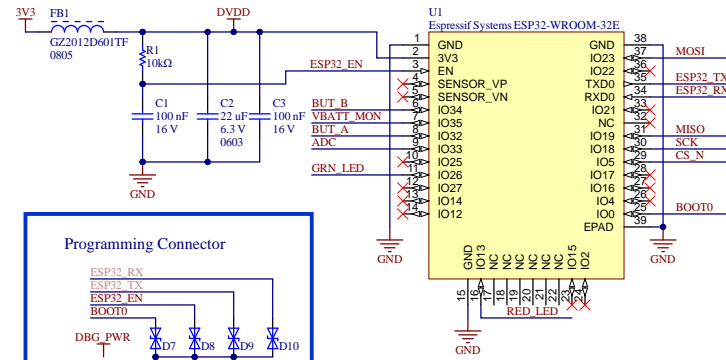
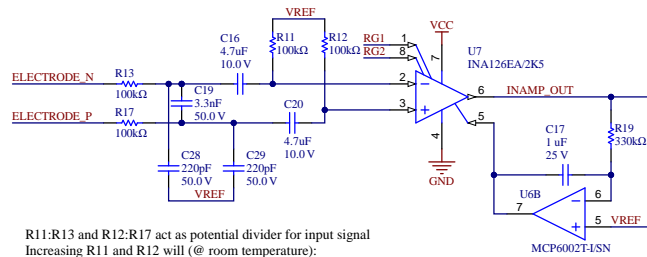


All passive components are 0402 unless specified
Resistor tolerance = 1%, Capacitor tolerance = 10%

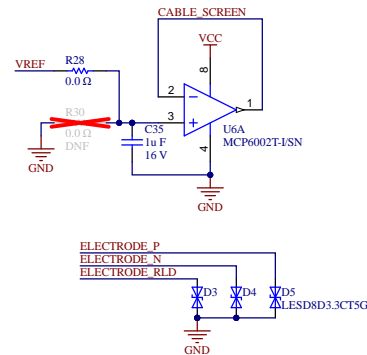
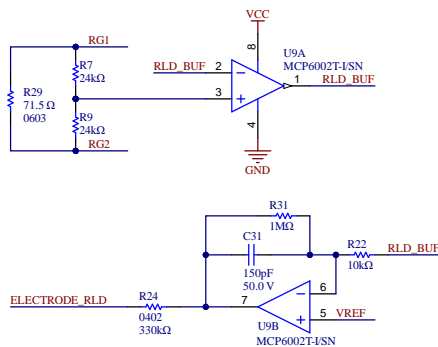


Gain = $5 + 80k / R_G$
 $R_G = 71.5 \text{ ohm}$, Gain = 1120
Input High-pass filter $f_c = 0.34 \text{ Hz}$
INAMP High-pass filter $f_c = 0.48 \text{ Hz}$
RFI Low-pass filter $f_{c_diff} = 233 \text{ Hz}$
RFI Low-pass filter $f_{c_cm} = 7.2 \text{ kHz}$

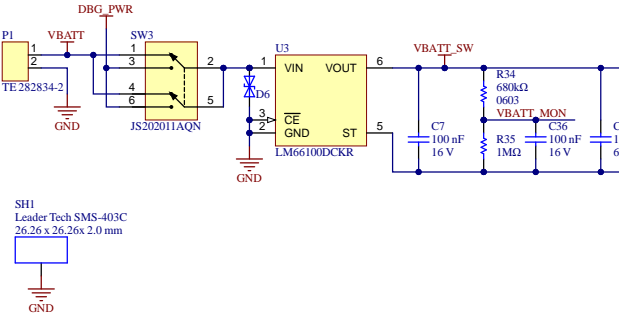
Third order Hourglass low-pass filter
 $Q = 2.17$, $F_c = 37.4 \text{ Hz}$, $F_n = 50 \text{ Hz}$
50 Hz Rejection:
Min = 17 dB, Nom = 35 dB, Max = 55 dB



