

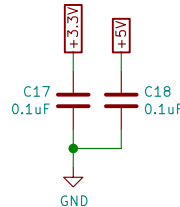
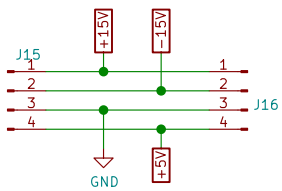
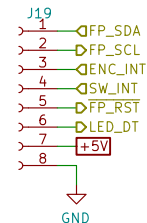
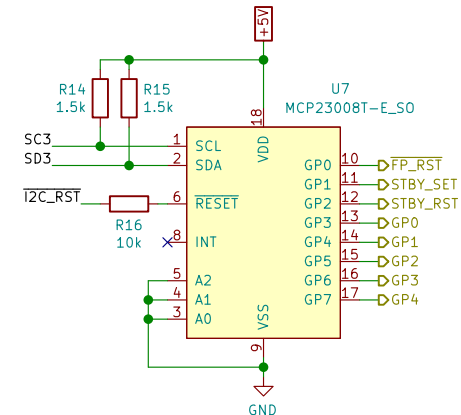
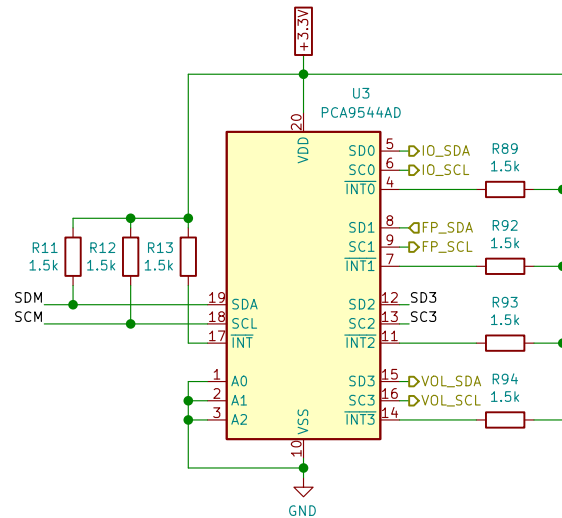
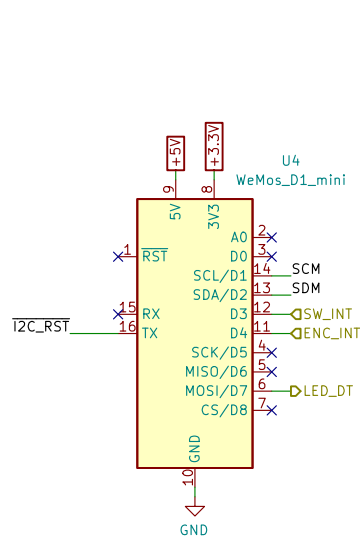
Author: Jordan Gerber  
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Sheet: /  
 File: preamp.sch

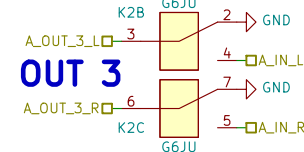
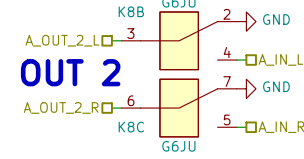
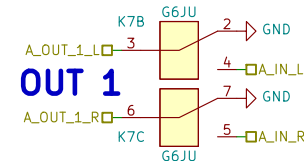
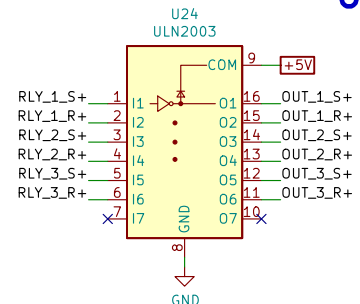
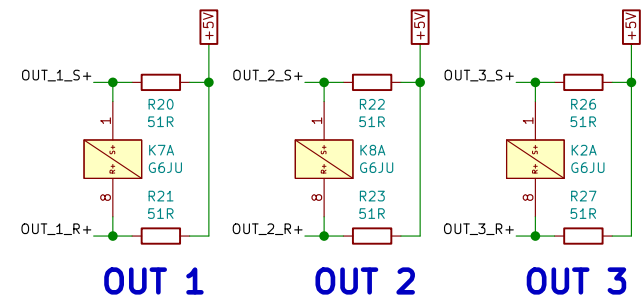
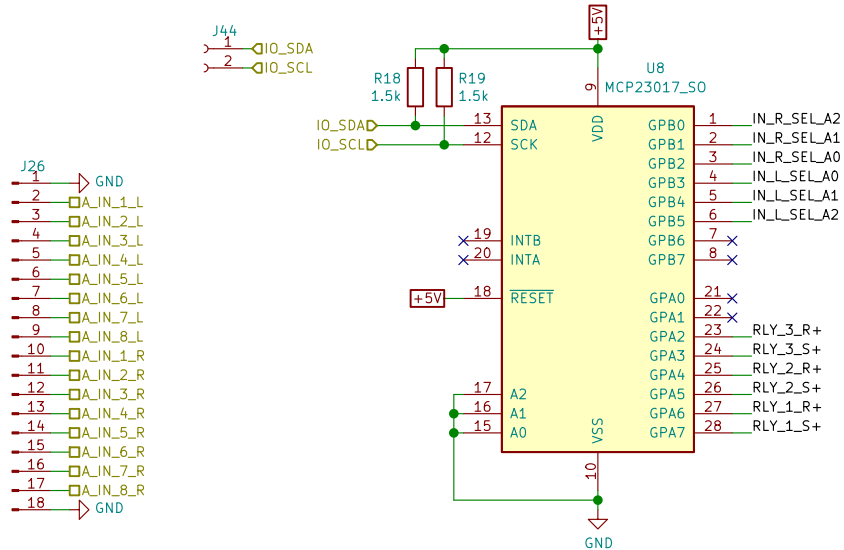
**Title: Preamp**

