Navsight Solution High Performance Inertial Systems

Quick Start Guide



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Navsight solution – Quick Start Guide

Following instructions will help you to start quickly with your new Navsight solution. Please read and follow it carefully before plugging the device or installing software.

Solution overview

Thank you for purchasing a SBG Systems product. The Navsight solution is a cutting edge navigation system dedicated to Marine, Land and Air Survey Applications. It has been designed for optimal integration with Qinertia post-processing suite, as well as popular survey software like Qinsy, Hypack, PDS and others.

This solution is composed of:

- An IMU, used to measure all rotations and accelerations of the vehicle
- A processing unit, used to fuse its internal (or external) GNSS data with the inertial measurements to provide accurate position and orientation, even in difficult conditions. This unit also features a wide range of input and output interfaces.
- 2x GNSS antennas





Processing unit keypad

The Navsight processing unit integrates a membrane keypad that gives a quick view about sensor health and status, and allows a few common actions like power up or down, enable or disable data-logging.



Software development Kit

The Software development kit is a set of tools that enable quick and easy use of Navsight systems. Although this step is not mandatory, It should be installed prior to the first use of your system.

The SDK runs on all Windows platforms and contains the following tools:

- sbgCenter software for easy connection to the web page, real time display, recording logs and analyze the data
- sbgNetworkDiag tool, that troubleshoots all network communication issues
- Full documentation including Hardware Manuals, Technical Reference Manual and Firmware manual
- sbgECom C library and associated code examples

You can download and install the latest SDK from SBG Systems support website:

https://www.sbg-systems.com/setup



First use of a Navsight system

Connect to the Navsight web page

Using sbgCenter

The web page is the main way to configure the Navsight system, and check the system status and health. SBG Systems recommends the use of a modern web browser to get an optimal user experience.

On Windows platforms, the easiest way to connect to the Navsight system is to launch the

sbgCenter to scan for devices on the network. Click on 😈 icon to scan for devices. Once

connected, you can go to the web page by clicking on 🔀 icon and then clicking on "Open Configuration" button.

All platforms

On all platforms that have Zeroconf implemented, it's possible to connect to the device web page by typing directly the product name and serial number in your web browser:

http://navsight_053000010.local.

Please note the final dot (.) in the http address.

SBG SYSTEMS	NAVSIGHT-	-S-RU : 053000010 🛛 🖛 Ground View 🕴 🔅	X Configure
	General Status Calif Position	Information Raw Values Orientation 00 min RoLL _0.33° (± 0.061 °) PRCH 0.65° (± 0.061 °) PRCH 0.65° (± 0.061 °) Mini 0.50° (± 14.48° °)	
	Velocity VEL NORTH -0.03 m/s (± 730.0 VEL EAST 0.82 m/s (± 730.0 VEL DOWN -256.42 m/s (± 730.0 GROUND SPEED 3.0 km/h TRACS COURSE 0.0 05	Status Summary ormaj SYSTEM ✓ ALIGNMENT NOT ALIGNED CLOCK UTC VALID ALIGNED ormaj CLOCK UTC VALID ALIGNED ormaj ONSI MODE SINGLE POINT DUAL ANTENNA DIBABLED DATE - TIME AUG. 31, 2018 - 12:36	



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Configure your IMU setup

Navsight supports various IMUs. The first thing to do when using the system for the first time is to setup correctly the installed IMU from the web configuration interface.

	Device Settings	×
Second Se	MU Model Selection	
W Sensor	Please select the IMU model that is connected to your NAVSIGHT processing unit.	
• Aiding Assignment		
Aiding Setting		
Inputs/Outputs		
Data Output		
Advanced	EKINOX2 Surface EKINOX2 Subsea APOGEE Surface APOGEE Subsea	
1 Administration		
	ERMOX2 Surface The ECMOX2 is an TR45 the MEMS based Inertial Measurement Unit able to provide befor than 0.02 roligitch accuracy. The surface housing is IP68 and is perfectly/filted for airborne, ground and between deck maine applications.	
	INU Measurement Point You can relact third point to use at a antiference for all machinical institution measurements. The "Baw (Winnote securit supply any differion physicial IAU ratio If you select "Cover Target"; the (0,0) point will be set to the center of the frame reference drawn on top of the IAU cover.	
	Select the IMU reference point to use Cover Target \$	
	San	Cancel

Note that to obtain valid performance, you will also need to setup your mechanical installation parameters. Please refer to your application operating handbook for more details about that.

