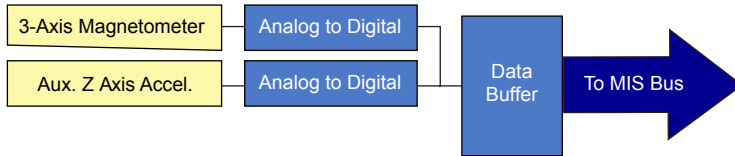


Dynetics Modular Instrumentation System

Miniature Inertial Measurement Unit (IMU)

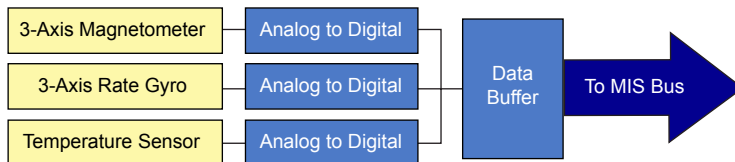
Triaxial Low-Noise Accelerometers

- ◆ +/- 35- or +/- 50-g measurement ranges in X and Y axes
- ◆ Dual ranges in Z axis
- ◆ +/- 10-, +/- 25-, +/-50-, or +/-100-g measurement ranges in Z axis
- ◆ 30-mg resolution in X and Y axes; 5-mg resolution in Z axis
- ◆ Internal self-test of MEMS sensors on power up



Triaxial Rate Gyros and Triaxial Magnetometer

- ◆ +/- 300° measurement range in yaw, pitch, and roll (other ranges available by request)
- ◆ 0.2°/sec resolution
- ◆ 0 to 40-Hz measurement bandwidth
- ◆ Internal self-test of MEMS gyro on power up
- ◆ +/- 6 gauss
- ◆ Integrated temperature sensor



Resolution

- ◆ 12 bits at >50 kSPS (variable)

Interface

- ◆ Compatible with MIS architecture

Physical

- ◆ Diameter 2.375" min
- ◆ Height 0.316" min
- ◆ Weight 120 g min

Accelerometer Specifications

- ◆ +/-50 g measurement range
- ◆ 12 bit resolution
- ◆ 2.5 mg / sqrt (Hz)
- ◆ RMS Bias 10 mg
- ◆ Sensor misalignment 2°
- ◆ Scale factor error 0.1%
- ◆ Anti-alias filter cutoff 40 Hz
- ◆ Sample rate 1000 Hz

Rate Sensor Specifications

- ◆ +/-500°/sec measurement range
- ◆ 12 bit resolution
- ◆ Sensor misalignment 2°
- ◆ Scale factor error 0.1%
- ◆ Anti-alias filter cutoff 40 Hz
- ◆ Sample rate 1000 Hz



Miniature IMU Highlights

This module provides the MIS with inertial measurement capability for high-dynamic applications such as missiles or high-performance aircraft. Low-cost MEMS sensors are used to measure accelerations and rates around three orthogonal axes. A tri-axis magnetometer is also provided. Highlights include:

- ◆ Simultaneous sampling of all channels
- ◆ Availability of custom dynamic ranges

This module works in concert with the Dynetics Modular Instrumentation System (MIS) PCM Encoder/Data Recorder and Power Supply Modules to provide a complete data acquisition solution.

For More Information:

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