Size: A4 Date: 2020-02-25  
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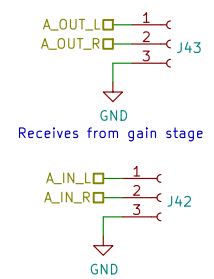
Rev: A00  
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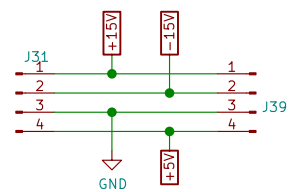
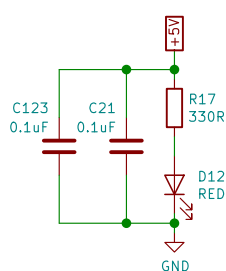
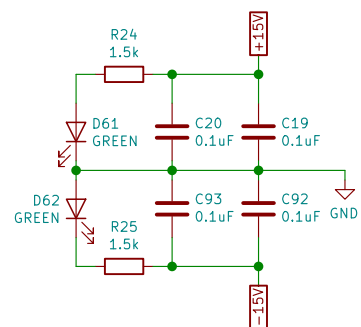
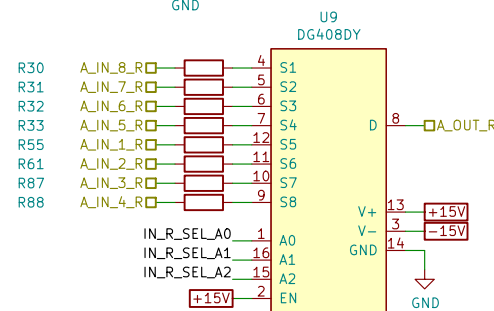
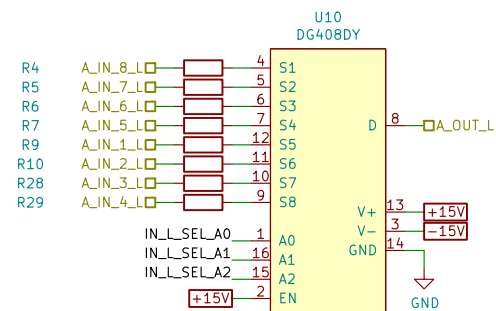
Author: Jordan Gerber github.com/SlurpyTurts/preamp License: CC BY 4.0 creativecommons.org/licenses/by/4.0/	
Sheet: /MCU/ File: MCU.sch	
<b>Title: Preamp MCU Board</b>	
Size: A4	Date: 2020-02-25
KiCad E.D.A. kicad (5.1.5-0-10_14)	Rev: A00 Id: 2/11



