

Product Specification

NHD-4.3-HDMI-HR-RSXP-CTU

TFT Liquid Crystal Display

NHD-	Newhaven Display
4.3-	4.3" Diagonal
HDMI-	HDMI Interface
HR-	800x480 Resolution
RSXP-	IPS Display
CTU-	Capacitive USB-HID

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Additional Resources

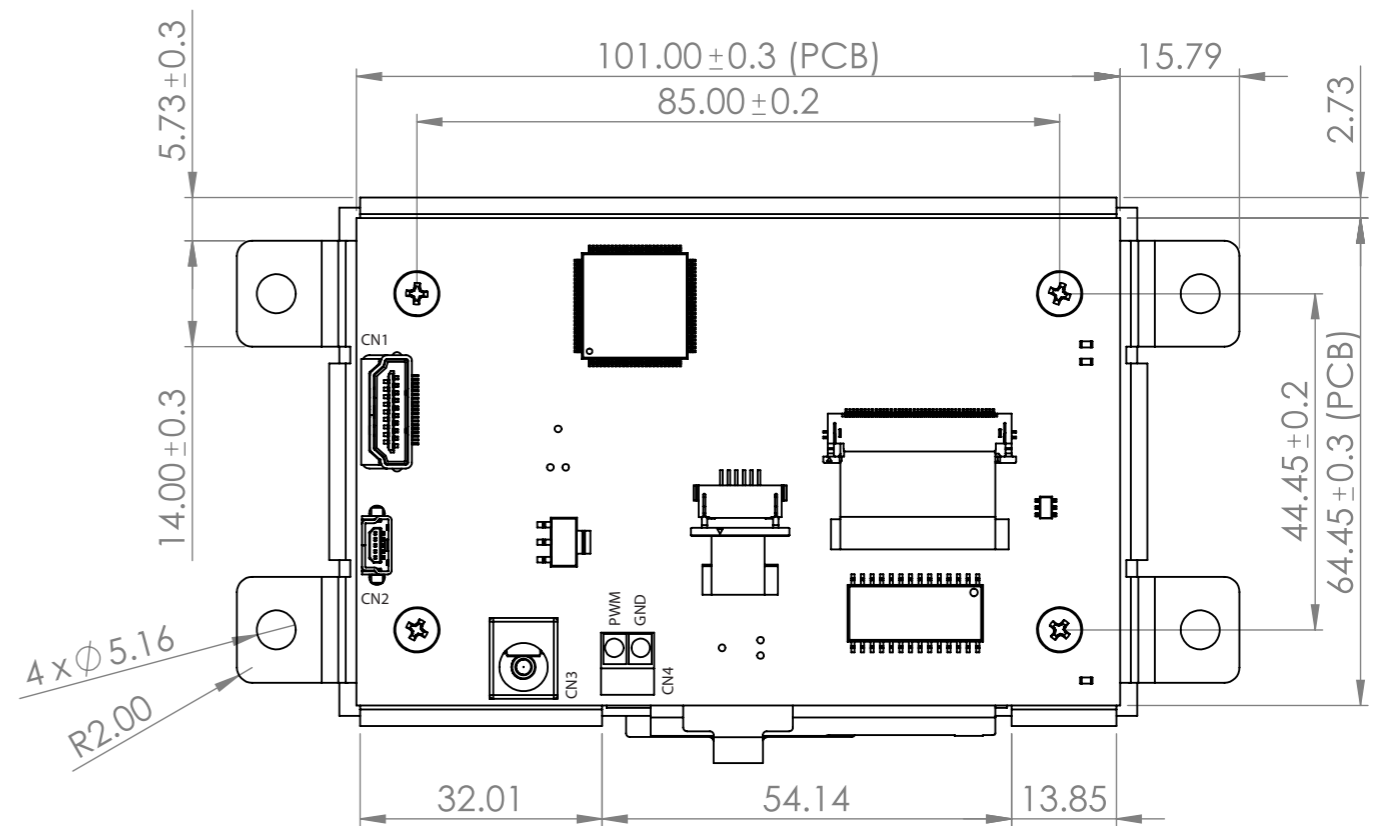
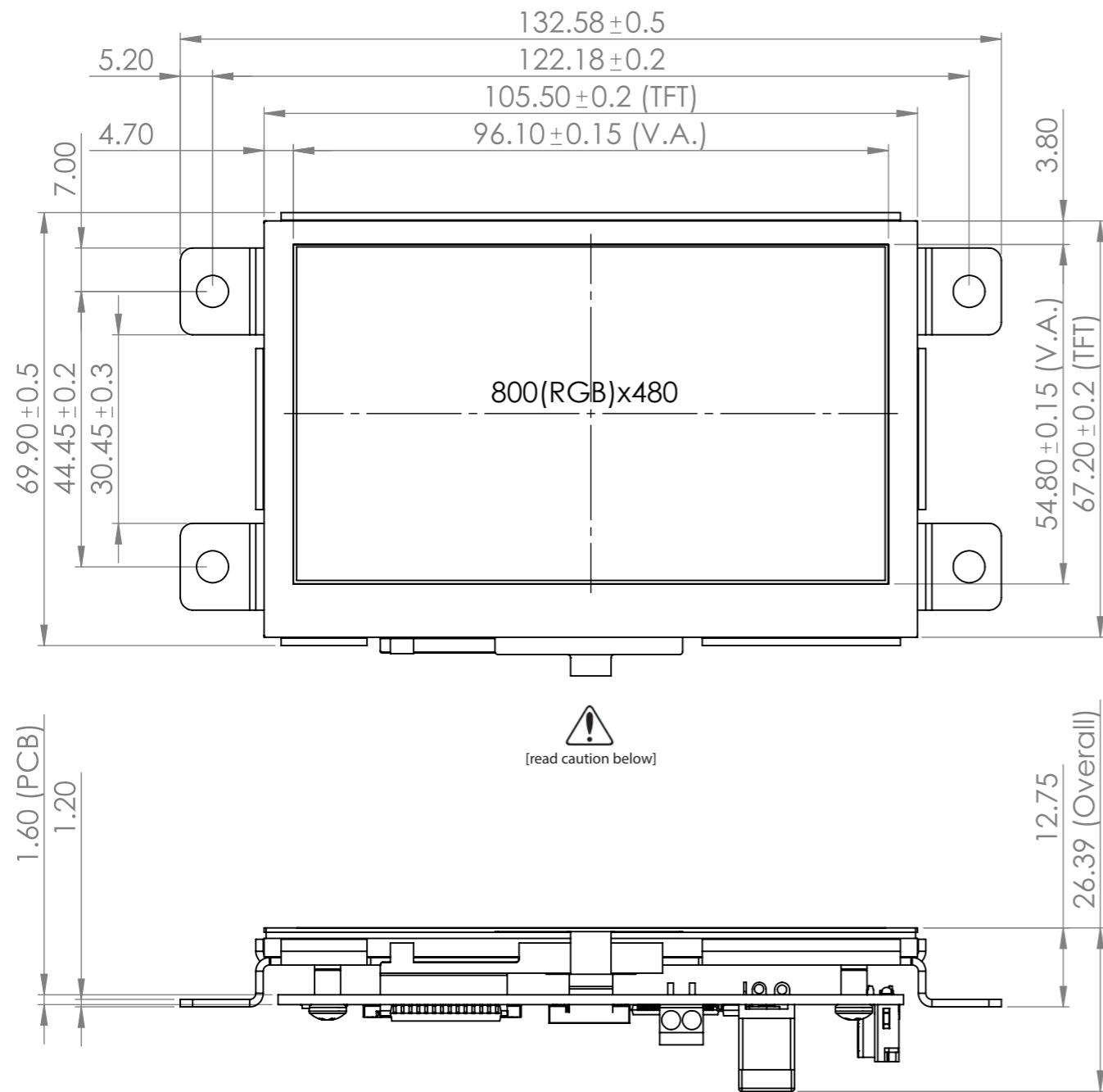
- **Support Forum:** <https://support.newhavendisplay.com/hc/en-us/community/topics>
- **GitHub:** <https://github.com/newhavendisplay>
- **Example Code:** <https://support.newhavendisplay.com/hc/en-us/categories/4409527834135-Example-Code/>
- **Knowledge Center:** https://www.newhavendisplay.com/knowledge_center.html
- **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
0	09/29/2021	Initial Release	ZP
1	01/10/2022	Updated cover page, technical resource section, and mechanical drawing. FT5426 IC version update.	CJ
2	06/27/2023	Document Formatting Updated	KL

