M 2.03 - Protocol Frame

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SpaceKatz

Specifications

Why Onyx?

- Onyx is a composite filament made of micro carbon fiber inside of a nylon matrix.
- Combines high strength, easy manufacturing, and high resistance to corrosion.
- High thermal integrity.
- Low weight and inexpensive alternative to metal.

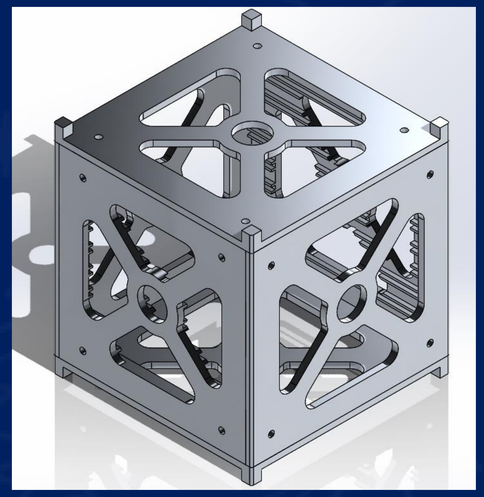
Testing:

The CubeSat passed random vibration and thermal vacuum bakeout testing.

Project Overview

What is a CubeSat?

Carries small scientific payloads (i.e. for radiation testing) to space on upcoming rocket launches for primarily educational usage, remote sensing, communications, and more.



Mission Statement:

Texas State's physics department obtained a satellite kit, but the continuous purchase of kits in the future is not economically feasible.

The department requires the manufacturing protocol to allow in-house fabrication with a total budget of $500.

The framework material and design must be able to withstand the conditions of low – Earth orbit and follow the CubeSat design outline.

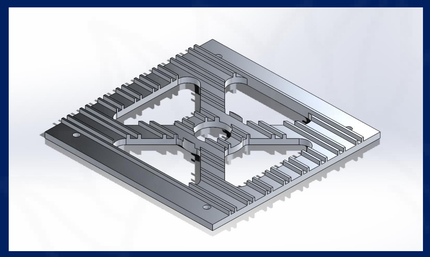
The produced protocol must include a computer model that simulates the final design to allow adjustments of the mass and thermal distribution for future expeditions with the satellite.

Design

Our Design

PCB Guide Rails

- Two walls of the satellite will have raised rails.
- They will improve the accessibility of the design and provide protection for the PCB's



Access Door

- One wall is removeable by slide rails to allow easy access to the inside.
- The door will be secured using J-B Weld Clearweld Clear Epoxy Adhesive