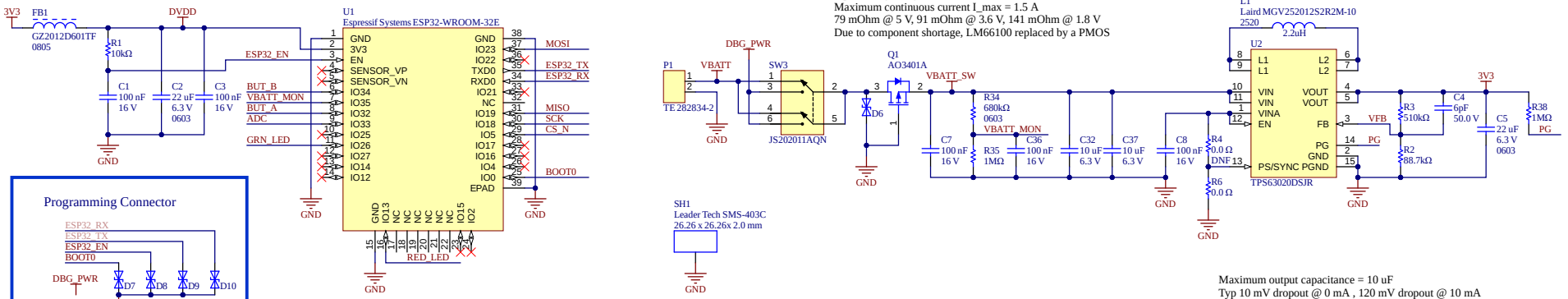
All passive components are 0402 unless specified
Resistor tolerance = 1%, Capacitor tolerance = 10%

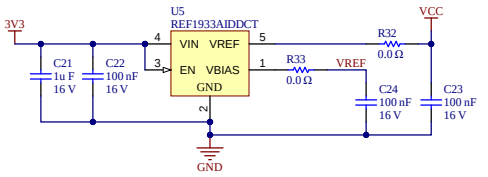


LM66100 Ideal Diode with input polarity protection
Input voltage range: 1.5 V to 5.5 V
Maximum continuous current I_max = 1.5 A
79 mOhm @ 5 V, 91 mOhm @ 3.6 V, 141 mOhm @ 1.8 V
Due to component shortage, LM66100 replaced by a PMOS

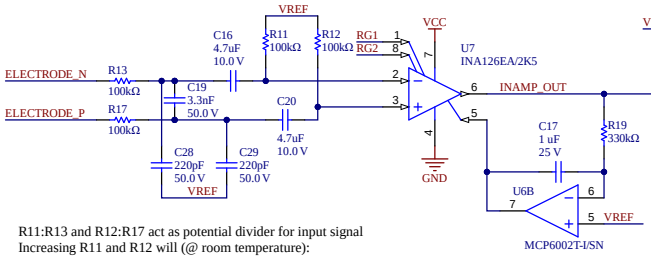
VFB = 495 - 505 mV
Input voltage range: 1.8 V to 5.5 V
Efficiency: 80+% @ 10 mA, 90+% @ 100+mA
Vout = 3.375 V
PS/SYNC: Low = Enable power saving mode, High = Disable power saving mode

SH1
Leader Tech SMS-403C
26.26 x 26.26x 2.0 mm

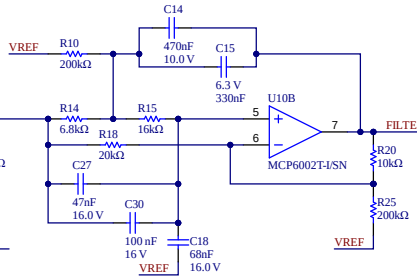
Maximum output capacitance = 10 uF
Typ 10 mV dropout @ 0 mA , 120 mV dropout @ 10 mA



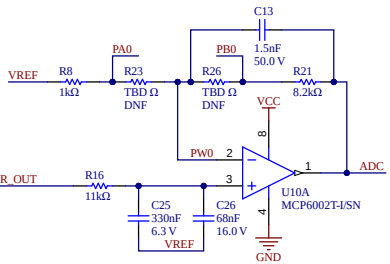
Gain = 5 + 80k / R_G
R_G = 71.5 ohm, Gain = 1120
Input High-pass filter fc = 0.34 Hz
INAMP High-pass filter fc = 0.48 Hz
RFI Low-pass filter fc_diff = 233 Hz
RFI Low-pass filter fc_cm = 7.2 kHz

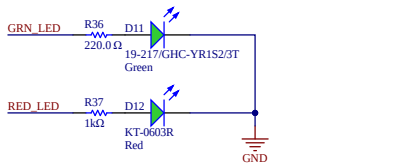


Third order Hourglass low-pass filter
Q = 2.17, Fc = 37.4 Hz, Fn = 50 Hz
50 Hz Rejection:
Min = 17 dB, Nom = 35 dB, Max = 55 dB

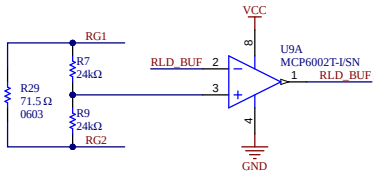


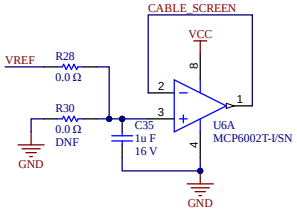
Gain = 1.745 - 19.2 where DigiPot D = 0 - 255
Feedback low-pass fc = 12.9 kHz - 5.8 kHz
Input low-pass fc = 36.35 Hz



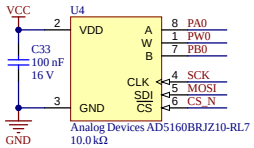


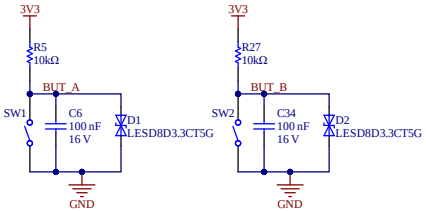
R11:R13 and R12:R17 act as potential divider for input signal
Increasing R11 and R12 will (@ room temperature):
- Reduce signal ratio at INAMP input (50% @ 100 kOhm, 76.7% @ 330 kOhm)
- Increase thermal noise (32nV/Hz^1/2 @ 100 kOhm, 42nV/Hz^1/2 @ 330 kOhm)
- Increase DC offset at INAMP output due to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

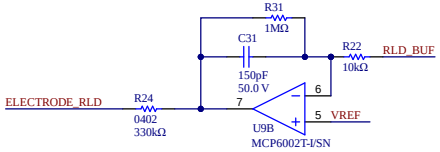


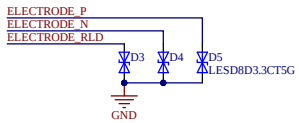


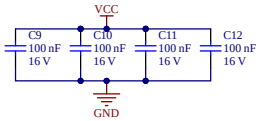
R_WA(D) = ((256 - D) / 256) * 10kohm + Rw
R_WB(D) = (D/ 256) * 10kohm + Rw
Rw: 50 ohm (Nom.), 120 ohm (Max)
SPI = 25 MHz max











PROJECT: World Wide Mind	Imperial College NGNI London	
PROJECT REVISION: 03	DOCUMENT REVISION: A	DATE: 22/05/2021
TITLE: Single Channel Monitor		
SIZE: B	FILE NAME: main.SchDoc	REV: B
Drawn by: Steven Wong	SHEET 1 OF 1	