InvenSense

IAM-20680

High Performance 6-Axis MEMS MotionTracking™ Device for Automotive Applications

GENERAL DESCRIPTION

The IAM-20680 is a 6-axis MotionTracking device for Automotive applications that combines a 3-axis gyroscope, 3-axis accelerometer, and FSYNC for image stabilization functionality in a small 3x3x0.75mm (16-pin LGA) 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 ±250dps, ±500dps, ±1000dps and ±2000dps
- Accelerometer with Programmable FSR of ±2g, ±4g, ±8g and ±16g
- EIS FSYNC support
- Tested to meet AEC-Q100 Grade 3 qualification

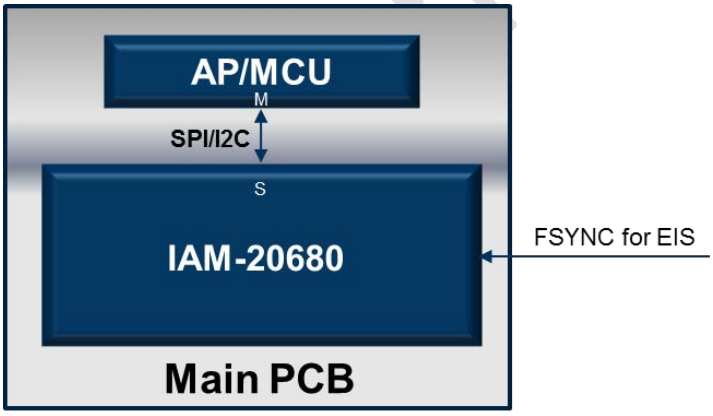
IAM-20680 includes on-chip 16-bit ADCs, programmable digital filters, an embedded temperature sensor, and programmable interrupts. The device features an operating voltage range down to 1.71V. Communication ports include I^2C and high speed SPI at 8MHz.

ORDERING INFORMATION

PART	TEMP RANGE	PACKAGE
IAM-20680†	–40°C to +85°C	16-Pin LGA

†Denotes RoHS and Green-Compliant Package

BLOCK DIAGRAM



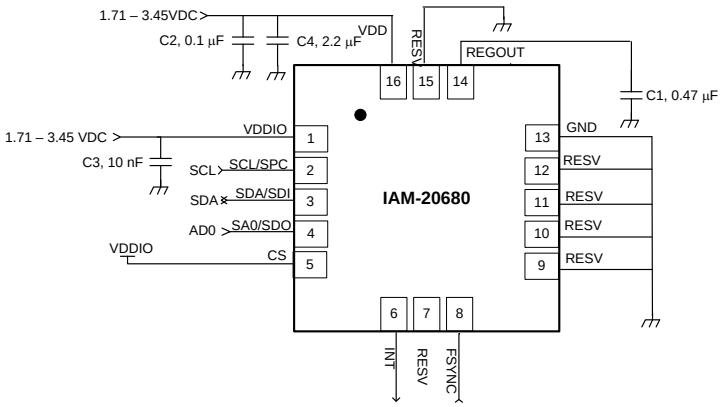
APPLICATIONS

- Navigation Systems Aids for Dead Reckoning
- 360º View Camera Stabilization
- Accurate Location for Vehicle to Vehicle and Vehicle to Infrastructure communication
- Accurate location for e911 call
- Theft detection
- Lift Gate Motion Detection

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: 8MHz 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
- Tested to meet AEC-Q100 Grade 3 qualification

TYPICAL OPERATING CIRCUIT



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