

Athena 111



High-performance, low-cost, integrated INS/GPS/ADAHARS and magnetometer sensor suite.

Rockwell Collins engineers have integrated solid-state gyros, accelerometers, magnetometer, GPS receiver and air data pressure transducers into the Athena 111 to meet the demands of any unmanned vehicle application.

The Athena 111 includes a built-in automatic magnetometer calibration which simplifies the installation process. Our engineers have made use of Kalman filter algorithms and GPS/magnetometer reference in order to achieve superior accuracy during dynamic maneuvers. To protect from moisture contamination, we have equipped the Athena 111 with a sealed enclosure to ensure a long, trouble-free life and performance over full altitude and temperature range.

KEY BENEFITS

- ▶ Provides attitude and heading measurement with static and dynamic accuracy
- ▶ Includes a differential ready, WAAS-enabled GPS receiver
- ▶ Full air data measurements

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SPECIFICATIONS

INS/GPS performance

Update rate	100 Hz (50 Hz optional)
Start-up time	10 sec (initial attitude); 1 min (full alignment)
Heading range	+/- 180°
Attitude range pitch	+/- 90°
Attitude range roll	+/- 180°
Altitude range	-1,000 ft to 50,000 ft
Baroinertial altitude accuracy	<45 ft at S.L., <200 ft at 40,000 ft altitude
GPS range	Worldwide
Lat/long position accuracy	GPS C/A Code; differential ready, WAAS-enabled
GPS antenna power	5 V
Airspeed accuracy	< 2 knots @ 40 knots, < 1 knot @ 60 knots
Max airspeed	165 knots standard, up to 650 knots optional

IMU performance

Maximum angular rates	+/- 200°/s
Maximum g range	+/- 10 g

Attitude heading accuracy (1 sigma) with GPS

Pitch/roll accuracy	0.3°
Heading accuracy	0.5° *

Extended GPS outage

Pitch/roll accuracy	0.5° *
Heading accuracy	1.0° *

*Using adequate external magnetic field measurement.

Overview

Size (in)	5.5 x 5.0 x 2.5
Weight (lbs)	1.7
Enclosure	Aluminum
Power	4.5 W (nominal) @ 18-36 VDC

Environmental

Operating temperature	-40 to 70°C
Non-operating temperature	-54 to 85°C
Operating vibration/shock	MIL-STD-810
Humidity	95%, non-condensing sealed enclosure

Serial input/output	RS-422
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Athena 111 provides all 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.

For more information contact:

Rockwell Collins
3721 Macintosh Drive
Vint Hill Tech Park
Warrenton, VA 20187
540.428.3300
fax: 540.428.3301
e-mail: learnmore@rockwellcollins.com
www.rockwellcollins.com

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