Sends to amp / tone / etc



Receives from gain stage

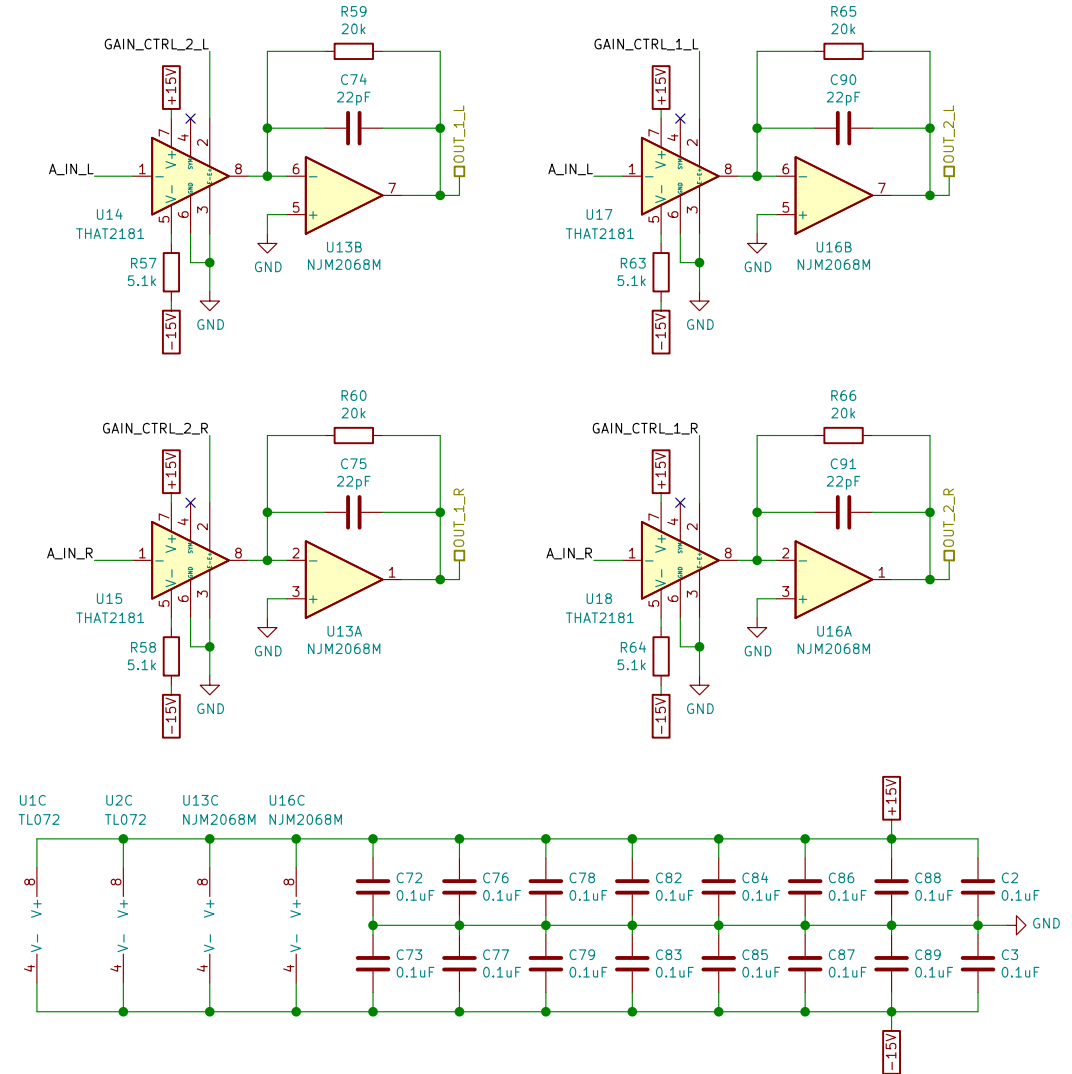
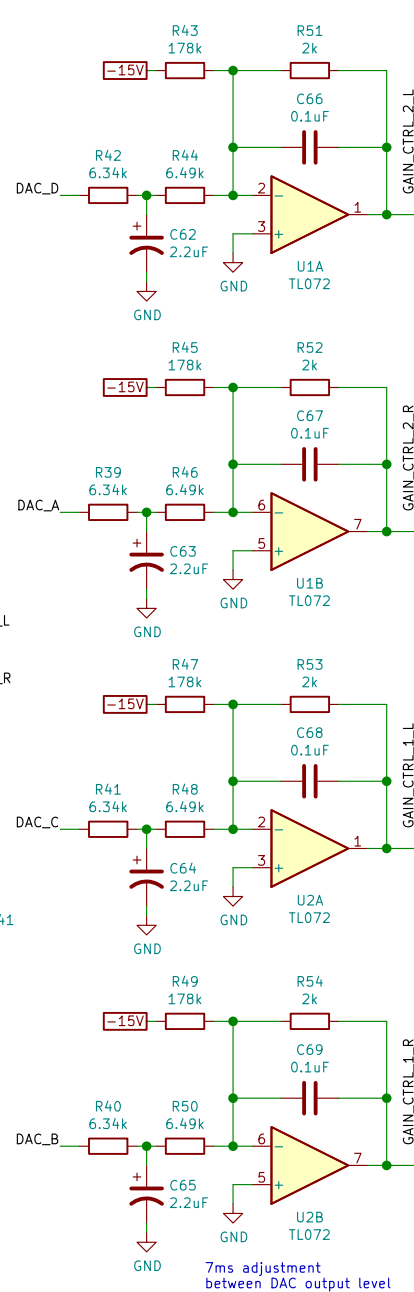
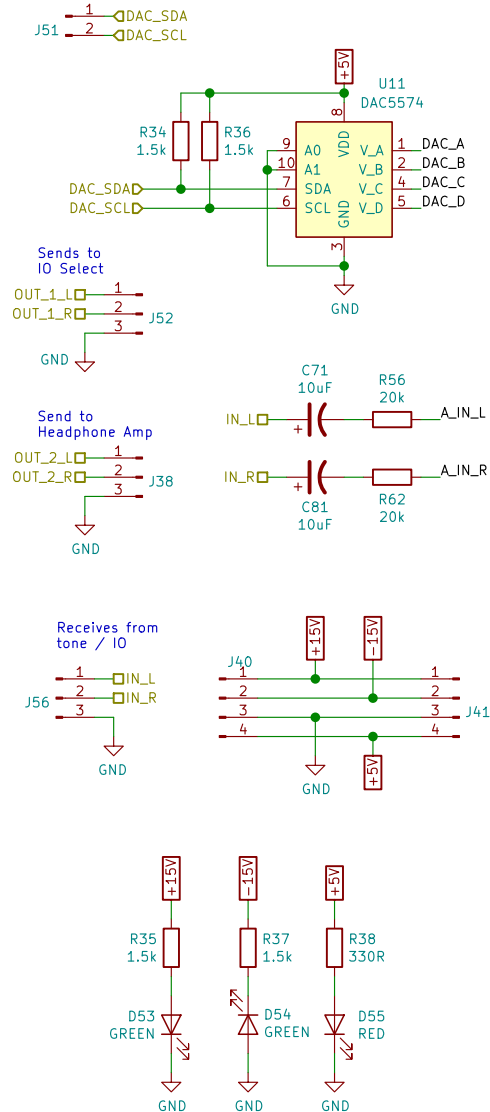


