

NEWSPACE MARKET · COMPANY PROFILE



aliena

Singapore · founded 2018 · aliena.sg

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PRODUCTS

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as of 20 August 2026



aliena

Aliena designs and manufactures Hall thruster systems for small satellites, covering power ranges from 100 W to kW-class. Their product lines include MUSIC for nanosatellites and microsatellites (12U to 150 kg), MESSE for microsatellites (100 to 500 kg), and MFE for small to medium satellites. All systems integrate in-house TCU, PMA, and tank technology. They also offer standalone thruster units. Their customers include space agencies, satellite operators, and commercial, government, and R&D sectors worldwide. The company is headquartered and manufactures in Singapore, operating an advanced jet propulsion test and production facility. Aliena was founded in 2018. The company has launched 2 missions, with 2 ongoing programs. Flight heritage includes a historic first HET integrated and launched on a 3U satellite in 2022, MUSIC as part of a multimodal electric propulsion engine on a 12U nanosatellite in 2023, and a dual-thruster system environmentally qualified and delivered for an 180 kg microsatellite in 2024. They have delivered 2 units and have 2 units in development for 2027 and 2028. Their products are qualified for major commercial launch vehicles. The facility includes 5 vacuum chambers, Class 100k clean rooms, and thrust measurement systems, with a production scale of up to 100 systems per year with strategic manufacturing partners.

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Product catalogue



ALIENA

Advanced Jet Propulsion Test & Production Facility (AJPTPF)

Aliena's state-of-the-art facility in Singapore offers advanced testing and production capabilities for electric propulsion systems, including multiple vacuum chambers, clean rooms

Total Footprint	8,020 sqft
Production & R&D Floor	4,000 + sqft
Vacuum Chambers	5 (including TVAC)
Rapid Prototyping Chambers Size	0.5 m x 0.5 m x 0.5 m
Rapid Prototyping Chambers Working Pressure	< 5e-5 mbar (with 2 sccm of Xe)
Large Vacuum Chamber (I) Working Pressure	< 1e-5 mbar (with 25 sccm of Xe)
Large Vacuum Chamber (II) Footprint	2 m (diameter) x 3 m (length)

price on request



ALIENA

Hall Thruster Systems

Aliena's Hall Thruster Systems are engineered as integrated, plug-and-play solutions, offering both COTS and bespoke configurations for various space missions.

Spacecraft bus input	25 - 36 V
TCU Input	25 - 36 V 6 A (Peak)
TCU Comms	Redundant CAN bus via CSP RS422 available (TBD)

price on request



ALIENA

Hall Thrusters

ALIENA offers a range of Hall Thrusters designed for various satellite classes, providing efficient and reliable propulsion solutions.

price on request



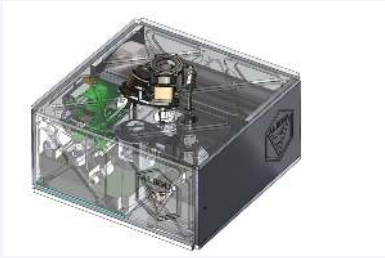
ALIENA

MESSE Magnetically Enhanced Small Satellite Engine

Compact 350 W high-thrust Hall thruster for 100-500 kg platforms: 13.5 mN, ~1100 s Isp, over 200 kNs total impulse.

System power	350 W (nominal)
Thrust	13.5 mN
Specific impulse	~1100 s
Total impulse	> 200 kNs
Propellant	Kr / Xe
Satellite class	100 - 500 kg
Ignition cycles	> 10,000

price on request



ALIENA

MUSIC Electric Propulsion System

Multi-stage Hall thruster with three operating modes covering 0.1 to 3 mN of thrust and 200 to 1000 s Isp in 1.5U or 4U form factors, flown since 2022.

Type	Multi-stage Hall thruster, modular design
Self-ignition mode	1.5U form factor, < 20 W, up to 0.25 mN, up to 200 s, 1 kNs total impulse, 2 kg wet mass,
Hot mode	4U form factor, < 100 W, ~3 mN, ~1000 s, 15 kNs total impulse, 5 kg wet mass, microsatelli
Dual mode / fault-tolerant	4U form factor, < 100 W, 0.1 to 3 mN, 200 to 1000 s, 15 kNs total impulse, 5 kg wet mass,
Fuel	Xe / Kr gas
Total impulse note	Quoted with Xe (configurable)
Flight heritage	Self-ignition on a 3U nanosatellite January 2022; MUSIC-HM on a 12U satellite July 2023

price on request



ALIENA

MUSIC Flight-ready | 2nd gen qualified 2026

The most capable integrated propulsion solution for nanosatellites and microsatellites, a fully self-contained 4U system ready to integrate.

Form factor	4U
Wet mass	6 kg
System power	100 W
Specific impulse	~700 s
Total impulse	~15 kNs
Propellant	Xe
Satellite class	12U - 150 kg

price on request



ALIENA
MUSIC Hollow Cathode

Flight-ready 1 A-class LaB6 hollow cathode for Hall thrusters from 70 to 350 W, 50 g in 3 x 4.5 cm.

Type	Heated, ceramic encapsulated
Emitter	Lanthanum hexaboride (LaB6)
Current	0.2 - 1.2 A
Ignition heating power	< 50 W
Flow rate (Xe)	0.05 - 0.16 mg/s
Alternative working gas	Kr
Suggested thruster power	70 - 350 W

price on request



ALIENA
μCAT Propulsion System

The μCAT (Micro Cathode Arc Thruster) is a miniaturized electric propulsion system developed by Aliena, a Singapore-based space startup. Using a solid titanium propellant and requi

price on request

Contact aliena

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