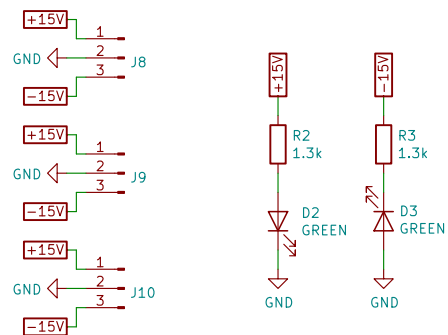
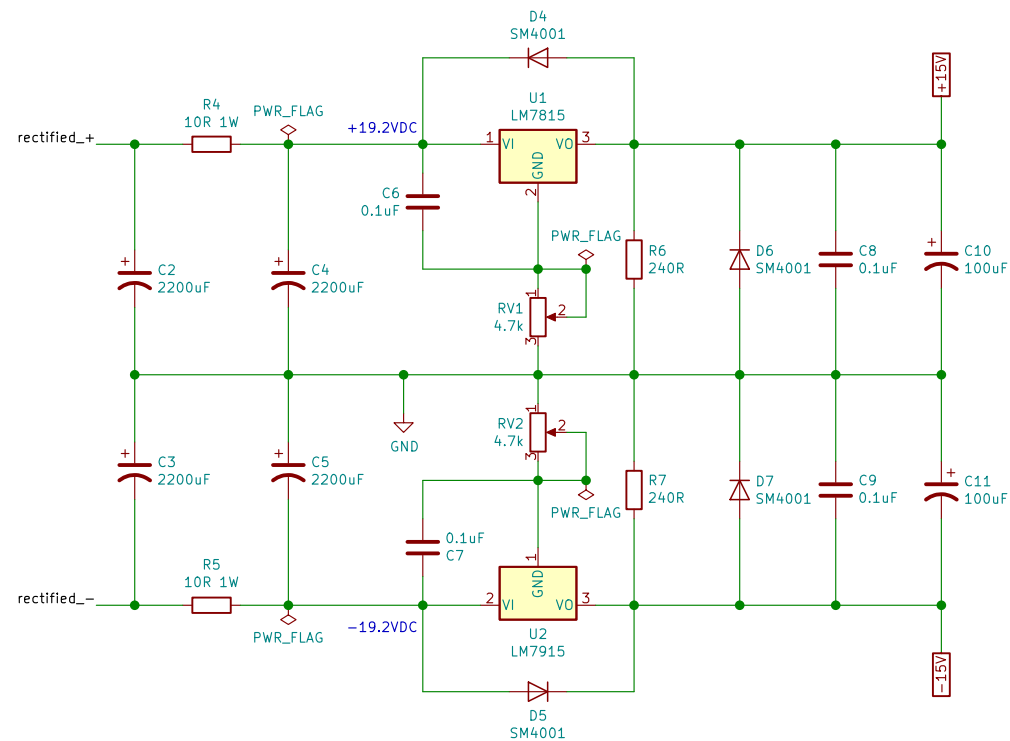
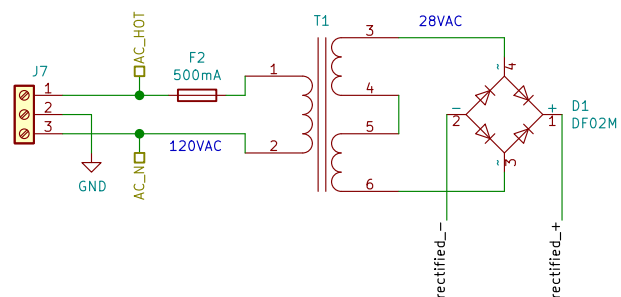


Author: Jordon Gerber github.com/SlurpyTurts/preamp License: CC BY 4.0 creativecommons.org/licenses/by/4.0/		
Sheet: /AC input/ File: AC_input.sch		
Title:		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 2/13



