

ANS | 511-A

AIRBORNE INERTIAL NAVIGATION SYSTEM

#Navigation



IN MOTION ALIGNMENT WITH GPS OR GNSS
WAYPOINT ALIGNMENT WITHOUT GPS OR GNSS
EMBEDDED RECEIVER GPS OR GNSS
0.8 NM/HR PERFORMANCE
DO-178B AND DO-254 CERTIFIABLE



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ANS | 511-A

AIRBORNE INERTIAL NAVIGATION SYSTEM

ANS 511-A is a navigation grade airborne inertial navigation system with embedded GPS (SAASM) or GNSS receiver which is intended for application to air vehicles.

ANS 511-A has an open architecture and flexible hardware/ software which can be adapted to various air platforms including rotary-wing, fixed-wing and unmanned aerial vehicles.

ANS 511-A provides linear acceleration, linear and angular velocity, position, attitude and heading to the host vehicle systems continuously. ANS-511 provides hybrid (inertial + EGR navigation solution, inertial only navigation solution and EGR only navigation solution simultaneously. ANS- 511 is also capable of using external pressure altitude data to complement hybrid and inertial only navigation solutions.

ANS 511-A is designed specifically for airborne applications and it is a DO-178B and DO-254 certifiable system.

System Interfaces

- MIL-STD-704A-F and DO-160G Compliant 28VDC Power Interface
- 2 x MIL-STD-1553B Interfaces, Dual Redundant
- ARINC 429 Interfaces, 8 Output, 4 Input
- 3 x RS422 and 1 x RS232 Asynchronous Serial Interfaces
- Have Quick and 1PPS Interface
- KYK-13 Interface
- Active and Passive RF Antenna Interface
- CRPA Type Antenna Interface
- Discrete Interfaces

System Operational Modes

- Leveling
- Alignment
 - In Flight Alignment (IFA)
 - Gyro Compass (GC) Alignment
 - Stored Heading Alignment
- Directional Gyro/Attitude
- Navigation
- Initiated Built In Test (IBIT)
- Platform Adaptation (ORIENT)



System Functions

- Hybrid, Free Inertial, EGR Only Navigation Solutions
- Magnetic Variation, Wind Speed and Direction Calculation
- Motion Detection Function
- Zero Velocity Update, Position Update
- Configurable Flight Control Filters
- Alignment Progress Status
- EGR Lever Arm, Reference Point Lever Arm Correction
- Start-Up BIT, Periodic BIT, Commanded BIT

Navigation Performance

	Free Inertial	Hybrid (INS+EGR)
Position		
Horizontal	0.8 nm/hr CEP	10 m (CEP)
Altitude	< 45 m ⁽¹⁾	16 (PE)
Velocity		
North, East	0.8 m/s (rms)	0.03 m/s (rms)
Vertical	0.6 m/s (rms)	0.03 m/s (rms)
Attitude		
Roll, Pitch	0.05 deg (rms)	0.02 deg (rms)
Azimuth	0.07 deg ⁽²⁾ (rms)	0.02 deg ⁽³⁾ (rms)
1- With Baro Aiding, %1.5 (rms) for Altitude>3 km. 2- With 4 minute ground alignment at 45 degree Latitude. 3- With sufficient aircraft maneuvers.		

Alignment Durations

Ground Alignment Mode	In-Flight Alignment Mode	Stored Heading Mode
4.0 min	10.0 min	30 sec

Environmental Conditions

- MIL-STD-810G / DO-160G Compliant

Electromagnetic Conditions

- MIL-STD-461E / DO-160G Compliant

Dimensions and Weight

- Dimensions: 28 cm (H) x 20 cm (D) x 17 cm (W) (including connector)
- 7.5 kg with EGR

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