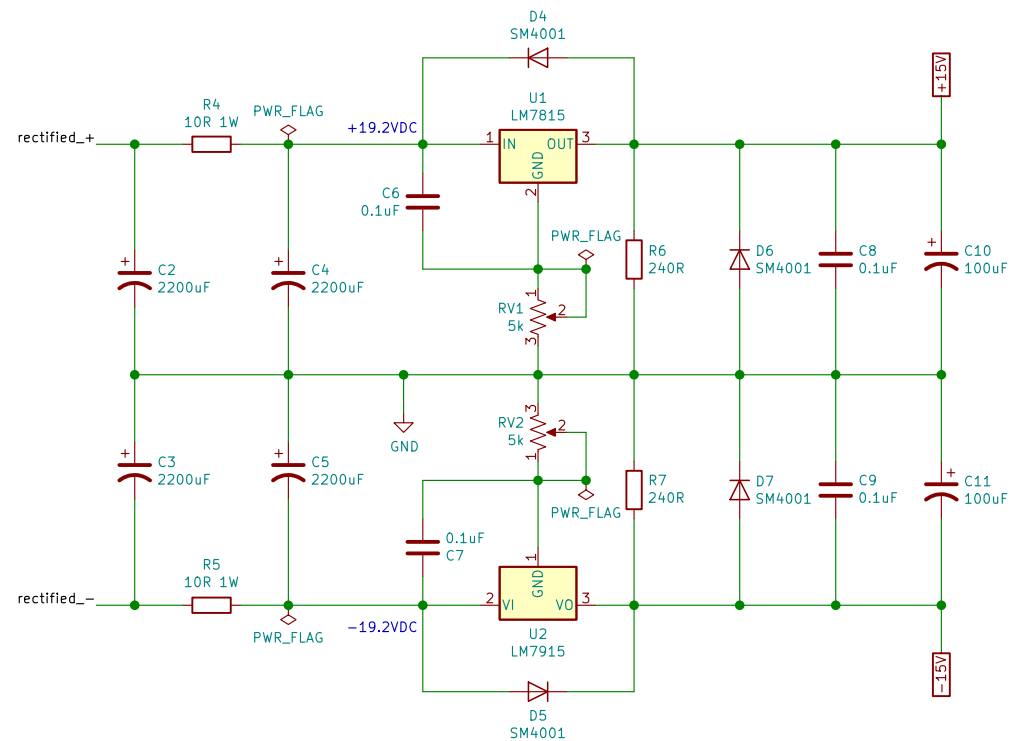
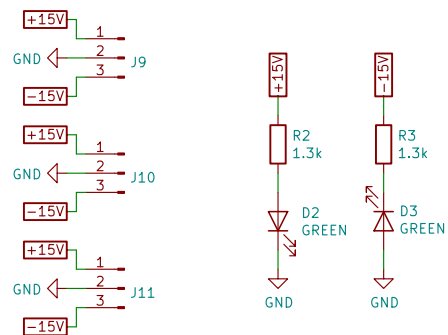
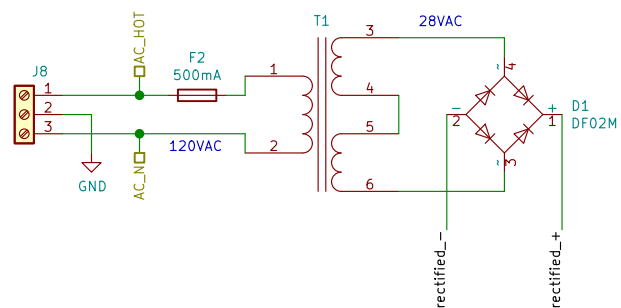


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Sheet: /AC input/ File: AC_input.sch		
<b>Title:</b>		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 2/13