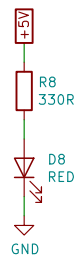
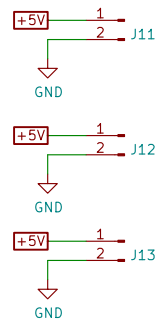
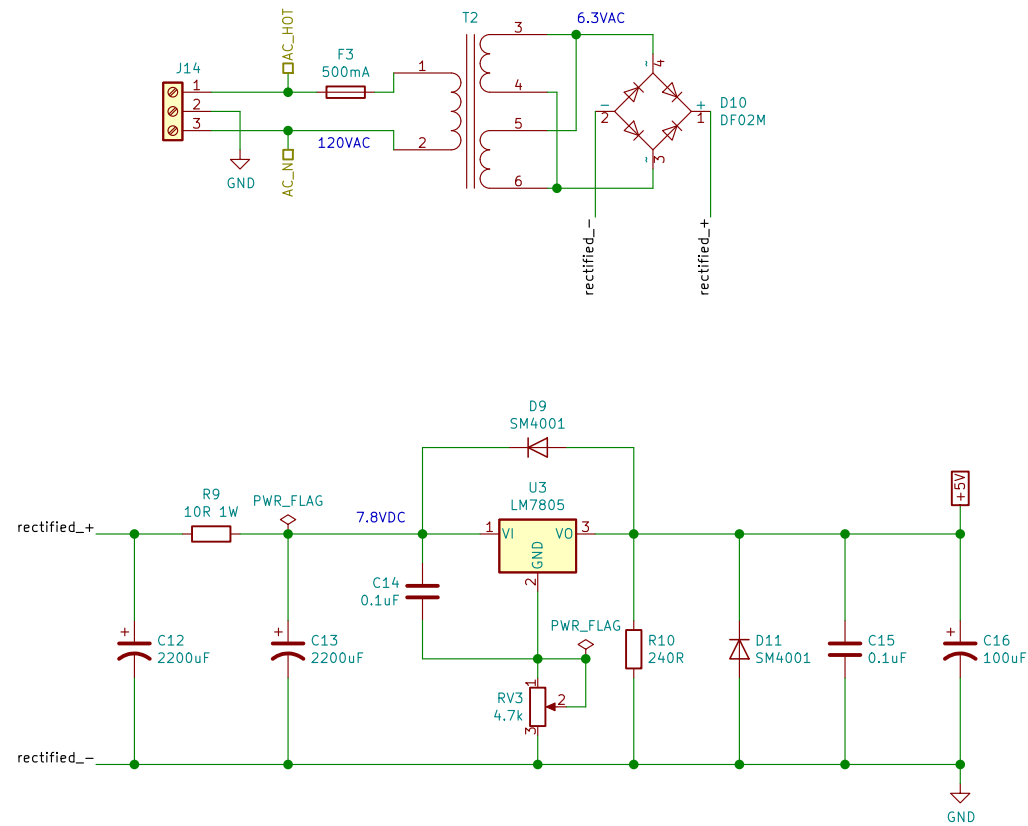
Author: Jordan Gerber  
[github.com/SlurpyTurts/preamp](https://github.com/SlurpyTurts/preamp)  
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[creativecommons.org/licenses/by/4.0/](https://creativecommons.org/licenses/by/4.0/)

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



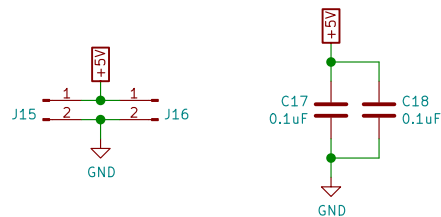
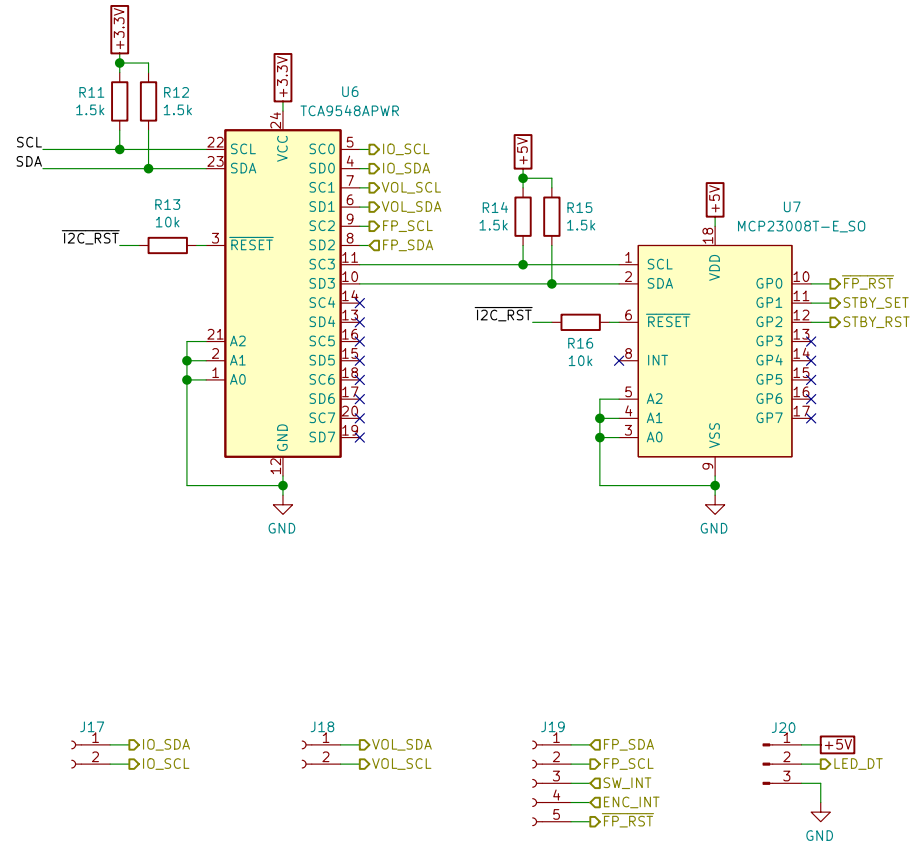
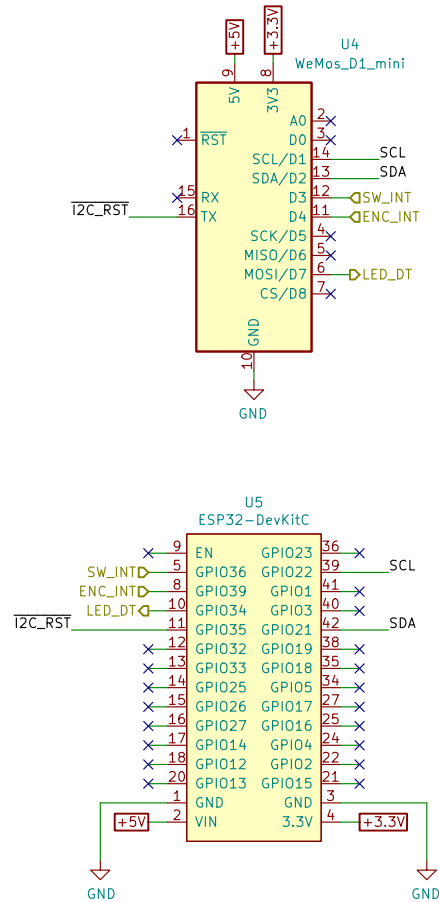
Author: Jordan Gerber  
[github.com/SlurpyTurts/preamp](https://github.com/SlurpyTurts/preamp)  
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[creativecommons.org/licenses/by/4.0/](https://creativecommons.org/licenses/by/4.0/)

