AstraControl

23 June 2024

In review

ESP32 Based control PCB for other light fixture pcbs.

Features

- 5V 10A Input
- USB C
- External WiFi Antenna
- 5Mbps RS485 (half-duplex)
- ESP32
- I2C Auxilary
- GPIO Breakout
- Button
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- -
- -

Render placeholder

File: overview.kicad_sch

File: block_diagram.kicad_sch

Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/	AstraControl.kicad_sch	2024-08-26	A	A4	1 of 16

Overview

22 April 2024

Notes

- Components marked with will not be fitted.

Design Considerations

Information

Generic information box to inform about specifics of the part or layout, notes, helpful information.

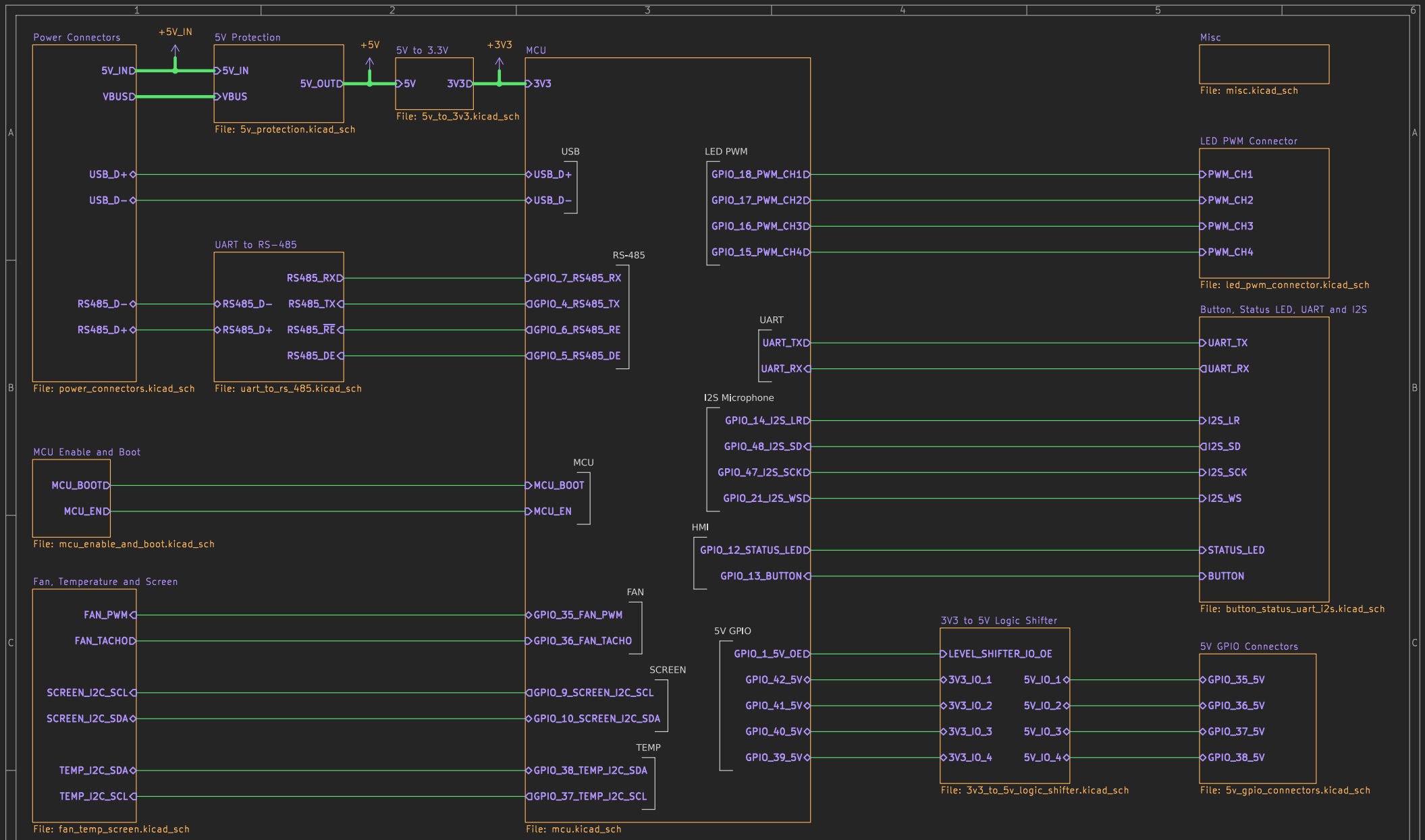
Caution

Extra care is required here. Pay attention to details, routing, and try your best to follow the advice.

