

ProtoCube

Specifications



This CubeSat was design with this criteria:

1. Easy to assembly
2. Safety and resistance to space
3. Different payload coupling

Assembly

It uses screw and nuts to hold the panels of the structure, for the PCBs it uses a fiber carbon tube in the corners



Materials



Aluminium AISi10Mg is the best option.

Highlights

- Low weight
- Good thermal properties
- Good strength and hardness
- Fast building
- Excellent machinability

Applications

- Thin walls
- Complex geometries
- Lower cost prototypes
- Aerospace
- Automotive



Tests

We have test this structure using finite element in ANSYS, with good result. Some of the test where:

Structural integrity: a load in the top plate with an acceleration of 20G and a mas of 1.3Kg.

Vibration: Random vibration with a maximum of 2000 Hz

Thermal conductivity: Heat conductivity from the top plate to the bottom plate from 180°C to -70°C

