SDN500-CD01

MEMS Integrated GPS/INS Tactical System

Ideal for High-Precision Navigation & Guidance Applications:

- Position Sensor for Geo-Location
- UAVs & Other Unmanned Vehicles
- Targets & Drones
- Ground Vehicle Tracking
- Range Instrumentation
- Targeting & Positioning
- Precision Antenna Pointing
- Attitude Reference

Key Performance Features:

- **Attitude**
  - **Roll/Pitch (1σ) – 1.0 mrad**
  - **Heading in Dynamics (1σ) – 1.5 mrad**
- **54 in.^{3} Compact Size**
- **Weighs <2.0 lbs.**
- **Customer Programmable Output Data Rates**
- **Durable Design for High-Vibration Environments**

In mid-2011 Systron Donner Inertial introduced the SDN500 INS/GPS system as the successor to the C-MIGITS to address components obsolescence issues. Utilizing the latest SDI500 Quartz MEMS IMU, a tactical-grade system proven across many platforms, the SDN500 combines dramatically-improved quartz gyros, quartz accelerometers, high speed signal processing and a Coarse/Acquisition (C/A) Code GPS receiver into a tightly coupled GPS/INS System for guidance and navigation applications. SDN500 uses the familiar C-MIGITS communications and command interface. Easily integrated into existing applications, the SDN500-CD01 continues to serve legacy applications with fast, low-cost re-qualification cycles.

SDN500-CD01

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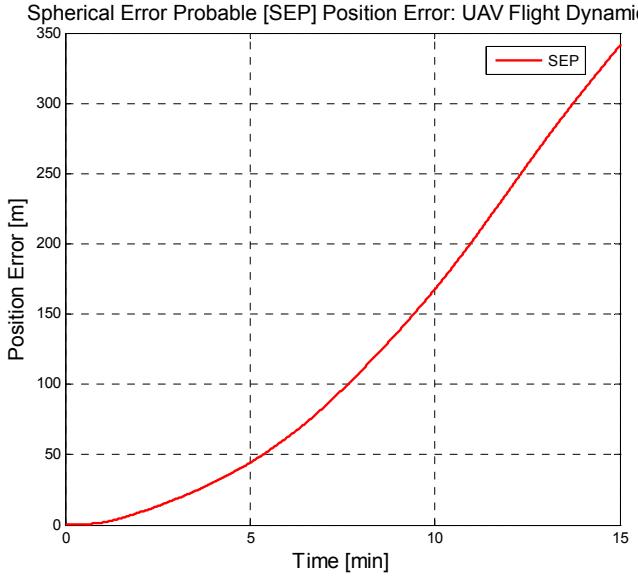
	Units	Measure	SDN500-CD01
System Performance			
Position (SEP)	m	max	3.9
Velocity (horizontal/vertical)	m/s	1σ	0.1/0.1
Pitch/Roll	mrad	1σ	1.0
Heading (in motion)	mrad	1σ	1.5 + d[1]
Timemark Output 1pps	µs	nom	±1
Gyro Channels			
Bias In-Run Stability from Turn-on	deg/hr	1σ	2.0
Angle Random Walk	deg/√hr	1σ	0.03
Angular Rate – Dynamic Range	deg/sec	min	±1000
Accelerometer Channels			
Bias In-Run Stability from Turn-on	µg	1σ	200
Random Walk Noise	µg/√Hz	1σ	120
Acceleration – Dynamic Range	g	min	±50
System Physical & Environmental			
Input Voltage	Vdc		+12 to +42
Power	watts		<7.5
I/O			RS232/422, SDLC IMU Output
Volume	cu in		54
Weight	lbs		<2.0
Temperature Range (Operating)	°C		-40 to +71
Vibration (Operating)	g_{RMS}		12
Shock (Operating)	g, msec		40, 30
Altitude (INS/GPS)	ft		60,000
Velocity (INS/GPS)	m/s		500
Acceleration (INS/GPS)	g		4
Reliability @ 35°C	hrs		50,000 MTBF, ground: 6,000 MTBF, air cargo

Spherical Error Probable [SEP] Position Error: UAV Flight Dynamics



[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 1σ.

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