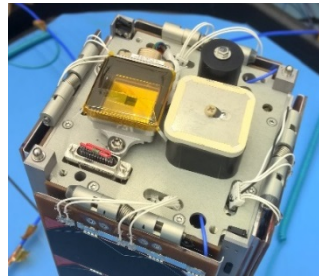
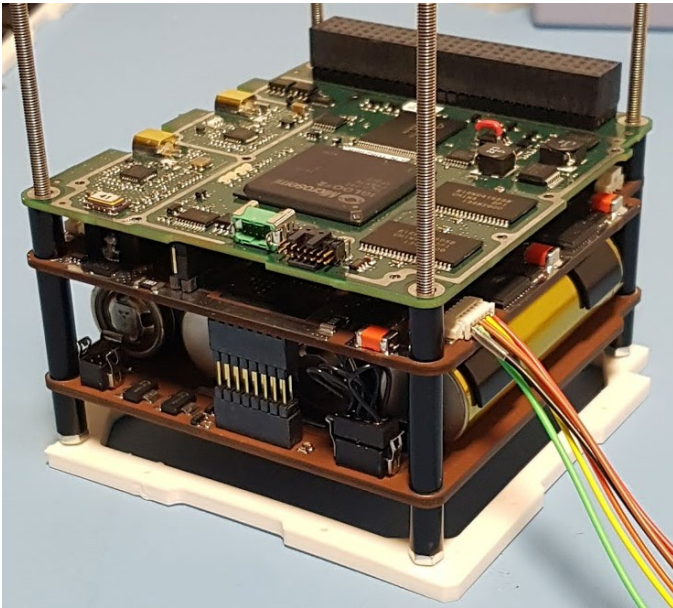


Space GNSS Receiver SGR-Ligo



The SGR-Ligo is SSTL's miniaturised Space GNSS (Global Navigation Satellite System) Receiver that supports the Cubesat PC-104 standard. The SGR-Ligo is low mass, low power and delivers position, velocity and time to Low Earth orbit satellites. It uses radiation tolerant core components; supports dual antennas and supporting 24+ channels capable of tracking GPS L1 signals, with options for GLONASS G1 and Galileo E1 signals.

The SGR-Ligo supports multiple interface standards including UART, CAN and I2C, and can be powered from either 3V3 or 5V spacecraft buses. The SGR-Ligo also supports the use of passive antennas for even lower power requirements.

BENEFITS

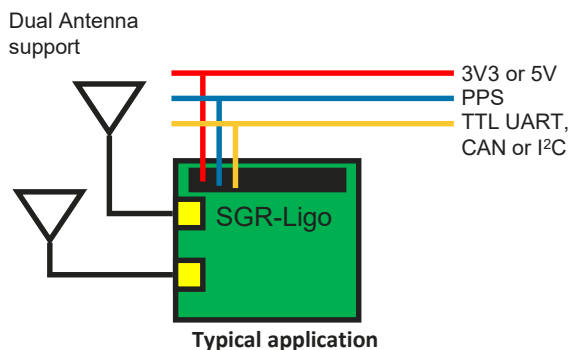
- Position, Velocity, Time Determination for LEO Missions
- Cubesat PC-104 standard footprint
- Reduced power requirements
- COTS-based design

FEATURES

- Supports 3V3 or 5V power
- 1 to 2 active or passive antennas
- Passive antenna support
- 24 L1/G1/E1 channels
- Fast Time to First Fix
- Multi GNSS options

Space GNSS Receiver SGR-Ligo

Physical Characteristics	
Dimensions (mm)	92 x 87 x 12
Power at 5V	<0.5W
Mass	90 g
Radiation	>5 kRad (Si) (core components tested to 10krads)
Temperature	-20° C to +50° C operating -30° C to +85° C non-operating
Performance Properties	
Number of channels	24
Number of antennas	1-2
Frequencies & signals	GPS L1 C/A Code GLONASS G1 (option) Galileo E1 (option)
PPS outputs	TTL
SEE mitigation	Yes (SEE & SEL) Fault-tolerant processor EDAC protected memories
Typical position*	5 m
Typical velocity *	10 cm/s
TTFF (NVRAM)*	<90 s
Time (UTC)*	100 ns
TM/TC interface(s)	TTL UART, CAN, I ² C
Optional: Lower power mode	12 channel operation <0.4W at 3V3



Interface configuration for SGR-Ligo

Additional features/options:

- 6 x selectable power supply pins
- Can be powered from switchable or permanent 3V3 or 5V
- Inhibit and reset lines
- 3x selectable UART I/O pin pairs
- Configurable for separate LNA power input
- Supports up to 2 antennas for redundancy and extra visible mode
- Multiple CubeSat-ready antenna options (standard patch, recessed patch, quadrifilar)
- Interface board available for bench test
- Additional low power modes
- Avionics-integrated variant available

Flight Heritage

- Due for launch on two CubeSats in 2019
- Derived from SGR-Axio and SGR-ReSI with extensive flight heritage

SSTL is ISO9001/14001:2015 certified

All work overseen by ESA certified assembly staff

Standard delivery service includes:

- compliance testing
- vibration test
- thermal cycling
- user manual
- test results
- export license and shipping
- thermal vacuum testing available

**Under defined 680km polar orbit, Earth pointing conditions
Product specification may be subject to change without notification*

SSTL designs, manufactures and operates high performance satellites, subsystems and ground systems for space agencies, international governments, and commercial customers worldwide. Our satellite platforms are designed to fly remote sensing, navigation and communication payloads in LEO, MEO and GEO orbits and beyond. Our innovative approach to low cost spacecraft engineering is changing the economics of space.