

Reference Magnetic Sensor Suites

RM3000 & RM2000



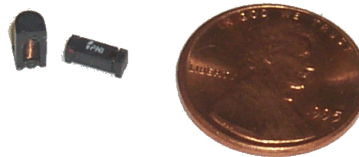
THE HIGHEST ACCURACY SENSORS in their class, PNI's patented Reference Magnetic Sensor Suites deliver high performance resolution and repeatability with extremely low noise. The Reference Magnetic Sensor Suites have a wide field measurement range, superior noise immunity, no hysteresis, and are extremely 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.



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)

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 at 200 cycle counts		35 nT	
Gain at 200 cycle counts		45 counts μ T	
Linearity over $\pm 200 \mu$ T		0.6%	
Single Axis Data Rate at 200 cycle counts		450 Hz	
DC Supply Voltage	1.6 V	3.3 V	3.6V
Average Current (35 Hz single axis at 200 cycle counts)		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	

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



LOW POWER



HIGH RESOLUTION

PNI SENSOR CORPORATION is America's leader in the exacting science of turning information from the Earth's magnetic field into usable orientation data. Building on decades of patented knowledge of magnetic fields and their anomalies, PNI offers today's most reliable magnetic sensors, including both 2 and 3 axis compasses and other advanced sensor systems. Highly sensitive and finely tuned, PNI offers a range of sensors to meet varying price, accuracy and footprint size needs.

Serving a demanding, wide-ranging list of industries and applications, 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. Nimble and responsive, PNI offers a multitude of sensors to meet today's growing technology needs.