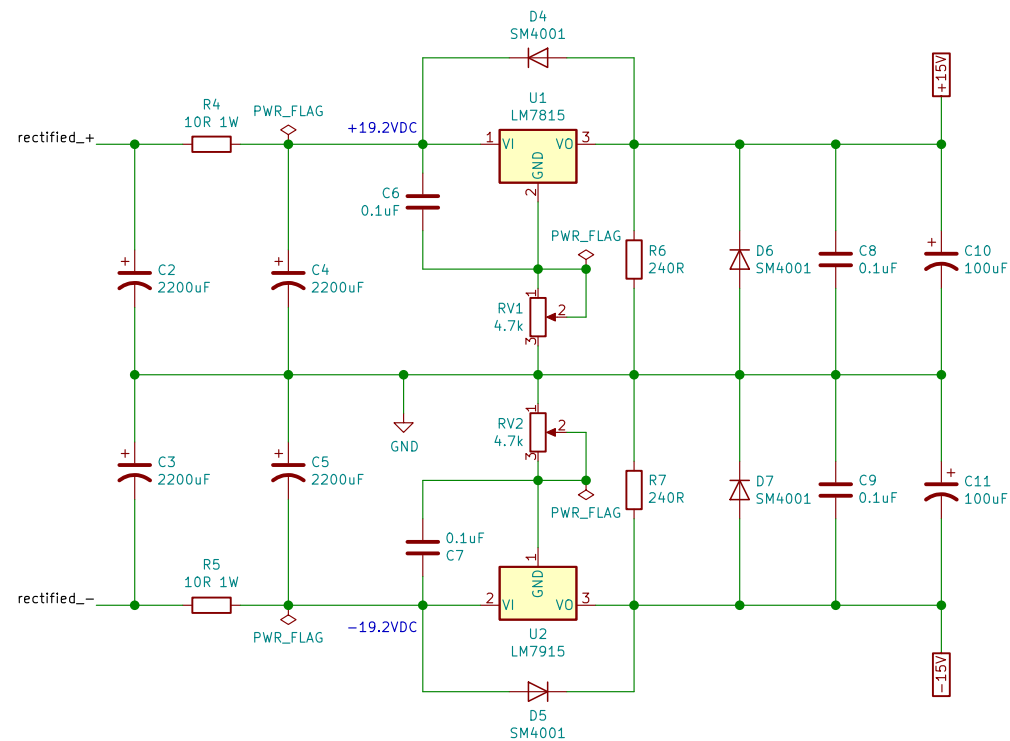
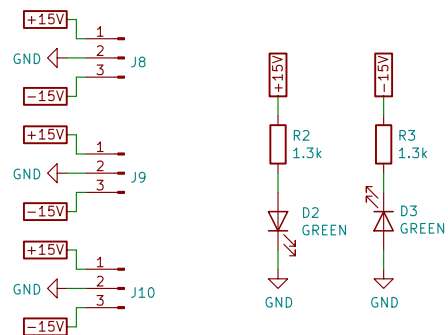
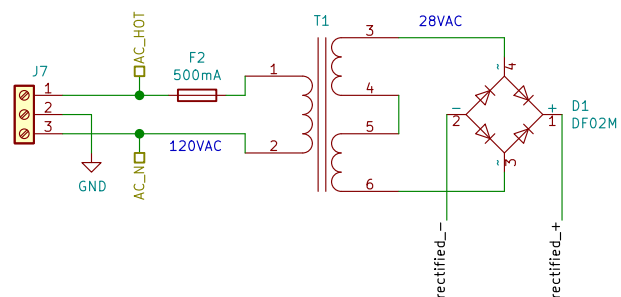


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Sheet: /AC input/ File: AC_input.sch		
Title:		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 2/13



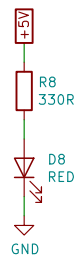
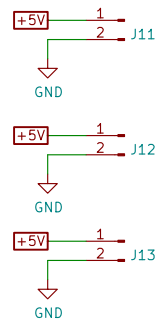
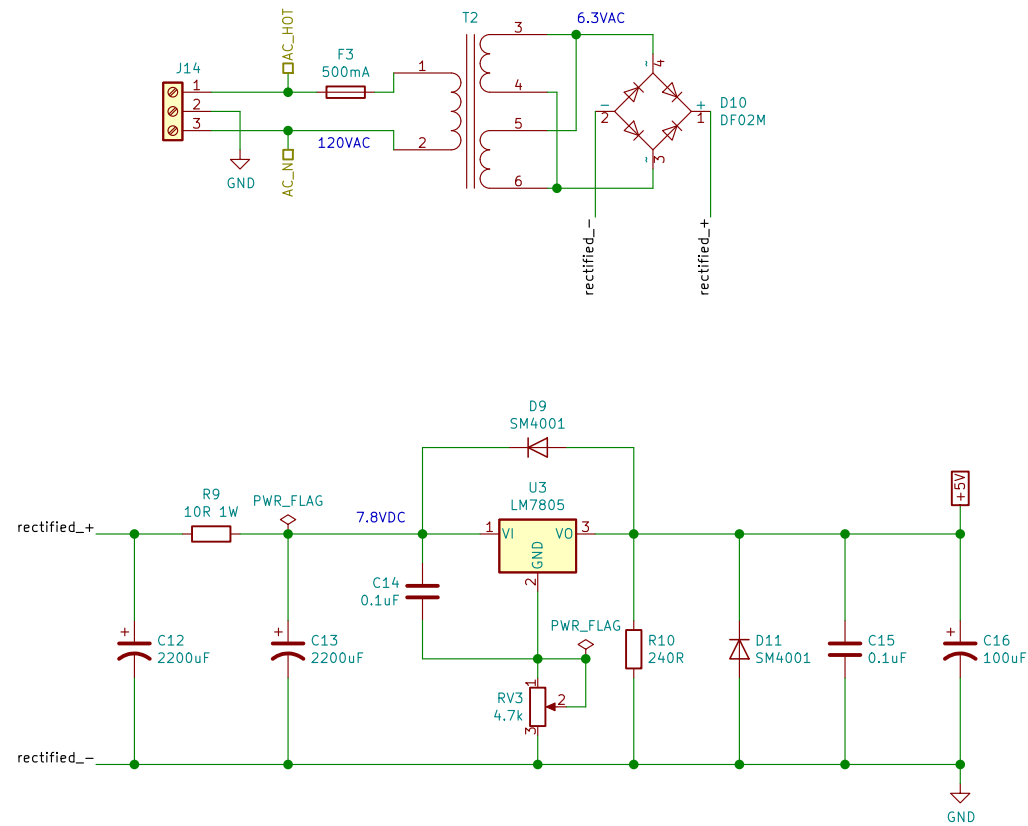
Author: Jordan Gerber  
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Sheet: /+-15V PWR SUPPLY/  
 File: +-15V\_PWR\_SUPPLY.sch

