

Author: Jordon Gerber
github.com/SlurpyTurts/preamp
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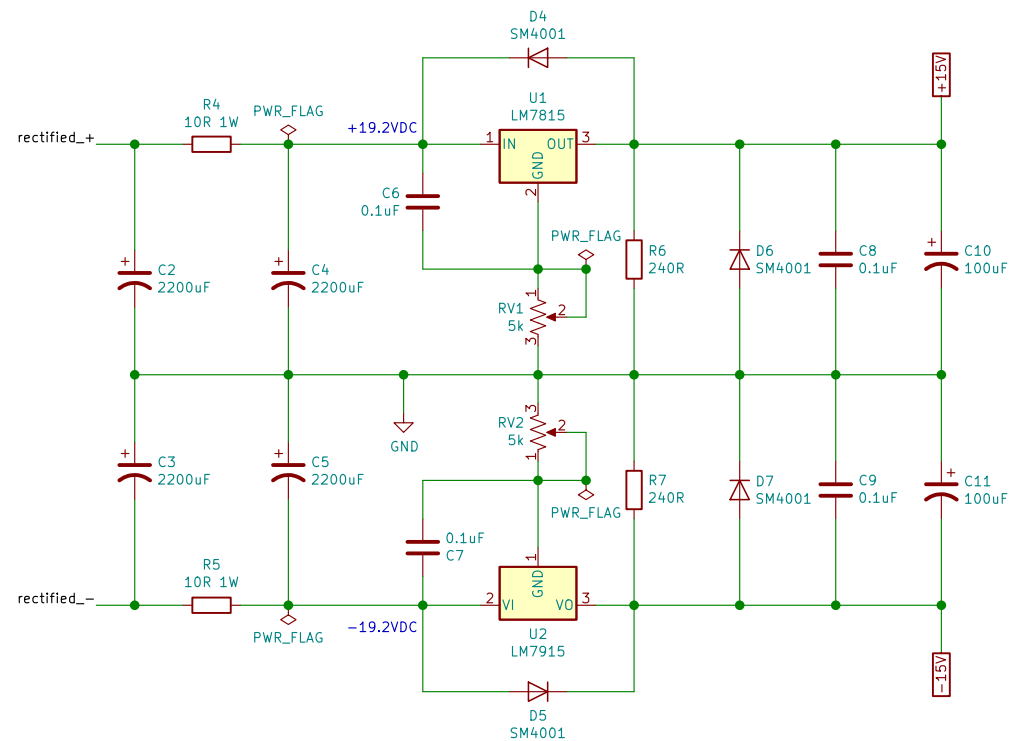
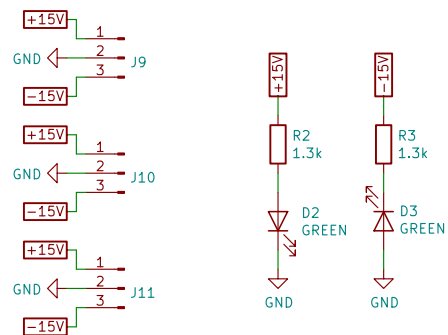
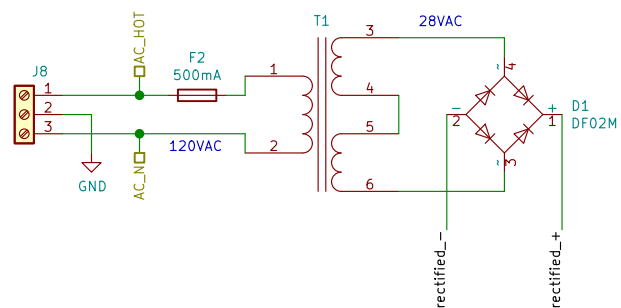
Sheet: /AC input/
File: AC_input.sch

Title:

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

Rev: A00

Id: 2/13



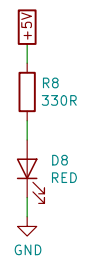
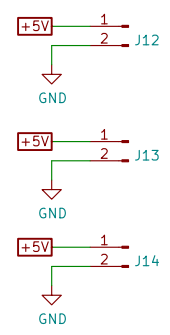
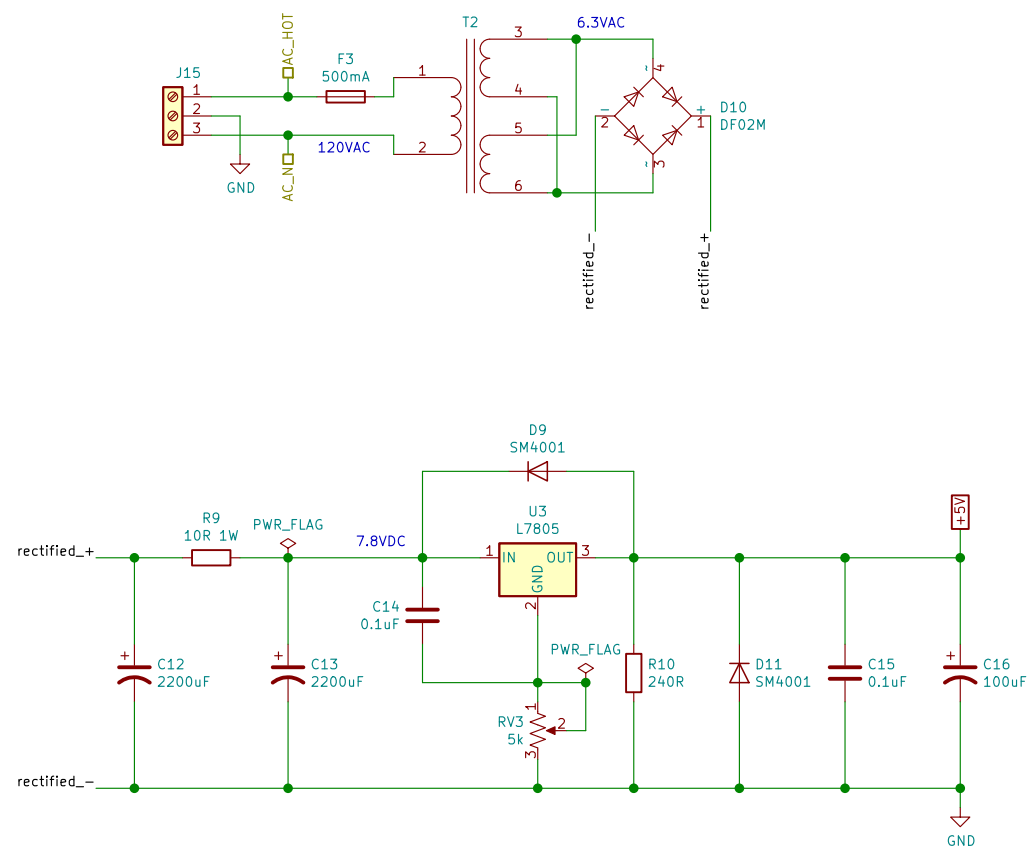
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Sheet: /+ -15V PWR SUPPLY/
 File: +-15V_PWR_SUPPLY.sch

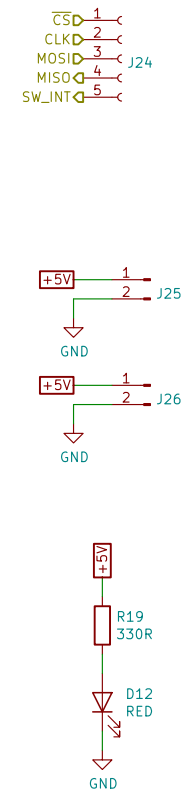
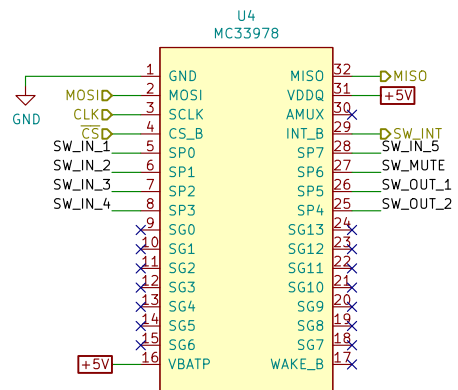
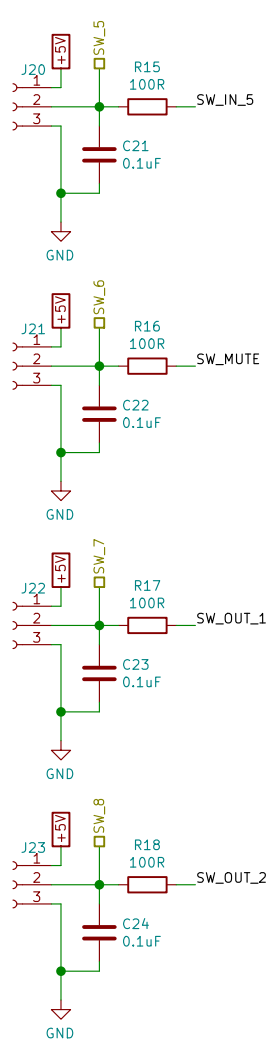
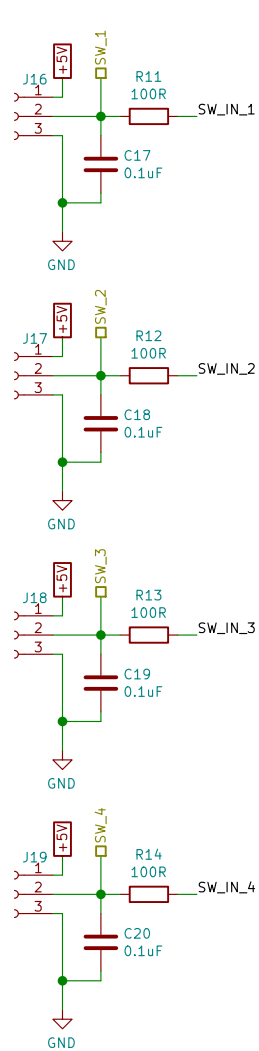
Title: 15V Power Supply

