

ANS | 313-A

TACTICAL AIRBORNE INERTIAL
NAVIGATION SYSTEM

#Navigation



IN MOTION ALIGNMENT WITH GPS
EMBEDDED SPS GPS



aselsan

ANS | 313-A

TACTICAL AIRBORNE INERTIAL NAVIGATION SYSTEM

ANS 313-A is an integrated position and attitude determination system with embedded GPS receiver which is intended for application to air platforms.

ANS 313-A consists of strapdown inertial measurement unit, system processor unit, power supply unit, embedded GPS receiver (EGR) and chassis. The system provides linear acceleration, linear and angular velocity, position, attitude and heading to the host vehicle systems continuously.

ANS 313-A provides a hybrid (Inertial + GPS) and a GPS only navigation solution simultaneously. ANS 313-A is also capable of using external barometric pressure altitude data to complement hybrid navigation solution.

The tightly coupled mechanization of inertial and GPS data and ability to use external pressure altitude data of ANS 313-A provides improved performance for airborne platforms.

ANS 313-A is a cost effective solution for all types of airborne platforms requiring position, velocity and attitude during their mission.

ANS 313-A is an open architecture and hardware/software flexible unit which can be adapted to various airborne platforms.

Long mean time between failure (MTBF) and internal built in test capability reduces the logistics requirement to a minimum. ANS 313-A does not require periodic maintenance.

General Specifications

- Hybrid and GPS Only Navigation Solution
- 3 Axes Position, Velocity and Attitude
- 3 Axes Angular Rates and Linear Accelerations
- Embedded Commercial (SPS) GPS Receiver
- True and Magnetic Heading Calculation
- External Heading and Barometric Altitude Update
- Configurable Flight Control Filters
- Built In Test Capability
- Low Power Consumption (<25 W @ 28VDC)
- Field Programmable Software
- No Periodic Maintenance

System Interfaces

- MIL-STD-704F Compliant 28 VDC Power Interface
- 2 x RS422 Asynchronous Serial Interface
- Have Quick and 1PPS Interface
- Active and Passive RF Antenna Interface

Navigation Performance

	With GPS (Full Performance)	Without GPS (After Full Performance)
Position		
Horizontal	< 10 m CEP ⁽¹⁾	N/A
Vertical	< 14.0 m PE (RMS) ⁽¹⁾	5.0 m ⁽²⁾
Velocity		
North, East	0.03 m/s ⁽¹⁾	N/A
Vertical	0.03 m/s ⁽¹⁾	< 1.0 m/s (RMS) ⁽²⁾
Attitude		
Roll, Pitch	0.1 degree ⁽¹⁾	0.3 degree ⁽⁵⁾ (RMS)
Heading	0.2 degree ^(1,4)	1.0 degree ⁽³⁾ (RMS) 3.0 degree/hour (1 σ)
Angular Velocity		
p, q, r	0.1 degree /s (RMS)	0.1 degree/s (RMS)
Acceleration		
a _x , a _y , a _z	5.0 mg (RMS)	5.0 mg (RMS)

Notes

- (1)- Provided that HDOP<1.39 and VDOP<1.97
- (2)- Baro aided, reference to the baro
- (3)- Under appropriate circumstances with calibrated magnetic heading aiding
- (4)-Under sufficient platform maneuver
- (5)-Valid up to 4 hour navigation without GPS

Environmental Conditions

- MIL-STD-810

Electromagnetic Conditions

- MIL-STD-461

Dimensions and Weight

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



Specifications are subject to change without any notice. | All tolerances are within $\pm 10\%$.