**Title: 15V Power Supply**

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

Rev: A00  
 Id: 3/13



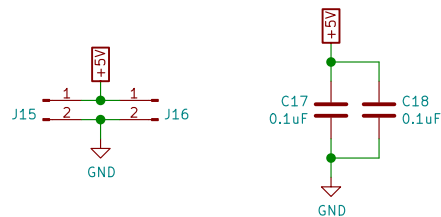
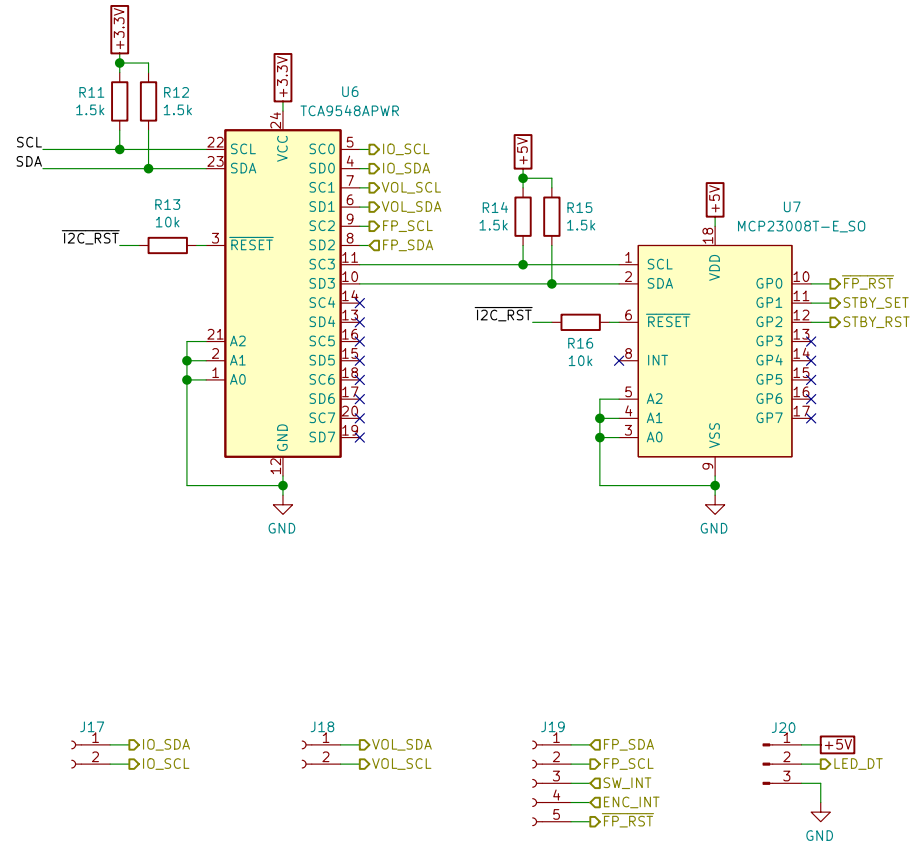
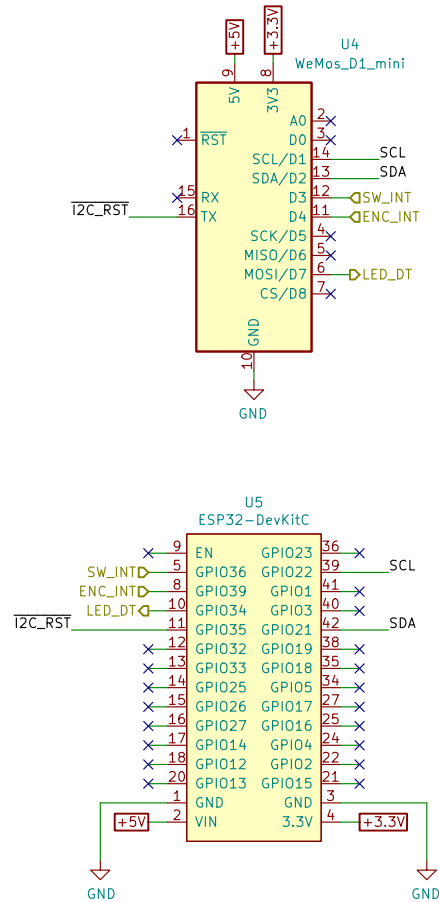
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Sheet: /5V supply/  
 File: 5V\_supply.sch

