



**PennState**  
College of Engineering

# USB D-Link Hub Bracket

Team 4

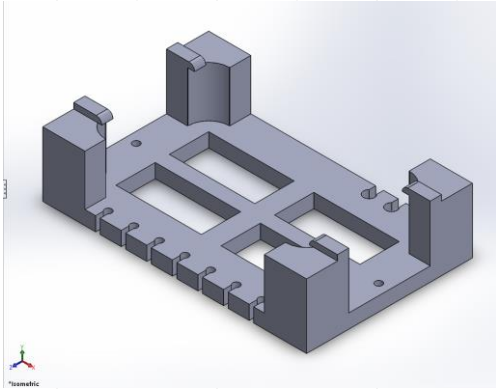
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**LOCKHEED MARTIN**



# Introduction



For the advancement of a custom avionics mission system, it will require a USB Hub bracket as a debug and auxiliary mounting device. It will allow the bracket to have an increased capacity and vertical mounting.

## Design Objectives

The objective of this design was to make changes to the present USB hub mounting bracket.

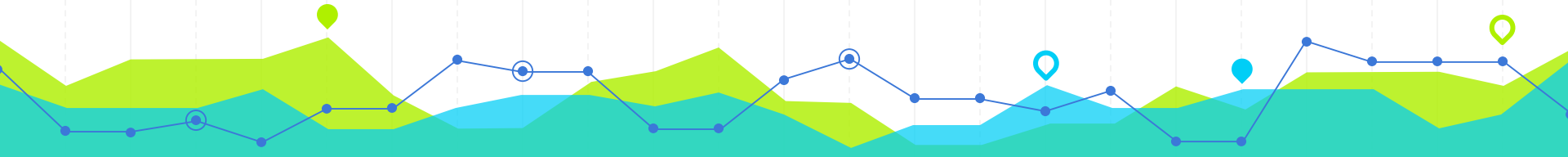
- Change from Horizontal to Vertical mounting
- Design New Cable Retention System
- Design for 7 ports



# Design Approach

Our team took several steps to make this design:

- Brainstorming
- Sketching
- Design Matrices
- Modeling
- Testing
- Manufacturing

