



xNAV v3

The high performance, lightweight INS for drone and UAV mapping

The xNAV v3 combines GNSS technology with high performance, miniature inertial sensors to deliver a complete yet compact navigation solution.

Capturing precision measurements for a range of applications including:

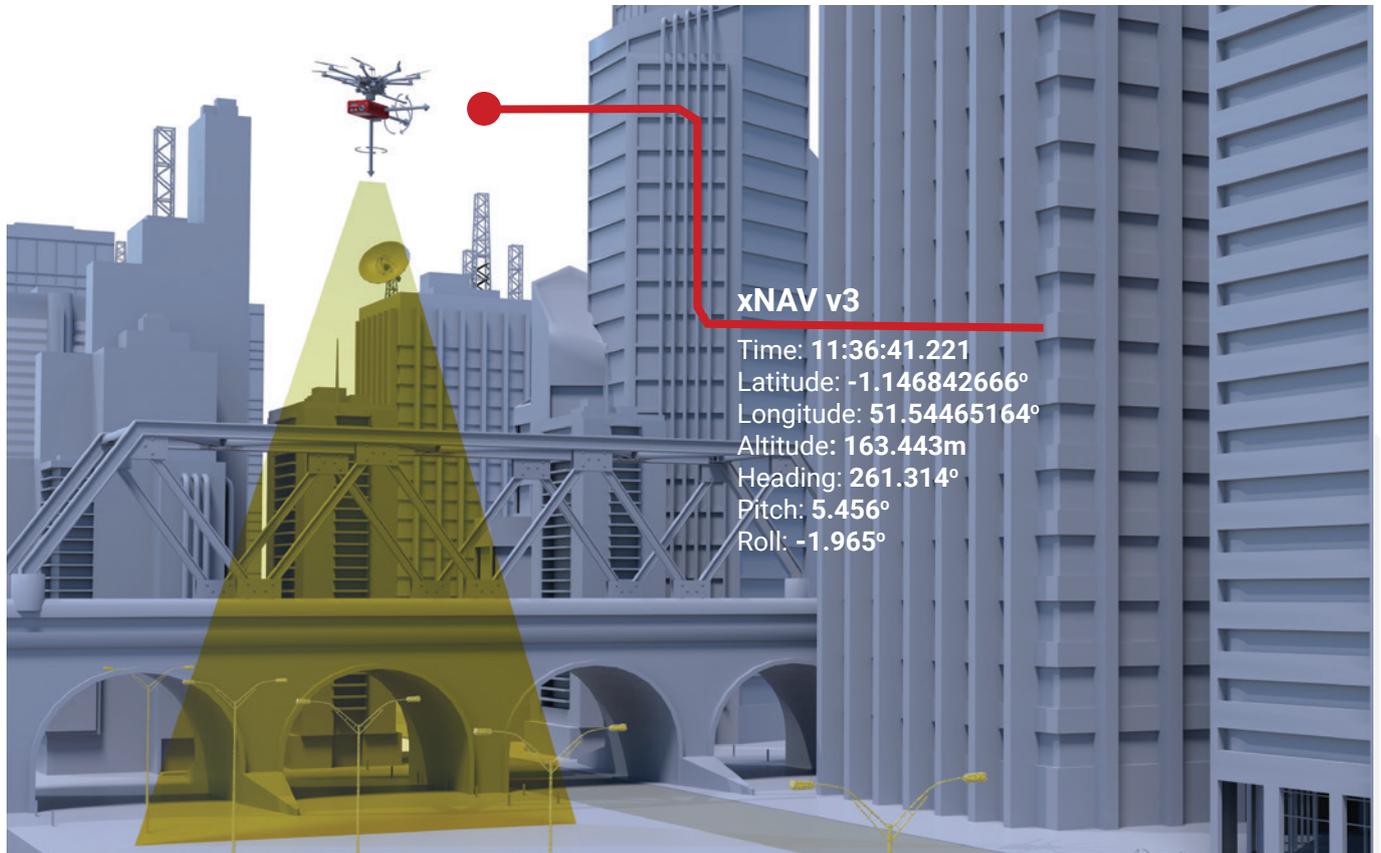
- / LiDAR georeferencing
- / Mobile mapping
- / UAV/UAS navigation
- / Aerial mapping
- / Aerial photogrammetry
- / Pedestrian mobile mapping systems and more.....



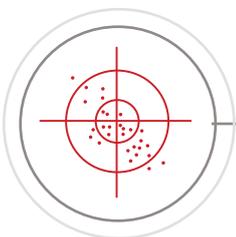
Size and weight constraints are no obstacle with our xNAV INS

Compact and weighing just 365 g, the xNAV v3's miniature appearance is proof that looks can be deceiving once the powerful performance components within are revealed.

One of the most competitively priced INS solutions for drone and UAV mapping, the xNAV v3 ensures the perfect blend of affordability and lightweight size without compromise on performance.

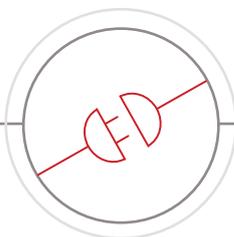


Powerful performance. Simplified usability.



