

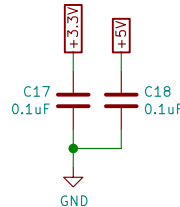
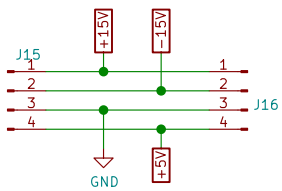
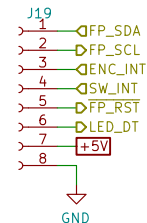
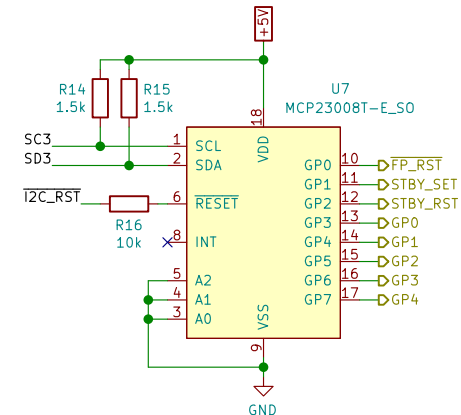
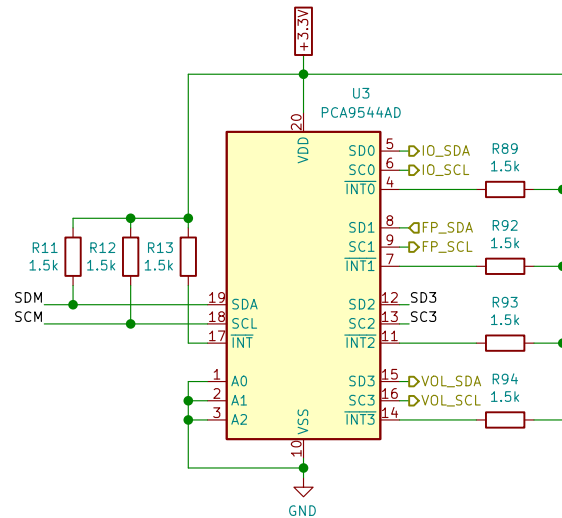
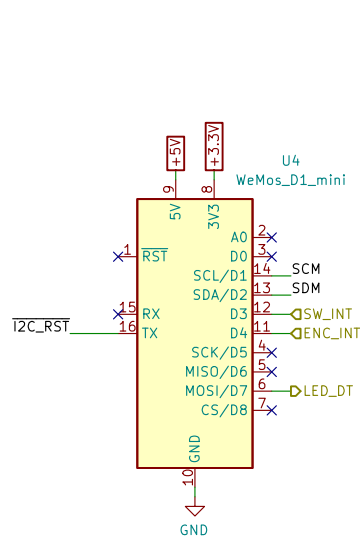
Author: Jordan Gerber
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Sheet: /
 File: preamp.sch

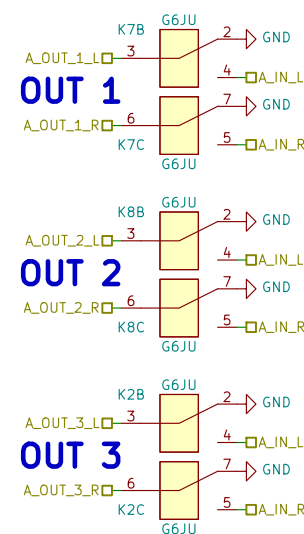
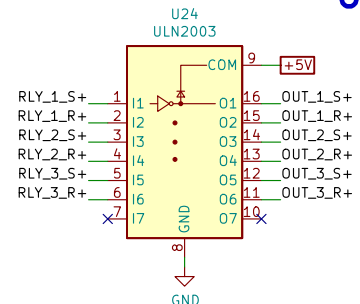
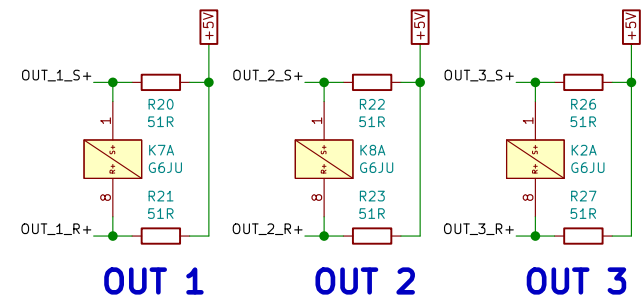
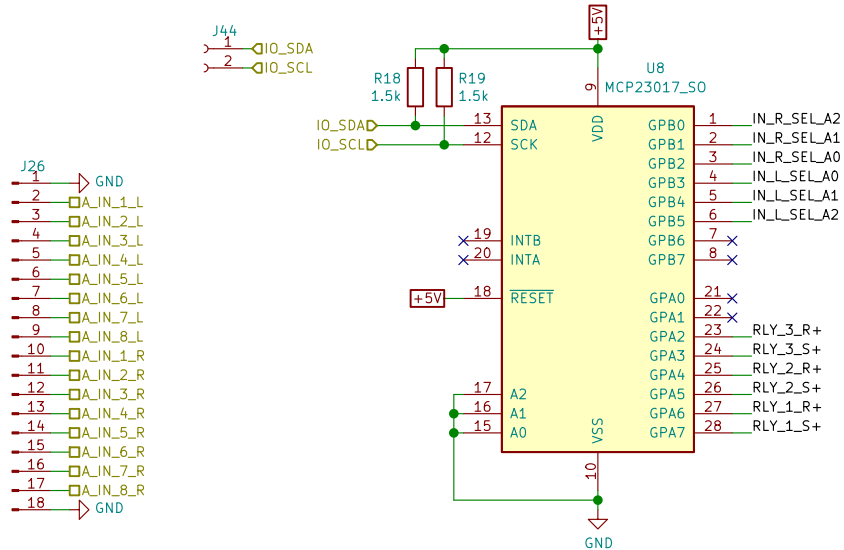
Title: Preamp