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



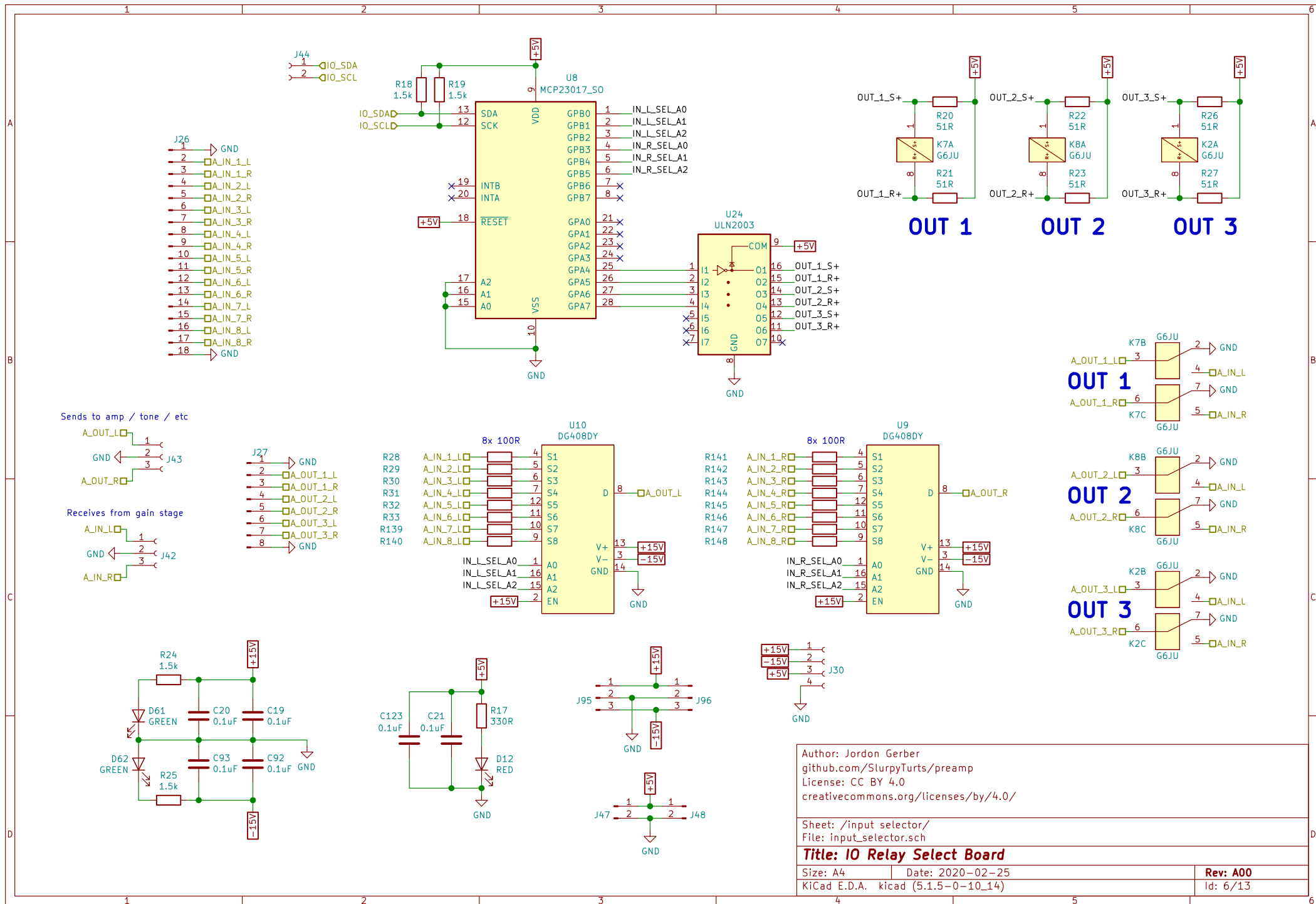
Author: Jordan Gerber  
[github.com/SlurpyTurts/preamp](https://github.com/SlurpyTurts/preamp)  
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[creativecommons.org/licenses/by/4.0/](https://creativecommons.org/licenses/by/4.0/)