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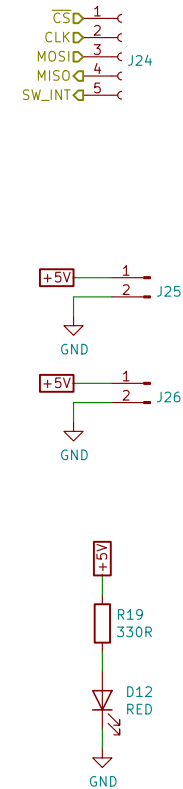
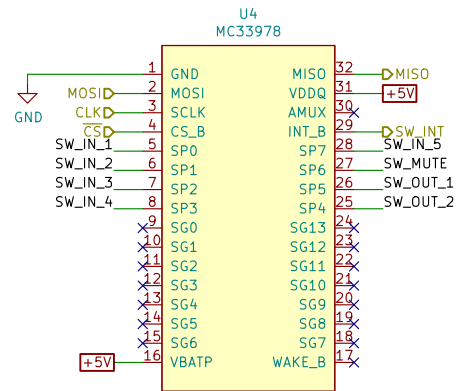
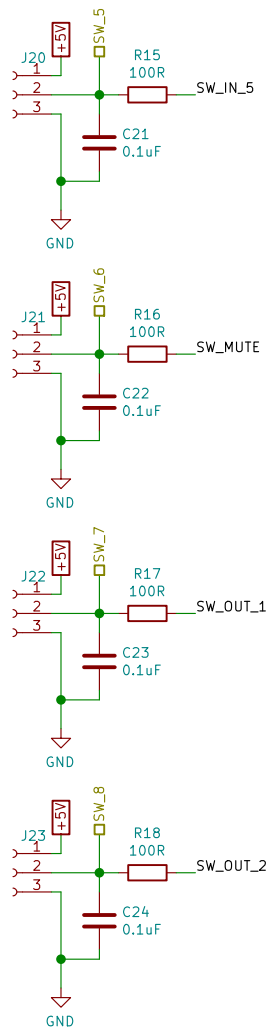
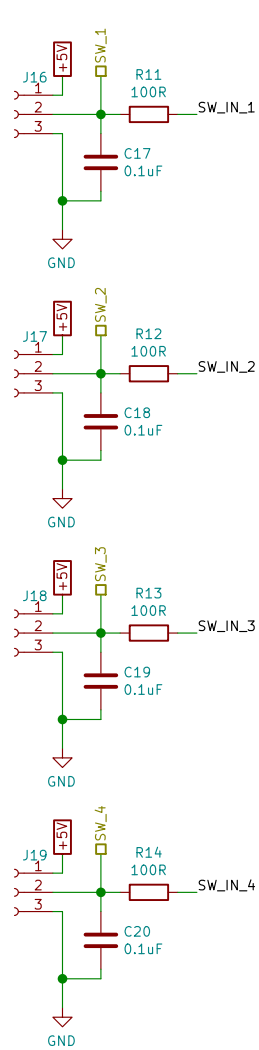
Sheet: /+ -15V PWR SUPPLY/  
 File: +-15V\_PWR\_SUPPLY.sch

**Title: 15V Power Supply**

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

Rev: A00  
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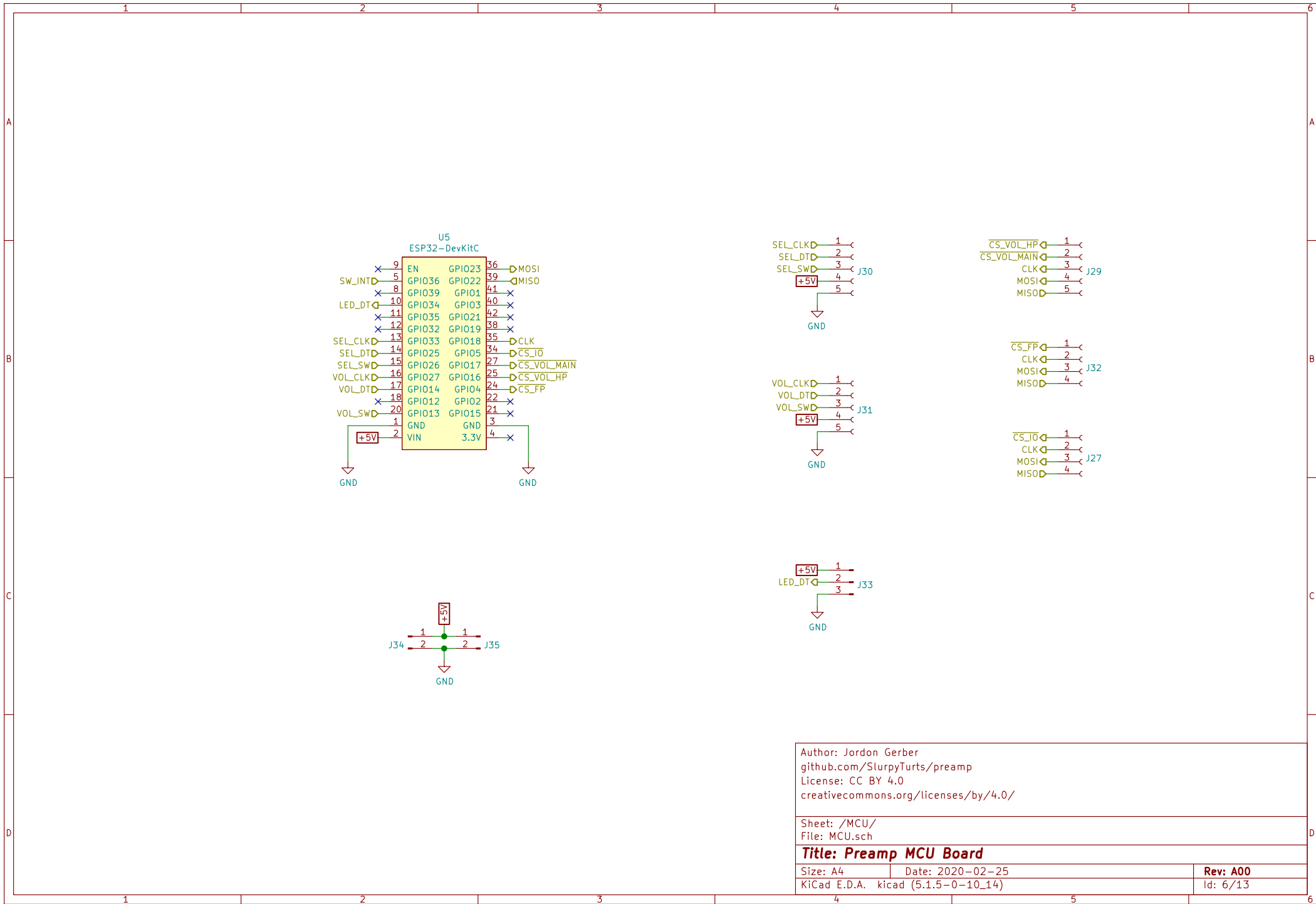
Author: Jordon Gerber  
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Sheet: /front panel/  
 File: front\_panel.sch

