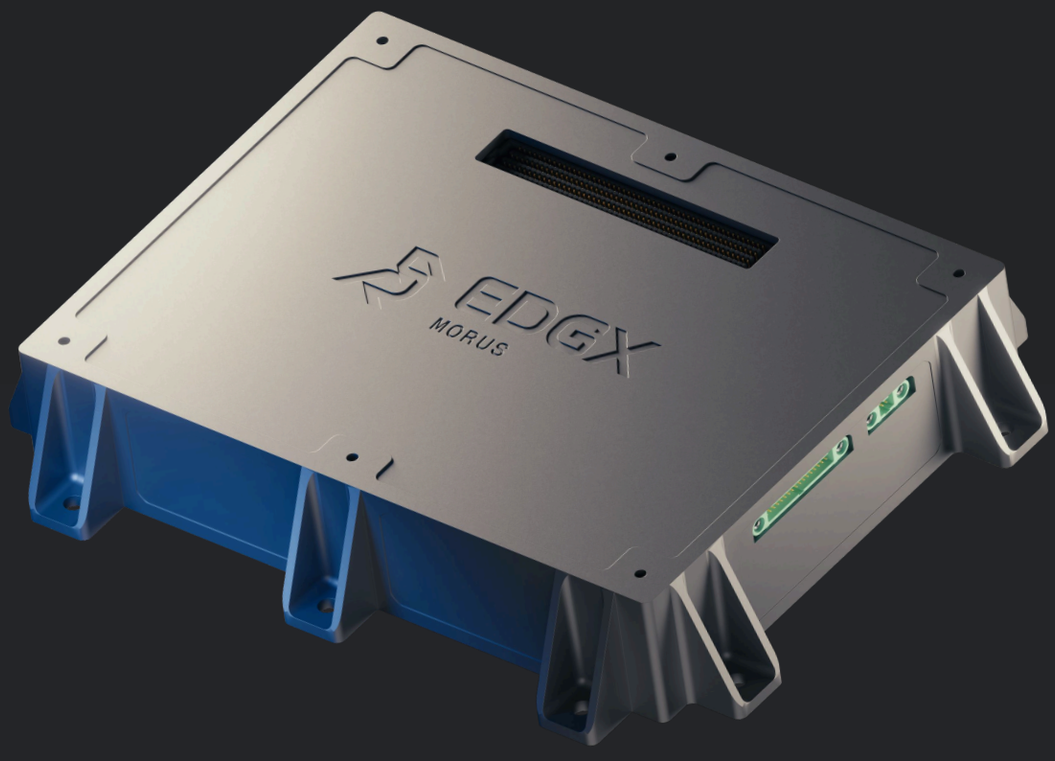
EDGX
MORUS

DATASHEET
MORUS



- Powered By NVIDIA Jetson Thor
- Unlock In-Orbit Artificial Intelligence
- Power-Efficient Supercomputing
- Mission-Specific Radiation Hardening

Flight-Ready for 1 Mission
Launching 2027

EDGX NVIDIA

www.edgx.space
sales@edgx.space

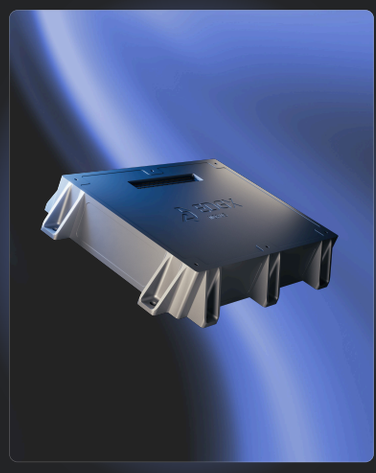
Supercomputing Onboard

Waiting on a downlink is a lost opportunity. Morus' raw computational power lets you act on critical intelligence the instant it's captured.

01 Deliver up to **2070 TFLOPS** of in-orbit compute

02 Dynamic power modes from **20W** to **130W**

03 Unlock the **NVIDIA ecosystem**



Uncompromising Reliability

Morus is engineered for mission certainty. It will be validated against every extreme, ensuring it doesn't just survive, but thrives.