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

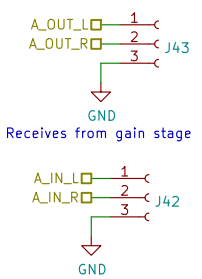
Rev: A00
 Id: 1/11



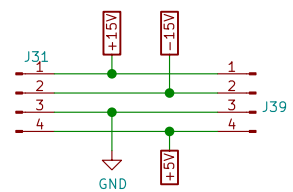
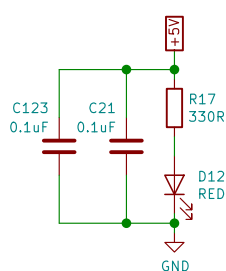
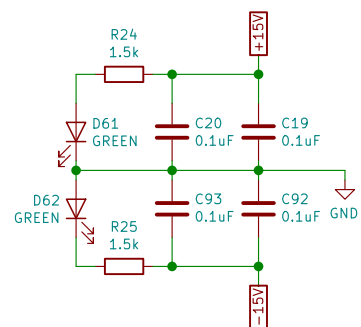
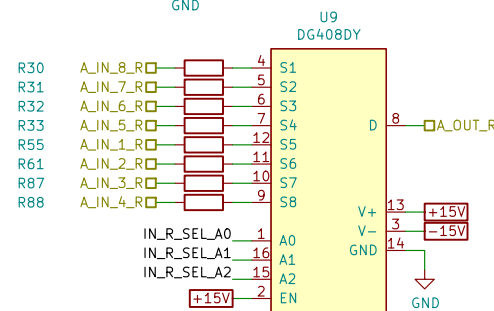
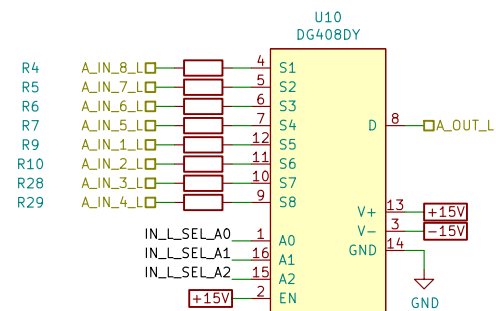
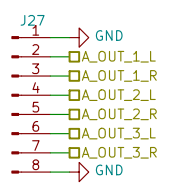
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|---|------------------|----------|
| Author: Jordan Gerber github.com/SlurpyTurts/preamp License: CC BY 4.0 creativecommons.org/licenses/by/4.0/ | | |
| Sheet: /MCU/ File: MCU.sch | | |
| Title: Preamp MCU Board | | |
| Size: A4 | Date: 2020-02-25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



