

Product Specification

NHD-10.1-HDMI-A-RSXP-CTU

TFT Liquid Crystal Display

NHD-	Newhaven Display
10.1-	10.1" Diagonal
HDMI-	HDMI Interface
A-	1024x600 Resolution, HDMI Audio Support
RSXP-	IPS Display
CTU-	Capacitive USB-HID Touch

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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>

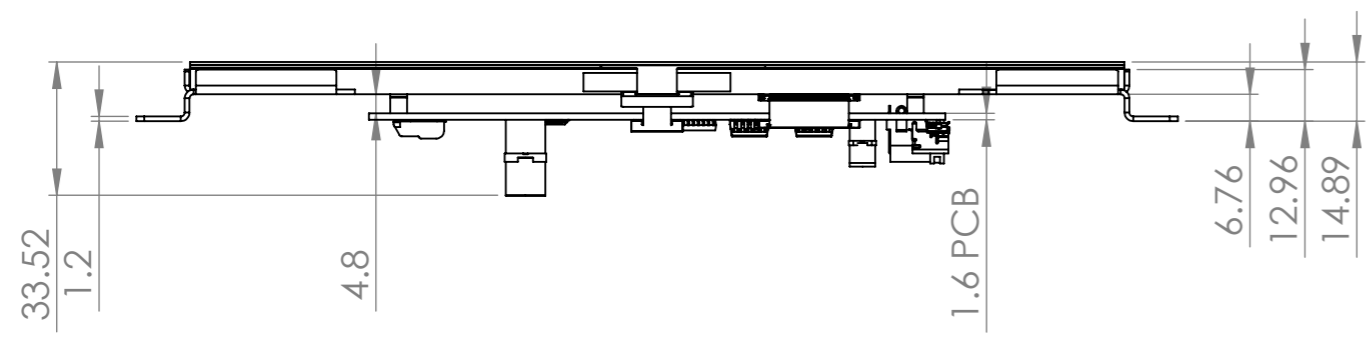
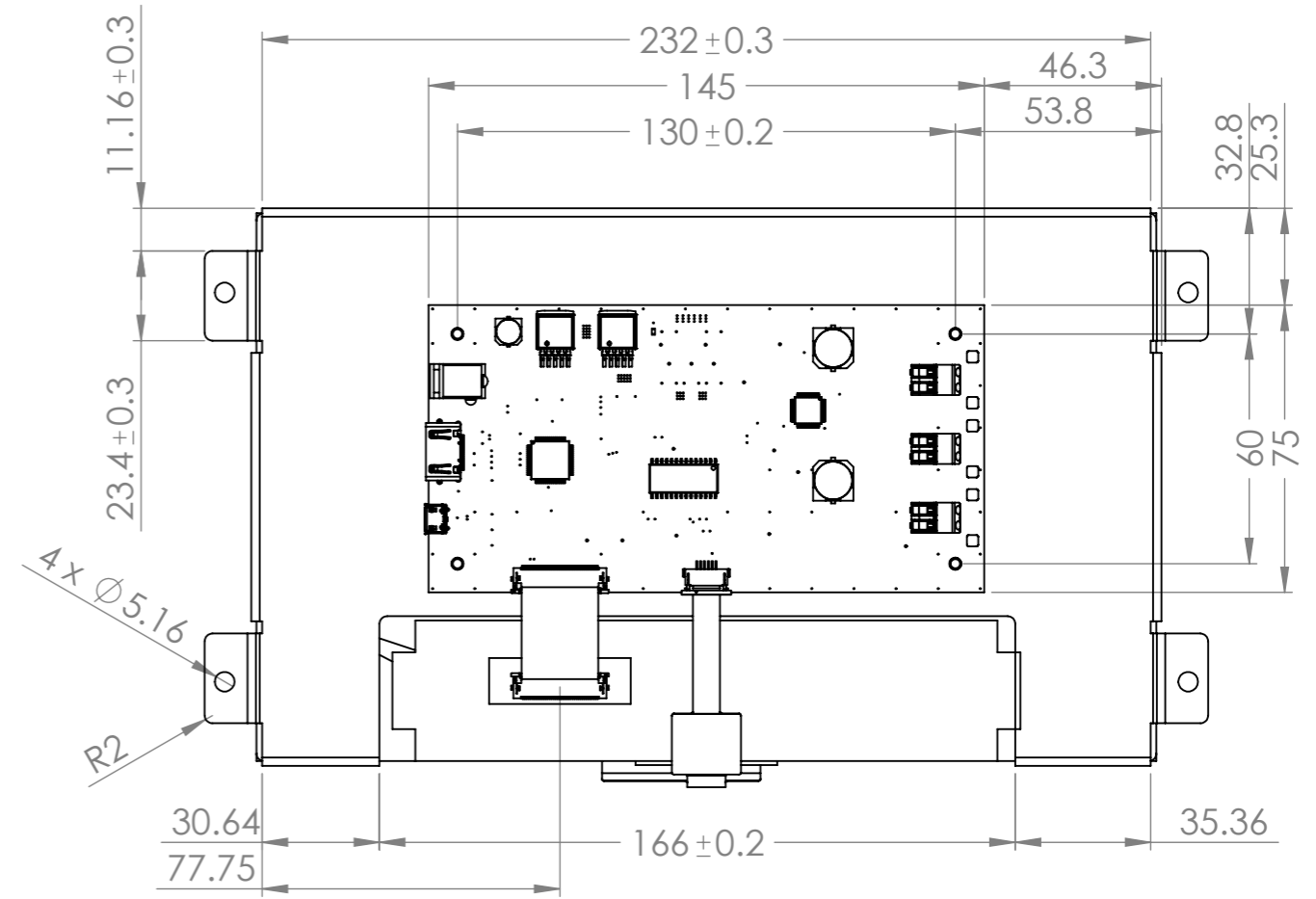
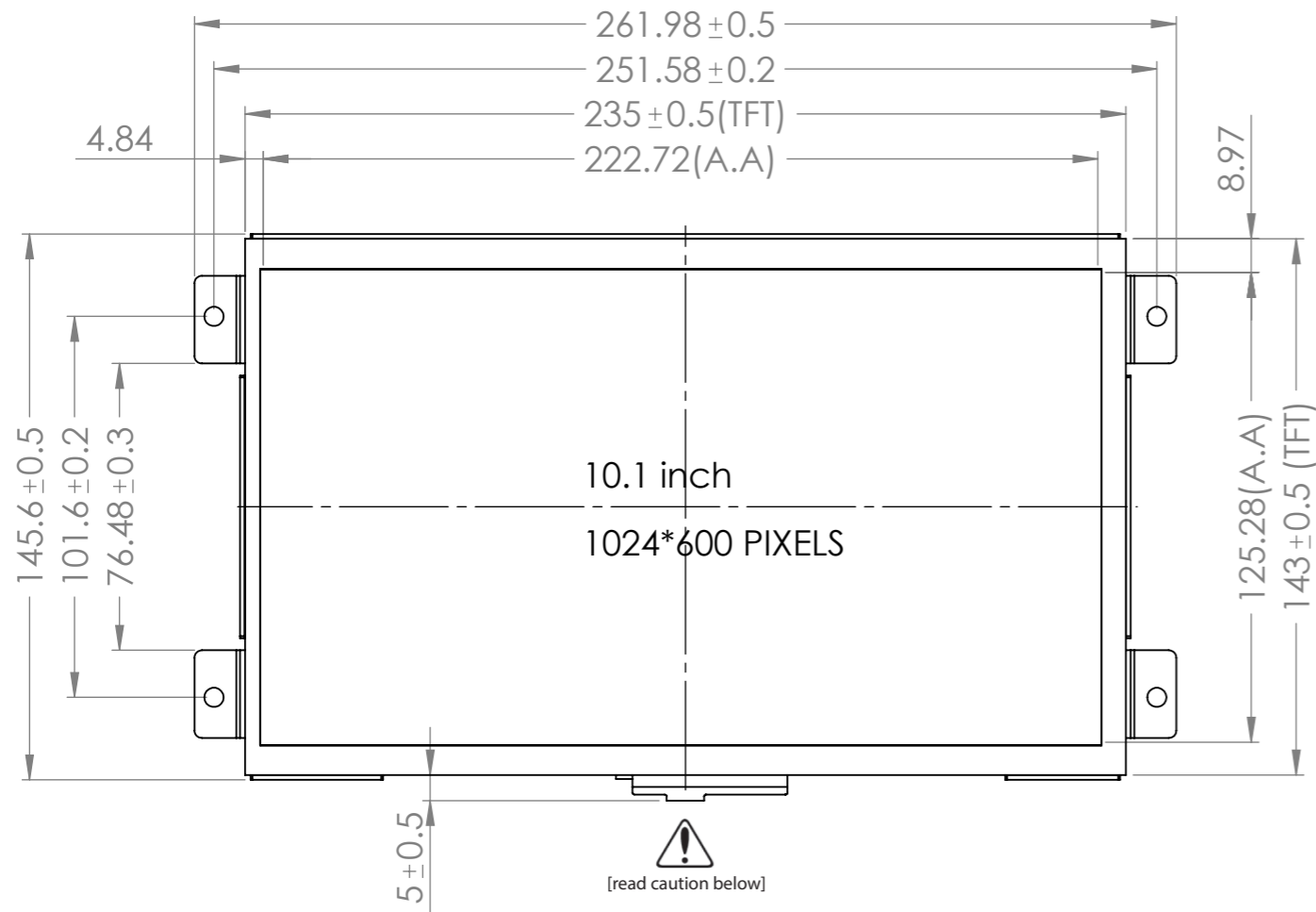


Document Revision History

Revision	Date	Description	Changed By
0	07/13/2022	Initial Release	CJ
1	09/08/2022	Updated Electrical Characteristics and Quality Information	JT

Mechanical Drawing

SYMBOL	REVISION	DATE



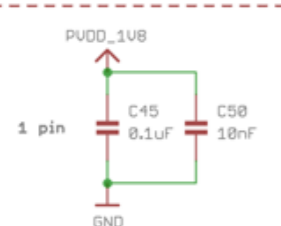
- Product Description: 10.1" HDMI IPS TFT w/ Capacitive Touch**
1. TFT Driver IC: TFP401A, CTP IC: FT5526EEZ-003
 2. TFT Interface: HDMI, CTP Interface: I²C
 3. TFT Power Requirement: 6V/1.7A
 4. Optical Features: Normally Black, Transmissive, 680 cd/m²

! 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.

