Survey+ v2

OXTS Inertial+GPS

GNSS/INS for land and airborne survey applications

Survey+ 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

- 1 cm positioning
- 0.03° roll and pitch
- Low cost, high accuracy
- Tightly coupled GNSS/INS
- Single satellite aiding
- Real-time outputs
- 100 or 250 Hz versions
- Dual antenna versions
- GLONASS enabled versions
- Smooth, stable outputs
- Odometer input
- ITAR free
- Software suite included
- Cables and antennas included

>> Applications

- Aerial photogrammetry
- Coastal survey
- Topographic mapping
- Asset management
- GIS data acquisition
- Land survey
- Road monitoring
- Road profiling
- Mobile mapping
- And more...

>> Experts in GNSS and inertial technology

Advanced algorithms in the Survey+ seamlessly blend the inertial and GNSS data to provide a smooth, real-time 3D navigation solution, even when satellite signals are blocked or disturbed. For ground based applications, a wheel speed odometer can be used to reduce the drift even further.

>> One box, turnkey solution

Combining GNSS receivers, an inertial measurement unit, internal storage and a real-time on-board processor all in one compact box, the Survey+ delivers everything you need for a complete navigation solution. All cables and antennas are included, and the Survey+ comes with an extensive software suite so you can post-process and plot your data at no additional cost.

>> Simple, adaptable, manageable

The Survey+ is easy to install and configure, with simple wizards to speed up the process. It can seamlessly integrate with external sensors such as LIDAR scanners and hyperspectral cameras to provide accurate roll, pitch, and position data for direct georeferencing. All of the components are ITAR free for maximum flexibility when operating in multiple countries.

>> Improved accuracy with advanced processing

A high raw GNSS data rate coupled with processing forwards and backwards in time means post-processed Survey+ data can achieve highest level accuracy. Our custom gx/ix processing engine can further improve performance with single satellite aiding algorithms for position updates even with less than 4 satellites in view. The optional gxRTK feature allows users to download a RINEX file post-mission and process their data with 1 cm accuracy.

>> Performance[1]

Model	Survey+	Survey+2	Survey+ L1	Survey+2 L1
Positioning	L1, L2	L1, L2	L1	L1
Position accuracy (CEP)[2]				
SPS	1.5 m	1.5 m	1.8 m	1.8 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
PPP[3]	0.1 m	0.1 m		
RTK	0.01 m	0.01 m		
Velocity accuracy (RMS)	0.1 km/h	0.1 km/h	0.1 km/h	0.1 km/h
Roll/pitch accuracy (1σ)	0.03°	0.03°	0.05°	0.05°
Heading accuracy (1σ)[4]	0.1°	0.05°	0.1°	0.05°
Dual antenna	x	✓	x	✓
Heave accuracy (1σ)[5]	10 cm or 10%	10 cm or 10%	10 cm or 10%	10 cm or 10%

>> Options: Survey+ABCD

A−GNSS receiver
Blank: single antenna
2: dual antenna

B−Constellation
Blank: GPS only
G: GPS + GLONASS

C−Output rate
Blank: 100 Hz
250: 250 Hz

D−Tracking
Blank: L1+L2
L1: L1 only

>> Hardware

Dimensions	234 x 120 x 80 mm
Mass	2.2 kg (single antenna)
	2.4 kg (dual antenna)
Input voltage	10−25 V dc
Power consumption	15 W (single antenna)
	20 W (dual antenna)
Operating temperature	−10° to 50° C
Environmental protection	IP65
Vibration	0.1 g^2/Hz, 5−500 Hz
Shock survival	100 g, 11 ms
Internal storage	2 GB

>> Interfaces

Ethernet	10/100 Base−T
Serial	2x configurable RS232
Digital I/O	Odometer input
	Event trigger input
	1PPS output
	Camera trigger
	IMU sync output

>> 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%[6]
Scale factor	0.1%	0.1%
Random walk	0.005 m/s/√hr	0.2°/√hr
Axis alignment	<0.05°	<0.05°

[1] Valid for open sky conditions.
[4] Dual antenna accuracy with 4 m antenna separation.
[2] Horizontal position accuracy. Vertical accuracy approx 1.5x horizontal.
[5] Heave output not available on 250 Hz systems.
[3] PPP requires TerraStar−D license and GLONASS option.
[6] With SuperCAL adjustment.

Document version: 140701. Specifications subject to change without notice.

MAGUS TECHNOLOGY

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