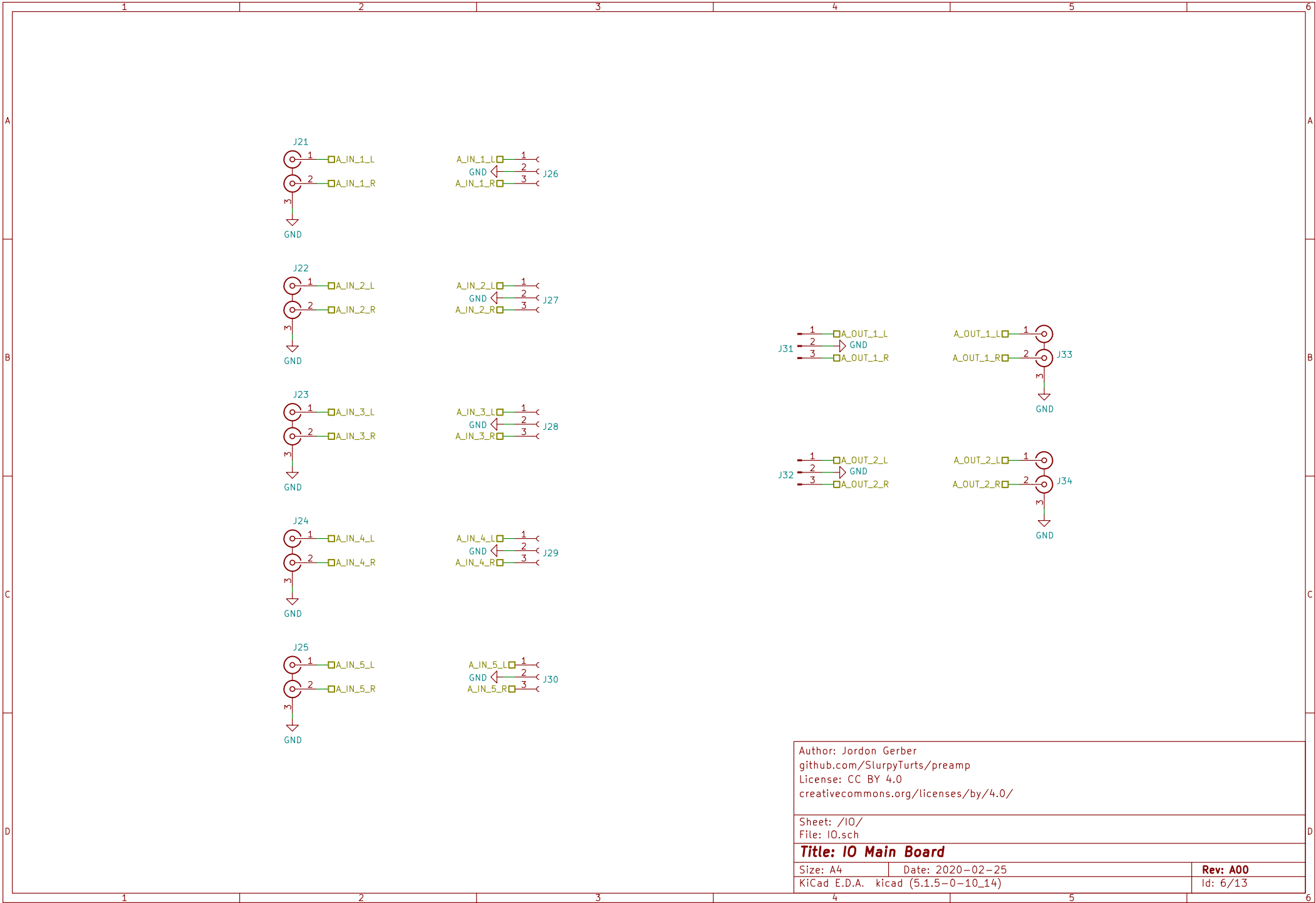
### Title: 5V Power Supply

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

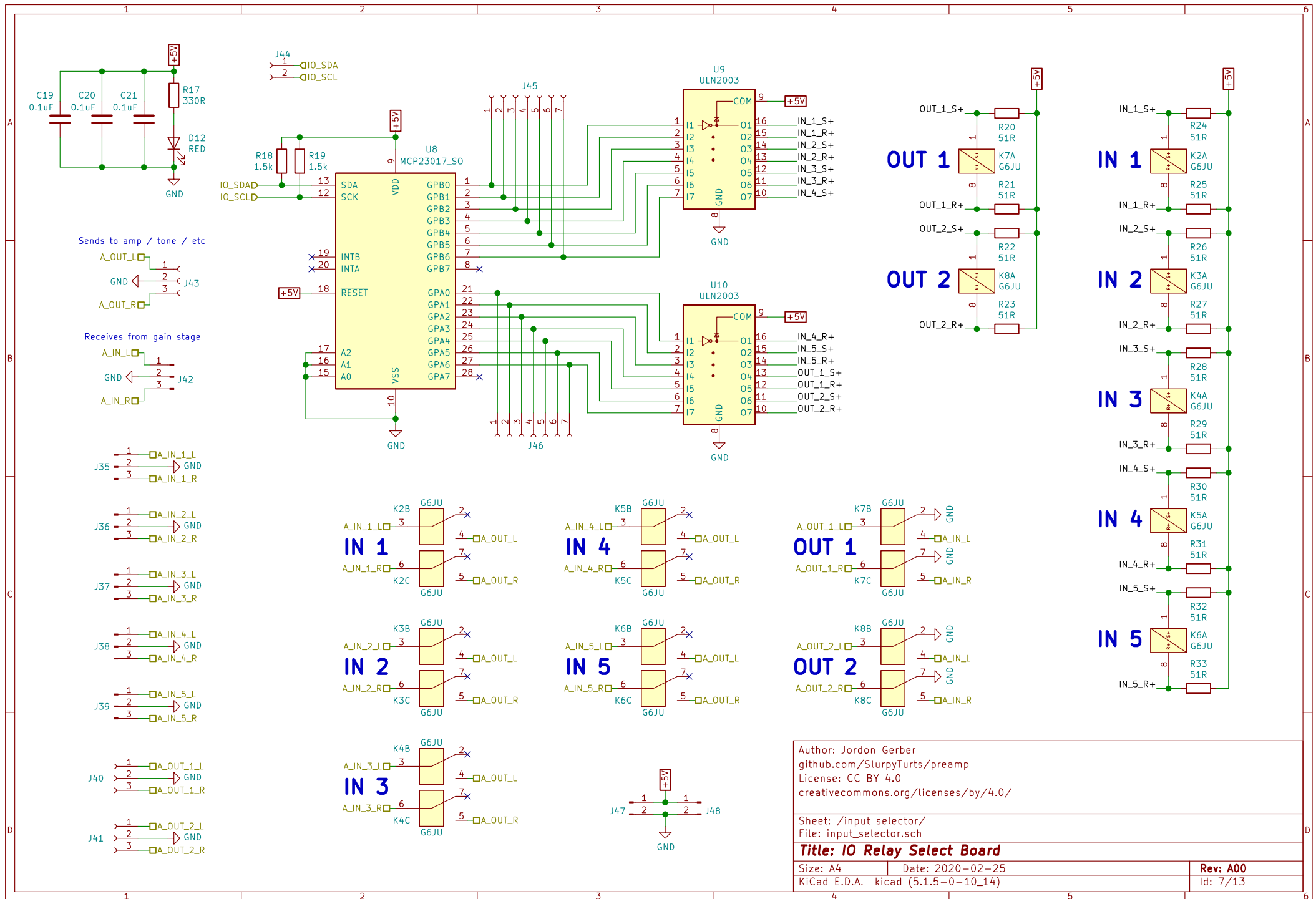
Rev: A00  
 Id: 4/13

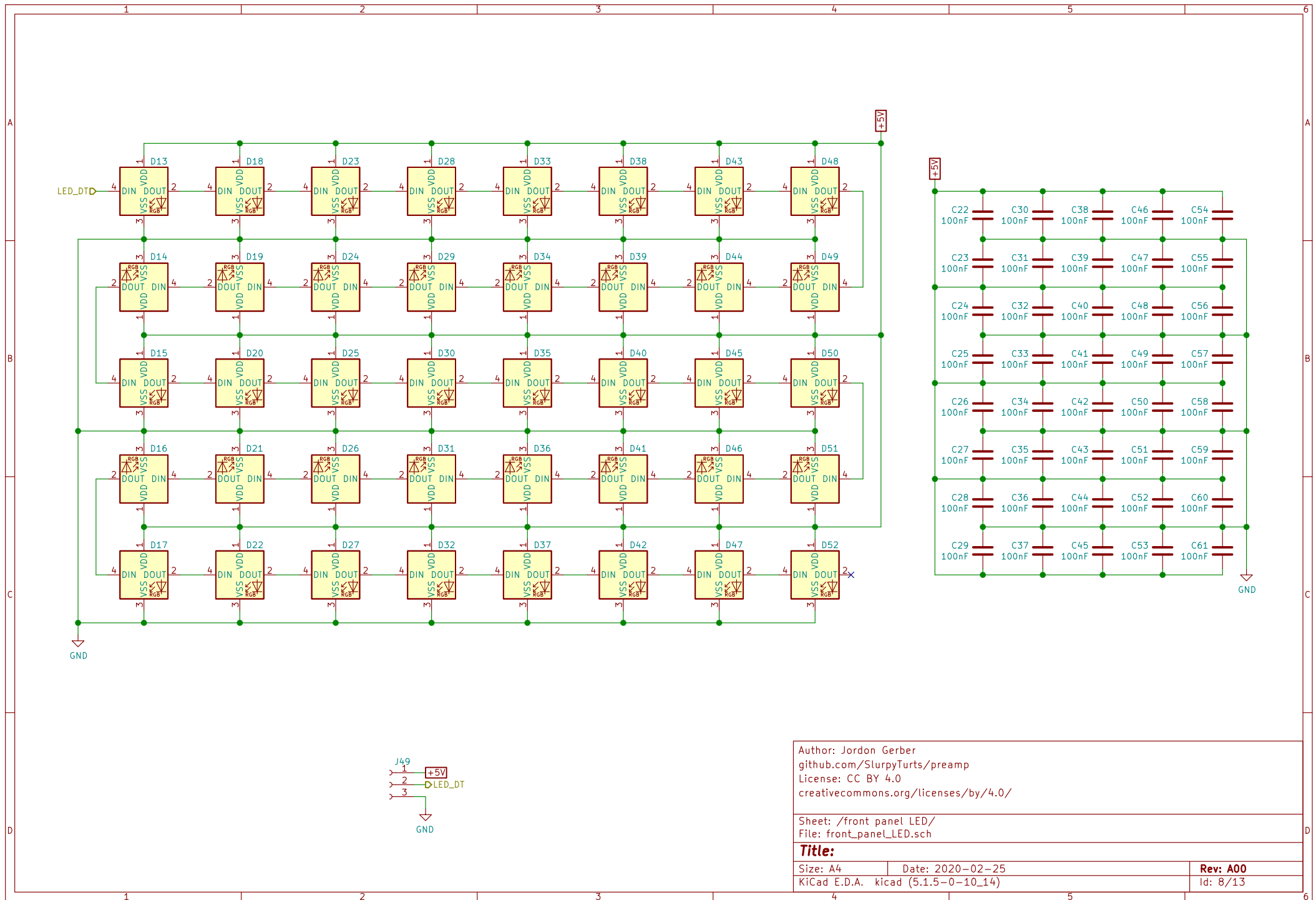


