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Objectives

- Create an electric autonomous lawnmower.
- Provide a mow time of one hour per charge
- Mow one acre per day.
- Can navigate a path with minimal error
- Can avoid obstacles with minimal error

Specifications

Mass [kg]	25.4
Power [W]	46.67
Top Speed [mph]	1.5 to 2.0
Max Incline [deg]	25
Accuracy [cm]	~ 3

System Overview

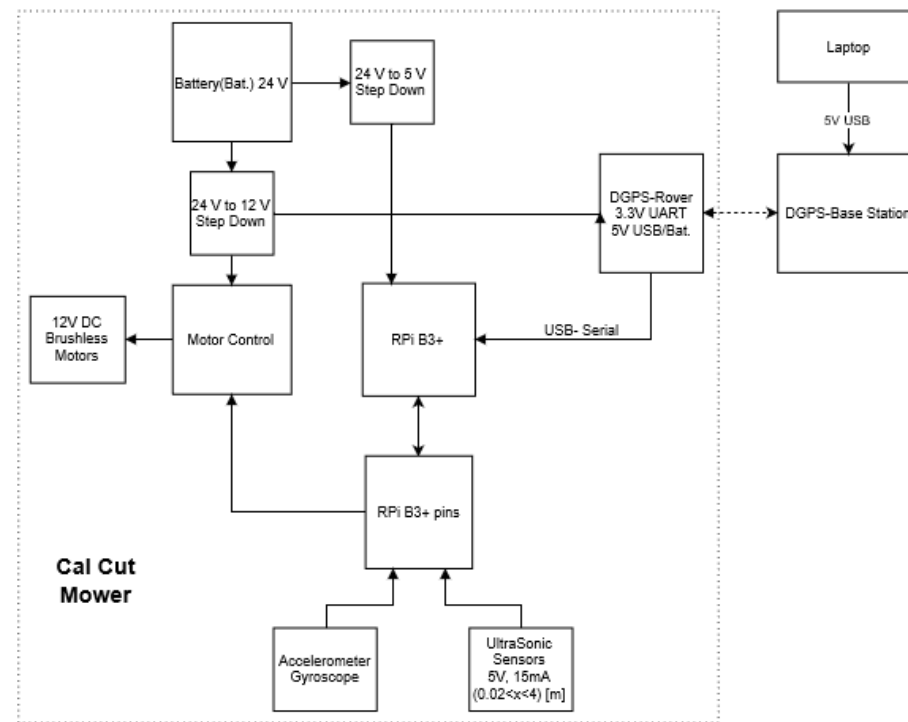
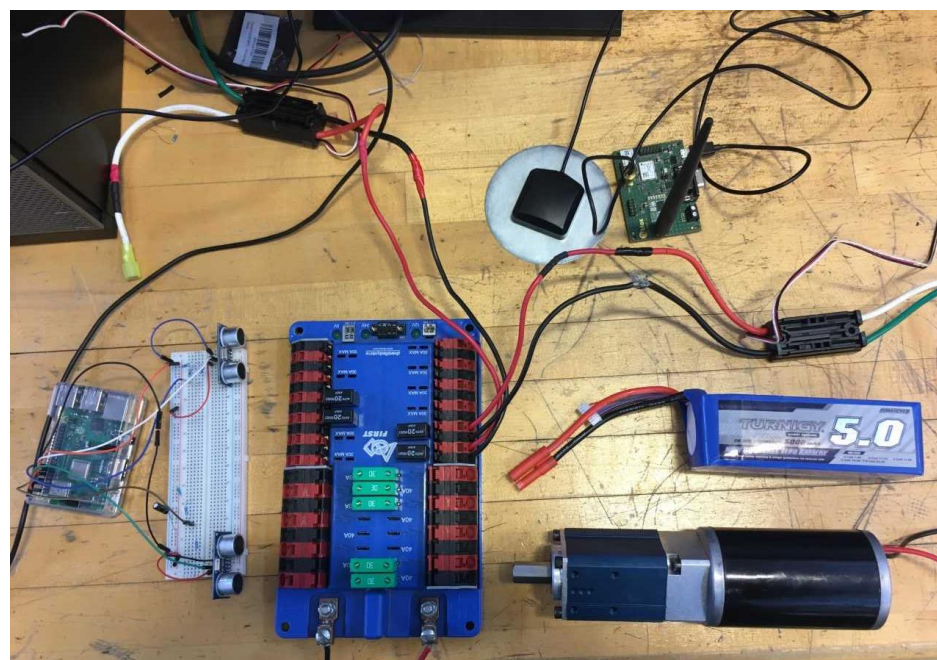


Figure 1. High Level System Diagram

The micro-controller will control the speed of the electric motors using PWM, according to data from the sensors and DGPS.



Cal Cut Frame



Design Concept

- Differential GPS for centimeter precision
- To avoid stationary/fixed obstacles, ultrasonic sensors are used
- To sense if the mower has been flipped, an Accelerometer/Gyroscope is used to kill the operation of the blade.