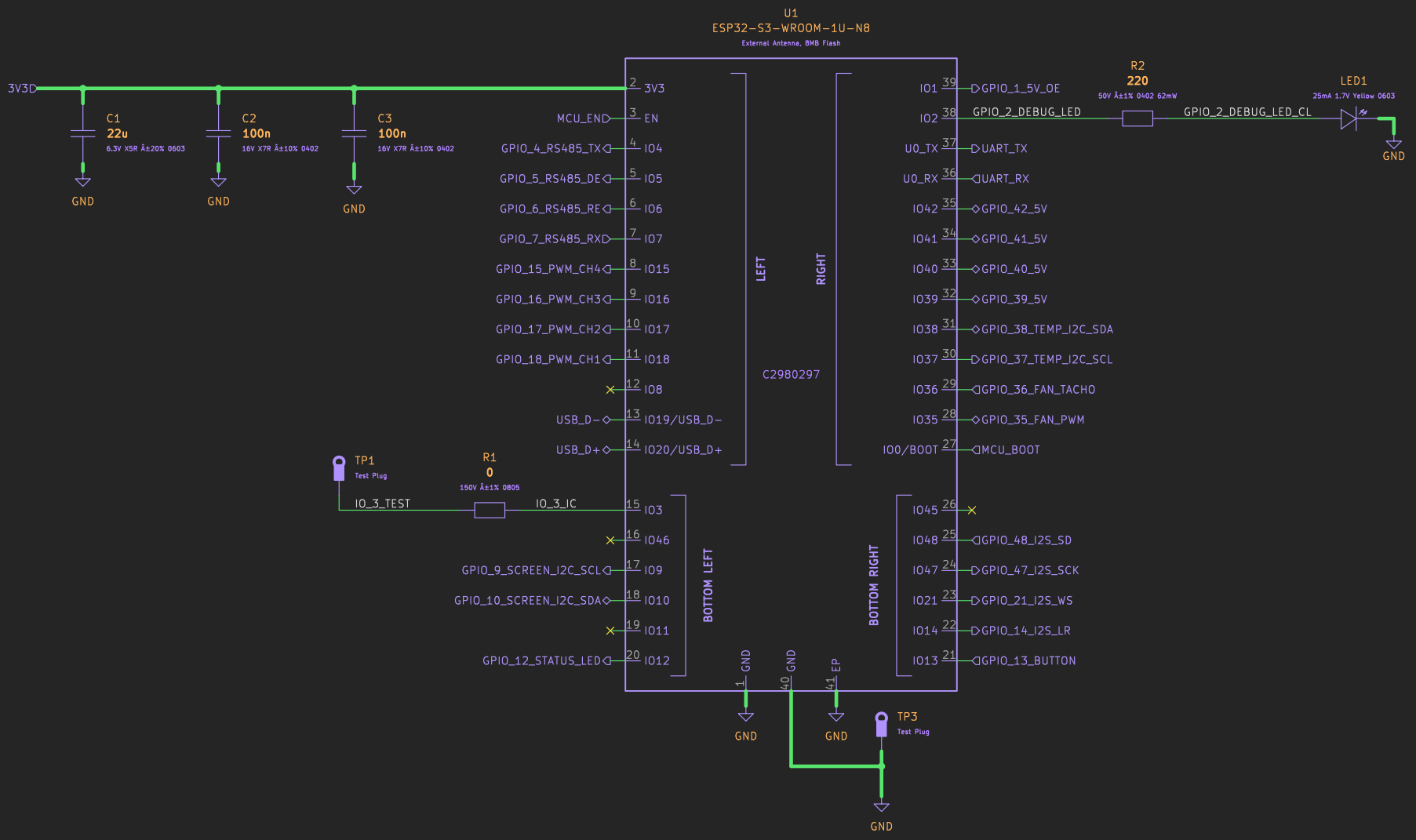
Critical

It is critical to follow the instructions here. Failure to do so will result in poor performance or failuire.

Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Overview/	overview.kicad_sch	2024-08-26	A	A4	2 of 16



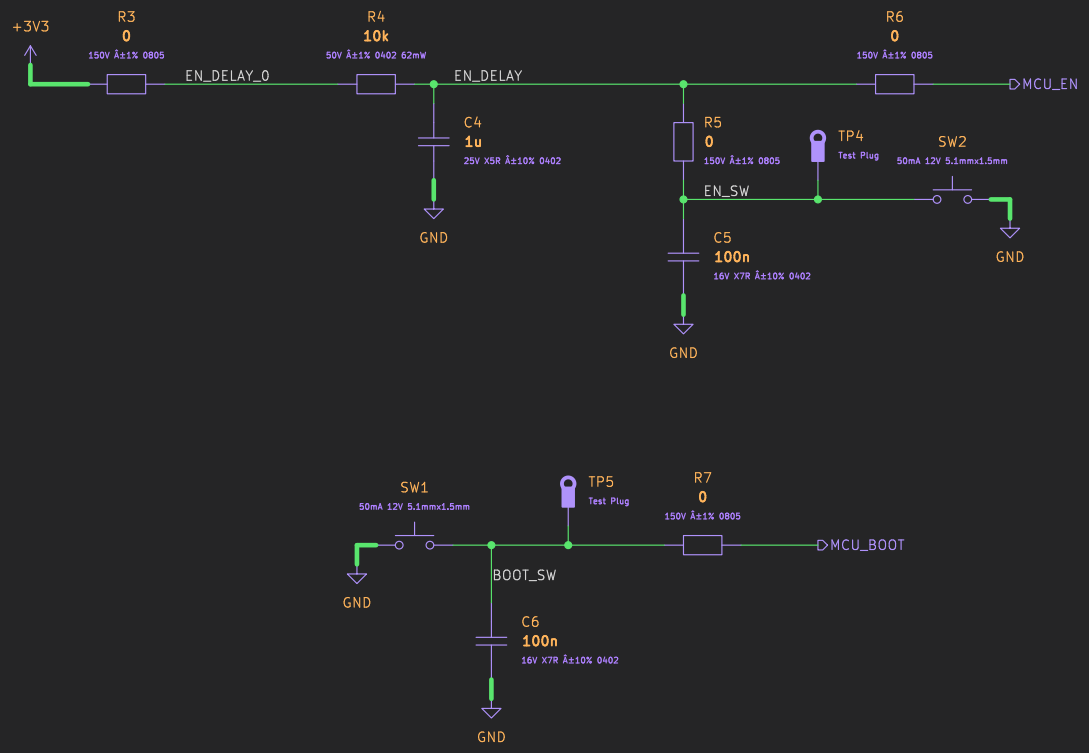
Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/	block_diagram.kicad_sch	2024-08-26	A	A4	3 of 16



Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/MCU/	mcu.kicad_sch	2024-08-26	A	A4	4 of 16

Information

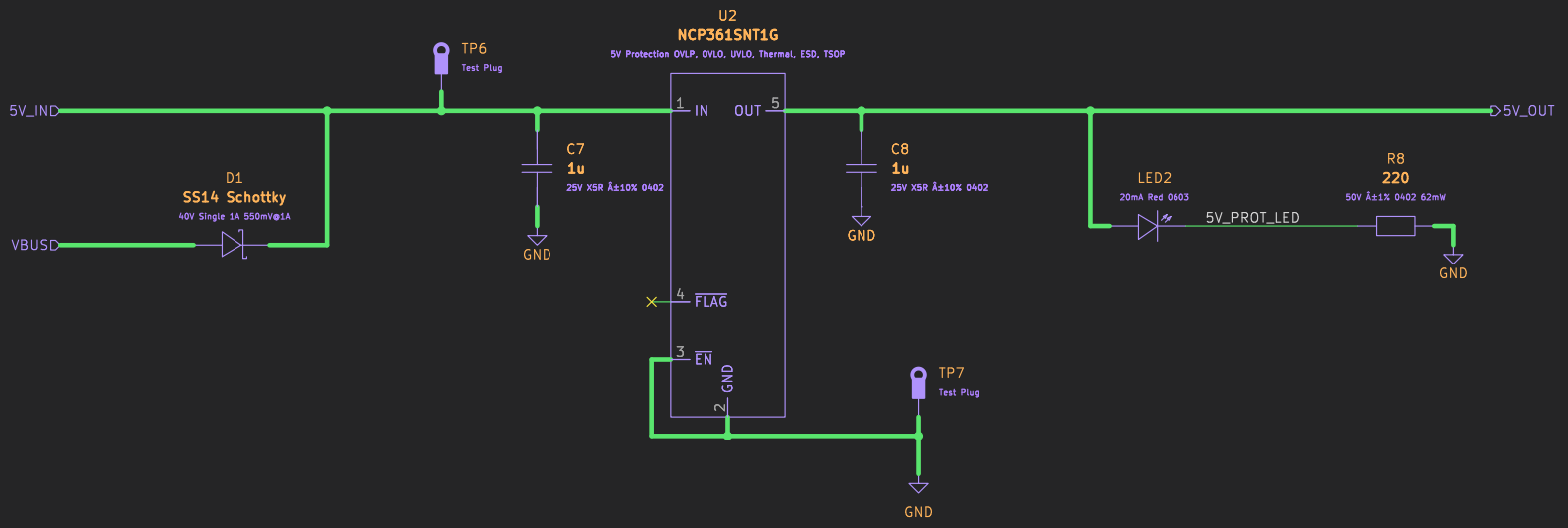
To ensure that the power supply to the ESP32-S3 chip is stable during power-up, it is advised to add an RC delay circuit at the EN pin.



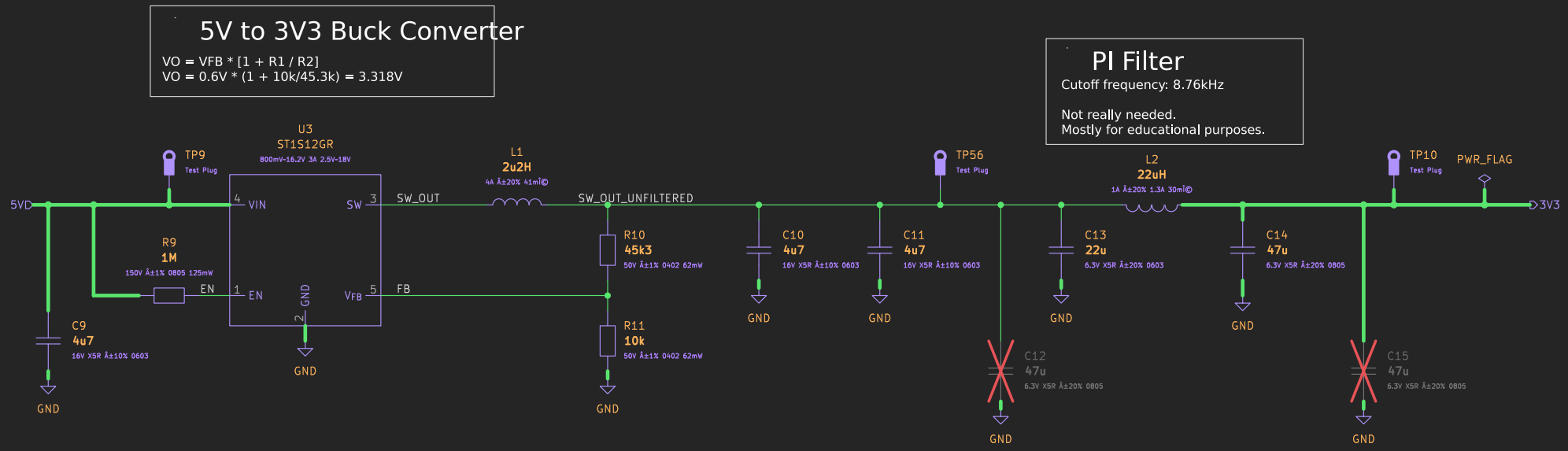
Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/MCU Enable and Boot/	mcu_enable_and_boot.kicad_sch	2024-08-26	A	A4	5 of 16