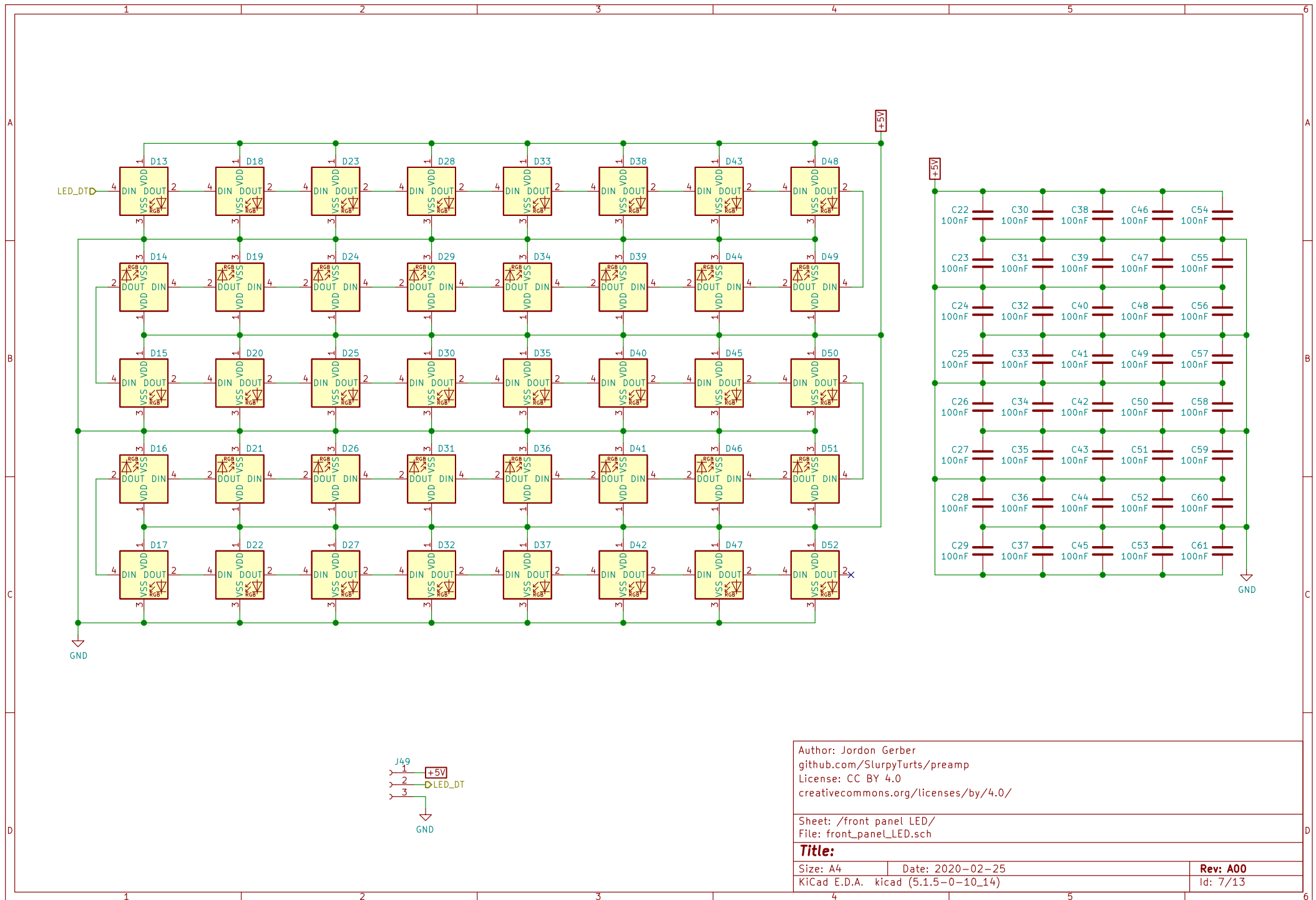
Sheet: /MCU/  
 File: MCU.sch

### Title: Preamp MCU Board

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

Rev: A00  
 Id: 5/13



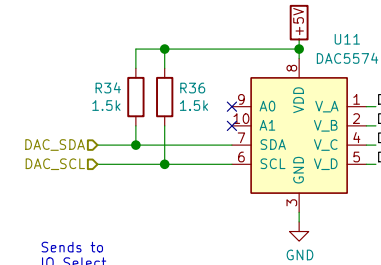


Buffered DAC output max approx. 0.78V  
 $5V \cdot (2k / (6.34k + 6.49k))$

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

J51  
 1 DAC\_SDA  
 2 DAC\_SCL



Sends to  
 IO Select

OUT\_1\_L  
 1  
 2  
 3

OUT\_1\_R  
 1  
 2  
 3

Send to  
