

SJ-201
Mycroft AI

Sheet: /
File: SJ-201-R10.kicad_sch

Title: SJ-201-R10

Size: A Date: 2022-07-28
KiCad E.D.A. kicad (6.0.7)

Rev: 10
Id: 1/7

[illegible]

Figure 4. XL4501 Typical Application Circuit Reference Diagram

Reverse Polarity Protection

12V_Unregulated

D16 TVS

GND

C63 100NF

GND

FB8 4A 28mΩ 680Ω@100MHz

Q3 WST4041 40V 6A

R27 100k

GND

+12V

C64 470UF/16V

GND

D20 TVS

GND

FB Resistor
 $V_{OUT} = 1.25 \cdot (1 + R_2/R_1)$

- LDO to power on PCB circuits instead of using Raspberry 3.3v

The diagram shows a buck converter circuit. The input is a +5V supply connected to the VIN pin (pin 5) of the MP2359 IC (U7). A 10µF capacitor (C5) is connected between the +5V supply and ground. The EN pin (pin 4) is connected to a signal labeled 'Enable1V'. The GND pins (pins 2 and 3) are connected to ground. The BST pin (pin 1) is connected to the SW pin (pin 6). A 10nF capacitor (C7) is connected between the SW pin and ground. The SW pin is connected to the positive terminal of an inductor L2 (2.7µH ±30%, 2.35A). The negative terminal of the inductor is connected to the FB pin (pin 3) and the positive terminal of a Schottky diode D15. The other terminal of the diode is connected to ground. The output of the converter is taken from the node between the inductor and the diode, passing through a 47k resistor (R3) to a +1V0 output. A 200k resistor (R4) is connected between the output node and ground. A 22µF capacitor (C37) is connected between the +1V0 output and ground.

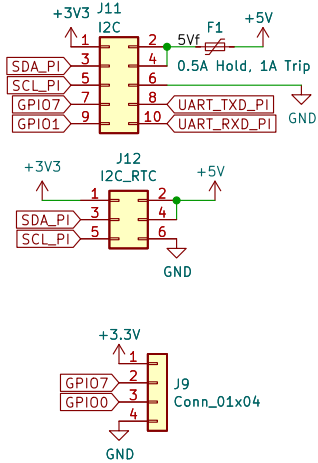
$$V_{FB} = 0.6V$$
$$V_O = 0.6 \times (1 + 30/47) = 0.98V$$

TP12v0 ○ 12v_Unregulated

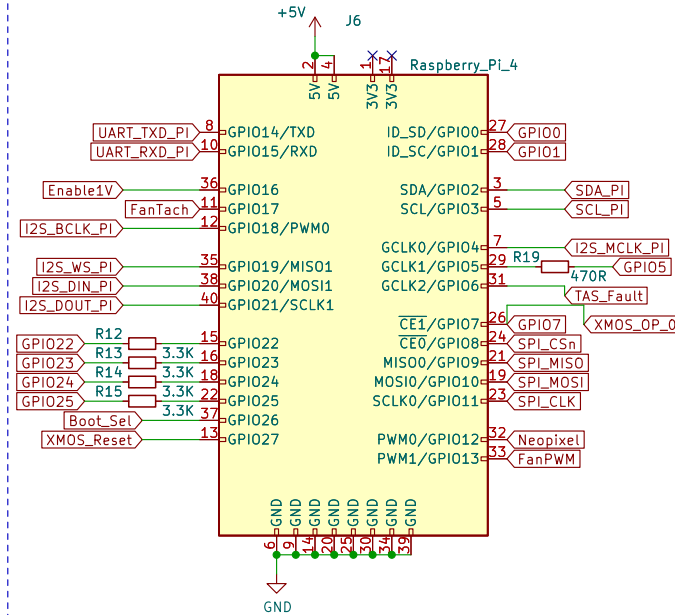
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Raspberry Pi