Size: A4 Date: 2020-02-25
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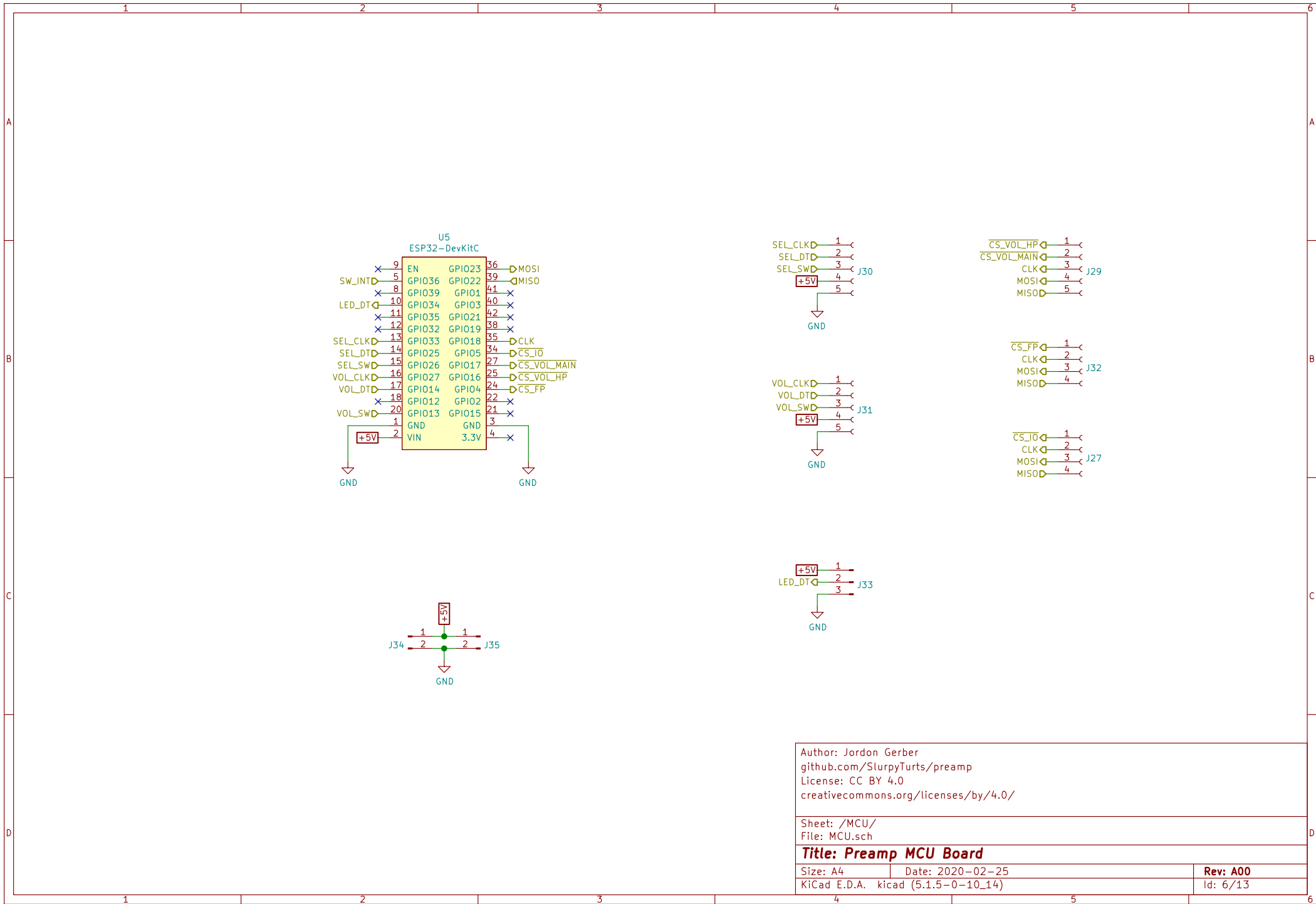
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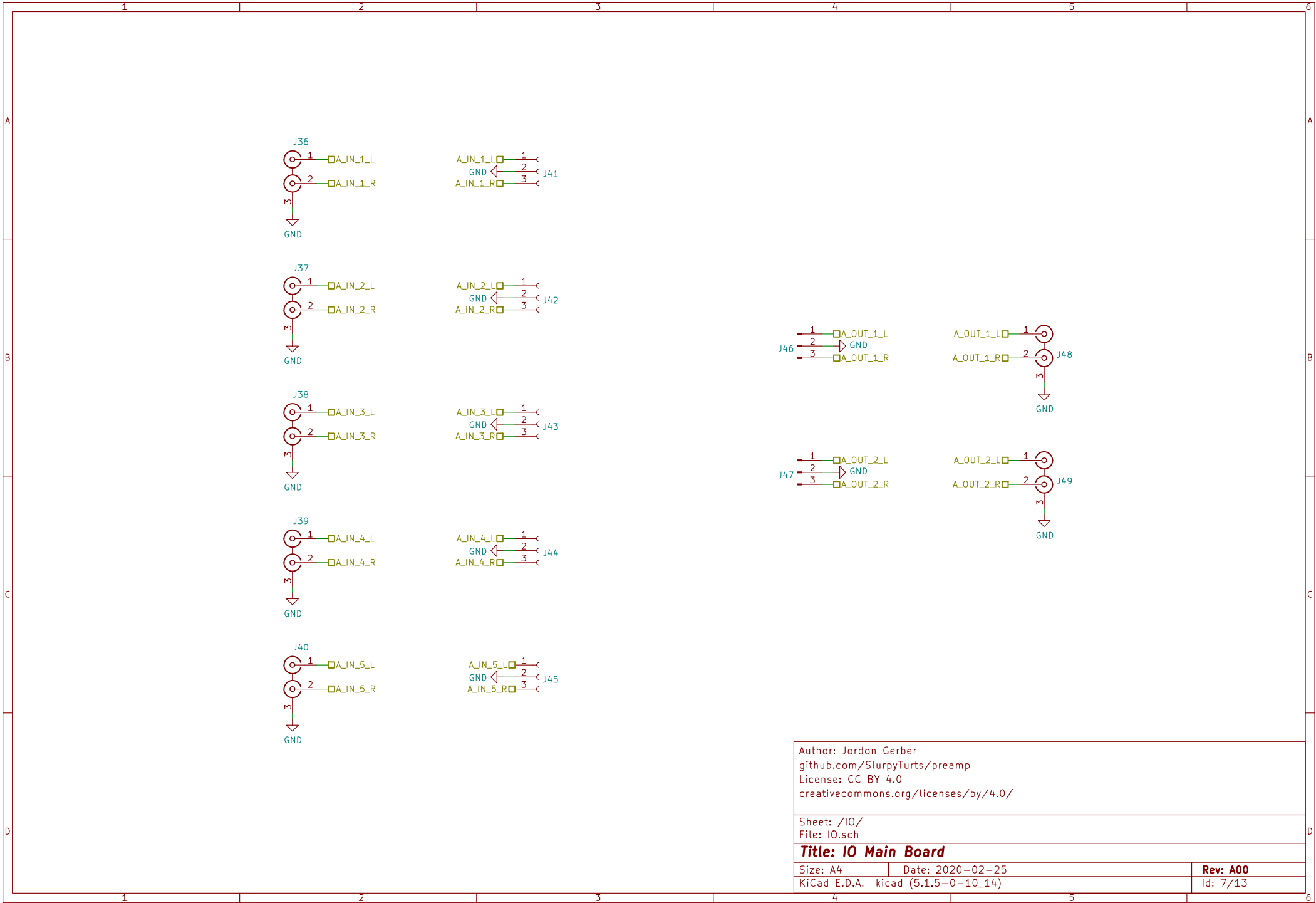
Author: Jordan Gerber github.com/SlurpyTurts/preamp License: CC BY 4.0 creativecommons.org/licenses/by/4.0/		
Sheet: /5V supply/ File: 5V_supply.sch		
Title: 5V Power Supply		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 4/13