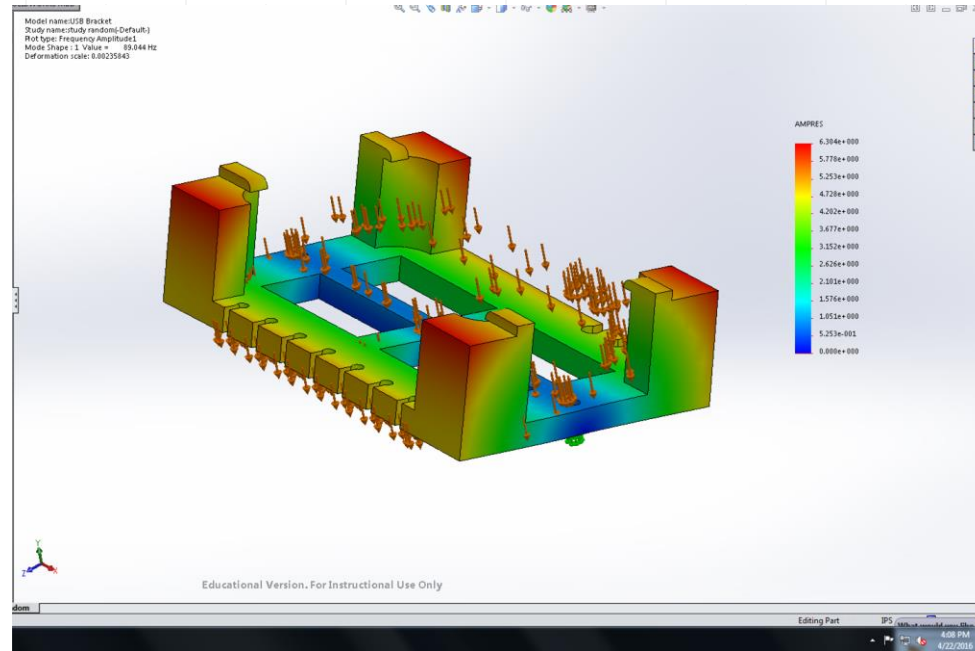


## Analysis of Design

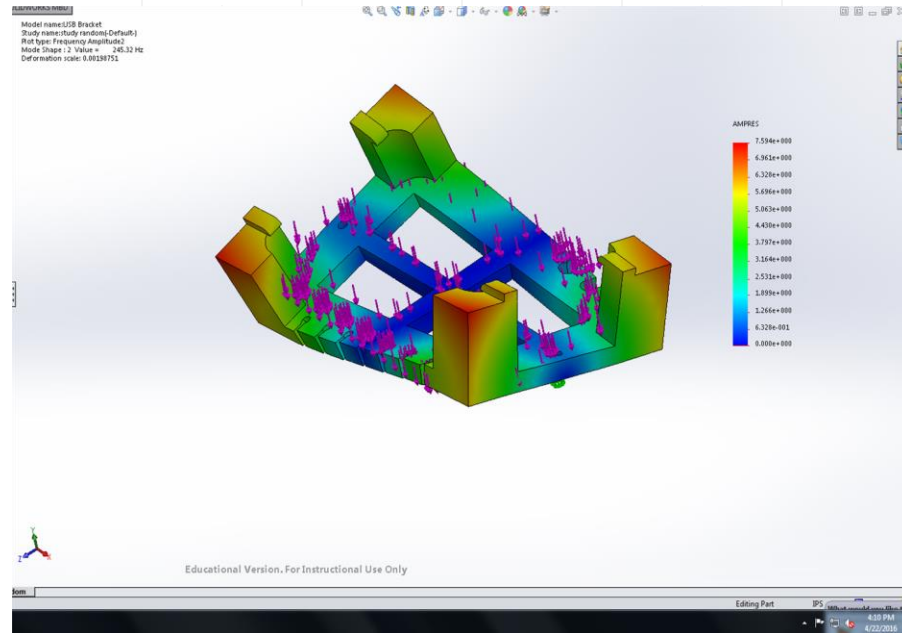
- Structure
- Material
  - Biodegradable (PLA)
  - Easily Printed
- Vibration Loading



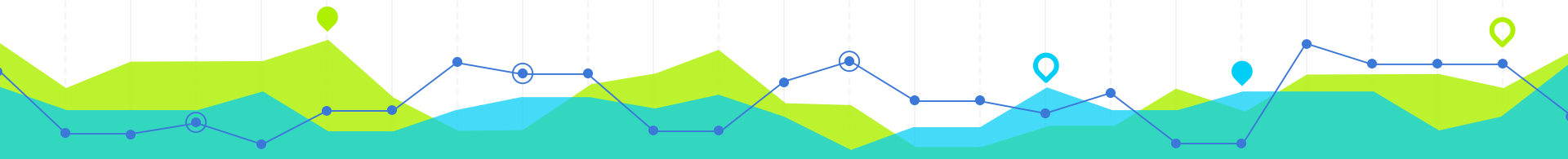
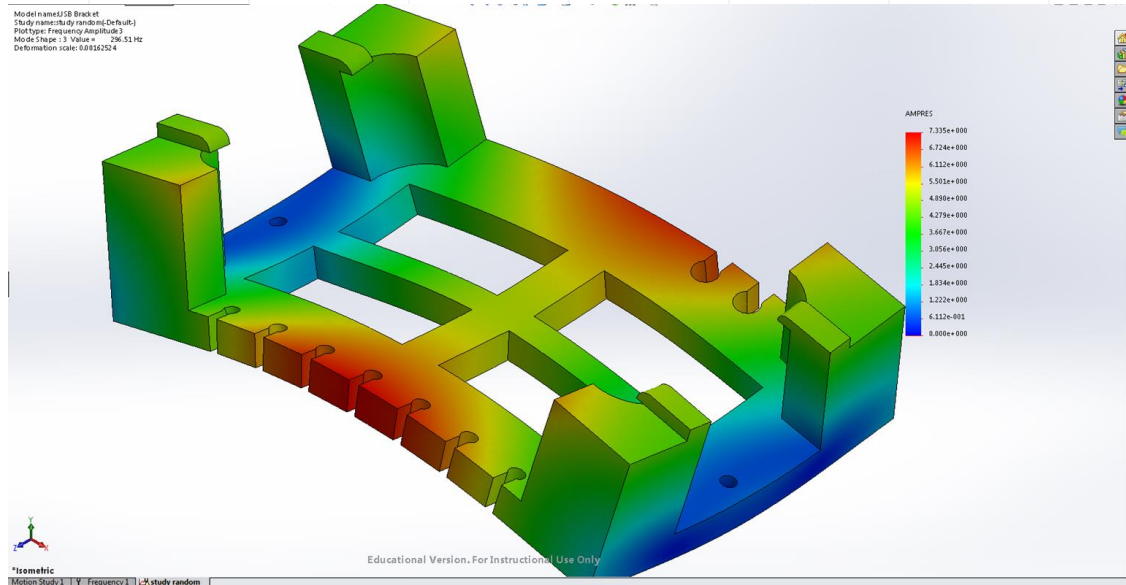
# 89 Hz



