ANS | 420-L

TACTICAL LAND INERTIAL NAVIGATION SYSTEM

#Navigation

IN MOTION ALIGNMENT WITH GPS OR GNSS
WAYPOINT ALIGNMENT WITHOUT GPS OR GNSS
EMBEDDED RECEIVER GPS OR GNSS

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TACTICAL LAND INERTIAL NAVIGATION SYSTEM

ANS 420-L is an integrated position and attitude determination system for land vehicles. ANS 420-L provides linear acceleration, linear and angular velocity, position, attitude to the host vehicle systems continuously.

ANS 420-L consists of strapdown inertial measurement unit, system processor unit, power supply unit, Embedded GPS (SAASM)/GNSS Receiver (EGR) and chassis. ANS 420-L is capable of using GPS (SAASM) or GNSS as embedded receiver. ANS 420-L is also capable of using an external receiver.

The tightly coupled, embedded INS/GPS (SAASM) or GNSS and integrated odometer mechanization of ANS 420-L provides improved performance for land platforms.

ANS 420-L provides hybrid (inertial+ GPS/GNSS + Odometer) navigation solution and GPS/GNSS only navigation solution simultaneously. ANS 420-L has the capability of providing high performance position and attitude with odometer update in case of lack of GPS/GNSS signals.

ANS 420-L is a cost effective solution for all types of ground-based vehicles requiring position and pointing during their mission.

ANS 420-L is an open architecture and hardware/software flexible unit which can be adapted to various land platforms.

General Specifications
- Embedded Commercial (SPS) GPS receiver or GPS
- Hybrid, GPS Only Navigation Solution
- Odometer Update
- Zero Velocity Update
- UTM or Geographical Position Calculation
- True, Grid or Magnetic Heading Calculation
- Position Update
- Start-Up BIT, Periodic BIT
- Field Programmable Software
- No Periodic Maintenance

System Operational Modes
- Initialization
- Alignment
  - Gyro Compass (GC) Alignment
  - In Motion Alignment with Internal/External GPS (SAASM)/GNSS
  - Waypoint Alignment
  - Stored Heading Alignment
- Hybrid Navigation (HNAV)
- Initiated Built in Test (IBIT)

System Interfaces
- MIL-STD-1275D Electrical Power Interface
- High speed RS422 Asynchronous Serial Test Interface
- RS422 Asynchronous Serial User Interface
- Spare RS422 Asynchronous Serial Interfaces
- Ethernet User Interface
- Active and Passive RF Antenna Interface
- Discrete Interfaces

Navigation Performance

Parameter	Performance Specification
Heading (RMS) (With GPS(SAASM)/ GNSS Aided or Waypoint Alignment)	7 mils (1 sigma)
Attitude (Roll and Pitch) (RMS)	4 mils (1 sigma)
Horizontal Position (CEP)	
Inertial + Odometer	% 1.0 x distance travelled
Inertial+Odometer+GPS/GNSS	10 m
Vertical Position (PE)	
Inertial + Odometer	% 0.4 x distance travelled
Inertial+Odometer+GPS/GNSS	15 m

Alignment Modes and Durations

Gyrocompass Alignment Mode (Coarse Alignment)	GPS (SAASM)/GNSS In-Motion Alignment Mode (Full Alignment)	Stored Heading Alignment
180 sec	300 sec	30 sec

Environmental Conditions
- MIL-STD-810

Electromagnetic Environmental Effects
- MIL-STD-461

Dimensions and Weight
- ~ 26cm x 19cm x 12.5 cm (including connectors)
- < 5 kg (with GPS receiver installed)

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