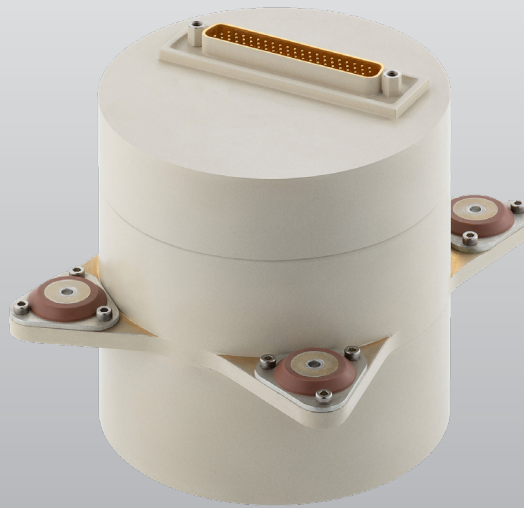


Inertial Measurement Unit IMU 52 Family



Proven IMUs for Harsh Vibration Environments

The Kearfott Inertial Measurement Unit (IMU) 52 family integrates the latest closed-loop fiber optic gyro (FOG) and linear accelerometer technology. The IMU 52 family complements Kearfott's Ring Laser Gyro-based, navigation grade IMUs; they are small, lightweight, high-performance strap-down IMUs, suited for navigation, stabilization, and flight control for both defense and commercial applications. The IMU 52s are available in a hard-mount configuration for high bandwidth applications, or with vibration isolators for harsh vibration environments. The IMU52 family is available in multiple configurations to meet different price and performance requirements.

Kearfott IMUs have been tested and combat proven on in a variety of operational applications, including rocket systems, accurate munitions, payloads, UAVs, and civilian aircraft protection systems.

Features & Benefits

- ✓ Extended Performance Option: $0.1^{\circ}/\text{hr}$.
- ✓ Low ARW: $0.02 - 0.008^{\circ}/\text{rt. hr}$.
- ✓ Scalable Bias: $0.5 - 0.1^{\circ}/\text{hr}$.
- ✓ Improved LOS Stabilization
- ✓ Reduced Jitter
- ✓ Improved CEP

IMU 52 Product Specifications

System Characteristics		
Size	48.82 in³ (800 cm³)	
Weight	2.20 lbs (1 kg)	
Power	13 W	
Operational Ranges		
Temperature	-40° to 160°F (-40° to 71°C)	
Temperature Gradient	5.4°F/min (3°C/min)	
Input/Output		
Power Input	28 VDC	
Interface	SDLC, RS-422	
Data Rates	100 to 4800Hz	
Sync	External or Internal	
Performance Characteristics		
	IMU 52	IMU 52-XP
Gyro Bias Stability	<0.5°/hr	<0.1°/hr
Gyro Angular Random Walk	0.02°/√hr	0.008°/√hr
Gyro Scale Factor	<150 PPM	150 PPM
Gyro Dynamic Range	2000°/sec	1000°/sec
Accelerometer Bias Short Term Over Temperature (1 sigma)	<300 µg	<300 µg
Accelerometer Threshold	10 µg	10 µg
Accelerometer Scale Factor	300 PPM	300 PPM
Accelerometer VRE	20 µg/g^2	20 µg/g^2
Accelerometer Range	±30/±50g	±30/±50g

System Name	System P/N	Mounting	Input Voltage	Accelerometers	Communication
IMU 52-G	220-1013	Hard Mounted	15/5 V	Quartz Rebalanced	SDLC
IMU 52-M	220-1005	Vibration Isolation	28 V	MEMS	RS-422
IMU 52-B	220-1007	Vibration Isolation	28 V	Quartz Rebalanced	RS-422
IMU 52-H	220-1010	Vibration Isolation	28 V	Hybrid	RS-422
IMU 52-K	220-1014	Hard Mounted	28 V	Quartz Rebalanced	RS-422