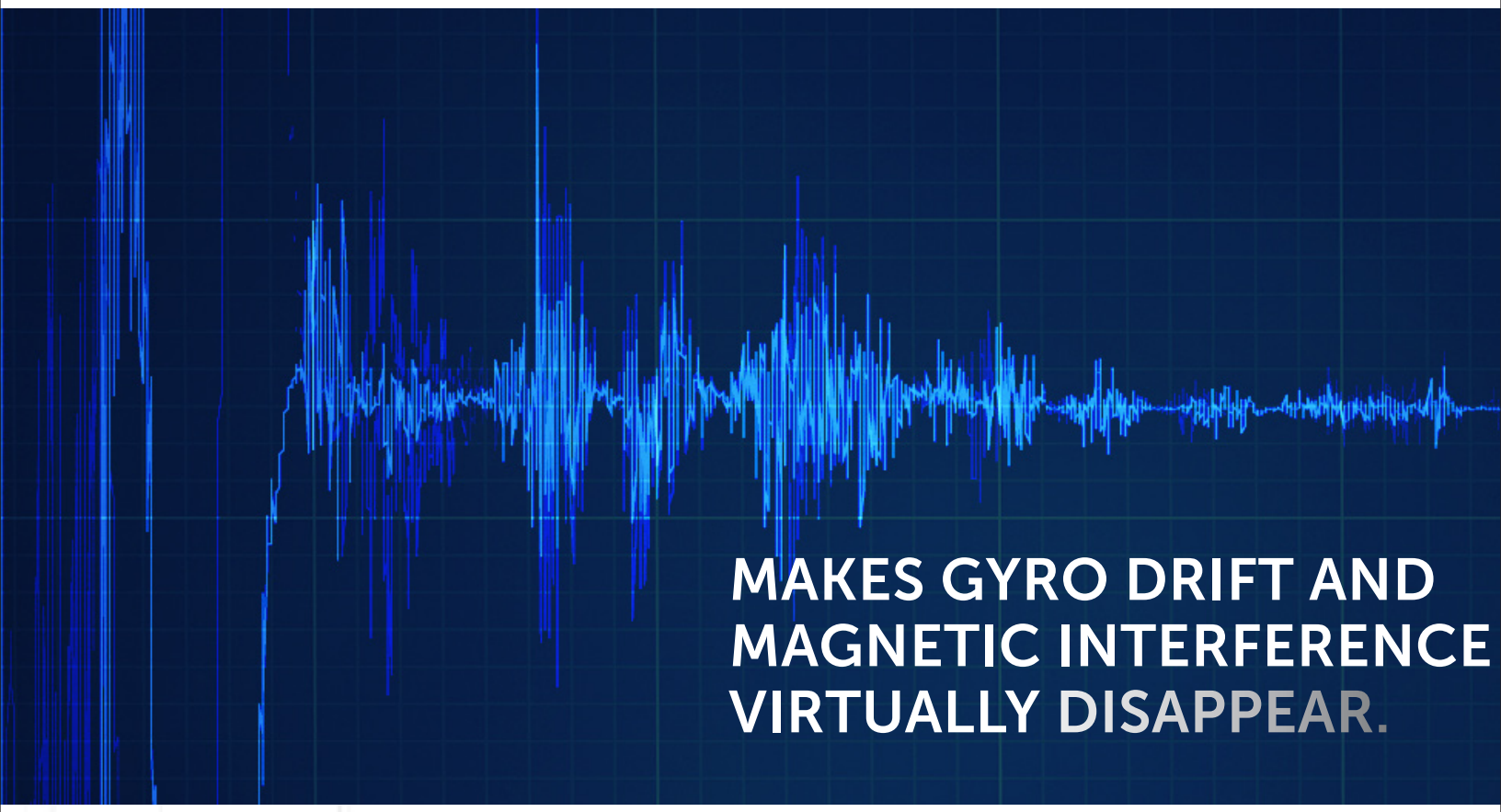
HEADWAY
sensor engine



MAKES GYRO DRIFT AND MAGNETIC INTERFERENCE VIRTUALLY DISAPPEAR.

