GPS/GNSS Equipment Overview

Your ONE Source for GNSS Equipment and Solutions

Delivering expert GNSS + INS system design, COTS equipment solutions and more

- Custom hardware/software integration
- GPS/GNSS integration into LiDAR systems
- GNSS simulation and testing
- Jammer detection and interference mitigation
- GPS RF network components, design and installation
- Unmanned air/ground/maritime vehicles
- Precise recovery/docking systems
- Reconnaissance for geolocation applications
- Mobile surveillance vehicles
- Precise attitude/heading system applications
- PNT (position, navigation and timing) applications
- Components from nearly 30 manufacturers

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Your ONE Source for GNSS Products, Solutions and Training

We sell products from ...

Products and Services

In-house expertise on a wide range of components and systems from nearly 30 manufacturers.

- Customized systems using off-the-shelf components (COTS)
- GPS/GNSS Integration into LiDAR systems
- Hand-held GNSS jamming, interference detection and mitigation
- Space weather monitor receivers for tracking through scintillation
- RF networking system design and installation (DAS)
- OEM on-chip GPS-aided INS
- Indoor locating and positioning in GPS-denied areas
- Differential subscription services
- GNSS heading and attitude
- OEM receiver boards
- GNSS simulation and testing
- GNSS development software
- Signal distribution products
- GNSS inertial navigation
- GNSS signal interference mitigation
- Post-processing software
- PPP systems
- RTK systems
- GNSS antennas
- Smart antennas
- Customized cables
- GIS equipment
- SBAS

GNSS Training and Seminars

NavtechGPS is a world leader in GPS/GNSS education and training with nearly 30 years of experience.

- We conduct on-site courses for 10 or more people, saving you overhead, travel expenses and time.
- We can tailor any course from our comprehensive list of courses to meet your group’s needs.
- For individuals or smaller groups, our public venues offer an excellent learning environment, networking opportunities and time for in-depth instruction.

References and Books

We stock hard to find, specialized GPS/GNSS titles.

- In stock titles usually ship same day.
- Order online or call.

Contact Us

The choices you want. The expertise you need.
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NavtechGPS® represents industry leading manufacturers of GNSS products, components and auxiliary products.  

**Contact Us:** 1-703-256-8900 or 800-628-0885 or info@navtechgps.com

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<tr>
<th>Manufacturer</th>
<th>Products</th>
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<tr>
<td>Acumen</td>
<td>Portable, set-it-forget-it black box data loggers.</td>
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<tr>
<td>AntCom</td>
<td>Antenna division of NovAtel. Quality, well priced single- and multi-frequency antennas for geodetic, GIS, automotive, airborne and marine applications.</td>
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<tr>
<td>Chronos Technology</td>
<td>Handheld GPS jamming detectors and locators.</td>
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<tr>
<td>Freewave</td>
<td>Spread spectrum radio modems, OEM and boxed.</td>
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<tr>
<td>Forsberg Services Ltd.</td>
<td>ForSberg products: In-line signal amplifiers, DUCs, fiber optic link system, splitters. (NavtechGPS is the sole distributor for Forsberg StarLink GPS products in the U.S. and Canada)</td>
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<tr>
<td>GPS Networking</td>
<td>Signal splitters, amplifiers and signal distribution, re-radiation systems.</td>
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<tr>
<td>GPSsoft</td>
<td>SatNav, INS, Kalman filtering MATLAB® toolboxes.</td>
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<tr>
<td>LabSat</td>
<td>LabSat by Racelogic. Multi-constellation GNSS simulator (GPS/GLONASS/Galileo, BeiDou, QZSS or SBAS). Record-playback multiple base band satellite RF signals.</td>
</tr>
<tr>
<td>L3NAV Systems</td>
<td>L3NAV. GPS, Kalman Filtering, RINEX and SPC (RAS), and Coordinate Transformations (CT) software for MATLAB® toolboxes.</td>
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<tr>
<td>NAVCom</td>
<td>NavCom. Single- and multi-frequency rugged receivers. Several form factors, some with internal radios. Complete survey (including aerial survey) and high accuracy positioning systems. Producers of Starfire, a satellite based differential correction service.</td>
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<tr>
<td>novXperience</td>
<td>novXperience. Robust, light, accurate, next generation, 4 constellation antennas. NGS calibrated.</td>
</tr>
<tr>
<td>OmniSTAR</td>
<td>OmniSTAR. Subscription options include localized or worldwide, short- or long-term and varying accuracy levels.</td>
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<tr>
<td>OxTS</td>
<td>OxTS. Inertial navigation systems, combining GNSS technology with high-performance inertial sensors. Available with dual antenna and dual frequency configurations for GNSS heading/roll or heading/pitch. Also includes post-processing software!</td>
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<tr>
<td>Pacific Crest</td>
<td>Pacific Crest. UHF radio transceivers and accessories.</td>
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<tr>
<td>PCTEL</td>
<td>PCTEL. Diverse line of primarily single frequency antennas. Timing and reference, automotive and marine applications. Also smart antennas and receiver modules. Many form factors.</td>
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<tr>
<td>septentrio</td>
<td>Septentrio. High sensitivity single and multi-frequency receivers. GPS/Galileo/GLONASS. Heading units. High output rates. OEM receiver boards and boxed receivers, plus Septentrio’s Advanced Interference Mitigation (AIM+) technology. GPS/Galileo receivers for signal analysis.</td>
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<tr>
<td>SpectraPrecision</td>
<td>SpectraPrecision. Rugged, handheld mobile mapping devices for field data collection for GIS, mobile mapping and survey.</td>
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<tr>
<td>Tallysman</td>
<td>Tallysman. Small form factor GNSS antennas and amplifiers, and SMART antennas. Single frequency L-band and GNSS inline signal amplifiers, splitters, bias-tees and lightning arresters.</td>
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<tr>
<td>Trimble</td>
<td>Trimble. High quality, high accuracy OEMs providing seamless integration, whatever the application, for high-precision positioning solutions.</td>
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<tr>
<td>VectorNav</td>
<td>VectorNav. OEM GPS-aided INS, Inertial Measurement Unit and Attitude Heading Reference System (IMU/AHRS) for commercial and tactical applications.</td>
</tr>
<tr>
<td>Waypoint</td>
<td>Waypoint, a NovAtel company. Waypoint GrafNav/GrafNet post-processing software.</td>
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Chronos Technology

Chronos Technology has developed low-cost, battery-operated handheld GPS interference and jamming detectors and locators that detect the presence of too much power at the center frequency of L1 GPS, and interference broadcasting on the GPS satellite navigation L1 channel. These detectors could be used by the FCC, the FAA, law enforcement, trucking companies, vehicle fleets, in test labs, for field use, in airports, in toll booths, by local and federal governments, and in many other business uses.

NavtechGPS has partnered with Chronos Technology to market these products in the United States. Contact us about how these products can help alert you to GPS jamming and unintended GPS signal interference.

CTL-3510-LOG GPS Interference and Jammer Detector and Logger

The CTL-3510 got even better. It builds on the basic features of the CTL-3500 but with a more sensitive handheld device that now has an internal event logging option. Like the original CTL-3510, the CTL-3510 with event logging is also battery operated and designed to detect the presence of GPS jamming or too much power or interference in the GPS (L1) band.

CTL-3520 Handheld Directional GPS Interference and Jammer Detector and Locator

The Chronos CTL-3520 directional GPS jammer detector and locator is a handheld, battery operated device designed to detect and quickly locate the presence of jamming signals from commercially available GPS jammers or too much power or interference broadcast in the GPS (L1) band.