Information

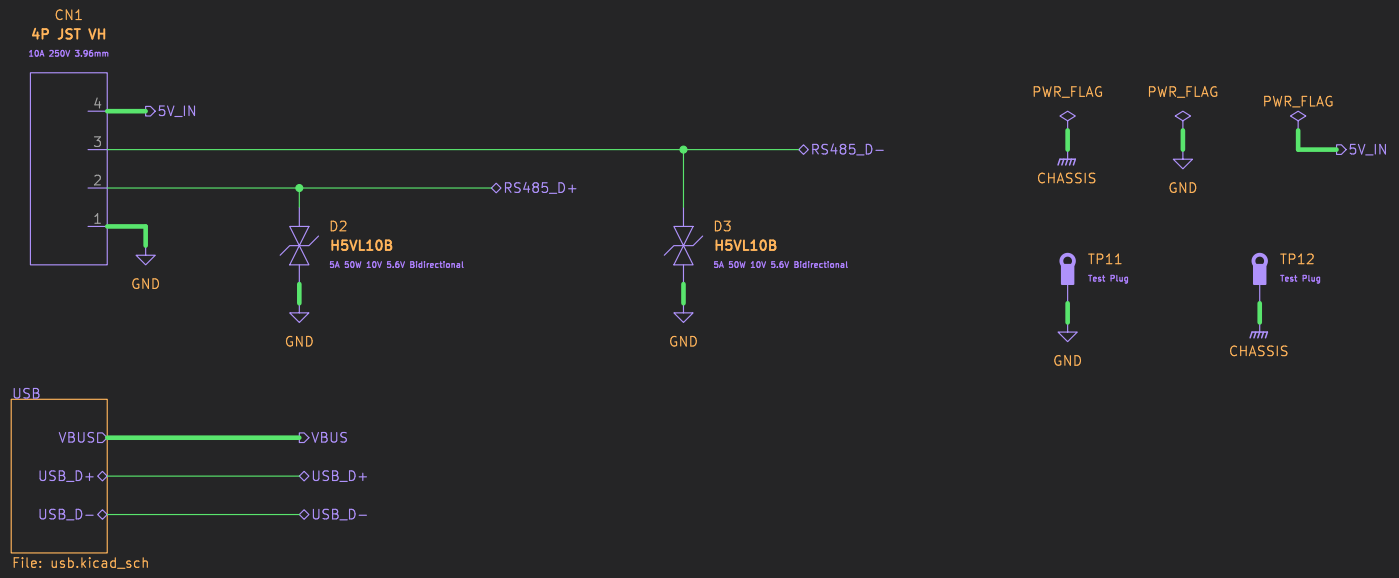
Overvoltage: 5.67V
Undervoltage: 3V
Max current: 600mA - 780mA
Max V_{IN}: 21V



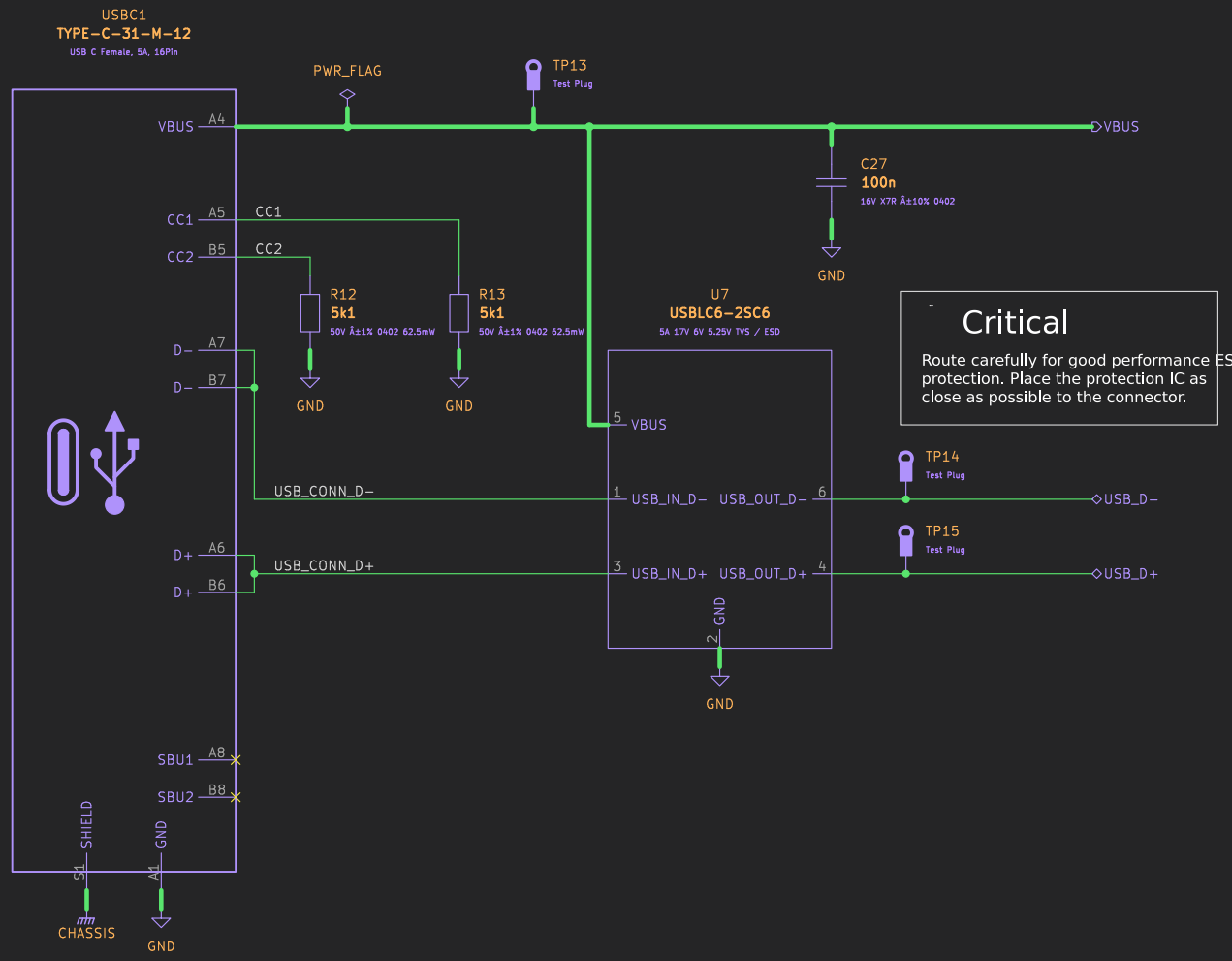
Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/5V Protection/	5v_protection.kicad_sch	2024-08-26	A	A4	6 of 16



