



EDGX
STERNA

DATASHEET
STERNA



Powered By
NVIDIA Jetson Orin



Unlock In-Orbit
Artificial Intelligence



Power-Efficient
Supercomputing



Mission-Ready
Radiation Hardening



Flight-Ready
Launching Q1 2026

EDGX



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Supercomputing Onboard

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

- 01 Deliver up to **157 TOPS** of in-orbit compute
- 02 Command power modes from **10W** to **40W**
- 03 Unlock the **NVIDIA ecosystem**



Uncompromising Reliability

Sterna is engineered for mission certainty. It has been validated against every extreme, ensuring it doesn't just survive, but thrives.

- 01 Qualified for **Launch Vibrations**
- 02 Proven in **Thermal & Vacuum Conditions**
- 03 Validated against **Radiation Effects**

Operate with our SpaceFeather™ Software

Powerful hardware is only half the equation. The SpaceFeather™ software ecosystem provides the functions you need for mission success.



Operating System

A custom, space-hardened Linux operating system.



Application Framework

Deploys and manages your containerised applications in-orbit.



Real-Time Supervisor

Monitors system health and safeguards critical hardware.



Radiation Shielding

Actively mitigates radiation-induced functional interrupts.

Technical Specifications

STERNA

Sterna is a high-performance **Data Processing Unit (DPU)** bringing the power of the **NVIDIA Jetson Orin NX** to space. It is engineered to provide mission-critical compute power to CubeSats and SmallSats in Low Earth Orbit (LEO) and Sun Synchronous Orbit (SSO). Two standard build variants (A/B) are offered to match different interface preferences; custom configurations are available on request.

MAIN COMPONENTS

- NVIDIA Jetson Orin NX 16GB + Supervisor MCU
- [CPU] 8-Core ARM Cortex-A78AE (@ 2 GHz)
- [GPU] 1024 CUDA Core Ampere (@ 1GHz)
- [NPU] 2x NVDLA 2.0 (@ 600MHz)

SOFTWARE

- Optimized Linux OS (Yocto / JetPack 6)
- Containerized Applications (Docker)
- Health monitoring and logging (FreeRTOS)

STORAGE & MEMORY

- 16 GB of 128-bit LPDDR5: Shared System Memory
 - 2 TB NVMe SSD (TLC): Application Storage
 - 256 GB NVMe SSD (pSLC): Boot Storage
- Underwent TID (⁶⁰Co) and SEE (200 MeV proton) testing

SIZE, WEIGHT & POWER

- Size: 0.30U (96 x 90 x 30 mm)
- Form-factor: PC/104 (mounting)
- Weight: ± 350g w/o harness
- Power: 15W (avg) / 30W (peak) / 45W (super)
- Can be dynamically limited and reconfigured
- 15V - 30V (Normal) or 23V - 30V (Super)

INTERFACES - SUPERVISOR

- Connector(s):** Harwin Gecko-SL
- 1x CAN (for C&C of Sterna)
 - (Opt. A) +1x CAN (for redundant C&C)
 - (Opt. B) +1x 10/100 Mbps ETH (for redundant C&C)
 - 1x UART (for Debug and Recovery)
- C&C interfaces can be further customized on request

INTERFACES - NVIDIA JETSON ORIN NX

- Connector(s):** Harwin Gecko-SL | Samtec ERF8
- 1x Gigabit Ethernet (for OTA, Recovery and Data)
 - 2x USB 3.2 Gen 1 (for Data)
 - (Opt. A) +1x PCIe Gen4 x4, with SRIS clocking
 - (Opt. B) +1x USB 3.2 Gen 1, +1x 2-Lane MIPI CSI-2
 - (Upcoming) 1x 10 GbE, 1x Spacewire
- Data interfaces can be further customized on request

THERMAL & VACUUM

- Operational range: -20°C to +65°C
- Qualified in a Thermal Vacuum Chamber (TVAC) for an operational range of -25°C to +70°C and a non-operational range of -40°C to +80°C

VIBRATION

- Qualified for use on Falcon 9, Ariane 6, VEGA-C and other launch systems
- Tested according to the General Environmental Verification Standard (GEVS) for random vibrations and quasi-static sine bursts.

ELECTROMAGNETIC COMPATIBILITY (EMC)

- Tested for emissions according to MIL-STD-461 standards.
 - Tested 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 validation and characterisation under 200 MeV proton

EDGX

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

Discover our products on:
www.edgx.space