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Sheet: /MCU/ File: MCU.sch	
<b>Title: Preamp MCU Board</b>	
Size: A4	Date: 2020-02-25
KiCad E.D.A. kicad (5.1.5-0-10_14)	Rev: A00 Id: 5/13



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Sheet: /IO/ File: IO.sch		
Title: IO Main Board		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 6/13



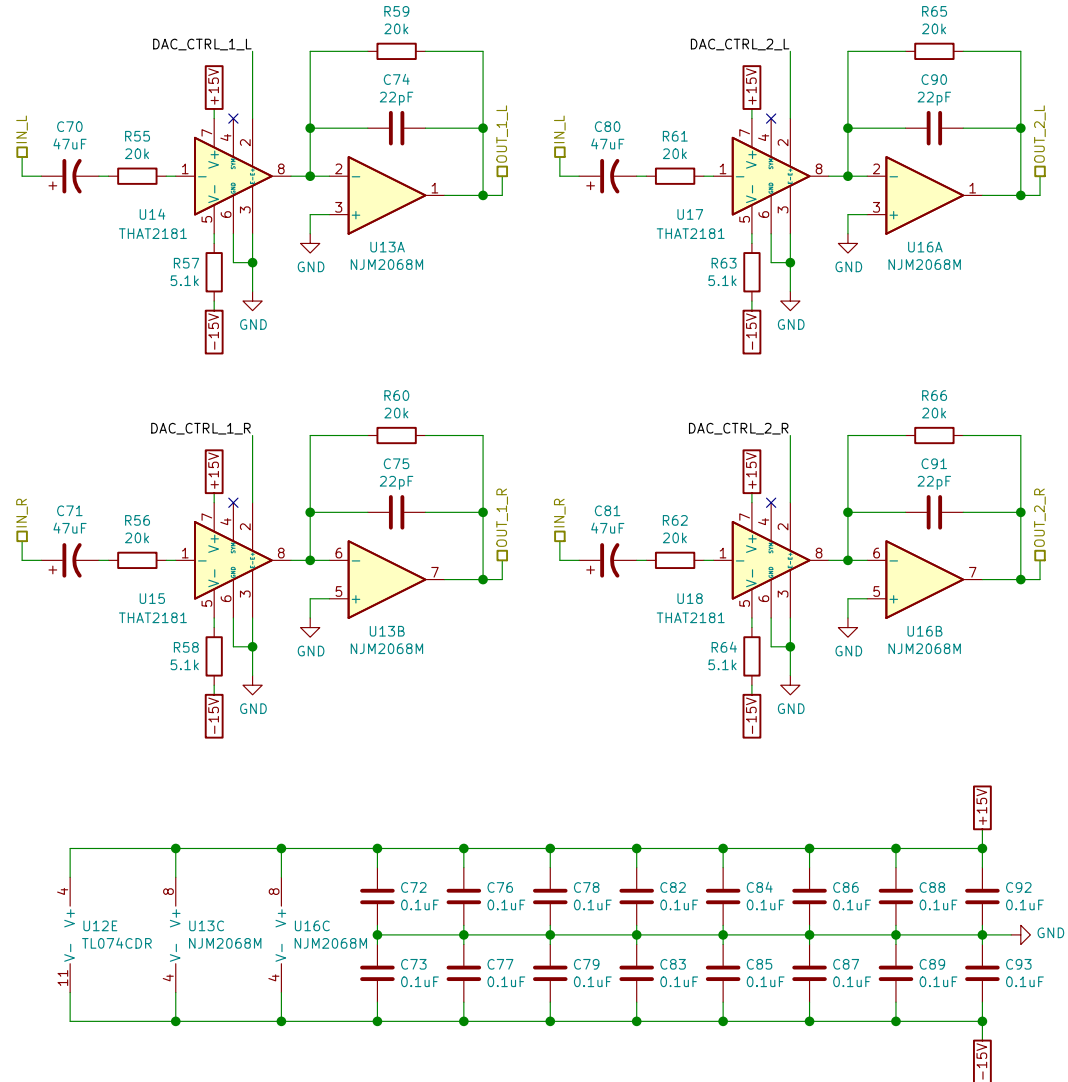
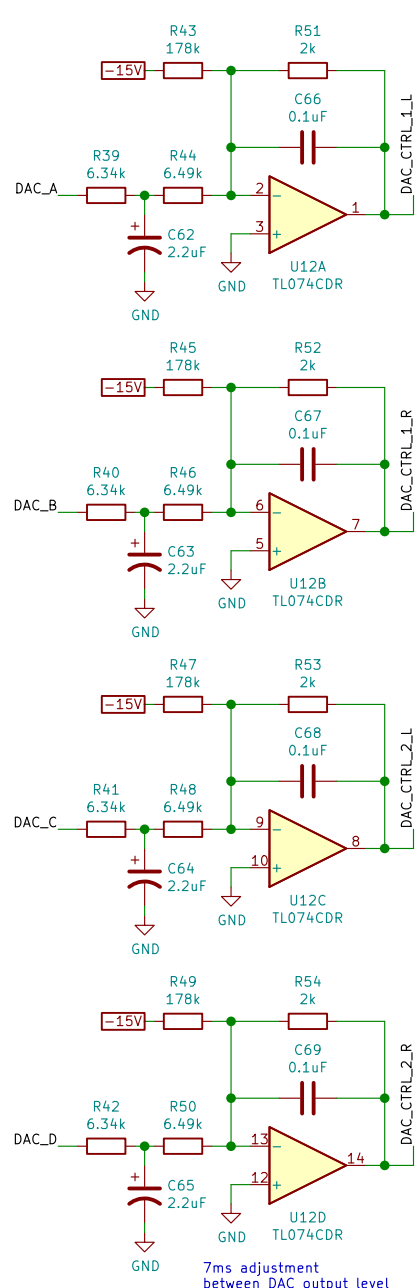
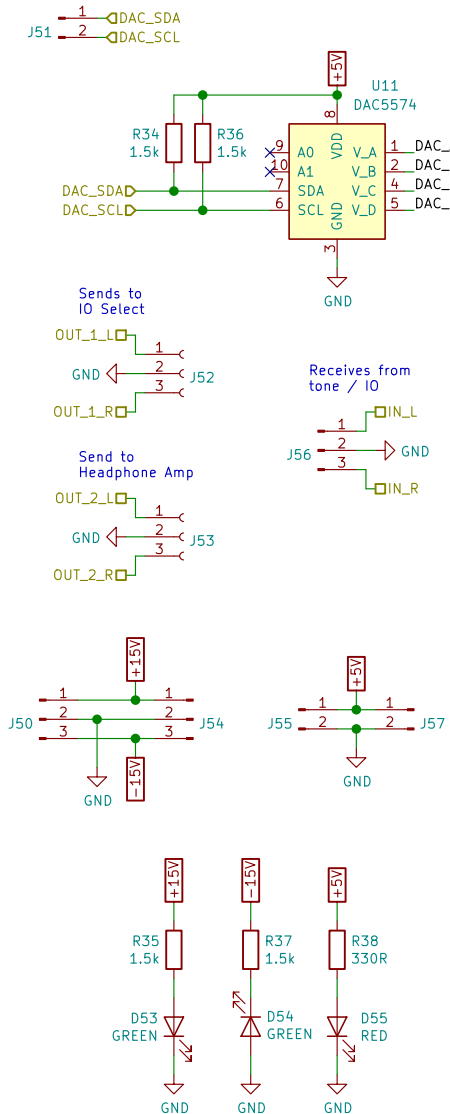




