

Power Sensing Solutions for a Better Life

The IMU480ZA family is a high performance, high accuracy, Inertial Measurement Unit that combines a 3 axis accelerometer, 3 axis gyroscope, and magnetometer along with a temperature sensor to provide tactical grade performance over a wide range of extreme operating conditions. IMU480ZA provides an easy to use SPI/UART interface enabling for a fast integration into complex system designs. IMU480ZA has been fully calibrated, tested and qualified to operate in industrial environment, thus simplifying the design cycles for end equipment.



Applications

- **Construction Equipment**
- Unmanned Vehicle Guidance
- **Robotic Control Systems**
- **Mobile Mapping**
- **Precision Marking Equipment**

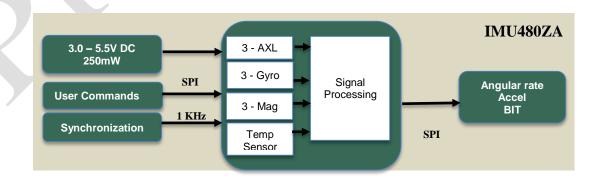
IMU480ZA

INERTIAL MEASUREMENT SYSTEM



Features

- **9DOF IMU**
- Hi range gyo, accel and magnetometer
- 5°/hr, <0.01 mg Bias Instability
- <0.05°/sec, <1 mg bias stability over temp
- <0.1 SF accuracy
- < 0.75 ARW, 0.05 VRW
- 3 to 5V operation, <250mW Power Consumption
- 5 to 50hz User configurable Bandwidth
- User configurable SPI/UART Interface
- -40 to +85°C
- ITAR Free Product
- Available in 24mm x 37mm x 9.5mm. <17g, Anodized Aluminum Package with shrouded connector for easy installation



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IMU480ZA INERTIAL MEASUREMENT SYSTEM

Performance IMU480ZA-409

1 GITOITHANCE	IWU48UZA-4U9	
Gyroscope		
Range: Roll, Pitch, Yaw (º/sec)	± 400	
Bias Instability (°/hr) 2,3	<5	
Bias Stability Over Temp (⁰ /sec) ^{1,4}	<0.15	
Resolution (º/sec)	<0.02	
Scale Factor Accuracy (%)	<0.1	
Non-Linearity (%FS)	<0.1	
Angle Random Walk (⁰/√hr) ^{2,3}	<0.65	
User Configurable Bandwidth (Hz)	5 - 50	
Accelerometer		
Range: X, Y Z (g)	± 8	
Bias Instability (mg) ^{2,3}	<0.01	
Bias Stability Over Temp (mg) 1,4	<3	
Resolution (mg)	<0.5	
Scale Factor Accuracy (%)	<0.1	
Non-Linearity (%FS)	<0.1	
Velocity Random Walk (m/s/√hr) ^{2,3}	<0.05	
User Configurable Bandwidth (Hz)	5-50	
Magnetic Field		
Range: (X,Y,Z) (Gauss)	± 4	
Resolution (mGauss)	<5.0	
Noise Density (mGauss/√Hz)	<1	
Bandwidth (Hz)	5-50(user-configurable)	

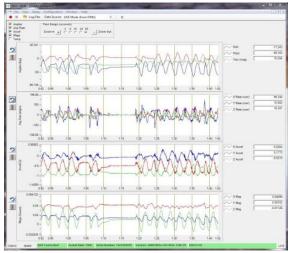
Specifications

Environment		
Operating Temperature (°C)	-40 to +85	
Non-Operating Temperature (°C)	-55 to +105	
Enclosure	Aluminum (Gold Anodized)	
Electrical		
Input Voltage (VDC)	3.0 to 5.5	
Power Consumption (mW)	< 250	
Digital Interface	SPI or UART (User Configurable)	
Output Data Rate	Upto 100Hz (SPI)	
Input Clock Sync	1kHz Sync Pulse	
Physical		
Size (mm)	24.15 x 37.7 x 9.5	
Weight (gm)	< 17	
Interface Connector	20-Pin (10 x 2) 1.0 mm pitch header	

Ordering Information

Model	Description
IMU480ZA-409	9DOF OEM IMU, Hi Range

NAV-VIEW Software



NAV-VIEW provides an easy to use graphical interface to display, record, playback, and analyze all of the IMU480ZA Inertial Measurement System parameters.

NAV-VIEW can also be used to set a wide range of user-configurable fields in the IMU480ZA to optimize the system performance for highly dynamic applications.

NAV-VIEW software is available for download from MEMSIC's website at: www.memsic.com/support

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1 $T_a = -40$ to $+85^{\circ}$ C, VCC=5.0V 2 Max RMS Error of X, Y, Z 3 Allan variance curve, constant temperature 4 Max Error.

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