### Title: Front Panel

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

Rev: A00  
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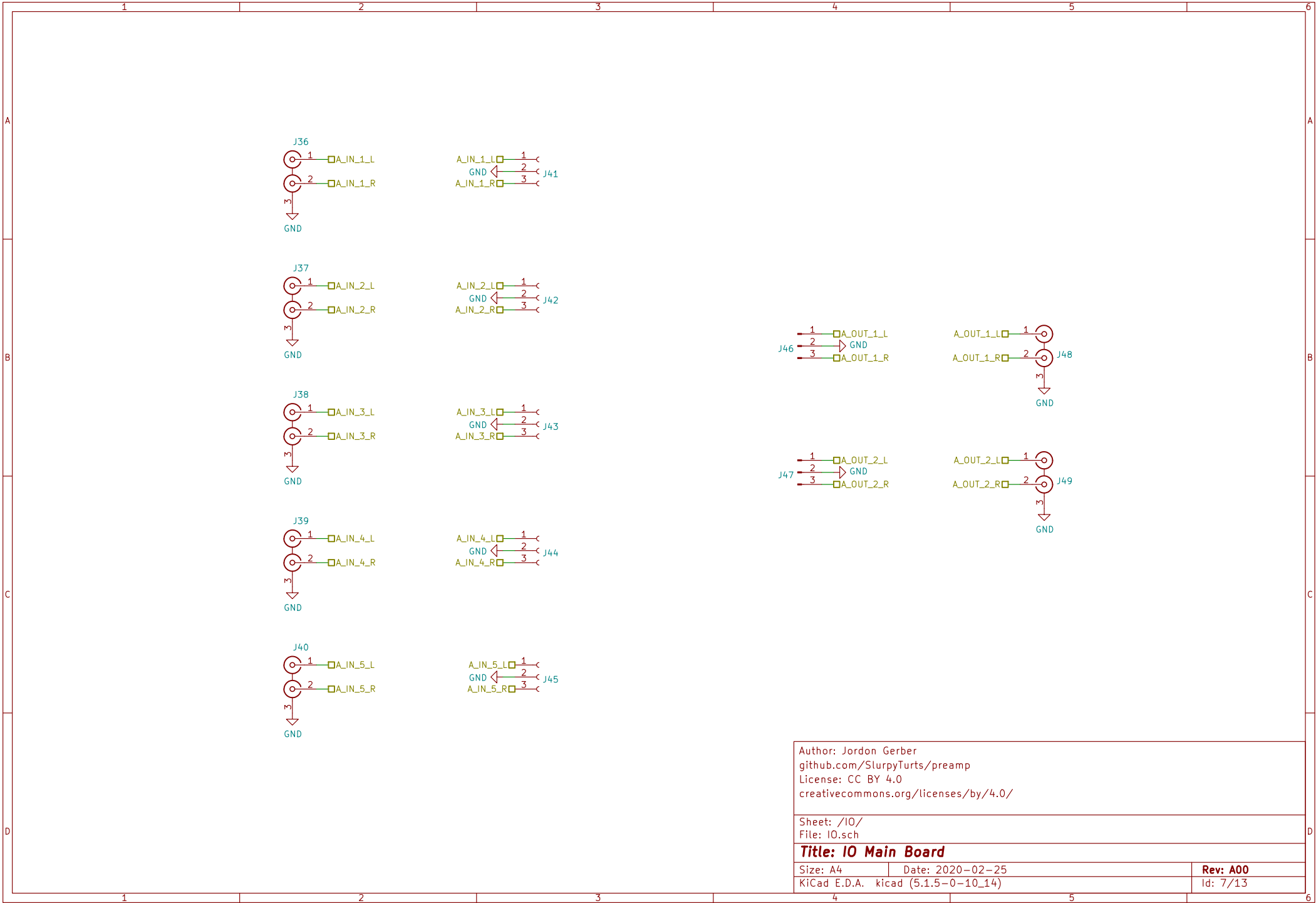


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Sheet: /MCU/  
File: MCU.sch