01 Qualification for **Launch** Vibrations

02 Proven in **Thermal & Vacuum** Conditions

03 Validation against **Radiation** Effects

Operate with our software stack

Powerful hardware is only half the equation. We provide the essential software ecosystem that provides the functions you need for mission success.

Real-Time Supervisor

Monitors system health and safeguards critical hardware.

Operating System

A custom, mission-specific Yocto Linux operating system.

Application Framework

Deploys and manages your containerised applications in-orbit.

Dynamic Power Modes

Instantly tune power consumption to your mission.

Technical Specifications

MORUS

Morus is a high-performance **Data Processing Unit (DPU)** bringing the power of the **NVIDIA Jetson Thor T5000** to space.
It is engineered to provide mission-critical compute power to SmallSats and MicroSats in Low Earth Orbit (LEO) and Sun Synchronous Orbit (SSO).
A standard build variant is offered to match most common interface preferences; custom configurations are available on request.

MAIN COMPONENTS

NVIDIA Jetson Thor T5000 128GB + Supervisor MCU
- [CPU] 14-Core ARM Neoverse-V3AE (@ 2.6 GHz)
- [GPU] 2560 CUDA Core Blackwell (@ 1.575 GHz), MIG-capable for workload isolation

SOFTWARE

- Optimized Linux OS (Yocto / JetPack 7)
- Containerized Applications (Docker)
- Health monitoring and logging (FreeRTOS)

STORAGE & MEMORY

- 128 GB of 256-bit LPDDR5X: Shared System Memory
- 160 GB NVMe SSD (pSLC): Boot Storage
- 2 TB NVMe SSD (TLC): Application Storage

Planned TID (^{60}Co) and SEE (200 MeV proton) testing

SIZE, WEIGHT & POWER

- Size: 188 x 148 x 35 mm (subject to change)
- Weight: 1.3kg (subject to change)
- Power: 20W (idle) / 60W (avg) / 130W (maxn) Can be dynamically limited and reconfigured
- 15V - 30V (subject to change)

INTERFACES - SUPERVISOR

Connector(s): Harwin Gecko-SL
- 2x CAN (TM/TC)
- 2x RS422 or 1x RS485 (TM/TC)
- 1x 10/100 Mbit/s Ethernet (TM/TC)
- 1x UART (debug and recovery)
- 1x 1PPS input (time sync)

At least one TM/TC interface is preferred. Configured as CSP by default, other protocols on request.

INTERFACES - NVIDIA JETSON THOR T5000

Connector(s): Harwin Gecko-SL | Samtec
- 1x Gigabit Ethernet (for OTA, Recovery and Data)
- 3x USB 3.2 Gen 2 (for Data)
- 1x PCIe Gen5 x8 (SRIS), or x4 + 4x 25 GbE
- 16x MIPI CSI-2 v3.0 lanes, up to 6 cameras
- 1x UART (for Linux Debug)
- (Upcoming) 1x SpaceWire/Fiber

Data interfaces can be further customized on request

THERMAL & VACUUM

- Operational range –15 °C to +60 °C.
- Under qualification for TVAC over –25 °C to +70 °C (+10 °C margin).

VIBRATION

- Under qualification for Falcon 9, Ariane 6, Vega-C and other launchers
- Random 20 g RMS (20 Hz–2 kHz), quasi-static 21.25 g sine burst
- Pyroshock SRS 60 g at 100 Hz to 2824 g (Q=10), 1.6–10 kHz, 3 shocks/axis in 3 axes

ELECTROMAGNETIC COMPATIBILITY (EMC)

- Under test for emissions according to MIL-STD-461 standards.
- Under test for immunity according to MIL-STD-461 standards.

Detailed test reports, notch analysis and compliance matrices are available on request.

RADIATION

- Components tested for a Destructive SEE LETth of 38 MeV cm²/mg
- Components selected for a minimum TID resilience of 30kRad
- Board-level under validation and characterisation for 200 MeV proton

EDGX

EDGX is a spacetech company on a mission to enable compute in space.

Discover our products on:
www.edgx.space