 Headphone Amp

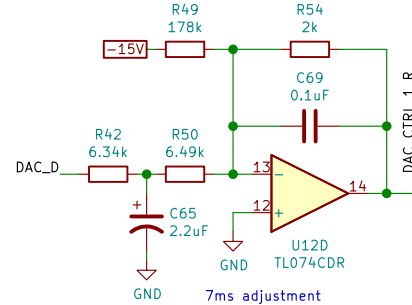
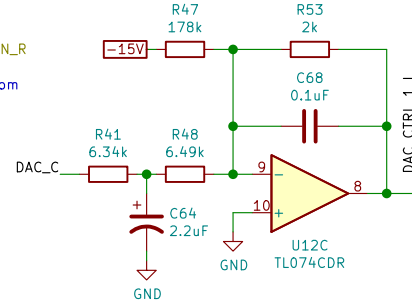
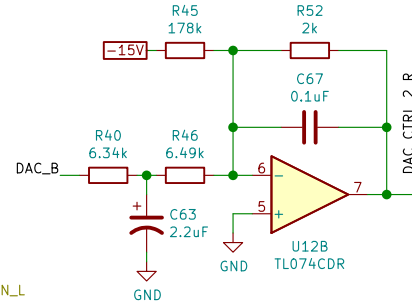
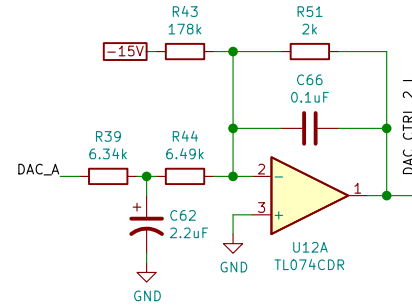
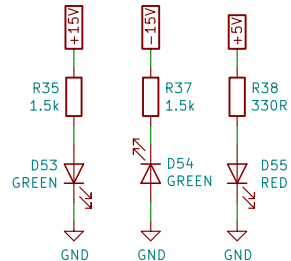
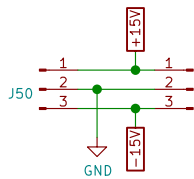
OUT\_2\_L  
 1  
 2  
 3

OUT\_2\_R  
 1  
 2  
 3

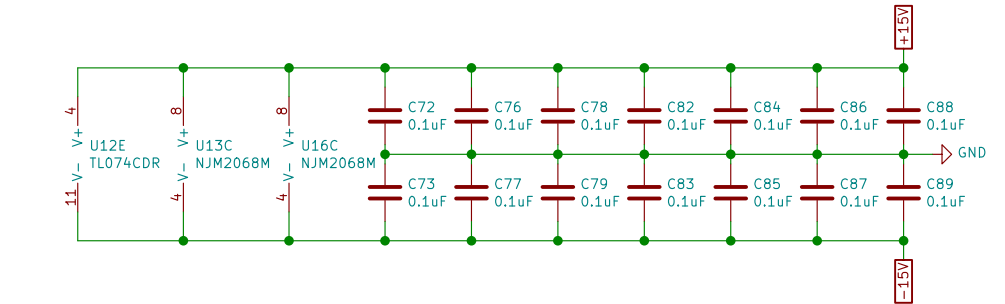
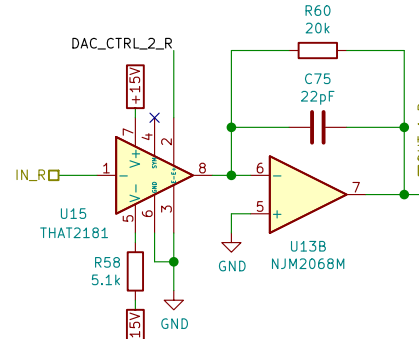
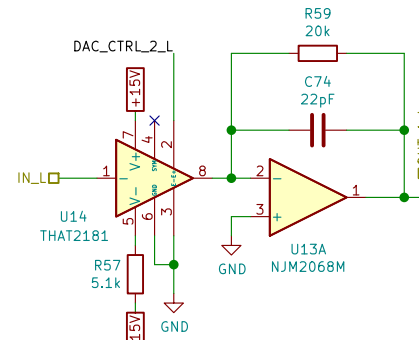
Receives from  
 tone / IO

