

Athena 411



Superior accuracy during dynamic maneuvers.

Developed for compatibility with both UAV and military applications, the Rockwell Collins Athena 411 integrates solid-state gyros and accelerometers, magnetometer, GPS receiver and air data pressure transducers into a single unit.

We have equipped the Athena 411 with a sealed enclosure to ensure a long, trouble-free life and performance over full altitude and temperature range to protect from moisture contamination. Our engineers have tested the Athena 411 under the stringent military specifications for shock and vibrations. This high reliability, strap-down system provides attitude and heading measurements with static and dynamic accuracy superior to traditional spinning mass vertical and directional gyros.

KEY BENEFITS

- › Accurate roll, pitch, heading in dynamic environments and sustained turns
- › WAAS-enabled, differential ready GPS
- › Kalman filter algorithms for full INS and attitude solution
- › A tactical, low-cost, integrated INS/GPS/ADAHRS and flight controls system
- › Dual airspeed and altitude air data measurement

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SPECIFICATIONS

INS/GPS performance

| | |
|----------------------------|--|
| Update rate | 100 Hz (50 Hz optional) |
| Start-up time | 10 sec (initial attitude); 2 min (full alignment) |
| Heading range | +/- 180° |
| Attitude range pitch | +/- 90° |
| Attitude range roll | +/-180° |
| Altitude range | -1,000 ft to 50,000 ft |
| Altitude accuracy | 45 ft at S.L., 250 ft at 40,000 ft altitude |
| GPS range | Worldwide |
| Lat/long position accuracy | GPS C/A Code; differential ready, WAAS-enabled |
| GPS antenna power | 3.3 V standard or 5 V optional with embedded GPS |
| Airspeed accuracy | <2 knots @ 40 knots, <1 knot @ 60 knots |
| Max airspeed | 200 knots standard, up to 650 knots optional |
| Angle of attack range | +/- 8° at max airspeed |
| Angle of sideslip range | +/- 8° at max airspeed |

IMU performance

| | |
|-----------------------|------------|
| Maximum angular rates | +/- 200°/s |
| Maximum g range | +/-7 g |

Attitude heading accuracy (1 sigma) with GPS

| | |
|---------------------|--------|
| Pitch/roll accuracy | 0.1° |
| Heading accuracy | 0.1° * |

Extended GPS outage

| | |
|---------------------|--------|
| Pitch/roll accuracy | 0.5° * |
| Heading accuracy | 1° * |

*Dependent on external magnetometer performance.

Overview

| | |
|--------------|--|
| Size (in) | 4.5 x 4.3 x 4.9 |
| Weight (lbs) | 2.2 (1.0 kg) |
| Enclosure | Aluminum |
| Power | 6 W (nominal) @ 18-36 VDC 12 W peak |

Environmental

| | |
|-----------------------|--|
| Operating temperature | -40 to 70°C |
| Operating vibration | MIL-STD-810 |
| Humidity | 95%, non-condensing sealed enclosure |
| Serial input/output | (2) RS-232 (2) RS-422 (1) RS-422 – DGPS (1) RS-422 – Service Port |



Athena 411 provides all the data for modern Primary Flight Displays (PFDs), Multi-Function Displays (MFDs), Head-Up Displays (HUDs) and Electronic Flight Bags (EFBs).

The INS/GPS reduces sensor acquisition and installation costs. Solid-state technology significantly improves MTBF.

Autopilot and flight controls optional.



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Rockwell Collins delivers smart communication and aviation electronic solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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