The CTL-3520 uses innovative direction finding technology developed by the University of Bath to accurately determine which vehicle or individual is hosting the jammer, and then point the user in the direction of the jammer.

Aimed specifically at detecting GPS jammers hidden in vehicles, the unit can pinpoint even the weakest jammer and identify the vehicle in which the jammer is hidden, even in a busy multi-level parking garage. Other applications include detecting vehicles with jammers at airports, fleet depots, airport parking garages and in taxi fleets.
NavtechGPS is pleased to partner with Forsberg to handle the North America sales and distribution of the new Forsberg StarLink RF line of GNSS / GPS down-up converters, signal splitters and in-line amplifiers, as well as the Forsberg Raven Link System of transmitters and receivers.

The Forsberg StarLink (formerly Raven StarLink DPGS) GPS signal splitters and fiber-optic solutions resolve the difficulties associated with signal losses due to extended antenna cable lines of practically any length.

Forsberg Services, Ltd., acquired Raven’s StarLink GNSS product line from Raven Industries in April 2015. NavtechGPS is the exclusive North American distributor for the Forsberg StarLink product line.

**Inline Amplifiers**

Forsberg StarLink in-line amplifiers are a convenient way to boost and filter GPS signals before they reach the receiver.

**Down/Up Converters**

The patented GPS Down/Up converter makes it possible for long cable runs of 450 meters. The DUC converters are the perfect add-on for L1 GPS installations where long antenna cables are needed and a simple in-line amplifier will not suffice. A DUC consists of a down converter at the GPS antenna and an up converter at the RF input of the GPS receiver.

**Fibre Optic Link System**

The RVL-1 Fiber Optic Link System is an affordable GPS fiber optic antenna link system for GPS and GNSS systems, which offers exceptional lightning protection.

**Splitters**

The Forsberg StarLink splitters are designed to provide two DGPS receivers with a signal from a single antenna by dividing the outgoing signal into two separate GPS receivers with minimal signal loss.
GPS Networking, Inc., manufactures GPS signal distribution products to create distributed antenna systems (DAS) to distribute the GPS signal throughout a facility. GPS Networking was the first manufacturer to develop these building block GPS products and to commercially supply GPS re-radiating kits to transmit GPS signals indoors.

Attention Military Users: GPS Networking’s ruggedized splitters have been tested and certified to military specifications. These products are specifically designed for military applications and are hermetically sealed, EMI shielded (MIL-SPEC). Contact us for product details, certification and testing information and pricing.

Over the years, NavtechGPS had designed and installed hundreds of DAS and RF networking systems. We have everything you need for your RF network: advice, expertise, years of experience, installation know-how, and quality components from GPS Networking, the company that originated the technology.

Mil-Spec Splitters
GPS Networking’s ruggedized splitters have been tested and certified to military specifications. These products are specifically designed for military applications and are hermetically sealed, EMI shielded, and virtually indestructible. Please see the product detail pages on our website for certification and testing information.

Fibre Optic Antenna Link Systems
Time to take advantage of these outstanding systems because the prices have dropped by nearly 50 percent! Take advantage of various types of fibre optic antenna link systems for converting the GPS carrier for RF to travel up to 10 kilometers and then reconvernt back to RF to be output to your GPS receiver.

L1 and L1, L2 Hanger GPS Networking
Re-radiating Kits
This re-radiating kit (L1/L2GNRRKIT) is a complete re-radiating (GPS repeater) system that allows re-radiation of the GPS L1, L2, L5, Galileo, GLONASS and Omnistar signals indoors. The kit consists of an active roof antenna, a re-radiating amplifier with a wall mount plug-in transformer that powers the entire system, and a passive re-radiating antenna. We have a number of kits available with other configurations. (Please see our website for required authorizations before purchases can be completed.)

Amplifiers
GPS Networking has a large line of amplifiers to meet any need, including inline amplifiers.
Atlas™ Global Correction Service
and AtlasLink™ Smart Antenna

Atlas™, Hemisphere's new space-based correction service, delivers correction signals via L-Band satellite broadcast or over the Internet at accuracies ranging from meter to sub-decimeter levels for GPS and GLONASS corrections.

Atlas™ support is being introduced across a wide range of multi-frequency, RTK-capable hardware, including Hemisphere’s all-new AtlasLink™ GNSS smart antenna.

The Atlas L-Band correction service is available for the AtlasLink™, R330U, V320, and VS330U. Or, you can export the corrections from the ATLASLINK to your own existing RTK receiver using their corrections.

AtlasLink™ Smart Antenna

AtlasLink™ is a versatile multi-frequency smart antenna from Hemisphere GNSS that is preconfigured to receive corrections from the new Atlas GNSS global correction service. AtlasLink offers Hemisphere GNSS Athena GNSS engine; L-Band 10 cm corrections; L1 L2, RTK; a powerful Web user interface accessible via WiFi; Built-in internal memory for data logging, download and upload, and an enclosure for the most aggressive user scenarios.
GNSS Crescent® Vector™ H220 Board

The H220 GNSS OEM board is a single-frequency, high-performance GNSS heading, positioning, and attitude module. It allows integrators to develop for sophisticated marine, navigation, and land applications in challenging, dynamic environments. It uses Hemisphere's advanced Vector technology, advanced multipath mitigation techniques, and Hemisphere's patented multifunction application. The H220 is capable of providing heading of 0.04° with a 5 meter antenna baseline and either RTK or SBAS positioning depending on your location requirements. With Atlas corrections, the H220 can obtain instant sub-meter accuracy worldwide, while being more robust than SBAS even in SBAS regions.

The Eclipse™ P326 / P327™ and P328 OEM Modules

These multi-frequency, multi-GNSS Hemisphere Eclipse P326 (34 pin) and P327 (20 pin) modules are based on an innovative platform that integrates L-band and receives Atlas® GNSS corrections on a single small board, reducing overall cost, size, weight, and power consumption. The P326 / P327 support 394 channels and offer centimeter-level accuracy in multi-frequency, multi-GNSS, Atlas-capable mode and a high accuracy in single-frequency mode. The small form factor 34-pin P326 module is a drop-in upgrade for Hemisphere products, and the P327 is a drop-in upgrade for other standard 20-pin modules. The P328 OEM board enables simultaneous tracking of all satellite signals, including L-band, making it a robust and reliable solution for survey, mapping, and machine control.

Vector™ Eclipse™ H328 Compass OEM Board for Advanced Heading and RTK Positioning

The Hemisphere GNSS Vector H328 OEM board is an advanced GNSS heading and positioning board. It utilizes dual antenna ports to create a series of additional capabilities to Eclipse™ Vector technology including fast, high-accuracy heading over short baselines, RTK positioning, onboard Atlas L-band, RTK-enabled heave, low-power consumption, and precise timing.

With the H328, positioning is scalable and field upgradeable with all Hemisphere software and service options. Utilize the same centimeter-level accuracy in single frequency mode, or use the full performance and fast RTK initialization times over long distances with multi-frequency multi-constellation GNSS signals. High-accuracy L-band positioning from meter to sub-decimeter levels are available via the Atlas correction service.

Vector VS330 GNSS Compass Heading and Positioning Receiver

Developed for precise marine and land applications that require precise heading and RTK position performance from the Vector VS330 GNSS receiver compass, the Hemisphere GPS Vector VS330 Compass L1 L2 heading receiver, with its display and user interface, can be conveniently installed near the operator. The two antennas are mounted separately and with a user-determined separation to meet the desired heading accuracy. The Vector VS330 uses L-band DGNSS/HP/XP and SBAS (WAAS, EGNOS, MSAS, etc.) for differential GPS positioning.
R330™ GNSS Receiver
The R330 GNSS receiver from Hemisphere GNSS offers a complete solution in a small box. This multi-GNSS RTK, high accuracy receiver utilizes the Hemisphere GNSS Eclipse™ platform Hemisphere GNSS’ latest GNSS patented technology, providing accurate positioning using several differential correction methods such as RTK, ATLAS, L-band DGNSS (VBS / HP / XP / G2) and Beacon.

