



## 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 ~200µAmps 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 µAmps.

### Features

- | Heading Accuracy of 2° rms.
- | Ultra Low Power Consumption
- | Continuous Soft and Hard-Iron Magnetic Auto-Calibration
- | Magnetic Anomaly Compensation
- | I2C Interface – 100 to 2000 kHz
- | Small Form-Factor
- | Sensor Flexibility
- | Sensor Functions:
  - Heading, pitch and roll
  - Rotation Matrix
  - 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

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