Sends to amp / tone / etc



Receives from gain stage

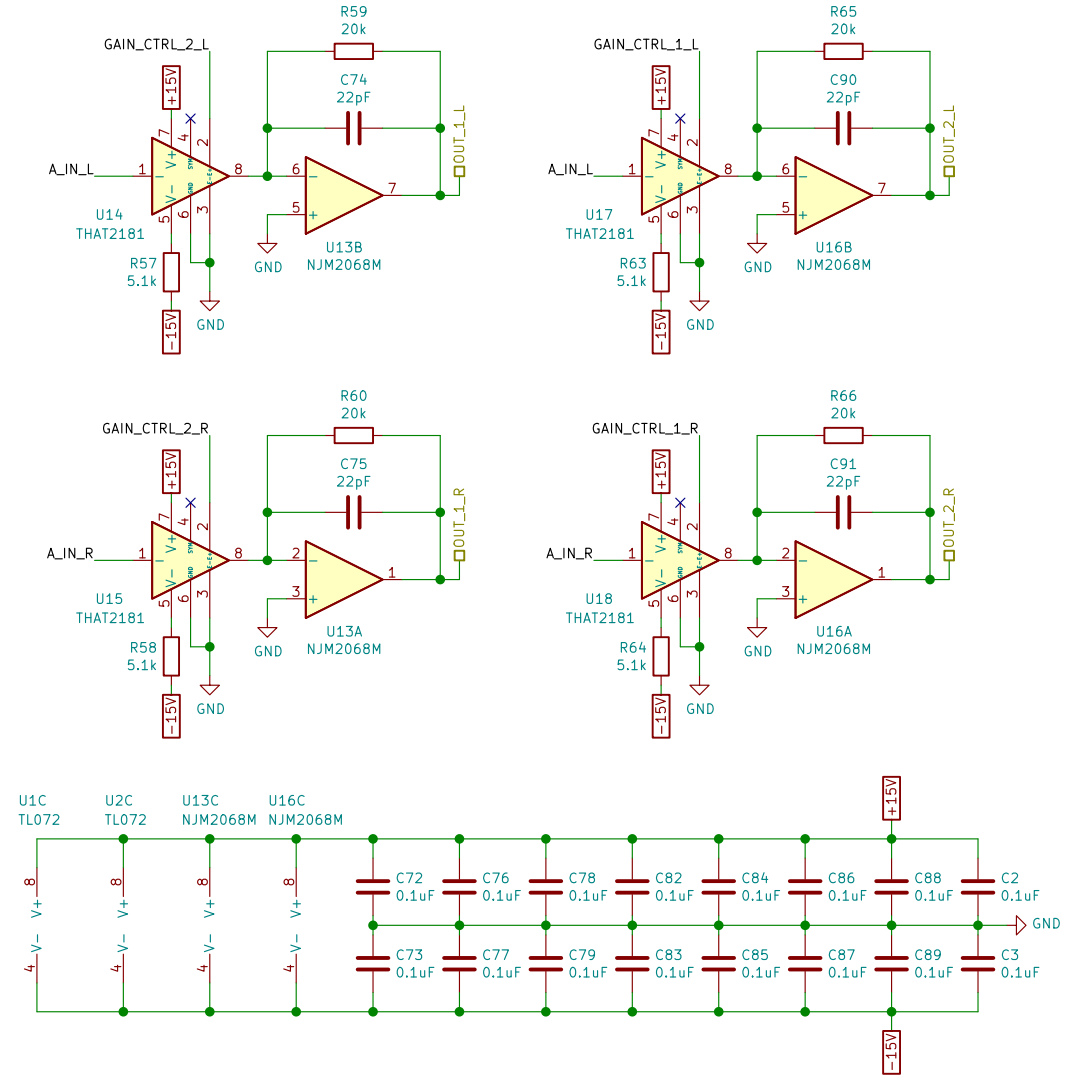
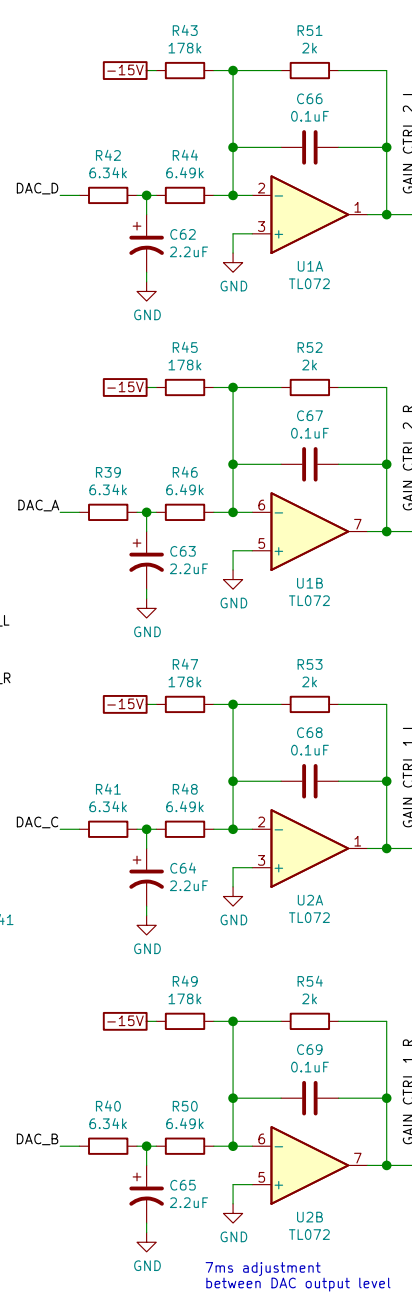
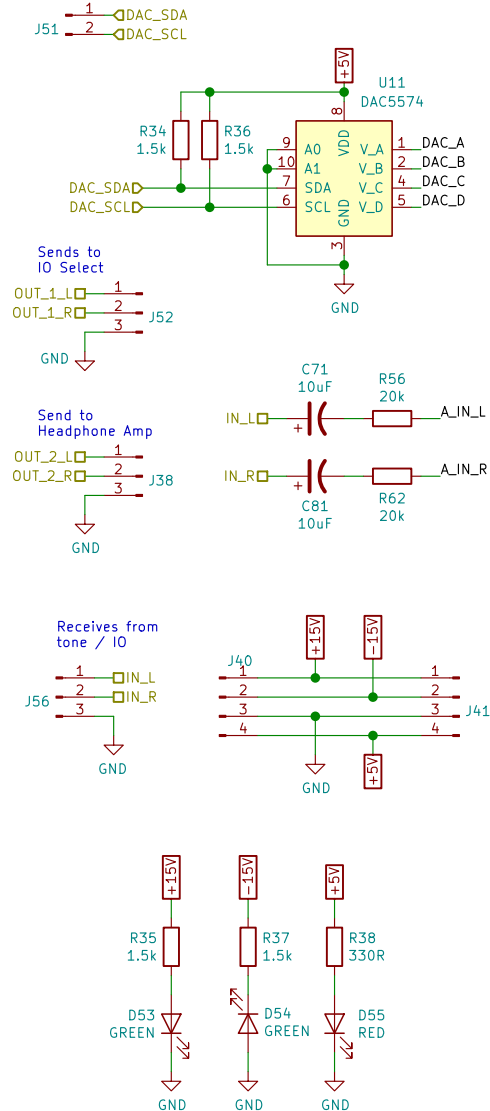