S321+™ GNSS Survey Smart Antenna
The S321 is Hemisphere’s multi-GNSS, multi-frequency, smart antenna. The S321+ combines provides robust performance and high precision in a compact and rugged package. With multiple wireless communication ports and an open GNSS interface, the S321+ can be used in a variety of operating modes. Use it as a precise base station sending RTK to your existing rover network or turn it into a lightweight rover by connecting it to your base via UHF radio or Wi-Fi network. The built-in web user interface (web UI) can be used to control and manage the receiver status and operation, as well as to upgrade the S321+ with new firmware and activations. S321+ is Athena-enabled and Atlas-capable.

V102™ GPS Compass Series
Experience superior navigation from the accurate heading and positioning performance available with the V102™ GPS compass. The V102 uses SBAS (WAAS, EGNOS, MSAS, etc.) for differential GPS positioning allowing Hemisphere to provide a low cost and highly effective heading and position based smart antenna. The rugged and low profile enclosure combines Hemisphere’s Crescent® Vector™ II OEM technology and two multipath-resistant antennas for accuracy, portability and simple installation. The smart antenna — measuring less than half-meter length — mounts easily to a flat surface or pole.

Vector V123 and V133™ GPS Compass
The Hemisphere Vector™ V123 / V133 is an all-in-one single-frequency, multi-GNSS smart antenna which provides Atlas decimeter-level position and precise heading. Designed for the harshest environments, it is a great solution for professional marine and other challenging applications. This smart antenna combines Hemisphere’s Crescent Vector H220 OEM board and two multi-path and noise-rejecting antennas (spaced 50 cm apart) in a single enclosure. The V133 add ATLAS support.

A222 GNSS SMART Antenna
The A222 GNSS Smart Antenna offers professional-level accuracy for agricultural, marine, GIS, mapping, and other applications. The Hemisphere A222 Smart Antenna offers 60 cm accuracy, and an LED status indicator for power, GNSS, and DGNSS. The durable enclosure houses both antenna and receiver. It can be powered through various sources, making the A222 smart antenna ideal for a variety of applications. Dual-Serial, CAN, and pulse output options make this DGNSS receiver compatible with almost any interface. A222 is supported by Hemisphere’s Atlas, which allows you to update firmware and take advantage of Atlas subscriptions for accuracies from meter to sub-decimeter levels.
NavCom Technology, Inc., a John Deere Company, is a leading provider of advanced GNSS products for OEMs, VARs and system integrators needing high performance RTK systems, global five centimeter level GPS satellite corrections, geodetic quality GNSS receivers, in the areas of precise positioning.

**SF-5050 StarFire™/RTK Extend™ Receiver**

NavCom’s SF-5050 integrated StarFire™/RTK Extend™ Receivers provide 5cm-level position accuracy, anywhere in the world, anytime. Powered by the new Onyx GNSS Engine, the SF-5050 provides 255 channel tracking, including multi-constellation support for GPS and GLONASS. It also provides patented interference rejection and anti-jamming capabilities.

The SF-5050 is fully upgradable allowing users to upgrade from an autonomous receiver to a variety of augmentation capabilities with just a software bundle upload. This flexible framework makes the SF-5050 ideal for any application.

**Onyx Integrated StarFire™ OEM Board**

The NavCom Onyx board offers a GNSS engine with 255 channel tracking, including multi-constellation support for GPS, GLONASS, Beidou and Galileo. It also had built-in patented interference rejection and anti-jamming capabilities. The Onyx GNSS OEM board is a fully upgradeable GNSS receiver.

Integrated with StarFire’s five centimeter global accuracy makes Onyx ideal for high accuracy surveying, control and guidance of mobile platforms. The Onyx offers durability and reliability for precise point positioning system integration. StarFire™ is supported on 3-separate channels providing on-board capability for tracking redundant or enhanced signals.
Performance, Accuracy and Innovation

With innovations including GL1DE, ALIGN and AdVance RTK, SPAN® (NovAtel’s synchronous position, attitude and navigation) technology, and correction services through NovAtel CORRECT®, NovAtel continues to evolve its GNSS hardware. And now, with the introduction of the OEM7 receivers, which includes advanced interference mitigation features, NovAtel continues to ensure that the people get what they want. (See next page for more great products from NovAtel.)

OEM7™ High Precision GNSS Receivers

The NovAtel OEM7™ GNSS series of receivers builds on the precise positions known-how of its previous six generations to incorporate innovative capabilities and features that enhance positioning reliability, accuracy and availability, including much-needed advanced interference detection and mitigation capabilities, with L-Band and SPAN® GNSS+INS functionality on every card.

These Multi-frequency GNSS receivers use a 555 channel architecture and are capable of tracking all current and upcoming GNSS constellations. Multiple form factor, configurations and firmware options are available.

OEM7™ High Precision GNSS Receivers

Five series 7 boards are available: OEM 7700™, OEM 7600™, OEM 7720™, OEM 719™, and the OEM 729™. NovAtel has a receiver for all your needs. The series 7 receivers include the following features:

1. **Compact Enclosure Option:** The Series also includes a new compact enclosure option, the PwrPak7™, to house OEM7 receiver technology, and offer 16 GB onboard data storage, built-in Wi-Fi and serial, USB, CAN and Ethernet for ease of integration.
2. **Interference Toolkit:** The Interference Toolkit is used to detect sources of interference and intentional and unintentional jamming, and then mitigates such occurrences using proprietary NovAtel filters.
3. **L-Band Functionality:** The L-Band functionality on every OEM7 receiver enables satellite delivery of Precise Point Positioning (PPP) correction data directly to the receiver. Utilizing TerraStar correction data from the TerraStar network, means centimeter level positioning is possible for a broad range of applications.
4. **SPAN® Technology:** NovAtel’s SPAN® technology is supported on every OEM7 receiver. SPAN tightly-couples NovAtel’s GNSS technology with a number of available Inertial Measurement Units (IMUs) to provide robust, continuous 3D positioning, velocity and attitude, even through periods of blocked or unavailable signal reception.

OEMStar

The OEMStar receiver has the same form factor as NovAtel’s OEMV-1 series receivers and uses the OEMV® style command interface. This allows you to easily integrate the OEMStar into existing OEMV-1 series systems. The OEMStar uses SBAS corrections from services such as WAAS and EGNOS.
Performance, Accuracy and Innovation

With innovations including GL1DE, ALIGN and AdVance RTK, SPAN® (NovAtel’s synchronous position, attitude and navigation) technology, and correction services through NovAtel CORRECT®, NovAtel continues to evolve its GNSS hardware. And now, with the introduction of the OEM7 receivers, which includes advance interference mitigation features, NovAtel continues to ensure that the people get what they need. (See next page for more great products from NovAtel.)

NovAtel OEM719 Multi-Frequency GNSS Receiver
The OEM719 multi-frequency GNSS receiver delivers precise positioning while retaining backwards compatibility with NovAtel's OEM615™ and OEM617™ form factors. The OEM719 is scalable to offer sub-meter- to centimeter-level positioning, and is field upgradable to all OEM7™ family firmware options.