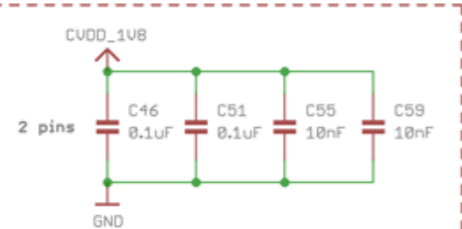
Standard Tolerance: (Unless otherwise specified) Linear: ± 0.3 mm		
	Drawing/Part Number: NHD-10.1-HDMI-A-RSXP-CTU	Revision: -
Unless otherwise specified: • Dimensions are in Millimeters • Third Angle Projection	Drawn By: C. Johnson	Approved By: C. Johnson
	Drawn Date: 07/13/2022	Approved Date: 07/13/2022
Do Not Scale Drawing		Sheet 1 of 1
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ADU7611 (Low Power 165 MHz HDMI Receiver)

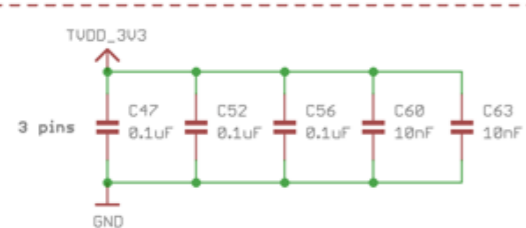
PUDD Decoupling



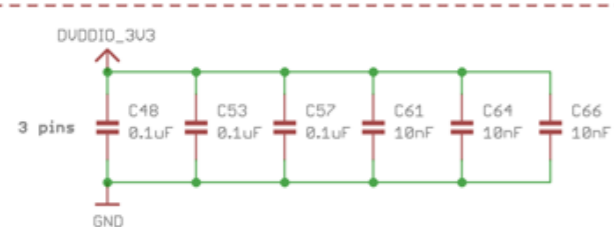
CUDD Decoupling



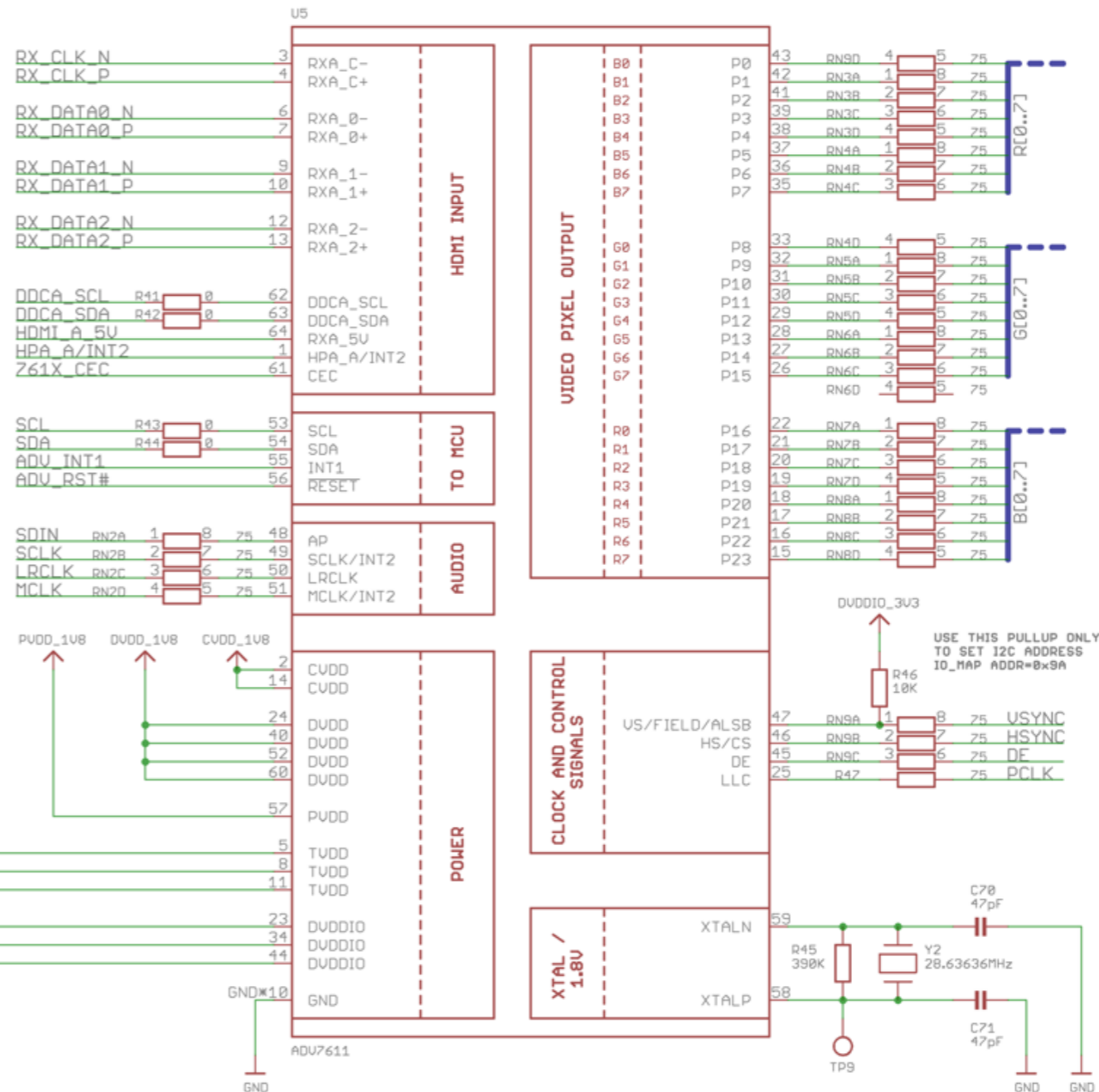
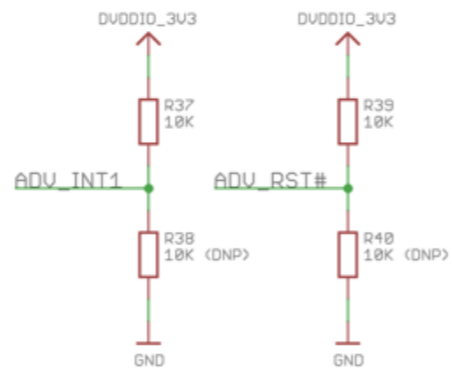
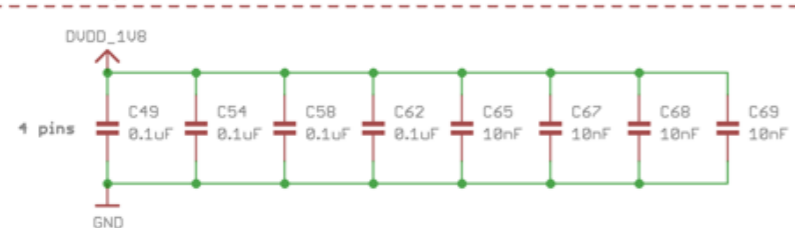
TUDD Decoupling



DVDDIO Decoupling



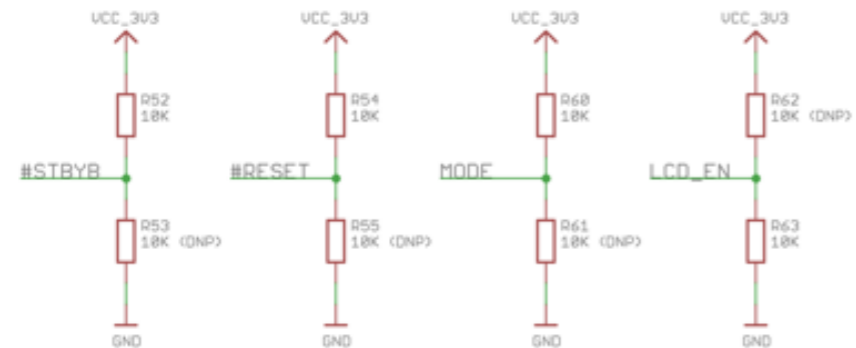
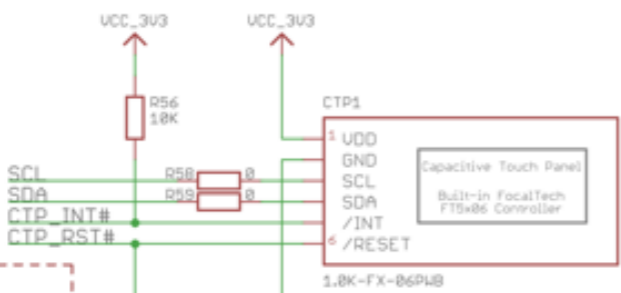
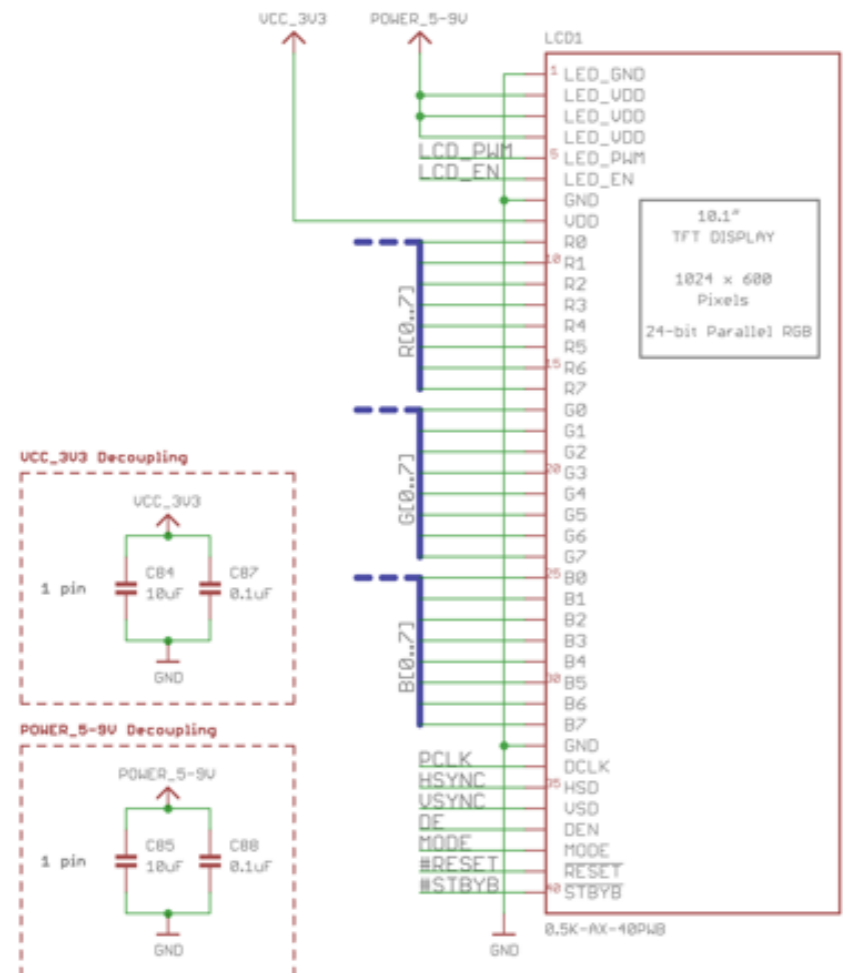
DVDD Decoupling



