

**Senior Design 2018/2019**

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Engineering Analysis & RRP

10/17/2018



Deliverable: Engineering Analysis & Proposed RRP – REVISED

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### **Engineering Analysis**

- Heat Transfer Analysis – The enclosure will need to be analyzed to ensure that it will withstand the expected amount of heat that will be generated.
- Power Consumption – Compute maximum power consumption for microcontroller and electrodes. Accurate analysis depends on knowing processor speed for the microcontroller and current draw for the electrodes.

### **RRP**

**Electrical:** Electromyography (EMG): In order to succeed we must be able to sense muscle movement and condition the signal for accurate detection. We have not previously integrated electrodes with a PSoC microcontroller nor are we familiar with EMG. **For the RRP we propose to build an EMG circuit in order to determine how much muscle movement is detected.**

**Electrical:** Data Processing and Reporting: Like our concerns with EMG, successful detection depends on being able to process the signals sent by the electrodes as quickly as possible in order to ensure accurate results. **For the RRP, we plan to build a basic algorithm that can process the incoming data and output a correct result.**