NovAtel OEM729 Multi-Frequency GNSS Receiver
The OEM 729 from NovAtel is a multi-frequency GNSS receiver that delivers precise positioning while retaining backwards compatibility with NovAtel's OEM628™ form factor. It offers not only precise positioning, but also advanced interference mitigation. The OEM729 is scalable to offer sub-metre to centimetre level positioning, and is field upgradable to all OEM7™ firmware options.

OEM7700 Multi-Frequency GNSS Receiver
This multi-frequency GNSS receiver offers precise positioning and advanced interference mitigation in a small package. With a 555 channel architecture, the OEM7700 can track upcoming GNSS constellations, including GPS, GLONASS, Galileo, BeiDou, QZSS and IRNSS. Firmware options include NovAtel CORRECT™ with RTK for centimetre level real-time positioning, ALIGN® for precise heading and relative positioning, GLIDE® for decimetre level pass-to-pass accuracy and SPAN® for continuous 3D position, velocity and attitude.

NovAtel OEM7720™
This multi-frequency, dual-antenna receiver delivers robust heading and positioning along with advanced interference mitigation features. For maximum flexibility, the OEM7720 uses a 555 channel architecture and is capable of tracking all current and upcoming GNSS constellations. It is scalable to offer sub-metre to centimetre level positioning. This receiver is field upgradable to all OEM7™ family software options, including NovAtel CORRECT™ with RTK, ALIGN®, GLIDE® and SPAN®.

NovAtel PwrPak7®
The PwrPak7 is a compact enclosure that delivers scalable Global Navigation Satellite System (GNSS) with internal storage and INS options. The PwrPak7 is capable of tracking all present and upcoming GNSS constellations and satellite signals. It also offers optional integrated INS support for continuous position, velocity and attitude through short periods of GNSS outage.

GrafNav/GrafNet Post Processing Software
GrafNav/GrafNet post-processing software from NovAtel Waypoint® is a powerful and highly-configurable processing engine that allows for the best possible static or kinematic GNSS accuracy using all available GNSS data.

The software also has multiple quality control features built-in so the quality of the solution is never in question. The base station download utility allows access to thousands of publicly available, continuously operating reference stations and Precise Point Positioning (PPP) means that for many applications, no base station is required!
Performance, Accuracy and Innovation

With innovations including GL1DE, ALIGN and AdvanCe RTK, SPAN® (NovAtel’s synchronous position, attitude and navigation) technology, and correction services through NovAtel CORRECT®, NovAtel continues to evolve its GNSS hardware. And now, with the introduction of the OEM7 receivers, which includes advance interference mitigation features, NovAtel continues to ensure that the people get what they want.

SPAN® GNSS InERTial Navigation Systems
NovAtel’s SPAN® technology tightly couples its OEM precision GNSS receivers with robust inertial measurement units (IMUs) to provide reliable, continuously available, position, velocity and attitude — even through short periods of time when satellite signals are blocked or unavailable.

SPAN® GNSS Receivers
NovAtel provides SPAN® capable GNSS/INS card-level receivers as well as enclosed GNSS/INS receiver products. Board level receivers that integrate with IMUs include the OEM 638. Enclosed receiver products include the ProPak6, the FlexPak6 and the PwrPak7e.

SPAN Inertial Measurement Units (IMUs)
SPAN® technology tightly couples NovAtel’s GNSS receiver technology with an Inertial Measurement Unit (IMU). NovAtel markets a variety of IMUs from leading IMU manufacturers to provide customers with the opportunity to select an IMU that delivers the accuracy or price point their application requires.

SPAN® GNSS/INS Combined Systems
Single enclosure GPS/INS systems are ideal for space constrained applications, integrating GPS receiver technology with Fiber Optic Gyros (FOG) and Micro Electrical Mechanical Systems (MEMS) accelerometer inertial components in a single compact unit. Tight coupling of the GPS and INS technologies in one enclosure optimizes the raw GPS and Inertial Measurement Unit (IMU) data, delivering a highly accurate position, velocity and attitude solution.

NovAtel CORRECT™: Offering TerraStar-L and C Correction Services
NovAtel CORRECT™ is the positioning algorithm on NovAtel’s GNSS receivers that handles corrections from a variety of sources, including RTK, PPP, SBAS and DGPS. With CORRECT™, you can choose the correction method that best meets the requirements and performance objectives of your application.

NovAtel CORRECT™ works with the data provided by the TerraStar network. Subscriptions for TerraStar corrections are available directly from NavtechGPS. CORRECT™ provides a single source for GNSS hardware, correction services and support. NovAtel CORRECT RTK and PPP solutions are designed to work together to deliver decimeter or better positioning. CORRECT™ is scalable, offering integrators a competitive positioning technology with options for future innovation.

You can upgrade your OEM6 receiver to use NovAtel CORRECT, and then purchase a subscription for the TerraStar service.
With innovations including GL1DE, ALIGN and AdVance RTK, SPAN® (NovAtel’s synchronous position, attitude and navigation) technology, NovAtel CORRECT® correction service, NovAtel continues to evolve its GNSS hardware. With the introduction of the OEM7 receivers, which includes advance interference mitigation features, NovAtel continues to ensure that the people get what they need. And, of course, NovAtel provides a wide range of high precision GNSS antenna options.

VEXXIS GNSS-800 Series of Antennas
The VEXXIS GNSS-800 series features a patented multi-point feeding network and advanced radiation pattern optimization technology. This radiation pattern optimization technology enables low elevation satellite tracking without sacrificing gain for higher elevation satellites for excellent performance even in difficult environments. The VEXXIS 800 Series includes the following:
- GNSS-802: GPS: L1, L2; GLONASS: L1, L2; Galileo: E1; Beidou: B1
- GNSS-804: GPS: L1, L2; GLONASS: L1, L2; Galileo: E1, E5b; Beidou: B1, B2b/B2I
- GNSS-850: GPS: L1, L2, L5; GLONASS: L1, L2, L3; Galileo: E1, E5a, E5b, E6; Beidou: B1, B2a, B2b/B2I, B3, L-Band

VEXXIS™ GNSS-500 Series Antennas (GNSS-501 and GNSS-502)
The VEXXIS 500 series provides outstanding circularly polarized, symmetric radiation patterns with superior multipath rejection performance. Multi-point feeding network and radiation pattern optimization technology provides a stable phase center and exceptional low-elevation satellite tracking, while achieving high peak zenith gain, to track the maximum number of satellites for an enhanced positioning solution. Also capable of receiving correction services transmitted in the L-Band, such as TerraStar.

GPS-704-X Triple-Frequency Pinwheel® GNSS Antenna
The GPS-704-X GNSS passive antenna features improved performance to ensure excellent operation in all GPS, Galileo and GLONASS frequency bands. The antenna also includes NovAtel’s patented Pinwheel technology for excellent multipath rejection and phase center stability.

GNSS-750: Multi-Constellation Antenna
Capable of tracking signals from 5 satellite constellations, including GPS, GLONASS, Compass, Galileo and QZSS satellite systems, the innovative design of this 3-D choke ring antenna delivers exceptional low elevation tracking and enhanced multipath reduction.

GPS-703-GGG-HV (High Vibration) Antenna
The GPS-703-GGG-HV receives L1, L2, L5 GPS; L1, L2, L3 GLONASS; B1, B2 BeiDou and E1, E5a/b Galileo frequencies. Customers can use the same antenna for GPS-only, dual or triple constellation applications, resulting in increased flexibility and reduced equipment costs. The GPS-703-GGG-HV is suited for use under high vibration conditions.

GPS-704-X Triple Frequency Pinwheel Antenna
The NovAtel GPS-704-X GNSS passive antenna features improved performance to ensure excellent operation in all GPS, Galileo and GLONASS frequency bands. The antenna also includes NovAtel’s patented Pinwheel technology for excellent multipath rejection and phase center stability.

