

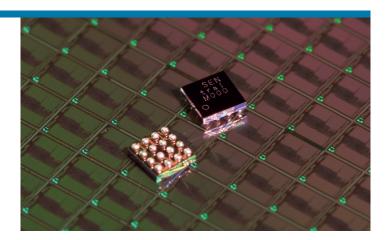
EM MICROELECTRONIC



FACT SHEET | EM7184

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Motion Coprocessor for Android 4.4 KitKat

General Description

The Motion Coprocessor is an ultra-low power sensor hub to support all Android 4.4 KitKat-compliant sensors, providing a full solution of processing plus algorithm in one tiny and efficient package.

The Motion Coprocessor embeds the complete range of KitKat sensor features in hardware on a low-power coprocessor, allowing smart phone OEMs to support always-on context aware applications such as Google Now - without having to worry about power consumption.

The Motion Coprocessor offers a single solution for both enabling hardware and software for KitKat and «always-on» operation of the highest performance motion, context and location algorithms.

Compared to FLASH-based sensor hub microcontrollers (MCUs) with on-board floating point units (FPUs), the motion coprocessor operates at <1/10 power. It can routinely run over 140'000 floating point operations per second at ~200 μ Amps average current consumption at 1.8V.

The Motion Coprocessor accommodates up to 6 different sensor inputs and is the only sensor hub in the market that can run all the KitKat sensors simultaneously for under 200 μ Amps.

Features

- I Heading Accuracy of 2° rms.
- I Ultra Low Power Consumption
- I Continuous Soft and Hard-Iron Magnetic Auto-Calibration
- I Magnetic Anomaly Compensation
- I I2C Interface 100 to 2000 kHz
- I Small Form-Factor
- I Sensor Flexibility
- I Sensor Functions:
- · Heading, pitch and roll
- · Rotation Matrix
- \cdot 9-Axis Sensors (3-Axis Gyro, 3-Axis Accel, 3-Axis Magnetometer
- · 6-Axis Sensors (Accelerometer+Gyro, or Accelerometer+Magnetometer)
- Gravity
- · Linear Acceleration
- · Significant Motion
- · Calibrated Sensor
- · Uncalibrated Sensor
- Data Batching
- · Timestamp

Applications

- I Smartphones
- I Tablets
- **I** Wearables
- I Battery-Powered equipment
- I Remote controls
- I 3D pointers, Air Mice
- I Motion and gesture recognition
- I Dead reckoning
- I Location based services
- I Augmented reality
- I Gaming