

LLN-G1

HYBRID INERTIAL LAND NAVIGATOR



Northrop Grumman LITEF has 60 years of experience in Inertial Systems Technology and was the first company in the world to introduce Fiber Optic Gyroscopes (FOG) in commercial aviation systems in the 1990s.

Triggered by demand of the German Army LITEF established its line of land navigation systems. All LITEF LAND NAVIGATORS are based on FOG technology combined with high accuracy MEMS accelerometers, developed and produced in Germany.

The LLN-G1 is a hybrid / inertial navigator which receives automatic position updates from GPS when available. Based on a full six degree of freedom IMU its design provides a navigation performance matching navigators with more expensive Ring Laser Gyro sensors by applying the inherent advantages of Fiber Optic Gyro technology.

Designed for the environmental conditions of the Leopard2 MBT, the LLN-G1 is in use on all kinds of military vehicles, both wheeled and tracked, providing reliable and uninterrupted position and heading data for situational awareness and command and control (C2) systems.

MAIN FEATURES

- Hybrid and inertial navigation
- Continuous position and heading data
- Automatic operation
- Alignment on the move and gyrocompass alignment
- Fully operational immediately after power-on
- Rotational rate and linear acceleration data
- Jamming robustness
- RS-422, CAN-BUS, MILSTD-1553 B and Ethernet interfaces
- No scheduled maintenance
- Designed for 20+ year life time
- Digital inertial sensor generation
- German technology

TYPICAL APPLICATIONS

- Waypoint navigation
- Heading reference for Laser Range Finder
- Attitude data for Far Target Location and Active Suspension
- Reliable C2 position updates independent of GPS

TECHNICAL DATA LLN-G1

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PERFORMANCE (all values PE50/CEP50)	
Heading	$\leq 0.2^\circ$ (GPS moving alignment) $\leq 0.19^\circ \cdot \text{sec (Lat)}$ (Gyro compass alignment)
Position - INS/VMS/GPS - INS/VMS - INS	$\leq 8 \text{ m}$ (typ.*:< 5 m) $\leq 0.5 \% \text{ DT}$ (typ.*:< 0.15 % DT) $\leq 1.0 \% \text{ DT}$
Altitude - INS/VMS/GPS - INS/VMS	$\leq 10 \text{ m}$ $\leq 1.0 \% \text{ DT}$
Attitude (Pitch / Roll) - static - dynamic	$\leq 0.05^\circ$ (typ.*:<0.02°) $\leq 0.1^\circ$
PHYSICAL	
Weight	< 5.1 kg
Dimensions L x W x H	220 x 180 x 147 mm ³
Power Consumption	< 28 W
Power Supply	18 - 32 VDC (MIL-STD-1275B)
ENVIRONMENT	
Operating temperature	-46 °C to +69 °C
Vibration Shock	MIL-STD-810F
EMC	MIL-STD-461E
LOGISTICS	
Built in Test	Power up BIT Continuous BIT
Compatible GPS receivers	GPS-ICD 153, NMEA-0183
OPTIONAL EQUIPMENT	
GPS receivers	
Odometers	
Displays	
Test equipment	

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