IN\_L  
 1  
 2  
 3

IN\_R  
 1  
 2  
 3



7ms adjustment  
 between DAC output level



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

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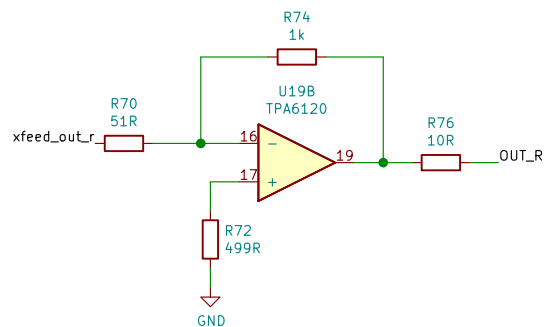
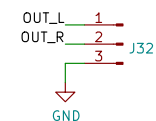
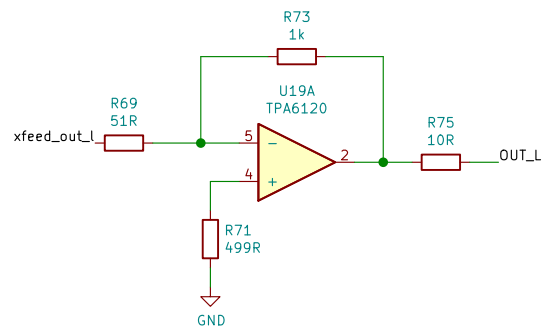
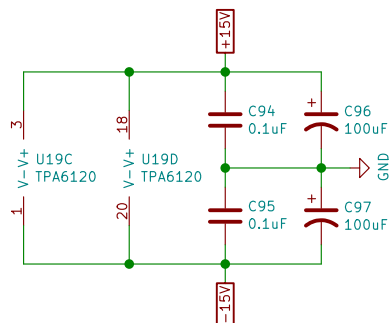
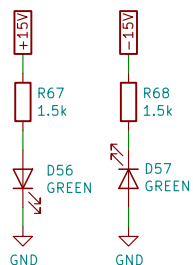
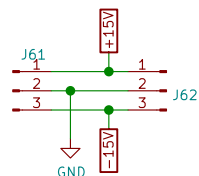
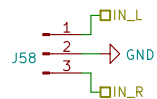
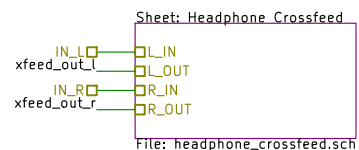
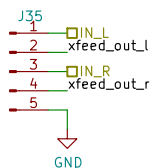
Sheet: /Volume Control/  
 File: volume\_ctrl.sch

Title:

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

Rev: A00  
 Id: 8/13





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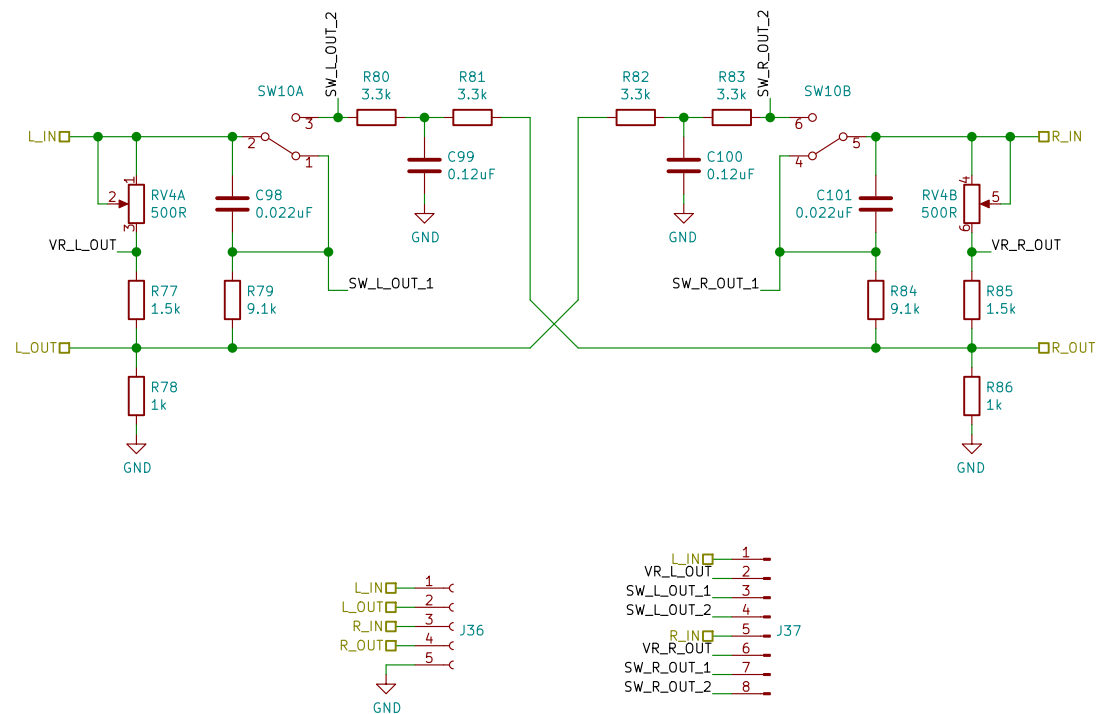
Sheet: /headphone amp/  
File: headphone\_amp.sch

