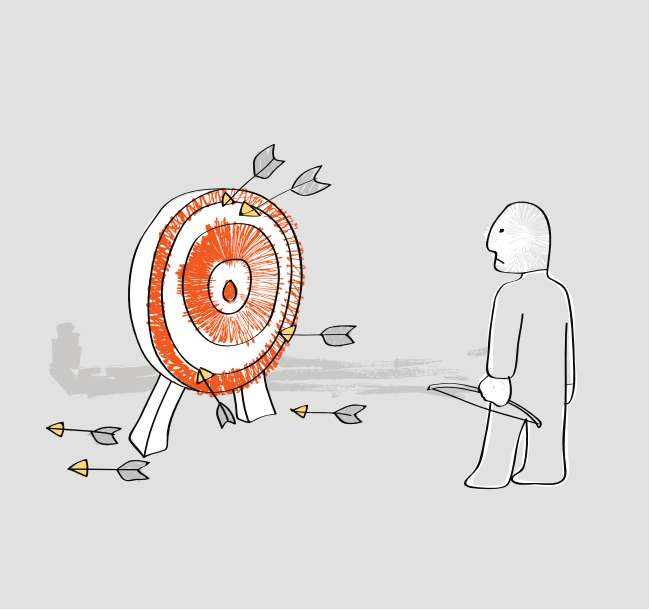
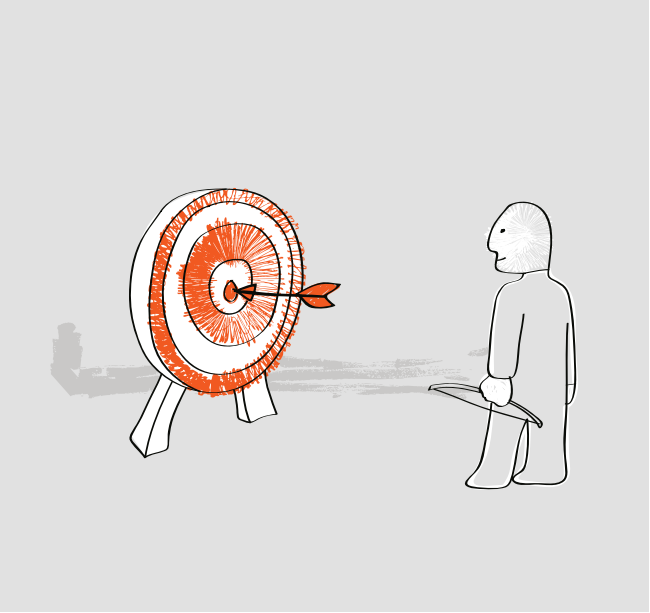
SPACEPOINT™ CR

CONTROLLER MOTION–TRACKING SYSTEM



Standard tracking algorithms can send your controller off target.



SpacePoint CR tracking algorithms keep your controller on target.

SpacePoint CR keeps handset controllers on target!

Designers of handheld controllers used in virtual reality and gaming applications know all too well the frustrations of trying to accurately track hand movement with inertial sensors. When users flick their wands, slash with their swords, and twirl their clubs to target a constantly changing environment, these actions can saturate gyroscopes – leaving users with skewed visuals and missed targets.

Introducing SpacePoint CR, the first 3D motion-tracking system made expressly for hand-held controllers. Unlike standard sensor systems, SpacePoint CR fuses outputs from inertial sensors with Kalman filters and sophisticated specialized algorithms. So it maintains absolute pointing accuracy by continually correcting for gyro saturation and drift, even during rapid movement.

- ***SpacePoint CR*** *has heading acccuracy of under 4° rms, and tracking latency of less than 1 ms – imperceptible to the human eye.*
- ***SpacePoint CR*** *algorithms reside on PNI's SENtral coprocessor, which offloads sensor management and fusion work from your main processor.*
- ***SpacePoint CR*** *handles all the motion sensor calculations, so there are no unpleasant surprises or wasted engineering time.*

SpacePoint CR: Built by PNI's inertial sensor fusion experts with 25+ years of real-world expertise, SpacePoint CR takes the guesswork out of accurately tracking hand movement.

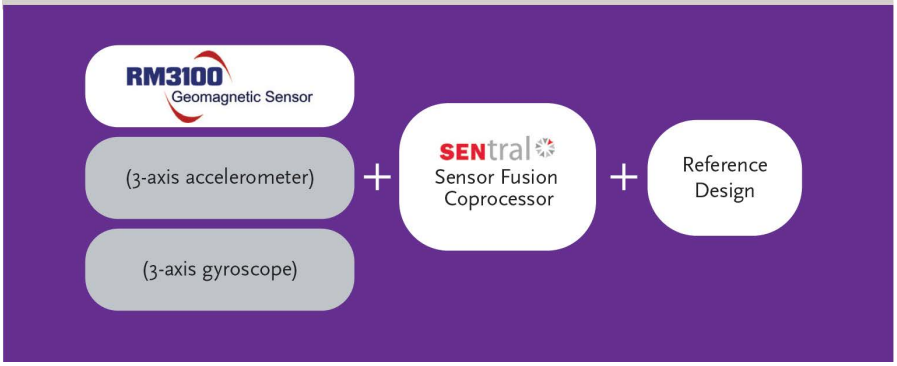
PNI SENSOR CORPORATION

Specifications*

System

Static Heading Accuracy	< 4° RMS
Pitch and Roll Errors	< 2° RMS
Dynamic Accuracy	< 6° RMS
Gyro Drift Compensation	Within 3°/hour
Tracking Latency	< 1 ms sensor update to quaternion update
Data Update Rate	Up to 1 KHz
Output	Mag, Accel, Gyro, Quaternion, Timestamps
I2C Interface Frequency	Up to 3.4 MHz on host interface I2C side; up to 1 MHz on sensor bus
Operating Temperature	Room temperature

SPACEPOINT CR Includes:



RM3100 Geomagnetic Sensor

Noise		15nT
Sensitivity		~20.6nT/LSB
Current Consumption		21.6μA/Hz (in VR mode)
Field Measurement Range		-800 μT to +800 μT
Dimensions	Sen XY	6.0 x 2.1 x 2.2 mm
	Sen Z	3.0 x 3.0 x 5.75 mm
	MagI2C	4.0 x 4.0 x 0.75 mm

SENtral Coprocessor

Supply Voltage (VDD)		1.6 to 3.3 V
Current Consumption	Peak	800 μA (in VR Mode)
	Average	520 μA
	Standby	5 μA
Dimensions		1.6 x 1.6 x 0.5 mm

Reference Designs available for high volumes. For availability, please contact sales@pnicorp.com.

PNI SENSOR CORPORATION

With over 30 years of experience, PNI is the world's foremost expert in precision location, motion tracking, and fusion of sensor systems into real-world applications.

PNI's sensors and algorithms serve as the cornerstone of successful IoT projects and other mission-critical applications where pinpoint location, accuracy, and low power consumption are essential. Building on decades of patented sensor and algorithm development, PNI offers the industry's highest-performance geomagnetic sensor in its class, location and motion coprocessors, high-performance modules, sensor fusion algorithms, and complete sensor systems. PNI's technology is used in consumer electronics and wearables, smart parking, IoT, robotics, automotive, military, and other applications, by customers such as Nintendo, Samsung, iRobot, Sony, ST Microelectronics, General Motors, and Ford.

To learn more about PNI products and markets, please visit **www.pnicorp.com**.

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*Specifications are subject to change.

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