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|---|------------------|
| Author: Jordan Gerber github.com/SlurpyTurts/preamp License: CC BY 4.0 creativecommons.org/licenses/by/4.0/ | |
| Sheet: /input selector/ File: input_selector.sch | |
| Title: IO Relay Select Board | |
| Size: A4 | Date: 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>

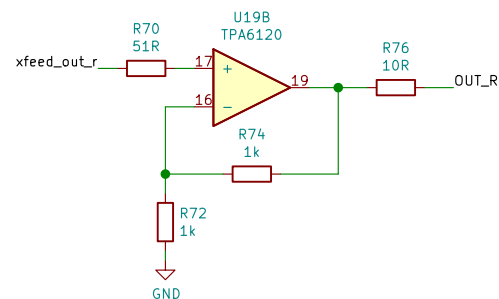
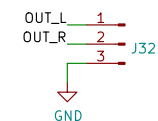
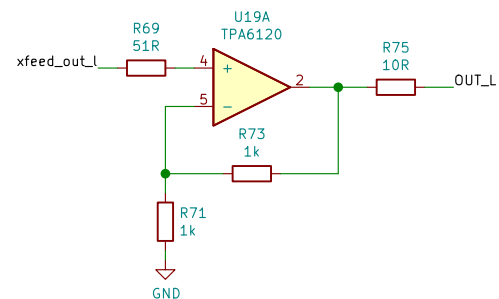
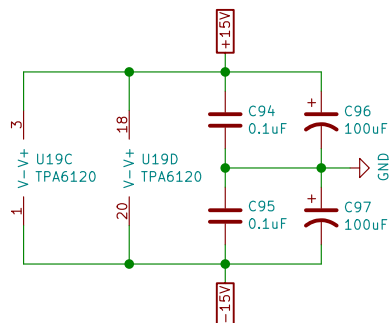
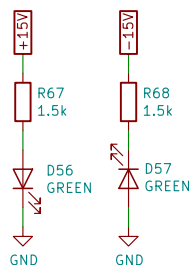
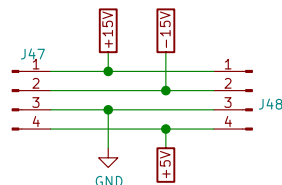
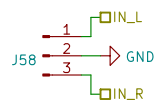
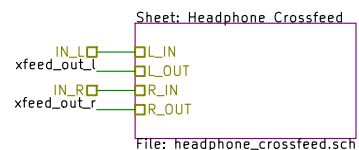
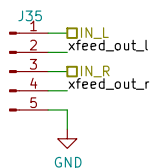
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Sheet: /Volume Control/
 File: volume_ctrl.sch

Title:

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

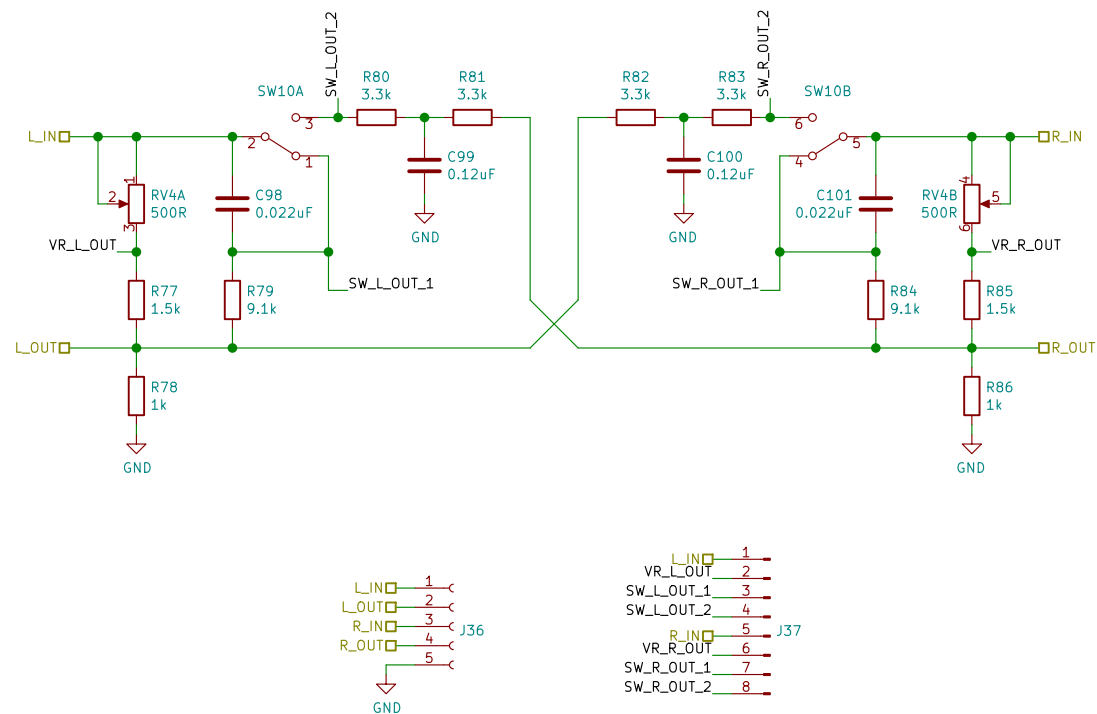
Rev: A00
 Id: 4/11



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



| | | |
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| Author: Jordon Gerber github.com/SlurpyTurts/preamp License: CC BY 4.0 creativecommons.org/licenses/by/4.0/ | | |
| 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: 5/11 |



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Sheet: /headphone amp/Headphone Crossfeed/
 File: headphone_crossfeed.sch

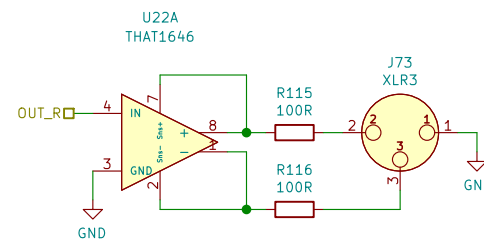
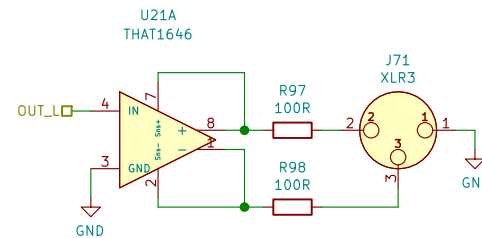
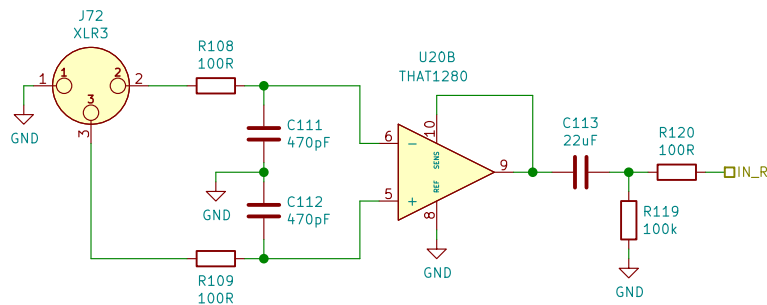
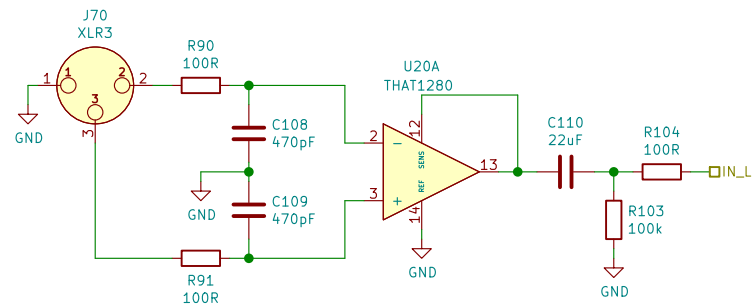
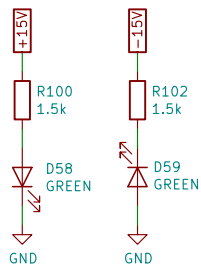
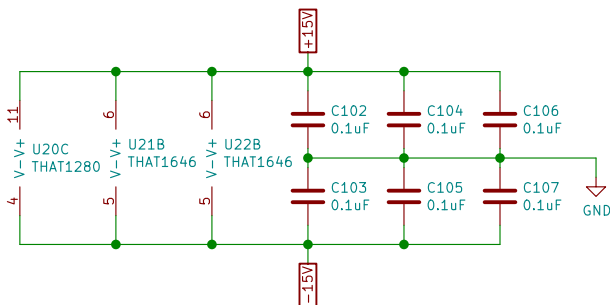
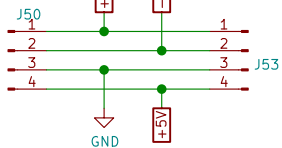
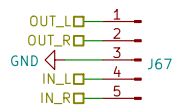
Title: Headphone Crosstalk

Size: A4 Date: 2020-02-25

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Rev: A00

Id: 6/11



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Sheet: /Balanced daughter IO pcb/
File: IO_BALANCED_DAUGHTER.sch