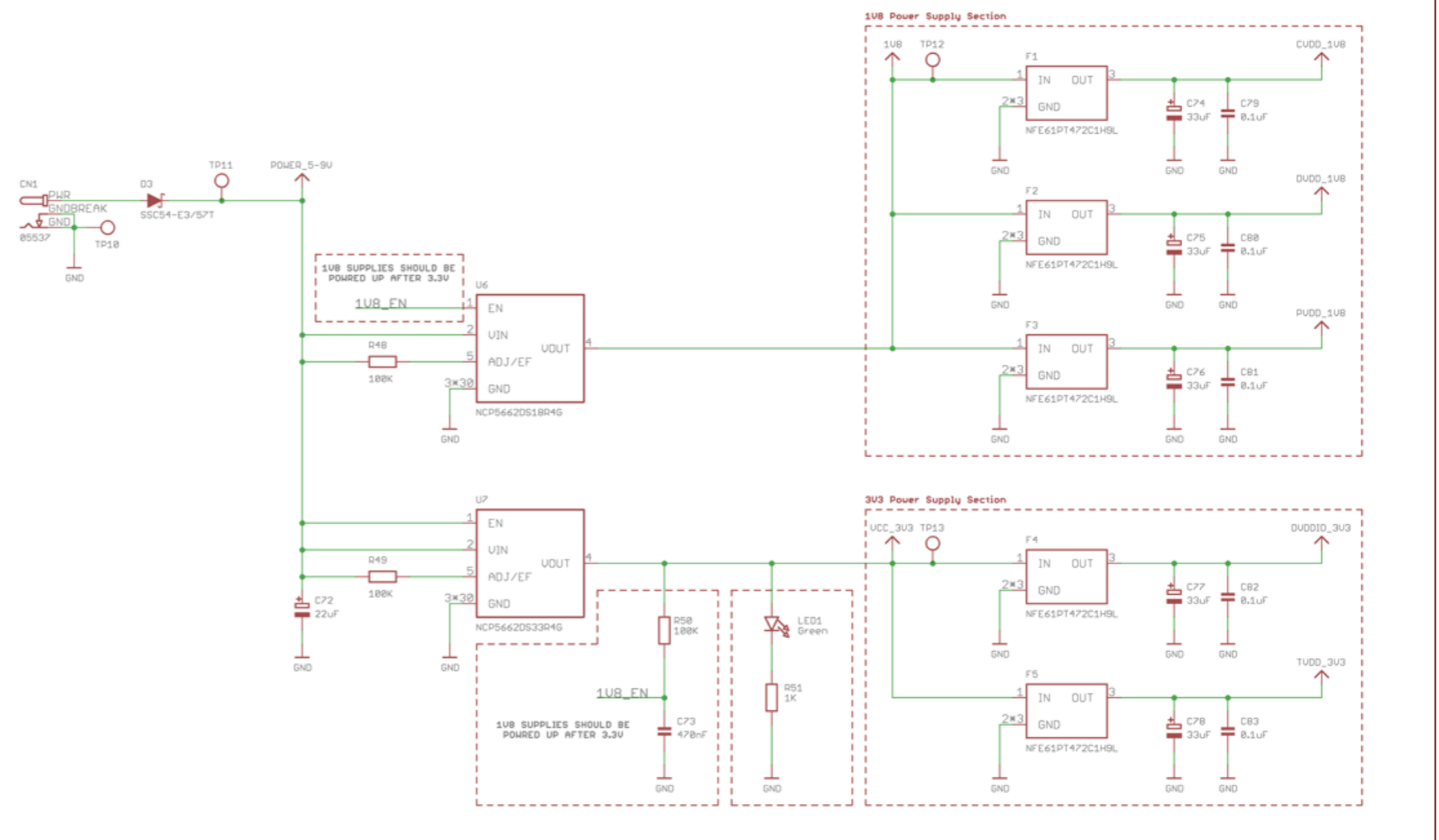
PIXEL PORT CONFIGURATION = 010 (DEFAULT 011)

