Power Supply Module

The power module consists of a battery and voltage regulator to power all device components. The device battery was chosen according to the specifications suggested in the Power Calculations section. Namely, a battery capacity of 1538mAh was required to meet the 1,000 measurements per charge specification. Thus, the *Sparkfun Polymer Lithium Ion Battery* was chosen, which has a capacity of 2000mAh and nominal voltage of 3.7V, all contained within approximately 0.25x2.1x2.4 inches. Because the device components were chosen with an operating voltage of 3V in mind (and the power calculations were done assuming a 3V operating voltage), a voltage regulator was necessary to constrain the voltage input to 3V. Additionally, a voltage regulator would help maintain consistency of device operation. The *Sparkfun Low Drop Fixed and Adjustable Positive Voltage Regulator* was chosen, which has a configurable output voltage of 3V and an input voltage of up to 15V—and can thus handle the 3.7V input from the lithium ion battery.