HGUIDE
FREQUENTLY ASKED QUESTIONS

At Honeywell, our goal is to help you make informed decisions about integrating HGuide into your operations,ensuring you can take full advantage of this high-performance navigation solution.

NAVIGATION SYSTEMS

Q. Is the n380 100% compatible with n580?

A. The n380 and n580 products are designed to be virtually identical to allow customers to easily tailor performance/ pricing with minimal extra design/support costs. The devices have the same footprint, use the same cabling, and employ the same HGuide Navigation Software Interface (HGNSI). The n380 has a few additional features given its more recent release (noticeably - internal logging) but these differences will disappear by Q1 of 2021.

Q. What is the configuration for event input on n580 /n380?

A. The event in inputs can be configured to trigger on either leading edge, falling edge, or both. It can also trigger off of the Honeywell Internal GPS PPS clock (1 Hz). Each trigger sends a navigation message specifically valid at the time of the trigger. Software versions V4 and prior do require you to enable the event in function each power cycle. See the event in application note on Gitlab. Contact Hguide.Support@ Honeywell.com for access.

Q. What is the configuration of the n580/n380 PPS output ?

A. The configuration of n580 / n380 PPS output is best described in the n380 and n580 electrical and mechanical manual on page. The GPS Pulse Per Second (PPS) signal is a +5 VDC TTL valid on the rising edge.

Q. How can I initialize the n580 / n380 with a single antenna?

A. The n380 and n580 (with a single antenna) can be initialized by sending an heading message or automatically - by moving at the proper speed. To initialize with the HGuide Data Reader - download the "HGuide Sample Scripts.zip" from Gitlab and use the "N580-Single Antenna Navigation North" script. To initialize automatically, move at a constant speed and direction with a speed of at least 40 KPH for 5 seconds.

Q. What GNSS corrections services can be used with a Honeywell navigator?

A. The n380 and n580 products support an industry standard RTCM3 correction input. Most correction services should work. For North America, three commercial services are HxGN SmartNet, Trimble VRSNow, and TopCon TopnetLive. You may also have a free service in your area. This web site is a good resource - https://www.ngs.noaa.gov/CORS_Map/.

Q. Can I use a distance measuring device such as odometer with a Honeywell navigator?

A. Yes. The Honeywell n380 and n580 performance can be improved to better than 0.1% of distance traveled taking aiding from distance measuring devices. The most common input is from rotary encoders that are mounted on car wheels. An implementation guide is available on Gitlab (see Common Documents Folder).

Q. Can I use RTK with your products?

A. The n380 and n580 both have real time kinematic (RTK) capability. Please consult our brochures to select the right part number. Download the RTK quick start guide from Gitlab for more information.

Q. How many antennas are required for using your products?

A. The n380 and n580 support both single and dual antenna navigation. See brochures for models.

Q. What are the methods available for storing data recorded by your products?

A. The n380 has internal logging. The n580 product will be available with data logging by Q1 2021.

Q. How do I update my n380 or n580 SW?

A. Please contact HGuide.Sales@ Honeywell.com so we can discuss if your units should be updated and if so the optimal method of doing so.

Q. What data can I stream from my device using Ethernet?

A. The device is streaming HGNSI data over ethernet. The communication is bi-directional and allows full control of the HGuide Navigator.

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Q. What is the best way to optimize settings of the n580 and n380?

A. Driving a figure 8 produces accelerations and angular rates that allow the HGuide navigation algorithms to find initial set up errors and improve the gyros and accelerometers. Driving several figure 8's will produce improved odometer and lever arm estimates as well as tune the navigation filter.

Q. Is the n380 Ethernet PTP compatible?

A. The n380 supports UDP and plans are in place to support TCP. The n380 does not support Ethernet PTP protocol.

Q. Is there any performance difference between using RTK on COM2 (RS422) or COM4 (RS232)?

A. No difference. Both ports send out a $GPGGA message at 1 Hz – and the message is sent on to the RTK network – and then an RTCM3 message is received back through the port.

Q. The n380 and n580 manuals request that antennas be 2 meters apart. My distance is shorter. Will this affect performance.

A. In general - you should be okay down to about 1 meter with some degradation and placing them beyond 4 meters apart adds minimal value.

Q. What does RTK, PPK, and SBAS mean?

A. Real Time Kinematic (RTK) uses real time information from a reference base station to obtain cm level accuracy in the HGuide Navigation System. A real time connection such as a cellular modem is needed.

Post Processing Kinematic (PPK) provides similar performance improvement but does so with the recorded GNSS and HGuide data. Satellite correction information is obtained after recording from a dedicated data repository.

