**Head-mounted EMG and EEG Preamplifier**

(Alpha 1c, 2018)

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| --- | --- | --- | --- | --- |
| **Name** | **Value** | **Package** | **Description** | **Part Number** |
| C1, C2 | .033 uF | 0805 | Input LP filter (diff channel) |  |
| C7, C8, C11, C12 | .1 uF | 0805 | Input LP filter (common channels) |  |
| C3, C5, C9, C10, C13, C14 | .1 uF | 0805 | Supply bypass caps |  |
| C4, C6 | 10 uF | 0805 | Supply bypass caps |  |
|  |  |  |  |  |
|  |  |  |  |  |
| RG1, RG2, RG3 | 499 | 0805 | Gain resistor |  |
| R1-R6 | 1.5M | 0805 | LP filter resistor |  |
|  |  |  |  |  |
| IC1-IC3 |  | SOIC8 | Instrumentation amplifier | AD8221 |
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**HP Filter**

Capacitors should be low leakage e.g. film

**EMG:** 1.5M and .01 uF (10.6 Hz cutoff)

**EEG:** 1.5M and .22uF (.48 Hz cutoff)

**Version History:**

**Alpha 1a** (Fabbed 2018)

**Alpha 1b** (Fabbed 2018)

1. Enlarged holes for millmax connector
2. Realized there is an error. IC3 was not connected to V-