

INERTIAL NAVIGATION SYSTEMS

FEATURES

- Multimode Kalman Filter
- Accepts External Aiding Data
- Position Accuracy: 2.5 m CEP
- Velocity Accuracy: 0.8 m/s
- 10MHz GPS disciplined clock
- Platform Customization - Aerial/Land
- Shock Resistance up-to 20g
- Isolated Interfaces & Power Supply
- Ethernet Interface
- MIL-STD-810G & MIL-STD-461E Qualified
- JSS55555 Compliant

APPLICATIONS

- Inertial Guidance & Dead Reckoning
- Armored Vehicle Navigation
- Platform Stabilization and Control
- Unmanned Vehicle Navigation
- Antenna Orientation & Stabilization
- Mapping & Surveying
- Avionics
- Tactical Grade Navigation

NS6300S



DESCRIPTION

The Octantis 2 series of Inertial Navigation Systems are next-generation NAV systems offering tactical performance with high-performance MEMS sensors. The Octantis 2 series is a highly integrated system with an exclusive selection of low-noise accelerometers, low-drift gyroscopes, magnetometer, barometer, and multi-constellation GNSS.

Aeron's proprietary parameter estimation engine based on multi-modal Kalman filter works optimally utilizing the high-speed processor architecture offering real-time performance in demanding applications. The Octantis 2 INS system is ruggedized and qualified to MIL-STD-810G & MIL-STD-461E standards incorporating vibration & EMI rejecting features in the design.

Octantis 2 has multiple isolated interfaces for communication. It has a provision for interfacing odometer and externally feeding in aiding data from other external sensors. The OCT2 variants have a solid-state memory built-in for data logging.

The sensing elements are characterized in our in-house lab and corrected for temperature drifts, misalignment, non-linearity & other errors over the dynamic operating ranges.

NS6300S has a single L1 GNSS receiver, suitable for standalone land and airborne applications.

TECHNICAL SPECIFICATIONS

Parameter Name	Parameter Value
	OCTANTIS 2
	NS6300S
Acceleration	
Range	±15 g
Noise Density	160 µg / √Hz
Resolution	0.1 mg
Bias	±1.5 mg
Angular Rate	
Range	±480 °/s (upgradable up to 1900°/s)
Noise Density	0.006 °/s / √Hz
Bias Instability	< 1° / hr
Position & Velocity Accuracy	
Position	2 m CEP with SBAS, 2.5 m CEP with L1 GNSS, 2% of DT with external Odometer ¹ / external Air Data Computer
Velocity	<0.2 m/s with GNSS , <0.8 m/s (in 1 min) w/o GNSS
Attitude	
Roll Range	±180°
Pitch Range	±90°
Roll, Pitch Accuracy	0.15° (1σ) with GNSS aiding
Heading Range	±180°
Heading Accuracy ²	0.5°
Angle Resolution	< 0.01°
Magnetometer	
Range	±4 gauss
GPS / GNSS	
Type	72 channels L1, GNSS (GPS, GLONASS, Beidou, Galileo, SBAS)
TTFF ³ Cold Start	26 s
Reacquisition Time	1 s
GPS Modules	1
Electrical	
Input Voltage	20-30 VDC (isolated)
Power Consumption	5W
Connector	D38999 series III

1 - 0.5 - 2 %, subject to Odometer accuracy

2 - 1σ, Static accuracy after magnetic calibration

3 - Time to First Fix

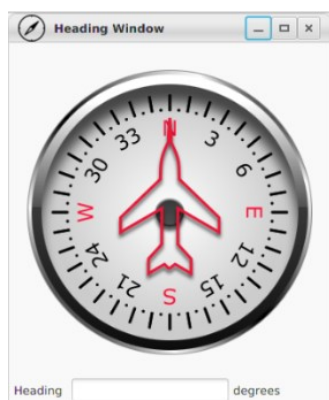
TECHNICAL SPECIFICATIONS

Parameter Name	Parameter Value
	OCTANTIS 2
	NS6300S
Physical	
Weight	900 gms
Size	142 mm (W) x 115 mm (B) x 62.10 mm (H)
Update rate	Up to 50 Hz
Data Format	NMEA / Binary
External I/Ps	Odometer
Output Parameters	Euler angles, Position in Geodetic, NED velocities, Body Accelerations, Body Rates, Quaternion
Environmental	
Operating Temperature	-40°C to +85°C
Storage Temperature	-45°C to +90°C
Humidity	10% to 90% RH (non - condensing)
Survival Shock	Up to 20g
IP Protection	IP67
Vibration	0.04 g ² / √Hz
MTBF	44000 hours
EMI/EMC	As per MIL-STD-461E
Environmental Tests	As per MIL-STD-810G
Interface Options	RS232 (isolated), RS422 (isolated), Ethernet (isolated TCP), 1PPS from GNSS, 10MHz disciplined clock