SMART7: GNSS Multi-Frequency Smart Antenna
The SMART7 combines an OEM7® receiver and precision antenna in a durable and waterproof enclosure. It also receives L-Band signals to access world-wide correction signals provided by TerraStar.
OxTS Inertial + GPS

Oxford Technical Solutions designs and manufactures world leading products combining the best of inertial navigation and GPS/GNSS. OxTS focuses on affordable INS using MEMS gyroes and precision accelerometers. OxTs' Kalman filter extracts the maximum information from GPS, delivering high accuracy measurements and low drift rates.

The OxTS precision survey product line is aimed at mobile mapping companies; aerial surveying; UAV manufacturers; system integrators who require small, reliable tactical grade IMU/GPS, but without the added cost for unwanted features, and for anyone looking for high accuracy position, attitude and orientation for geo-referencing LiDAR, camera and sensor data. OxTS products do not use magnetometers, so there are no effects from ferrous metals or electrical interference from outside sources! And, ALL OxTS systems include post-processing software!

NavtechGPS is pleased to offer the xNAV family of products to customers looking for an inertial navigation and GNSS solution.

xNAV550™
The xNAV550 integrates dual L1/L2 GNSS receivers for 2 cm RTK position accuracy. The upgraded receivers also mean better and more robust heading accuracy. The xNAV550 is 5 mm taller than the other models and slightly heavier at 425 g to accommodate its bigger receivers, but still matches the other models for length and width and features the same IP65 rated anodized aluminum enclosure. Post-processing software is included.

xNAV500™
The xNAV500 is a compact, lightweight GPS-aided inertial navigation system, perfectly suited for all applications where size and weight as well as performance matter. It measures and outputs position (50 cm), heading (0.15°), roll/pitch (0.05°) and much many other metrics in real-time. In addition to real time, your data can also be post-processed later with the OxTS advanced software suite, included free of charge. The xNAV500 is ideal for use on UAVs and other weight constrained applications.

xNAV200 and 250™
The xNAV200 GPS-aided inertial navigation device is designed for UAV applications that require sub-metre accuracy. xNAV200 includes dual-antenna GPS and tightly coupled INS in one powerful package. The system measures reliable, continuous position data at 1m positional accuracy. It also logs highly accurate heading (0.15°), roll/pitch with 0.05° accuracy and many other parameters at 100Hz. The only difference is between the xNAV250 and 200 is a logging only solution allowing users to download data from the system and post-process it the included post-processing software.

xOEM Family
The xOEM series of inertial navigation systems offer original equipment manufacturers (OEMs) and system integrators an extremely lightweight, compact solution for any application requiring a complete 3-D navigation solution. Based on the xNAV series, the xOEM series offers all the same great features and functionality but as an embedded GNSS+INS board set, shedding over two thirds of the weight and allowing manufacturers to integrate and build directly into their product.

Survey+™
Advanced algorithms in the Survey+ 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. 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.
Racelogic manufactures electronic systems to measure, record, display, analyze and simulate data. NavtechGPS has carried the complete line of Racelogic’s LabSat products starting with the original LabSat through the LabSat 3 generation, and now the LabSat Wideband. LabSat Wideband builds on the tri-band LabSat 3 by increasing the recording bandwidth on each of the 3 channels to capture all the bands of all the current GNSS constellations.

LabSat 3 is an affordable and versatile multi-constellation global navigation satellite simulator for recording and replaying real GPS RF data, allowing you to test almost any single-frequency GNSS device with real-world signals, from your bench, and now, in real time, with the LabSat RT software.

If you are selling, testing or developing products using single GPS or multi-GNSS engines, incorporating GLONASS, Galileo, BeiDou, QZSS or SBAS, then you’ll find LabSat invaluable. Contact us for a demonstration. (LabSat continued next page.)

The new LabSat 3 Wideband is the latest generation of the hugely successful LabSat 3 GNSS Simulator. Building on the original tri-band version, LabSat 3 Wideband is now capable of recording bandwidths of up to 56 MHz and 6 bit sampling (3 bit I & 3 bit Q) to capture the following signals:

- GPS: L1 / L2 / L5
- GLONASS: L1 / L2 / L3
- BeiDou: B1 / B2 / B3
- QZSS: L1 / L2 / L5
- Galileo: E1 / E1a / E5a / E5b / E6
- IRNSS: L5
- SBAS: WAAS, EGNOS, GAGAN, MSAS, SDCM

LabSat 3 Wideband is a completely portable, stand-alone unit — no need for a PC. It retains all of the existing features of LabSat 3, including one-touch record and replay. It has an internal rechargeable battery pack with over 2 hours record time, an SD card interface for replaying existing files from a LabSat 3. It has a compact, lightweight form factor, and dual-channel CAN Bus recording.

LabSat 3 is recognized as the most cost effective and intuitive GNSS simulator on the market. The ability to record live sky signals and replay them on the bench allows test engineers to develop products rapidly and with absolute consistency.

**Additional Features**

- Wide bandwidth recording at up to 56MHz
- Three frequency sets / channels
- 4 or 6 bit capture
- Removeable 1 TB SSD hard drive
- SD card interface
- High tuning range to cover all GNSS bands for most applications
- Up to 3 bit I/Q record quantization dependent on channel / bandwidth selection
- Remote control and fast file transfer via Ethernet
- Event marking
- OCXO (Oven controlled oscillator)
LabSat 3 Multi-constellation Simulator

With Robust Software Options

The LabSat 3 multi-constellation simulator by Racelogic is a portable, stand-alone, one touch record and replay device that allows developers looking for realistic signal output to easily record scenarios in the field and replay them in a controlled environment. In addition to the multi-constellation option, there are dual- and single-constellation options. LabSat 3 has completely replaced the prior LabSats, with more features and options for testing.

LabSat 3 is a completely self-contained device — no need for a laptop or PC! This system is capable of recording and replaying multiple raw (base band) satellite navigation RF signals, including GPS, GLONASS, Galileo, BeiDou, QZSS and SBAS. By digitizing and storing the original signals at a high bandwidth when recording, LabSat 3 replays scenarios that include real-world signal artifacts like multipath and signal dropouts for authentic device testing. Choose from six model configurations. A free library of pre-recorded and simulated files is included with each system to get you up and running as quickly as possible.

Introducing LabSat Real-Time

LabSat RT uses real-time GNSS RF signals to play multiple satellite signals from up to two constellations with a current time stamp. If you are developing, testing or selling products incorporating GPS, GLONASS or BeiDou engines, then you’ll find LabSat RT makes your job quicker, easier and more effective. Use the SatGen v3 software to define the position, route, speed, date, and time, as well as the number of satellites included in the data stream. SatGen also gives you the ability to vary the individual carrier to noise levels for each satellite, allowing you to control the data being streamed directly into your device.

With a powerful PC, the system can generate GPS, GLONASS, and BeiDou L1 signals in single-constellation (1- or 2-bit) or dual-constellation signals at 1-bit each.

SatGen v3 Software

SatGen v3 is a multi-constellation, 64-bit simulation software with single-, dual- or triple-constellation scenario creation capabilities. SatGen software allows you to create a GPS RF IQ data file that can be replayed on a LabSat, based on a user-generated trajectory file to simulate almost any kind of test scenario, at a set time and date, anywhere in the world. Take advantage of significant price reductions when you buy the SatGen V3 and LabSat 3 together.

