

Product Specification

NHD-3.5-HDMI-HR-RSXP

TFT Liquid Crystal Display

NHD-	Newhaven Display
3.5-	3.5" Diagonal
HDMI-	HDMI Interface
HR-	640x480 Resolution
RSXP-	IPS Display

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Additional Resources

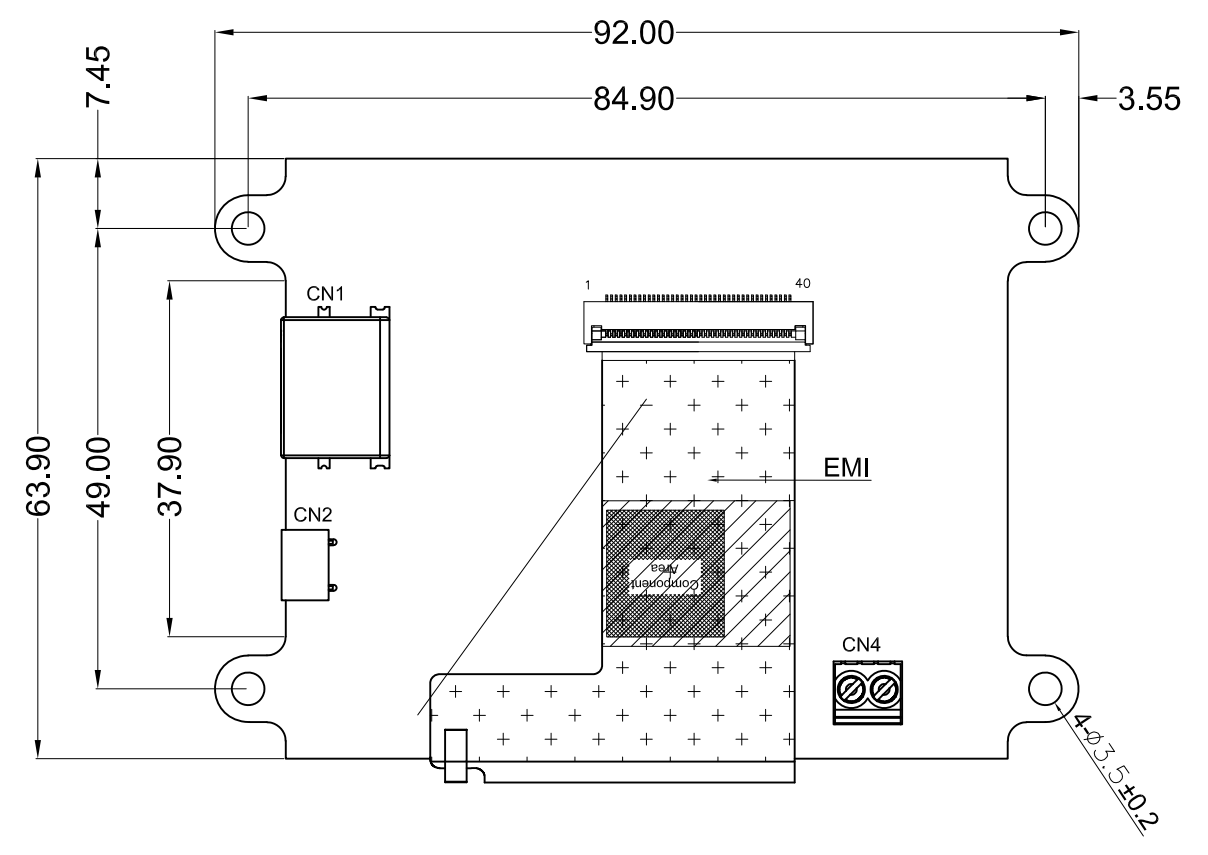
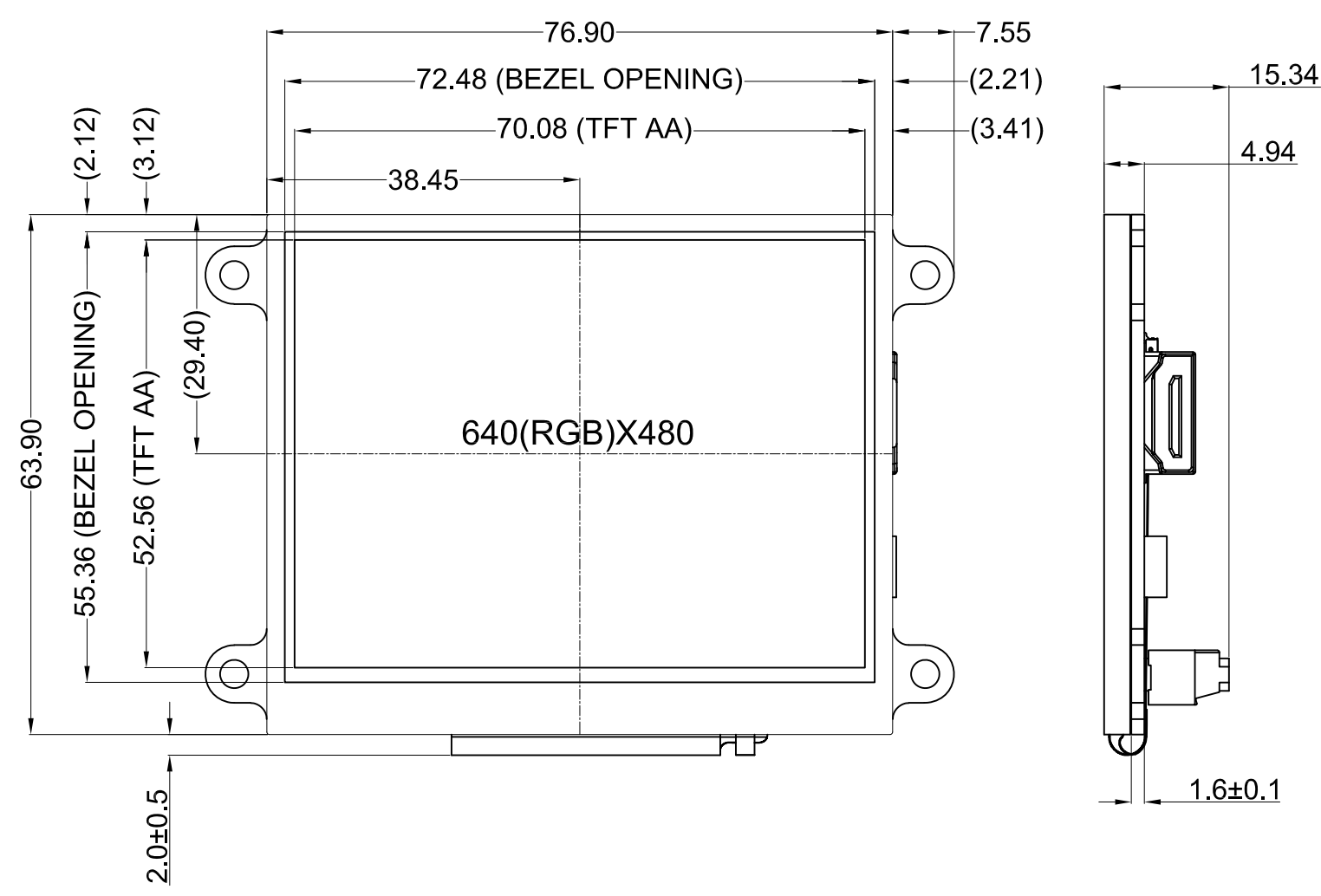
- **Support Forum:** <https://support.newhavendisplay.com/hc/en-us/community/topics>
- **GitHub:** <https://github.com/newhavendisplay>
- **Example Code:** <https://support.newhavendisplay.com/hc/en-us/categories/4409527834135-Example-Code/>
- **Knowledge Center:** https://www.newhavendisplay.com/knowledge_center.html
- **Quality Center:** https://www.newhavendisplay.com/quality_center.html
- **Precautions for using LCDs/LCMs:** <https://www.newhavendisplay.com/specs/precautions.pdf>
- **Warranty / Terms & Conditions:** <https://www.newhavendisplay.com/terms.html>