Mechanical Drawing



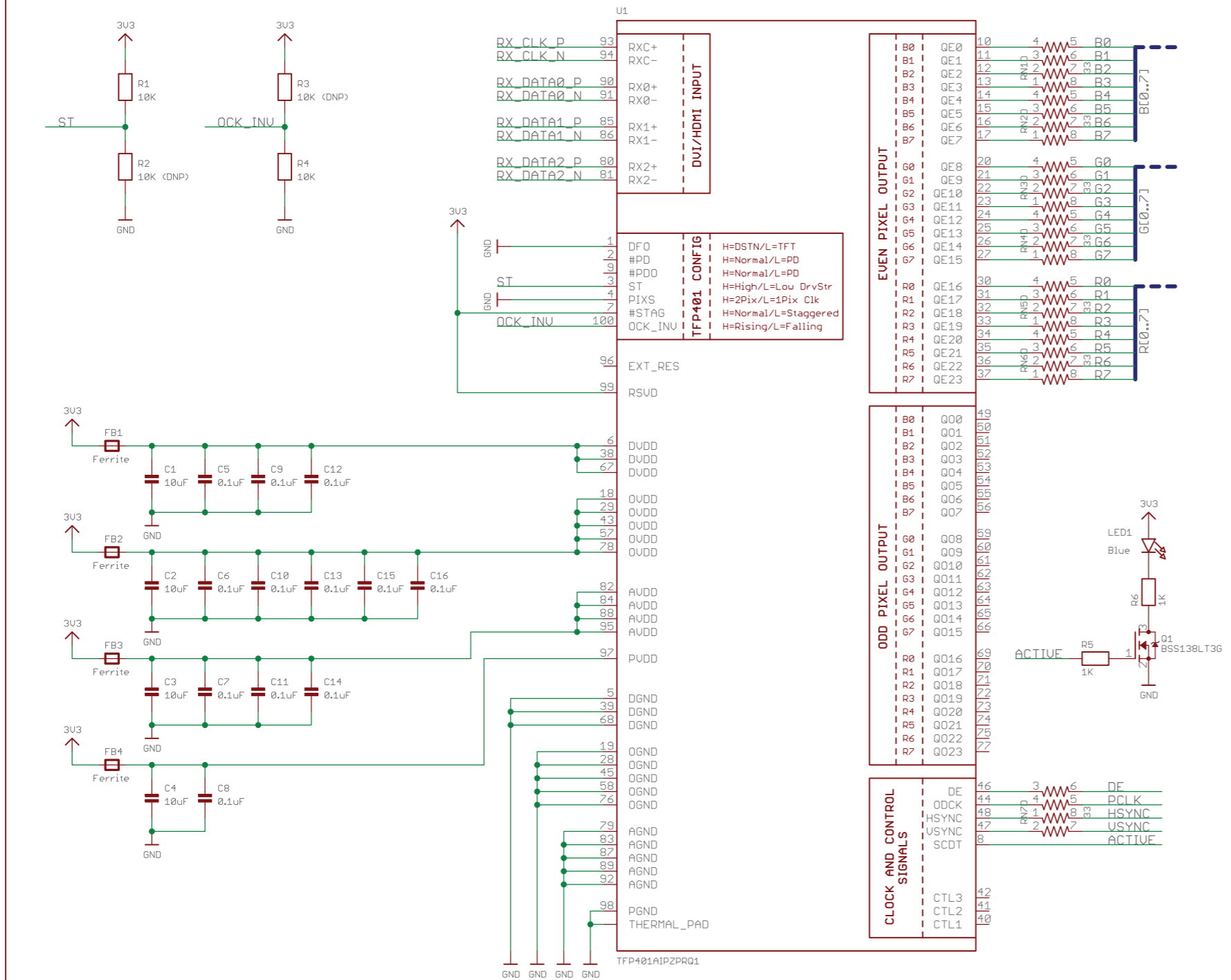
Product Description: 4.3" 800x480 IPS TFT w/ Capacitive Touch