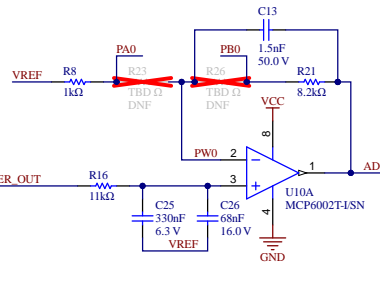
R11:R13 and R12:R17 act as potential divider for input signal
Increasing R11 and R12 will (@ room temperature):
- Reduce signal ratio at INAMP input (50% @ 100 kOhm, 76.7% @ 330 kOhm)
- Increase thermal noise ($32nV/Hz^{1/2}$ @ 100 kOhm, $42nV/Hz^{1/2}$ @ 330 kOhm)
- Increase DC offset at INAMP output due to R11/R12 mismatch



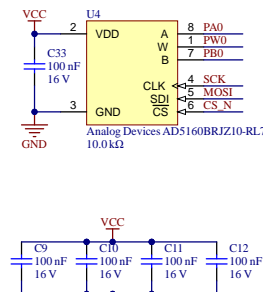
LM66100 Ideal Diode with input polarity protection
Input voltage range: 1.5 V to 5.5 V
Maximum continuous current $I_{max} = 1.5 \text{ A}$
79 mOhm @ 5 V, 91 mOhm @ 3.6 V, 141 mOhm @ 1.8 V



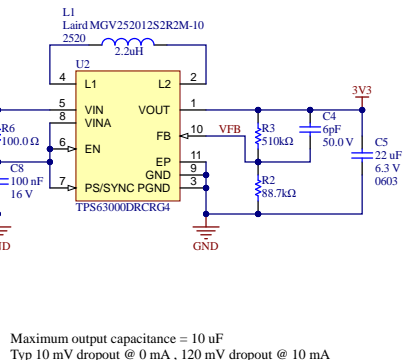
Gain = 1.745 - 19.2 where DigiPot D = 0 - 255
Feedback low-pass $f_c = 12.9 \text{ kHz}$ - 5.8 kHz
Input low-pass $f_c = 36.35 \text{ Hz}$



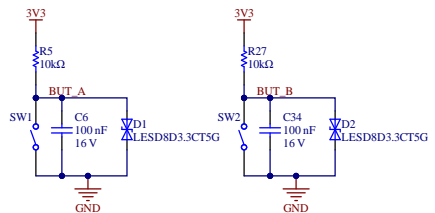
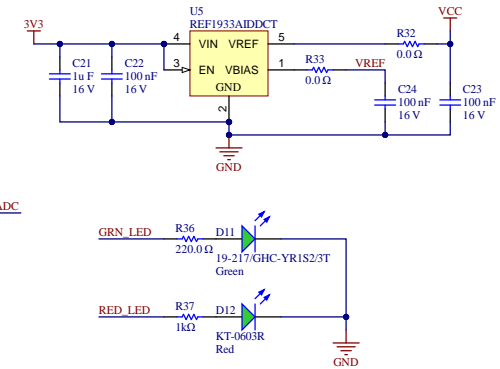
$R_{WA}(D) = ((256 - D) / 256) * 10k\text{ohm} + R_w$
 $R_{WB}(D) = (D / 256) * 10k\text{ohm} + R_w$
 $R_w = 50 \text{ ohm}$ (Nom.), 120 ohm (Max)
SPI = 25 MHz max





VFB = 495 - 505 mV for TPS63000
Input voltage range: 1.8 V to 5.5 V
Efficiency: 70+% @ 1mA - 10 mA, 90+% @ 100+mA



Maximum output capacitance = 10 uF
Typ 10 mV dropout @ 0 mA, 120 mV dropout @ 10 mA



PROJECT			
World Wide Mind			
PROJECT REVISION: 03	DOCUMENT REVISION: B	DATE: 19/05/2021	
TITLE			
Single Channel Monitor			
SIZE	FILE NAME	REV	
B	main.SchDoc	A	
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