Instrumentation amplifier (Gain: x11)

ampRef

C1 100pF

R1 1K — bioIN− — inaIN−

C2 1nF

R2 1K — bioIN+ — inaIN+

C3 100pF

ampRef

R8 10k

R7 100k — ampRef

2 − Amp U1A 1
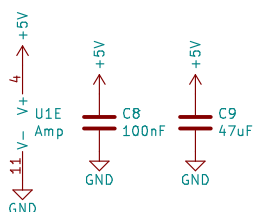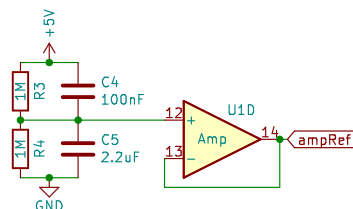3 + inaIN−

R9 10k

6 − Amp U1B 7 — inaOUT
5 + inaIN+

R10 100k

Mounting holes

H4 MountingHole   H8 MountingHole

H2 MountingHole   H6 MountingHole   H10 MountingHole

H1 MountingHole   H5 MountingHole   H9 MountingHole

H3 MountingHole   H7 MountingHole
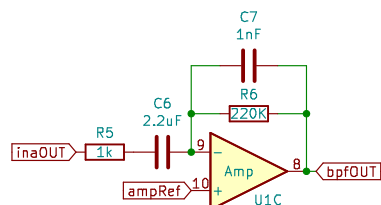
BandPass filter 72Hz − 720Hz (Gain: x220)

C7 1nF

C6 2.2uF

R6 220K

R5 1k — inaOUT

9 − Amp U1C 8 — bpfOUT
10 + ampRef

BioAmp Connectors

+5V

J1
1
2
3 — bpfOUT

GND

J3 BioAmp_input
1 — bioIN−
2 — bioIN+
3 — ampRef

Power supply

+5V

R3 1M
C4 100nF

R4 1M
C5 2.2uF

12 + Amp U1D 14 — ampRef
13 −

GND

+5V

11 V− 4 V+ +5V
U1E Amp

C8 100nF

C9 47uF

GND   GND   GND
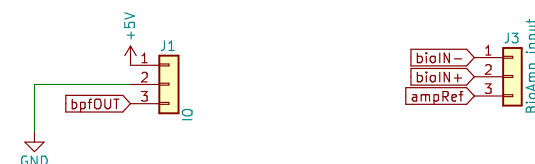
Neuroscience for all
Innovate with India

Candy size ElectroMyoGraphy (EMG) sensor
Quad OpAmp based BioAmp design
Gain: x2420
BandPass: 72 − 720 Hz
Upside Down Labs
Sheet: /
File: EMG−Candy.kicad_sch

Title: Muscle BioAmp Candy

Size: A4   Date: 2022−11−30   **Rev: v0.3**
KiCad E.D.A. eeschema 6.0.9−1.fc36   Id: 1/1

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