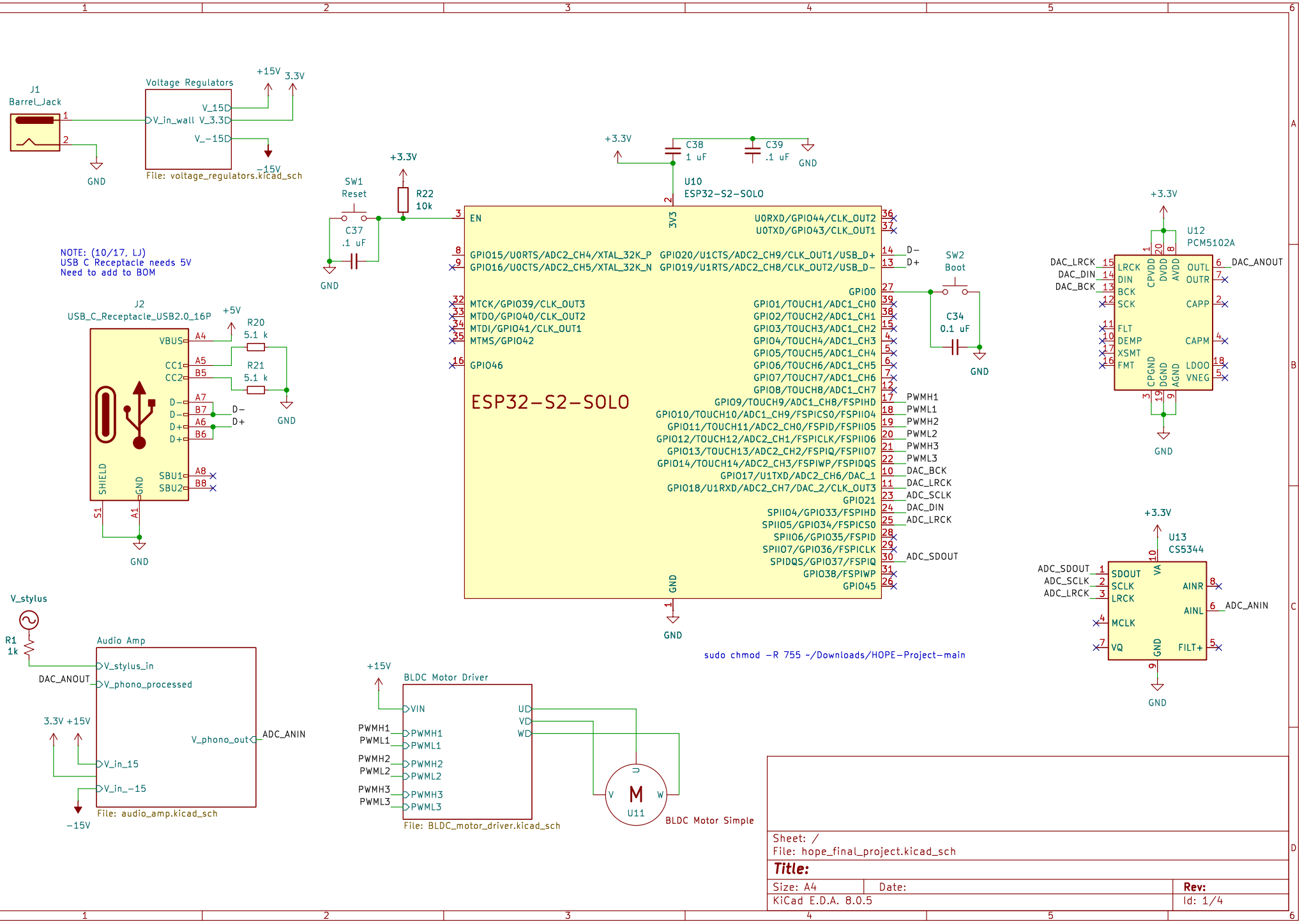
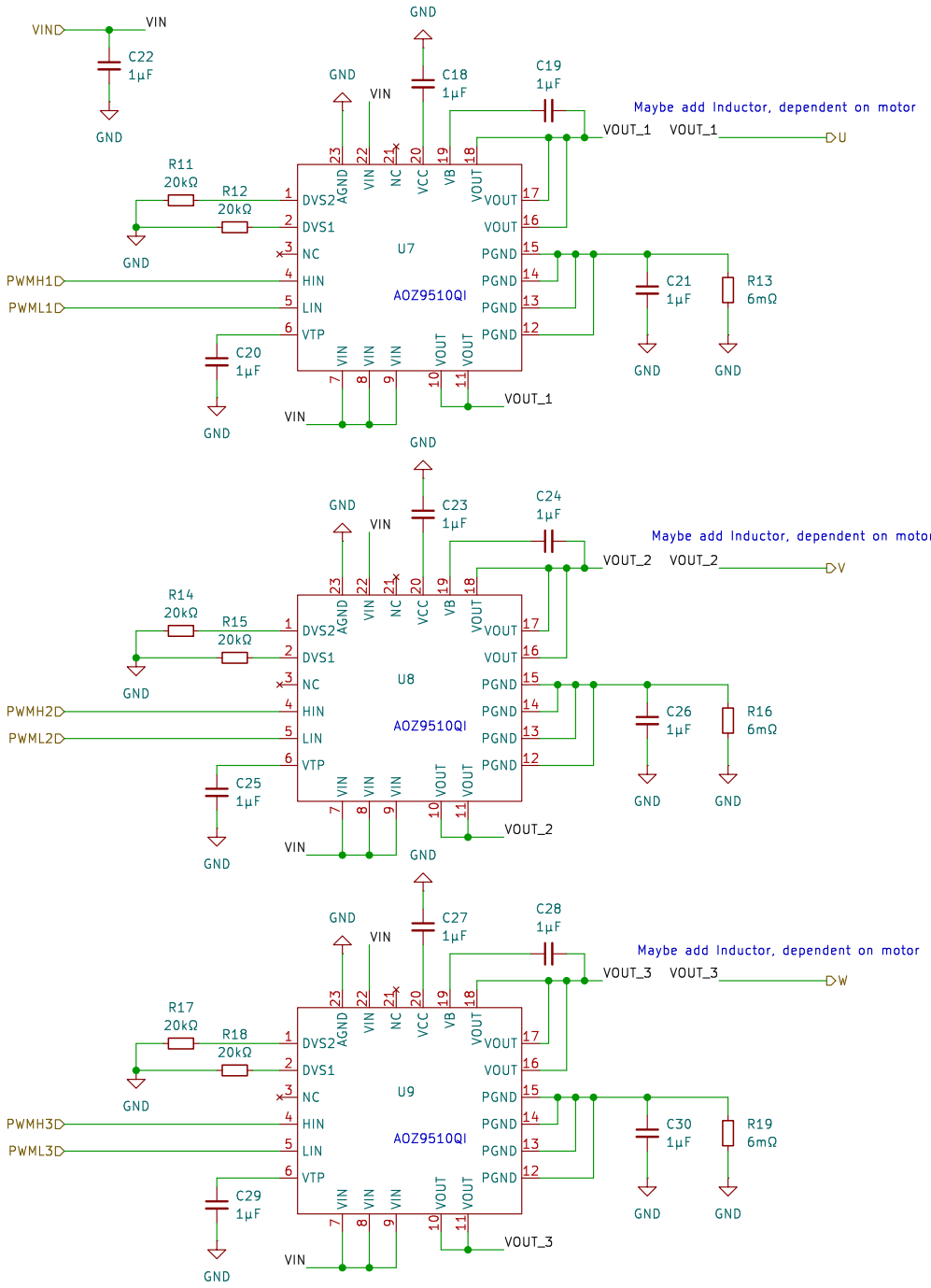