**Title: Preamp MCU Board**

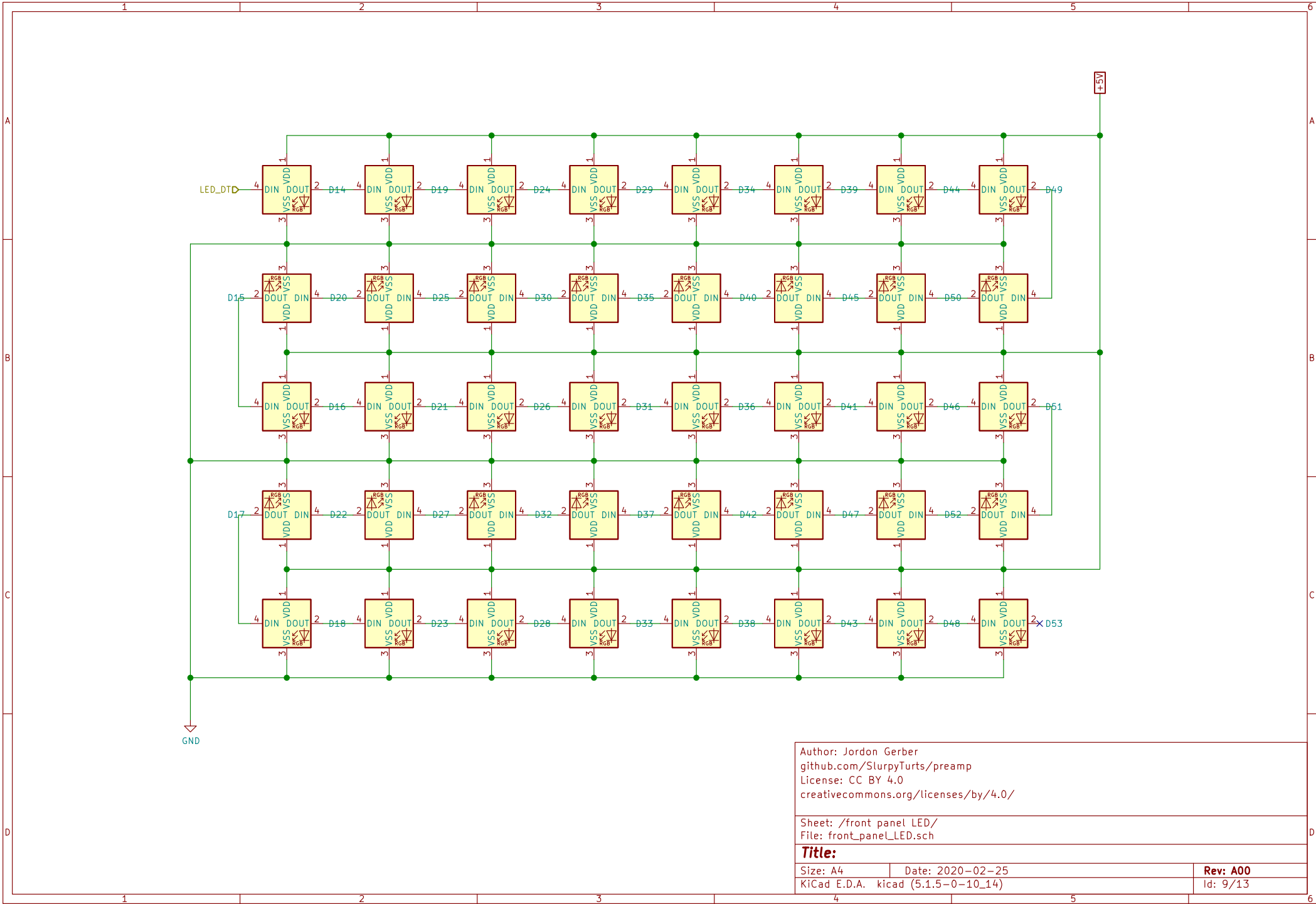
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 6/13



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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: 7/13

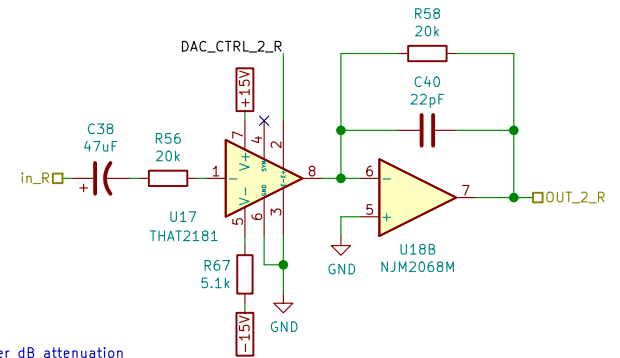
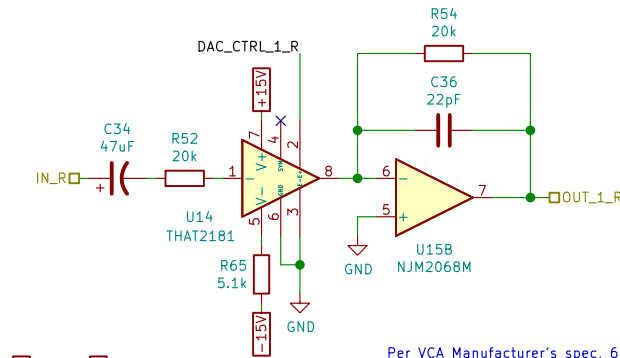
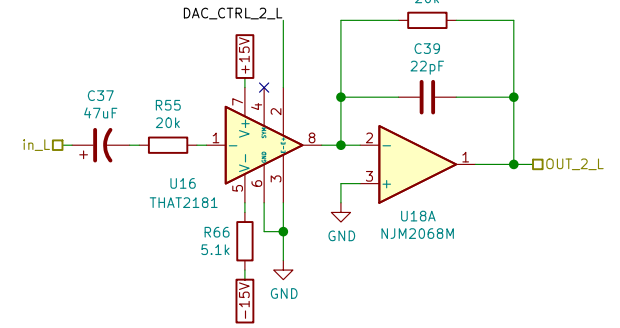
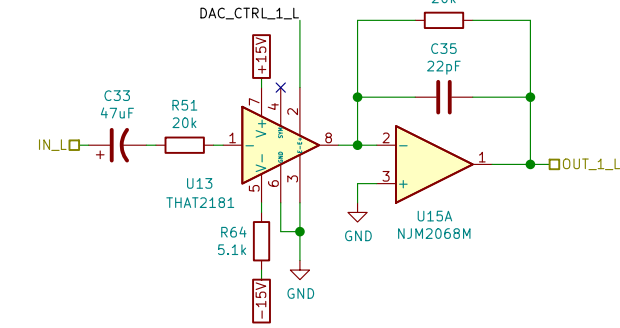






