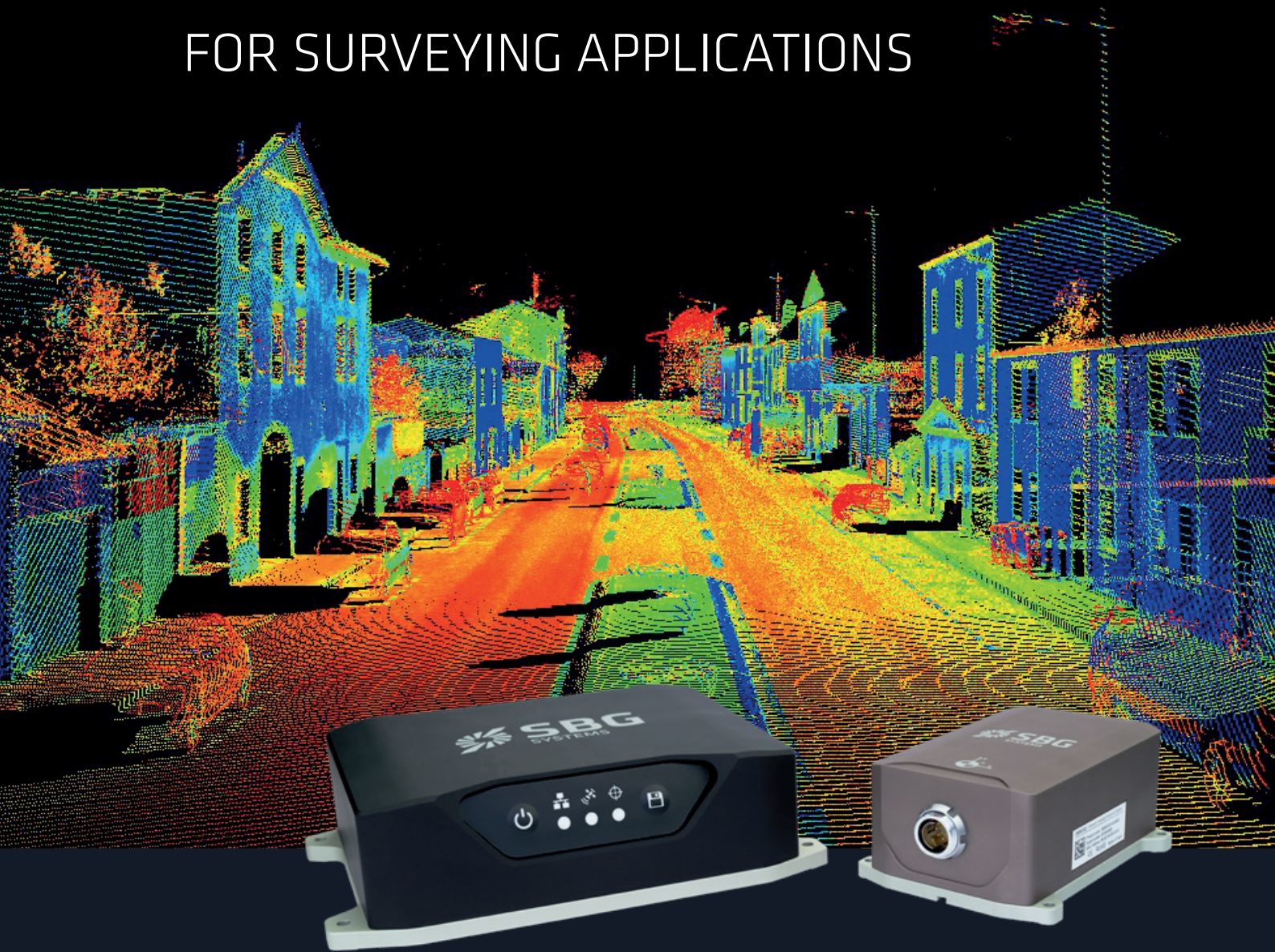# Navsight Land & Air Solution

Motion & Navigation Solution
FOR SURVEYING APPLICATIONS

Motion, Navigation, and Geo-referencing

NAVSIGHT LAND/AIR SOLUTION is a full high performance inertial navigation solution designed to make surveyors' mobile data collection easier, whether it is terrestrial or aerial.

SBG SYSTEMS

Reliable Trajectory
IN EVERY CONDITION

Navsight Land/Air Solution is an extremely versatile solution. It consists in an Inertial Measurement Unit available at three different performance levels, and connected to Navsight, a rugged equipment embedding the fusion intelligence, the GNSS receiver, and all connections to external equipment such as LiDAR, cameras, computer, etc.

