

Your OEM partner for GNSS/INS integration



OEM series

GNSS/INS for system integrators

The OEM series of inertial navigation systems from Oxford Technical Solutions combine the best of GNSS positioning technology with high-grade gyros and accelerometers to deliver superior performance in a single enclosure.



>> Key features

- Range of performance levels
- Advanced sensor fusion
- Complete position and orientation solution
- Low cost, high accuracy
- Extra savings for bulk buyers
- Customisable options
- Real-time outputs
- Seamless integration
- Smooth, stable outputs
- Wide choice of output formats
- ITAR free
- Software suite included

>> Applications

- Aerial surveying
- Autonomous vehicles
- Direct georeferencing
- Mobile mapping
- Platform stabilisation
- Robotics
- Road profiling
- Unmanned aerial vehicles
- Vehicle dynamics
- And more...

>> Experts in GNSS and inertial technology

Advanced algorithms in the OEM systems seamlessly blend the inertial and GNSS data to provide a smooth, real-time 3D navigation solution, even when satellite signals are blocked or disturbed.

>> One box solution

Combining GNSS receivers, an inertial measurement unit, internal storage and a real-time on-board processor, the OEM systems deliver a full position and attitude solution in a single compact enclosure. All systems come with an extensive software suite so you can post-process, plot, and inspect your data at no additional cost.

>> Flexible, simple integration

A number of output formats including standard NMEA messages mean the OEM systems can seamlessly integrate with external sensors such as LIDAR scanners and hyperspectral cameras. OEMi+2 models take data from an external GNSS receiver and blend it with inertial data for improved performance. OEM3000 and OEM4000 models contain their own high accuracy GNSS receivers for a complete standalone solution. All of the components are ITAR free for maximum flexibility when operating in multiple countries.

>> Customisable to suit you

Our OEM systems have a range of optional extras you can choose from to increase the functionality and customise the systems to suit your application. A robot interface for direct communication with steering and pedal robots, wheel speed odometer input to further reduce drift in GNSS blackouts, and post-processing of RINEX files for 2 cm accuracy are just some of the options available. There are also dual antenna models and GLONASS compatible models to choose from.

>> OEM models

100 Hz output	3200	3202	3004	3005	i+2
250 Hz output	4200	4202	4004	4005	i+2 250

>> Performance^{1 2}

Positioning	L1	L1	L1, L2	L1, L2	L1, L2
Position accuracy					
SPS	1.8 m	1.8 m	1.5 m	1.5 m	
SBAS	0.6 m	0.6 m	0.6 m	0.6 m	
DGPS	0.4 m	0.4 m	0.4 m	0.4 m	
RTK			0.02 m	0.02 m	0.02 m
Velocity accuracy	0.1 km/h	0.1 km/h	0.05 km/h	0.05 km/h	0.05 km/h
Heave accuracy ³	10 cm or 5%	10 cm or 5%	10 cm or 5%	10 cm or 5%	10 cm or 5%
Roll/pitch accuracy	0.05°	0.05°	0.03°	0.03°	0.03°
Heading accuracy ⁴	0.1°	0.05°	0.1°	0.05°	0.05°
Dual antenna	x	✓	x	✓	✓

>> Hardware

Dimensions	234 x 120 x 80 mm (OEM3000/4000) 234 x 120 x 76 mm (OEMi+2)
Mass	2.2 kg (single antenna) 2.4 kg (dual antenna)
Input voltage	10–25 V dc (OEM3000/4000) 10–18 V dc (OEMi+2)
Power consumption	15 W (single antenna) 20 W (dual antenna)
Operating temperature	–10° to 50° C
Calculation latency	3.5 ms
Vibration	0.1 g/Hz, 5–500 Hz
Shock survival	100 g, 11 ms
Internal storage	2 GB

>> Sensors

Type	Accelerometers	Gyros
Technology	Servo	MEMS
Range	10 g	100°/s
Optional	30 g	300°/s
Bias stability	2 µg	2°/hr
Linearity	0.01%	0.05% ⁵
Scale factor	0.1%	0.1%
Random walk	0.005 m/s/√hr	0.2°/√hr
Axis alignment	<0.05°	<0.05°

¹ Typical values. Actual performance dependent on satellite visibility, atmospheric conditions, multipath and other environmental effects.
² OEMi+2 performance dependent external GNSS receiver. Values shown representative of L1, L2 GPS receiver.
³ Heave output not available on 250 Hz systems.
⁴ Dual antenna heading with 4 m antenna separation.
⁵ With SuperCAL adjustment.