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Sheet: /input selector/ File: input_selector.sch	
<b>Title: IO Relay Select Board</b>	
Size: A4	Date: 2020-02-25
KiCad E.D.A. kicad (5.1.5-0-10_14)	Rev: A00
	Id: 3/11

Buffered DAC output max approx. 0.78V  
 $5V * (2k / (6.34k + 6.49k))$

Per VCA Manufacturer's spec, 6mV per dB attenuation  
 for max 0.78V,  $0.78 / 0.006 = 130dB$  range  
 $130dB / 256 \text{ steps} = 0.51dB / \text{step}$

178k offset resistor shifts output up by approx. 30dB  
 control range becomes -100dB to +30dB



<http://www.thatcorp.com/datashts/dn02.pdf>

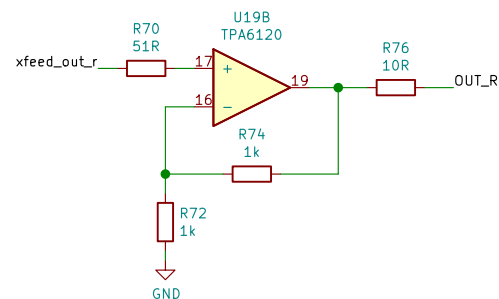
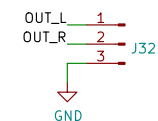
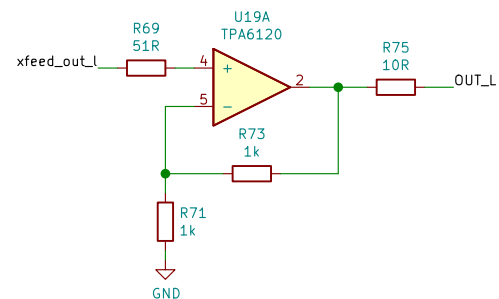
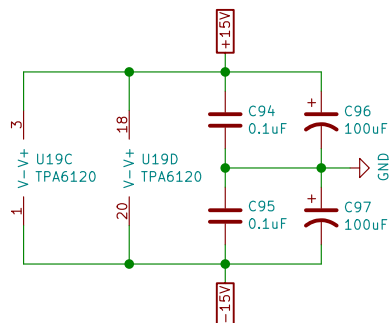
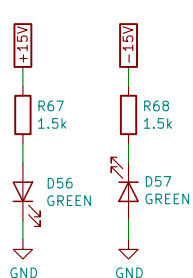
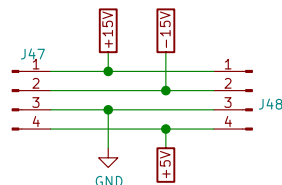
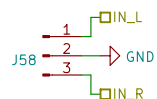
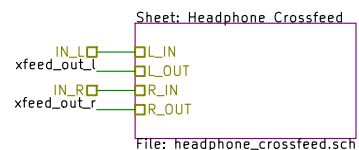
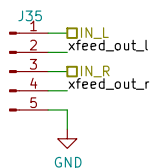
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Sheet: /Volume Control/  
 File: volume\_ctrl.sch

**Title:**

Size: A4 Date: 2020-02-25  
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**Rev: A00**  
 Id: 4/11



crosstalk: <https://headwizememorial.wordpress.com/2018/03/09/an-acoustic-simulator-for-headphone-amplifiers/>  
amp: [http://www.pavouk.org/hw/tpa6120headamp/en\\_index.html](http://www.pavouk.org/hw/tpa6120headamp/en_index.html)



