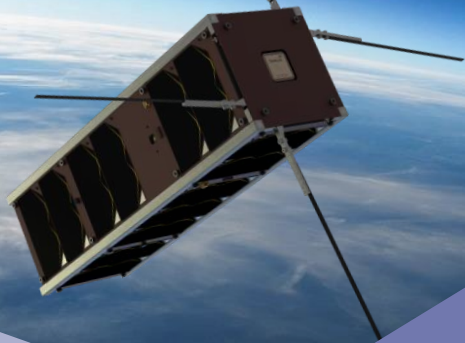# ODALISS
Optical Data Link for Small Satellites

ODALISS is a complete high performance nanosatellite platform with optical communications, including every subsystem you need to turn your space mission into reality.

IN ORBIT TECHNOLOGY DEMONSTRATIONS

SATELLITE COMMUNICATIONS

ATMOSPHERIC SCIENCE

MICROGRAVITY RESEARCH

EARTH OBSERVATION

The **ODALISS** nanosatellite platform is based on a high-performance bus allowing data-intensive payloads to be connected in a scalable architecture. ODALISS internal bus includes a rich set of logic interfaces and power lines to fulfill the most demanding applications.

Designed for:

- **DATA INTENSIVE APPLICATIONS:** High performance architecture with optical communications downlink.

- **SIGNAL INTEGRITY:** Double 80-pin rugged backplane designed for high-speed.

- **FLEXIBILITY:** High density backplane offering a rich logic interface designed for the most demanding payloads.

- **FOCUS ON YOUR MISSION AND PAYLOADS,** thanks to its integrated avionics.

- **THE MOST COMPLEX ENDEAVORS,** with the support of our highly experienced team.

SPECIFICATIONS

STRUCTURE
- Hard anodized 7075 aluminium.
- High-performance architecture for high-speed logic interconnection.
- 3U and 6U CubeSat sizes (12U available in 2024).

POWER SYSTEM
- Modular Li-Ion battery packs.
- 3U and 6U solar panels available.
- 8W nominal power, 36W peak power (per pack).
- Fully configurable power profile.
- Two unregulated buses of +7.6V and two regulated buses of +5V and +3.3V.

ADCS
- Three reaction wheels and three magnetorquers.
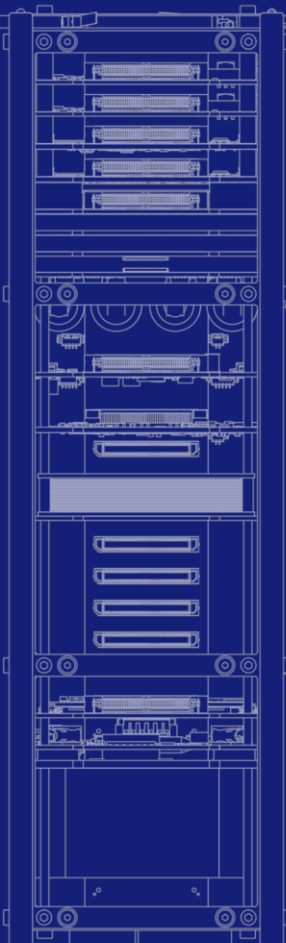- Attitude determination via sun sensor and magnetometer.
- <0.1º attitude accuracy.
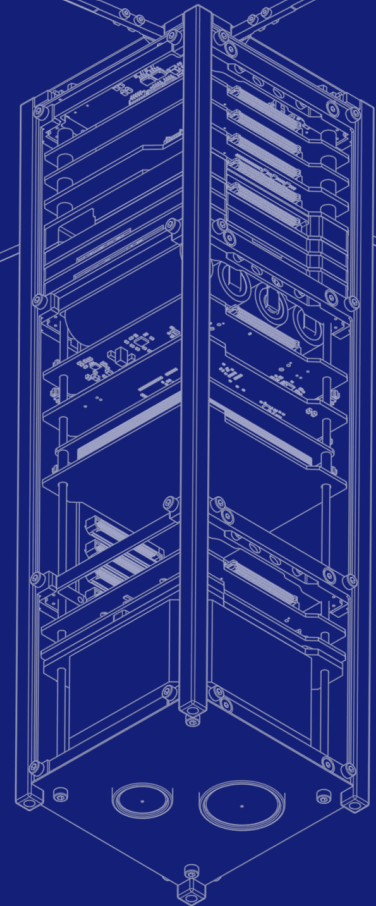
COMPUTERS
- OBC based on dual-core Cortex®-M4 + Cortex®-M7 at 480MHz with up to 8GB Flash storage capacity, 64MB SDRAM.
- Data-Intensive Payload Processor (DIPP) based on dual-core ARM® A9 + FPGA 28k LGs Fabric, up to 256GB flash storage. Linux OS powered with high level programming framework (Python, Java, etc.)
- Rich set of logic interfaces including 10/100 Ethernet, SPI, I2C, UART, RS-485, RS-422, USB, etc.

COMMUNICATIONS
- TTC based on on-flight reconfigurable low power VHF-UHF transceiver up to 900MHz band.
- Data Downlink: Optical communications based on Mechanisms-Free C-Band (1550nm) Laser transmitter, up to 500Mbps downlink.
- RF Data Downlink: S-Band SDR based transceiver (up to 6Mbps).
- S-Band patch antenna integrated in solar panel.
- Deployable turnstile monopole or dual dipole antenna configuration.

For more info:

sales@emxys.com