Buffered DAC output max approx. 0.78V  
 $5V \cdot (2k / (6.34k + 6.49k))$

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>

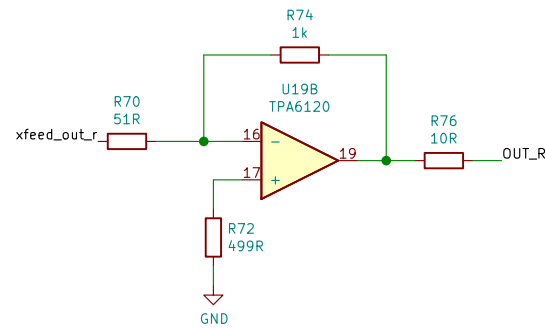
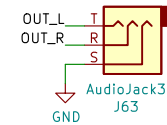
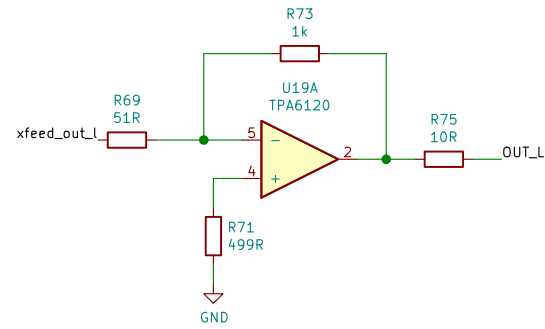
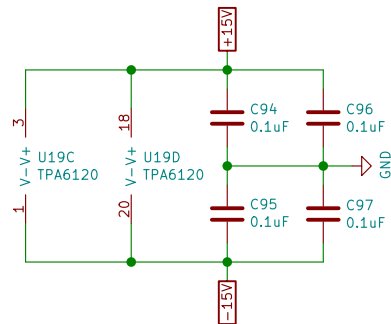
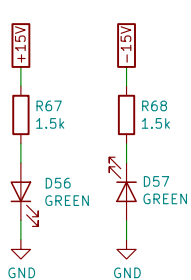
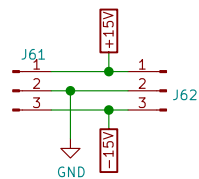
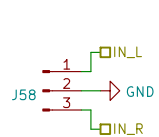
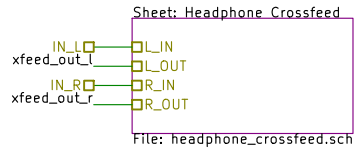
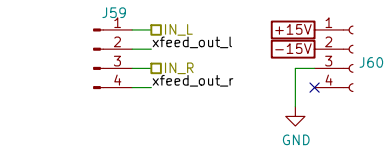
Author: Jordan Gerber  
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Sheet: /Volume Control/  
 File: volume\_ctrl.sch

Title:

