

SmartIndustrial™

PRIMARY APPLICATIONS



Navigation

IMU data couples with GNSS to constrain position, bridge GNSS outages, and maintain the right path over the full temperature range



Vibration Monitoring

Motor monitoring systems use vibration sensors to prevent downtime and enable an ideal maintenance schedule



Tilt Sensing for Construction Equipment

Accurate tilt sensing is critical to securely operate most construction equipment, vehicles, and tools



Manufacturing & Robotics

Industrial robots use precise motion data to enable automation, improve efficiency, and monitor conditions

FEATURED PRODUCTS

IIM-46230/4



23 x 23 x 8 mm³

High-performance fault tolerant 6-Axis IMU module that provides best in class bias instability and ARW at an affordable price

IIM-20670



4.5 x 4.5 x 1.1 mm³

Thermally Stable IMU for Drone & Stabilization Applications. The low VRE specification leverages the product for deployment in high vibration environment

IIM-42652/3



2.5 x 3 x 0.91 mm³

Compact 6-axis, high FSR (/3), configurable IMU that can withstand an extended operating temperature range while requiring very low power

IIM-42351/2



2.5 x 3 x 0.91 mm³

High-performance, Low-power Accelerometer with multiple capabilities to enable easy, robust and accurate tilt and vibration measurements



InvenSense, a TDK Group Company ("TDK InvenSense") is committed through its Product Longevity Program ("PLP") to ensure that its customers will have access to a stable supply of products for their designs. Products are selected for the PLP from products developed for automotive and industrial markets.

PRODUCT CATEGORIES

IIM-46230 & IIM-46234

High End Industrial, GNSS Module, Delivery Systems

- Best in class bias instability
- Ultra-low ARW
- Custom calibration to improve thermal stability
- Processing power to incorporate complex algorithms

IIM-20670

Antenna Stabilization, Drones

- Max Gyroscope FSR: ±1966 dps
- Max Accelerometer FSR: ±65g
- Good stability over temp
- Low Vibration Rectification Error

IIM-42652 & IIM-42653

Autonomous Mobile Robots

- High FSR – 4000dps & 32g (IIM-42653 only)
- Good bias instability
- Low noise density

IIM-4565x

Navigation Units, Drones

- High FSR – 4000dps & 32g
- Balanced gyroscope
- Good bias instability
- Low noise density

IIM-42351 & IIM-42352

Tilt Sensing, Construction Tools, Vibration Sensing (IIM-42352 only)

- 3-Axis Accelerometer
- High bandwidth up to 4 kHz (IIM-42352 only)

Note: All products have an Operating Temperature Range of -40°C to 105°C and a Shock Tolerance of 10,000g

PRODUCT DETAILS

Parameters	Units	IIM-46234	IIM-46230	IIM-20670		IIM-42652/3	IIM-4565x	Color Key
		X, Y, Z	X, Y, Z	X, Y	Z	X, Y, Z	X, Y, Z	
	Axis	X, Y, Z	X, Y, Z	X, Y	Z	X, Y, Z	X, Y, Z	
	L x W x H (mm ³)	23 x 23 x 8	23 x 23 x 8	4.5 x 4.5 x 1.1		2.5 x 3 x .91	2.5 x 3 x .81	
Output Data Rate (Max ODR)	kHz	1	1	8		32	6.4	
Gyro FSR	dps	±480	±250 / 500 / 1000 / 2000	± 41, 61 ... 1311, 1966		±500 / 1000 / 2000 / 4000		
Gyro Noise Density	mdps/√Hz	1.6	3	5		3.8	3.8	
Gyro Bias Over Temp	mdps/C ±	0.966	2.069	1.724		10	5	
Gyro Sensitivity Over Temp	%/C ±	0.001	0.001	0.001		0.005	0.01	
Gyro Non-Linearity	%FS ±	0.04	0.046	0.2		0.1	0.1	
Gyro Bias Instability	deg/hr	1.9	4.1					
Angular Random Walk	deg/√hr	0.07	0.15					
Accel FSR	g	±8	±2 / 4 / 8 / 16	±2 / 4 / 8 / 16 / 32 / 64		±2 / 4 / 8 / 16 / 32		
Accel Bias Repeatability	mg ±	0.2	0.4	1		20	15	
Accel Noise Density	µg/√Hz	29	41	172		248	80	
Accel Bias Over Temp	ug/C ±	6.9	13.8	3.5		138	150	
Accel Sensitivity Over Temp	%/C ±	0.001	0.001	0.001		0.003	0.005	
Accel Non-Linearity	%FS ±	0.05	0.05	1		0.1	0.1	
Accel Bias Instability	µg	5, 12	7, 15					
Velocity Random Walk	m/s/√hr	0.011	0.015					



Scan Here for additional materials and information.