

xOEM v3

Our lightweight, next generation INS board set for system integrators

The xOEM board set combines survey-grade GNSS technology with high performance miniature inertial sensors to provide a complete navigation solution to survey and mapping system integrators

Helping your product developments to deliver key applications such as:

- / LiDAR georeferencing
- / Mobile mapping
- / UAV/UAS navigation
- / Aerial mapping
- / Aerial photogrammetry
- / Pedestrian mobile mapping systems and more.....



The high performance INS board set for surveying and mapping

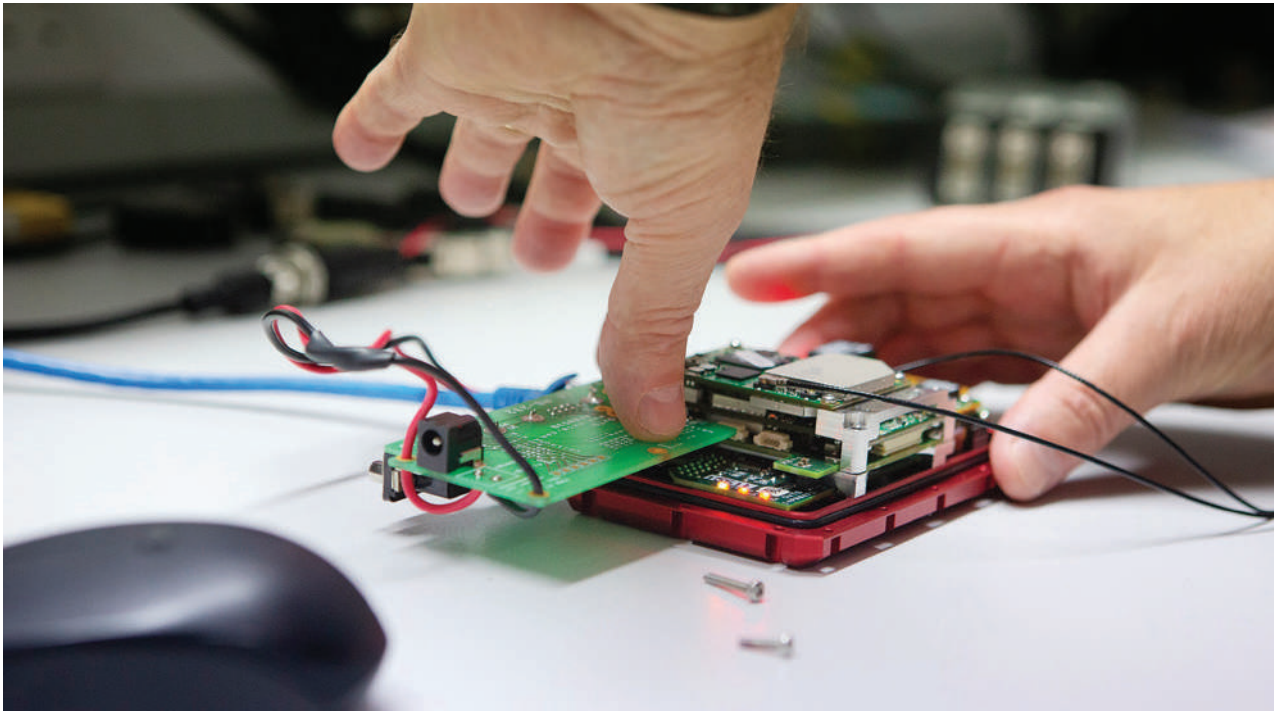
Integrate the powerful, next generation technology of our xNAV v3 into your systems for commercial mapping applications, both on land and in air, with our xOEM v3 board set.

Weighing just 150 g, the xOEM v3 board set offers the ideal compact size to ensure manufacturers can seamlessly integrate and build a high-performance INS into their products.

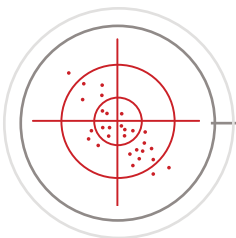
Whether it's guiding autonomous vehicles through urban environments, georeferencing LiDAR point clouds in a mobile mapping vehicle, or providing vital information to sensors in a UAV platform, the xOEM will perform reliably and continuously in any environment.

The xOEM v3 solution not only includes our innovative xNAV v3 architecture but a full range of software interfaces, meaning integrators can enjoy maximum flexibility when configuring the INS.

One board set, delivering all the INS functionality your product needs to fully meet customer requirements – and at one of the most affordable price points in the market.

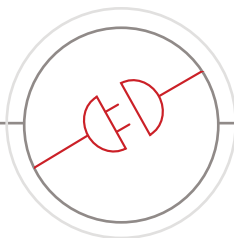


Precision performance. Easy integration.



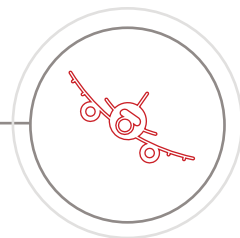
Achieve even more precise results

The addition of a next-gen accelerometer delivers excellent stability and performance. While GPS & GLONASS ensures positioning accuracy of 2 cm, even in difficult environments.



Simple "plug and play" set-up

Users can be up and running within minutes instead of hours with seamless integration also available with 3rd party software and hardware.



0.05° roll and pitch accuracy

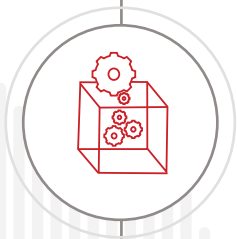
Minimum measurement accuracy of 0.05° roll/pitch guaranteed

Why choose the xOEM board set?