Satellite Based Augmentation Systems (SBAS) provides improved position via a regional correction system; but the corrections are inherent to the provided GNSS signals. No user action is needed and much of the world is covered by SBAS.

Q. Can I obtain Rinex files from the n380 and the n580.

A. The n380 and n580 produce GNSS information that is readily convertible into RINEX formats. Programs from GNSS suppliers (Novatel Convert, Septentrio SBF Analyzer) and from RTK lib (http://www.rtklib.com/) can easily do the task.

Q. Do you have list manuals, application notes, or anything else I might find interesting?

A. In the Gitlab HGuide Common Documents folder is a PDF showing known manuals, Etc. Email HGuide.Support@Honeywell.com if you can't find what you need.

Q. Are cables included with HGuide products?

A. Cables are not included with the HGuide products. Consult individual product manuals for evaluation kits or accessories that may be available. If you need further assistance, contact HGuide.Sales@Honeywell.com

Q. How can I change configuration of my device?

A. Honeywell provides the Honeywell HGuide Data Reader (HGDR) which is a Windows based application that can test and configure (if

applicable) the HGuide product line. The HGDR is available on Gitlab. Contact Honeywell for access.

Q. Is a Software Development Kit (SDK) available?

A. Yes, an SDK is available for all HGuide products (IMU and Navigators) in a GitLab repository (https://gitlab.com/HoneywellIMU). Please contact your local sales representative to get access.

Q. My product is warm during operation. Is that normal?

A. It is normal for products to warm up during operation and Honeywell HGuide products are very rugged. However, mounting to a thermally conductive surface (metal) will help reduce device temperature, improve performance, and potentially prevent the device from exceeding product specifications during extreme heat. Consult the individual manuals for specific installation instructions. The Gitlab common documents folder also has an application note on installation for the n380 and n580.

Q. Can I use the i300 or HG4930 evaluation Kit boards to make an RS422 to USB converter for the n380 or n580.?

A. Yes you can! Although probably easiest to order the Serial Comm RS422 to USB converter described in the n380/n580 manual - the i300 and HG4930 evaluation boards can also do this. You need some electrical savvy and wiring skills. Detailed information on the evaluation boards is on the HGuide Gitlab site which would allow you to easily fabricate a design for permanent installation.

Q. What does is 'control data' and 'nav data' mean?

A. Honeywell IMU's are design to support multiple applications. Many applications require data that is transmitted rapidly in order to react in real time. For example, one may be controlling a gimbal and the gimbal must be rapidly stabilized in order not to degrade image data. Some applications are more concerned about using IMU information to track vehicle position and orientation. These applications accept a penalty in rapid response in order to be more accurate. How to use Honeywell messages is described in both the HG4930 and i300 manuals (Pages 4 and 8 respectively).

Q. How should I mount my Hg4930 IMU best?

A. Be sure to mount the IMU to a firm surface. A standard Honeywell IMU has a bandwidth of approximately 70 Hz. If motion with frequency content greater than 70 Hz is present, this will degrade the motion measurement. See the Hg4930 Gitlab folder for a presentation on how to mount and how to distinguish motion from real noise.

Q. What are the differences between the HGuide HG4930 SDLC and Non-SDLC?

A. Synchronous Data Link Control (SDLC) is a legacy high reliability format that sends out data when a clock is turn on. It is a "bit" oriented protocol that requires hardware beyond normal PC type devices. If you haven't used it previously, strongly recommend using our asynchronous format. The SDLC and Non-SDLC differences are described in detail in an application note on the HGuide Gitlab site. Contact HGuide.Sales@Honeywell.com for access.

For more information

To learn more please contact your Honeywell sales representative, call +1-888-634-3330 Ext 7 Sales or email resilient.navigation@honeywell.com

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Q. The HG4930 runs on +5 VDC. Do you have any adapters that allow higher voltages (for example, +12 VDC or +28 VDC).

A. The evaluation board for the i300 provides regulation up to and including +28 VDC. The power must be supplied via external power input connector (see i300 manual). This board will provide reverse voltage protection also. NOTE – the i300 evaluation kit board does not support a direction interface to a PC USB port with the HG4930. Although the board supports a i300 USB interface – the higher load of the HG4930 doesn't play nice with the PC interface. To interface with a PC – order the HG4930 evaluation kit.

Q. Do the HGuide products come with everything I need to easily hook up?

A. All the products require that you order an accessory or evaluation kit to hook up. See individual manuals for available accessories or contact Honeywell at HGuide.Sales@Honeywell.com

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