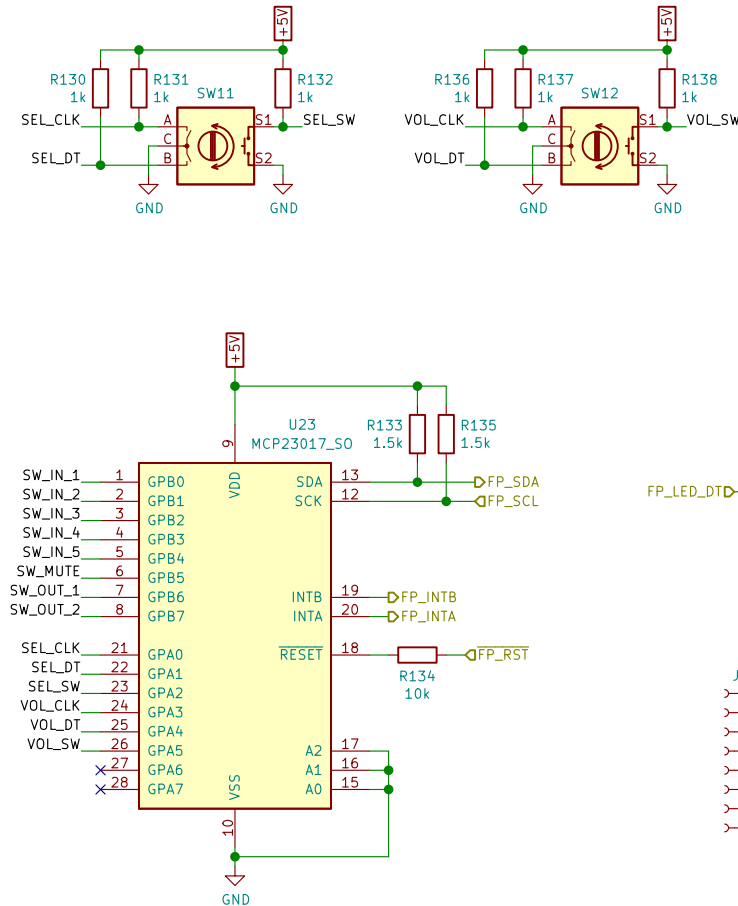
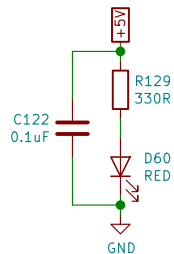
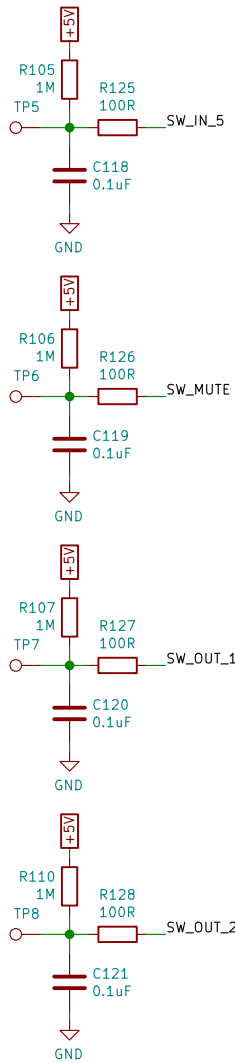
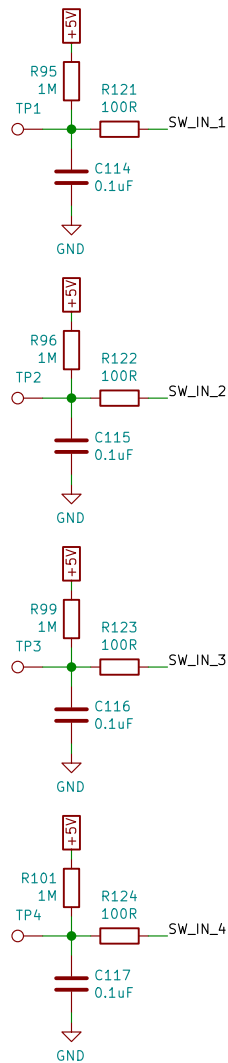
Title: Balanced IO Daughter Board

Size: A4 Date: 2020-02-25

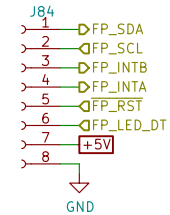
KiCad E.D.A. kicad (5.1.5-0-10_14)

