



Kionix introduces ARM-based Sensor Hub with embedded accelerometer, includes library of advanced motion processing and context awareness software

Ithaca, NY, USA - March 31, 2014 - [Kionix, Inc.](#), a leading supplier of MEMS inertial sensors and software solutions, today announced a new integrated sensor hub device, the KX23H, combining a high-performance, very low power 3-axis accelerometer with a 32-bit ARM Cortex™-M0 microcontroller in a single 3x3x0.9mm package. The KX23H also includes a library of advanced motion processing software, providing the user with pedometer and caloric counting algorithms, as well as activity monitoring and the ability to detect differences between states such as Stop/Walk/Run/Car/Train etc. In addition, the KX23H includes embedded algorithms for Tap/Double-Tap, screen rotation, tilt and other common applications.

The KX23H's microcontroller is a full-featured, low-power ARM Cortex™-M0, running at 32MHz. With the ability to accept additional inputs such as gyroscopes, magnetometers and pressure sensors, and the capability to run sensor fusion software, the KX23H can reduce demand on the system CPU or application processor, reduce power consumption and simplify system architecture. The KX23H marks the first time Kionix has offered a sensor hub device, building upon the technology of parent company ROHM Semiconductor and their LAPIS subsidiary, formerly OKI semiconductor.

The accelerometer is based on Kionix's highest performance design, with 16-bit resolution, a 256-byte FIFO/FILO buffer and power consumption as low as 1µA. It also features FlexSet Performance Optimization allowing the user to dynamically adjust power and noise parameters according to the state and activity of the device.

"Integrating an accelerometer and an MCU to create a smart sensor hub is a natural evolution of these technologies. The smart sensor hub gives customers the opportunity to distribute intelligence within their systems, providing more design flexibility and lower power consumption," said Kenny Salky, EVP Sales and Marketing for Kionix. The KX23H sensor hub is targeted at a wide range of applications including wearable devices, mobile phone and portable devices, as well as Internet of Things applications.

KX23H Accelerometer Features:

- Low power : 1 μ A@standby; 2 μ A@3.1Hz; 146 μ A@1.6kHz
- \pm 2g, 4g, 8g full scale range
- Data Rate 0.781Hz to 1.6kHz
- 16-bit resolution
- Low noise with FlexSet Performance Optimizer
- Embedded 256-byte FIFO/FILO buffer
- Internal voltage regulator
- Embedded wake-up function
- Digital High-Pass Filter Outputs
- Integrated Directional Tap/Double-Tap™ and device-orientation algorithms
- Excellent Temperature Performance
- High Shock Survivability (10,000g)

KX23H MCU Features:

- ARM Cortex™-M0 32MHz
- 128 kB Flash ROM
- 16 kB SRAM
- Power consumption (MCU only):
- 2.5 μ A (sleep); 6mA @ 32MHz
- I2C master port
- I2C slave port
- 3 GPIO with Interrupt capability

The KX23H will begin sampling during the second quarter of 2014.

About Kionix

[Kionix, Inc.](#), a global MEMS inertial sensor manufacturer based in Ithaca, NY, USA, offers high-performance, low-power accelerometers, gyroscopes, and 6-axis combination sensors plus comprehensive software libraries that support a full range of sensor combinations, operating systems and hardware platforms. Leading consumer, automotive, health and fitness and industrial companies worldwide use Kionix sensors and total system solutions to enable motion-based functionality in their products. Kionix is ISO 9001:2008, TS 16949, and TS 14001:2004 certified. Kionix is a wholly owned subsidiary of ROHM Co., Ltd.

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Press Contacts

Edward Brachocki

Director, Marketing

(607) 257-1080

ebrachocki@kionix.com

www.kionix.com