J1
Barrel_Jack
Voltage Regulators
+15V
3.3V
V_15
V_in_wall V_3.3
V_−15
−15V
GND
File: voltage_regulators.kicad_sch
NOTE: (10/17, LJ)
USB C Receptacle needs 5V
Need to add to BOM
J2
USB_C_Receptacle_USB2.0_16P
+5V
R20
5.1 k
R21
5.1 k
VBUS
CC1
CC2
D−
D+
SHIELD
GND
SBU1
SBU2
S1
A1
SW1
Reset
C37
.1 uF
R22
10k
+3.3V
C38
1 uF
C39
.1 uF
U10
ESP32-S2-SOLO
3V3
EN
GPIO15/U0RTS/ADC2_CH4/XTAL_32K_P
GPIO16/U0CTS/ADC2_CH5/XTAL_32K_N
MTCK/GPIO39/CLK_OUT3
MTDO/GPIO40/CLK_OUT2
MTDI/GPIO41/CLK_OUT1
MTMS/GPIO42
GPIO46
U0RXD/GPIO44/CLK_OUT2
U0TXD/GPIO43/CLK_OUT1
GPIO20/U1CTS/ADC2_CH9/CLK_OUT1/USB_D+
GPIO19/U1RTS/ADC2_CH8/CLK_OUT2/USB_D−
GPIO0
GPIO1/TOUCH1/ADC1_CH0
GPIO2/TOUCH2/ADC1_CH1
GPIO3/TOUCH3/ADC1_CH2
GPIO4/TOUCH4/ADC1_CH3
GPIO5/TOUCH5/ADC1_CH4
GPIO6/TOUCH6/ADC1_CH5
GPIO7/TOUCH7/ADC1_CH6
GPIO8/TOUCH8/ADC1_CH7
GPIO9/TOUCH9/ADC1_CH8/FSPIHD
GPIO10/TOUCH10/ADC1_CH9/FSPICS0/FSPII04
GPIO11/TOUCH11/ADC2_CH0/FSPID/FSPII05
GPIO12/TOUCH12/ADC2_CH1/FSPICLK/FSPII06
GPIO13/TOUCH13/ADC2_CH2/FSPIQ/FSPII07
GPIO14/TOUCH14/ADC2_CH3/FSPIWP/FSPIDQS
GPIO17/U1TXD/ADC2_CH6/DAC_1
GPIO18/U1RXD/ADC2_CH7/DAC_2/CLK_OUT3
GPIO21
SPII04/GPIO33/FSPIHD
SPII05/GPIO34/FSPICS0
SPII06/GPIO35/FSPID
SPII07/GPIO36/FSPICLK
SPIDQS/GPIO37/FSPIQ
GPIO38/FSPIWP
GPIO45
ESP32-S2-SOLO
D−
D+
SW2
Boot
C34
0.1 uF
PWMH1
PWML1
PWMH2
PWML2
PWMH3
PWML3
DAC_BCK
DAC_LRCK
ADC_SCLK
DAC_DIN
ADC_LRCK
ADC_SDOUT
sudo chmod −R 755 ~/Downloads/HOPE−Project−main
U12
PCM5102A
DAC_LRCK
DAC_DIN
DAC_BCK
LRCK
DIN
BCK
SCK
FLT
DEMP
XSMT
FMT
CPVDD
DVDD
AVDD
CPGND
DGND
AGND
OUTL
OUTR
CAPP
CAPM
LDOO
VNEG
DAC_ANOUT
U13
CS5344
ADC_SDOUT
ADC_SCLK
ADC_LRCK
SDOUT
SCLK
LRCK
MCLK
VQ
VA
AINR
AINL
FILT+
ADC_ANIN
V_stylus
R1
1k
Audio Amp
V_stylus_in
V_phono_processed
DAC_ANOUT
3.3V +15V
V_phono_out
ADC_ANIN
V_in_15
V_in_−15
−15V
File: audio_amp.kicad_sch
BLDC Motor Driver
VIN
UD
VD
WD
PWMH1
PWML1
PWMH2
PWML2
PWMH3
PWML3
File: BLDC_motor_driver.kicad_sch
M
U11
V
W
BLDC Motor Simple
Sheet: /
File: hope_final_project.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. 8.0.5
Id: 1/4