Navsight Processing Unit - Data Fusion and GNSS

Navsight Processing Unit with embedded GPS/GNSS

» Tri-frequency receiver
» Multi-constellations
» RTK
» PPP ready
» Internal logger for Post-processing
» One or two antennas
» Precise Time Protocol (PTP) for time synchronization

Navsight can also be used with your own GNSS receiver

Inertial Measurement Unit (IMU) - Several Levels of Accuracy

	Ekinox IMU Compact & Economical	Apogee IMU Good Perf/Price Ratio	Horizon IMU High Accuracy FOG IMU
Roll/Pitch	0.01°	0.005°	0.004°
Heading Land	0.03°	0.01°	0.008°
Heading Air	0.02°	0.01°	0.008°
Position Horizontal	1 cm + 0.5 ppm	1 cm + 0.5 ppm	1 cm + 0.5 ppm

Post-processing Accuracy

Continuous Position   Continuous fusion of inertial data with GNSS information stabilizes the position output, effectively eliminating the impact of multipath and signal outages, when the vehicle is passing in dense urban areas for example.

ROBUST AND SMOOTH TRAJECTORY

Navsight fuses inertial and GNSS data to offer a robust and smooth trajectory at a high frequency (200 Hz).

MAXIMIZED SIGNAL AVAILABILITY

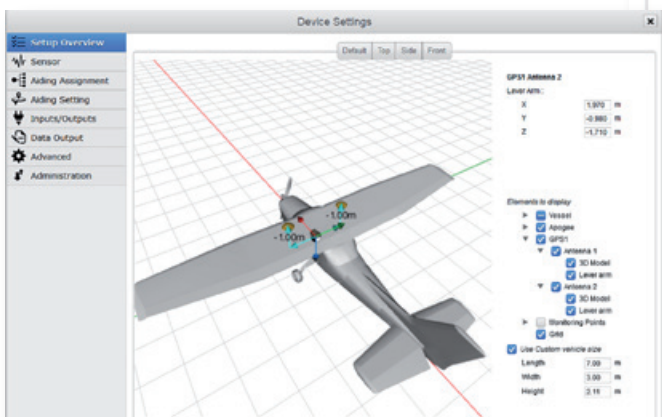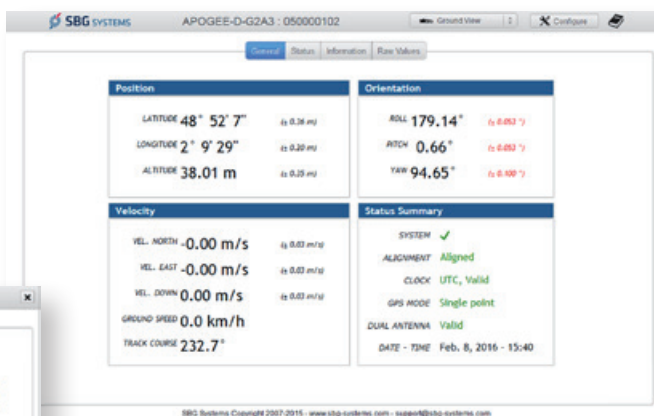Four constellations can be used simultaneously to benefit from more satellites and so, more signal availability.

ODOMETER AIDING

Navsight fuses inertial, gnss, and odometer data for an even better performance in harsh conditions.

Modern and Easy-to-use Interface

WEB INTERFACE

Connect your sensor and configure it troughout the intuitive web interface.

3D VIEW

The new 3D View helps you to check your mechanical installation, especially your sensor position, your alignments, and levers arms.

SBG⊕SERVICES

NO Surprise! Navsight solution is based on proven and maintenance-free technologies. Technical assistance is free of charge and firmware upgrades are available during the life of the product without extra cost to secure your day to day operations.

Take advantage of our SBG⊕Services:

+ Warranty Extension

All SBG inertial sensors come with a 2-year warranty. This warranty can be extended up to 5 years. Secure your budget during 3, 4, or 5 years.

+ Check & Calibration

The Check & Calibration service includes a quality check, a firmware update, cleaning, and if required, a calibration in temperature and dynamics. A certificate is delivered with the sensor. It guarantees the quality of the sensor data during 3 years.

+ Back-up System

The back-up system consists in a complete inertial system set delivered in replacement of your sensor during repair operations and during the « check and calibration » service. This service is included into the PREMIUM and ELITE packages.

INS/GNSS Post-processing Software

Qinertia is the SBG Systems' in-house post-processing software. This full-featured software enhances SBG inertial navigation systems performance by post processing inertial data with raw GNSS observables.

The Fastest Processing

Tight Coupling INS/GNSS fusion

Modern & Intuitive User Interface

+ 8,000 Base Stations always up-to-date

Why Post-processing ? By processing all your INS and GNSS raw data forward and backward, Qinertia PPK software greatly increases accuracy, solves GNSS outages, installation errors, etc. Qinertia can save your survey, or allow you to survey in very complicated areas.

