NavtechGPS
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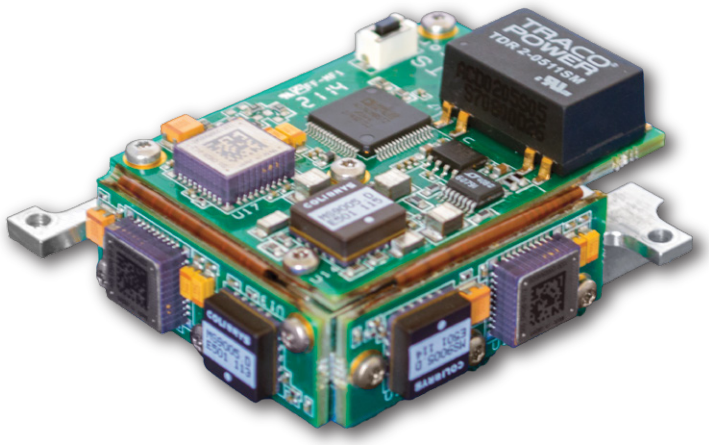
Your OEM partner for GNSS/INS integration

OXTS Inertial+GPS

xOEMcore

IMU/INS for system integrators

The xOEMcore is a combined 6-axis inertial measurement unit and navigation system with sensor fusion in one compact OEM module. It is ideal for integration inside any solution that requires robust, high-performance position and orientation.



>> Navigation features

- WGS84 strapdown navigator
- Sensor fusion included
- Tightly-coupled GPS processing
- Dual-GPS processing for heading
- Inertially-aided RTK algorithms
- RTCM V3 and RINEX DGPS
- Odometer input
- Post-processing option

>> IMU features

- Temperature calibration
- 3°/hr and 50 µg bias stability
- 500 ppm linearity
- <0.02° orthogonality error
- No export control

>> Applications

- UAV surveying, mobile mapping
- LIDAR, visual, remote sensing
- Direct geo-referencing
- Robust indoor positioning
- Multi-environment positioning
- Autonomous vehicles and robots
- Research

>> Get stable position and orientation, not just IMU measurements

Our xOEMcore enables you to take advantage of robust, continuous inertial position and orientation in your own application or research without needing to become an expert yourself. Our proven sensor fusion is already running in our products and is easily adaptable for your application.

>> Feed in your sensor data and we combine it

Whether you use LIDAR, vision, GNSS, sonar, wifi or other forms of aiding, the xOEMcore fuses all your measurements with inertial sensors. By blending the data with the on-board Kalman filter, it provides an optimal solution giving you robust, continuous position and orientation at a high data rate. It can use your data if it is nearly 1 second late while maintaining millisecond output delay.

>> Advanced GPS processing

Get unsurpassed accuracy from low-cost GPS receivers with optional gx/ix™ tight coupling algorithms, DGPS corrections, and forward-backward post-processing. Enhance survey-grade receivers with an inertially-aided RTK solution. With two receivers we compute a stable heading solution. That is technology your customers want to combine with your application expertise.

>> Flexible, customisable, simple integration

Mount at any angle in your product, output what you need, synchronise to other timing sources: the xOEMcore provides a flexible solution for integration. We are always looking for new ways to customise the xOEMcore for your needs. Our simple integration approach means you can create your customised solution from a single low cost microcontroller or a powerful multi-core system.

Using the xOEMcore you can combine the knowledge from the leader in MEMS inertial navigation systems in your product and deliver amazing results to your customers faster and more cost-effectively.

>> Integration

Choose your aiding	xOEMcore sensor fusion	Additional corrections
GNSS, dual antenna GNSS DMI, odometer, visual odometry LIDAR, visual positioning Indoor GPS, Wi-Fi, Bluetooth USBL, DVL, compass And more...	IMU data Aiding data Continuous, robust measurements 100 Hz outputs Low latency Position, velocity & orientation	Forwards-backwards processing RTCM v3, RINEX gx/ix™ tight coupling Manual corrections Improved data accuracy

>> IMU performance

Type	Accelerometers	Gyros
Technology	MEMS	MEMS
Range	5 *g*	300°/s
Bias stability	0.05 m*g*	3°/hr
Linearity	0.05%	0.05%
Scale factor	0.05%	0.05%
Random walk	0.05 m/s/√hr	0.5°/√hr
Axis alignment error	<0.02°	<0.02°

>> Hardware

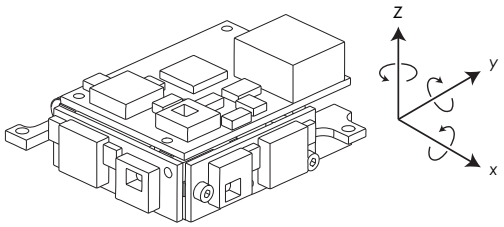
Dimensions	50 x 65 x 24 mm
Mass	50 g
Input voltage	5 V dc
Power consumption	2 W (typical)
Operating temperature	-20° to 70° C
Calculation latency	<3 ms
Shock survival	1000 *g*, 10 ms
Interface	Serial
Transmission rate	115200 baud

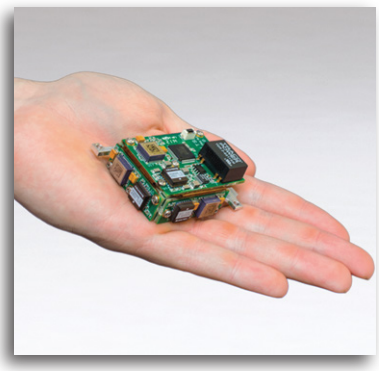
>> Navigation performance

Aiding	Conditions	Position (CEP)	Velocity (RMS)	Heading (RMS)	Roll/pitch (RMS)
u-blox LEA6	gx/ix™, RTCM V3, 4 m antenna baseline, open sky	0.5 m	0.02 m/s	0.06°	0.05°
Topcon B110	gx/ix™, RTCM V3, 4 m antenna baseline, open sky	0.02 m	0.015 m/s	0.05°	0.05°
Novatel OEM6	gx/ix™, RTCM V3, 4 m antenna baseline, open sky	0.01 m	0.015 m/s	0.05°	0.05°
Odometer / DMI	1 minute or 1 km without GNSS data	2.20 m	0.02 m/s	0.6°	0.08°
Odometer / DMI	Post-processed, 1 minute or 1 km without GNSS data	0.80 m	0.02 m/s	0.4°	0.07°

>> Options

xOEMcore	Base model, raw IMU capability
+Navigation	Allows aiding input, adds INS capability
+PP	Allows raw data logging, adds post-processing capability
+gx/ix	Allows differential corrections, adds gx/ix™ tight-coupling
+gx/ix RTK	Allows RTK corrections, adds gx/ix™ inertial relock





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