Adapters



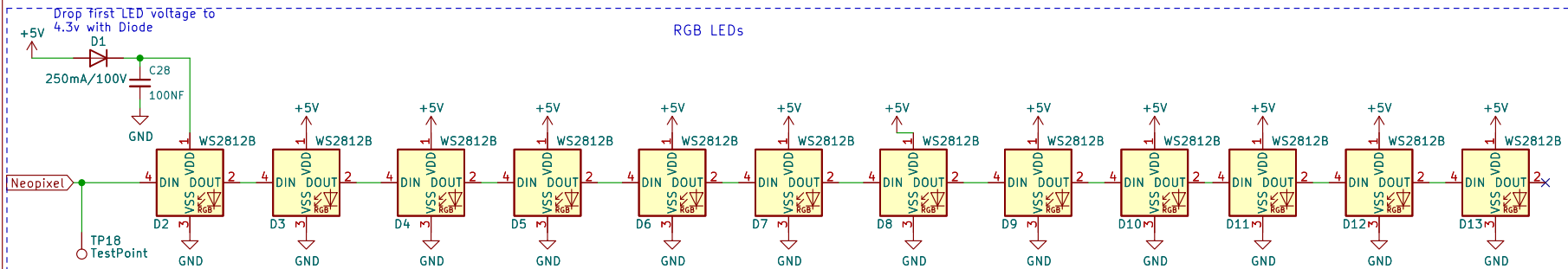
Raspberry Pi Connector



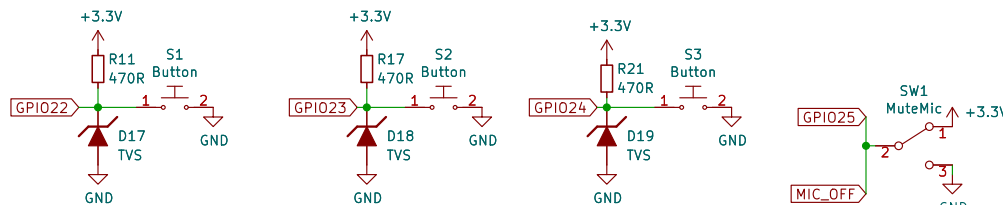
Bed of nails test pins

| | |
|------|-----------|
| TP29 | GPIO22 |
| TP30 | GPIO23 |
| TP31 | GPIO24 |
| TP32 | GPIO25 |
| TP33 | TAS_Fault |
| TP34 | GPIO5 |

