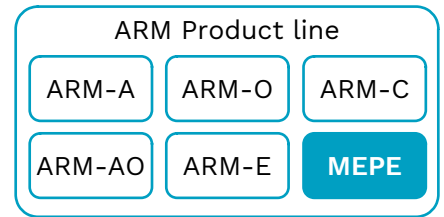




DATASHEET | MEPE

Multi-modal Electric Propulsion Engine

AA CLASS COLLABORATION



Aurora Propulsion Technologies from Finland and Aliena from Singapore are growing propulsion companies dedicated to provide high-performance propulsion solutions for SmallSats. The Multi-modal Electric Propulsion Engine is the first fruit of the two companies' close collaboration.

MULTI-MODAL ELECTRIC PROPULSION ENGINE

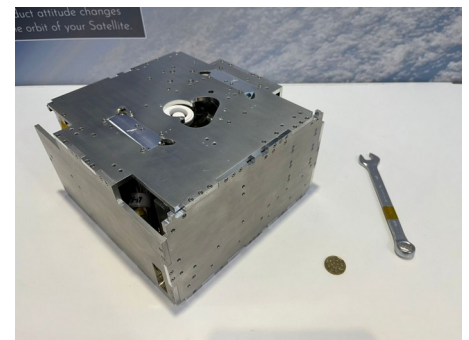
With Aliena's Hall-based MUSIC thruster for orbital changes and Aurora's ARM thrusters for attitude control, the MEPE is able to provide both functionalities in a minimal form factor. Both thrusters are fed from the same tank and propellant management system which saves both volume and mass. Closely integrated, the systems work in harmony with each other.

The system can be used on LEO and beyond as it provides propulsive attitude control. MEPE enables complex 4-degrees-of-freedom manoeuvres for small satellites.

MEPE SPECIFICATION

These preliminary values are provided for the baseline form factor. The design is customizable for example with larger tank sizes.

Quantity	Value
Form factor	125 x 220 x 220 mm ³
Wet mass	~ 5 kg
Target satellite	From 12 U CubeSat to 250 kg
Degrees of Freedom	1 translation; 3 rotation
Thrusters	1x MUSIC, 4x ARM
Propellant mass	~ 1 kg
MUSIC thrust	3 mN
MUSIC Isp	~ 1000 s
MUSIC power	100 W
ARM thrust	1 mN (per thruster)
ARM Isp	~ 40 s
ARM power	4 W (per thruster)
Command	RS422
Total impulse	10 kNs
Availability	8-12 months from order



Engineering model of the MEPE