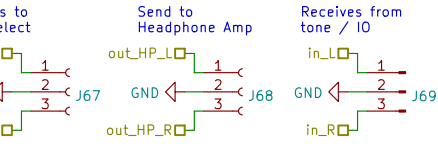
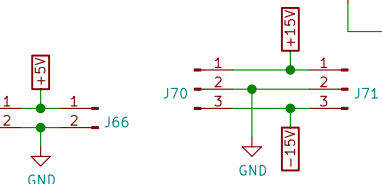
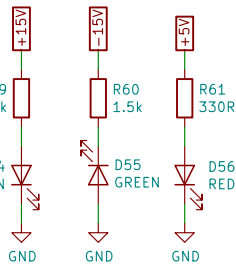
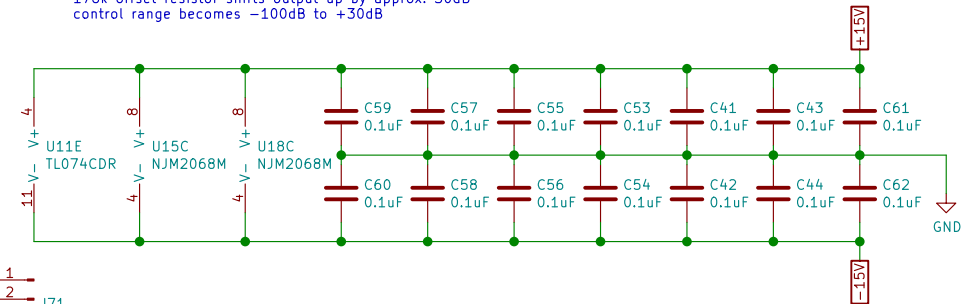
Author: Jordon Gerber github.com/SlurpyTurts/preamp License: CC BY 4.0 creativecommons.org/licenses/by/4.0/		
Sheet: /front panel LED/ File: front_panel_LED.sch		
Title:		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 9/13

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,  $0.78 / 0.006 = 130\text{dB}$  range  
 $130\text{dB} / 256 \text{ steps} = 0.51\text{dB} / \text{step}$

178k offset resistor shifts output up by approx. 30dB  
 control range becomes  $-100\text{dB}$  to  $+30\text{dB}$