Standard Tolerance: (Unless otherwise specified) Linear: ±0.3mm		
	Drawing/Part Number: NHD-10.1-HDMI-A-SCH	Revision: -
Unless otherwise specified: • Dimensions are in Millimeters • Third Angle Projection	Drawn By: Z.Palrang	Approved By: Z.Palrang
	Drawn Date: 08/12/2021	Approved Date: 08/12/2021
Do Not Scale Drawing		Sheet 1 of 4
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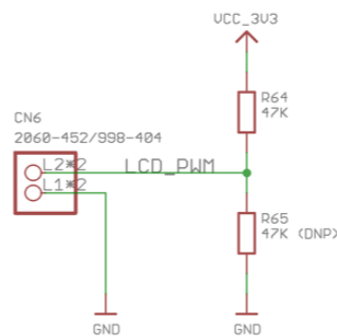
LCD Interface



Power Supply

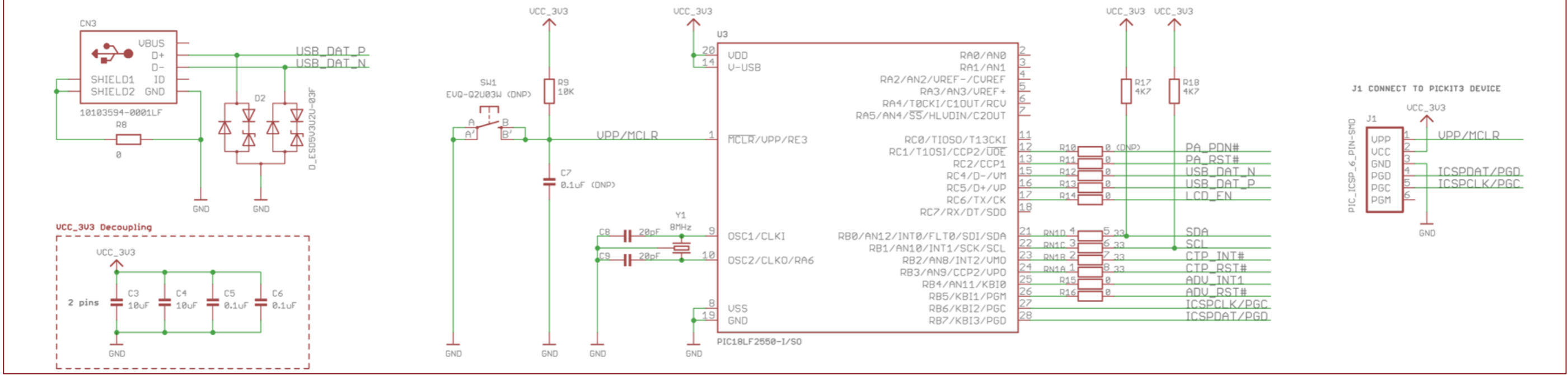


PWM LED Backlight



Standard Tolerance: (Unless otherwise specified) Linear: ±0.3mm		
	Drawing/Part Number: NHD-10.1-HDMI-A-SCH	Revision: -
Unless otherwise specified: • Dimensions are in Millimeters • Third Angle Projection	Drawn By: Z.Palrang	Approved By: Z.Palrang
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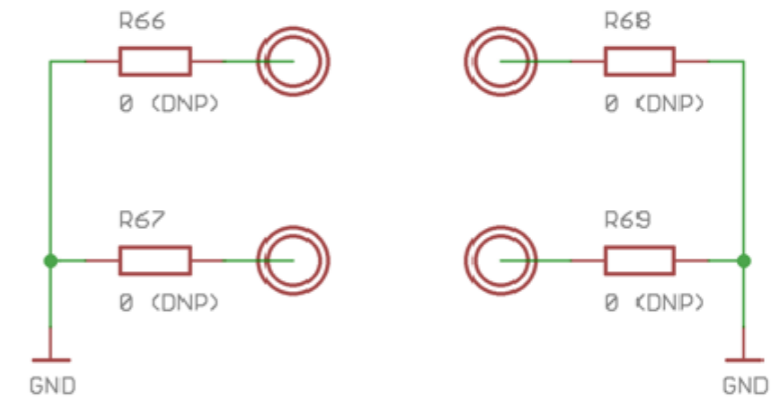
PIC18LF2550 / Micro-B USB Capacitive Touch Screen Controller