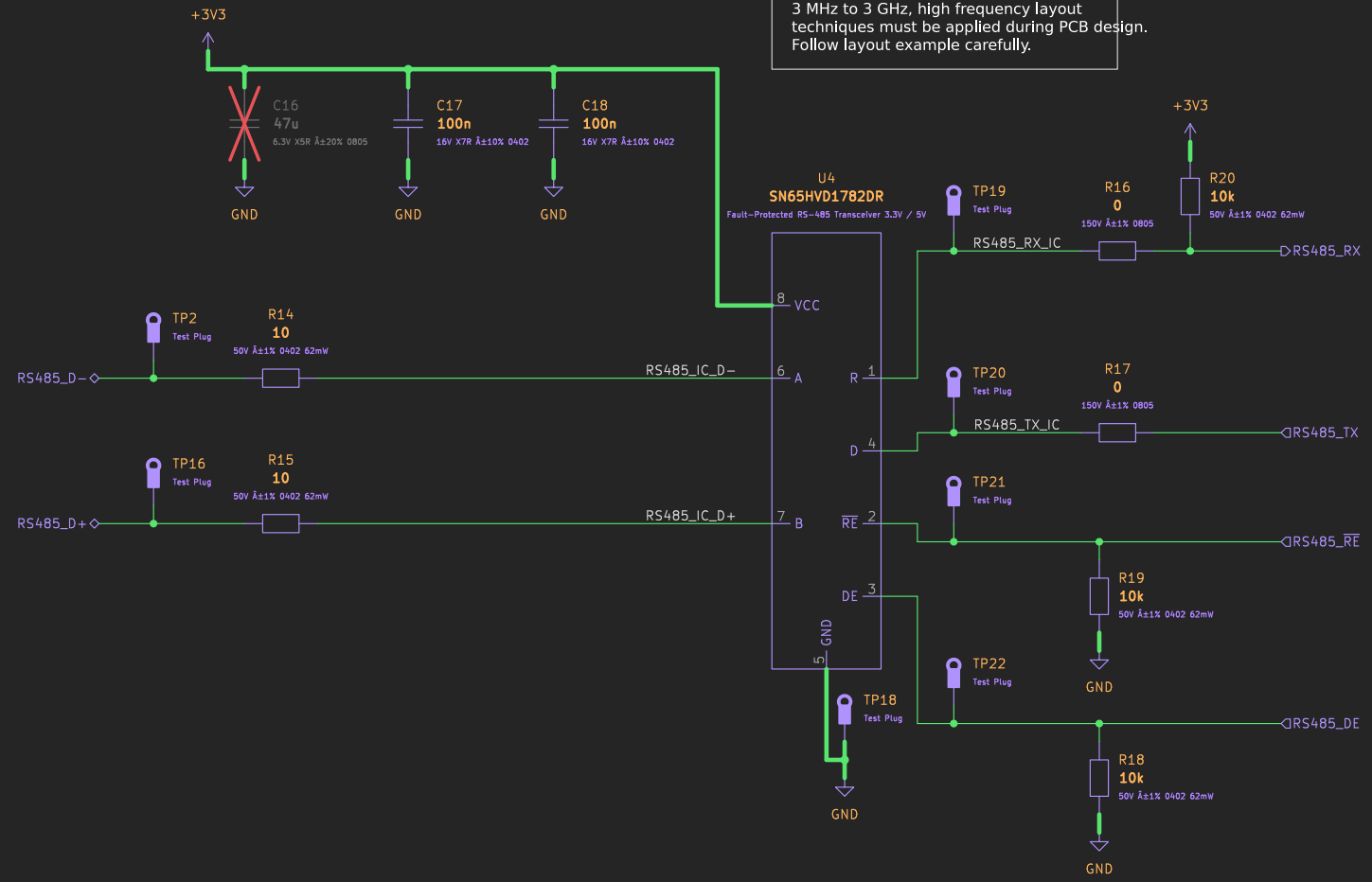
Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/5V to 3.3V/	5v_to_3v3.kicad_sch	2024-08-26	A	A4	7 of 16