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

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

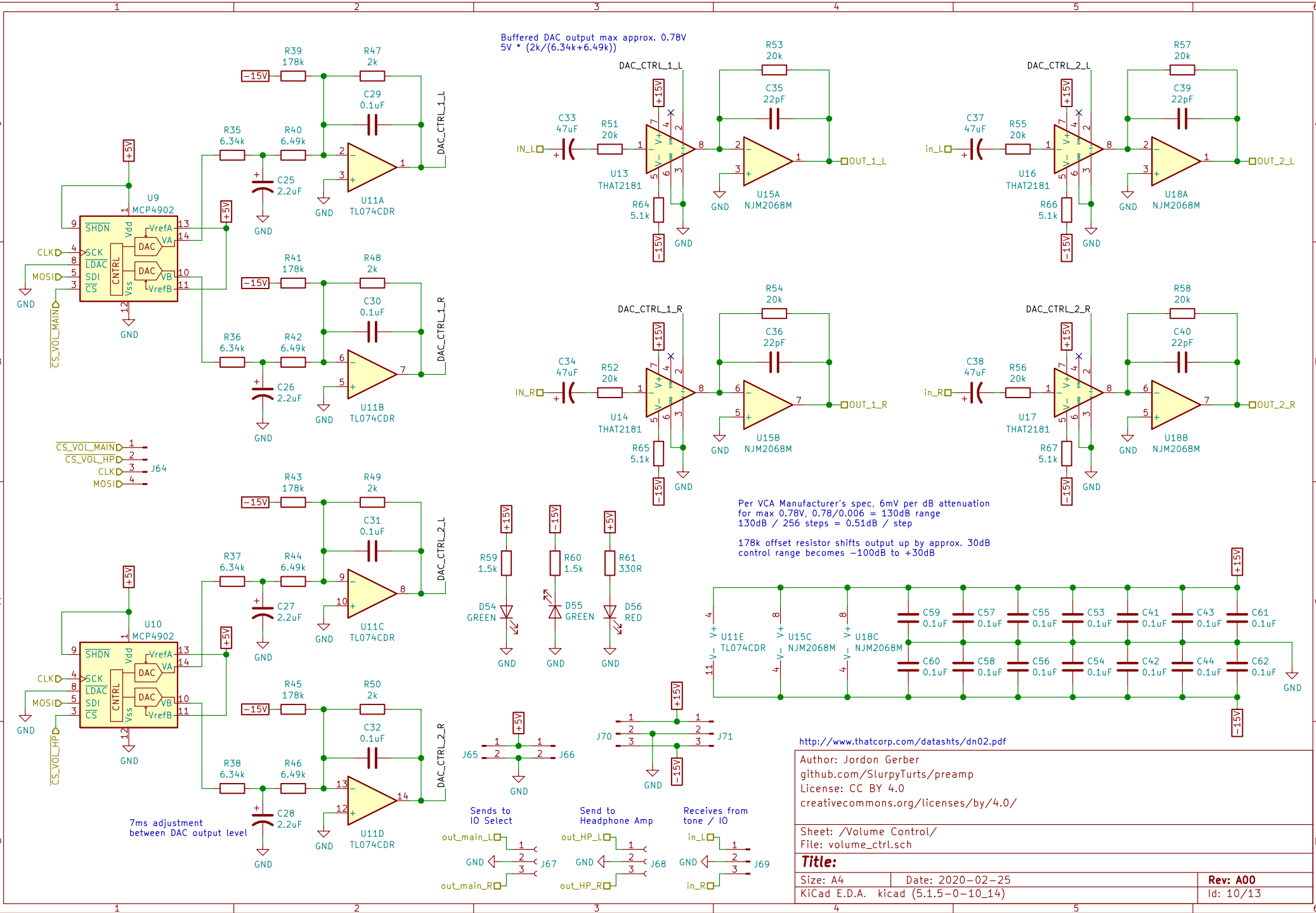
**Title:**

Size: A4 Date: 2020-02-25

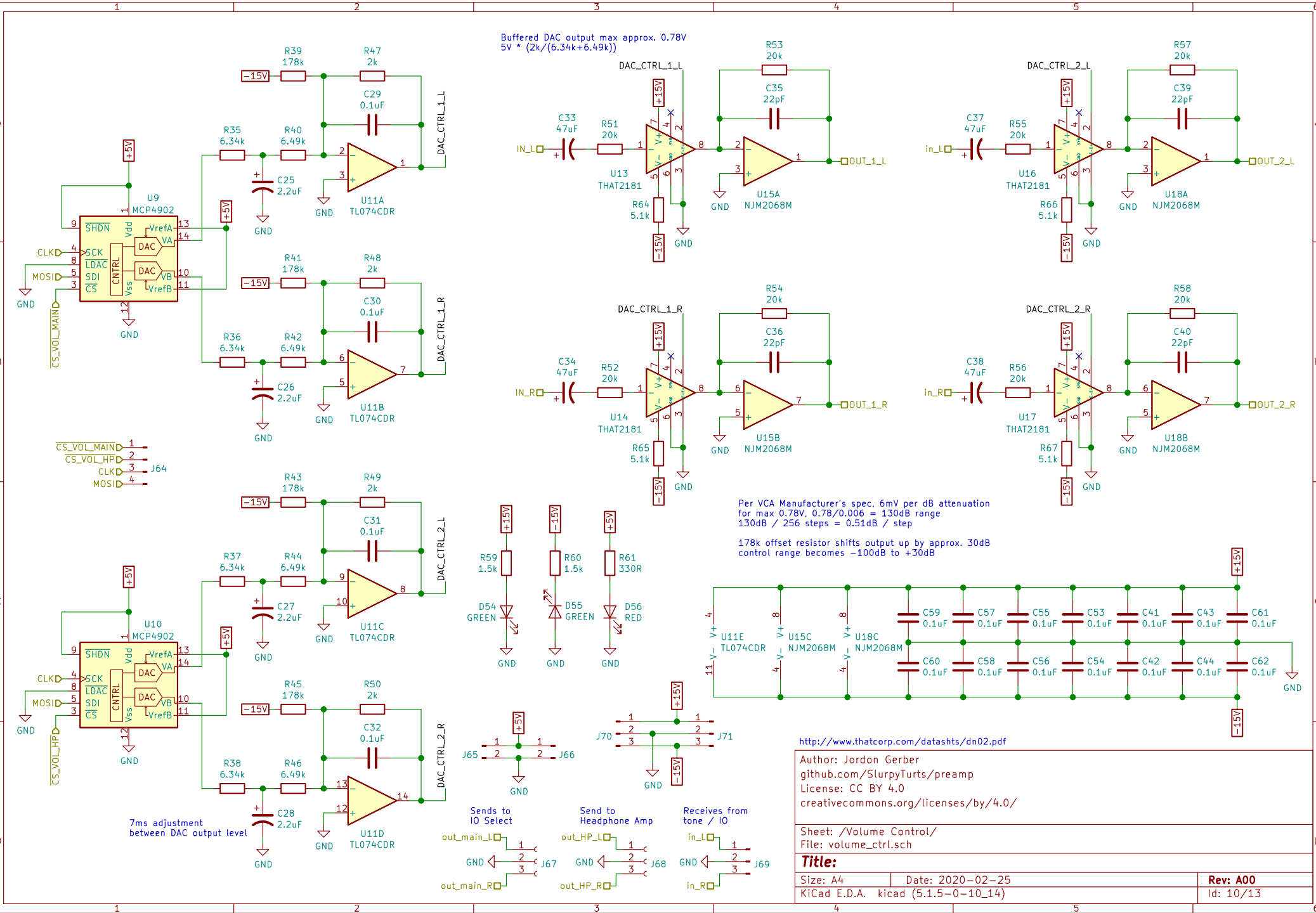
KiCad E.D.A. kicad (5.1.5-0-10\_14)