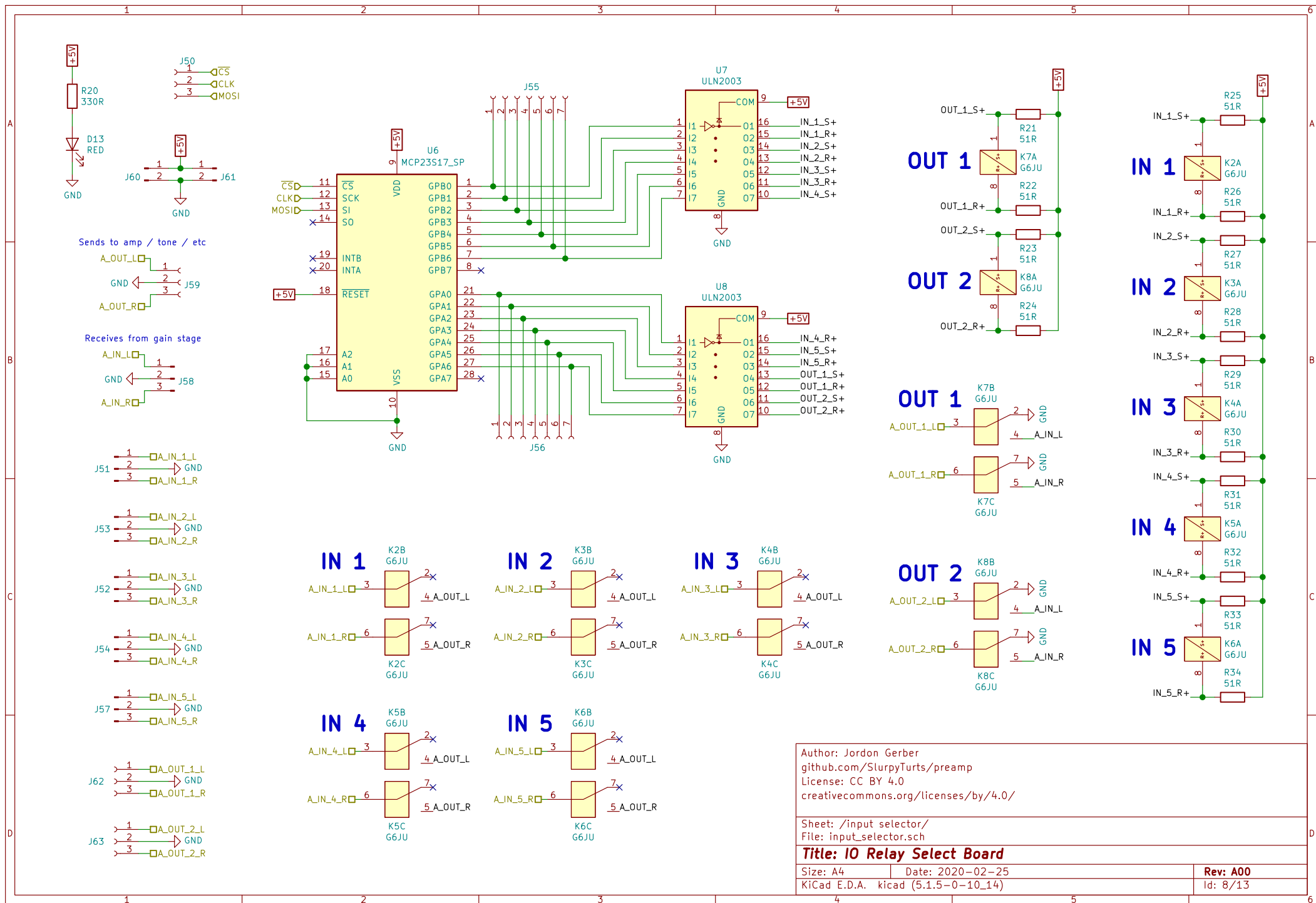
Author: Jordon Gerber github.com/SlurpyTurts/preamp License: CC BY 4.0 creativecommons.org/licenses/by/4.0/		
Sheet: /front panel/ File: front_panel.sch		
Title: Front Panel		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 5/13

