

INERTIAL NAVIGATION SYSTEMS

FEATURES

- Multimode Kalman Filter
- Accepts External Aiding Data
- Tactical class IMU, 0.8 °/hr gyro
- Isolated Interfaces and Power Supply
- Ethernet Interface
- Shock Resistance up-to 40 g
- MIL-STD-810G, MIL-STD-461E and JSS55555 Compliant

APPLICATIONS

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

OCT2 NS6300S



Note: This is a representational image

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 high performance 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 and EMI rejecting features in the design.

Octantis 2 has multiple isolated interfaces for communication. It has a provision for interfacing odometer and externally providing aiding data from other external sensors.

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

OCT2-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	±16 g
Bias Instability	<15 µg
Angular Rate	
Range	±450 °/s
Bias Instability	0.8 °/hr
Position & Velocity Accuracy	
Horizontal Position ^{1,2,3}	2 m CEP with GNSS 1.5 m CEP with SBAS <2% of DT with external Odometer ⁴ / external Air Data Computer
Vertical Position ^{1,2,3}	5 m (1σ) with GNSS 2 m (1σ) relative with Barometer
Velocity	0.2 m/s with GNSS
Attitude	
Roll Range	±180°
Pitch Range	±90°
Roll, Pitch Accuracy ²	0.08° RMS (static/low dynamics) 0.15° RMS (dynamic)
Heading Range	±180°
Heading Accuracy ^{1,2,5,6}	<0.3° RMS with GPS in dynamic conditions <0.5° RMS with magnetometer
Angle Resolution	<0.01°
Barometer	
Range	300-1100 hPa
Accuracy	±1 hPa
Magnetometer	
Range	±8 gauss
GPS / GNSS	
Type	72 channels L1, GNSS (GPS L1C/A, SBAS L1C/A, GLONASS L1OF/BeiDou B1I, Galileo E1B/C)
TTF ⁵ Cold Start	26 s
Reacquisition Time	1 s
Connector	TNC
Electrical	
Input Voltage	12 V to 32 V DC
Power Consumption	<5 W
Connector	D38999
Interface Options	RS232, RS422, Ethernet, CAN, 1PPS from GNSS

1 - Open sky conditions

2 - RMS levels

3 - Baseline <40 km

4 - 1-2 %, subject to Odometer accuracy

5 - Accuracy after magnetic calibration and setting correct declination / offset angle

6 - After magnetic calibration for Hard Iron and Soft Iron disturbances, and in static magnetic field