**Title: Headphone Amplifier Board**

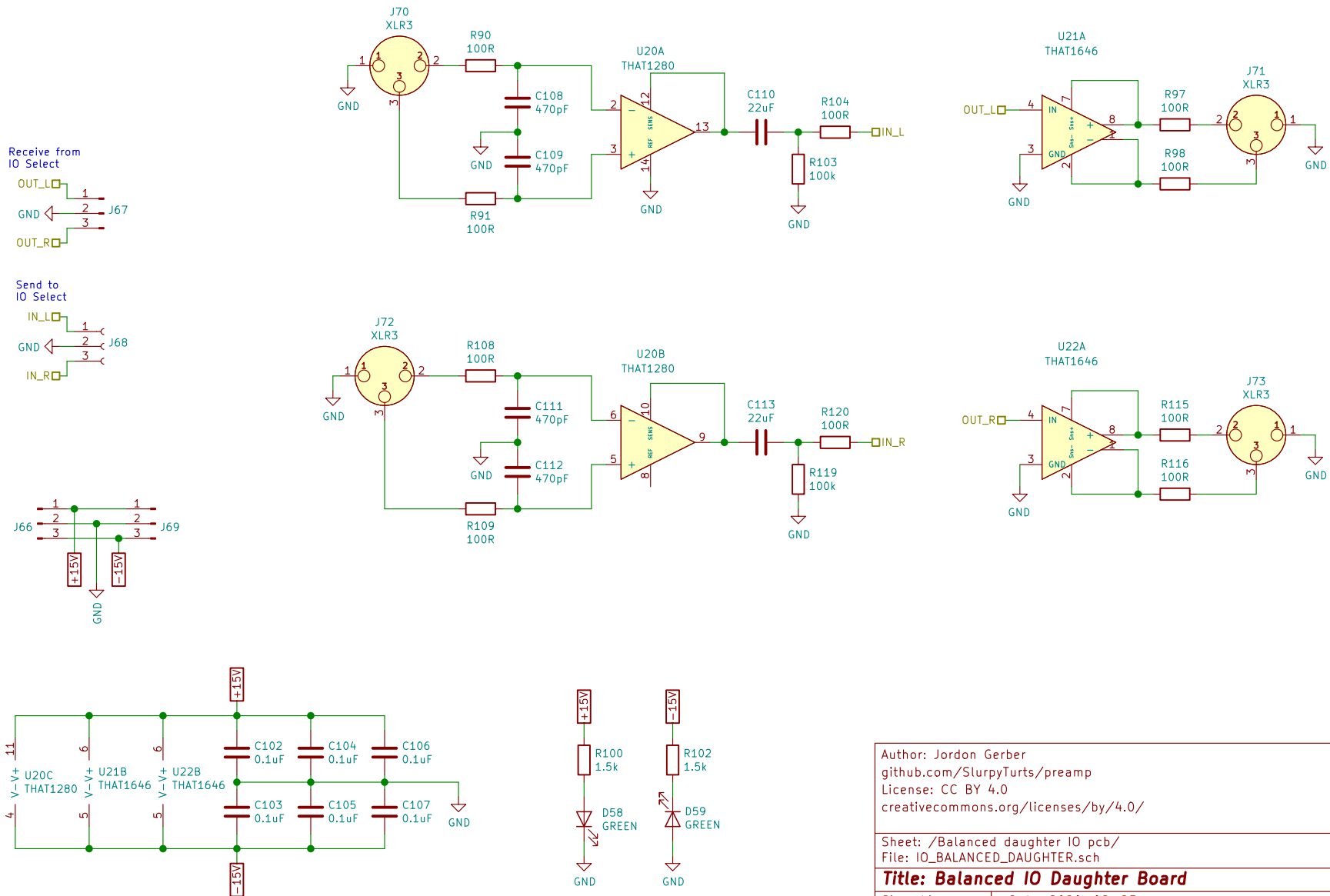
Size: A4  
KiCad E.D.A. kicad (5.1.5-0-10\_14)