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

Rev: A00  
 Id: 9/13

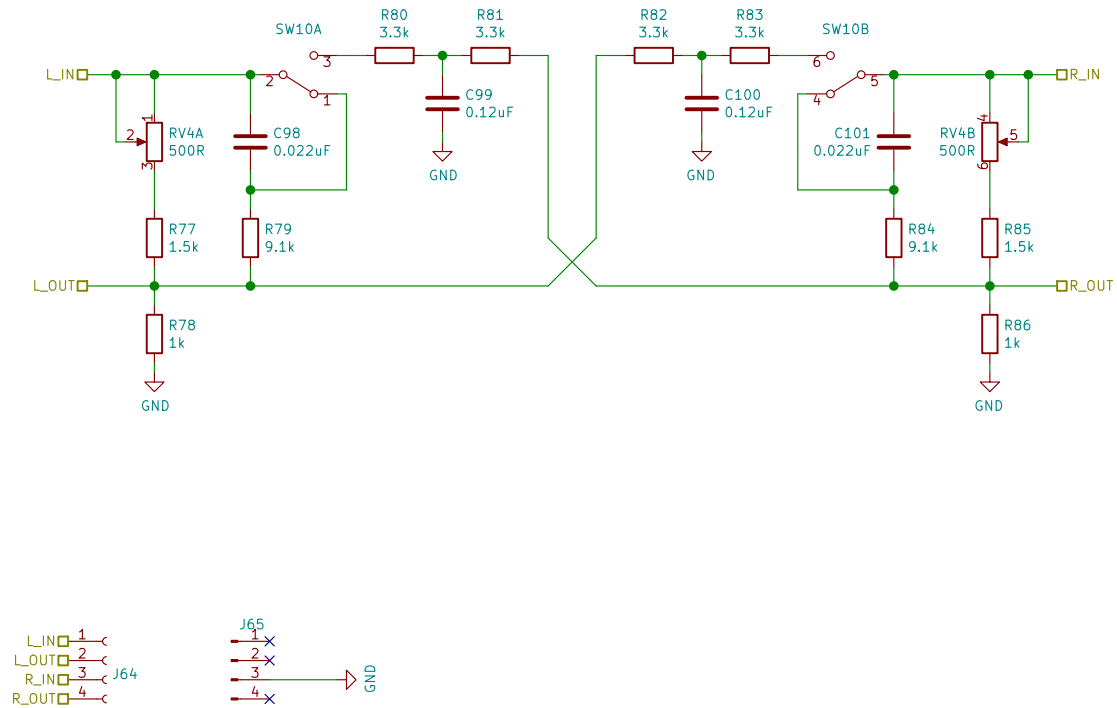


crosstalk: <https://headwizememorial.wordpress.com/2018/03/09/an-acoustic-simulator-for-headphone-amplifiers/>  
amp: [https://www.nutsvolts.com/magazine/article/precision\\_stereo\\_headphone\\_amplifier](https://www.nutsvolts.com/magazine/article/precision_stereo_headphone_amplifier)

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Sheet: /headphone amp/  
File: headphone\_amp.sch  
**Title: Headphone Amplifier Board**

Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 10/13



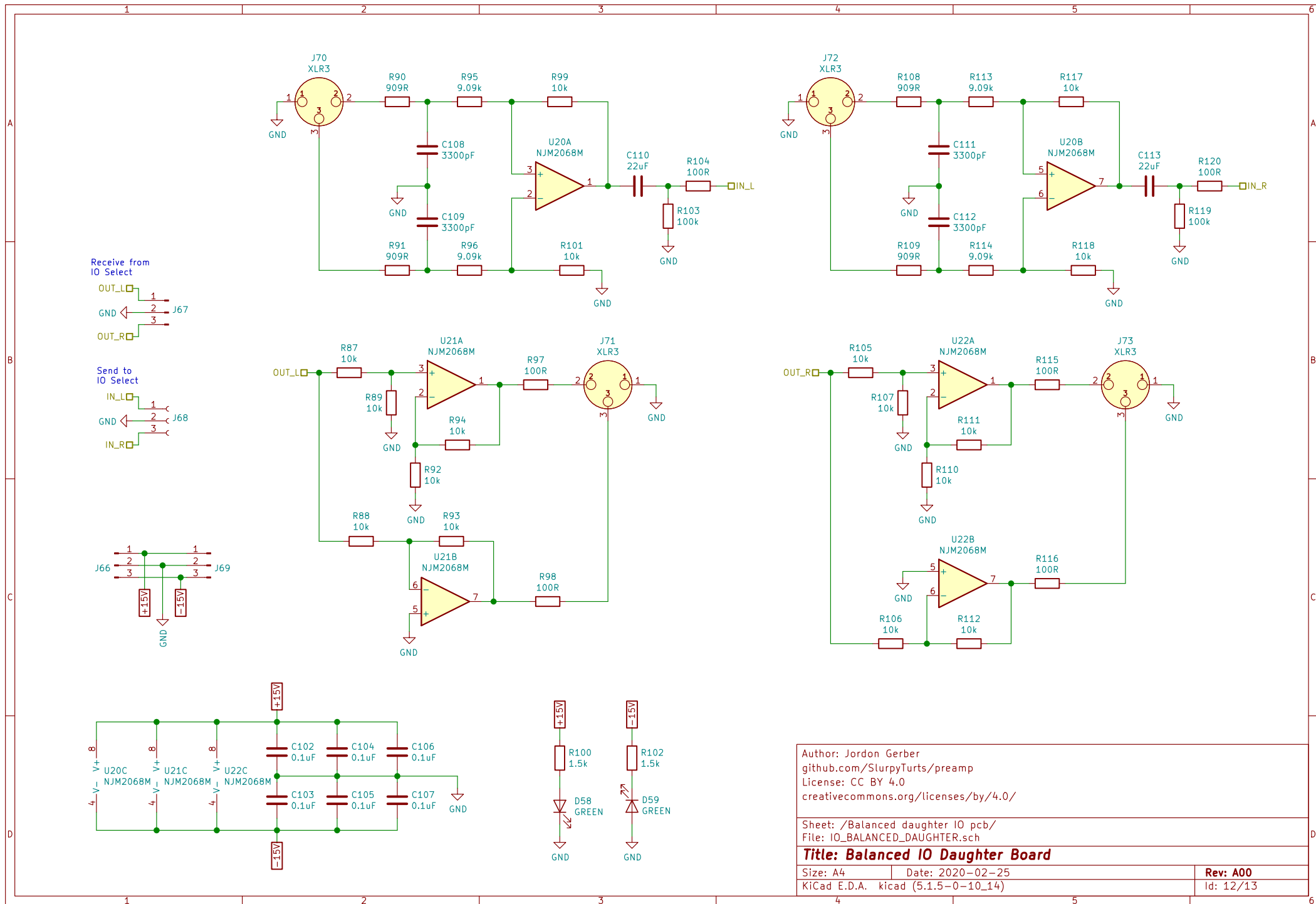
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Sheet: /headphone amp/Headphone Crossfeed/  
 File: headphone\_crossfeed.sch