SOFTWARE SUITE

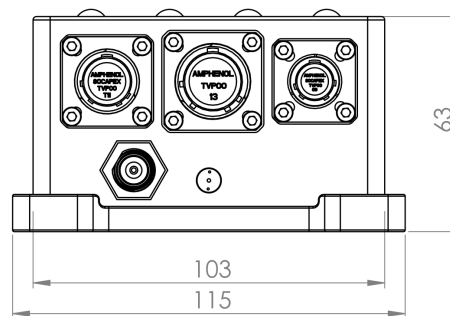
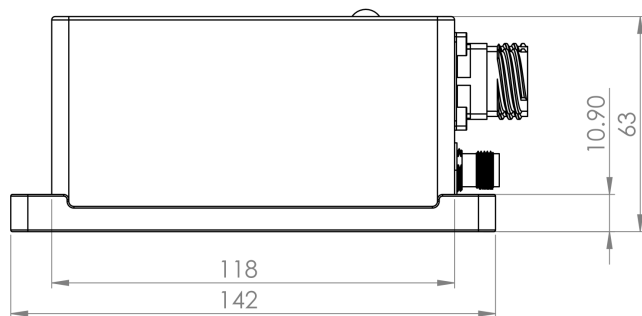
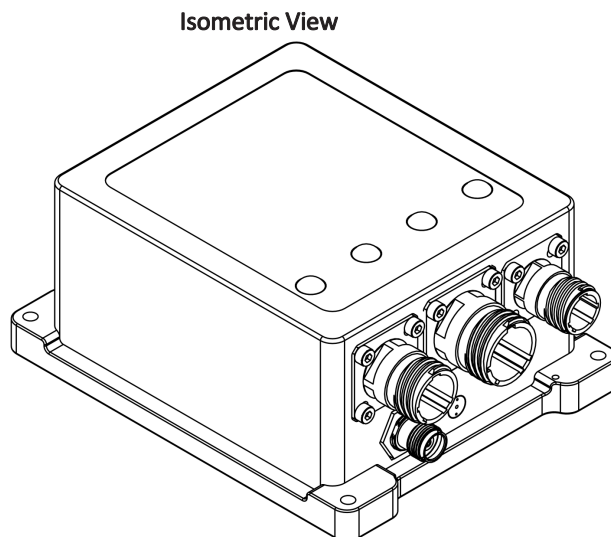
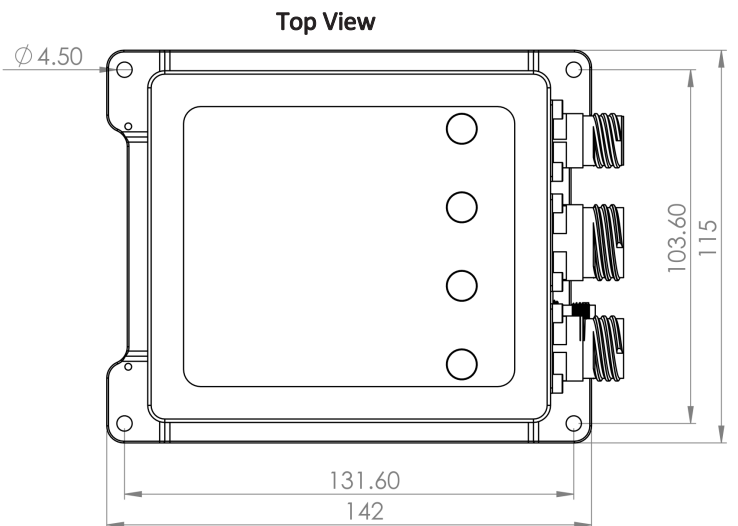
Octantis 2 INS comes with a feature rich software suite, for easy configuration, magnetic calibration, data display and data logging.

Note: These images of the software suite are for reference.



MECHANICAL DIMENSIONS

All dimensions in mm



ORDERING INFORMATION

OCT2 - NS6300S (Product Code: 19011)