Date: 2020-02-25

Rev: A00  
Id: 9/13



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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: 10/13



Author: Jordan Gerber  
[github.com/SlurpyTurts/preamp](https://github.com/SlurpyTurts/preamp)  
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Sheet: /Balanced daughter IO pcb/  
 File: IO\_BALANCED\_DAUGHTER.sch

**Title: Balanced IO Daughter Board**

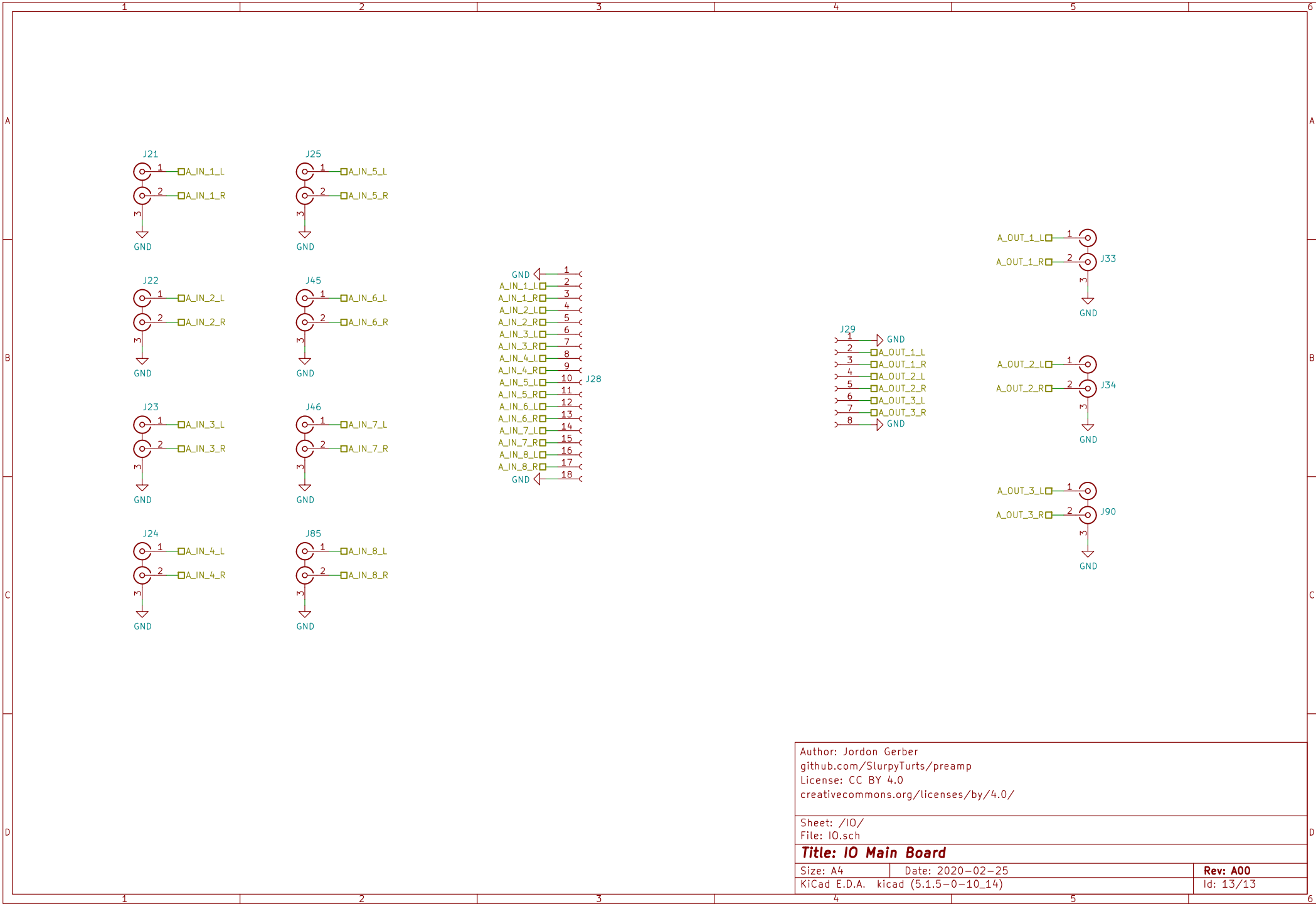
Size: A4 Date: 2020-02-25

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Rev: A00

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Sheet: /IO/  
File: IO.sch

**Title: IO Main Board**

Size: A4 Date: 2020-02-25

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

Rev: A00

Id: 13/13