1. Driver IC: TFP401A
2. Interface: HDMI, USB
3. Power Requirement: 5.0V
4. Optical Features: Normally Black, Transmissive, 723cd/m^2

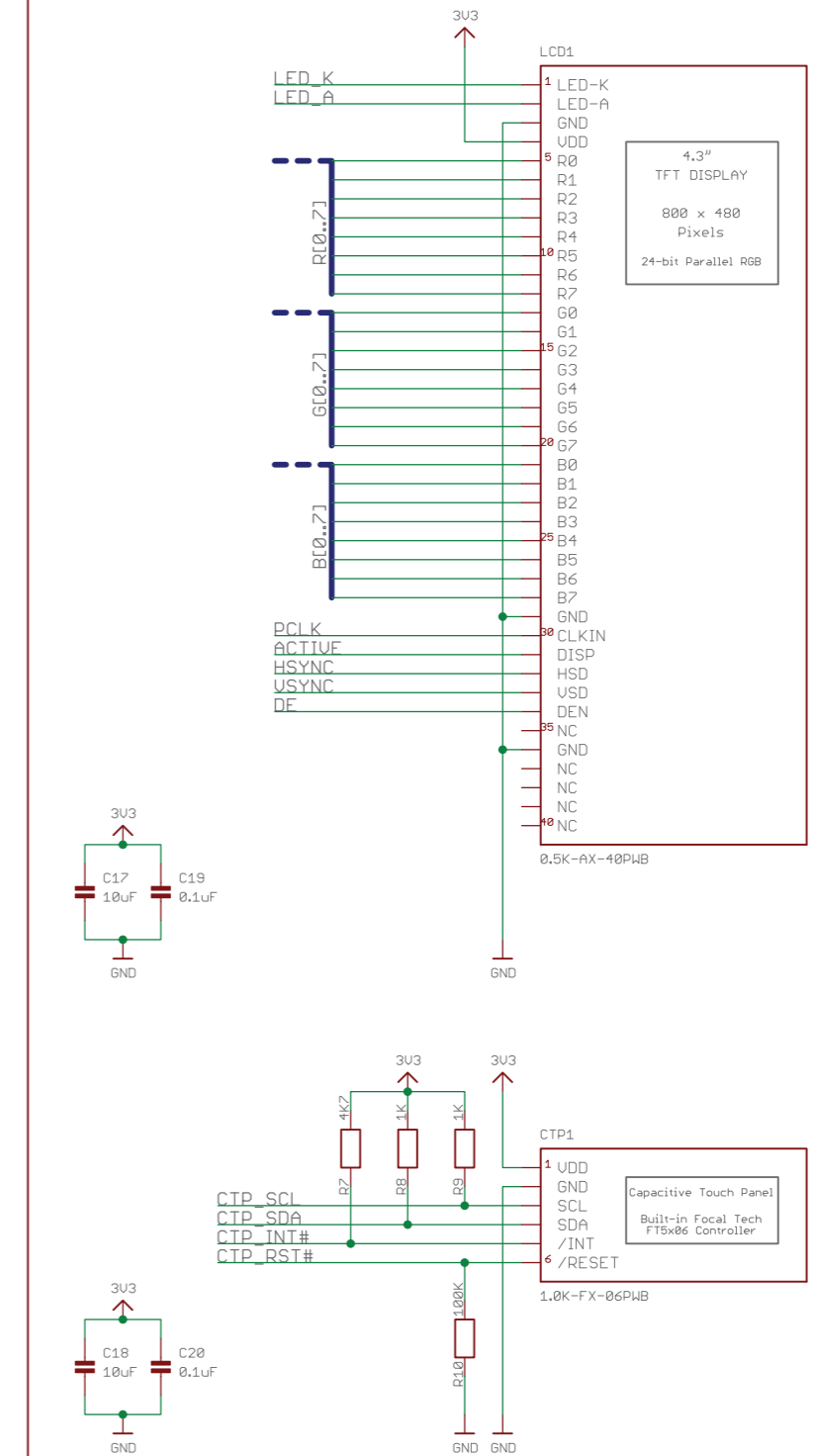
Improper handling of the FPC connections at the bottom edge of this module may cause damage resulting in display or touch failure. Take special care when handling this area of the display module to make sure these connections are never strained nor creased.

