

SDN500

MEMS Integrated SAASM GPS-AJ / INS Tactical System

Ideal for High-Precision Navigation & Guidance Applications:

- Precision Guided Munitions
- Tactical Missiles
- Position Sensor for Geo-Surveying
- Targeting & Positioning
- Precision Antenna Pointing
- UAVs & Other Unmanned Vehicles
- Targets & Drones
- Ground Vehicle Tracking
- Range Instrumentation

Key Performance Features:

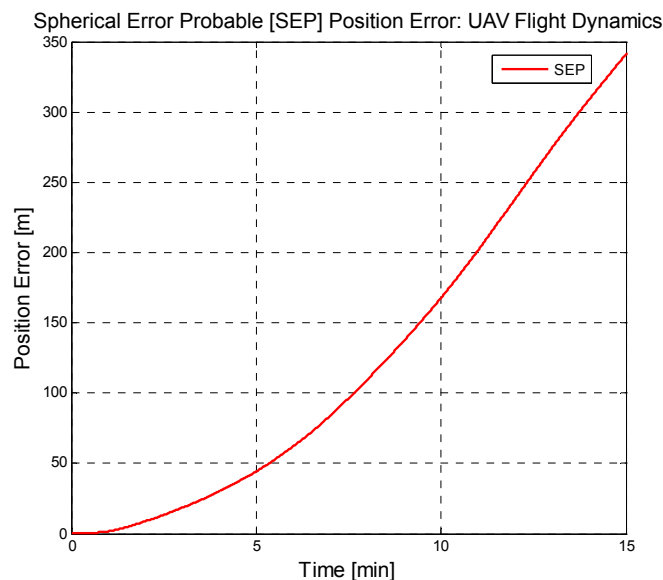
- **Position 3.9 m SEP**
- **Attitude**
 - Roll/Pitch (1σ) – 1.0 mrad (0.057°)
 - Heading in Dynamics (1σ) – 1.5 mrad (0.086°)
- **Integrates with External NavFire™ SAASM GPS Anti-Jam (AJ) Receiver**
 - 12 channels with all-in-view, L1 frequency
- **25 in.³ Compact Size for Packaging Flexibility**
- **Weighs <1.6 lbs.**
- **Customer Programmable Output Data Rates**



The SDN500 GPS-AJ/INS navigation system is a platform extension of Systron Donner Inertial's (SDI) proven tactical grade SDI500 IMU. The SDN500 GPS-AJ/INS combines latest generation quartz MEMS gyros and accelerometers, delivers industry leading bias in-run stability performance, provides enhanced 100Hz position data and integrates an external Rockwell Collins NavFire™ SAASM GPS Anti-Jam (AJ) Receiver, creating a tightly coupled powerful GPS/INS System for guidance and navigation applications. The modular compact 25 in³ size provides for maximum packaging flexibility in dense systems.

The solid state quartz sensors and sealed construction provide reliable 50,000+ hr. MTBF, and a 20 year operating and storage life. Continuous Built-in Test (BIT), configurable communications protocols, electromagnetic interference (EMI) protection, and flexible input power requirements make the SDN500 easy to use in a wide range of higher order integrated system applications.

| | Units | Measure | SDN500-AD76 | SDN500-BD76 | SDN500-CD76 |
|--|---------------------|------------|-------------|--|-------------|
| System Performance | | | | | |
| Position (SEP) | m | max | | 3.9 | |
| Velocity (horizontal/vertical) | m/s | 1 σ | | 0.1/0.1 | |
| Pitch/Roll | mrاد | 1 σ | | 1.0 | |
| Heading (in motion) | mrاد | 1 σ | | 1.5 + d ¹ | |
| Timemark Output 1pps | μ s | nom | | \pm 1 | |
| Gyro Channels | | | | | |
| Bias In-Run Stability from Turn-on | deg/hr | 1 σ | 1.0 | 1.5 | 2.0 |
| Angle Random Walk | deg/ \sqrt hr | 1 σ | 0.02 | 0.02 | 0.03 |
| Angular Rate – Dynamic Range | deg/sec | min | \pm 1000 | \pm 1000 | \pm 1000 |
| Accelerometer Channels | | | | | |
| Bias In-Run Stability from Turn-on | μ g | 1 σ | 100 | 200 | 200 |
| Random Walk Noise | μ g/ \sqrt Hz | 1 σ | 100 | 100 | 120 |
| Acceleration – Dynamic Range | g | min | \pm 50 | \pm 50 | \pm 50 |
| System Physical & Environmental | | | | | |
| Input Voltage | Vdc | | | +12 to +42 | |
| Power | watts | | | <7.5 | |
| I/O | | | | RS232/422, SDLC IMU Output | |
| Volume | cu in | | | 25 | |
| Weight | lbs | | | <1.6 | |
| Temperature Range (Operating) | $^{\circ}$ C | | | -45 to +85 | |
| Vibration (Operating) | g _{RMS} | | | 12 | |
| Shock (Operating) | g, msec | | | 40, 30 | |
| Altitude (INS/GPS) | ft | | | 60,000 | |
| Reliability @ 35 $^{\circ}$ C | hrs | | | 50,000 MTBF, ground: 6,000 MTBF, air cargo | |



¹ d represents a growth rate that depends on the time once all horizontal accelerations have stopped, drift will be 1 to 10 deg/hr 1 σ .

For more information, contact:

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