

ATLAS-1000 IMU

High-Precision MEMS Inertial Measurement Unit

The ATLAS-1000 IMU is a high-stability, low-noise, six-degree-of-freedom MEMS inertial measurement unit designed for tactical-grade performance in demanding environments. It combines robust signal conditioning, on-board diagnostics, and standard RS422 communication in a rugged, thermally-stable package.



FEATURES & BENEFITS

- Low MEMS angle random walk
- Cost-effective solution
- 3-axis gyroscope + 3-axis accelerometer
- Rugged enclosure for harsh environments
- Low noise density
- Dual-use applications
- Made in USA
- GNSS-Denied Operation
- Optimized SWaP
- ITAR-free
- Versatile integration

APPLICATIONS



Vehicle
Orientation
Tracking



Robotic
control and
UVs



GNSS-Denied
Environments



Attitude & Heading
Reference System

TECHNICAL SPECIFICATIONS

Gyroscope Performance

	Typical	Maximum (+3 σ)
Dynamic Range	± 300 °/s with optional ± 2000 °/s upon request	
Angle Random Walk	0.015 °/√h	0.026 °/√h
Bias Instability	0.3°/h	0.5°/h
Offset	± 0.1 °/s	
Sensitivity Error	± 0.05 %	
Linearity Error	± 0.15 °/s	
Noise Density	0.0004 (°/s)/√Hz	
G-sensitivity		0.00075 (°/s)/g
Bandwidth (configurable)	13 to 370 Hz	

Accelerometer Performance

	Typical	Maximum (+3 σ)
Dynamic Range	± 80 m/s ²	
Velocity Random Walk	30 (mm/s)/√h	
Instability Bias	0.15 mm/s ²	
Offset	± 0.02 m/s ²	
Sensitivity Error	± 0.05 %	
Linearity Error	± 0.15 °/s	
Noise Density	0.8 (mm/s ²)/√Hz	
Bandwidth (configurable)	13 to 370 Hz	

Physical characteristics

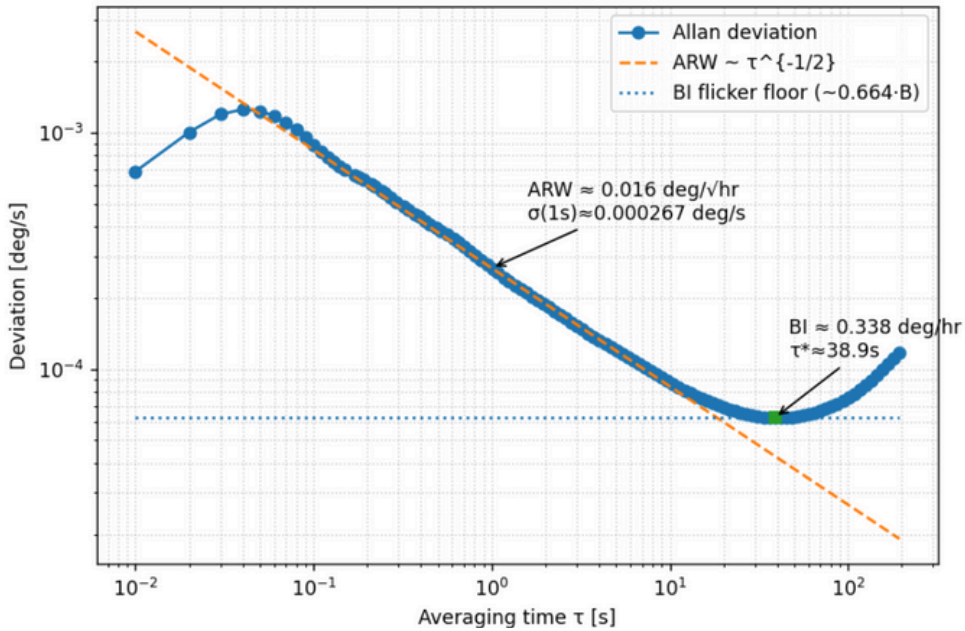
Case Dimensions (L x W x H)	52 x 44 x 14 mm (smaller dimensions available upon request)
Weight	40 g
Material	6061 Aluminum
Mechanical Shock	0.8 (mm/s ²)/√Hz
Operating Temperature	-40 to 140 °C

