GNAV540

Ruggedized GPS/IMU

MOOG CROSSBOW

MEMS-Based GPS/IMU for Ground Systems

GNAV540 is a next generation, high-reliability, Ethernet-enabled ground vehicle version of Moog Crossbow's 440 series inertial systems. Moog Crossbow has thousands of inertial systems fielded worldwide for use in U.S. DOD and Coalition Forces programs.

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DESCRIPTION

Moog Crossbow's GNAV540 delivers continuous GPS position, true heading and vehicle attitude tracking information for ground vehicles. The system integrates advanced MEMS inertial gyros and accelerometers, embedded or optional remote 3-Axis magnetometer, a C/A code GPS receiver, and 10/100 Ethernet interface in a fully sealed enclosure for tactical vehicles operating in homeland security environments.

Using the latest inertial sensors and navigation techniques, the GNAV540 provides high dynamic tracking of vehicle Pitch, Roll, and True Heading under aggressive maneuvers. The performance of the GNAV540 compares favorably with systems typically priced two to three-times higher, thus providing a substantial value.

KEY FEATURES

- **Pitch and roll accuracy of <0.4°**
- **Ethernet output**
- **MIL-C-38999 connector**
- **Integrated C/A Code GPS aiding**
- **MTBF of > 25,000 hrs**
- **Less than 4W power**
- **Optimized for ground vehicle power**
- **Rugged sealed enclosure meeting MIL-STD-810 and EMI immunity**
- **High range sensor options (400°/sec, 10g)**

SPECIFICATIONS

Environment

Operating Temperature	-40° to +71°C
Enclosure	IP66 compliant

Electrical

Input Voltage	9 to 42 VDC
Power Consumption	< 4 W
Digital Interface	10/100 Ethernet or RS-422

Physical

Size	5.3"w x 4.8"l x 2.7"h
Weight	2.7 lbs (1.2 kg)
Interface Connector	Mil-C-38999, 37 Pin
GPS Antenna Connector	SMA Male

PERFORMANCE

Position/Velocity

Position Accuracy	<7.8 m CEP
1PPS Accuracy	±50 ns

Heading

Accuracy	<1.0° rms (magnetic) <0.75° rms (with GPS aiding)

Attitude

Range: Roll, Pitch	±180°, ±90°
Accuracy	<0.4°

Angular Rate

Range: Roll, Pitch, Yaw	±200°
Bias Stability in run	<10°/hr
Bias Stability over temp	<0.02°/sec

Acceleration

Input Range	±4 g or ±10 g
Bias Stability in run	<1 mg
Bias Stability over temp	<4 mg

ORDERING INFORMATION

Model	Description
GNAV540MA-201-1	Ruggedized, GPS Aided AHRS with embedded GPS Module
GNAV540MA-201-2	Ruggedized, GPS Aided AHRS without embedded GPS Module

For more information

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