Document Revision History

Revision	Date	Description	Changed By
-	01/31/2025	Initial Release	KL

Mechanical Drawing



- Product Description: 3.5" 640x480 IPS TFT
1. Driver IC: LT6911C
 2. Interface: HDMI, USB
 3. Power Requirement: 5.0V
 4. Optical Features: Normally Black, Transmissive, 950cd/m²
 5. Built-in EMI Shielding

Standard Tolerance: (Unless otherwise specified) Linear: ±0.3mm	 NEWHAVEN DISPLAY INTERNATIONAL	
	Drawing/Part Number: NHD-3.5-HDMI-HR-RSXP	Revision: -
Unless otherwise specified: • Dimensions are in Millimeters • Third Angle Projection 	Drawn By: K. Lewis	Approved By: K. Lewis
	Drawn Date: 01/31/2025	Approved Date: 01/31/2025
This drawing is solely the property of Newhaven Display International, Inc. The information it contains is not to be disclosed, reproduced or copied in whole or part without written approval from Newhaven Display.		

Electrical Characteristics

Item	Symbol	Condition	Min.	Typical	Max.	Unit
Operating Temperature Range	T _{OP}	Absolute Max	-20	-	+70	°C
Storage Temperature Range	T _{ST}	Absolute Max	-30	-	+80	°C
Backlight PWM Voltage	V _{PWM}	-	2.5	3.3	5.5	V
Backlight PWM Frequency	f _{PWM}	V _{PWM} = 3.3V	5	-	100	kHz
Module Supply Voltage	V _{DD}	-	4.5	5	5.5	V
Module Supply Current	I _{DD}	V _{DD} = 5.0V	-	460	530	mA

HDMI to MIPI Bridge IC Information

To view the full LT6911C specification, please download it by accessing the link:

<https://support.newhavendisplay.com/hc/en-us/articles/29830212424215-LT6911C>

Technical Resource

3D Model	TFT Panel Used	Display Type	Luminance Rating	Optimal Viewing Angle	Touch Panel
NHD-3.5-HDMI-HR-RSXP	NHD-3.5-640480EF-MSXP	IPS, Sunlight Readable	950 cd/m ²	85° all angles	No Touch

EDID Array

```
Const unsigned char NHD_HDMI3.5[] = {
00, FF, FF, FF, FF, FF, FF, 00, 32, 8D, 00, 00, 00, 00, 00,
24, 1F, 01, 03, 80, 00, 00, 78, 0A, 0D, C9, A0, 57, 47, 98, 27,
12, 48, 4C, 00, 00, 00, 01, 01, 01, 01, 01, 01, 01, 01, 01,
01, 01, 01, 01, 01, 01, 3A, 0C, 80, 68, 21, E0, 30, 10, 78, 78,
95, 04, 80, E0, 21, 00, 00, 1E, 00, 00, 00, 00, 00, 00, 00,
00, 00, 00, 00, 00, 00, 00, 00, 00, 00, 00, 00, 00, 00, 00,
00, 00, 00, 00, 00, 00, 00, 00, 00, 00, 00, 00, 00, FC,
00, 36, 39, 31, 31, 43, 0A, 20, 20, 20, 20, 20, 20, 20, 00, E4
}
```

EDID Timing

Pixel Clock:	31.20	☐ Interlaced
H. Active Pixels:	640	V. Active Lines: 480
H. Blank:	120	V. Blank: 18
H. Front Porch:	120	V. Front Porch: 25
H. Sync Width:	120	V. Sync Width: 5
H. Image Size:	0	V. Image Size: 0
H. Border:	0	V. Border: 0
H. Clock: 41.05 kHz	V. Clock: 82.43 Hz	

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, 96 hrs.	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C, 96 hrs.	1,2
High Temperature Operation	Endurance test applying the electric stress (voltage & current) and the high thermal stress for a long time.	+70°C, 96 hrs.	2
Low Temperature Operation	Endurance test applying the electric stress (voltage & current) and the low thermal stress for a long time.	-20°C, 96 hrs.	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, 96 hrs.	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.	Air: $V_s=\pm 8KV$, Contact: $V_s=\pm 4KV$ 10 Times	

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.