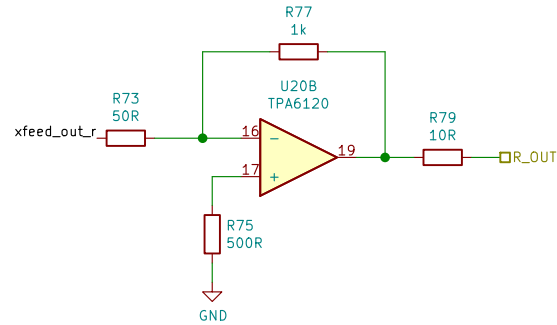
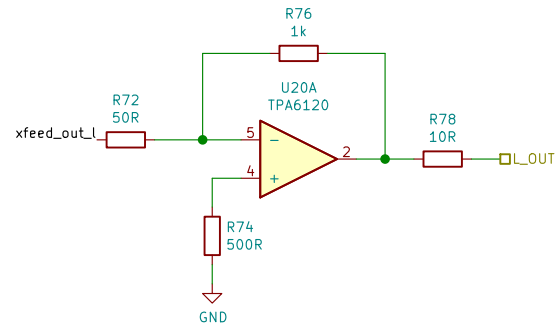
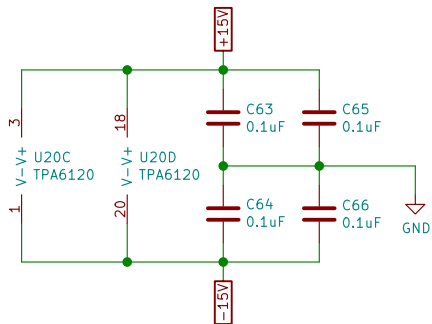
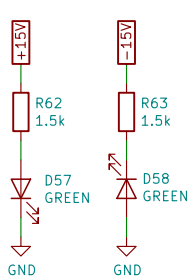
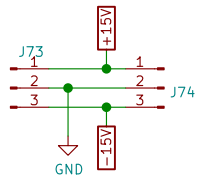
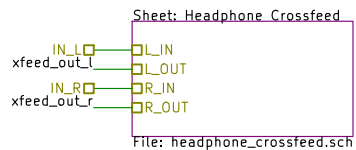
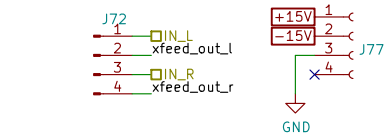
Rev: A00

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7ms adjustment  
 between DAC output level





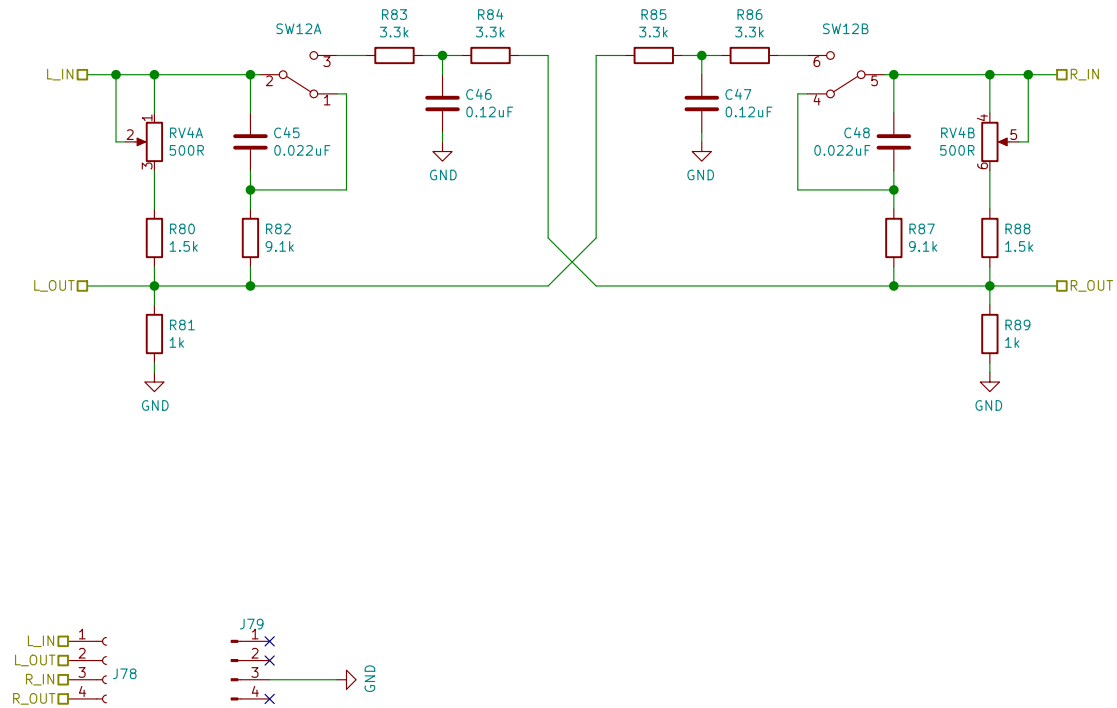
crosstalk: <https://headwizememorial.wordpress.com/2018/03/09/an-acoustic-simulator-for-headphone-amplifiers/>  
amp: [https://www.nutsvolts.com/magazine/article/precision\\_stereo\\_headphone\\_amplifier](https://www.nutsvolts.com/magazine/article/precision_stereo_headphone_amplifier)

