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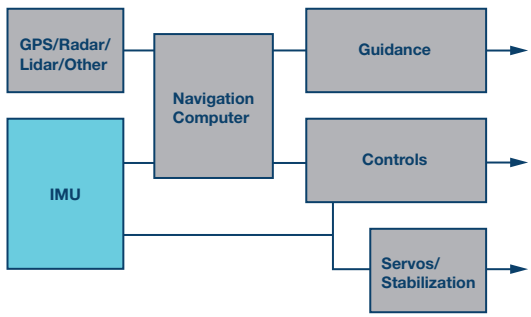
TACTICAL GRADE INERTIAL MEASUREMENT UNIT (IMU) WITH INDUSTRY'S LOWEST SWaP+C

Overview

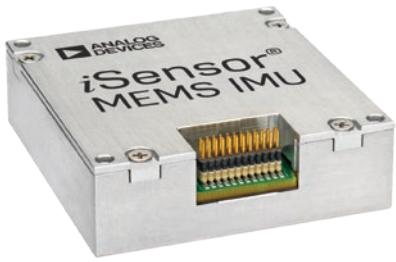
The ADIS16490/ADIS16495/ADIS16497 tactical grade inertial measurement units offer a no compromise solution to system developers previously inhibited by either cost barriers or performance limitations from upgrading legacy designs. Analog Devices advancements in MEMS inertial sensing enable tactical grade stability at a fraction of the size and cost of existing solutions. Whether for guidance and control, or precision instrument stabilization, these new sensors deliver ultralow noise angular rate and linear acceleration sensing, with stable operation even under severe environmental disturbances.



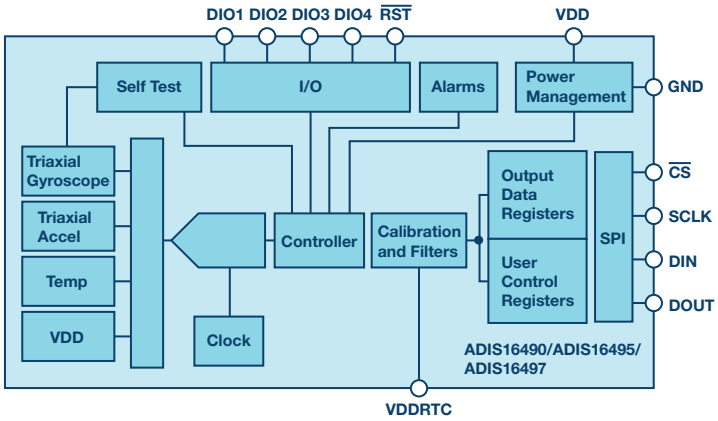
Applications



- Precision stabilization, instrumentation
- Tactical grade guidance and navigation
- Unmanned vehicles; autonomous machines, robotics



ADI's newest tactical grade IMU makes highly stable and ruggedized sensing attainable for multiple navigation and stabilization applications that demand no compromise—high performance, affordability, and reliable operation in complex and dynamic environments.



Dynamic Range Options

- ADIS16490: 100°/sec, 8 *g*
- ADIS16495: 2000°/sec, 8 *g*
- ADIS16497: 2000°/sec, 40 *g*

ADIS16490/ADIS16495/ADIS16497	
Gyroscope Range (°/sec)	100 to 2000
Gyroscope Noise (°/sec/√Hz rms)	0.002
ARW (°√Hr)	0.09
Linear *g* (°/sec/*g*)	0.005
Cross Axis (%)	0.09
Bias Tempco (°/sec/°C)	0.0004
Sensitivity Tempco (ppm/°C)	24
Accelerometer Range (*g*)	8 to 40
Accelerometer Noise (m*g*/√Hz rms)	0.016
VRW (m/sec/√Hr)	0.008

ADI MEMS Sensors

ADI has perfected and patented unique MEMs processes and architectures that deliver industry-leading ultralow noise and stable sensing even in the presence of vibration, shock, and temperature disturbances. With three decades of high reliability experience in the automotive, industrial, and military markets, ADI gyroscope and accelerometer cores have been optimized to deliver the highest application-level performance through a balanced specification approach and the intelligent fusing of precision sensor cores and industry-leading signal processing.

*i*Sensor

Demanding industrial and military applications benefit from *i*Sensor® integration of triaxial rotational and acceleration sensing, coupled with embedded compensation, filtering, and processing. Each production unit is uniquely calibrated across temperature extremes and alignment compensated. Industry-leading ADI signal conditioning, conversion, and processing has been optimized and embedded, allowing systems designers to concentrate on application level processing.

Performance

The ADIS16490/ADIS16495/ADIS16497 provides the industry's best angular random walk and velocity random walk, based on ultralow noise gyroscopes and accelerometers. Tactical grade in-run bias specifications, coupled with highly accurate temperature calibration and sensor alignment, as well as industry-leading vibration rejection, combine to produce stable sensor outputs under extreme conditions.

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