

# Kionix expands motion sensing product portfolio with first gyros for consumer applications and trio of new accelerometers

Medical Design Technology

## Kionix enters the consumer gyro market

The company announced a pair of new gyros aimed at the consumer devices market—the dual-axis KGY12 and the tri-axis KGY13. Citing a high-growth consumer gyro market that analysts expect to reach US\$1.04B by 2014, Galvin stated: *“MEMS gyroscopes are making consumer electronics history with their rapidly-growing integration into a wide range of products. For Kionix, having had such widespread success with accelerometers, producing gyroscopes optimized for mass-produced consumer applications was a logical next step—and one that will enhance our market position in 2011 and 2012.”*

Kionix gyros are packaged in a 5x5x0.9mm 24-pin land grid array (LGA). They feature low power consumption and 16-bit digital outputs (I2C and SPI) over a measurement range of  $\pm 2048^\circ/\text{sec}$ . Analog outputs are also available in userselectable ranges of  $\pm 256^\circ/\text{sec}$ ,  $\pm 512^\circ/\text{sec}$ ,  $\pm 1024^\circ/\text{sec}$  and  $\pm 2048^\circ/\text{sec}$ . Both gyros offer user-definable bandwidth and embedded temperature sensors. Tim Davis, executive vice president and CTO of Kionix, commented: *“Kionix has been immersed in gyro technology for some time, our first gyro having been introduced in 2003. This new generation of gyros reflects our deep understanding of maximizing performance by striking a balance between current consumption and noise with excellent bias stability over temperature. It will effectively establish best-in-class performance for consumer gyros.”*

Targeting a global market for MEMS in consumer electronics and mobile handsets that analysts predict will reach more than US\$3B in 2014, Kionix’s portfolio of MEMS inertial sensors adds intelligence through embedded algorithms and application software, speeding the implementation of popular functions such as tap/double-tap touch, directional shake and gesture recognition in portable devices.

*“Kionix is not about simple inertial sensor sales. Embedded algorithms and application software such as Directional Tap/Double-Tap, Directional Shake, screen orientation and Gesture Designer have become an increasingly important part of Kionix’s overall digital product family. Combined with our full suite of software development tools, Kionix offers the most comprehensive algorithmic and software solutions in the industry. The end result? Shorter design cycles, better implementations and better products for our customers,”* Galvin stated. **A trio of high-performance accelerometers**

The Kionix product portfolio sets new standards for low power, performance over temperature and broad user programmability:

- o **KXTH9** — A multiplexed analog tri-axis accelerometer packaged in a 3x3x0.9mm 10-pin LGA featuring:
  - Analog output featuring an integrated 4-channel multiplexer that reduces system microcontroller unit (MCU) requirements to only one analog-to-digital converter (ADC) and two digital I/O’s and achieves very high data sampling rates

- Factory-programmable low pass filter with option for user-defined external capacitors
- Ultra-low noise density at 150  $\mu\text{g}/\sqrt{\text{Hz}}$  typical
- Low power consumption
- o **KXTG9** — A digital (I2C/SPI) tri-axis accelerometer packaged in a 3x3x0.9mm 10-pin LGA featuring:
  - High-speed digital interface with SPI (40 MHz, 3 or 4 wire) and I2C for easy system integration, eliminating analog-to-digital converter requirements and providing direct communication with system microcontrollers
  - Two intelligent user-programmable application interrupts, motion and/or freefall, that can use High Pass Filtered (HPF) or Low Pass Filtered (LPF) output
  - Calibrated temperature measurement that can be read via the digital communication
  - Low power consumption
  - o **KXTI9** — A digital (I2C) tri-axis accelerometer packaged in a 3x3x0.9mm 10-pin LGA featuring:
    - Non-volatile buffer memory for acceleration signals
    - Enhanced integrated user-programmable orientation, tap/double-tap, and activity-monitoring algorithms
    - User-selectable g-range (2g, 4g, 8g) and user-selectable Output Data Rate (ODR) that can use HPF or LPF output
    - Low power consumption

**Availability** The KGY12 dual-axis gyro is currently sampling, as are the KXTH9, KXTG9 and KXTI9 accelerometers. Samples of the tri-axis gyro will be available next month. For more information about these products, please email: [salesna@kionix.com](mailto:salesna@kionix.com) or contact the Kionix sales office nearest you: <http://www.kionix.com/aboutkionix/sales-offices.html>. **About Kionix** Kionix, Inc., located in Ithaca, New York, USA, is a wholly-owned subsidiary of ROHM Co., Ltd. of Japan. The Company pioneered high-aspect ratio silicon micromachining based on research originally conducted at Cornell University

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and today enjoys a global reputation for MEMS product design, process engineering and quality manufacturing. Consumer electronics leaders worldwide utilize Kionix's products, development tools and application support to enable motionbased gaming; user-interface functionality in mobile handsets, personal navigation and TV remote controllers; and hard-disk-drive drop protection in mobile products. Kionix's MEMS products are further diversified into the automotive, industrial and healthcare sectors. Kionix offers one of the industry's broadest families of MEMS devices that incorporate tri-axis accelerometers and gyroscopes along with the mixed-signal-interface integrated circuits that provide algorithm processing of sensor data. Kionix is ISO9001:2000 and TS16949 registered. For more information on Kionix, visit: <http://www.kionix.com>. For additional information on ROHM, visit <http://www.rohm.com>.

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