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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: 11/13



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

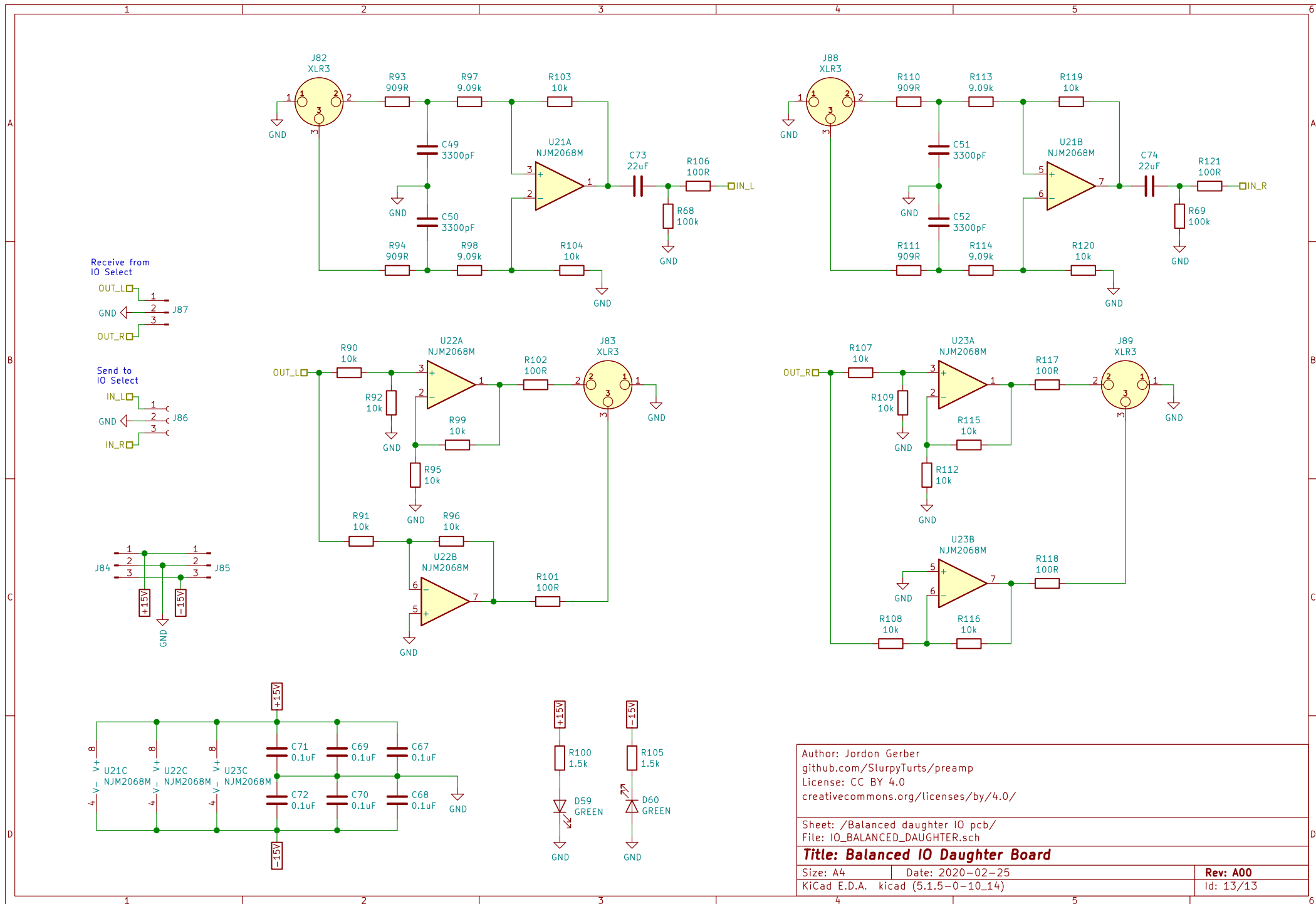
**Title: Headphone Crosstalk**

Size: A4 Date: 2020-02-25

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

Rev: A00

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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: 13/13