RGB LEDs



Buttons/Switches



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Sheet: /RaspberryPi/

File: RaspberryPi.kicad_sch

Title: Raspberry Pi

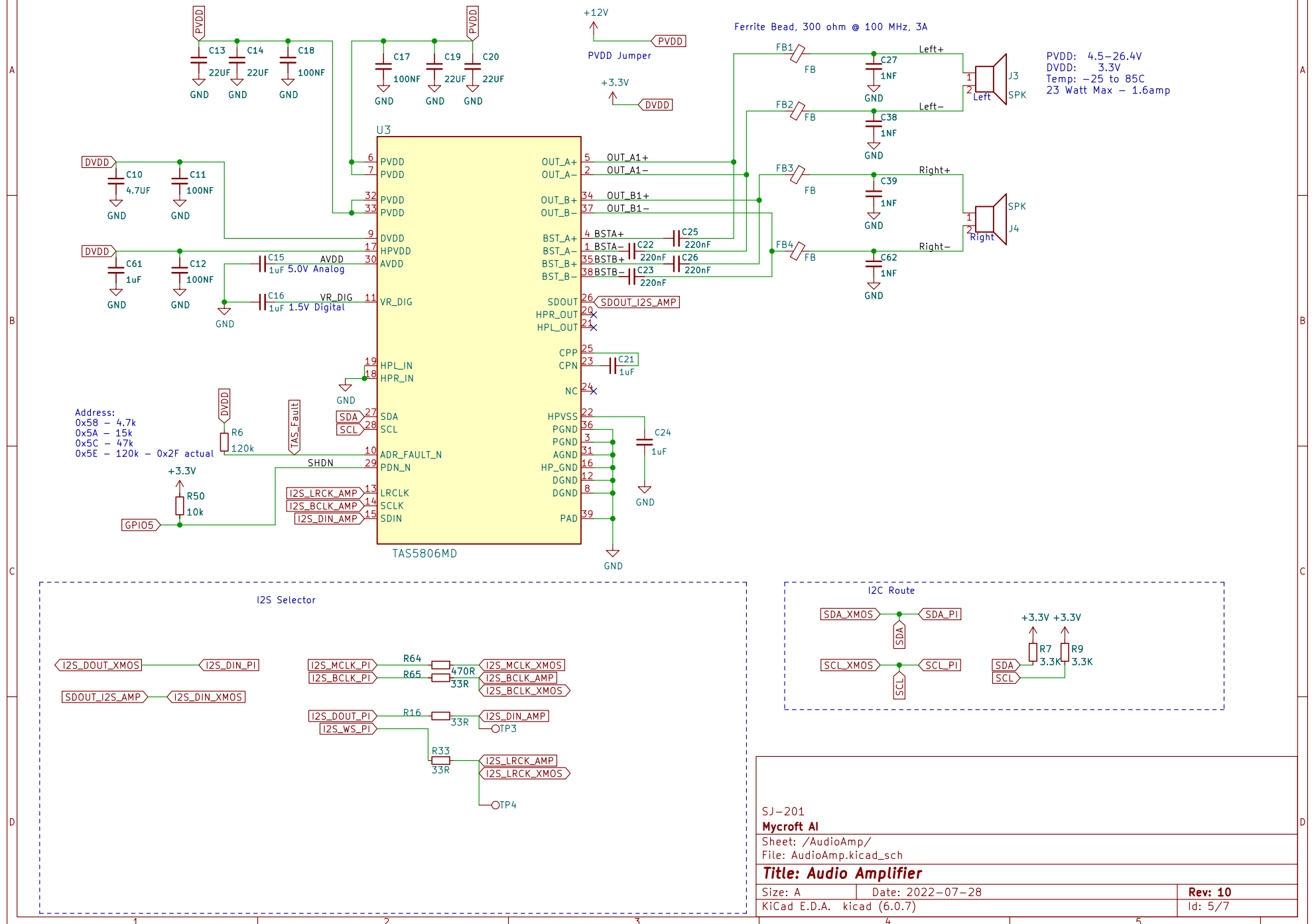
Size: A Date: 2022-07-28

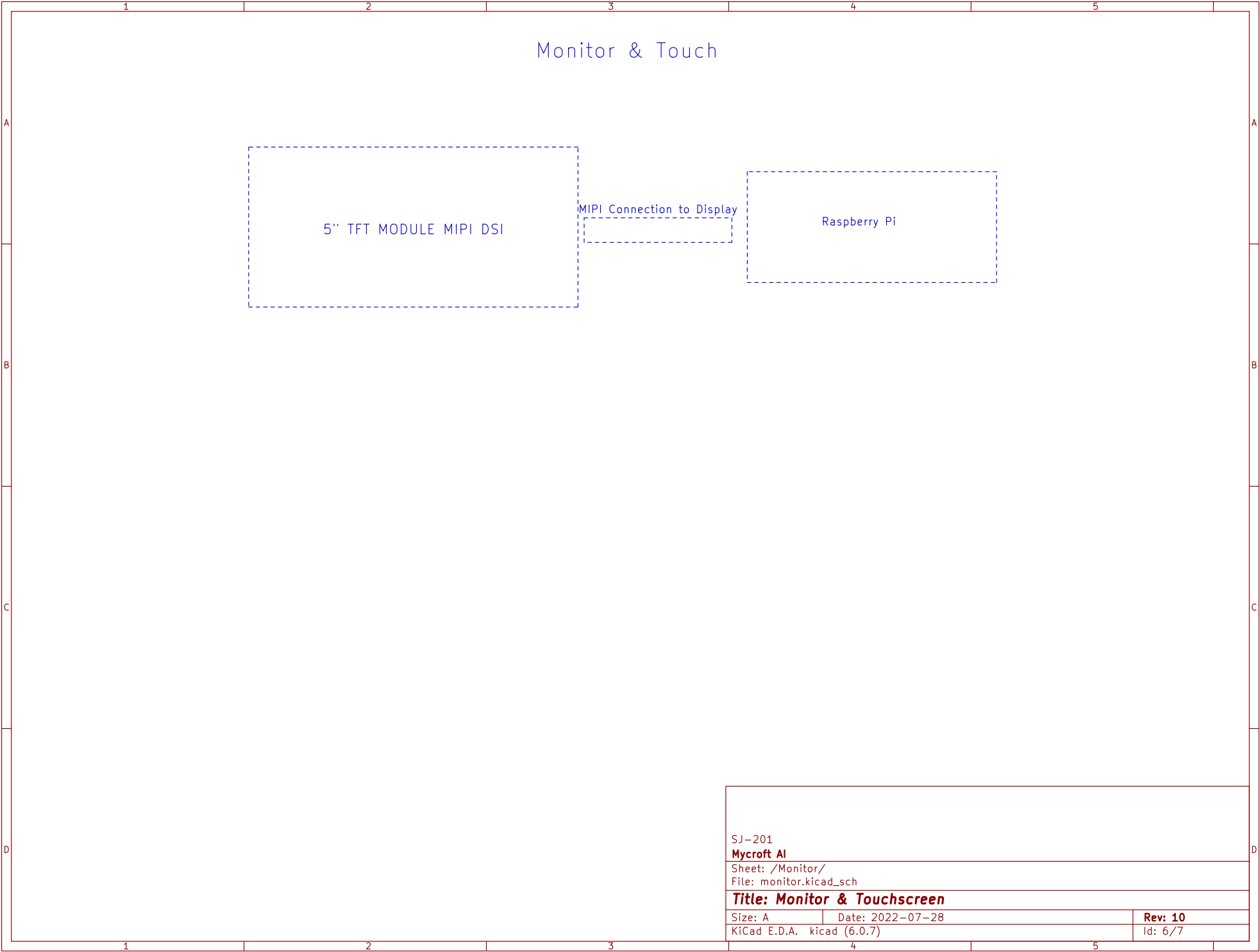
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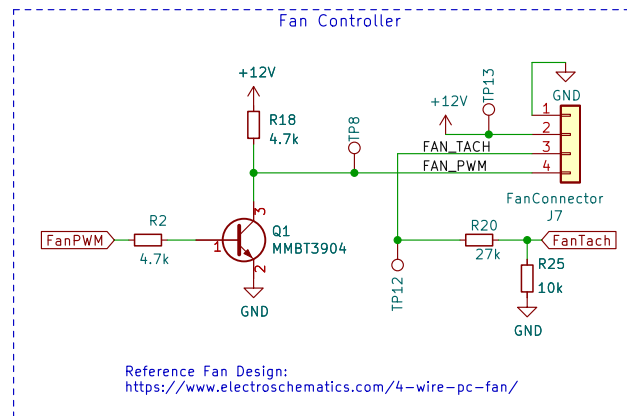
Audio Amplifier





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| SJ-201 | | |
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| Sheet: /Monitor/ File: monitor.kicad_sch | | |
| Title: Monitor & Touchscreen | | |
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Fan Controller



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Sheet: /MCU/

File: MCU.kicad_sch

Title: MCU & Fan

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