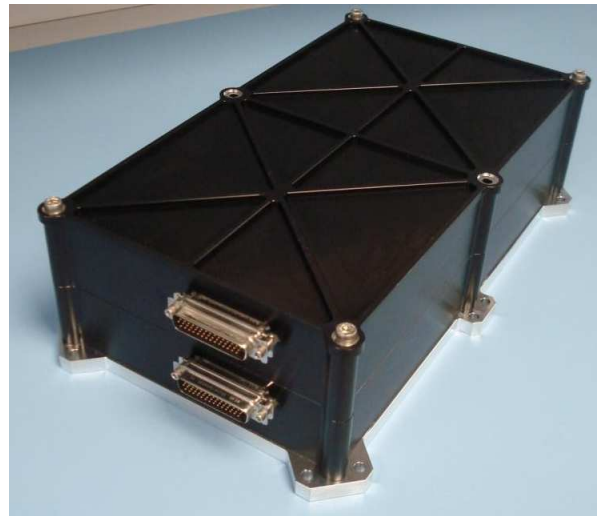


Inertial Sensor

MIRAS-01

Applications

- LEO missions and constellations
- 3-axis control systems
- Agile spacecraft
- Star camera blinding mitigation
- Autonomous de-tumble & Sun-acquisition
- Anomaly detection

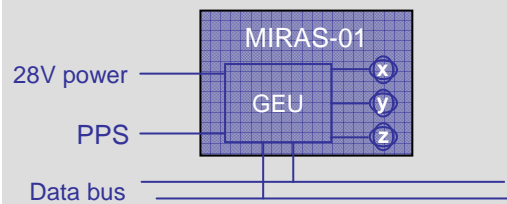


MIRAS-01 Inertial Sensor
(Dual-redundant Pair)

Features

- 8 previous flight units built.
- Manufactured to ECSS standards
- 3-axis attitude rate measurement
- MEMS sensor technology
- PPS clock synchronization
- Test port for closed-loop testing
- Available as single module or dual-redundant pair
- 7.5 year design life

Configuration



Interfaces

- Dual-redundant CAN TM/TC interface
- LVDS PPS input
- RS422 test port

Options

- Different housing configurations
- Various surface finishes
- RS422, RS485 & Spacewire interface options

Key Specifications

- 28 V unregulated supply, 5 W
- 1.8 / 2.8 kg (single / redundant pair)
- 0.01 deg/sec/ $\sqrt{\text{Hz}}$ noise
- 10Hz bandwidth

Other ADCS Products

- Complete ADCS Suite
- Magnetometers
- Magnetorquer rods
- Sun Sensors
- Reaction Wheels
- Star Trackers
- GPS Navigation Receiver

Heritage

- NigeriaSat-2
- Kanopus
- GökTürk-2

Inertial Sensor

MIRAS-01

The MIRAS-01 MEMS Inertial Rate Sensor provides reliable 3-axis rate measurements to support attitude control. The unit gives full performance over its entire operating temperature range and does not require active thermal control.

The internal clock can be synchronized to a Pulse-Per-Second input from an on-board time reference such as the SSTL SGR-10 GPS receiver. Attitude rate measurements are time-stamped.

The MIRAS-01 incorporates a test port to facilitate hardware-in-the-loop simulation. The unit accepts truth attitude rate via the test port and outputs representative rate telemetry.

- SSTL is ISO9001:2008 certified
 - Manufacture to:
 - ECSS Q-ST-70-08C
 - ECSS Q-ST-70-38C
 - All work overseen by ESA trained assembly staff

Standard Delivery Service Includes

- Compliance Testing
- Vibration Test
- Thermal Cycling
- User Manual
- Electrical, Mechanical & Environmental ICDs
- Test Results
- Export License and Shipping

- Thermal Vacuum Testing available
- Unit can be supplied prior to environmental testing

Rate Range	± 8deg/sec
Measurement Output Rate	1 – 10 Hz (configurable)
Noise	0.01 deg/sec/√Hz
Bias Stability	10 deg/hr over 1hr
Mass	1.8 kg
Dimensions	324 x 191 x 54 mm
Power	15 to 50 V, 5 W
Operating Temperature	-20 to +50 °C operating -30 to +60 °C non-operating
Random Vibration	25 G _{rms} in all axis
Radiation tolerance	10 kRad (Si)

Surrey Satellite Technology Limited

SSTL has launched over 30 satellites gaining almost 200 years in-orbit experience. SSTL draws on its world-class expertise in both small satellite platform technology and high and medium resolution optical instruments. SSTL provides complete turn-key system solutions; spacecraft, ground station, launch, operations and image processing.

SSTL is unique in the space industry; able to design, manufacture and integrate multiple satellites in-house.

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