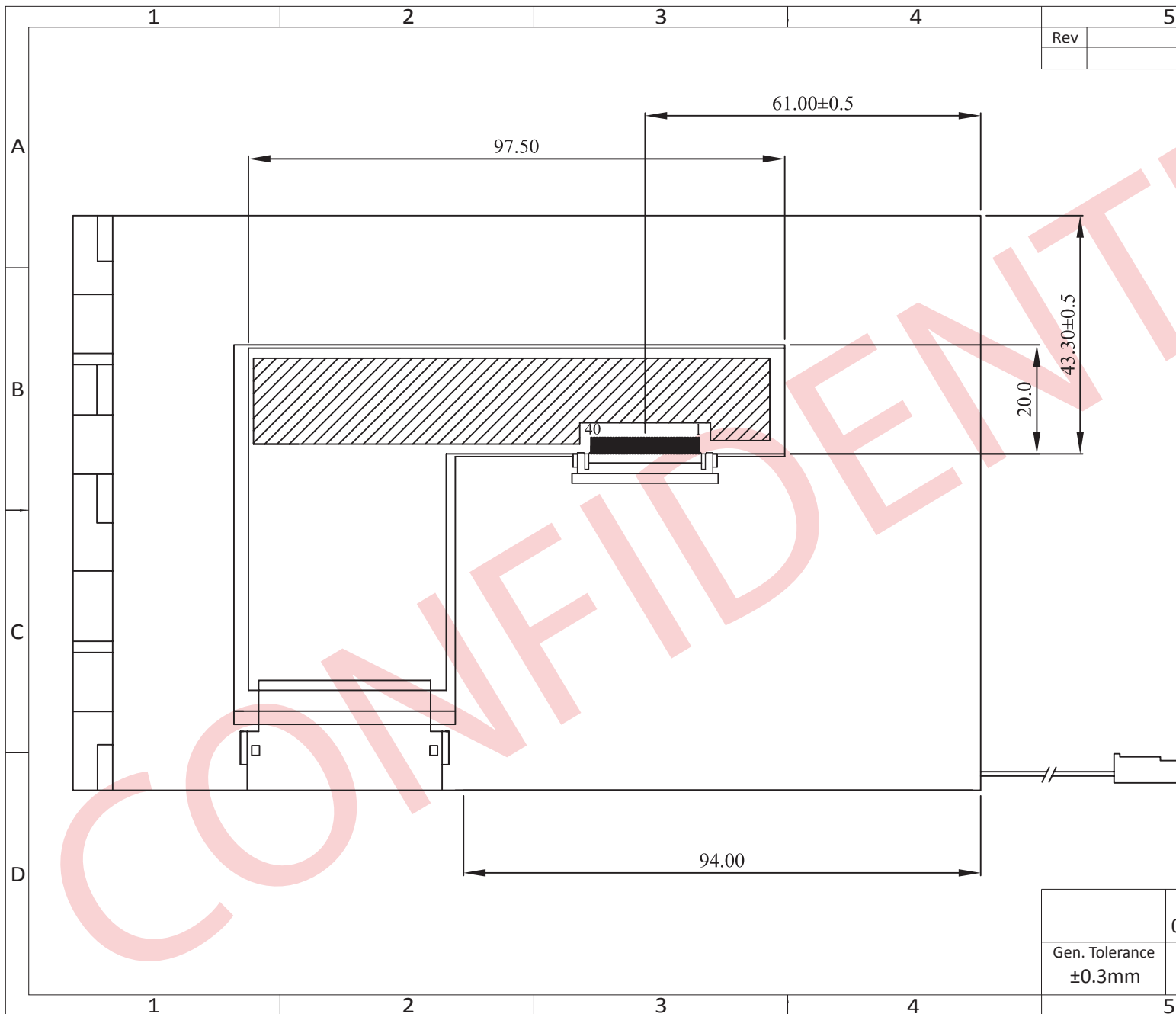
- 800xRGBx480 resolution
- LED backlight
- 24-bit digital RGB interface
- 262,144 colors
- Touch Panel