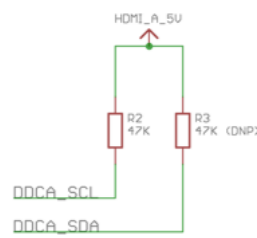
HDMI Port A - Connector and ESD Suppression



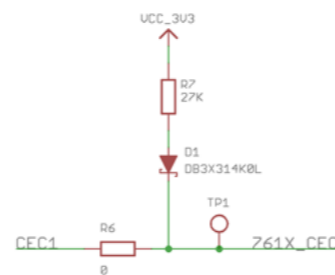
Mounting Holes 3.2mm Plated



DDC A Circuitry



CEC Circuitry



Standard Tolerance:
(Unless otherwise specified)

Linear: ±0.3mm

Unless otherwise specified:

• Dimensions are in Millimeters
• Third Angle Projection

NEWHAVEN DISPLAY INTERNATIONAL

Drawing/Part Number: NHD-10.1-HDMI-A-SCH

Revision: -

Size: A3

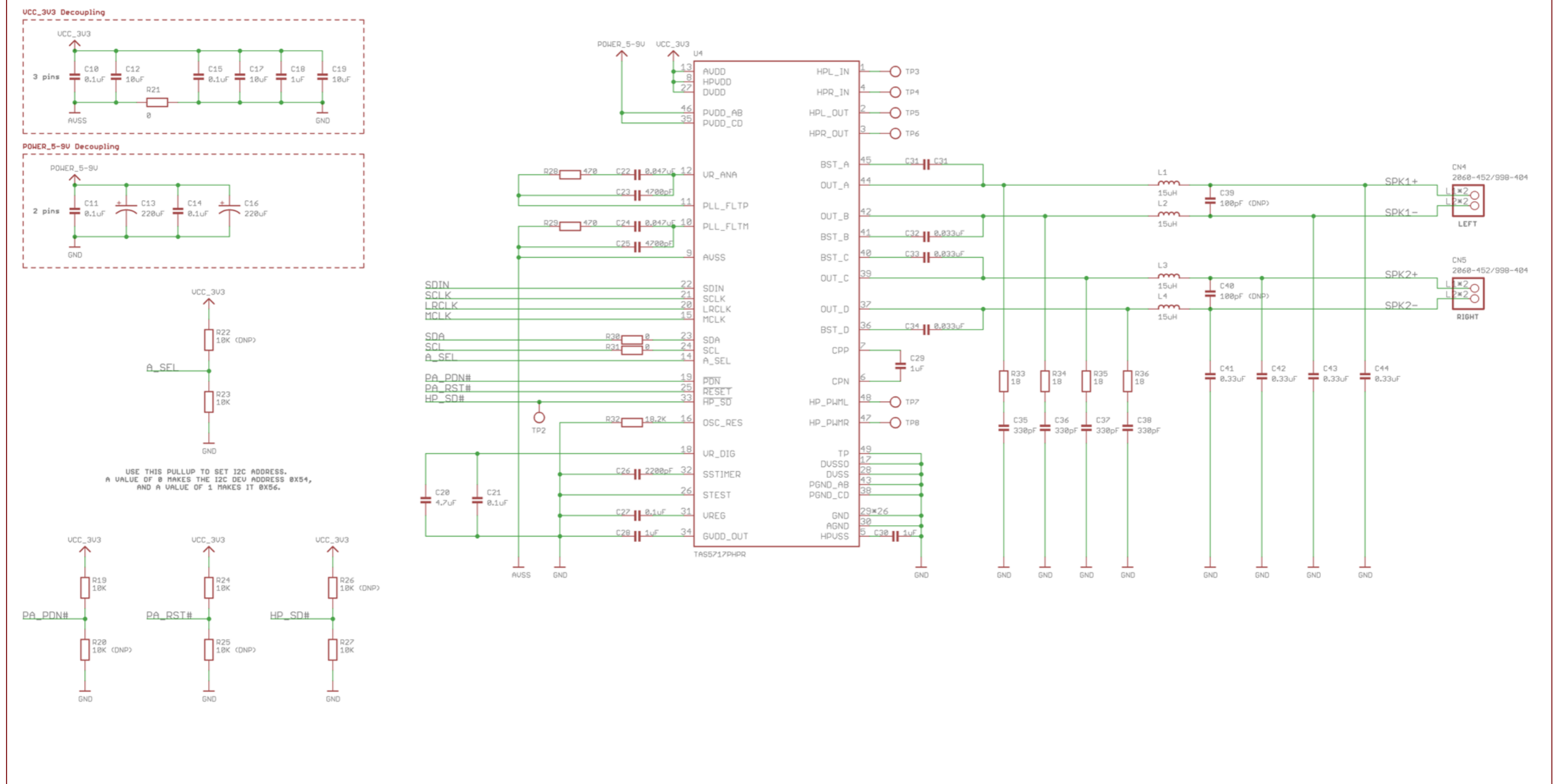
Scale: NS

Do Not Scale Drawing

Sheet 3 of 4

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10-W Digital Audio Power Amplifier