7 - Time to First Fix

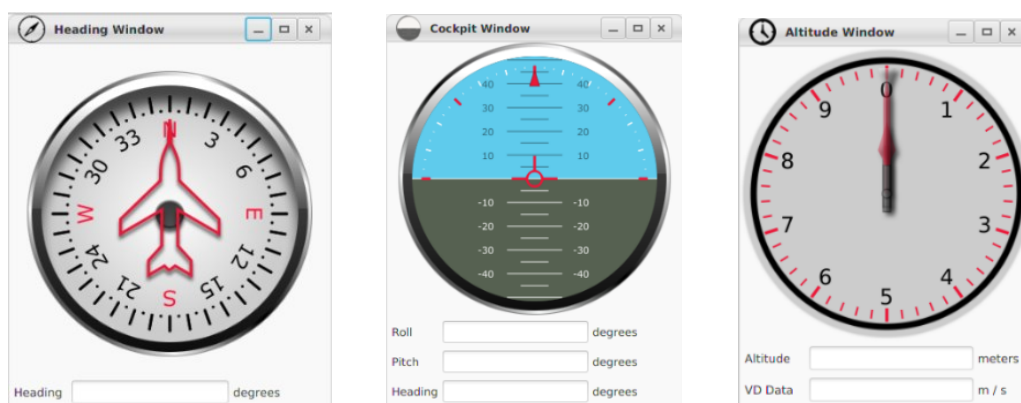
TECHNICAL SPECIFICATIONS

Parameter Name	Parameter Value
	OCTANTIS 2
	NS6300S
Physical	
Weight	<1 kg
Size	142 mm (W) x 115 mm (B) x 63 mm (H)
Update rate	100 Hz (Navigation data) 200 Hz (IMU data)
Data Format	NMEA / Binary
External I/Ps	Odometer/Air Data
Output Parameters	Euler angles, Position in Geodetic, NED velocities, Body Accelerations, Body Rates and Quaternion
Environmental Compliant	
Operating Temperature	-40 °C to +85 °C
Humidity	10% to 90% RH (non - condensing)
Survival Shock	Up to 40 g
IP Protection	IP65
Vibration	0.04 g ² /VHz
EMI/EMC	As per MIL-STD-461E
Environmental Tests	As per MIL-STD-810G

SOFTWARE SUITE

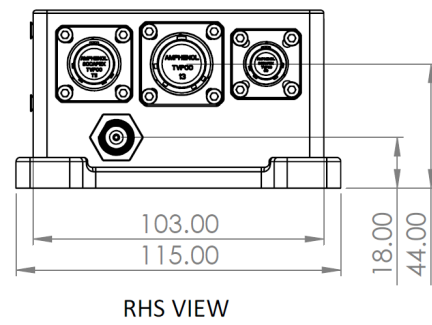
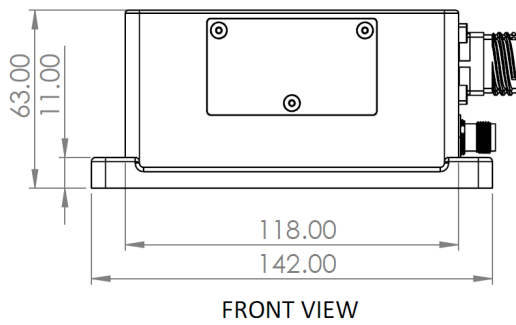
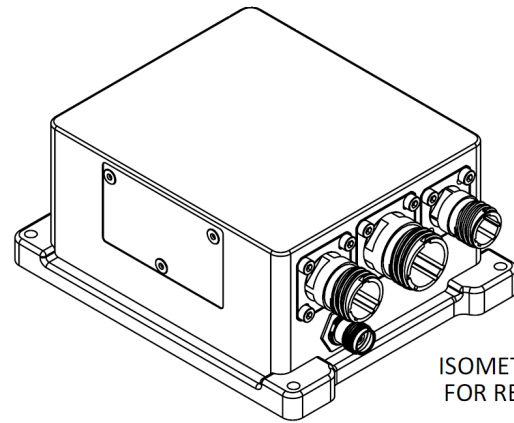
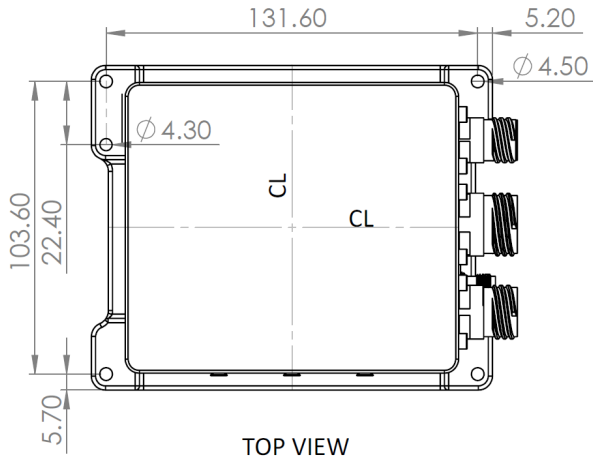
Octantis 2 INS comes with a feature rich software suite, for easy configuration, magnetic calibration, data display and data logging.

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



MECHANICAL DIMENSIONS

All dimensions in mm


ORDERING INFORMATION
OCT2 - NS6300S (Product Code: 19011)