Rev: A00

Id: 7/11



Sheet: sheet5F448428
File: front_panel_LED.sch



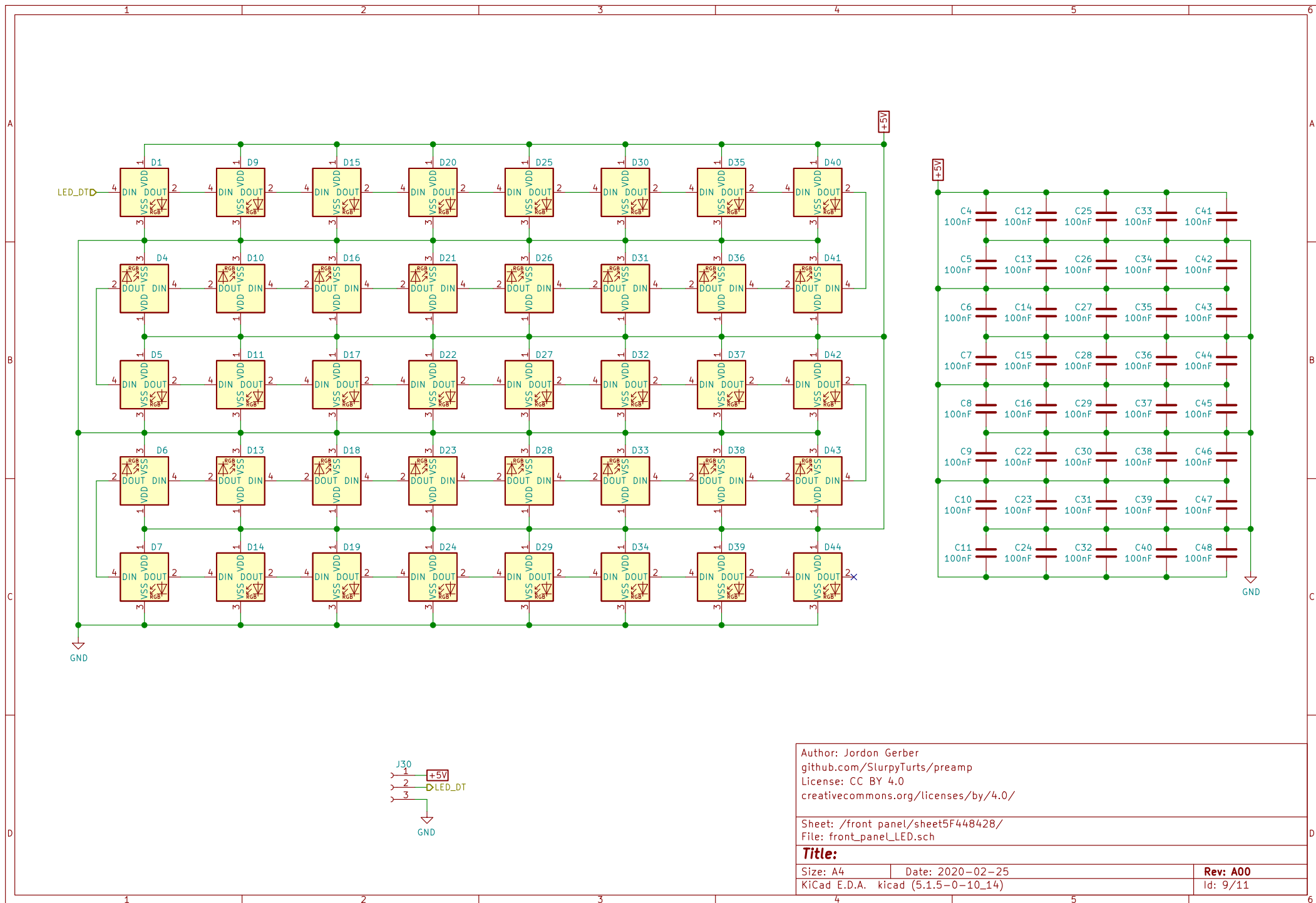
Author: Jordan Gerber
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Sheet: /front panel/
File: front_panel.sch

