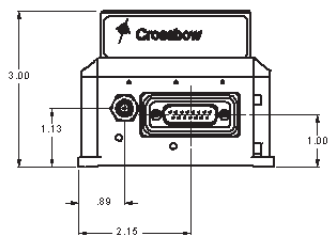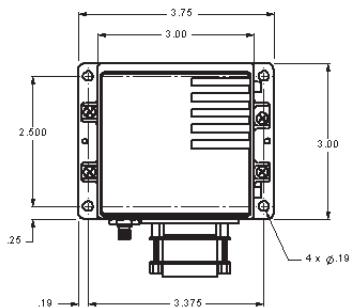# NAV420

GPS-AIDED MEMS INERTIAL SYSTEM

- Real-Time GPS X, Y, Z Position and Velocity Outputs

- AHRS Pitch, Roll, and Heading Output at 100Hz

- Built-In GPS Receiver with RTCM and WAAS Compatibility

- High Stability MEMS Sensors

- Enhanced Performance Kalman Filter Algorithm

- EMI & Vibration Resistant

- Environmentally Sealed

Applications

- Unmanned Vehicle Control

- Land Vehicle Guidance

- Avionics Systems

- Platform Stabilization

NAV420CA

The Crossbow NAV420 is a combined GPS Navigation and GPS-Aided Attitude & Heading Reference system (AHRS) that utilizes both MEMS-based inertial sensors and GPS technology to provide an unmatched value in terms of both price and performance. Developed in response to years of extensive application experience in a wide variety of airborne, marine and land applications, the NAV420 also incorporates many new and enhanced design features including:

- Built-in GPS receiver for position and velocity measurement

- GPS data synchronization clock

- High performance Kalman Filter algorithms

- Water resistant, vibration resistant, light-weight design

- EMI protection for trouble-free operation

- Continuous Built-in-Test

The NAV420 provides consistent performance over a wide temperature range in challenging EMI environments across a broad range of input power conditions. It is designed for use in a number of different applications including unmanned vehicle control, land vehicle guidance, uncertified avionics and platform stabilization.

This high reliability, strapdown inertial system provides attitude and heading measurement with static and dynamic accuracies that exceed traditional spinning mass vertical and directional gyros. With GPS integration, the NAV420 system also provides GPS-aided velocity data at up to 100 Hz. Velocity data derived from the inertial instruments improves stability and reduces the latency associated with stand-alone GPS measurements.

Each NAV420 system comes with a GPS antenna and User's Manual. Crossbow's NAV-VIEW software is also included to assist users with system development, evaluation, and data acquisition.

NAV420 Block Diagram
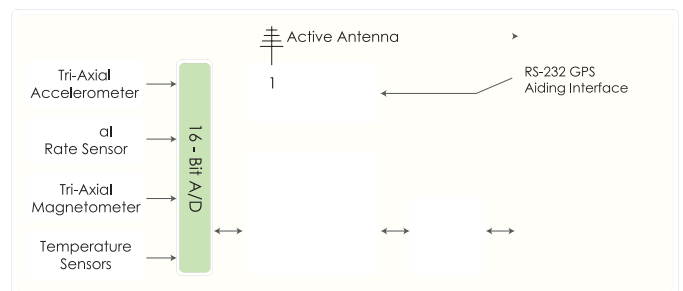
15
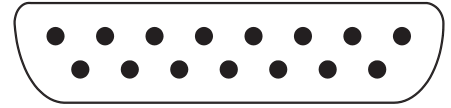
Pin	Signal
1	RS-232 Transmit Data
2	RS-232 Receive Data
3	Positive Power Input (+Vcc)
4	Power Ground
5	Chassis Ground
6	NC – Factory use only
7	RS-232 GPS Tx
8	RS-232 GPS Rx
9	Signal Ground
10	1PPS OUT
11	NC – Factory use only
12	NC – Factory use only
13	NC – Factory use only
14	NC – Factory use only
15	NC – Factory use only