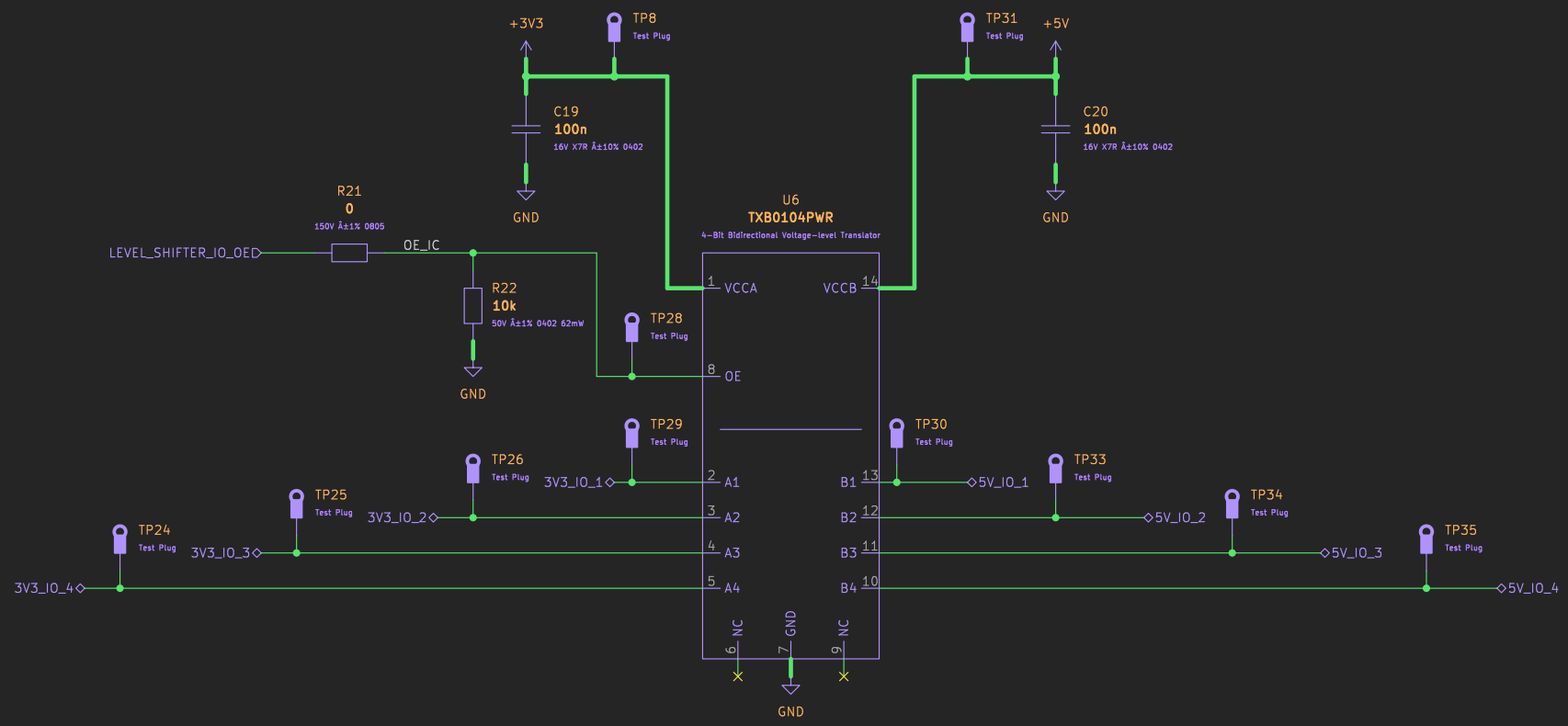
Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/Power Connectors/	power_connectors.kicad_sch	2024-08-26	A	A4	8 of 16



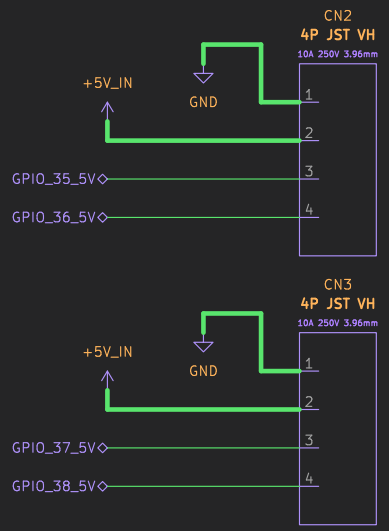
Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/Power Connectors/USB/	kicad_sch	2024-08-26	A	A4	9 of 16



