

ANS | 610-M

NAVAL INERTIAL NAVIGATION SYSTEM

#Navigation



0.5 NM/HR
PERFORMANCE WITHOUT GPS (SAASM)/GNSS
EMBEDDED RECEIVER
GPS (SAASM) OR GNSS



aselsan

ANS | 610-M

NAVAL INERTIAL NAVIGATION SYSTEM

ANS 610-M is a navigation grade naval inertial navigation system with embedded GPS (SAASM)/GNSS receiver and Log Speed interface. It is a small, low-cost, mass-producible system that will support a broad spectrum of marine platforms. ANS 610-M is designed for stabilization of shipboard sensors, such as radars, EO/IR trackers and to serve as a main/back up ship's gyrocompass.

ANS 610-M supplies linear acceleration, linear and angular velocity, position, attitude and heading to the host vehicle systems continuously. ANS 610-M provides a hybrid (Inertial+GPS (SAASM)/GNSS) navigation solution, inertial only navigation solution and a GPS (SAASM)/GNSS only navigation solution simultaneously. ANS 610-M is an open architecture and hardware/software flexible unit which can be adapted to various naval platforms.

ANS 610-M consists of strapdown inertial measurement unit, system processor unit, power supply unit, embedded GPS (SAASM)/GNSS receiver (EGR) and chassis. EGR is capable of tracking space vehicles simultaneously and transmitting the line-of-sight (LOS), position and velocity information to the system processor. The system processor combines the GPS (SAASM)/GNSS data with the inertial data from IMU using Kalman filter.

ANS 610-M is capable of using either GPS (SAASM) receiver or GNSS receiver as embedded satellite receiver. ANS 610-M is also capable of using external Log Speed data to complement hybrid and inertial only navigation solutions.

The hybrid (INS/GPS (SAASM) or INS/GNSS) and integrated Log Speed mechanization of ANS 610-M provides improved performance for surface naval platforms. ANS 610-M also has capability to operate with an external GNSS receiver.

System Functions

- Hybrid, Free Inertial, GPS (SAASM)/GNSS Only Navigation Solution
- Position Update
- Alignment Progress Status
- GPS (SAASM)/GNSS Lever Arm Correction
- Start-Up BIT, Periodic BIT
- Field Programmable Software
- Ship Log Speed Aiding
- UTM and Geographical Position Calculation
- True, Grid or Magnetic Heading Calculation
- No Periodic Maintenance



System Operational Modes

- Initialization
- Alignment
 - Dock Gyro Compass (GC) Alignment
 - In Motion Alignment with GPS/GNSS
 - In Motion Alignment with Log Speed
- Navigation
 - Hybrid Navigation (HNAV)
 - Inertial Navigation (INAV)
- Initiated Built In Test (IBIT)

System Interfaces

- 28 VDC Power Input
- RS-422 Asynchronous Serial Interfaces
- Test Port Serial Interface, User Port Serial Interfaces
- Spare Serial Ports
- External GNSS Interface
- Have Quick and 1PPS Interface
- KYK-13 Interface
- Active and Passive RF Antenna Interface
- Discrete Interfaces

Navigation Performance

Positioning and Pointing Accuracy	Inertial	Inertial + Log Speed	Inertial + GPS (SAASM)/GNSS + Log Speed
Position (CEP)	≤1 nm/hr	≤0.5 nm/hr	≤10 m
Heading (azimuth) (RMS)	≤1 mils	≤1 mils	≤1 mils

Alignment Modes and Durations

Dock Gyrocompass Alignment	GPS (SAASM)/GNSS In-Motion Alignment	Log Speed In-Motion Alignment
15 min	15 min	30 min

Environmental Conditions

- MIL-STD-810G Compliant

Electromagnetic Conditions

- MIL-STD-461G Compliant

Dimensions and Weight

- ~ 29 cm x 20 cm x 17 cm (including connectors)
- Less than 9 kg with GPS (SAASM)/GNSS receiver installed

Specifications are subject to change without any notice. | All tolerances are within ±10%.