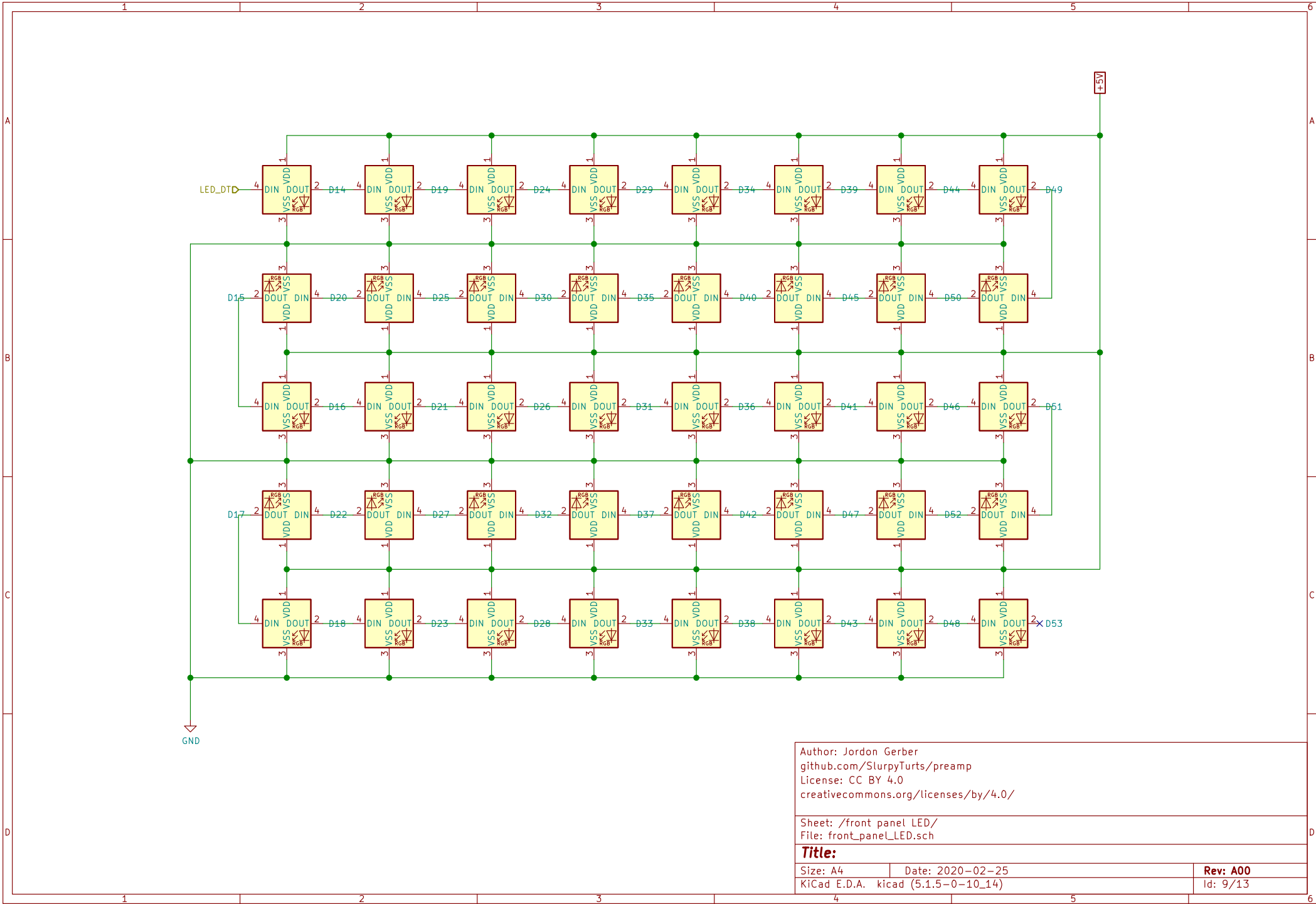


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Sheet: /MCU/ File: MCU.sch		
Title: Preamp MCU Board		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 6/13



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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