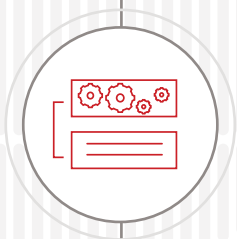
Lightweight solution, without compromise on performance

- / Although the xOEM v3 sheds the weight of the xNAV's IP65 casing, its incredibly lightweight size does not compromise on performance, offering like-for-like measurements versus the xNAV v3.
- / Integrators can enjoy the same trusted, robust performance time after time but shed crucial weight to free up payload capacity for other critical components in their product build.



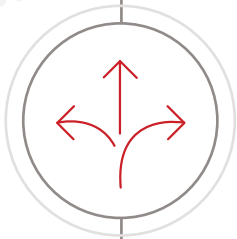
Next-generation architecture

- / The board set features high-grade MEMS inertial sensors and RTK capable GNSS receivers which are designed to deliver high performance capabilities both now and in the future.
- / Our use of state-of-the-art calibration techniques and advanced algorithms in the xOEM series pushes technology beyond its limits to deliver exceptional performance in a surprisingly small package.
- / OxTS are committed to continuously evolve the use of this on-board architecture so that integrators don't have to waste time integrating a new hardware revision every year and can continuously evolve a product with ease.



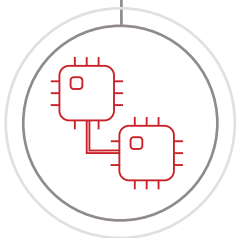
Complete navigation solution

- / Combining dual GNSS receivers, an inertial measurement unit, data storage and on-board processor all on a single board set, the xOEM series delivers a full position and orientation solution.



Flexible integration

- / Small enough to fit the palm of your hand, the xOEM is ideal for integrating directly into systems that require a high-performance inertial navigation system.
- / Standard NMEA messages, timing sync, output triggers and event inputs make the xOEM quick and easy to integrate into your workflow.
- / The user-friendly xOEM software interfaces can be customised using NAVsuite, allowing integrators to apply their own branding, package and include our software interfaces as part of your product.



Our expertise, your success

- / OxTS GNSS/INSs are recognised as a symbol of precision around the globe. By integrating the xOEM into your system, you add over 15 years of inertial navigation experience along with exceptional performance.

Features

- / **Weights from just 120 g**
one of the world's smallest tactical grade INS
- / **Dual GNSS receivers**
superior heading performance in all conditions
- / **Centimetre accuracy**
differential GNSS reaches 2 cm position
- / **ITAR free**
use your system worldwide without export restrictions
- / **Tightly coupled GNSS/INS**
improve performance in harsh environments with gx/ix™ technology
- / **Work directly with OxTS**
for custom developments specific to your application

Performance¹

Model	xOEM500	xOEM550
Positioning	GPS L1 GLONASS L1 SBAS	GPS L1, L2 GLONASS L1, L2 BeiDou*2 L1, L2 SBAS
Position accuracy (CEP) ²		
SPS	2.0 m	1.6 m
DGPS	0.5 m	0.4 m
RTK		0.02 m
60 s GNSS outage ³		0.8 m
Velocity accuracy (RMS)	0.1 km/h	0.1 km/h
Roll/pitch accuracy (1 σ)	0.05°	0.05°
Heading accuracy (1 σ)		
2 m antenna baseline	0.15°	0.1°
4 m antenna separation	0.06°	0.05°
Output rate	Up to 250 Hz	Up to 250 Hz

Hardware

Dimensions	112 x 65 x 28 mm (xOEM500) 112 x 65 x 30.1 mm (xOEM550)
Mass	120 g (xOEM500) 150 g (xOEM550)
Input voltage	10–31 V dc
Power consumption	6.5 W (typical) (xOEM500) 9 W (typical) (xOEM550)
Operating temperature	-40° to 70° C
Internal storage	32 GB
Connector	Samtec TMM-107-01-T-D
Antenna connectors	MMCX (xOEM500) Hirose H.FL (xOEM550)

Interfaces

Ethernet	10/100 Base-T
Serial (x3)	Configurable RS232
Digital I/O	Odometer (DMI) input (single or quadrature) Event input trigger 1PPS output Camera output trigger IMU sync output

Sensors

Type	Accelerometers	Gyros
Technology	MEMS	MEMS
Range	30 g	300°/s
Bias stability	0.02 mg	3°/hr
Linearity	0.05%	0.05%
Scale factor	0.01%	0.01%
Random walk	0.05 m/s/ $\sqrt{\text{hr}}$	0.5°/ $\sqrt{\text{hr}}$
Axis alignment error	<0.02°	<0.02°

Development tools

Adapter board included	Intermediate PCB with power Ethernet and Serial interfaces for quick evaluation
NAVsuite software	Configure, view in real time, post-process, and analyse data
NCOM decoders	Library of C code drivers to decode the OxTS binary format NCOM <ul style="list-style-type: none">• Read and integrate all information from the system• Full NCOM description manual available
Firmware control	Full access to all firmware commands, to access complete system functionality of the INS
Command line post-processing	Integrate the OxTS post-processing navigation engine into your workflow, for full integration
Bespoke development	Custom solutions and developments available through OEM partnerships

¹ Valid for open sky conditions.

² Horizontal position accuracy. Vertical accuracy approx. 1.5x horizontal accuracy.

³ Post-processed, with odometer corrections.



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The inertial experts since 1998
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