**Vehicle Power Usage Memo for: Team Panama City Beach**

*To: Dr. Simoni*

*From: Aliya Gosdin, Abel Keeley, Isabel Wilson, Logan Bryant*

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*Email:* [*gosdinas@rose-hulman.edu*](mailto:gosdinas@rose-hulman.edu)*,* [*keeleya@rose-hulman.edu*](mailto:keeleya@rose-hulman.edu)*,* [*wilsonic@rose-hulman.edu*](mailto:wilsonic@rose-hulman.edu)*,* [*bryantlj@rose-hulman.edu*](mailto:bryantlj@rose-hulman.edu)

*Submitted and verified by:*

**2-Minute run around Oval Track:**

*Figure 1*

*Figure 2*

*Figure 3*

|  |  |  |
| --- | --- | --- |
|  | Average | Max |
| shunt V (mV) | 70.59608 | 168.41 |
| current (mA) | 706.0485 | 1618 |
| power (mW) | 5619.823 | 12848 |

*Table 1*

The vehicle data was taken for a two-minute constant speed run with the motor written to 65. The maximum power draw at a single time was 12.848 Watts with an average of 5.619 Watts. Over a full two minutes at the average the vehicle will draw approximately 675 Watts of power.

**2-Minute run around Figure 8 Track:**

*Figure 4*

*Figure 5*

*Figure 6*

|  |  |  |
| --- | --- | --- |
|  | Average | Max |
| shunt V (mV) | 82.74908 | 152.42 |
| current (mA) | 824.6786 | 1464.6 |
| power (mW) | 6356.034 | 11138 |

*Table 2*

The vehicle data was taken for a two-minute constant speed run with the motor written to 65. The maximum power draw at a single time was 11.138 Watts with an average of 6.356 Watts. A two-minute run at the average power draw will draw approximately 763 Watts.

Given these power draws we believed that the power will supply power for a complete two-minute run. Our power supply is simulated to drop to 6.6V after a constant 1 Amp draw, which is in working spec of supplying power to the buck boost converter.