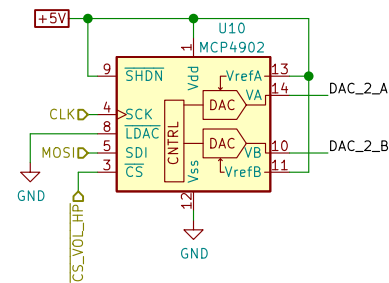
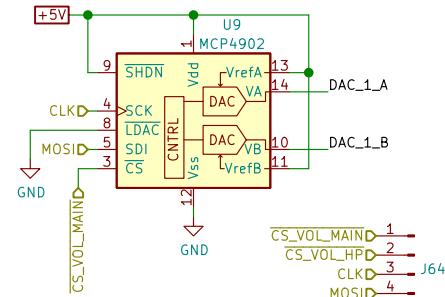


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Sheet: /front panel LED/ File: front_panel_LED.sch		
Title:		
Size: A4	Date: 2020-02-25	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 9/13

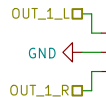
Buffered DAC output max approx. 0.78V
 $5V \cdot (2k / (6.34k + 6.49k))$

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

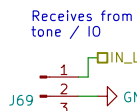
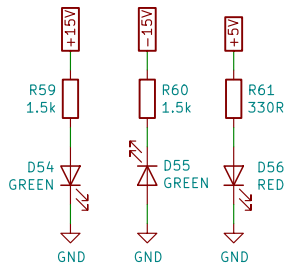
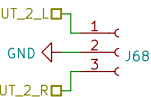
178k offset resistor shifts output up by approx. 30dB
 control range becomes -100dB to +30dB



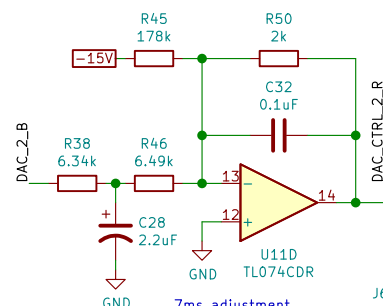
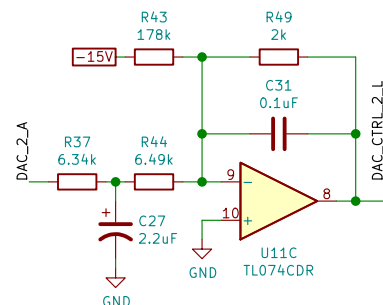
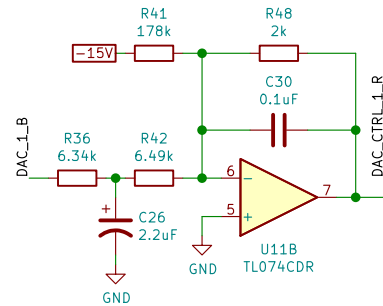
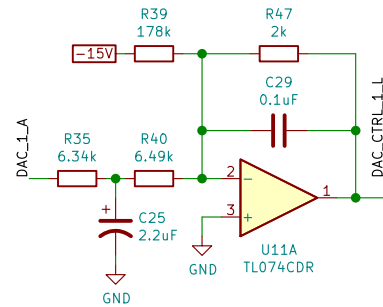
Sends to
IO Select



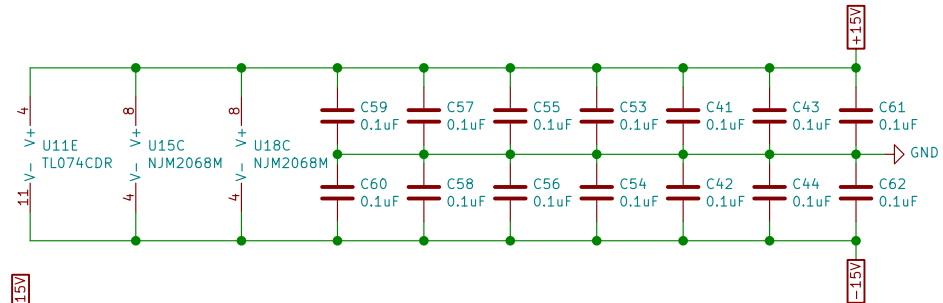
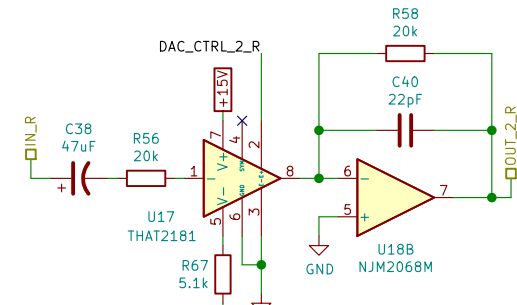
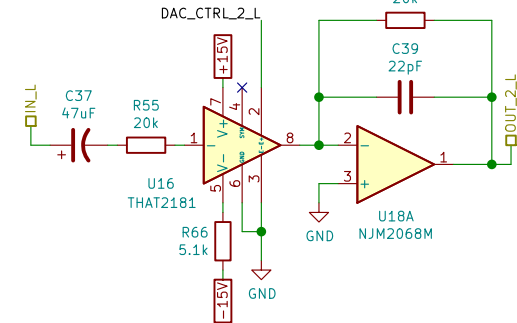
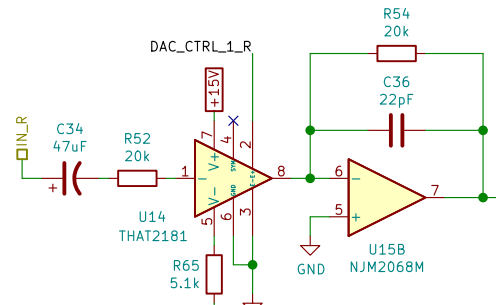
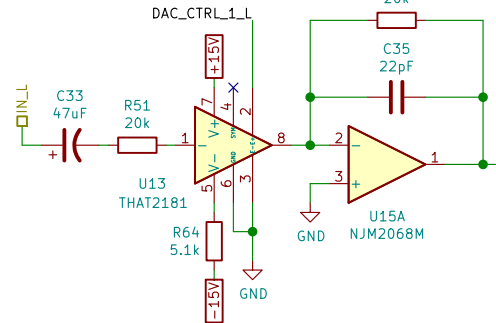
Send to
Headphone Amp



