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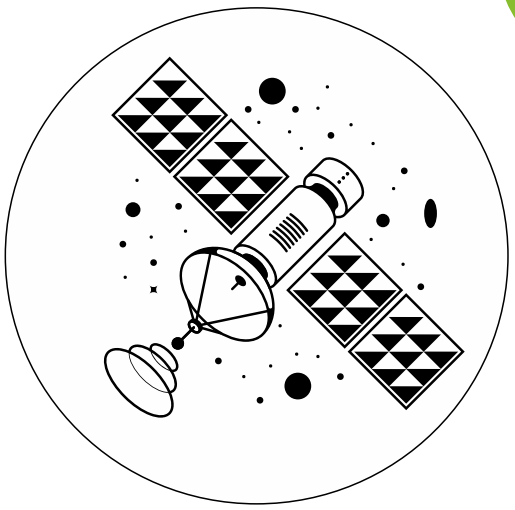
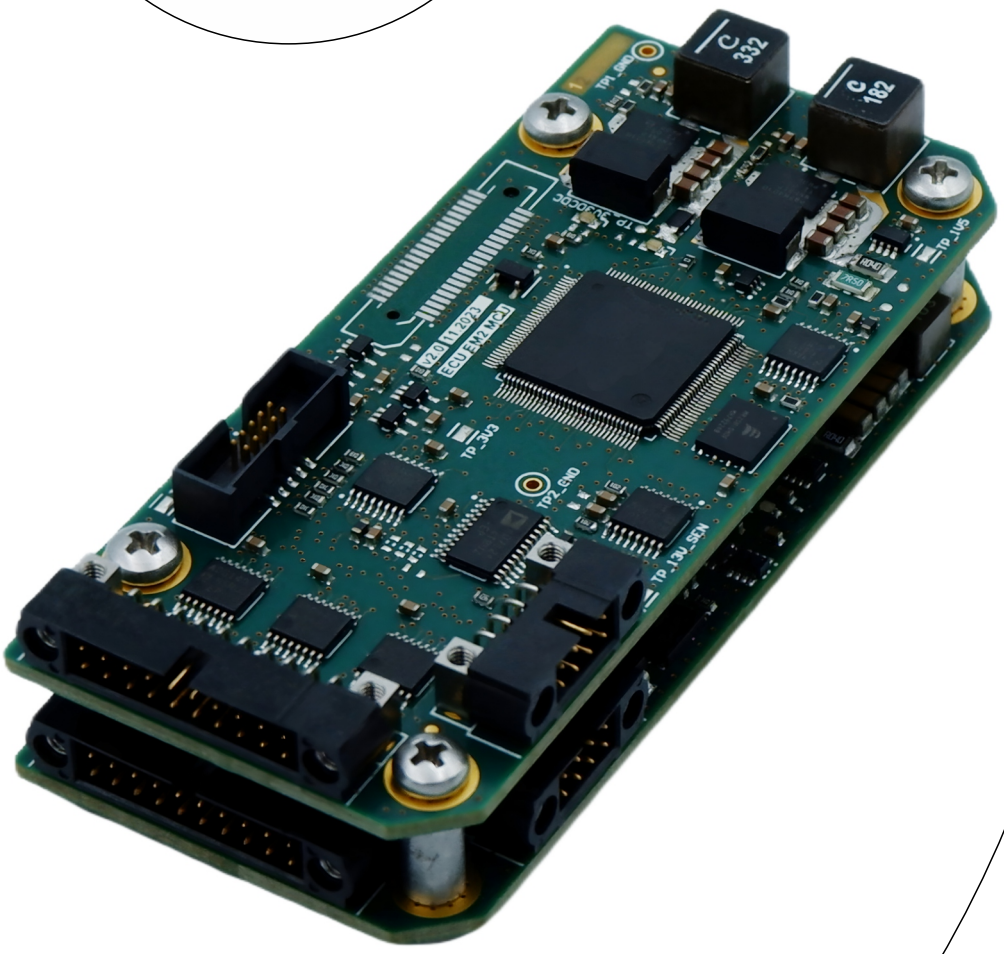
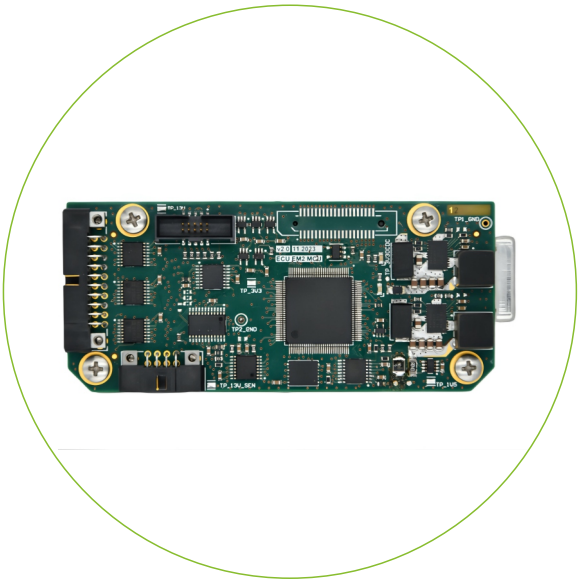




MINISAT PROPULSION CONTROL UNIT

CHARACTERISTICS



The MiniSat Propulsion Control Unit is an electronic device designed for operation in space environment on Earth Orbit. It is able to perform on-orbit data acquisition, control and manage of propulsion module including Thermal Control and Fluidic Subsystems. Device transfer telemetry data and is fully manageable by the OBC/AOCS with which it communicates via RS422 interface and Modbus protocol. Small device dimensions and low power consumption make it great choice for nano satellite platforms.

TECHNICAL DATA

Parameter	Value
Dimension	93 x 43 x 31 mm
Mass (without / with enclosure)	150 g / 300 g
Supply Voltage	26 to 32V
Power consumption	0.5 W in low power mode 40 W in full subsystem drive mode
Communication interfaces	1 x RS422 (with MODBUS) 2 x DI / TTL / 3.3V 2 x DO / TTL / 3.3V
Heaters ports	6 x 10W / 28V / PWM controlled
Valves ports	2 x 15W / ±12V / Latching 1 x 7W / +28V / Standard
DAQ interfaces	10 x temperature input / PT1000 / 16 bit / 1 Hz 2 x pressure input / 4–20 mA / 16 bit / 100 Hz
Operating temperature	-20 to +50 C
Radiation tolerance (TID)	up to 10 krad
Standards compliance	SpaceX Rideshare Payload Users Guide v.9
Guaranteed orbital operation time	1 year
Flight heritage	planned in 2025

Parameters given for baseline configuration.

Device has been qualified for space operation especially by vibration, environmental, vacuum (TVAC) and radiation tolerance tests. The device was successfully integrated with a nano satellite platform and a hydrogen peroxide propulsion module.
The launch and orbit flight is planned in the next years.
The customization of device is possible.

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