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IMU388 Tactical 6DoF MEMS IMU (<https://www.skymems.com/products imu388-tactical-6dof-mems-imu/>)



IMU388 Tactical 6DoF MEMS IMU

- High Precision Tactical 6DoF MEMS IMU Sensor
- Range (Typical) : Gyro $\pm 500^\circ/\text{s}$, Accel $\pm 40\text{g}$
- Bias Instability (Allan): Gyro: $0.6^\circ/\text{h}$, Accel $30\mu\text{g}$
- Strict Factory Calibration, Full Temp. Compensation
- High Bandwidth (Typical): 200Hz, RS422 Interface
- Proven Reliability, Dependability and Ruggedness
- Compact Size: $33.5 \times 25.5 \times 15 \text{ mm}^3$
- Working Temperature: $-40 \sim +85^\circ\text{C}$



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Product Categories





Brief Introduction

IMU388 is a high performance tactical grade MEMS Inertial Measurement Unit, which enjoys high accuracy: MEMS gyroscope is 0.6°/h bias instability (Allan) and MEMS accelerometer is 30 μ g bias instability (Allan), and its MEMS gyroscope range can be optional in $\pm 250^\circ/\text{s}$ ~ $\pm 4000^\circ/\text{s}$, the accelerometer range is $\pm 40\text{g}$, and it can output precise 3-axis outputs of angular rate and 3-axis acceleration data.

IMU388 adopts latest MEMS technology and advanced MEMS components, and it has been produced in bulk, which reduces the cost deeply. IMU388 can output precise measurement data in harsh environment, and it has been widely applied in unmanned aircraft, unmanned surface vessel, platform stabilization, industrial robotics, etc., and IMU388 is easily integrated into the variety of architectures that these applications present. The extremely small size, light weight, and low power make the IMU388 ideal for most applications.

Technical Specifications

Parameter	Test Condition	Min.	Typical	Max.	Unit
Gyroscopes					

Range ^①			±500		°/s
Bias Instability	Allan variance		0.6		°/h
	10s average(-40~+85°C, fixed temp.)		2		°/h
Bias Repeatability			1.8		°/h
Random Walk			0.1		°/√h
Bais	Bias change at full temp. range ^②		±0.04		°/s
	Bias change in vibration conditions ^③		6		°/h
Non-linearity			100		ppm
Bandwidth			200		Hz

Accelerometers

Range ^①			±40		g
Bias Instability	Allan variance		50		ug
	10s average(-40~+85°C, fixed temp.)		100		ug
Bias Repeatability			100		ug
Random Walk			0.01		m/s/ √h
Non-linearity			100		ppm
Bandwidth			200		Hz

Interface^④(RS422)

Baud Rate		115200	230400	921600	bps
Output Rate		250	500	2000	Hz
Reliability					
MTBF	20000 h				
Continuous Working Time	120 h				
Electrical Features					
Supply Voltage	3.6 ~ 36 V				
Power Consumption	< 0.2W				
Ripple Wave	100mV (P-P)				
Environment Conditions					
Operating Temperature	-40°C ~ 85°C				
Storage Temperature	-55°C ~ 105°C				
Vibration Resistance	20-2000Hz, 6.06g				
Shock Resistance	1000g, 0.5ms				
Physical Parameter					
Size	33.5 × 25.5 × 15 mm				
Weight	30grams				
Connector	9pins J63A				

Note:

- ①: The range of Gyroscopes and Accelerometers can be configured in our factory.
- ②: The bias value is calculated based on the whole temperature change period, the temperature changing rate<=2°C/minute, temperature range:-40~+85°C;
- ③:(before vibration average value +after vibration average value) /2-during vibration average value, the vibration conditions are 6.06g, 20~2000Hz
- ④: The baud rate and output rate can be configured in our factory.

Typical Application

- Airborne Optoelectronic Pod
- Target Drone
- Armored Personnel Carrier
- Rain-Seeding Rocket

Product Advantages

Why Selecting IMU388 Inertial Measurement Unit?