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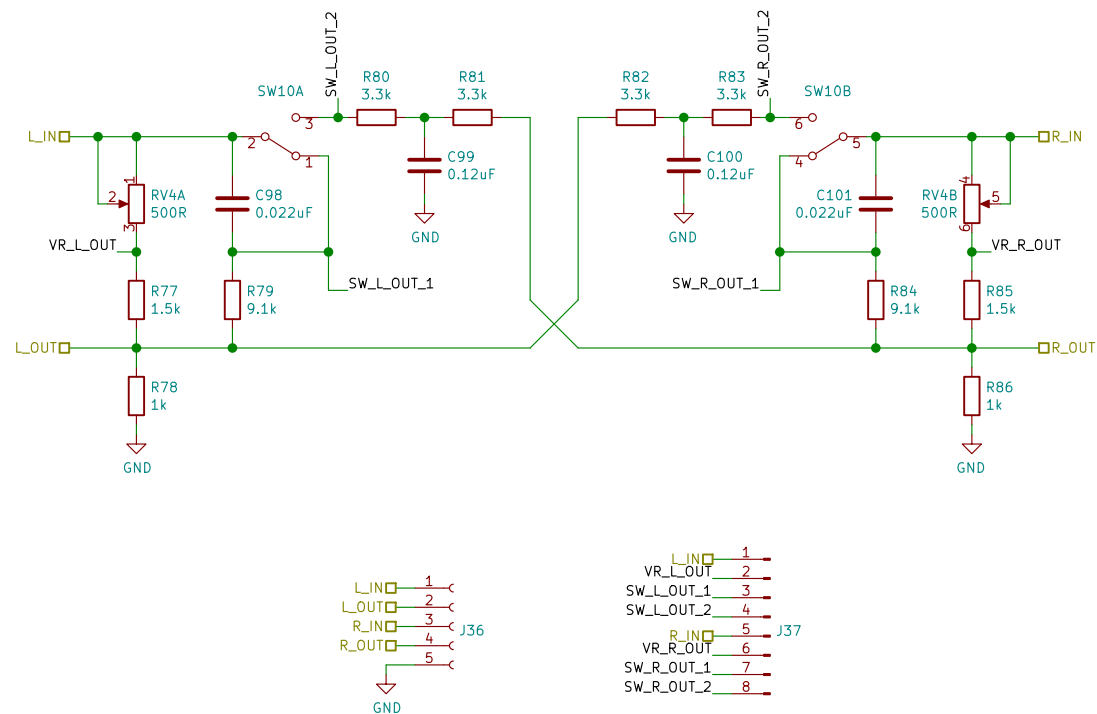
Sheet: /headphone amp/  
File: headphone\_amp.sch

**Title: Headphone Amplifier Board**

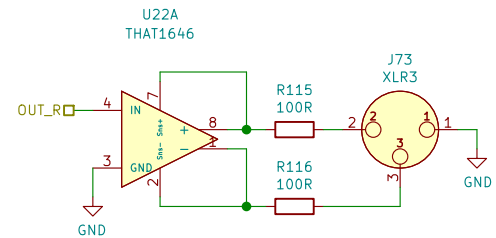
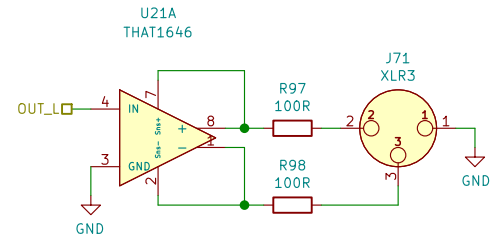
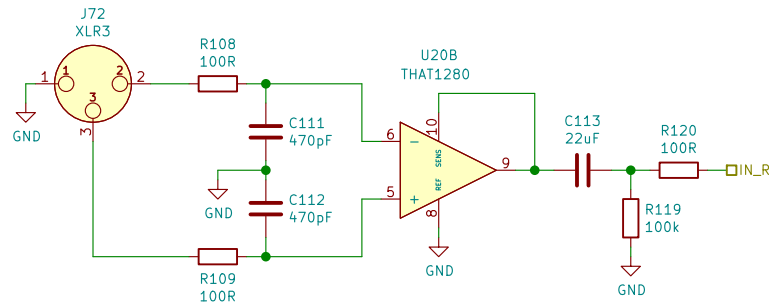
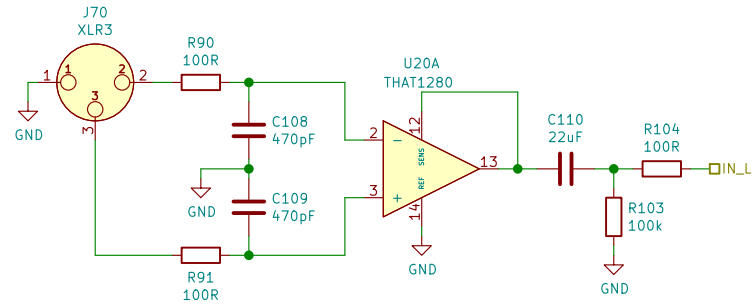
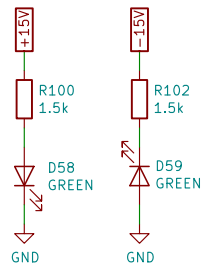
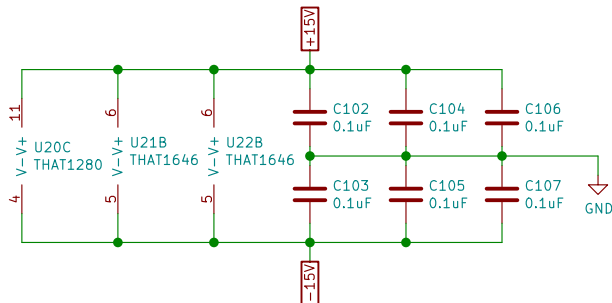
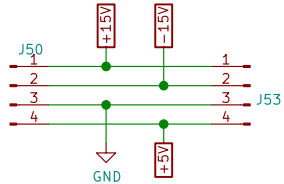
Size: A4  
KiCad E.D.A. kicad (5.1.5-0-10\_14)