Standard Tolerance: (Unless otherwise specified) Linear: $\pm 0.3\text{mm}$		
	Drawing/Part Number: NHD-4.3-HDMI-HR-RSXP-CTU	Revision: -
Unless otherwise specified: • Dimensions are in Millimeters • Third Angle Projection	Drawn By: K. Lewis Drawn Date: 06/27/2023	Approved By: K. Lewis Approved Date: 06/27/2023
	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.	

TFP401 (DVI/HDMI Decoder)

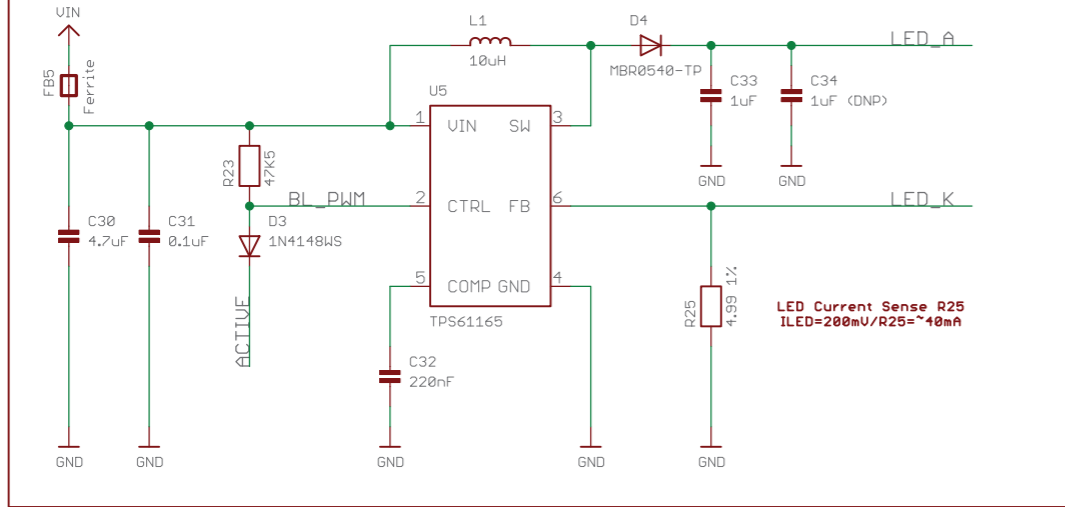


LCD Interface

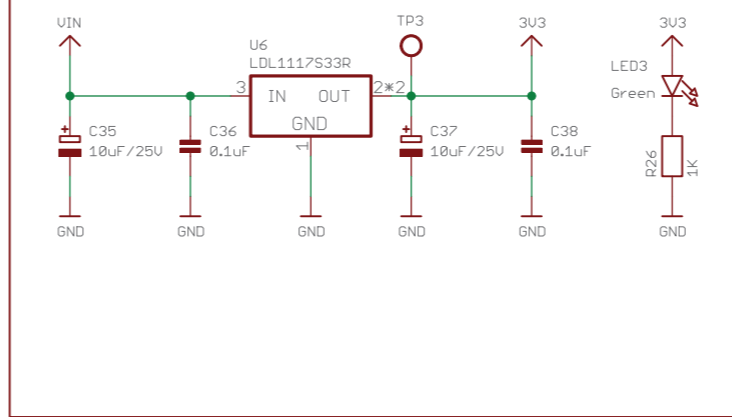


Schematic / Part Number: NHD-4.3-HDMI-HR		Revision: 1.2
Drawn By: K. Lewis	Checked By: K. Lewis	
Drawn Date: 06/27/2023	Checked Date: 06/27/2023	
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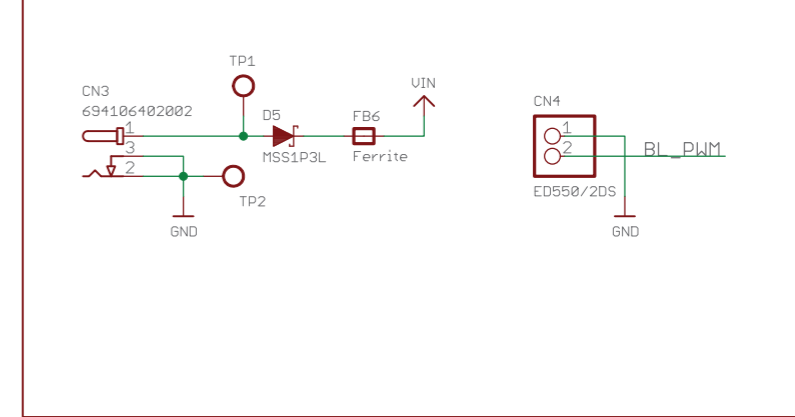
Backlight LED Driver



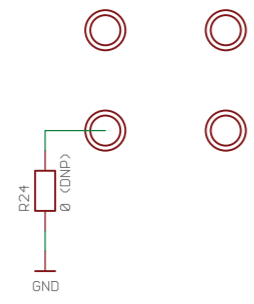
3.3V Regulator 1.2A



UIN / PWM



Mounting Holes 3.2mm Plated



BOARD VERSIONS

CTU Version: <DNP> - C21, C23, C34, CN5, CN6, D1, D2, R2, R3, R18, R24, U3

Non-Touch Version: <DNP> - C18, C21, C25, C26, C20, C23, C27, C28, C29, C34, CTP1, CN2, CN5, CN6, D1, D2, LED2, Q2, R2, R3, R17, R7, R10, R16, R19, R20, R24, R18, R8, R9, R21, R22, RN8, U3, U4, Y1



Schematic / Part Number: NHD-4.3-HDMI-HR		Revision: 1.2
Drawn By: K. Lewis	Checked By: K. Lewis	
Drawn Date: 06/27/2023	Checked Date: 06/27/2023	
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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}	-	5.0	-	7.0	V
Module Supply Current	I _{DD}	V _{DD} = 5.0V	-	615	650	mA