Interfaces

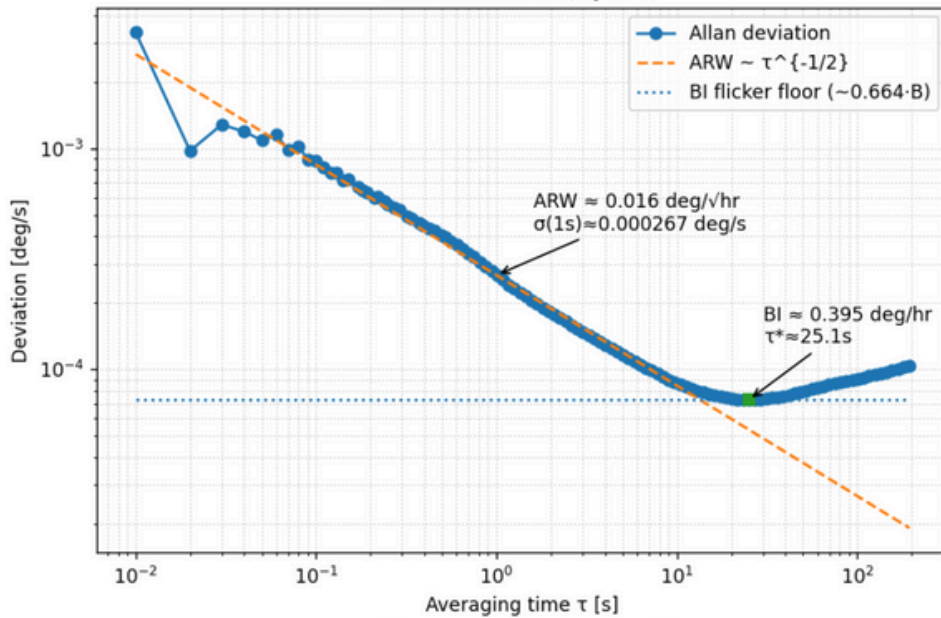
Communication	RS422
Power Supply Voltage Range	5 to 45VDC
Power Consumption	Less than 1 Watt



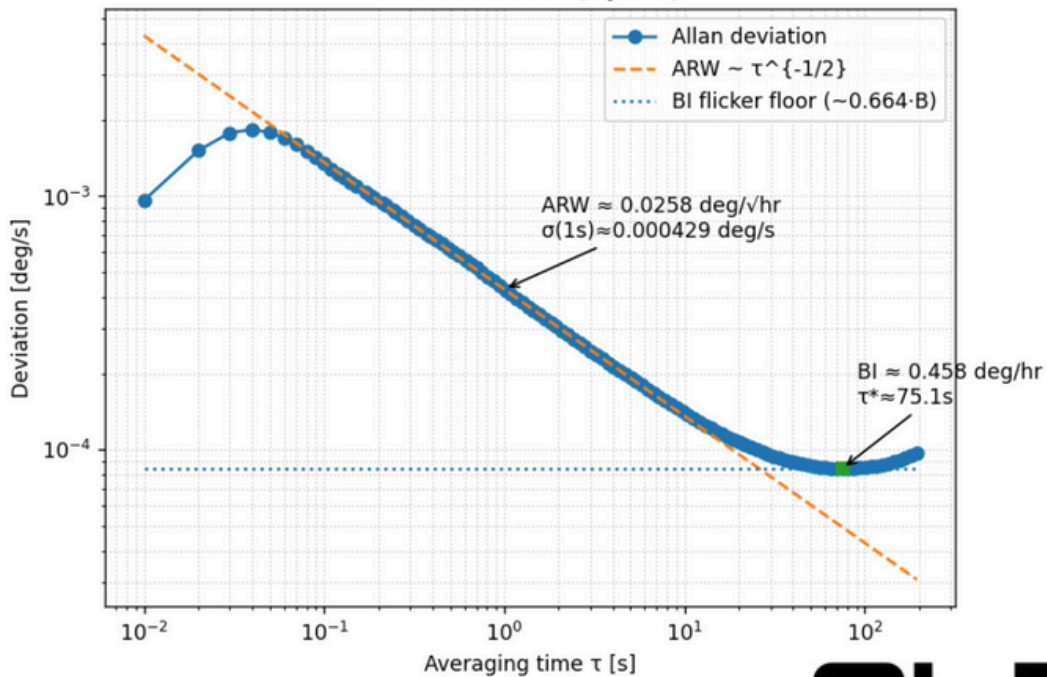
Gyroscope Typical Performance Allan Deviation (Gyro X)



Allan Deviation (Gyro Y)



Allan Deviation (Gyro Z)



Accelerometer Typical Performance