Product details at www.NavtechGPS.com. For more information: 1-800-628-0885; +1-703-256-8900; or info@navtechgps.com.
Septentrio products cover professional, industrial and scientific applications in precise GNSS signal tracking, positioning and navigation. Advanced hardware and sophisticated algorithms provide world-class performance, while well-engineered and standardized interface formats, complemented by an extensive command language, make for wide applicability and easy integration. NavtechGPS® is a distributor of the entire Septentrio line. Most of Septentrio’s products include Septentrio's Advanced Interference Mitigation (AIM+) technology to help mitigate GNSS signal interference. We also carry the full line of heading receivers utilizing IMU MEMS and GPS interferometry for a GNSS-only based heading.

AsteRx4 OEM, Next-Generation Receiver
The AsteRx4 OEM is a multi-frequency, multi-constellation dual antenna receiver that incorporates the latest GNSS tracking and positioning algorithms from Septentrio. The AsteRx4 delivers the highest possible accuracy, scalable to a centimeter, while integrating the entire suite of Septentrio GNSS+ algorithms to maintain tracking during heavy vibration of machines and under difficult ionosphere conditions, and AIM+ to mitigate or reject intentional or unintentional interference with GNSS signals.

AsteRx-U and AsteRx-U Marine
The AsteRx-U and the AsteRx-U Marine are multi-constellation dual antenna receivers that incorporate the latest GNSS tracking and positioning algorithms and interference mitigation. Built around Septentrio’s latest ASIC, the GReCo4, the AsteRx-U features built-in jamming detection and countermeasures, multi-path rejection and fast acquisition. It has over 500 channels to track all available constellations and has many of Septentrio’s special algorithms, including LOCK+ technology to maintain tracking during heavy vibration and IONO+ technology to assure position accuracy even in regions of elevated ionospheric activity.

PolaRx5 and PolaRx5TR Multi-frequency GNSS Reference Receiver
The PolaRx5 is a versatile, robust multi-frequency GNSS reference receiver with built-in Advanced Interference Mitigation (AIM+) technology to filter out intentional and unintentional interference from narrowband signals over high powered pulsed signals to chirp jammers and Iridium interferers. This receiver is also equipped with Septentrio’s patented APME+ multipath mitigation technology to eliminating short delay multipath without the introduction of bias, guaranteeing superior measurement quality. If needed, the user has the ability to activate or deactivate APME+ to obtain completely unmodified measurements.

AsteRx-m2 RTK Receiver
The AsteRx-m2 receiver from Septentrio is a high-performance, ultra-low power, compact RTK receiver. It’s ideal for UAS integration, mobile platforms and demanding industrial applications where power and space are limited. The AsteRx-m2 incorporates AIM, Septentrio’s robust anti-jamming technology.

AsteRx-m2 UAS GNSS Receiver
With Connections for Pixhawk and ArduPilot, the AsteRx-m2 UAS from Septentrio was designed for straightforward integration into UAS applications requiring ultra-low power and centimeter-level RTK positioning. It also features AIM+, advanced onboard interference mitigation technology and eliminates the need for for Ground Control Points.

PolaRx5S Scintillation Receiver
The PolaRx5S generates ultra-low noise scintillation indices and GNSS measurements while logging and streaming data at up to 100 Hz. Its compact and durable housing, low power consumption and open technology make it ideal for rapid and efficient integration into your existing network.

AsteRx-m2a UAS GNSS Receiver
The AsteRx-m2a UAS is designed for easy integration into UAS applications, providing centimetre-level RTK positioning and accurate heading. Standard connectors connect directly to your autopilot (e.g. Pixhawk). You can power the receiver directly from the UAS power bus. Event markers can sync a camera shutter with GNSS time.
Trimble has unique systems and solutions that our customers are looking for. Trimble develops high quality, high accuracy OEM boards and antennas that provide easy integration into your projects, whatever the application. NavtechGPS® is a value added reseller of the entire Trimble high-precision OEM line, including L1, L1/L2, L5, GLONASS, SBAS, Inertial, and more. Trimble products can leverage the strong network of existing community base stations around the globe and support many external sensors via a variety of interfaces available on board many of their OEM products. Product uses included unmanned systems, defense systems, mapping, machine control, asset tracking, mining and much more. Here is a sampling of the Trimble products we offer.

BX992 GNSS Receiver Enclosure (BD992 Receiver Inside)
The Trimble® BX992 has been designed for applications requiring continuous centimeter accuracy in a compact package. By integrating inertial sensors on the same module, robust high accuracy positions and orientations are produced in all environments. The BX992 enclosure is a dual-antenna receiver with and integrated inertial navigation system powered by the BD992-INS. The Trimble BD992 supports triple frequency for the GPS, GLONASS, BeiDou and Galileo constellations. As the number of satellites in the constellations grows the BD992 is ready to take advantage of the additional signals. This delivers the quickest and most reliable RTK initializations for centimeter positioning.

BD970 GNSS System: Compact Low-Power GPS Receiver
The BD970 GNSS system is a compact multi-constellation receiver designed to deliver centimeter accuracy to a variety of applications. With the BD970, OEMs and integrators can be assured their investment is sound today and into the future. The BD970 GNSS receiver supports a wide range of satellite signals, including GPS L2C and L5 and GLONASS L1/L2 signals.

The Trimble® ABX-Two High Performance Compact OEM Sensor
The Trimble® ABX-Two is the successor to the Trimble ABX Series OEM sensors. The ABX-Two provides faster dual-frequency based heading acquisition and an improved positioning engine with additional GNSS signals. In addition, the ABX-Two can support two additional modules that can be used for precise platform position using data from three antennas for full GNSS attitude.

MB-Two GNSS Receiver Module
The Trimble MB-Two is the successor to the MB-One OEM receiver module with an identical form factor for a drop-in replacement to use the latest GNSS innovations. The Trimble MB-Two provides faster dual frequency based heading acquisition and an improved positioning engine with additional GNSS signals. Furthermore, two MB-Two modules may be used for Precise Platform Position (P3) using data from three antennas for full GNSS attitude.

BD940-INS GNSS Receiver
The Trimble® BD940-INS module has been designed for applications requiring continuous centimeter accuracy in a compact package. By integrating inertial sensors on the same module, robust high accuracy positions are produced in all environments. The GNSS components are fully shielded to ensure signals are protected from the sources of EMI on the host platform. The BD940-INS was designed for easy integration and rugged dependability. With the BD940-INS you are buying a robust navigation solution, not just a GNSS receiver. It delivers varying levels of performance down to centimeter level without the use of a base station.

Product details at www.NavtechGPS.com. For more information: 1-800-628-0885; +1-703-256-8900; or info@navtechgps.com.
High-Precision Positioning Solutions

Trimble develops high quality, high accuracy OEM boards and antennas that provide easy integration into your projects, whatever the application. Here are some more great Trimble products.

**Zephyr 3 Geodetic Antenna**
This antenna is recommended for all base station applications. It is also suitable as a fixed rover antenna for use in high multi-path environments. It offers technology for multipath reduction, outstanding low elevation satellite tracking and sub-millimeter phase center stability. The Trimble Zephyr 3 antennas offer full support for current and near-future GNSS signals including GPS, GLONASS, Galileo, BeiDou, OmniSTAR, Trimble RTX and SABS.

**Trimble AV59 Aviation GNSS Antenna**
The AV59 is designed to support centimeter level accuracy for aerial, land and marine applications. The bulkhead mounting supports use in rugged environments and resists unwanted signal interference or multipath, which can cause inaccurate measurements. The aviation design and bulkhead mounting ensure that only the rugged radome is exposed to the elements, which is ideal design for machine control systems.

**The Trimble LV59 Aviation GNSS Antenna**
The LV59 aviation GNSS antenna has been designed to support centimeter level accuracy for land and marine applications. The rugged 5/8” x 11 female threaded mount and all aluminum base allows the antenna to be used in the most rugged of environments.