IMU388 Inertial Measurement Unit is designed and produced by SkyMEMS, it enjoys high performance and accuracy, extra large range, and high reliability with competitive price. It is a tactical inertial measurement unit sensor, which has the main following advantages:

1. Extra Large Range, High Accuracy, High Performance and Powerful Functions

IMU388 Inertial Measurement Unit is a precision 6 DoF MEMS inertial measurement unit, which enjoys excellent technical advantages:

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IMU388 Inertial Measurement Unit adopts big brand components, high-class glue encapsulation, advanced production craft, and fully calibrated, which assured that our products have real actual precise and perfect performance.

2. Aerospace Level Reliability, 12-step Strictest Quality Control

We have advanced product test team and measurement equipment, and we cherish the quality as the life of the company, all our products must pass the strictest quality control procedures, our unique 12-step quality control assures our products enjoy top level quality.

3. Competitive Price, ODM supported

With strict cost control and massive production, we can provide the most competitive cost-effective prices, and we have abundant ODM service experience for customers around the world, that is why we can build up long term win-win cooperation with our customers.

4. Successful Applications in many Fields, 200+ Customers are Using

We are continuously focusing on MEMS measurement & control technologies. IMU388 has been widely used in tactical UAS Navigation & Control, Seeker, Platform Stabilization, etc. and now more than 200 customers are using our tactical IMU around the world.

5. World-class Production Line, Fast Delivery

We have the world class production line to assure that the production procedures are scientific, precise, and normative, which also can assure our products to be fast delivered.

6. Service with Heart, Professional Technical Support

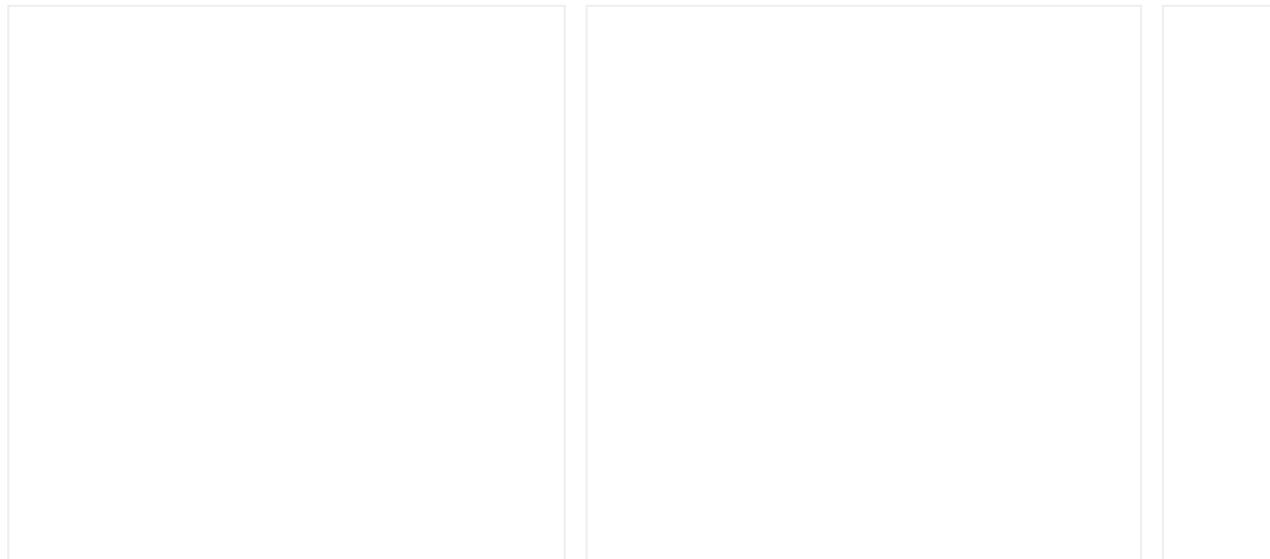
We have the professional technical support engineer team, which can provide 24-hour technical support and excellent after-sale service.

Serving customers with heart is the principle of SkyMEMS, Customer demand is the fundamental driving force of our development.

We treat our customers with heart, customers' satisfaction is the direction and target of SkyMEMS. Through continuously technology innovation and service upgrading, we will realize win-win cooperation with customers.

FAQ

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