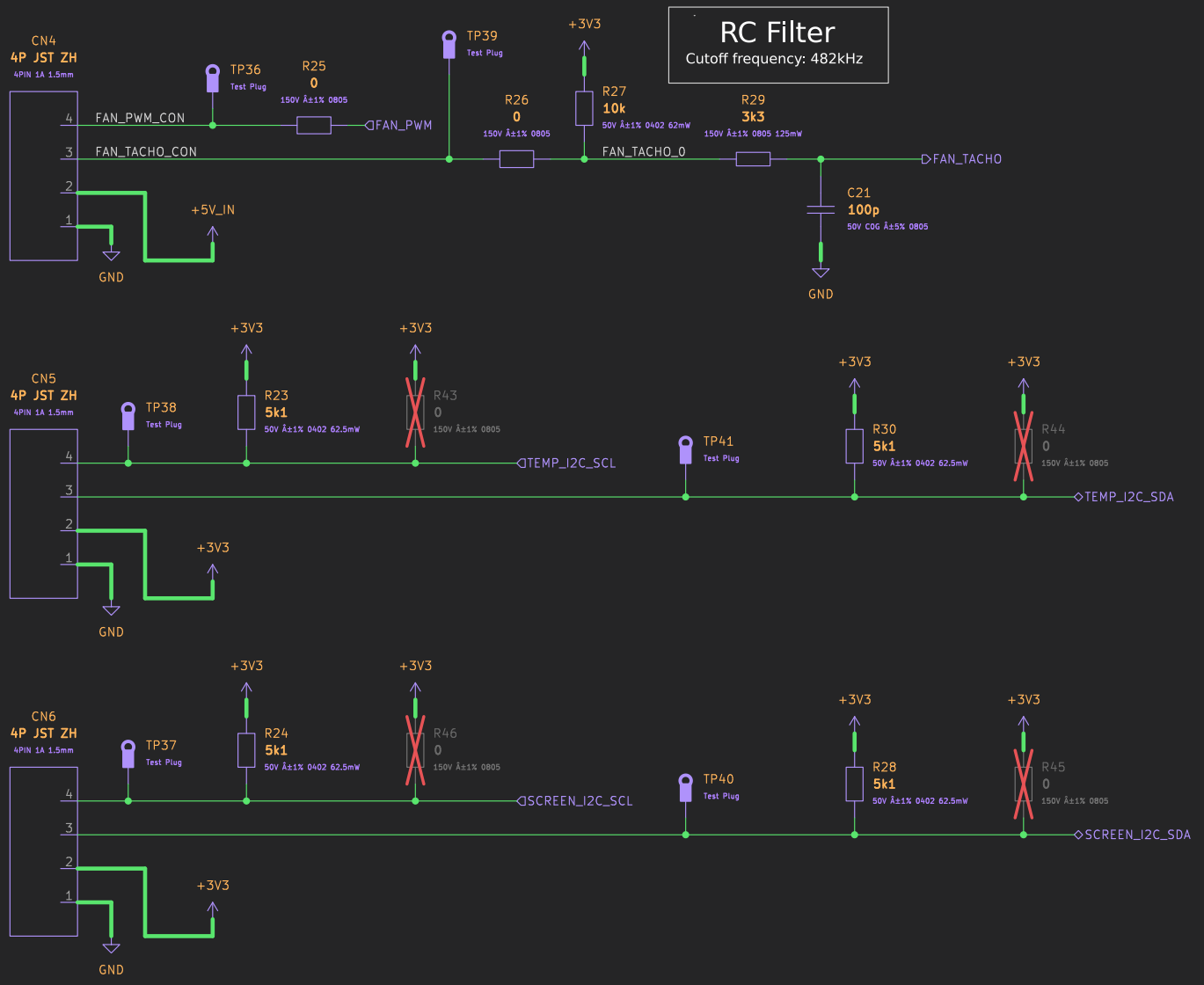
Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/UART to RS-485/	uart_to_rs_485.kicad_sch	2024-08-26	A	A4	10 of 16



Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/3V3 to 5V Logic Shifter/	3v3_to_5v_logic_shifter.kicad_sch	2024-08-26	A	A4	11 of 16



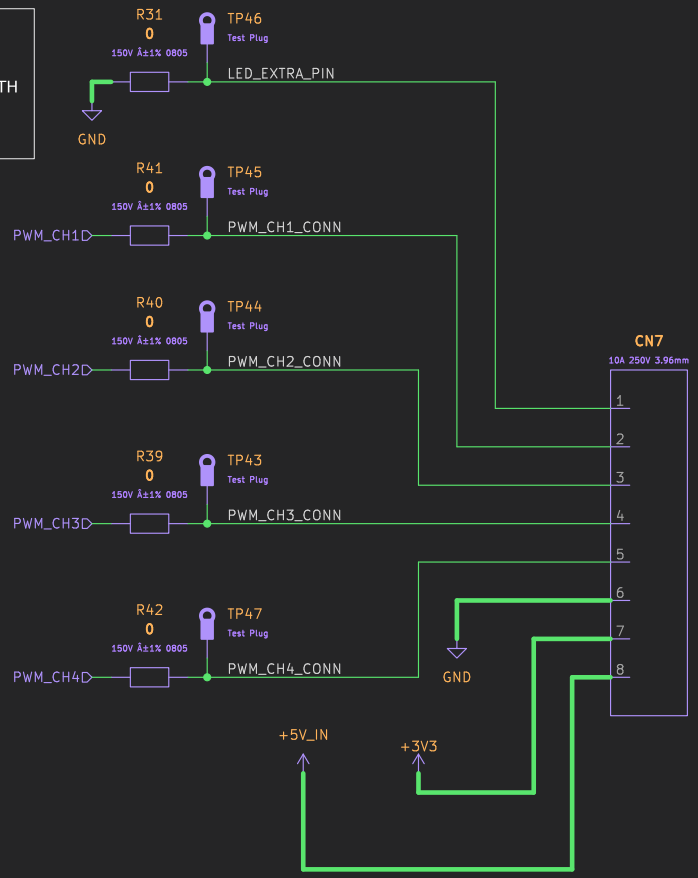
Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/5V GPIO Connectors/	5v_gpio_connectors.kicad_sch	2024-08-26	A	A4	12 of 16



