

Resilient Thermal Panel (RTP)



Problem Statement

- RTP is an integrated solution for thermal bus resiliency that with little parasitic mass, increases satellite lifetime, and eliminates or reduces the need for heater power
- RTP includes multiple embedded two dimensional heat pipes that require micro gravity testing to verify performance
- Potential Users: MilSatCom, GPS, SBIRS, NRO, Space Superiority, NASA

Technology Development Team

- **Principle Investigator:**
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- **Partner: Thermal Management Technologies**

Proposed Flight Experiment

Experiment Readiness:

- April 2014

Test Vehicles:

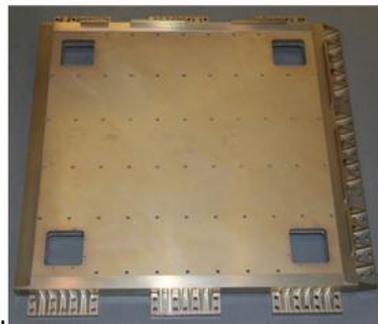
- Parabolic Aircraft

Test Environment:

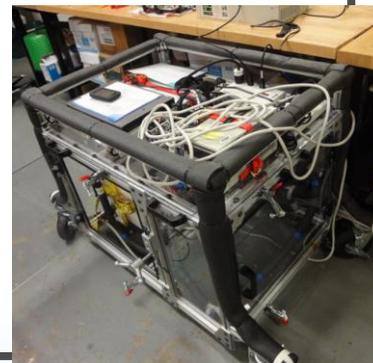
- RTP has been tested in traditional laboratory environments
- Request flight on parabolic aircraft to validate performance of structurally embedded two dimensional heat pipe.

Test Apparatus Description:

- Panel will be integrated into existing Zero-G compatible test cart
- Measured Parameters: power in, temperature across panel, temperature in, temperature out



Test Panel



Experiment Cart

Technology Maturation

- Flight on parabolic aircraft 2013 to TRL 5
- Describe the steps to mature your technology and the associated timeline.

Objective of Proposed Experiment

- Measure the thermal conductivity of the RTP in microgravity and other portions of the parabolic profile
- Temperature data will be taken across the panel
- Power input of the heater will be taken
- A successful flight will advance the readiness level of the panel to Level 6 enabling the panel to be installed on Air Force test satellites