**The Trimble AV37 GNSS and L-Band Aviation Antenna**
The Trimble AV37 Aviation Antenna has been designed to support centimeter level accuracy for airborne applications and track SBAS signals all in one compact design. It is fully certified by the FAA for aircraft installations. Mapping and surveying from the air using GNSS requires survey grade antenna technology in a compact and reliable form factor. The Trimble AV37 GNSS Aviation antenna achieves this without compromising performance.
VectorNav Technologies

VectorNav Technologies is a leading developer and manufacturer of high performance inertial navigation systems using the latest in MEMS sensor and GPS/GNSS technology, including miniature MEMs Inertial Measurement Units (IMUs), Attitude Heading Reference Systems (AHRS), inertial sensors, and GPS-aided INS. VectorNav brings high performance aerospace filtering and calibration techniques into the world of low-cost industrial grade MEMS sensors, expanding the possibilities of today’s MEMS sensor technology. VectorNav has unique expertise in applying the digital filtering and sensor calibration techniques that have multiple decades of heritage in Aerospace applications to the state-of-the-art in MEMS inertial and GPS/GNSS technology. Ask us about available development kits! (VectorNav continued on next prior page.)

Introducing the VectorNav Tactical Series: VN-110, VN-210, VN-310

The VectorNav Tactical Series is a next-generation, MEMS inertial navigation platform that features high-performance IMU, AHRS, GPS/INS and GPS-compass solutions. Featuring a tactical-grade IMU core housed in a robust and compact aluminum enclosure, the Tactical Series leverages VectorNav’s industry leading navigation algorithms to offer a new class of inertial navigation solutions.

Key Benefits

- < 1°/hr in-run gyro bias stability
- < 2 mrad attitude performance
- IP 68 rated enclosure designed to meet DO-160G
- Software compatible with existing VectorNav products
- Expansion port for connectivity to external sensors
- 4 GB onboard memory for data logging
- Made in the USA

The VectorNav Tactical Series has been designed from the ground up to offer robust inertial navigation solutions for a wide range of applications and operating environments. The Tactical Series is well suited for Size, Weight, Power and Cost (SWaP-C) constrained systems in the aerospace, military, marine, and other industries.

High-Accuracy GPS Heading and Position: Introducing the VN 360 GPS-Compass

VectorNav introduces the VN-360 GPS-Compass, a surface mount module that provides an accurate, True North heading solution for systems integrators seeking a reliable alternative to magnetic-based sensors.

Incorporating two onboard GNSS receivers, the VN-360 measures the relative position between two connected GNSS antennas to calculate a heading solution that is an order of magnitude more accurate than a magnetic compass. The VN-360 also incorporates a set of 3-axis gyros and accelerometers that provide pitch & roll measurements and enable the VN-360 to output a continuous heading solution through a temporary loss of GPS.
VectorNav Technologies is a leading developer and manufacturer of high performance inertial navigation systems using the latest in MEMS sensor and GPS/GNSS technology, including miniature MEMS inertial measurement units (IMUs), attitude heading reference systems (AHRS), inertial sensors, and GPS-aided INS. VectorNav brings high performance aerospace filtering and calibration techniques into the world of low-cost industrial grade MEMS sensors, expanding the possibilities of today’s MEMS sensor technology. VectorNav has unique expertise in applying the digital filtering and sensor calibration techniques that have multiple decades of heritage in Aerospace applications to the state-of-the-art in MEMS inertial and GPS/GNSS technology. Ask us about available development kits!

VN-300 Dual Antenna GPS-Aided INS
The VN-300 is a miniature Dual Antenna GPS-Aided Inertial Navigation System (GPS/INS) that provides GPS heading and roll and pitch backed by MEMS 3-axis sensors for an off-the-shelf, high-performance inertial navigation sensing solution. With the latest MEMS sensor technology, the VN-300 combines 3-axis accelerometers, gyros, magnetic sensors, a barometric pressure sensor and two GPS receivers into a lightweight, robust aluminum enclosure. Now also available in a surface-mount (OEM) package.

VN-200 OEM SMD Inertial Navigation System
The VN-200 OEM (also known as the VN-200 SMD Inertial Navigation System) is a miniature, surface mount, high-performance GPS-Aided Inertial Navigation System (GPS/INS). Incorporating the latest MEMS sensor technology, the VN-200 OEM combines 3-axis accelerometers, gyros, magnetic sensors, and an optional barometric pressure sensor into a lightweight, robust aluminum enclosure.

VN-200 Rugged™ INS
The VN-200 Rugged (also known as the VN-200 Rugged Inertial Navigation System) is a miniature GPS-Aided Inertial Navigation System (GPS/INS) that provides an off-the-shelf, high-performance inertial navigation sensing solution. Incorporating the latest MEMS sensor technology, the VN-200 Rugged combines 3-axis accelerometers, gyros, magnetic sensors, a barometric pressure sensor and a high-sensitivity GPS receiver into a lightweight, robust aluminum enclosure.

VN-100 SMD Orientation Sensor
The VectorNav VN-100 OEM (also known as the VN-100 SMD orientation sensor) is a miniature, surface mount, high-performance inertial measurement unit (IMU) and attitude heading reference system (AHRS). Incorporating the latest MEMS sensor technology, the VN-100 OEM combines 3-axis accelerometers, gyros, magnetic sensors, and an optional barometric pressure sensor into a miniature surface mount module.

VN-100 Rugged™ Orientation Sensor
The VN-100 Rugged (also known as the VN-100 Rugged orientation sensor) is a miniature Inertial Measurement Unit (IMU) and Attitude Heading Reference System (AHRS) that provides an off-the-shelf, high-performance inertial sensing solution. Incorporating the latest MEMS sensor technology, the VN-100 Rugged combines 3-axis accelerometers, gyros, magnetic sensors, and an optional barometric pressure sensor into a lightweight, robust aluminum enclosure.
Interference Mitigation and Detection

Because signal jamming can render your GPS useless, these new products for jammer detection and location, and interference mitigation can be invaluable. 

NavtechGPS® carries a line of easy to use handheld GPS jammer detectors from Chronos Technology, as well as a number of receivers with built-in interference mitigation and detection from quality companies like NovAtel and Septentrio. Contact us about your needs, so we can recommend the best solution for your application.

Heading and Attitude Systems

Do you need accurate heading or attitude measurements? We have a line of products for that. Do you need an OEM or boxed solution? We can recommend the right product for your needs. We carry single- and dual-frequency heading and attitude systems from leading manufactures that include Hemisphere GNSS, NavCom, NovAtel, Septentrio and Trimble. These systems have a range of sizes, antenna types and prices. Let us know what your application is, and we will recommend a solution.

Small Antennas for Unmanned Aerial Vehicles (UAVs)

NavtechGPS® carries a variety of antennas that are ideal for use in UAVs. For example, Tallysman Wireless offers a range of precision housed and embedded GNSS antennas that are optimized for use in autonomous systems, (UAV & UAS, UGVs, USVs, and inertial navigation systems where low weight, small size and low power are absolute requirements. Tallysman technology incorporates its dual feed Accutenna™ technology, which provides a circular response over the entire bandwidth, resulting in excellent cross polarization rejection and superior multi-path signal rejection. The net result is increased accuracy of position. Tallysman’s OEM (embedded) antennas are available with different connectors and custom cable lengths. Contact NavtechGPS to find just what you need.
FREEWAVE Spread Spectrum Radios and Board-Level Products

The FGR2 series represents the next generation of the new spread spectrum radio modems from FreeWave, allowing customers to incorporate cost-effective wireless communications into a variety of applications. Offered as both a board-level product and in an enclosure, the FGR2 provides tremendous flexibility for use in applications ranging from oil and gas to golf carts, water systems and more. The FGR2 is also backward compatible with the FGR and DGR series. NavtechGPS® offers the FGR2 as a board-level product or in an enclosure with a mounting shoe. No license is required for use within the United States.