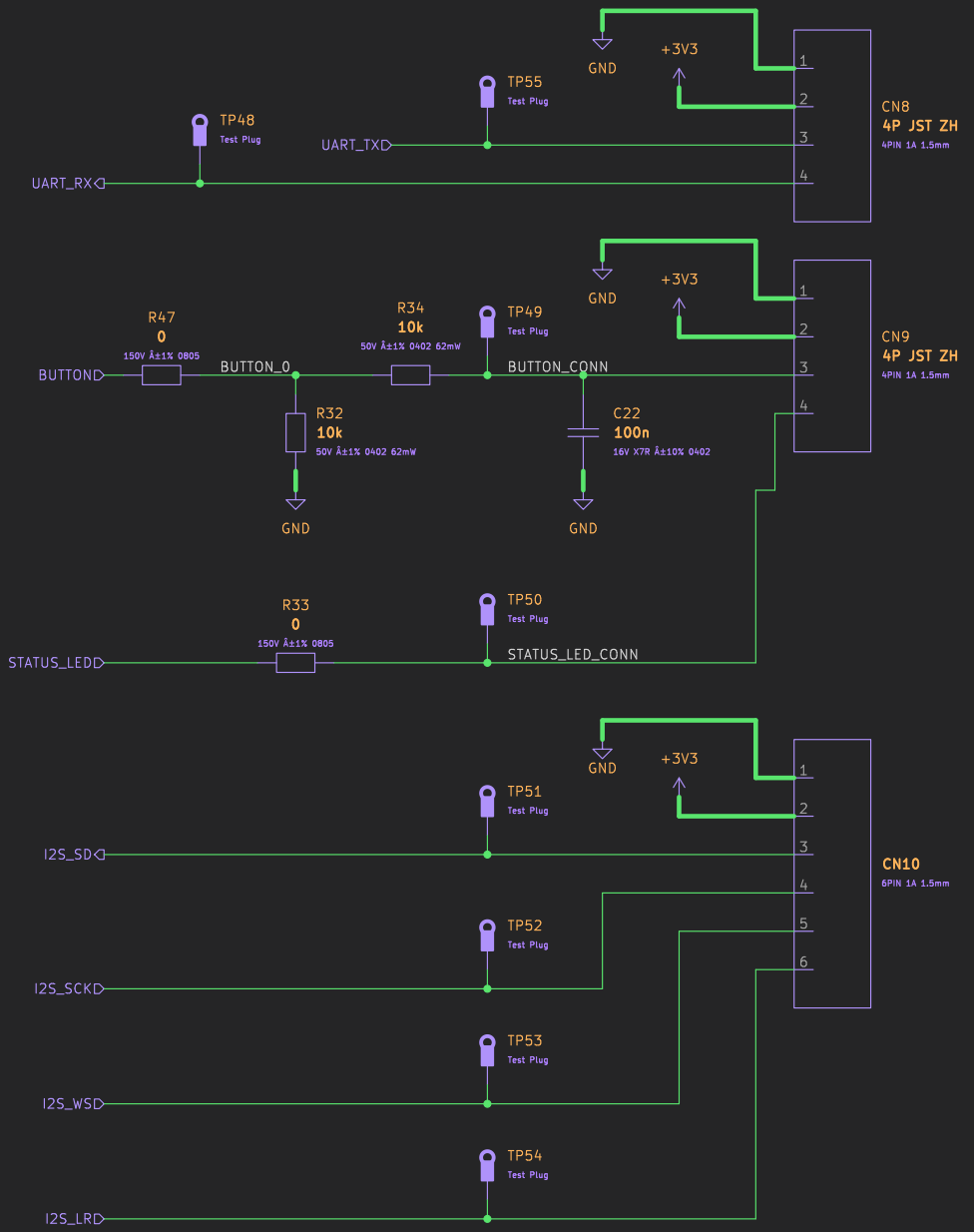
Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/Fan, Temperature and Screen/	screen.kicad_sch	2024-08-26	A	A4	13 of 16

Information

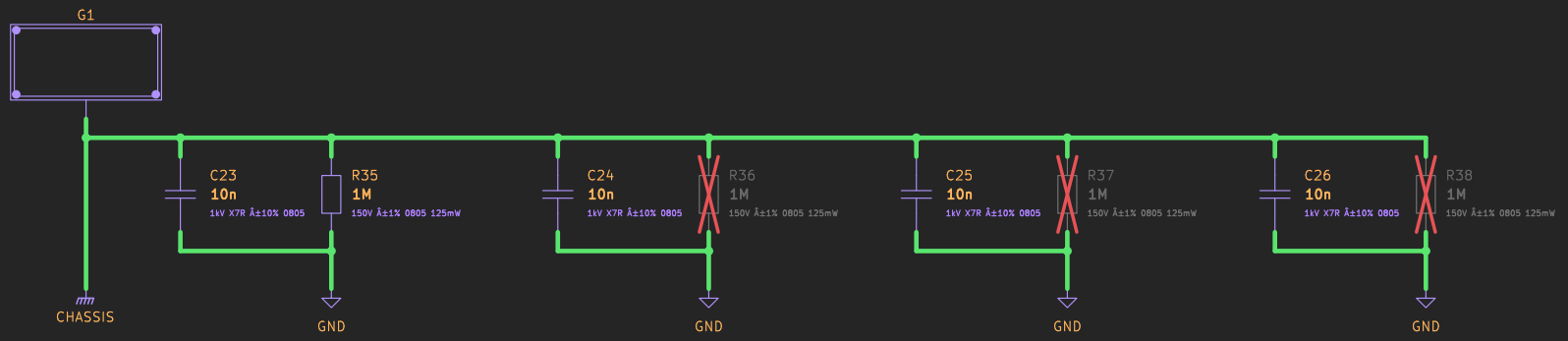
If a different signal is required here the 0Ohm + PTH will allow a post assembly fix / experimentation. Otherwise, just GND.



Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/LED PWM Connector/	led_pwm_connector.kicad_sch	2024-08-26	A	A4	14 of 16



Board Name	Project Name	Company	Sheet Title	Sheet Path	File Name	Date	Revision	Size	Sheet
AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/Button, Status LED, UART and I2S/	button_status_uart_i2s.kicad_sch	2024-08-26	A	A4	15 of 16



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AstraControl	AstraBeam	LiveAstra Technologies	AstraControl - Root	/Block Diagram/Misc/	misc.kicad_sch	2024-08-26	A	A4	16 of 16