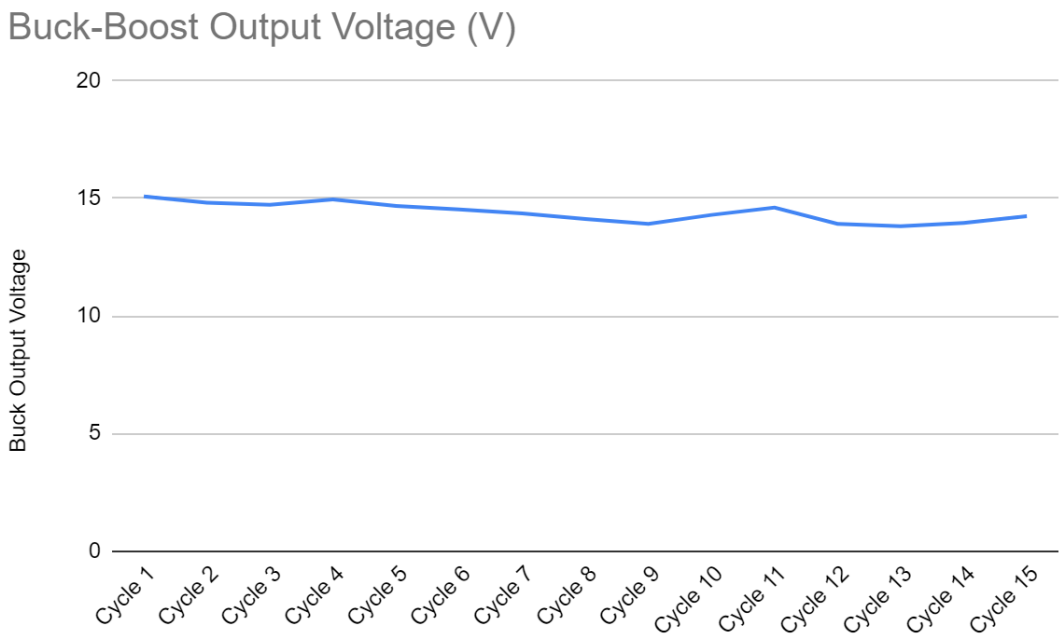
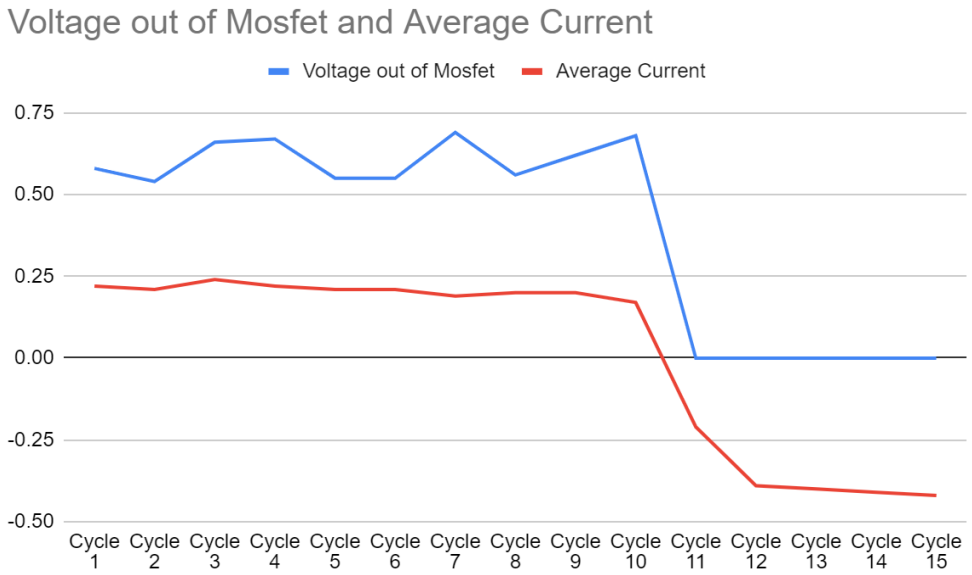
Figure 1: Buck-Boost Output Voltage



This graph shows how the voltage of the buck-boost converter is unchanged when the battery charging is stopped at Cycle 10. The Mosfet is turned off and current is stopped from flowing through the pcb.

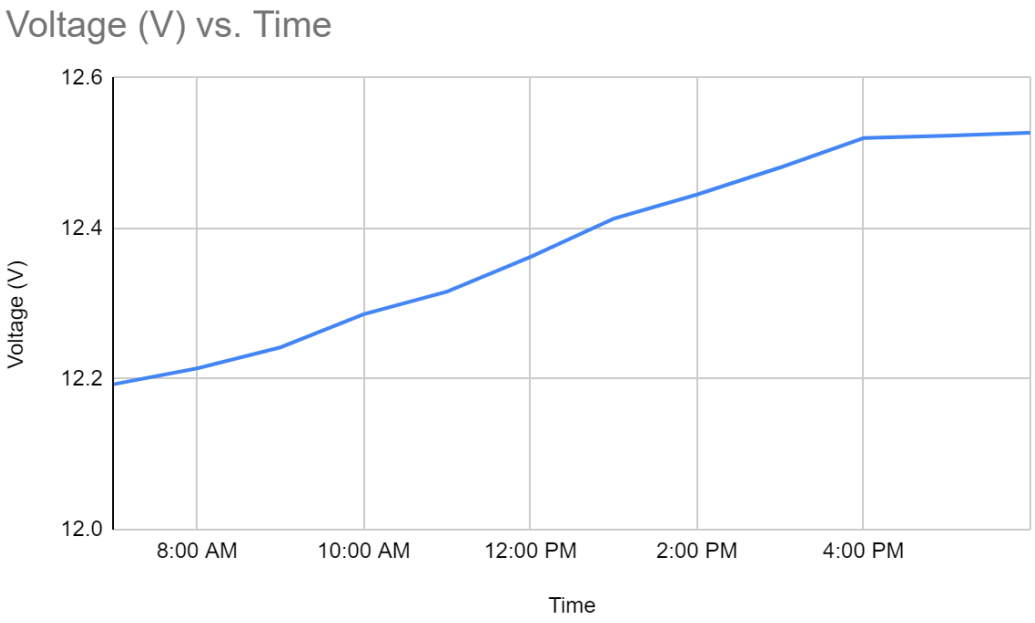
Figure 2: Current through Battery Charger and Voltage Across Mosfet



This graph shows how once the mosfet is turned off, the current through the battery charger is stopped from flowing in the positive direction charging the battery. The current

actually shows a negative value because it is connected to a battery and the polarity is then flipped. This is also shown by the voltage across the mosfet decreasing to 0 V showing there is no longer a voltage drop across the mosfet which happens when no current flows through it.

Figure 3: Buck-Boost Output Voltage



This graph shows how the voltage of the battery is increased as the day passes. The battery started at around 48% charged and rose to roughly 82% charged. When the battery is least charged it is expected that the voltage will increase the fastest. However, due to the rising level of the sun throughout the morning it led to a faster charge in the middle of the day even though the battery was more fully charged. Toward the end of the day when the battery was both well charged and the sun began to set, the rate at which the batteries voltage increased began to plateau.

Unfortunately, due to the lack of working motors for our system we were unable to verify the differences in a stationary vs a dual axis design.