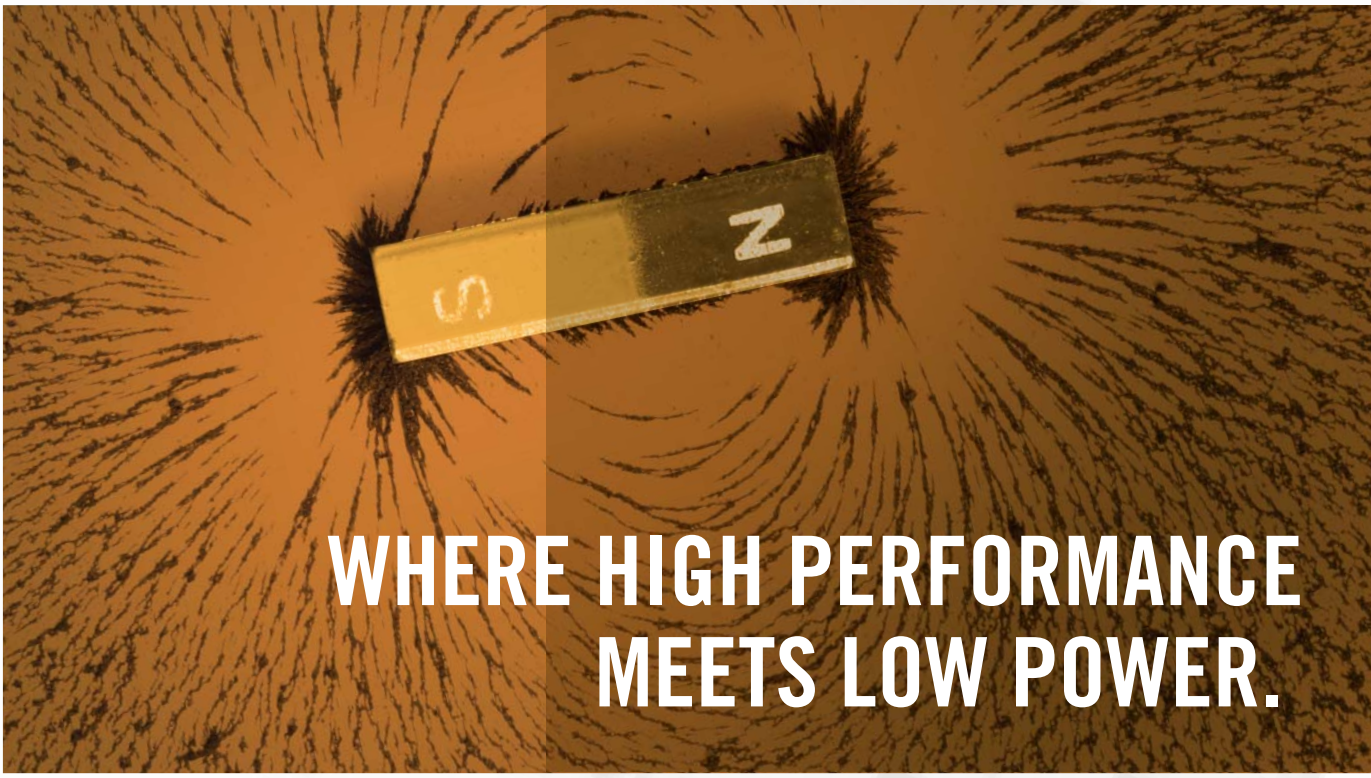
Reference Magnetic Sensor Suites

RM3000 & RM2000



WHERE HIGH PERFORMANCE MEETS LOW POWER.

THE HIGHEST ACCURACY SENSORS in their class, PNI's patented Reference Magnetic Sensor Suites deliver high performance resolution and repeatability with extremely low noise. The Reference Magnetic Sensor Suites have a wide field measurement range, superior noise immunity, no hysteresis, and are extremely stable over temperature. All this comes with the lowest power consumption in the industry.

Unlike magneto-resistive sensors, PNI's Reference Magnetic Sensor Suites do not require temperature calibration nor high current set and reset pauses before each measurement. Hence, they are simple to design in, and peak current requirement is dramatically less. It isn't surprising that this patented technology has been proven across a wide spectrum of applications, including motion tracking, compassing, robotics and targeting.

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Reference Magnetic Sensor Suites

are designed to enable 3D (RM3000) and 2D (RM2000) applications and are optimized for use in game controllers, solid-state navigation devices, and handheld devices with integrated compassing functions. The Suites consist of 2 or 3 Reference Magnetic sensors driven by PNI's 3D MagIC ASIC. The interface to the 3D MagIC ASIC is through an SPI bus; eliminating the need for signal conditioning or an analog/digital converter.

Sen-XY (horizontal mount)
Sen-Z (vertical mount)

LOW POWER

HIGH RESOLUTION

An all-digital demo board is available for design and prototyping for high-volume applications, as well as use in research, education and hobby use. The RM3000 demo board integrates PNI's Reference Magnetic Sensors and 3D MagIC ASIC onto a single PCB.

Available suites:

RM3000 enables unparalleled performance in 3D applications. It contains two Sen-XY sensors, one Sen-Z sensor plus the new 3D MagIC ASIC controller.

RM2000 enables 2D applications and contains two Sen-XY sensors plus the new 3D MagIC ASIC controller.

RM3000 demo board incorporates the 3-axis sensor suite with PNI's 3DMagIC ASIC controller on a single PCB, and is ideal for prototyping applications such as video game controllers and TV remote controller devices that require high refresh rates and high magnetic sensor resolution. The SPI interface allows direct interface to a microprocessor, eliminating the need for additional signal processing. For 2D applications the third axis can simply be turned off.

Sensor Suite Specifications

Parameter		Min.	Typical	Max.
Field Measurement Range		-11 Gauss		+11 Gauss
Noise Limited Resolution			20 nT at 200 cycle counts	
Linearity over ±200 µT			0.6%	
Single Axis Data Rate @ noise limited resolution			450 Hz	
DC Supply Voltage		1.6 V	3.3 V	3.6V
Average Current (35 Hz single axis at noise limit)			0.3 mA	
Temperature Range	Operation	–40˚C		85˚C
	Storage	–40˚C		85˚C
Size	Sen-XY (l x w x h)		6.0 x 2.1 x 2.2 mm	
	Sen-Z (l x w x h)		3.0 x 3.0 x 5.75 mm	
	3DMagIC (l x w x h)		5.0 x 5.0 x 0.9 mm	

PNI MAGNETO-INDUCTIVE POSITION SENSORS can tell you if something is up or down, sideways or facing east. They can tell you where in space your handheld is. They can track movement... whether you've moved across a screen or down a ravine. They're reliably accurate underwater, in space, in a car, and at extreme temperatures — all with pin-point accuracy, and using far less power than other technologies.

PNI uses the existing power of the earth's magnetic field to detect position, applying its patented Magneto-Inductive technology in each of its proprietary sensors and modules.

Many of today's leading companies are using PNI technology in their marquee products and across a wide spectrum of applications, including compassing, surveying equipment, sonar, robotics, vehicles and oceanography equipment.

For detailed ordering information and most current specifications, please visit www.pnicorp.com

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