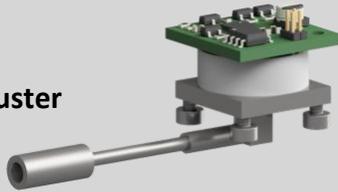# AURORA
PROPULSION TECHNOLOGIES

Current products

Single Orbital Thruster

A single water-based resistojet thruster capable of minor orbital changes. Miniaturised propellant tank allows about 100 firings. SOT is perfect for engineering testing as well as missions with additional ADCS. SOT module is tiny, measuring only 16x16x16mm. Multiple modules can be installed for additional impulse.

Plasma Brake module

Plasma Brake is a de-orbiting device that can slow down a spacecraft from a 1U CubeSat up to 1000kg satellite from up to 1000km orbit. The length of the tether can be modified to customers' needs providing optimal deorbiting times and compliancy with space regulation whilst providing excellent value for money.

Near future products

ADCS module
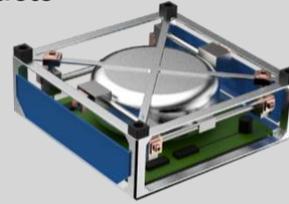
Attitude Determination and Control System is a 0.3-1U sized module that uses a water-based propellant to control a spacecraft. Modules' propulsion capabilities come from eight reaction control thrusters and four orbital thrusters giving the complete control of spacecraft manoeuvrability. Multiple units can be fitted to a spacecraft.
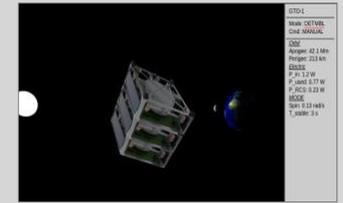
E-Sail module

The electric sail is a revolutionary means of propellantless propulsion capable of accelerating a spacecraft to cruising speeds of an order of magnitude faster than the common means of propulsion. As a lightweight and low volume module E-sail is a game changer in deep space exploration.

Software Products

Satellite Simulation Environment

Aurora Simulation Environment consists of multiple stand-alone packages. All packages are integrated into one software suite leading to avoidance of unnecessary expenses as you pay only for the packages you need. Architecture of the simulation ensures that even if the GUI is terminated or OBC is restarted, reprogrammed or disconnected, the simulation core continues to run. This enables hot-swapping the controller or its code, reducing time between HILT experiments

Aurora Simulation Environment is capable of

- Mission planning
- Constellation planning
- On-board software testing
- Hardware-in-the-loop testing (HITL) of
  - Satellite prototypes
  - Flatsat models
  - Ground twins

The simulation can be used with actual satellite hardware or with a software model

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