		V _{DD} = 7.0V	-	530	560	mA

HDMI Receiver Information

On-board Texas Instruments TFP401A Receiver. To view the full TFP401A specification, please download it by accessing the link: <http://www.ti.com/lit/ds/slds190a/slds190a.pdf>

Technical Resource

3D Model	TFT Panel Used	Display Type	Luminance Rating	Optimal Viewing Angle	Touch Panel
NHD-4.3-HDMI-HR-RSXP-CTU	NHD-4.3-800480CF-ASXP-CTP	IPS, Sunlight Readable	723 cd/m ²	85° all angles	PCAP (USB-HID)

EDID Array

```
const unsigned char NHD_HDMI5[] = {
0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x39, 0x04, 0x31, 0x04, 0x00, 0x00, 0x00, 0x00,
0xFF, 0x1E, 0x01, 0x04, 0x80, 0x0A, 0x07, 0x00, 0x1A, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x01, 0x00, 0x01, 0x00, 0x01, 0x00, 0x01, 0x00, 0x01, 0x00,
0x01, 0x00, 0x01, 0x00, 0x01, 0x00, 0x80, 0x0C, 0x20, 0x80, 0x30, 0xE0, 0x2D, 0x10, 0x28, 0x30,
0xD1, 0x00, 0x69, 0x43, 0x00, 0x00, 0x00, 0x18, 0x00, 0x00, 0x00, 0xFC, 0x00, 0x4E, 0x48, 0x44,
0x2D, 0x34, 0x2E, 0x33, 0x2D, 0x48, 0x44, 0x4D, 0x49, 0x0A, 0x00, 0x00, 0x00, 0x10, 0x00, 0x00,
0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x10,
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};
```

EDID Timing

Pixel Clock:	32.00	MHz
H. Active Pixels:	800	V. Active Lines: 480
H. Blank:	128	V. Blank: 45
H. Front Porch:	40	V. Front Porch: 13
H. Sync Width:	48	V. Sync Width: 3
H. Clock:	34.48	kHz
V. Clock:	65.68	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.