

*High Accuracy Integrated
FOG Inertial Navigation
System/Global Positioning
System*

LN-270 Pointing Locating Navigating System (PLANS)TM INS/GPS Land Navigation System



Description

Northrop Grumman's LN-270 Pointing Locating Navigating System (PLANS) is a complete, integrated land navigator and precision pointing system for ground-based military vehicles. The LN-270 combines a high accuracy, integrated fiber optic gyro (FOG), an inertial navigation system (INS), and a 12-channel P(Y) code GPS.

The LN-270 is the production system based on Northrop Grumman's GPS Guidance Package (GGP) program. The GGP was a DARPA-sponsored program managed by the Aviation and Missile Command (AMCOM) to develop a technology core of low-cost, modular, fiber optic gyro, and miniature GPS-based guidance systems that can be easily configured to

support a broad spectrum of DoD platforms. Successful Army land testing in Phase I and Phase II led to the production build of this system.

Applications

The LN-270 brings affordable pinpoint navigation and precision pointing to all classes of ground-based military vehicles.

Advantages

The fully integrated, tightly coupled LN-270 design provides superior positioning, quicker response time, and higher anti-jam performance than simple position navigation (POS NAV), Precision Lightweight GPS Receivers (PLGR), Position, Velocity and Time (PVT) or older embedded INS/GPS systems.

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Position and Pointing

	GPS Aided	Inertial/Odometer
Position	<10m CEP	0.15 - 0.5 DT (>4 km)
Pointing	<0.1 mil PE	0.34 - 2.0 mils sec (latitude) PE
Elevation	<0.1 mil PE	<1.0 mil PE
	<2 min TTFF (cold start)	5 min (gyrocompass) 30 sec (stored heading)
ZUPTS		No fixed interval
Operating Modes	Moving base alignment; aided navigation	Gyrocompass align; stored heading align; moving base align; Shoot-on-the-Move; odometer; position fix

Interfaces and Data

Position	Grid or geodetic
Heading	True, magnetic (no external reference required)
Velocity	3-axis
Acceleration	3-axis
Angular Rates and Accelerations	3-axis linear and angular output
Mil-Std-1553, RS-422, RS-485	Standard (multiple digital formats)
HAVE QUICK, PTTI Independent Inertial GPS Data	Standard
	Standard; GPS Mil-Std-1553 data per SS-US-200, SAASM
Key Loading	Standard GPS loaders, data bus (application approval required)

Characteristics and Operating Ranges

Power	Mil-Std-1275A, <25W (digital)
Weight	13.5 lb (6.12 kg)
Temperature	-54°C +71°C (+95°C intermittent) passive
Vibration	Mil-Prf-71185
Shock	Mil-Prf-71185
Gunfire	Mil-Std-810
Acoustic	Mil-Std-810
Rates and Accelerations	1,000°/sec; 1,500°/sec ² ; 13g/sec
MTBF	>20,000 hours
Maintainability	Full BIT; no intermediate maintenance required; no special tooling or test equipment required

For more information, please contact:

Northrop Grumman Corporation
Navigation Systems
21240 Burbank Boulevard
Woodland Hills, CA 91367 USA
1-866-NGNAVSYS (646-2879)
www.nsd.es.northropgrumman.com