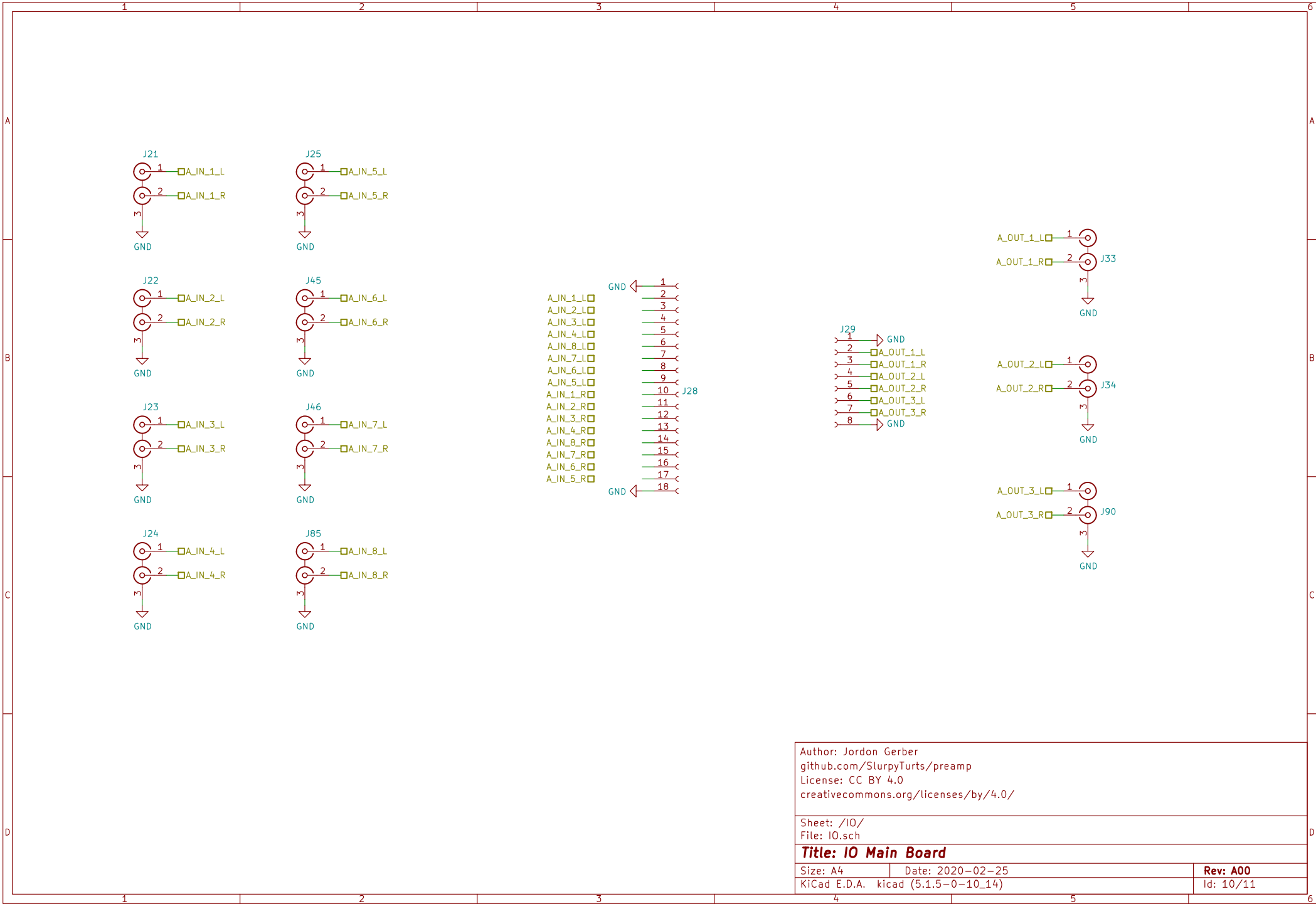
Title: Front Panel

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

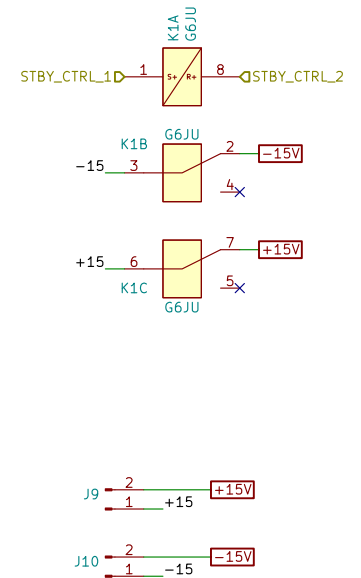
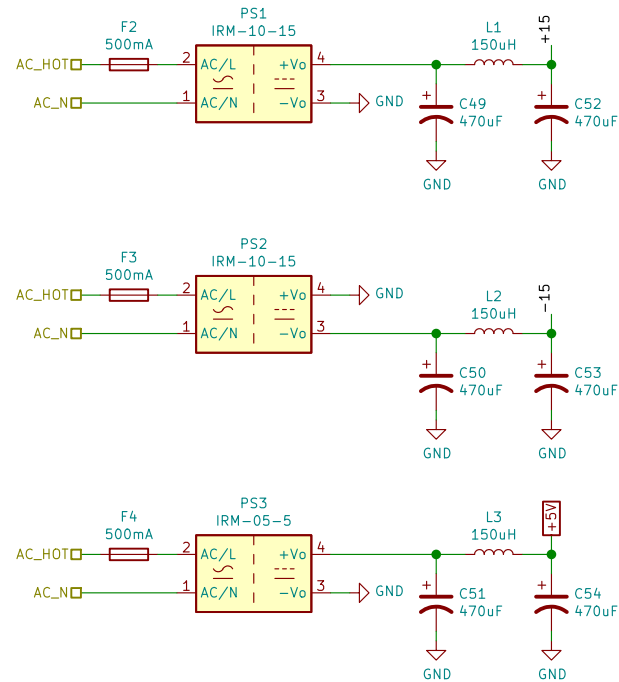
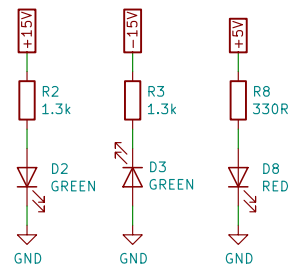
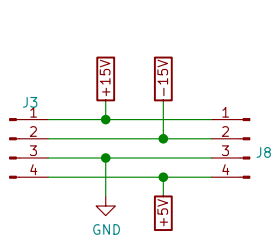
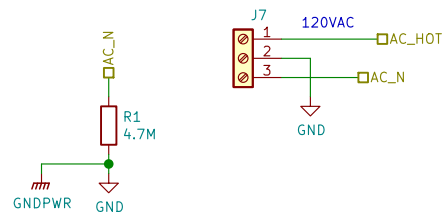
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| Sheet: /front panel/sheet5F448428/ File: front_panel_LED.sch | | |
| Title: | | |
| Size: A4 | Date: 2020-02-25 | Rev: A00 |
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| Sheet: /IO/ File: IO.sch | | |
| Title: IO Main Board | | |
| Size: 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
 KiCad E.D.A. kicad (5.1.5-0-10_14)

Rev: A00
 Id: 11/11