

Geo-LDV

Tightly Coupled Epoch-by-EPOCH® High-Accuracy, Real-Time Inertial Navigation System

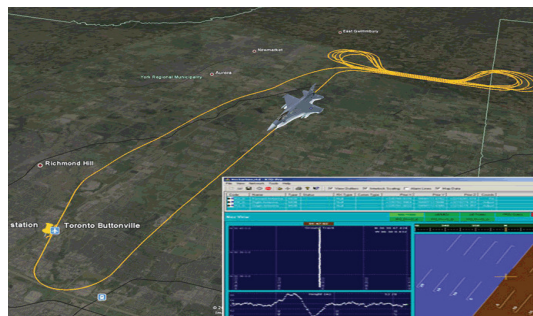
The Geo-LDV is a tightly coupled high-accuracy, real-time inertial navigation system for dynamic platforms. Applications include Time Space Positioning Information (TSPI) for manned and unmanned air, sea and ground vehicles, robotics and LiDAR mapping. The Geo-LDV is powered by Geodetics' Epoch-by-EPOCH® instantaneous differential GPS technology tightly coupled with a range of Inertial Measurement Units (IMU) i.e., MEMS, tactical and navigation grade devices with Geodetics' GKF Extended Kalman Filter.

The Geo-LDV offers a variety of processing, GPS and IMU options and can be configured to cover a broad performance spectrum.

Geo-LDV Features

- + Centimeter-Level position accuracy (dual-frequency DGPS configuration)
 - + <0.05 degree attitude accuracy (excluding MEMS IMU's)
 - + Small footprint - 25 cubic inches (without external IMU)
 - + Light weight - 15.8 oz. (without external IMU)
 - + Internal TDMA data link optional
 - + 1 RS-232 port and 1 Ethernet port
- Powered by the following Geodetics technologies:
- + Precise Instantaneous Network (PIN) positioning, based on Geodetics' Epoch-by-EPOCH® technology, a new network-based real-time methodology not requiring multi-epoch initialization and

- re-initialization
- + Tight coupling with Geodetics' GKF Extended Kalman Filter
- + Configurable with various grade IMU's and formats including Honeywell HG1900, HG1700 and HG9900, Litton LN200 (in both SDLC and AMRAAM formats)
- + Operates seamlessly with GPS reference networks
- + Mil-Spec ruggedization
- + Configurable with single or dual-frequency GPS receivers
- + On board end-user application support



Geo-LDV

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Technical Specifications

Applications

Civilian uses include LiDAR mapping, and tracking first responder assets. Military uses include tracking air, sea and ground vehicles, high-accuracy automated landing systems for UAV's, etc.

Size, Weight and Construction

- + 25 cubic inches (without external IMU)
- + 15.8 oz. (without external IMU)
- + MIL-810E Environmental Qualified
- + MIL-461 EMI and RFI

Communications (Option for Domestic Use Only)

- + Internal TDMA radio (available in various frequencies)
- + AES encryption available
- + Support for external datalinks

GPS

- + Configurable with single or dual-frequency receivers
- + GPS sample rate up to 20 Hz.

Operational Modes

- + Differential Epoch-by-EPOCH® Initialization-free, wide-area Precise Instantaneous Network (PIN) positioning*
- + Tight Coupling with Geodetics GKF Extended Kalman Filter

Data Output

- + Solutions in Geodetics' published RYO binary protocol
- + Precise position, velocity, acceleration, angular rate and attitude (transferred to an arbitrary eccentric point)

IMU's (Option for Domestic Use Only)

- + Honeywell HG1900 MEMS
- + Honeywell HG1700 Ring Laser Gyro
- + Honeywell HG9900 Navigation Grade
- + Litton LN200
- + Low-cost MEMS sensors
- + Support for both AMRAAM and SDLC formats

Power

- + Input power 10-30 volts DC

Interfaces

- + 1 RS232 serial port
- + 1 Ethernet data port
- + External power connector
- + Internal wireless TDMA data link (optional)
- + GPS antenna connector
- + 4 status LEDs

Safety and Diagnostics

- + Internal safety and monitoring systems
- + Internal BIT with operator notification

End User Application Support

Solution stream available on-board for user written application access to precise navigation solutions

*Accuracy is dependent upon GPS satellite system performance, ionospheric conditions, and other factors.

