



**High Precision 6-Axis MEMS MotionTracking™ Device**  
**ICM-42688-P**

The **ICM-42688-P** is a 6-axis MEMS MotionTracking device that combines a 3-axis gyroscope and a 3-axis accelerometer. It has a configurable host interface that supports I2C, I<sup>2</sup>C, and SPI serial communication.

It features a 2 kB FIFO and 2 programmable interrupts with ultra-low-power wake-on-motion support to minimize system power consumption. Other industry-leading features include InvenSense on-chip APEX Motion Processing engine for gesture recognition, activity classification, pedometer, programmable digital filters, and an embedded temperature sensor.



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## High Precision 6-Axis MEMS MotionTracking™ Device – ICM-42688-P

### Description

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The [ICM-42688-P](#) is a 6-axis MEMS MotionTracking device that combines a 3-axis gyroscope and a 3-axis accelerometer. It has a configurable host interface that supports I3C, I2C, and SPI serial communication.

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### ICM-42688-P Features and Benefits

- Gyroscope Noise: 2.8 mdps/√Hz & Accelerometer Noise: 70 √g/√Hz
  - Low-Noise mode 6-axis current consumption of 0.88 mA
- User selectable Gyro Full-scale range (dps): ±15.6/31.2/62.5/125/250/500/1000/2000
- User selectable Accelerometer Full-scale range (g): ±2/4/8/16
- User-programmable digital filters for gyro, accel, and temp sensor
- Noise and current consumption:
  - APEX Motion Functions:
  - Pedometer, Tilt Detection, Tap Detection
  - Wake on Motion, Raise to Wake/Sleep, Significant Motion Detection
- Host interface: 12.5 MHz I3C<sup>SM</sup>, 1 MHz I2C, 24 MHz SPI

### Request a Quote

CDI works continuously with our vendor partners to connect our customers to products and solutions that accelerate their time to market. CDI will leverage its product knowledge, technical expertise, and evaluation tools to find the right solution for your design.

For more information, or to learn how we can help drive your success, please visit [www.cdiweb.com](http://www.cdiweb.com) or email us at [sales@cdiweb.com](mailto:sales@cdiweb.com).

### About TDK InvenSense

**InvenSense, Inc, a TDK Group Company** is part of the Sensor System Business Company within TDK and is the industry leader in MEMS Motion, Audio, and Pressure Solutions for the consumer, industrial, automotive, and IoT market segments. TDK provides a very robust portfolio of MEMS 3/6/7/9 axis motion sensors, accompanied by the highest performing MEMS audio microphones, and pressure sensors. TDK continues to push the boundaries of performance and quality; setting new standards of innovation across multiple industries.

### **About Component Distributors, Inc. (CDI)**

**Component Distributors, Inc. (CDI)** is a value-added distributor of high-performance LED, Power, RF & Microwave, Wireless and Sensor component technologies. CDI distributes globally and provides local application support and customer service across the Americas.

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### **Category**

1. Ewave
2. Sensors and Wireless
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