

World's Lowest Power 9-Axis MEMS MotionTracking™ Device

GENERAL DESCRIPTION

The ICM-20948 is the world's lowest power 9-axis MotionTracking device that is ideally suited for Smartphones, Tablets, Wearable Sensors, and IoT applications.

- 1/3 the power of existing 9-axis devices
- 3-axis gyroscope, 3-axis accelerometer, 3-axis compass, and a Digital Motion Processor™ (DMP™) in a 3x3x1mm (24-pin QFN) package
- DMP offloads computation of motion processing algorithms from the host processor, improving system power performance
- Software drivers are fully compliant with Google's latest Android release
- EIS FSYNC support

ICM-20948 supports an auxiliary I²C interface to external sensors, on-chip 16-bit ADCs, programmable digital filters, an embedded temperature sensor, and programmable interrupts. The device features an operating voltage range down to 1.71V. Communication ports include I²C and high speed SPI at 7MHz.

ORDERING INFORMATION

PART	TEMP RANGE	PACKAGE
ICM-20948†	-40°C to +85°C	24-Pin QFN

†Denotes RoHS and Green-Compliant Package

BLOCK DIAGRAM



APPLICATIONS

- Smartphones and Tablets
- Wearable Sensors
- IoT Applications

FEATURES

- Lowest Power 9-Axis Device at 2.65mW
- 3-Axis Gyroscope with Programmable FSR of ±250dps, ±500dps, ±1000dps and ±2000dps
- 3-Axis Accelerometer with Programmable FSR of ±2g, ±4g, ±8g and ±16g
- 3-Axis Compass with a wide range to ±4900μT
- Onboard Digital Motion Processor (DMP)
- Android support
- Auxiliary I²C interface for external sensors
- On-Chip 16-bit ADCs and Programmable Filters
- 7MHz SPI or 400kHz Fast Mode I²C
- Digital-output temperature sensor
- VDD operating range of 1.71 to 3.6V
- MEMS structure hermetically sealed and bonded at wafer level
- RoHS and Green compliant

TYPICAL OPERATING CIRCUIT

