

ANS-310K

ASELSAN TACTICAL LAND INERTIAL
NAVIGATION SYSTEM

IN MOTION ALIGNMENT
WITH GPS

WAYPOINT ALIGNMENT
WITHOUT GPS

EMBEDDED GPS
SAASM OR SPS





ANS-310K

ASELSAN TACTICAL LAND INERTIAL NAVIGATION SYSTEM

ANS-310K is an integrated position and attitude determination system for land vehicles. ANS-310K provides linear acceleration, linear and angular velocity, position, attitude to the host vehicle systems continuously.

ANS-310K consists of strapdown inertial measurement unit, system processor unit, power supply unit, Embedded GPS Receiver (EGR) and chassis. ANS-310K is capable of using 12 channel commercial SPS GPS receiver as embedded GPS receiver. ANS-310K is also capable of using external GPS receiver.

The tightly coupled, embedded INS/GPS and integrated odometer mechanization of ANS-310K provides improved performance for land platforms.

ANS-310K provides hybrid (inertial+ GPS + Odometer) navigation solution and GPS only navigation solution simultaneously. ANS-310K has the capability of providing high performance position and attitude with odometer update in case of lack of GPS signals.

ANS-310K is a cost effective solution for all types of ground-based vehicles requiring position and pointing during their mission.

ANS-310K is an open architecture and hardware/software flexible unit which can be adapted to various land platforms.

Long mean time between failure (MTBF) and internal built in test capability reduces the logistics requirement to a minimum. ANS-310K does not require periodic maintenance.

General Specifications

- Embedded Commercial (SPS) GPS receiver
- 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
 - Waypoint Alignment
 - Stored Heading Alignment
- Hybrid Navigation
- Initiated Built In Test (BIT)

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
- External GPS Interface (ICD-GPS-153)
- Active and Passive RF Antenna Interface
- Discrete Interfaces

Navigation Performance

Parameter	Performance Specification
Heading (RMS) (With GPS aided alignment 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	10 m
Vertical Position (PE)	
Inertial + Odometer	% 0.4 x distance travelled
Inertial+Odometer+GPS	15 m

Alignment Modes and Durations

Gyrocompass Alignment Mode (Coarse Alignment)	GPS 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 / DO-160E

Dimensions and Weight

- ~ 24cm x 18cm x 12.5 cm (including connectors)
- < 4.3 kg with GPS receiver installed