Introducing a new solution in motion sensing.

PNI Sensor Corporation is introducing the new Headway™ Sensor Engine for mobile handsets. Using highly sophisticated adaptive filtering models in its patent-based algorithms, the Headway Sensor Engine provides always on, instant heading information. And, unlike currently available 9-axis systems, it eliminates gyro drift and susceptibility to magnetic distortion and anomalies.

The new Headway Sensor Engine filters and fuses outputs from accelerometers, gyroscopes, and magnetometers to deliver pinpoint heading accuracy, attitude, and signal reliability. Headway enables app developers to create more accurate and satisfying game play. And it's a boon for engineers working in the burgeoning field of location based services and applications where heading accuracy and reliability are required.

PNI
SENSOR CORPORATION

SUNSTAR传感与控制 http://www.sensor-ic.com/ TEL:0755-83376549 FAX:0755-83376182 E-MAIL:szss20@163.com

HEADWAY sensor engine

Headway™ makes gaming better...

The addition of motion sensing technologies to mobile handsets has fueled the growth of gaming, but the gyro drift and calibration interruptions inherent in existing 9-axis systems degrade the user experience. The Headway Sensor Engine does not require frequent calibration, so **game play is longer and more satisfying.** And its heading accuracy means that augmented reality games are now possible for the handheld market.

...and doesn't get lost.

Location based services and applications could connect users to places in new and inventive ways. But magnetic interference and signal noise cause frequent loss of heading and inaccurate directions. These constant interruptions can throw heading off as much as 90° in a matter of seconds, often without the user even knowing it. The Headway Sensor Engine reveals **pinpoint accurate heading** in all environments — without experiencing lag time or requiring frequent recalibration routines.

What is the Headway Sensor Engine?

Headway is a complex algorithm, delivered in API form, designed for today's smartphone-sized 9-axis sensor systems. It converges the outputs from MEMS accelerometers, gyroscopes and magnetometers into accurate, uninterrupted heading and orientation information. Headway performs differently than other 9-axis sensor fusion algorithms as it compensates for the magnetic anomalies that sidetrack these current smartphone sensor systems. It uses high number-of-states adapative Kalman filtering in place of standard low pass filter with heuristics and phase delays. By filtering and optimizing the outputs of each sensor, Headway delivers accurate and reliable information in real-world operating conditions.

Rock-solid reliability and performance in heading and attitude is now possible for mobile handsets with the Headway Sensor Engine.

Features

- Requires a 9-axis sensor system
  (3-axis magnetometer, 3-axis gyroscope, 3-axis accelerometer)
- Digital outputs are quaternion, heading, pitch, roll, linear acceleration, gravity, and pointer Hpos & Vpos
- Operating system support for Windows, MacOS, Linux including Andriod and Embedded Linux
- Platform support for x86, OMAP, Cortex-Mx, ARMx

9-AXIS (3:3:3)

LOW LATENCY

MOTION TRACKING

MAGNETIC IMMUNITY

PNI SENSOR CORPORATION is America's leader in the exacting science of making complex inertial sensors work together in small consumer devices. Building on decades of patented research, PNI offers today's most reliable integrated sensor systems, enabling pinpoint accurate heading and pointing applications unencumbered by magnetic distortion and gyro drift.

Serving a demanding, wide-ranging list of industries (including such clients as the US Military, General Motors, Ford and iRobot), PNI's U.S. based team of physicists, engineers, researchers and quality control experts can help speed your time to market and ensure marketplace success with algorithm and application support. Nimble and responsive, PNI offers a multitude of sensors and the sensor engineering talent to help integrate them into the next mobile, gaming or personal computing device.

For more information and the most current specifications, visit www.pnicorp.com

PNI Sensor Corporation 133 Aviation Blvd, Suite 101, Santa Rosa, CA 95403-1084 USA
Phone: 707-566-2260 Fax: 707-566-2261 www.pnicorp.com

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