NOTE:
20, VCC, Supply input for analog functions.
Bypass VCC to AGND with a 0.1uF~10uF ceramic capacitor and as close to VCC pin as possible. (page 3)

NOTE:
12, 13, 14, 15 PGND Power ground.
Reserved one 0603 X7R ceramic capacitor (0.1uF~1uF) between PGND and AGND is needed. (page 3)

NOTE:
Making a guess on R10 PGND to GND resistor.
RL_ON VOUT-PGND RON VIN= 12V, LIN= 5V, PGND= 0, VOUT= 1A 6 mΩ
(page 5)

NOTE: Assuming no difference between AGND V. PGND

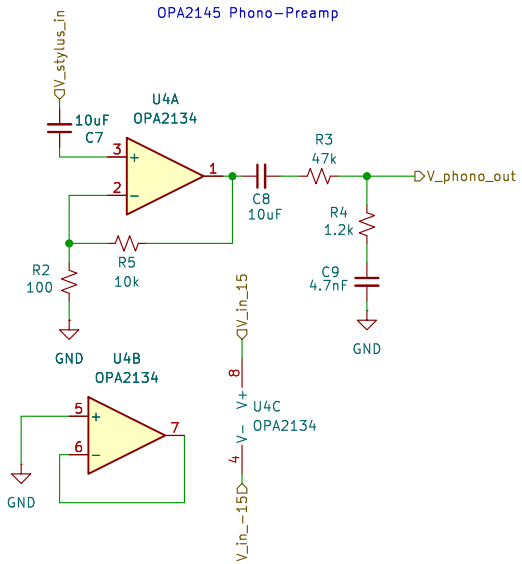
NOTE: 1µF decoupling capacitor value is a GUESS!

NOTE:
No idea if the inductor that is serial to VOUT is needed.
May depend on specific motor used, check link!