Date: 2020-02-25

Rev: A00  
Id: 5/11



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Sheet: /headphone amp/Headphone Crossfeed/ File: headphone_crossfeed.sch		
<b>Title: Headphone Crosstalk</b>		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 6/11



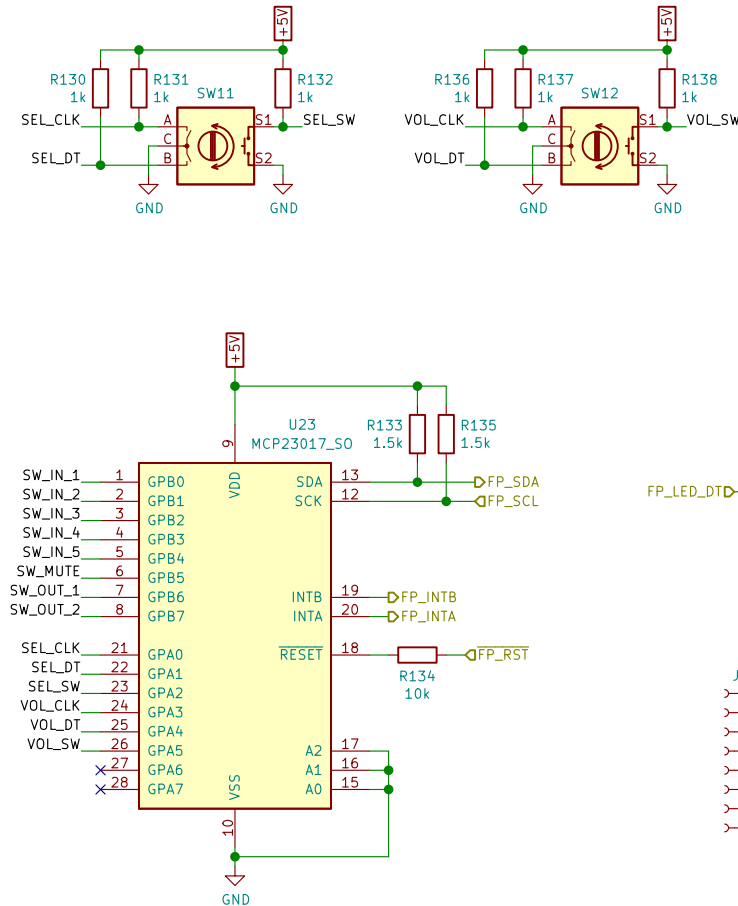
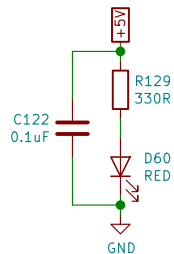
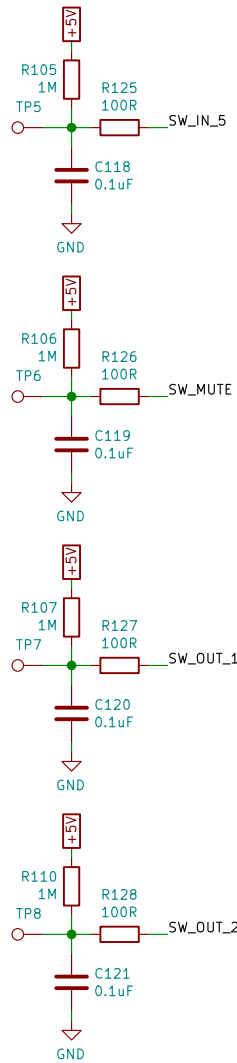
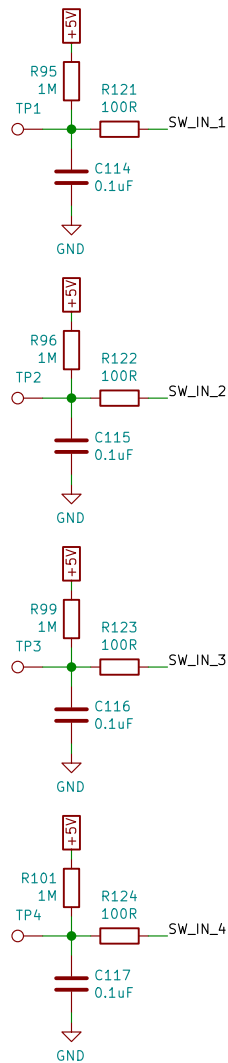
Author: Jordan Gerber  
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Sheet: /Balanced daughter IO pcb/  
 File: IO\_BALANCED\_DAUGHTER.sch

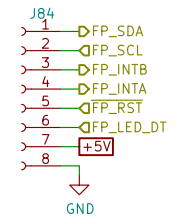
**Title: Balanced IO Daughter Board**

Size: A4 Date: 2020-02-25  
 KiCad E.D.A. kicad (5.1.5-0-10\_14)

