



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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High Performance 6-Axis MEMS MotionTracking™ Device in 4x4 mm Package

GENERAL DESCRIPTION

The ICM-20689 is a 6-axis MotionTracking device that combines a 3-axis gyroscope, 3-axis accelerometer, and a Digital Motion Processor™ (DMP) in a small 4x4x0.9 mm (24-pin QFN) package.

- Large 4K-byte FIFO to reduce traffic on the serial bus interface, and reduce power consumption by allowing the system processor to burst read sensor data and then go into a low-power mode
- Gyroscope programmable FSR of $\pm 250\text{dps}$, $\pm 500\text{dps}$, $\pm 1000\text{dps}$ and $\pm 2000\text{dps}$
- Accelerometer with Programmable FSR of $\pm 2g$, $\pm 4g$, $\pm 8g$ and $\pm 16g$
- EIS FSYNC support

The ICM-20689 includes on-chip 16-bit ADCs, programmable digital filters, an embedded temperature sensor, and programmable interrupts. The device features an operating voltage range down to 1.71 V. Communication ports include I²C and high speed SPI at 8 MHz.

APPLICATIONS

- Mobile phones and tablets
- Drones
- Motion-based game controllers
- 3D remote controls for Internet connected DTVs and set top boxes, 3D mice
- Wearable sensors for health, fitness and sports

FEATURES

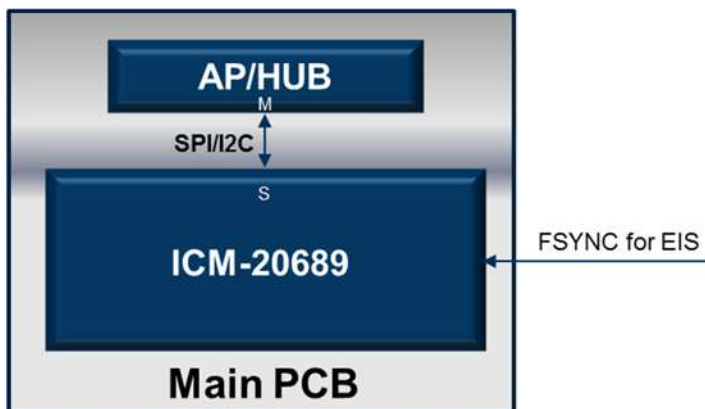
- User-programmable interrupts
- Wake-on-motion interrupt for low power operation of applications processor
- 4K-byte FIFO buffer enables the applications processor to read the data in bursts
- On-Chip 16-bit ADCs and Programmable Filters
- Host interface: 8 MHz SPI or 400 kHz Fast Mode I²C
- Digital-output temperature sensor
- VDD operating range of 1.71 V to 3.45 V
- MEMS structure hermetically sealed and bonded at wafer level
- RoHS and Green compliant

ORDERING INFORMATION

PART	TEMP RANGE	PACKAGE
ICM-20689†	-40°C to +85°C	24-Pin QFN

†Denotes RoHS and Green-Compliant Package

BLOCK DIAGRAM



TYPICAL OPERATING CIRCUIT