# Mechanical Drawing



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# Mechanical Drawing



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## Pin Description

Pin No.	Symbol	Connection	Function Description
1	GND	Power Supply	Power Ground
2	GND	Power Supply	Power Ground
3	NC	-	No connect
4-7	VDD	Power Supply	Power Supply (+3.3V)
8	NC	-	No connect
9	DE	MPU	Data Enable signal
10-12	GND	Power Supply	Power Ground
13-15	B5-B3	MPU	Blue B5 (MSB) to B3
16	GND	Power Supply	Power Ground
17-19	B2-B0	MPU	Blue B2 – B0(LSB)
20	GND	Power Supply	Power Ground
21-23	G5-G3	MPU	Green G5 (MSB) to G3
24	GND	Power Supply	Power Ground
25-27	G2-G0	MPU	Green G2 – G0(LSB)
28	GND	Power Supply	Power Ground
29-31	R5-R3	MPU	Red R5 (MSB) to R3
32	GND	Power Supply	Power Ground
33-35	R2-R0	MPU	Red R2 – R0(LSB)
36-37	GND	Power Supply	Power Ground
38	DCLK	MPU	Clock (Falling edge triggered)
39-40	GND	Power Supply	Power Ground

**LCD connector:** UJU p/n: PF050-40ZSG-F09-S (or equivalent)

## Backlight Pin-Out:

Pin No.	Symbol	Connection	Function Description
1	VDD	Power Supply	Power Supply (+9.9V)
2	GND	Power Supply	Power Ground

**Backlight connector:** JST p/n: BHSR-02VS-1

**Recommended mating connector:** JST p/n: SM 02B-BHSS-1

## Touch Panel Pin-Out:

Pin No.	Symbol	Connection	Function Description
1	X-	Touch Panel	Touch Panel – RIGHT
2	Y-	Touch Panel	Touch Panel – BOTTOM
3	X+	Touch Panel	Touch Panel – LEFT
4	Y+	Touch Panel	Touch Panel – TOP

## 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
Power Supply for Logic	VDD		3.0	3.3	3.6	V
Input Logic HIGH	VIH		0.7*VDD	-	VDD	V
Input Logic LOW	VIL		0	-	0.3*VDD	V
Power Supply Current	IVDD	VDD=3.3V 25°C	-	200	260	mA
Backlight Supply Current	ILED		-	160	200	mA
Backlight Supply Voltage	VLED	ILED=160mA	-	9.9	-	V
Backlight Lifetime		Until half-brightness	10,000	20,000	-	Hr

## Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle –Top		Cr ≥10	-	50	-	°
Viewing Angle –Bottom			-	70	-	°
Viewing Angle – Left			-	70	-	°
Viewing Angle – Right			-	70	-	°
Contrast Ratio	Cr	-	250	400	-	
Luminance	L	-	300	350	-	cd/m <sup>2</sup>
Response Time (rise)	Tr	-	-	5	10	ms
Response Time (fall)	Tf	-	-	11	16	ms

## Touch Panel Characteristics

Item	Min.	Typ.	Max.	Unit
Linearity	-	-	1.5	%
Circuit Resistance – X-Axis	450	800	1300	Ω
Circuit Resistance – Y-Axis	100	350	800	Ω
Insulation Resistance	10	-	-	MΩ
Operating Voltage	-	-	5	V
Chattering	-	-	10	ms
Transmittance	82	-	-	%
Activation Force	50	-	200	g
Pen Writing Durability	100,000	-	-	Characters
Pitting Durability	1,000,000	-	-	Touches
Surface Hardness	3	-	-	H
Haze	-	7	-	%

## Driver Information

Built-in HX8262 driver.

Please download specification at [http://www.newhavendisplay.com/app\\_notes/HX8262.pdf](http://www.newhavendisplay.com/app_notes/HX8262.pdf)

## 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 , 1.5mm 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)

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