# 245 Hz

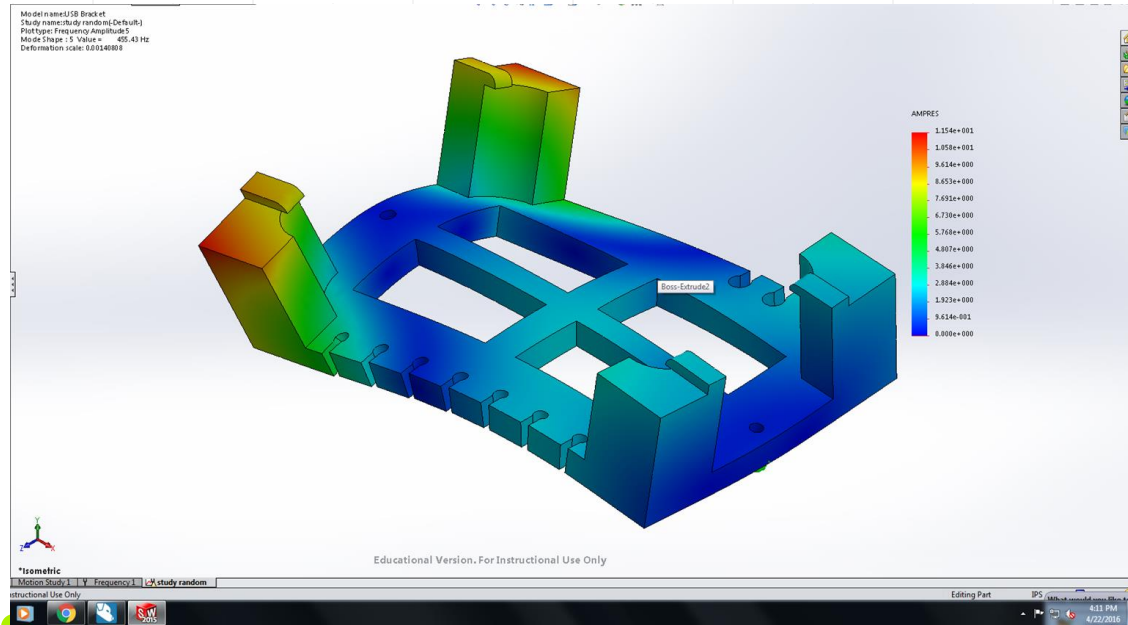


# 296 Hz





# 455 Hz



**Thank You**

Any Questions?

