

A.N.T. Labs Final Presentation

WEEK 10: NOV.28TH, 16

LAB TIME: FRI 1PM

Team Members

- Jorge Rodriguez
- Kyle Bautista
- Lyuyang Hu
- ► Pablo Ramirez
- Samuel Ayala

Introduction

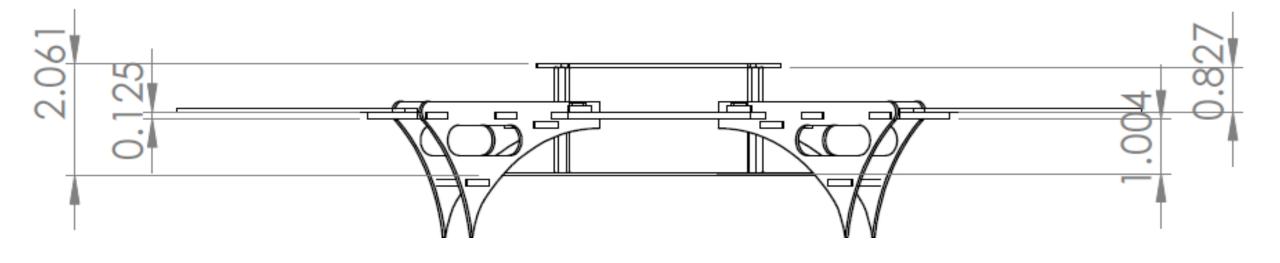
ANT Labs

Objective: Ten weeks ago, we were all thrown into this project some of us with little to no hands on experience with SolidWorks or tools used in labs. Our mission was to manifest to the best of our imagination the brain child that we had in mind when we thought of a quadcopter. In less than ten weeks of school, ANT Labs managed to come together and work with the dynamics of flight (such as Bernoulli's Principle) and put together a quadcopter. Here is the final product of our combined ideas.

