General Notes on Component Selection

This document is intended to provide guidance on why specific components were used (or not used). In many cases, components were chosen to match early designs which seemed to work well, or were simply a component which was part of in-house stock.

Gen 1

- PSA: The headers and sockets for the PSA were chosen to closely match the height of the CC2300 battery. Alternative headers and sockets may be used, but may require additional support for the battery to fit correctly, and will require adjustment to the panel cutouts for the battery/switch/LED.
- PSA: 100mil spacing connectors were chosen as they are inexpensive, provide a solid mechanical connection, and are easy to work with when troubleshooting or developing new modules.
- HFModule: The OPA2836 in the was chosen as it has a high frequency response, but does not require large power rails and is relatively low power
- HFModule: 0.1uF capacitors must be used for the bypass capacitors on the op-amps.
    - 0.01uF capacitors were used once and allowed significant high frequency noise into the circuit.
- PressureModule: AD620 gain resistor selected for as it was the lowest tolerance for ceramic resistor that was commonly in stock for a “typical” distributor
- PSA: Axial lead inductors are placed in-line with all ECG and IBP signals to reduce RF interference. This is especially important on the IBP signals when using a longer cable to the transducer. During development, we initially tried phenolic (non-magnetic) inductors, which are generally preferred in MRI coil development. The phenolic proved ineffective at reducing RF interference and were replaced with the current epoxy molded inductors which are common in non-MRI electronics. The epoxy molded inductors are clearly magnetic, but are very effective in removing RF interference from the cabling.