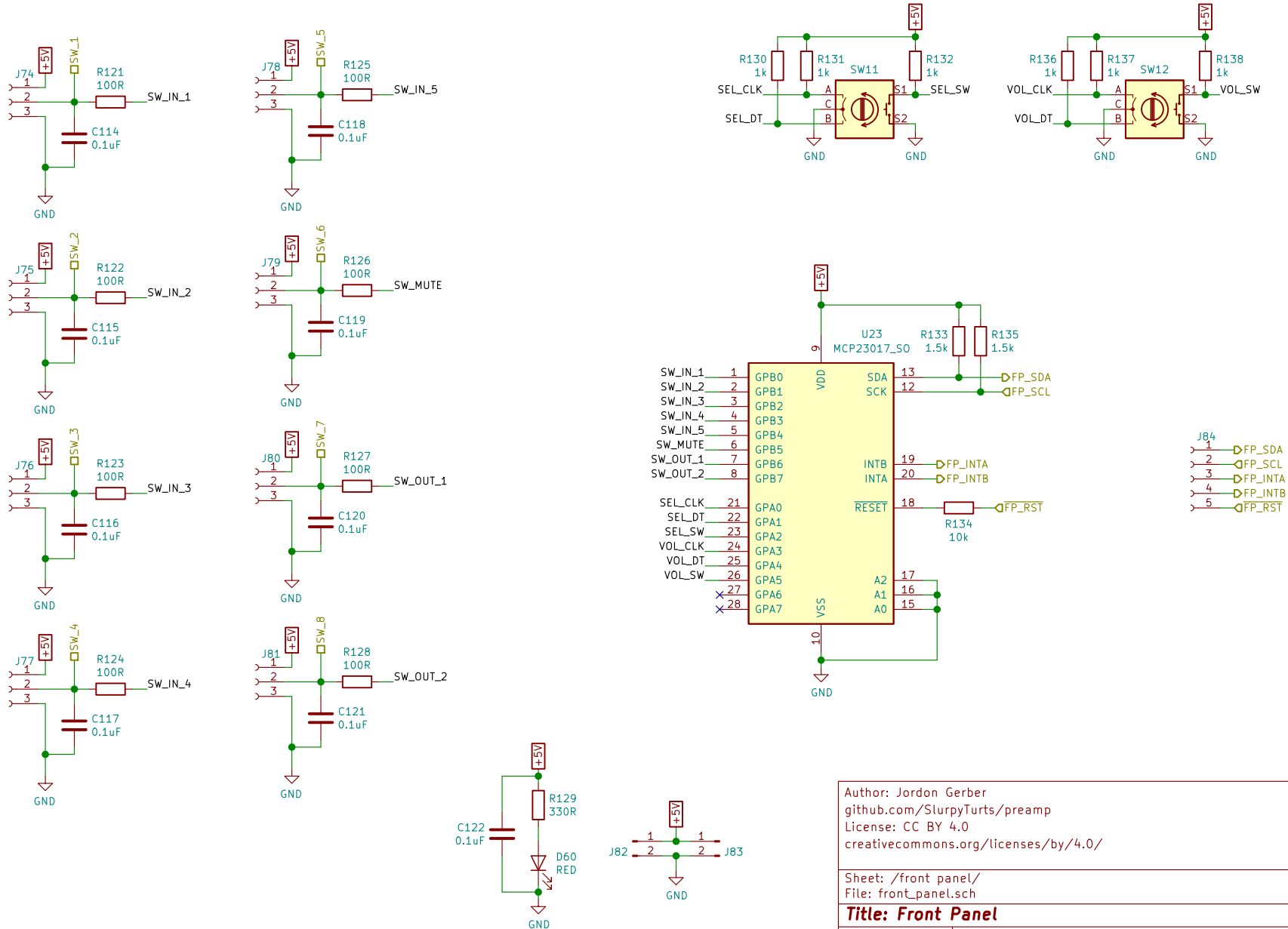
**Title: Headphone Crosstalk**

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

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Sheet: /Balanced daughter IO pcb/ File: IO_BALANCED_DAUGHTER.sch		
<b>Title: Balanced IO Daughter Board</b>		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 12/13



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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)

Rev: A00  
 Id: 13/13