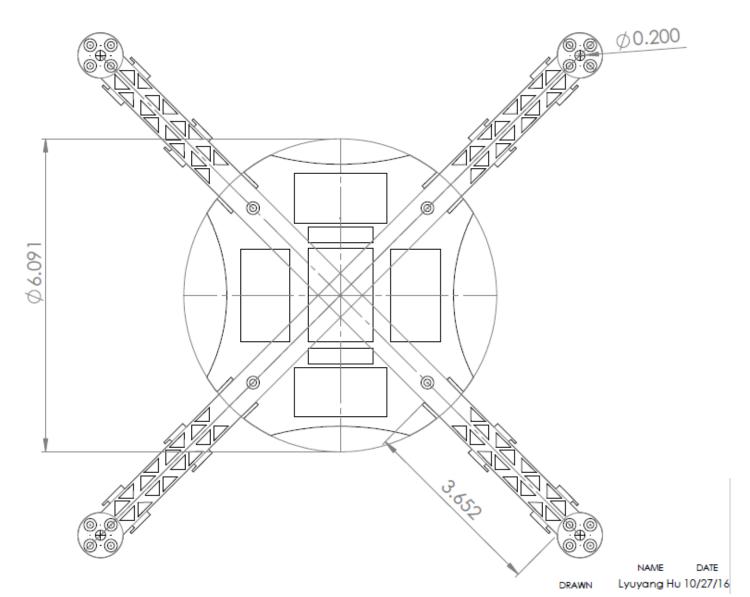
Design: Calculation and Material

```
Materials:
 Foam
    landing gear base
 Polycarbonate
    landing gear
    battery plate
    propeller arms
    main body
 Cobra 2204 2300kv
 3000mah Battery
Calulations:
 14inch between motors
 Zippy Battery-224g
Flight Controller-25.8g
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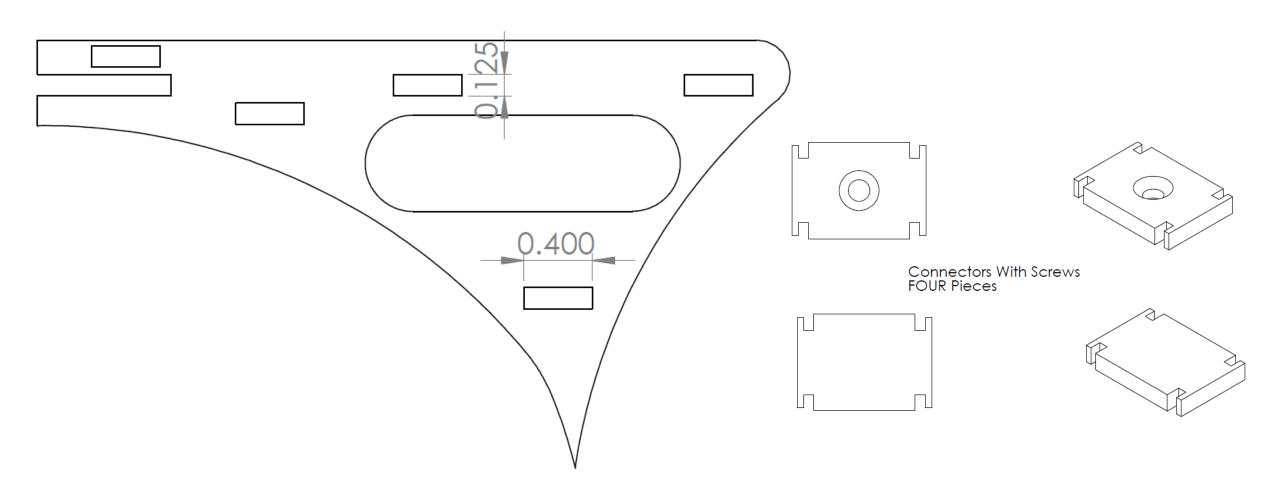
Design: Structure



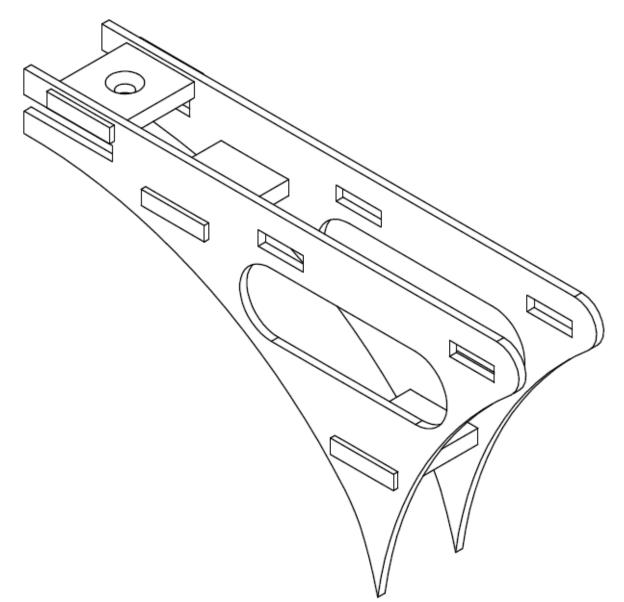
Middle Layer



Landing Gear



Assembled Landing Gear



Assemble Animation





Final Parts List and Cost

Motor: Cobra 2300kv [4 Pieces] + Motor Mount *4

Propeller: 6 inch [2 Pairs]

Flight Controller: NAZA-M Lite ESC *4

Transmitter/ Receiver

Battery

% Polycarbonate *2 Sheets

1/16 Polycarbonate *2 Sheets

\$315.92

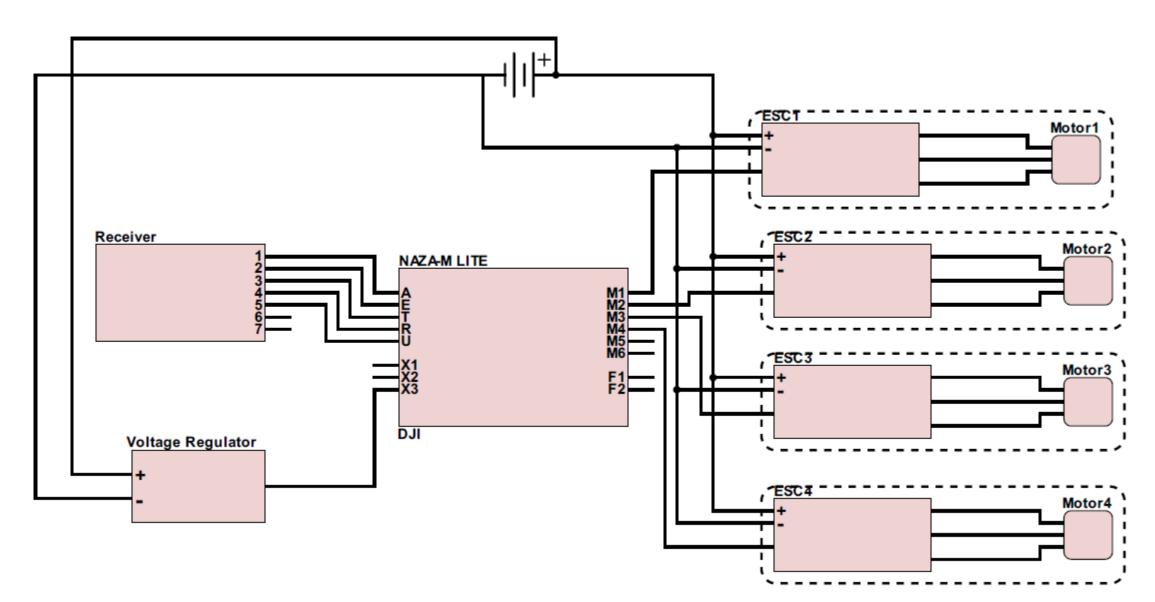
Foam

Fabrication and Problem Shooting





Electrical Diagram



Testing and Performance Evaluation

Test Flight #1 A.N.T Lab 11/21

Project Progress Overview

A. N. T Lab		Planr	ned		Actual			Due Date				Date Finished																		
Friday 1P.M.			leek	5	Teek 6				¥eek 7					¥eek 8					¥eek 9					▼eek 10						
Activity	F	II Tu	T	Th	F	П	Tu	¥	Th	F	I	Tu	T	Th	F	H	Tu	T	Th	F	I	Tu	T	Th	F	I	Tu	T	Th	F
Quadcopter Design																														
Determine Quad Layout																														
Select Motor/Propeller Con																														
Purchase Order Form																														
SolidWorks Part Designs																														
SolidWorks Assembly																														
SolidWorks Detailed Drawin																														
Structure Fabrication																														
Frame Arms																														
Frame Center																														
Propeller Guards																														
Landing Gear																														
Motor Mounting Holes																														
Structure Assembly										`																				
Electrical Fabrication																														
Solder Bullet Connectors																														
Heat Shrink Bullet Connect																														
Mount & Connect Electronic																														
Electrical Calibration																														
ESC Throttle Calibration																														
NAZA Flight Calibration																														
Motor Response Tilt Test																														

11.28.2016