Receives from
tone / IO



7ms adjustment
between DAC output level



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

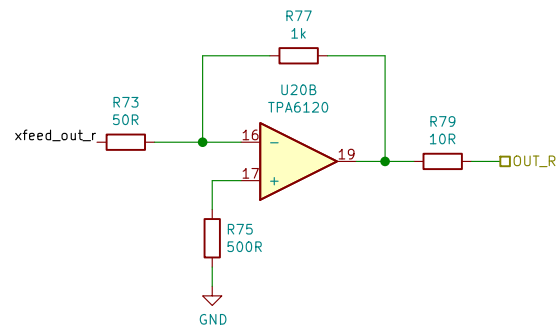
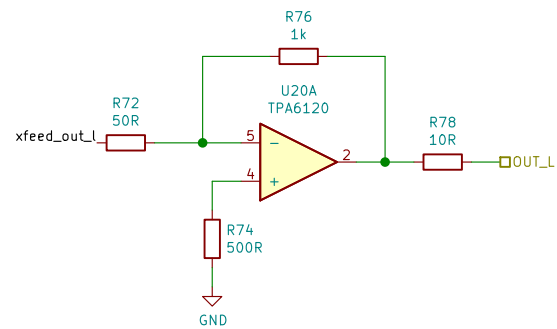
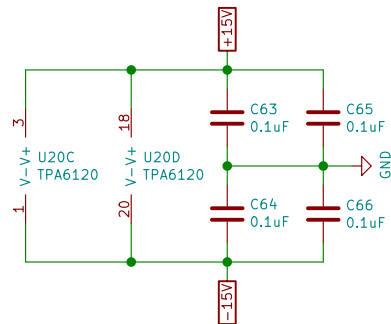
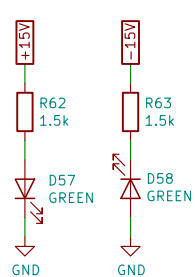
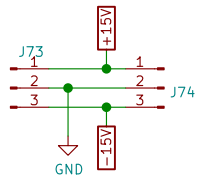
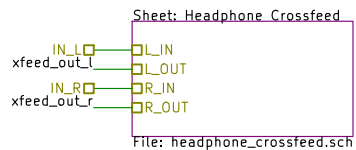
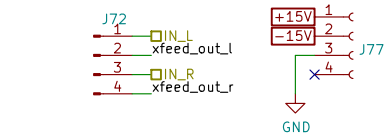
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Sheet: /Volume Control/
 File: volume_ctrl.sch

Title:

Size: A4 Date: 2020-02-25
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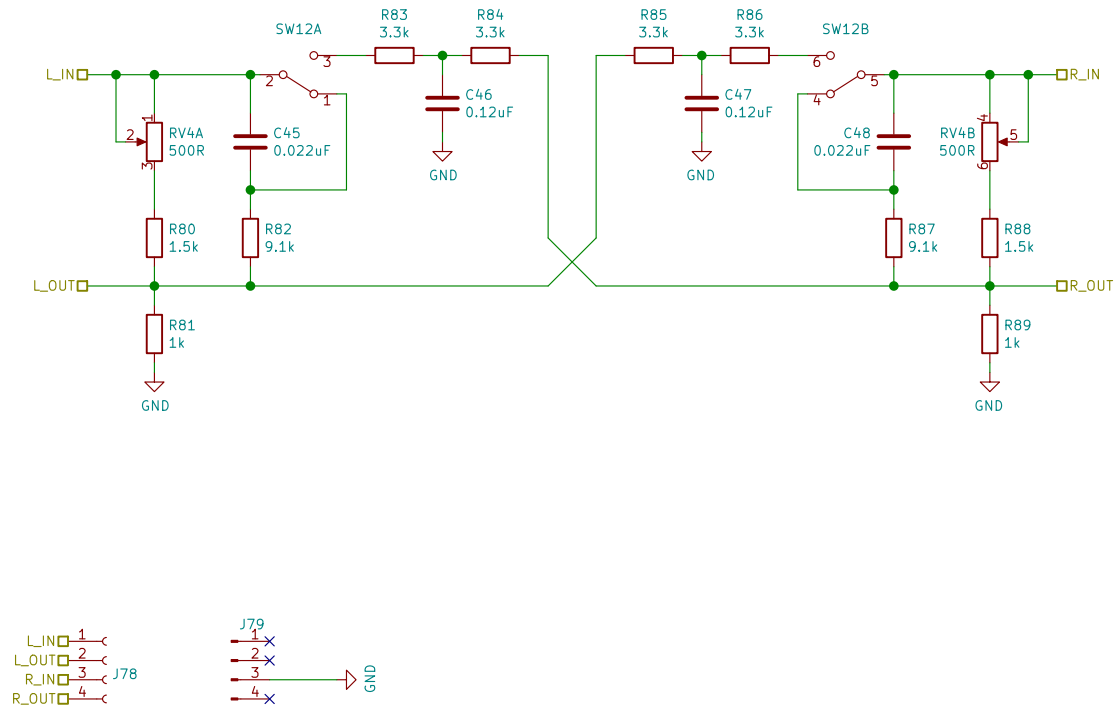