Rev: A00  
 Id: 7/11



Sheet: sheet5F448428  
File: front\_panel\_LED.sch



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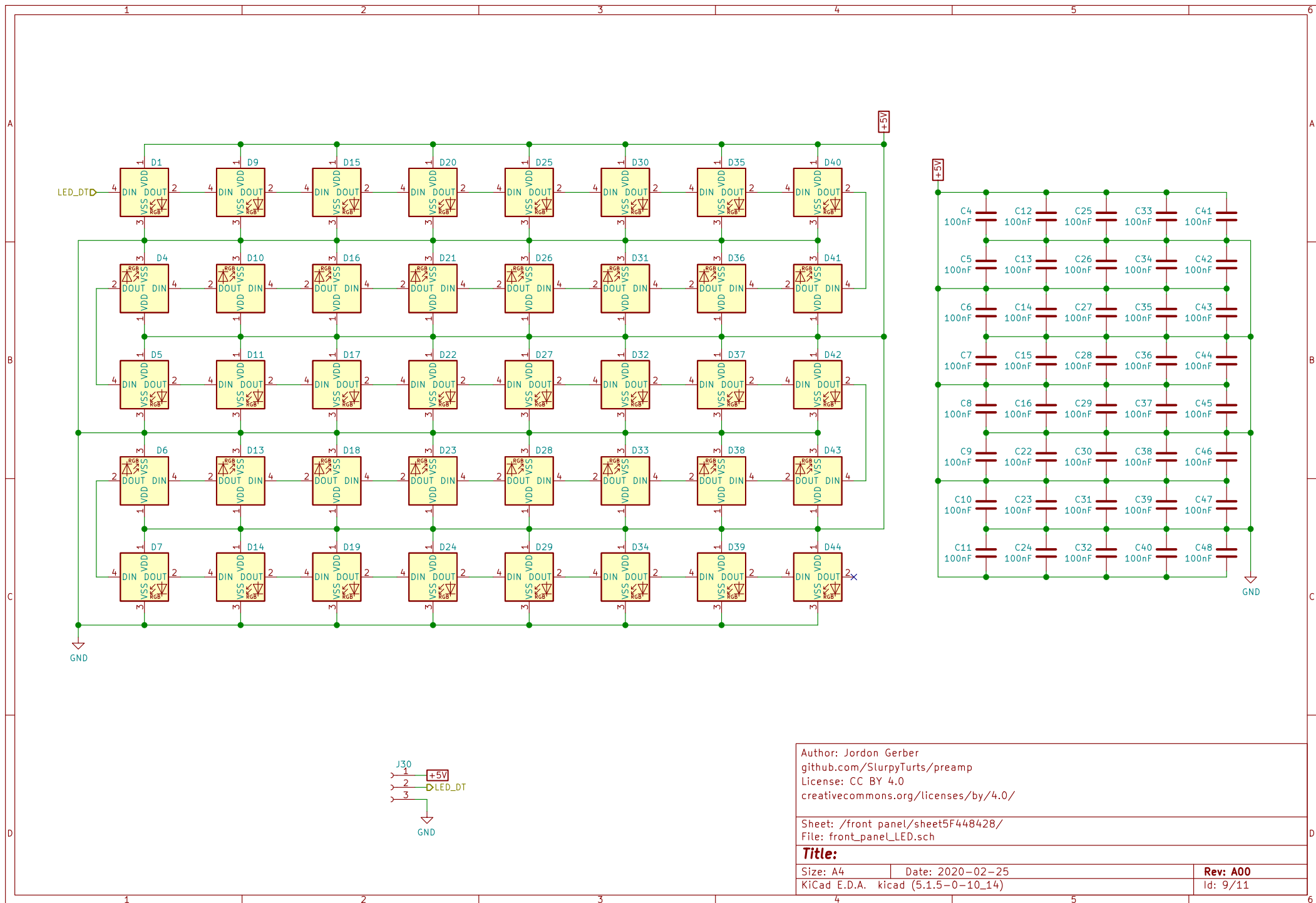
Sheet: /front panel/  
File: front\_panel.sch

