

More than inertial+GNSS positioning



xNAV

Miniature GNSS/INS for weight restricted applications

The xNAV family of inertial navigation systems from OxTS combine survey grade GNSS technology with high performance miniature inertial sensors to deliver a complete navigation solution in a lightweight package.

>> Key features

- Low weight, high performance
- Market leading price/performance ratio
- Attractive discounts for bulk purchases
- OEM board sets available for system integrators
- High accuracy orientation
- Tightly coupled GNSS/INS
- Dual antenna for stable heading
- Cables and antennas included
- Powerful software suite included
- ITAR free
- 100 Hz data output rate
- Low latency, real-time outputs available
- Logging-only option
- Smooth, stable outputs
- Wheel speed input
- Multiple configurable triggers

>> Applications

- Aerial photogrammetry
- Urban terrain mapping
- Disaster site monitoring
- LIDAR scanning
- Aerial surveillance
- Camera stabilisation
- UAV/UAS navigation
- Avionics
- And more...



>> 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. But 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.

>> One box solution, no hidden extras

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. All necessary cables and antennas are included, as well as our extensive software package—NAVsuite—which features powerful post-processing and graphing software.

>> Easy integration

Integrating the xNAV into systems like UASs couldn't be simpler. Mounting brackets are supplied to ensure a rigid installation. Standard NMEA messages, timing sync and trigger outputs as well as event input triggers mean the xNAV can be used with an array of sensors such as LiDAR scanners, cameras, and hyperspectral sensors. OEM board set versions are available for system integrators and we offer attractive discounts on top of our already low prices for bulk purchases.

>> Worldwide standard

OxTS inertial navigation systems are recognised as a symbol of precision and performance around the globe. With units in operation worldwide, you can be sure of the quality to expect from the xNAV.

>> xNAV models

	xNAV200	xNAV500
>> Performance¹		
Positioning	L1	L1
Position accuracy (CEP) ²		
SPS	2.0 m	2.0 m
DGPS	0.5 m	0.5 m
60 s GNSS outage ³	2.5 m	2.5 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°	0.15°
4 m antenna separation	0.06°	0.06°
Real-time outputs	x	✓
Dual antenna	✓	✓

>> Sensors

Type	Accelerometers	Gyros
Technology	MEMS	MEMS
Range	5 g	300°/s
Bias stability	0.05 mg	5°/hr
Linearity	0.05%	0.1%
Scale factor	0.02%	0.05%
Random walk	0.05 m/s/ \sqrt hr	0.2°/ \sqrt hr
Axis alignment	<0.02°	<0.02°

>> 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 IMU sync output

>> Hardware

Dimensions	132 x 77 x 36 mm
Mass	0.365 kg
Input voltage	10–31 V dc
Power consumption	7 W (typical)
Operating temperature	-40° to 70° C
Environmental protection	IP65
Vibration	0.002 g ² /Hz, 5–500 Hz
Shock survival	>1000 g
Internal storage	4 GB

¹ Valid for open sky conditions.

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

³ Post-processed, with odometer corrections.



Document version: 14.0530. Specifications subject to change without notice.

77 Heyford Park, Upper Heyford, Oxfordshire, OX25 5HD, UK
 Tel: +44 1869 238 015

Email: sales@oxts.com

Web: www.oxts.com