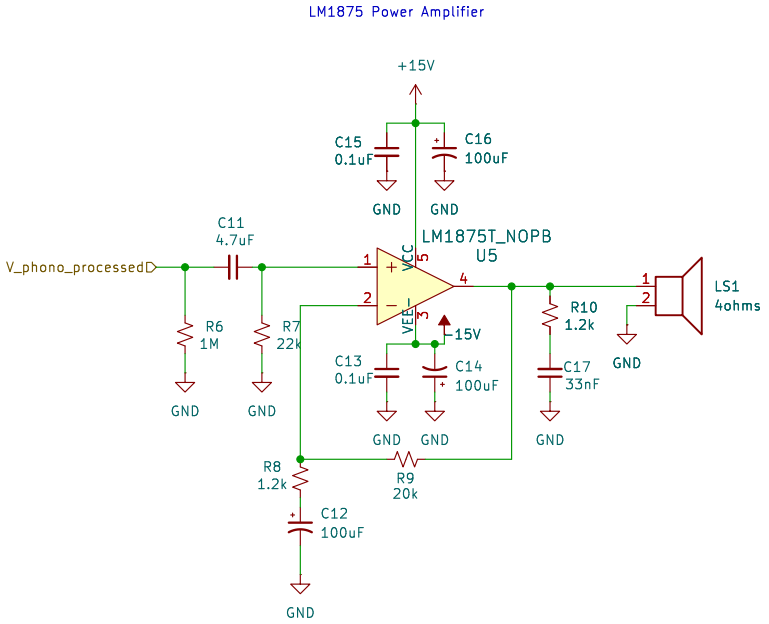
Sheet: /BLDC Motor Driver/
File: BLDC_motor_driver.kicad_sch

**Title:**

| Size: A4 | Date: | **Rev:** |
|---|---|---|
| KiCad E.D.A. 8.0.5 | | Id: 2/4 |



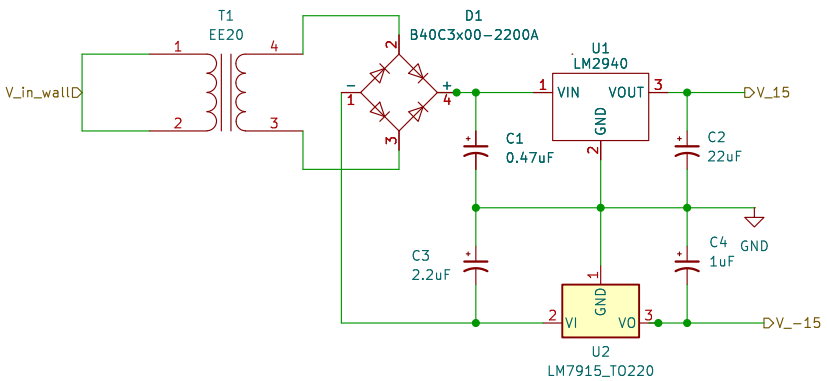

Notes: Phono–Preamp takes a 1–5mV signal from the stylus, and amplifies it to a 0.1–0.5V signal for the power amplifier. The gain is 1 + 10k/100 = 101.



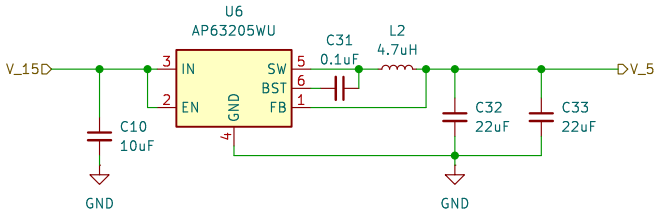

Notes: Power Amplifier takes 0.1–0.5V signal from the Phono–Preamp and amplifies it to a voltage for the speaker.

| | | |
|---|---|---|
| Sheet: /Audio Amp/<br>File: audio_amp.kicad_sch | | |
| **Title:** | | |
| Size: A4 | Date: | **Rev:** |
| KiCad E.D.A. 8.0.5 | | Id: 3/4 |

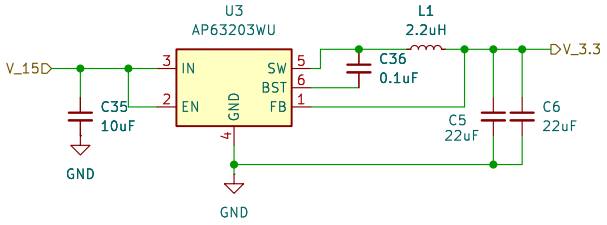
120V_AC to 15V_DC Voltage Regulator




15V_DC to 5V_DC Voltage Regulator




5V_DC to 3.3V_DC Voltage Regulator

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| Sheet: /Voltage Regulators/ | | |
| File: voltage_regulators.kicad_sch | | |
| **Title:** | | |
| Size: A4 | Date: | **Rev:** |
| KiCad E.D.A. 8.0.5 | | Id: 4/4 |