crosstalk: <https://headwizememorial.wordpress.com/2018/03/09/an-acoustic-simulator-for-headphone-amplifiers/>
amp: https://www.nutsvolts.com/magazine/article/precision_stereo_headphone_amplifier

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Sheet: /headphone amp/
File: headphone_amp.sch
Title: Headphone Amplifier Board

Size: A4	Date: 2020-02-25	Rev: A00
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Sheet: /headphone amp/Headphone Crossfeed/
 File: headphone_crossfeed.sch

Title: Headphone Crosstalk

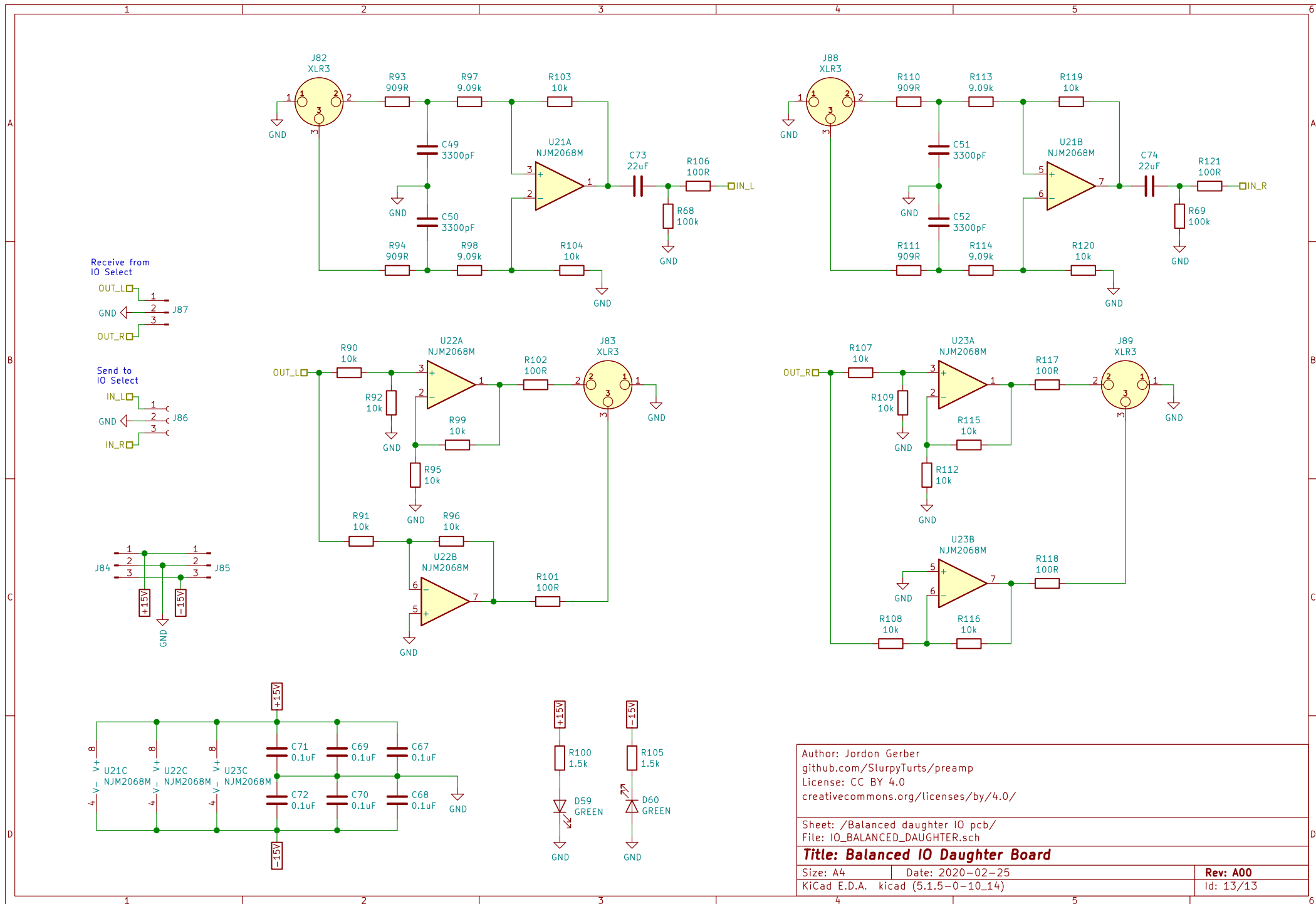
Size: A4

Date: 2020-02-25

Rev: A00

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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	Rev: A00
KiCad E.D.A. kicad (5.1.5-0-10_14)		Id: 13/13