



**THE DATASHEET OF  
EV\_ICM-20602**



## High Performance 6-Axis MEMS MotionTracking™ Device

### GENERAL DESCRIPTION

The ICM-20602 is a 6-axis MotionTracking device that combines a 3-axis gyroscope, 3-axis accelerometer, in a small 3x3x0.75mm (16-pin LGA) package.

- High performance specs
  - Gyroscope sensitivity error:  $\pm 1\%$
  - Gyroscope noise:  $\pm 4\text{mdps}/\sqrt{\text{Hz}}$
  - Accelerometer noise:  $100\mu\text{g}/\sqrt{\text{Hz}}$
- Includes 1K-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
- EIS FSYNC support

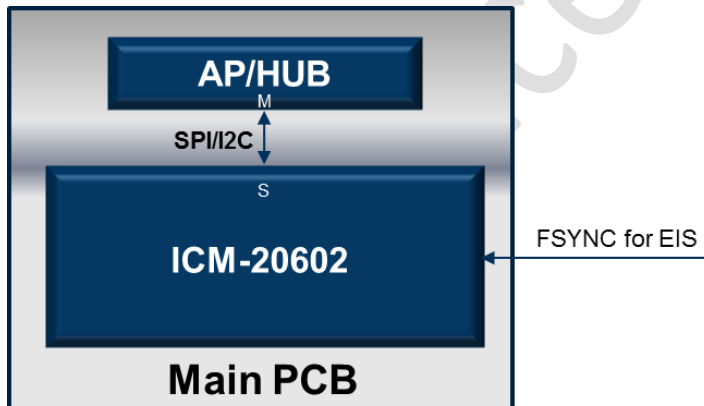
ICM-20602 includes on-chip 16-bit ADCs, programmable digital filters, an embedded temperature sensor, and programmable interrupts. The device features an operating voltage range down to 1.71V. Communication ports include I<sup>2</sup>C and high speed SPI at 10MHz.

### ORDERING INFORMATION

PART	TEMP RANGE	PACKAGE
ICM-20602†	-40°C to +85°C	16-Pin LGA

†Denotes RoHS and Green-Compliant Package

### BLOCK DIAGRAM



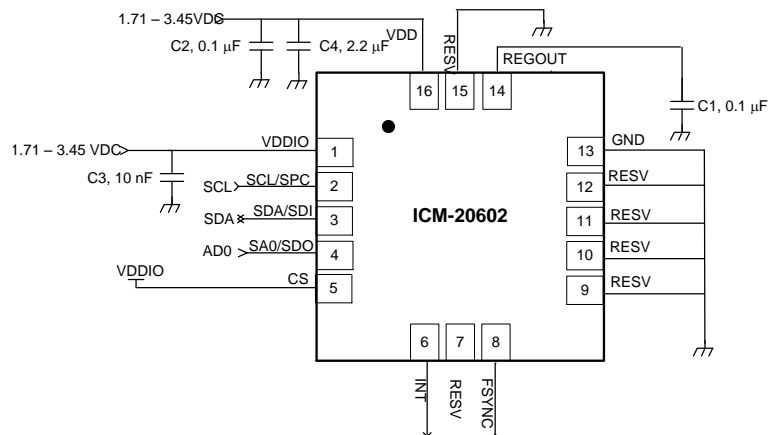
### APPLICATIONS

- Smartphones and Tablets
- Wearable Sensors
- IoT Applications
- Motion-based game controllers
- 3D remote controls for Internet connected DTVs and set top boxes, 3D mice

### FEATURES

- 3-Axis Gyroscope with Programmable FSR of  $\pm 250\text{dps}$ ,  $\pm 500\text{dps}$ ,  $\pm 1000\text{dps}$  and  $\pm 2000\text{dps}$
- 3-Axis Accelerometer with Programmable FSR of  $\pm 2\text{g}$ ,  $\pm 4\text{g}$ ,  $\pm 8\text{g}$  and  $\pm 16\text{g}$
- User-programmable interrupts
- Wake-on-motion interrupt for low power operation of applications processor
- 1K byte FIFO buffer enables the applications processor to read the data in bursts
- On-Chip 16-bit ADCs and Programmable Filters
- Host interface: 10MHz SPI or 400kHz Fast Mode I2C
- Digital-output temperature sensor
- VDD operating range of 1.71 to 3.45V
- MEMS structure hermetically sealed and bonded at wafer level
- RoHS and Green compliant

### TYPICAL OPERATING CIRCUIT



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