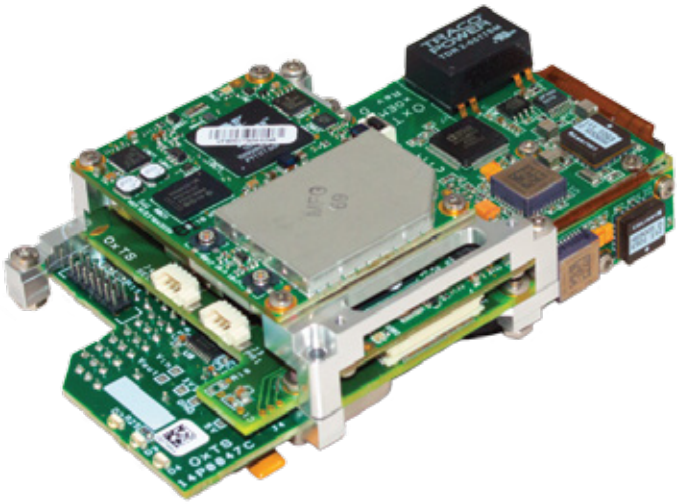
Your OEM partner for GNSS/INS integration

xOEM series

Embedded GNSS/INS board set

The xOEM series of inertial navigation systems from OxTS are an OEM board set version of the popular xNAV systems. Combining survey-grade GNSS technology with high performance miniature inertial sensors, all embedded on a single compact board set, the xOEM series delivers a complete navigation solution to system integrators.



>> Key features

- 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 GPS reaches 2 cm position
- No export restrictions – use your system worldwide without hassle
- Tightly coupled GNSS/INS – improve performance in harsh environments with gx/ix™ technology
- OEM partnerships – work directly with OxTS for custom developments specific to your application
- Amazing value – market leading price/performance plus discounts for volume sales

>> Applications

- Autonomous vehicles
- LIDAR scanning
- UAV/UAS navigation
- Hyperspectral scanning
- Robotics
- Camera stabilisation
- Motion analysis
- Avionics
- And more...

>> Experts in GNSS and inertial technology

The xOEM systems use compact MEMS sensors in order to be as economical as possible, both in terms of price and power. But thanks to state-of-the-art calibration techniques and advanced algorithms in the xOEM series, the technology has been pushed beyond its limits to deliver exceptional performance in a surprisingly small package. By seamlessly blending the inertial and GNSS data, the xOEM provides smooth, robust outputs even in poor GNSS environments.

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

>> 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. The compact size and light weight means you no longer have to sacrifice performance in weight restricted installations like UAV payloads. Standard NMEA messages, timing sync, output triggers, and event inputs make the xOEM quick and easy to integrate into your workflow. Our free post-processing software can also be integrated into your application.

>> 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. And being export control free, there's nothing stopping your system being recognised worldwide either.

>> Performance [1]

Model	xOEM500	xOEM550
Positioning	GPS L1	GPS L1, L2 GLONASS L1, L2
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 (1σ)	0.05 °	0.05 °
Heading accuracy (1σ)		
2 m antenna baseline	0.15°	0.1°
4 m antenna separation	0.06 °	0.05 °
Output rate	100 Hz	100 Hz

>> Hardware

Dimensions	112 x 65 x 28 mm (xOEM500) 112 x 65 x 35 mm (xOEM550)
Mass	0.12 kg (xOEM500) 0.165 kg (xOEM550)
Input voltage	10–31 V dc
Power consumption	7 W (typical) (xOEM500) 9 W (typical) (xOEM550)
Operating temperature	-40° to 70° C
Internal storage	4 GB
Connector	Samtec TMM-107-01-T-D
Antenna connectors	MMCX (xOEM500) Hirose H.FL (xOEM550)

>> Interfaces

Ethernet	10/100 Base-T
Serial	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	5 g	300°/s
Bias stability	0.05 mg	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°

>> Development tools

Evaluation Kit – plate mounted xOEM and breakout board

- SMA GPS antenna connectors
- Ethernet, RS232, Digital I/O interfaces
- Antennas and power supply included

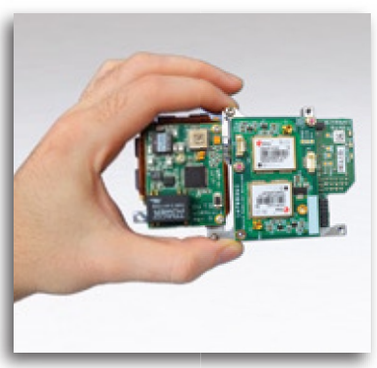
NAVsuite software – configure, view in real time, post-process, and analyse data

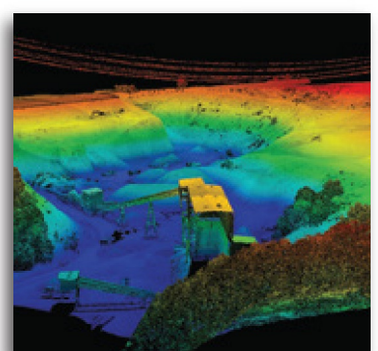
NCOM decoders – library of C code drivers to decode the OxTS binary format NCOM

- Read and integrate all information from the system
- Full NCOM description manual

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 h orizontal accuracy.
[3] Post-processed, with odometer corrections.





OXTS Inertial + GPS

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