



Flying Flashlight: May 1738

Statement of Purpose:

The purpose behind the Flying Flashlight is to provide a portable lighting system that allows a hands-free experience while providing uninterrupted lighting for an extended period of time.



Project Overview

Roadside emergencies necessitate a method of signaling emergency responders. Often, these methods include hazard lights on a vehicle, or road flares.

The Flying Flashlight aims to provide an additional method of signaling, by creating a flying lighting device. The Flying Flashlight can be programmed to flash a variety of different patterns, in order to alert other drivers and emergency personnel to hazards ahead.

Quadcopter

Developing a stable platform for hands-free control and flight.

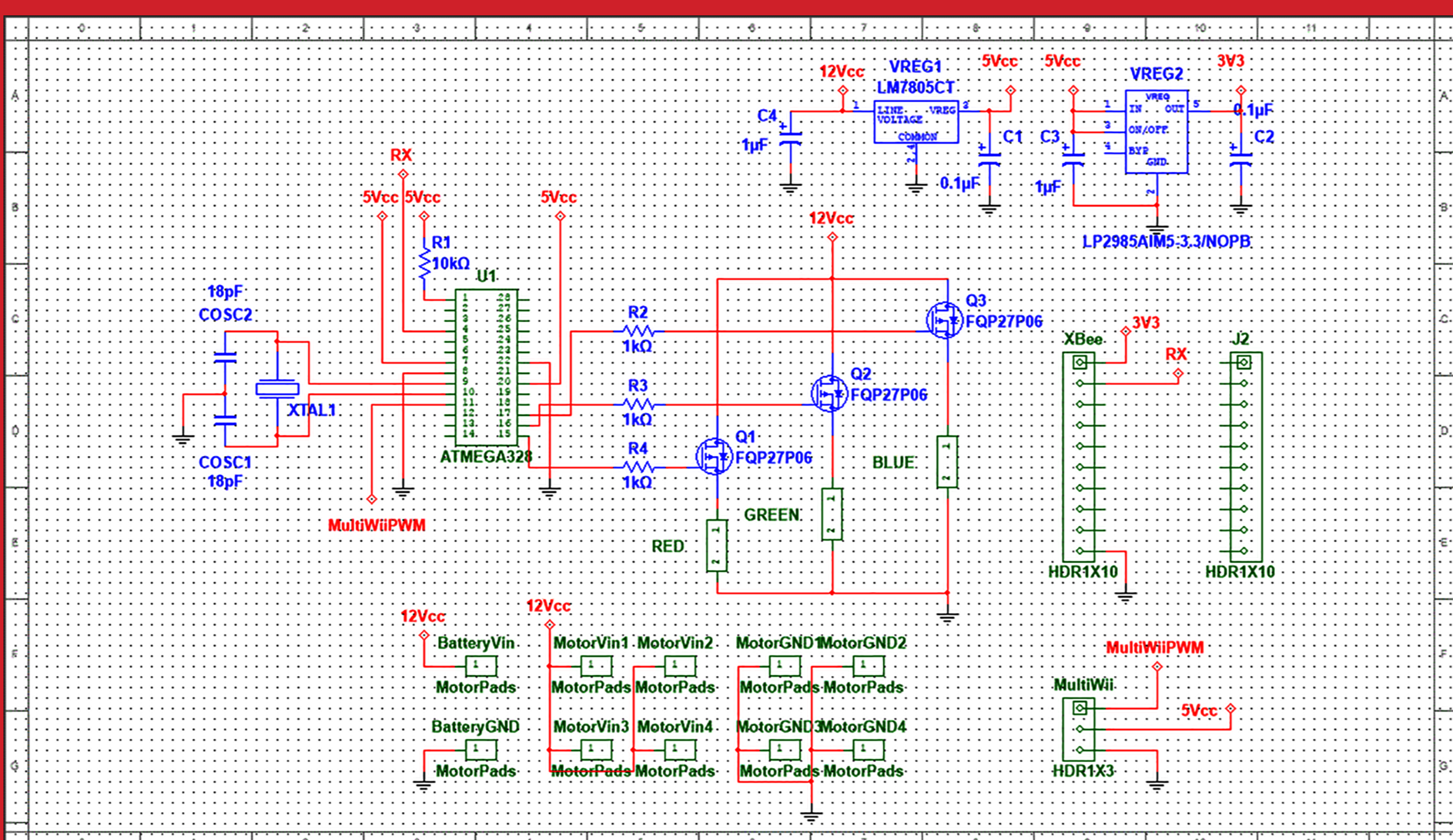
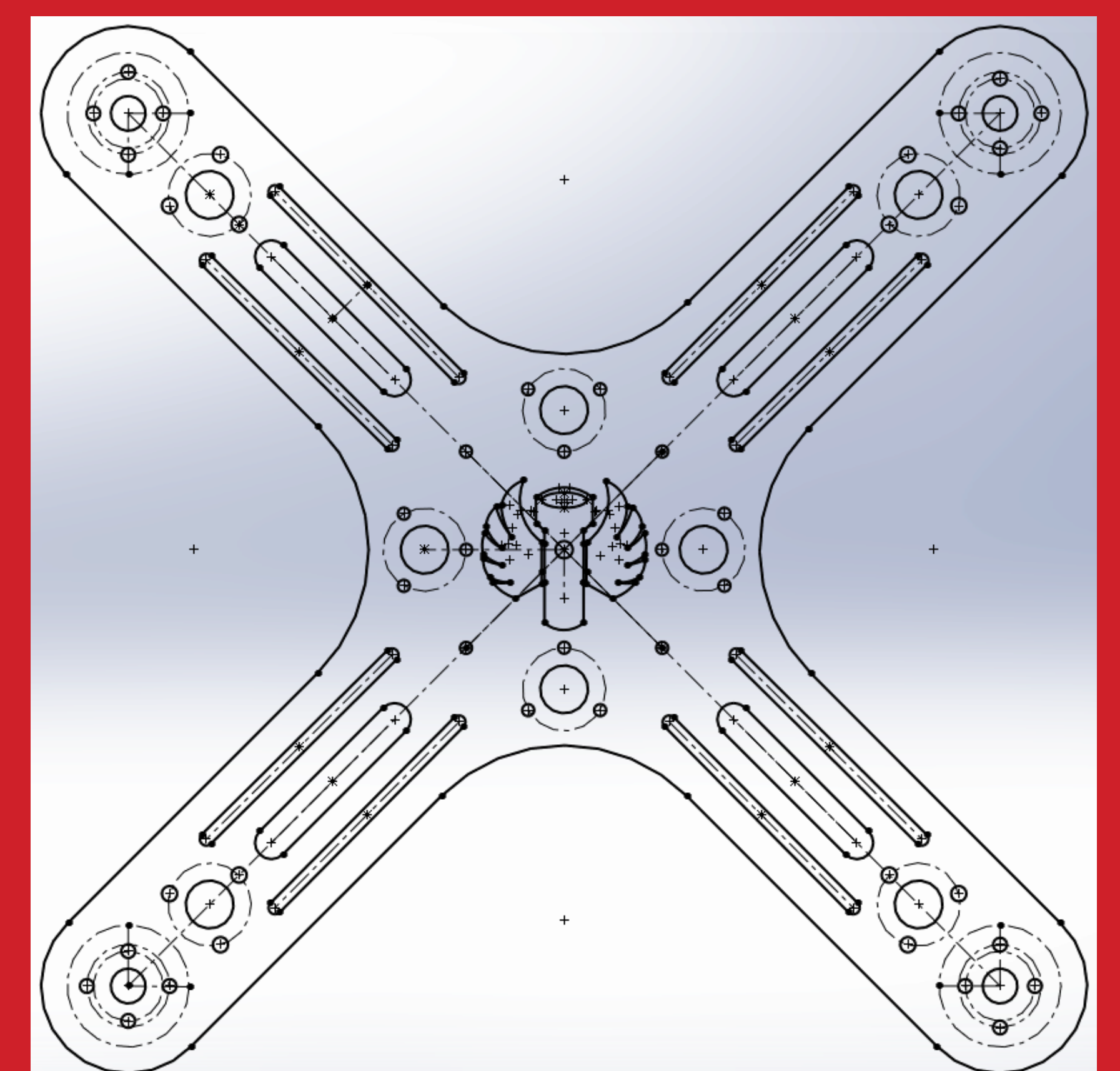
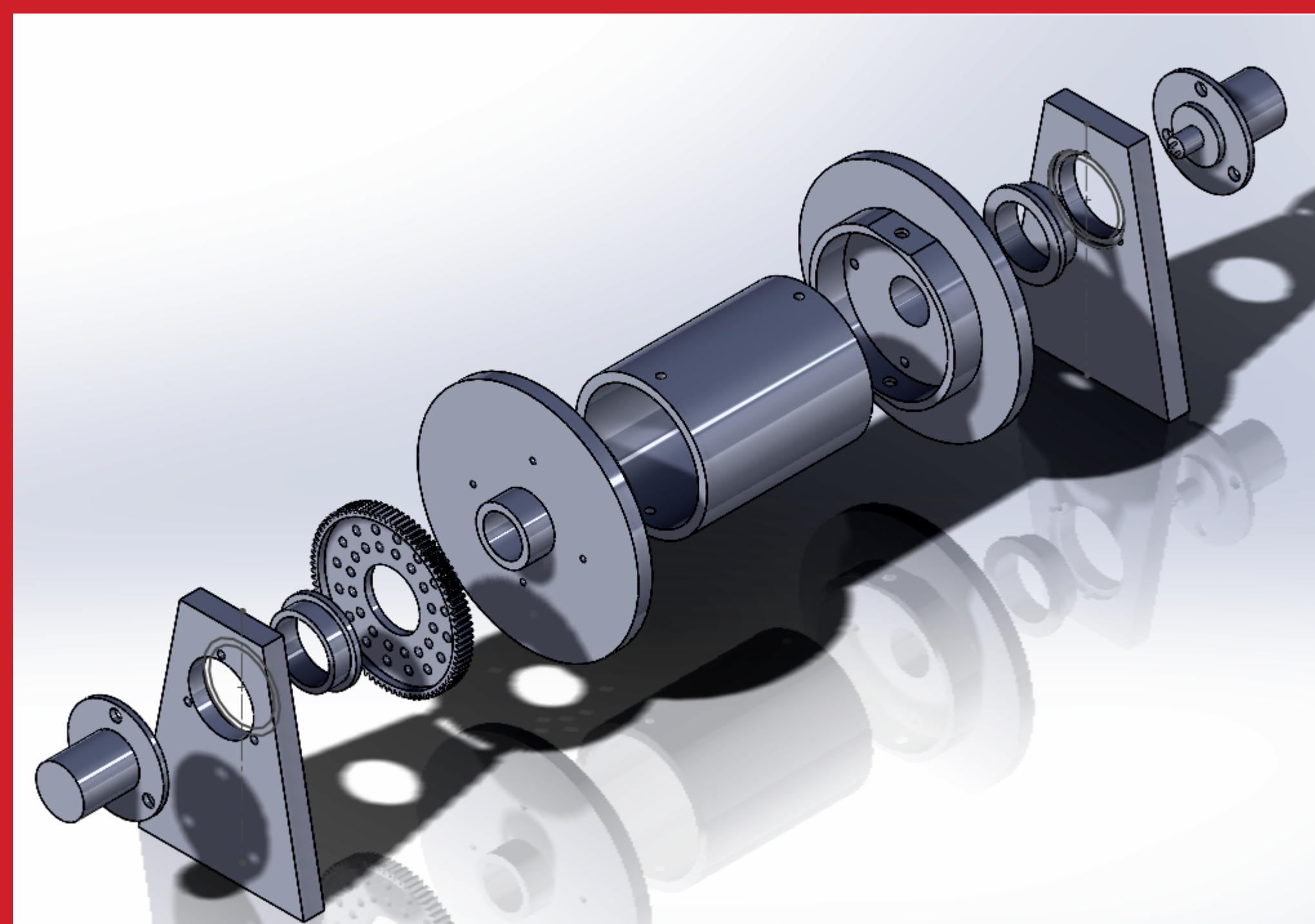
Lighting System

PWM controlled RGB LEDs provide a customizable lighting experience.

Tether

Using SolidWorks, we designed a cable drum assembly to supply power to the quadcopter.

Project Design Components



Project Testing

Each design component was tested individually before assembly. The quadcopter frame and flight tuning took up most of the testing time. A controlled environment was essential for safe flight operation. The tether and LED system were relatively quick and easy to test since little calibration was required.

Frame design was the most pressing problem to solve since we originally wanted to create our own frame for the quad. Eventually, a premade frame was purchased to fix flight stability issues. The LEDs and electric drum control operated within design specifications.