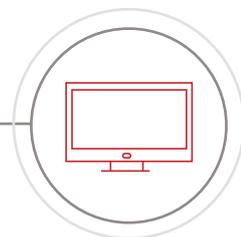
Achieve even more precise results

The addition of a next-gen accelerometer delivers excellent stability and performance, resulting in accuracy of 0.05° roll/pitch guaranteed 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.



Complimentary configuration software

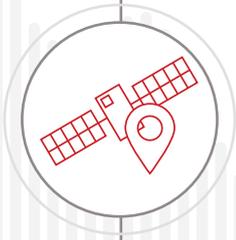
Powerful post-processing and analysis tools including free NAVsuite software to give you complete control over your data.

Why choose the xNAV v3?



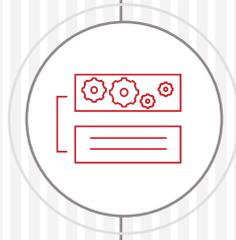
One box solution

- / Combining dual GNSS receivers, an inertial measurement unit, internal storage and on-board processor all in one compact box, the xNAV delivers everything you need for a complete navigation solution.
- / Our extensive software package (NAVsuite) is also included, which features powerful post-processing and graphing software.
- / Our additional paid georeferencing software add-on provides INS/LIDAR Boresight calibration and georeferencing capabilities to create basic, reliable point clouds.



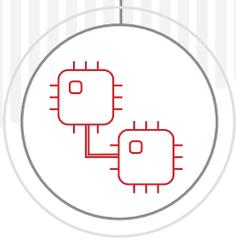
Tightly coupled navigation engine

- / OxTS inertial navigation systems utilise our tightly coupled navigation engine, which includes single satellite aiding and our inertial relock features to maintain performance in harsh GNSS environments.



Simple, adaptable, manageable

- / The xNAV is easy to install and configure, with simple wizards to speed up the process.
- / All of the components are ITAR free for maximum flexibility when operating in multiple countries.



Experts in GNSS and inertial technology

- / The xNAV systems use compact MEMS sensors in order to be as economical as possible, both in terms of price and power.
- / Thanks to state-of-the-art calibration techniques and advanced algorithms in the xNAV, we are able to push the technology beyond its limits to deliver exceptional performance in a surprisingly small package.
- / By seamlessly blending the inertial and GNSS data, the xNAV provides smooth, robust outputs even in poor GNSS environments.

Features

- / 2 cm positioning
- / Weighs just 365 g (200/500 versions)
- / gx/ix™ tightly coupled GNSS/INS
- / High-grade MEMS inertial sensors and RTK capable GNSS receivers
- / ITAR free – ship and operate worldwide
- / GPS and GLONASS as standard
- / Log more data with 32 GB of onboard storage
- / Extra low power consumption

xNAV models

Logging only	xNAV200	xNAV250
Real-time	xNAV500	xNAV550

Performance¹

Positioning	GPS L1 GLONASS L1 SBAS	GPS L1, L2 GLONASS L1, L2 BeiDou ² L1, L2 SBAS
Position accuracy (CEP) ³		
SPS	2.0 m	1.6 m
SBAS	0.6 m	0.6 m
DGPS	0.5 m	0.4 m
RTK		0.02 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 separation	0.15°	0.1°
4 m antenna separation	0.06°	0.05°
Dual antenna	Yes	Yes

Hardware

Dimensions	132 x 77 x 36 mm (all versions)
Mass	0.365 kg (200, 500) 0.395 kg (250, 550)
Input voltage	10–31 V dc
Power consumption	7 W typical (200, 500) 9 W typical (250, 550)
Operating temperature	-40° to 70°C
Specification temperature	-10° to 70°C
Environmental protection	IP65
Output rate	100 Hz 200/250 Hz ²
Vibration operating	0.002 g ² /Hz, 5–500 Hz
Shock survival	>1000 g
Internal storage	32 GB

Performance during GNSS outage⁴

Outage duration	Position mode	Horizontal position drift (RMS)
10 s	RTK	0.37 m
10 s	PP ⁵	0.07 m
30 s	RTK	1.29 m
30 s	PP ⁵	0.33 m
60 s	RTK	2.79 m
60 s	PP ⁵	0.95 m

Interfaces

Ethernet	10/100 Base-T
Serial	Configurable RS232
Digital I/O	Odometer input (single or quadrature) Event input trigger 1PPS output Camera output trigger ⁶ IMU sync output ⁶

Sensors

Type	Accelerometers	Gyros
Technology	MEMS	MEMS
Range	30 g	300°/s
Bias stability	0.02 mg	3°/hr
Linearity	0.05% \pm 1 g	0.05%
Scale factor	0.01%	0.01%
Random walk	0.05 m/s/ \sqrt hr	0.5°/ \sqrt h
Axis alignment error	<0.02°	<0.02°

¹ Valid for open sky conditions and in the temperature range of -10° to 60°C.

² Optional upgrade.

³ Horizontal position accuracy. Vertical accuracy approx. 1.5x horizontal accuracy.

⁴ With odometer corrections and advanced slip configured.

⁵ RT Post-process, forwards-backwards combined.

⁶ Real-time systems only.



Oxford Technical Solutions Ltd
United Kingdom
sales@oxts.com

The inertial experts since 1998
www.oxts.com