arazim

µIMU

near-Tactical-Grade Miniature Inertial Measurement Unit

The µIMU is a near tactical grade ultra-Miniature MEMS-Based Inertial Measurement Unit.
The unit is the 3rd generation of advanced Inertial Measurement Unit which is in use more than a decade now, compromising of 3-axis Gyro, 3-axis accelerometer to deliver optimal performance where size, cost & performance (SWaP-C) are of prime concern.

The µIMU utilizes most advanced available MEMS-based sensor and deploys multiple-redundancy technology approach which assure not only fail-safe performance but considerable improved performance, these make the µIMU extremely cost-effective and a serious candidate to replace many FOG solutions that were used previously among control and many others applications.

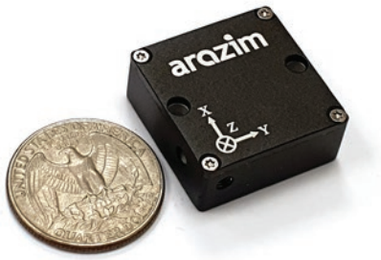
Each unit of The µIMU is factory calibrated for Bias, Cross-Axis, non-Linearity, Scale-Factor & g-sensitivity over full-Temp range.
The ultra-miniature size of the µIMU unit with 1"x1" (25 x 25 mm) dimension along it's performance & low-cost making it serious candidate for many dynamic & static solutions, from simple control tasks and up to digital dynamic gyro-compensated tilt measurement in dynamic environments, among many different arenas in both defense and commercial related usage.

Highlights

- Multiple-Redundancy Technolog
- near Tactical-Grade sensors
  Gyro < 2°/hr,
  Accelerometer < 20µg
- Up to 2000 Hz update rate
- Fully-Calibrated Inertial sensors
- Wide Input Voltage Range
- Ultra-Miniature, Low-Power
- ITAR-Free

Applications

- Camera Gimbal
- Antenna Tracker
- Optical Systems
- Line-of-Sight pointing
- UAV/UGV
- Condition Monitoring
- Predictive Maintenance



Sensors	Accelerometer	Gyro
Full Scale Range	+ 10g	+ 500 deg/sec
Bandwidth	0…200 Hz	0…200 Hz
Non Linearity	< 0.1%	< 0.05%
Bias Stability In-Run	< 20 µg	< 2 °/hr
Repeatability	< 5 mg	< 0.1 °/sec
over Temp	< 3 mg	< 0.03 °/s
Random Walk	0.05 m/sec/√Hr	0.1 °/√Hr
Resolution	< 100 µg	< 0.01 °/sec
Noise density	< 100 µg /√Hz	0.005 °/√Hz
Mis-Alignment	< 2 mRad	< 2 mRad
Communication		
Digital Interface	RS232	
Frame Rate	2000 Hz Max	
Data Format	Ax, Ay, Az , ωx, ωy, ωz , Time, Temp Conning & Sculling (ΔV, ΔΘ) (others upon request)	
Latency	< 1 msec	
Start Up Time	< 10 msec	
Power & Mechanical		
Input Voltage	5 VDC – 32 VDC	
Power Consumption	25 mA @ 5VDC	
Connectors	1 meter cable	
Size	25 x 25 x 8 mm	
weight	< 20 gr (without cable)	
Environmental Conditions (Design-to-Spec)		
Temp Operation	-40° C to +71° C	
Temp Storage	-40° C to +85° C	
Enclosure	IP65	

* PRELIMINARY. Specification subject to change without notice

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