Motion Monitoring Solutions

Making Motion Monitoring and Context Awareness Easy

Summary

Developing applications with motion/position sensors can be difficult. Engineers need to develop complex algorithms to filter, compensate and fuse the raw data from the sensors, which requires specialized knowledge and can be very resource intensive.

Microchip makes it easy to design motion-based applications. We offer a variety of solutions ranging from a motion module, to motion coprocessors, to development tools to speed your development time.

Microchip also offers discrete solutions for both Windows® 8 applications and for embedded Internet of Things (IoT) applications. The motion coprocessors are preprogrammed with calibration and sensor fusion algorithms to speed your development.

Microchip's solutions are ideal for a wide range of target applications. Motion solutions can be used in robots, wearables, transportation, physical therapy, toys and a myriad of other applications.

Target Markets

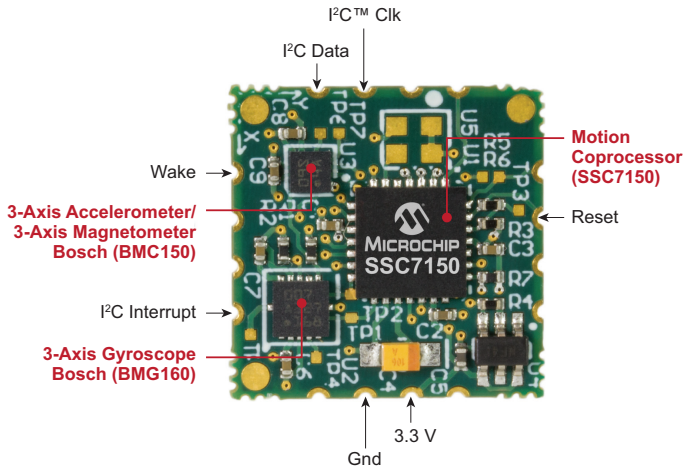
- Consumer
- Industrial
- Wearable
- Internet of Things
- Medical

MM7150 Motion Module

The MM7150 Motion Module is an easy-to-use, time-saving module. It is a complete, small form factor solution including accelerometer, magnetometer, gyroscope sensors and the SSC7150 Motion Coprocessor which is preprogrammed with integrated calibration and sensor fusion algorithms. With a few I²C™, power and ground connections, applications can easily read raw, compensated and calibrated 3D motion and position data.

- Powered by the SSC7150 Motion Coprocessor
- Filters, compensates and fuses raw 9-axis sensor data
- Comes prepopulated with a 3-axis accelerometer, a 3-axis magnetometer and a 3-axis gyroscope from Bosch
- Single sided so it can be soldered down
- Small size 17 mm × 17 mm
- Factory programmed and calibrated
- Self-calibrating over time
- Suitable for battery-powered applications
- Outputs position and motion data over standard I²C connection
- Works with most MCU/MPUs with I²C

MM7150 Diagram



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Motion Coprocessors

Microchip also offers discrete, chip-down solutions for both Windows 8 applications and for embedded IoT applications. Motion coprocessors come programmed with sophisticated sensor fusion algorithms. The coprocessors intelligently filter, compensate and combine the raw sensor data to output accurate position and orientation information over I^2C to the host MCU of the embedded device.

SSC7150 Motion Coprocessor

The SSC7150 Motion Coprocessor collects sensor data from an accelerometer, a magnetometer and a gyroscope and offloads the collecting and processing of sensor data from the main processing unit. The SSC7150 motion coprocessor is design to enable embedded and IoT applications.

- 6 mm × 6 mm 28-pin QFN package

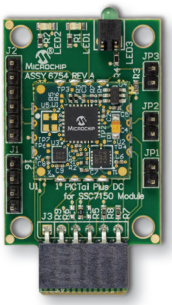
SSC7102 Motion Coprocessor

The SSC7102 Motion Coprocessor is a Windows 8-certified, HID over I^2C, low-power, flexible and turnkey solution. The SSC7102 makes implementing sensor fusion easy for Windows-based applications such as ultrabooks, 2-in-1 and tablets. Microchip partnered with multiple industry-leading sensor manufacturers and sensor fusion specialists to create this solution, enabling faster time to market without the need for sensor fusion expertise.

- 6 mm × 6 mm 84-pin TFBGA package

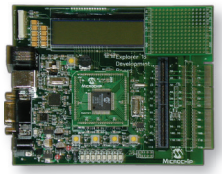
Development Tools

MM7150-PICtail Plus Development Board (AC243007)



Microchip's MM7150 Motion PICtail/ PICtail Plus Evaluation Board allows you to easily develop motion applications using Microchip's 16- and 32-bit PIC® microcontrollers. The board can be plugged directly into the Explorer 16 Development Board. The MM7150 PICtail Evaluation Board combines motion sensors (accelerometer, magnetometer and gyroscope) with a motion coprocessor. The SSC7150 Motion Coprocessor is pre-programmed with integrated calibration and sensor fusion algorithms to provide raw and calibrated motion-compensated 3D data.

Explorer 16 Development Board (DM240001)



The Explorer 16 Development Board is a low-cost modular development system for Microchip's 16-bit and 32-bit microcontrollers. It supports devices from the PIC24F, dsPIC® DSC and PIC32 families. A variety of families are supported with processor Plug-In Modules (PIMs) for easy device swapping. The board includes a PICtail Plus Daughter Card connector for expansion boards including USB, CAN, Ethernet, wireless, graphics and many more. This board comes with two interchangeable 100-pin PIMs supporting the PIC24FJ128GA010 and dsPIC33FJ256GP710 families.

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www.microchip.com/motion

Visit our web site for additional product information and to locate your local sales office.

Microchip Technology Inc. · 2355 W. Chandler Blvd. · Chandler, AZ 85224-6199

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