

Civilian GPS



Support for wide range of IMU's

- ❖ MEMS (internal)
- ❖ Tactical (external)
- ❖ Navigation (external)

SAASM GPS



Internal data logging

Path to M-CODE

Geo-iNAV[®] High Performance Inertial Navigation System

GEO-INAV[®] IS A FULLY-INTEGRATED GPS-AIDED INERTIAL NAVIGATION SYSTEM SUPPORTING A WIDE RANGE OF IMU GRADES AND PROVIDING A HIGH-PERFORMANCE, TRUSTED POSITIONING AND NAVIGATION CAPABILITY

Geo-iNAV[®] is offered in several configurations designed to meet a wide range of requirements, and is available for both commercial and military applications:

- Geo-iNAV[®] Commercial: Designed for civilian navigation applications (no ITAR restrictions)
- Geo-iNAV[®] SAASM: Designed for applications that have a military SAASM GPS requirement

Key Features

- Centimeter-level position accuracy (dual-frequency RTK configuration)
- GPS Processing with Precise Instantaneous Network positioning based on Geodetics' Epoch-by-Epoch[®] technology
- In-motion dynamic alignment
- Support for low, medium and high-dynamic platforms
- Post-processing support with RTD-Post
- Mil-Spec ruggedization

Applications

- UAV and UGV navigation and control
- Military and defense security
- Robotic and ROV control
- Oil and gas exploration
- Transportation safety and maintenance
- Mobile mapping systems and photogrammetry
- Construction and structural management

Geo-iNAV® GPS Options

GPS Options	Processing Options	Typical Position, Velocity, Acceleration, Attitude Accuracy (RMS) ¹		
		Position	Velocity, Acceleration	Roll, Pitch / Heading
Commercial	L1 Standalone	0.5 m (WAAS)	0.1 m/s, 0.15 m/s ²	0.1° / 0.3°
	L1/L2 RTK	5 cm	0.02 m/s, 0.1 m/s ²	0.05° / 0.15°
SAASM	L1/L2 Standalone	1.0 m	0.1 m/s, 0.15 m/s ²	0.1° / 0.3°
	L1/L2 RTK	5 cm	0.02 m/s, 0.1 m/s ²	0.05° / 0.15°

¹Accuracy is dependent on GPS satellite system performance, ionospheric conditions, satellite visibility, data-link and other factors.

Technical Specifications

Parameter	Commercial Configurations	SAASM Configurations
Interfaces	External power connector, TNC GPS antenna connector, 1 Ethernet data port, 3 RS-232 serial ports, 1PPS output, 4 status LEDs.	External power connector, TNC GPS antenna connector, 1 Ethernet data port, 3 RS-232 serial ports, 1PPS output, 4 status LEDs, SAASM Keyload Connector, SAASM Zeroize button.
GPS Frequency Tracking	L1/L2	L1 & L2 (P/Y Code)
Key Loading	N/A	DS-101
Size / Weight / Power	33.8 in ³ (4.73x3.95x1.81) / 20 oz. / 10 – 30 VDC @ 2 Amps min. (not including external IMU's)	
Temperature Range	Specified: -20°C to +65°C Operating: -40°C to +70°C	
Real-Time Data Output	Navigation solutions at 125 Hz (MEMS), 100 Hz. (FOG, RLG). available via Ethernet, RS-232	
Data Recording/Logging	Navigation solutions, raw GPS & IMU data (for post-processing with RTD-Post)	

IMU Specifications

Parameter	MEMS	Fiber Optic Gyro	Ring Laser Gyro (ITAR)
Gyroscope Dynamic Range	±100°/sec or ±200°/sec	±490°/sec.	±1074°/sec.
Gyroscope Bias In-Run Stability (1σ)	2.2°/hr.	2°/hr.	1°/hr.
Gyroscope Angle Random Walk (1σ)	0.09°/√hr.	0.012°/√hr.	0.125°/√hr.
Accelerometer Dynamic Range	±3g	±10g	±37g
Accelerometer Bias In-Run Stability (1σ)	0.1mg	7.5mg	1mg
Accelerometer Velocity Random Walk (1σ)	0.04(m/sec)/√hr.	0.07(m/sec)/√hr.	0.001(m/sec)/√hr.

