

# FSP200

## 6-AXIS SENSOR HUB

Our FSP200 provides superior planar heading and 6-axis IMU performance ideal for high-volume, cost-conscious consumer robots. The FSP200 is an application-specific standard product (ASSP) integrating Hillcrest's high-performance sensor hub software into a low-power 32-bit ARM Cortex M3 MCU.

With our proprietary Interactive Calibration software, the FSP200 achieves consistently superior performance, even with low-cost sensors. This allows manufacturers using the FSP200 to choose between various sensor suppliers to suit their product lines depending on their cost metrics.

By addressing common sensor anomalies with advanced algorithms that are continually perfected through rigorous testing, our motion sensors deliver more accurate dynamic heading than the competition. This small, adaptive component benefits developers and integrators with reductions in development time, reduced BOM cost, and the highest precision and quality. We've built a deep, flexible sensor platform so you can focus on innovating in other product areas. Leave the sensor fusion to the experts.



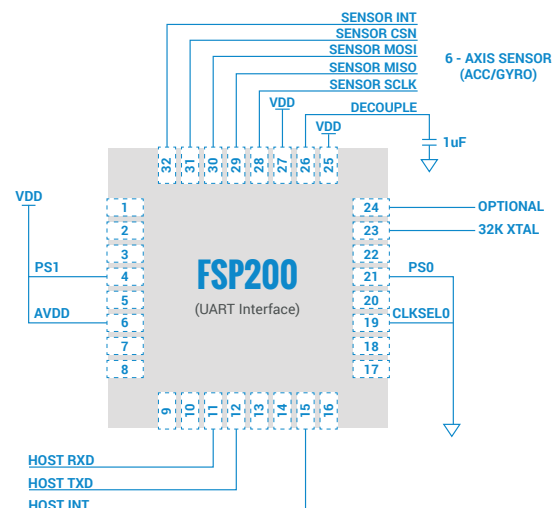
### FEATURE HIGHLIGHTS

- ✓ MotionEngine™ 6-Axis Sensor Fusion – Provides raw, calibrated and fused sensor orientation data with best in class heading accuracy and stability
- ✓ Choose Your Sensor – Low-cost MEMS sensors from top sensor vendors are supported
- ✓ Improved Performance – Working with our specialized Interactive Calibration software, top performance is achieved even with low-cost sensors
- ✓ Simplified UART Interface – Requires NO configuration; simply outputs data on power-up
- ✓ Dynamic Calibration – Our algorithms constantly monitor changes in sensor performance and temperature during live operation to deliver the highest performance
- ✓ Intelligent Power Management – Manages sensor states to conserve power without sacrificing quality of motion data
- ✓ Suitable for Android, Linux, and Embedded Designs – Driver example code available for ease of integration
- ✓ Firmware Upgradeable – Embedded bootloader enables factory and in-field firmware updates

### KEY PRODUCT ATTRIBUTES

LONG-TERM HEADING DRIFT	0.16°/min* (9.6°/hr*)
NON-HEADING ACCURACY	3.0° - Dynamic*   1.0° - Static*
SAMPLING RATE (FUSED OUTPUTS)	Up to 400 Hz
MAX RATE ANGLE	± 2000°/sec
POWER CONSUMPTION	2.3 mA (@3V)
PACKAGE	QFN(32)
DIMENSIONS	5.0 x 5.0

\* May require use of specific sensor and Interactive Calibration



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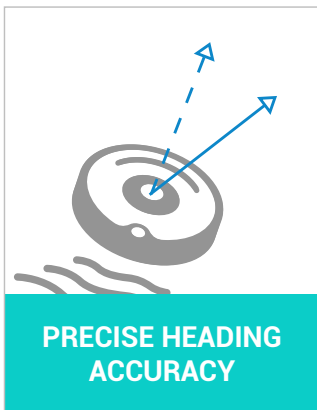
### PERFECT FOR YOUR ROBOTICS APPLICATION

The FSP200 is optimized for service and ground-roving robots such as floor cleaners, lawnmowers, and garden products that employ Simultaneous Localization And Mapping (SLAM) or other intelligent navigation solutions.

The combination of our MotionEngine sensor fusion software and a variety of external 6-axis sensors delivers superior heading performance even when the surface is not level. The FSP200 also provides features that enable bump and inclination detection, eliminating the cost of additional motion sensors or switches.

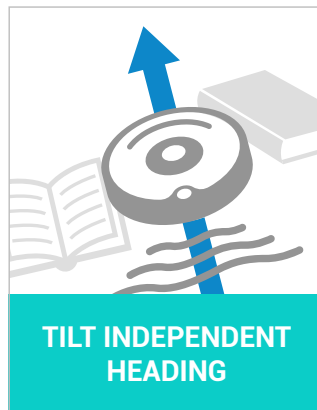
Systems designers can choose from a variety of sensors to best match performance and cost requirements. Our Interactive Calibration algorithms allow those sensors to maintain excellent performance in the field over time.

The FSP200 is simple to design into your product. The automatic UART mode requires no software configuration and the optional factory calibration algorithm is built in. Calibration is done at board test or product final test with simple motions, and does not require costly jigs, motorized turntables or gimbals.



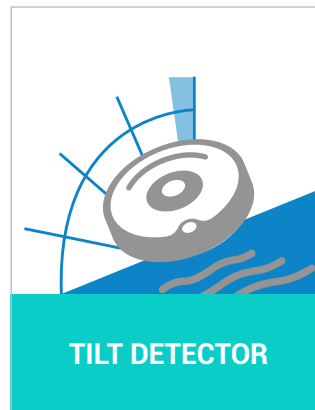
#### PRECISE HEADING ACCURACY

Configurable sampling rates up to 400Hz offer design tradeoffs with power consumption



#### TILT INDEPENDENT HEADING

Allows for proper heading output when surface is uneven



#### TILT DETECTOR

Inclination detection provides 3DOF robot orientation, allowing detection of ground surface and device issues



#### SIMPLE FACTORY CALIBRATION

Optional factory calibration requiring no specialized equipment; calibration algorithm built in

Please [contact us](#) to learn more.

### ABOUT CEVA

CEVA is the leading licensor of wireless connectivity and smart sensing technologies. We offer Digital Signal Processors, AI processors, wireless platforms and complementary software for sensor fusion, image enhancement, computer vision, voice input and artificial intelligence, all of which are key enabling technologies for a smarter, connected world. We partner with semiconductor companies and OEMs worldwide to create power-efficient, intelligent and connected devices for a range of end markets, including mobile, consumer, automotive, robotics, industrial and IoT. Our ultra-low-power IPs include comprehensive DSP-based platforms for 5G baseband processing in mobile and infrastructure, advanced imaging and computer vision for any camera-enabled device and audio/voice/speech and ultra-low power always-on/sensing applications for multiple IoT markets. For sensor fusion, our Hillcrest Labs sensor processing technologies provide a broad range of sensor fusion software and IMU solutions for AR/VR, robotics, remote controls, and IoT. For artificial intelligence, we offer a family of AI processors capable of handling the complete gamut of neural network workloads, on-device. For wireless IoT, we offer the industry's most widely adopted IPs for Bluetooth (low energy and dual mode), Wi-Fi 4/5/6 (802.11n/ac/ax) and NB-IoT.

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