Standard Tolerance: (Unless otherwise specified) Linear: ±0.3mm		
	Drawing/Part Number: NHD-10.1-HDMI-A-SCH	Revision: -
Unless otherwise specified: • Dimensions are in Millimeters • Third Angle Projection	Drawn By: Z.Palrang	Approved By: Z.Palrang
	Drawn Date: 08/12/2021	Approved Date: 08/12/2021
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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}	-	1.5	3.3	5.5	V
Backlight PWM Frequency	f _{PWM}	V _{PWM} = 3.3V	200	-	2000	Hz
Module Supply Voltage	V _{DD}	-	6.0	7.5	9.0	V
Module Supply Current	I _{DD}	V _{DD} = 6V	-	1.7	1.9	A
		V _{DD} = 9V	-	1.0	1.2	A

HDMI Receiver Information

On-board Analog Devices ADV7611 Low Power HDMI Receiver.

To view the full ADV7611 specification, please download it by accessing the link below:

<https://support.newhavendisplay.com/hc/en-us/articles/6963189583127-ADV7611>

Audio Amplifier Information

On-board Texas Instruments TAS5717 Digital Audio Power Amplifier.

To view the full TAS5717 specification, please download it by accessing the link below:

<https://support.newhavendisplay.com/hc/en-us/articles/7397555534615-TAS5717>

Technical Resource

3D Model	TFT Panel Used	Display Type	Luminance Rating	Optimal Viewing Angle	Touch Panel
NHD-10.1-1024600AF-ASXP-CTP	NHD-10.1-1024600AF-ASXP-CTP	IPS	680 cd/m ²	80° all angles	PCAP (USB-HID)

EDID Array

```
const unsigned char NHD_HDMI10.1A[] = {
0x00, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0x00, 0x39, 0x04, 0x03, 0x00, 0x00, 0x00, 0x00, 0x00,
0x01, 0x1B, 0x01, 0x03, 0xA1, 0x16, 0x0D, 0x78, 0x02, 0xBB, 0xD0, 0x94, 0x57, 0x55, 0x91, 0x27,
0x21, 0x50, 0x54, 0x00, 0x00, 0x00, 0x01, 0x00, 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0x01,
0x01, 0x01, 0x01, 0x01, 0x01, 0x01, 0xB0, 0x13, 0x00, 0x40, 0x41, 0x58, 0x19, 0x20, 0x30, 0x20,
0x3A, 0x00, 0xDF, 0x7D, 0x00, 0x00, 0x00, 0x18, 0x01, 0x1D, 0x00, 0x72, 0x51, 0xD0, 0x1E, 0x20,
0x6E, 0x28, 0x55, 0x00, 0xDF, 0x7D, 0x00, 0x00, 0x00, 0x18, 0x00, 0x00, 0x00, 0xFC, 0x00, 0x4E,
0x48, 0x44, 0x2D, 0x31, 0x30, 0x2E, 0x31, 0x20, 0x4C, 0x56, 0x44, 0x53, 0x00, 0x00, 0x00, 0xFD,
0x00, 0x00, 0x3C, 0x00, 0x2D, 0x08, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x01, 0x65,
0x02, 0x03, 0x10, 0x60, 0x63, 0x03, 0x0C, 0x00, 0x83, 0x01, 0x00, 0x00, 0x23, 0x09, 0x04, 0x04,
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0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x61
};
```

EDID Timing

Pixel Clock:	50.40	<input type="checkbox"/> Interlaced
H. Active Pixels:	1024	V. Active Lines: 600
H. Blank:	320	V. Blank: 25
H. Front Porch:	48	V. Front Porch: 3
H. Sync Width:	32	V. Sync Width: 10
H. Image Size:	223	V. Image Size: 125
H. Border:	0	V. Border: 0
H. Clock: 37.50 kHz		V. Clock: 60.00 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, 240 hrs.	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C, 240 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, 120 hrs.	2
Low Temperature Operation	Endurance test applying the electric stress (voltage & current) and the low thermal stress for a long time.	-20°C, 120 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.	+50°C, 90% RH, 120 hrs.	1,2
Thermal Shock resistance	Endurance test applying the electric stress (voltage & current) during a cycle of low and high thermal stress.	-30°C, 30min->25°C, 10min -> 80°C, 30min 10 cycles	
Vibration test	Endurance test applying vibration to simulate transportation and use.	Frequency:250r/min Amplitude: 1 inch Time:45min	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.