Record data for post-processing

A typical use of Navsight solution is to store the IMU and GNSS data on the datalogger for post-processing after the mission. This can be done easily by pressing button on Navsight key pad, or through the main web page, by clicking on the datalogger button.

Once the mission is finished, you can get the logged data back using the FTP server, at this address:

ftp://navsight_02000001.local.

The recorded files can be directly used by Qinertia post processing suite.





Interface with third party software and systems

Navsight solution is compatible with most popular survey software suites such as Qinsy, Hyapck, or PDS2000 using their dedicated driver.

In addition to specific drivers developed, Navsight solution is compatible with a wide range of third party devices thanks to the support of NMEA protocol as well as other protocols (ie; TSS1, SIMRAD, ...). This enables seamless integration into existing systems using those protocols.

Subsea IMU maintenance

For subsea IMU users, it is important to know that the IMU subsea connector is made in Chloroprene rubber. In order to maintain its mechanical properties, the cable plug needs to be regularly greased with a silicon compound such as Molykote 44 medium or Loctite 8021. Failing to do so can lead to the fusion of connector plug and receptacle.

A first grease application is performed in factory; however, user is responsible to take care of checking and greasing the connector.

Troubleshooting

If the Navsight system was previously used in another network with a specific configuration, it can be difficult to access the web page and other Ethernet services. You can easily sort this out by using the Navsight key pad or sbgNetworkDiag tool.

Revert to factory defaults

When the system is powered and running, it is possible to revert Navsight to its factory defaults by pressing and holding () and running buttons together for 5s.

Note: This will affect ALL parameters including sensor installation calibration parameters,

output configuration and all other settings!



Reconfigure network with sbgNetworkDiag

This tool is intended to reconfigure easily your Navsight network settings without affecting other parameters.

Step 1, connect to your system (Ethernet or Serial)

You can use either a direct Ethernet connection to your PC (Leaving the Navsight system on a network is not recommended for this step).

Alternatively, it is possible to use this tool through a UART connection on Navsight PORT A, B or C.

🖇 sbgNetworkDiag	×					
Communication mode selection Choose the communication mode to use						
○ Serial Port	COM1 👻					
Choose the serial port on which the dev The wizard will check each baudrate bet finds the device.	ice is connected. ween 4800 bps and 921600 bps until it					
• Ethernet Make sure the device is directly connected to the computer by ethernet. A broadcast message to find the device will be sent on the UDP port 52140, and the answer listened on the port 52141.						
Exit	Scan for device >					

When a device is detected, sbgNetworkDiag lists the main device information and its current network configuration.

***	sbgNetworkDiag	×
	Device information	
	Product serial	999990001
	Product code	NAVSIGHT-S-0001
	Harware revision	1.1.0.0
	Firmware version	2.1.10322-dev
	Device network information	
	DHCP enabled	Automatic
	Ip address	10.10.0.108
	Netmask	255.255.0.0
	Gateway	10.10.0.254
	Primary DNS	10.10.2.10
	Secondary DNS	0.0.0.0
	Exit	Configure >



Step 2, reconfigure the network or restore settings

Once connected, you have the possibility to setup Navsight Ethernet configuration or revert it to defaults. You can also revert all settings to factory defaults and simply reboot the unit.

🖸 sbgNetworkDiag 🛛 👋	🗯 sbgNetworkDiag	
Choose an action Review and change device's network configuration Review and modify the device network configuration (IP address, netmask, gateway, DNS) 	Device network configuration Device's network configuration can be reviewed at Clicking the apply button will save the new configu- reboot it.	nd modified here. ration to the device and
Reboot device Reboot the device and exit the wizard.	Network configuration DHCP enabled Ip address Netmaak Gateway Primary DNS Secondary DNS	Static 192.168.1.2 255.255.255.0 192.168.1.1 0.0.0.0 0.0.0.0
Restore device to factory settings Restore the entire device configuration (NOT ONLY network configuration) to its default factory settings.	The proposed configuration is valid	Set to default
Exit < Previous Next >		< Previous Apply >

Find out more

You will find the full Navsight documentation within this Software Development Kit: The Operating Handbooks are a quick guides to install the unit in a specific application.

For more details, the Hardware Manual provides deep information about your solution features and explains in details how to install and use it. The Firmware Reference Manual provides low level protocol specifications as well as advanced features information.

All this documentation is also accessible on Navsight web page.

Support

If you have any trouble or question with the use of your system, feel free to contact our support team:

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