Specifications

All parameters apply to -20 to 60°C temperature range, unless otherwise stated.
Full specifications can be found in the Navsight Hardware Manual available upon request.

1. CHOOSE YOUR IMU

IMU	Ekinox-I Surface	Apogee-I Surface	Horizon-I Surface Enclosure
size	86 x 100 x 58 mm	130 x 100 x 58 mm	94 x 94 x 177 mm
Weight	425 g	635 g	1.32 kg
Rating	IP68	IP68	IP68

OEM Version Available

EKINOX

	Single Point	RTK	PPK	Land RTK Outage (60 s)	PPK Outage (60 s)
Roll, Pitch	0.02°	0.015°	0.01°	0.08°	0.04°
Heading (Land)	0.05°	0.04°	0.03°	0.12°	0.05°
Heading (Air), Dual antenna 2m | 4m	0.03° | 0.02°	0.03° | 0.02°	0.02°	-	-
Position Horizontal	1.2 m	1 cm + 0.5 ppm	1 cm + 0.5 ppm	3 m	0.4 m

APOGEE

	Single Point	RTK	PPK	Land RTK Outage (60 s)	PPK Outage (60 s)
Roll, Pitch	0.01°	0.008°	0.005°	0.012°	0.008°
Heading (Land)	0.03°	0.02°	0.01°	0.06°	0.025°
Heading (Air), Dual antenna 2m | 4m	0.02° | 0.01°	0.02° | 0.01°	0.01°	-	-
Position Horizontal	1 m	1 cm + 0.5 ppm	1 cm + 0.5 ppm	0.5 m	0.1 m

HORIZON

	Single Point	RTK	PPK	Land RTK Outage (60 s)	PPK Outage (60 s)
Roll, Pitch	0.007°	0.007°	0.004°	0.01°	0.005°
Heading (Land)	0.01°	0.01°	0.008°	0.015°	0.01°
Heading (Air) Single | Dual antenna	0.04° / 0.01° *	0.04° / 0.01° *	0.008°	-	-
Position Horizontal	1 m	1 cm + 0.5 ppm	1 cm + 0.5 ppm	0.30 m	0.05 m

* 4m baseline

2. CHOOSE YOUR PROCESSING UNIT FUNCTIONALITIES

☐ **Navigation with External GNSS Receiver**

INTERFACES

Aiding Sensors (input)	2X GNSS, RTCM
Protocols	Output: NMEA, ASCII, Binary, TSS, Simrad Input: NMEA, Trimble, Novatel, Septentrio, Hemisphere, Fugro, PD0, PD6
Logging Capacity	8 GB ≈ 48h, 200 Hz
Ports/Communication	5x RS-232/RS-422 Tx/Rx ports
Synchronization	2x Sync Out (PPS) + 5x Sync In signals
Ethernet	5 virtual serial ports 5x UDP / TCP bidirectional ports Web interface , FTP PTP Grand Master Clock NTRIP v1/v2 client

☐ **Navigation with Embedded GNSS Receiver**

Constellations	Positioning	PPP Ready
☑ GPS & Glonass	☑ L1/L2/L5	☐ MARINESTAR™
☑ Galileo	☑ RTK	
☑ Beidou	☑ Raw	

☑ *Included*

NAVSIGHT PHYSICALS & ENVIRONMENTALS

Size	227 x 156 x 63 mm
Weight	1.99 kg
Wide input voltage range (isolated)	9 – 36V
EN-60945 compliant	Isolated Interfaces and power supply
Power consumption	<3 W, <7W with GNSS
Operating Temperature	-40 to 75°C
MTBF	50,000 hours

RMS values for typical survey trajectories. Performance depends on velocity aiding accuracy and requires frequent turns.
Performance may be affected by atmospheric conditions, signal multipath, and satellite geometry. All specifications subject to change without notice.
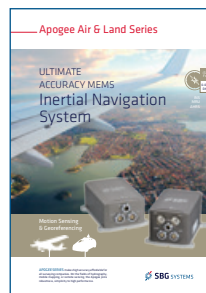
SBG SYSTEMS

SBG Systems is a leading supplier of MEMS-based inertial motion sensing solutions. The company provides a wide range of inertial solutions from miniature to high accuracy. Combined with cutting-edge calibration techniques and advanced embedded algorithms, SBG Systems products are ideal solutions for industrial & research projects such as unmanned vehicle control, surveying applications, antenna tracking, and camera stabilization.

PRODUCTS

Qinertia

Apogee Series

Ekinox Series

Ellipse Series

SBG Systems EMEA (Headquarters)
Phone: +33 1 80 88 45 00
E-mail: sales@sbg-systems.com

SBG Systems North America
Phone: +1 (657) 845 1771
E-mail: sales.usa@sbg-systems.com

SBG Systems Singapore
E-mail: sales.asia@sbg-systems.com

www.sbg-systems.com