### Title: Front Panel

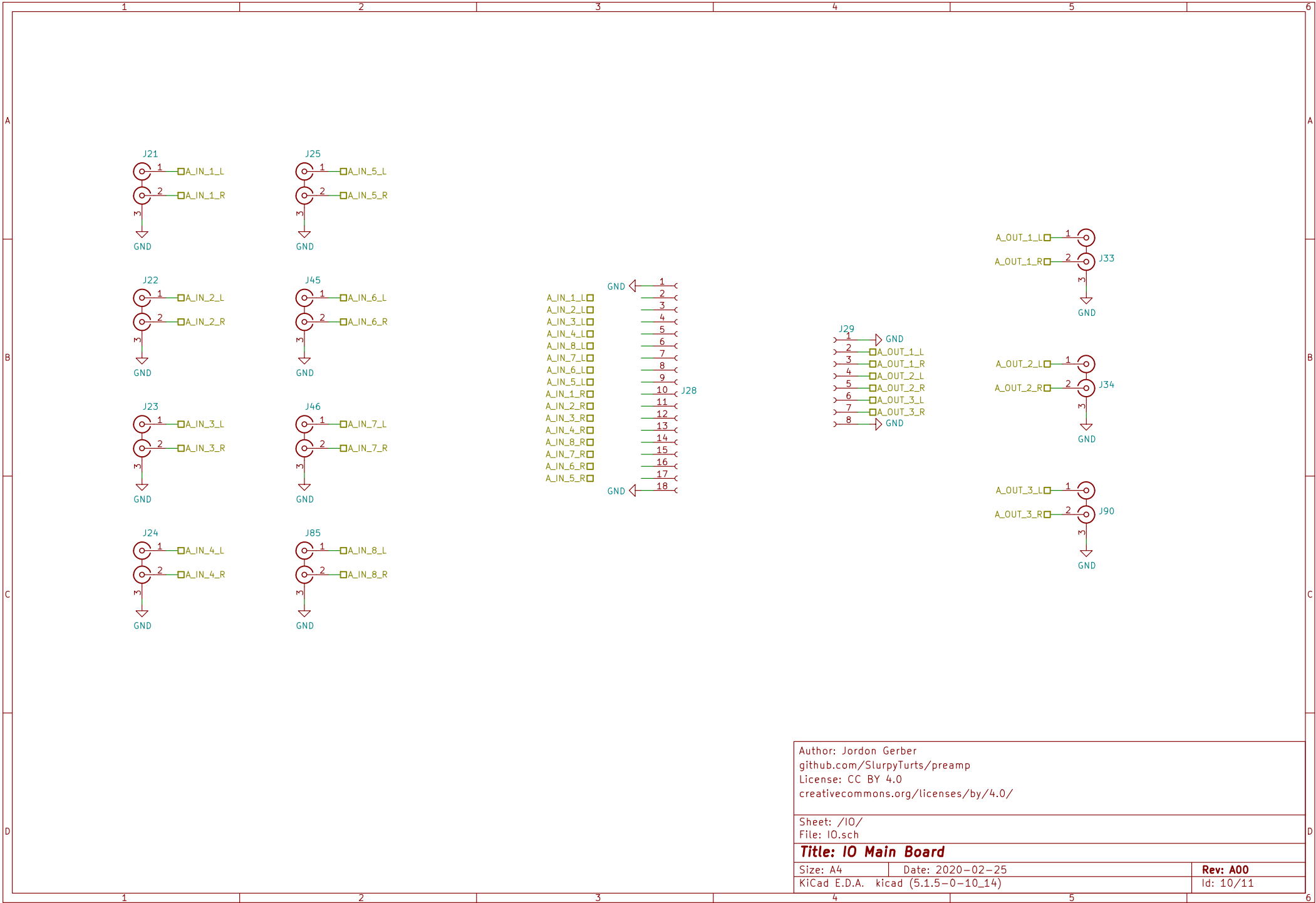
Size: A4 Date: 2020-02-25  
KiCad E.D.A. kicad (5.1.5-0-10\_14)

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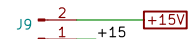
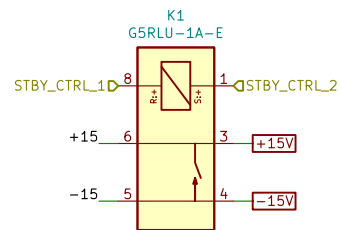
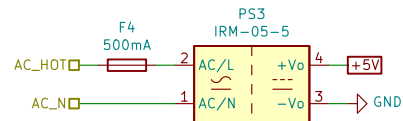
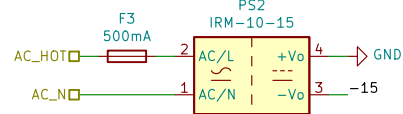
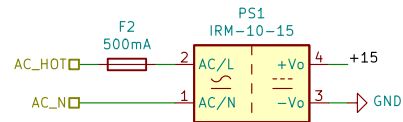
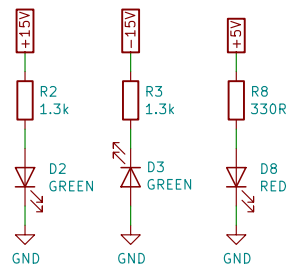
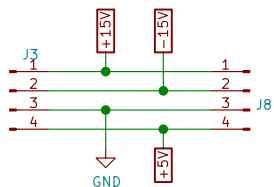
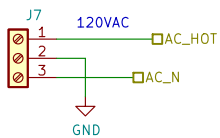
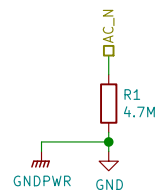




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Sheet: /front panel/sheet5F448428/ File: front_panel_LED.sch		
<b>Title:</b>		
Size: A4	Date: 2020-02-25	Rev: A00
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Sheet: /IO/ File: IO.sch		
Title: IO Main Board		
Size: A4	Date: 2020-02-25	Rev: A00
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Sheet: /DC\_PWR SUPPLY/  
File: DC\_PWR\_SUPPLY.sch

**Title: 15V Power Supply**

Size: A4 Date: 2020-02-25

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Rev: A00

Id: 11/11