In addition to one of the best spread spectrum packaged radios in the industry, FreeWave also has an extensive line of OEM radios and antennas, such as the FreeWave MM2 900 MHz mini data radio. Call us for more on these products.

Pacific Crest Radios and Modems

NavtechGPS® carries the complete line of Pacific Crest Advanced Data Link (ADL) modules and accessories, including the XDL Rover 2, for wireless precise positioning and remote sensing. These broad spectrum transceivers offer up to 35 Watts of power and over-the-air link rates as high as 19,200 bps. The rapidly growing line of ADL products include: the ADL Vantage Pro, a 35-Watt programmable UHF radio; the ADL Vantage, a 4-Watt programmable UHF radio for survey applications; the ADL Sentry, a 4-Watt radio for remote sensing and monitoring environments; the ADL Foundation, a transceiver OEM board; the ADL RXO, a receive-only OEM board; the ADL Uplink, a ruggedized handheld computer that streams Internet-based RTK corrections to a radio for rebroadcast into areas of poor cell coverage, and the XDL Rover 2, a lightweight, ruggedized UHF receiver for communications between 403 and 473 MHz in 25 kHz channels. Let us help you select the best option for your project.

TerraStar: Freedom from Base Stations!

NavtechGPS® is an authorized reseller of the TerraStar® satellite-based differential correction service. TerraStar® provides data services which enable accurate and efficient positioning solutions. These solutions are delivered in partnership with leading GNSS receiver manufacturers. The main service is based on precise point positioning, or PPP, which delivers an accuracy of a few centimeters globally using just a single receiver and without the need for a dedicated communications channel. TerraStar® is available worldwide and eliminates reliance on base stations for accurate positioning. Subscription options are available for different areas of the planet, levels of accuracy and different durations. NavtechGPS sells TerraStar-ready equipment from NovAtel and Septentrio. We can help you decide which subscription option you will need.

Hemisphere® AtlasLink™ and Atlas

AtlasLink™ is a versatile multi-frequency smart antenna from Hemisphere GNSS that is preconfigured to receive corrections from the new Atlas GNSS global correction service. AtlasLink offers Hemisphere GNSS’s Athena GNSS engine; L-Band 10 cm corrections; L1 L2, RTK; a powerful Web user interface accessible via WiFi; Built-in internal memory for data logging, download and upload, and an enclosure for the most aggressive user scenarios.
Antennas

Chances are, NavtechGPS® has an antenna for your application and can match an antenna to your receiver. We carry antennas by Antcom, PCTel, Panasonic, Hemisphere, navXperience, NovAtel, Tallysman and others. We stock a wide variety of single and dual frequency and multi-constellation antennas.

Leading Edge Antennas for an Array of Applications

Antcom excels in the design, development, manufacture and testing of a wide range of antenna and microwave products. We deliver leading edge solutions to customers developing applications for the agricultural, aviation, military, ground, marine, and space industries. Our extensive antenna product line includes Global Navigation Satellite System (GNSS) antennas as well as those with frequencies ranging from 100 MHz to 12 GHz. Whatever your antenna requirement — UHF, Iridium, Globalstar, InMarSat, Thuraya, XM, ICO, Video/Data Link or L/S/C/X-Band — we have the ideal solution for your unique application.

High Performance, High Quality GNSS Antennas

Tallysman Wireless is a developer of high performance, dual-feed, quality GNSS antennas. The line includes precision grade GPS, GLONASS, Galileo, Globalstar, Iridium, SBAS, L-band (OmniSTAR®, StarFire™, DGPS) and custom global positioning antennas, which meet or exceed industrial and military specifications.

Tallysman patented VeraPhase technology introduces extremely high performance in a light weight package across the full bandwidth of the antenna. The VeraPhase™ is lighter, smaller and more economical than most traditional choke ring antennas.

The VeraChoke 6100 is a full GNSS spectrum antenna with consistent performance (gain, axial ratio, PCV, and PCO) across the full bandwidth of the antenna, low axial ratios and exceptional front to back ratios. The VC6100 is compatible with both large and small SCIGN radomes.

navXperience New Rugged, Light & Accurate GNSS Antenna

These next-generation GNSS antenna products have been developed by navXperience with a future-proof technology that meet or exceed phase center eccentricity standards of up to 1 mm. The navXperience 3G+C antennas offer superior performance and durability for many applications, including reference (surveying), agriculture, navigation, marine and machine control.
Engineering/Development Software

NavtechGPS® has the navigation simulation and analysis software you need — in stock and ready to ship. Give us a call.

INS Toolbox 3.0™ for MATLAB® from GPSoft®
An official MATLAB® partner product, GPSoft® expanded on the highly successful SatNav Toolbox™ with the INS Toolbox for MATLAB®. The INS Toolbox provides the necessary functions to emulate a wide variety of inertial sensors from RLG's and FOG's down to MEMS sensors via user-defined sensors errors such as biases, scale factor error and noise. The INS Toolbox is fully compatible with the GPSoft SatNav Toolbox and both are utilized in GPSoft’s Navigation System Integration & Kalman Filter Toolbox.

SatNav Toolbox 3.0™ for MATLAB® from GPSoft®
Now the power of the SatNav Toolbox is extended with real data processing! Import ephemeris and measurement data (pseudorange and carrier-phase) in RINEX2 format. Perform simulations in your lab or office right now! GPSoft® has applied the power of MATLAB® to GNSS (Global Navigation Satellite System). This toolbox allows the user to emulate the C/A-code on L1, L2, L5 and any other user defined frequency. In addition, the toolbox can be used to simulate P-code on L1 and L2. Also with support for Galileo!

Navigation System Integration & Kalman Filter Toolbox™ for MATLAB® from GPSoft®
This toolbox extends the capabilities of the GPSoft® SatNav and INS toolboxes by providing the Kalman filter algorithms used to achieve maximum performance. Among these are GPS stand-alone 8-State and 11-State extended Kalman filters, inertial error modeling in state-space, loosely integrated INS/GPS Kalman filters.

GPS Toolbox Software for MATLAB® from L3NAV
GPS Toolbox v5 is a library of MATLAB® M-file modules and programs used for the implementation of GPS applications. GPS Toolbox enables you to simulate a specific GPS application quickly and easily without the need to code and test the basic GPS algorithms.

M-KF Toolbox Software for MATLAB® from L3NAV
M-KF Tool is a library of MATLAB® M-file modules and main programs for the implementation of discrete Kalman filtering applications. Simulate a specific application quickly and easily without the need to code and test the basic Kalman filtering algorithms or to provide direct hookups to individual receivers.

RINEX & SP3 (RAS) Software Toolbox for MATLAB®, L3NAV
The GPS RINEX and SP3 Software Toolbox for MATLAB® is a library of m-file modules and programs performing basic data processing frequently encountered in GPS RINEX and SP3 related engineering calculations. The user can modify existent m-files to suit a specific application without the need of implementing elementary building blocks that are included in this toolbox.

Coordinate Transformations (CT) Software Toolbox for MATLAB® from L3 NAV
The key features of this toolbox are the UTM and UPS coordinate transformations: A low cost solution for coordinate transformation. Additional features include angle transformations, point coordinate transformations, matrix coordinate transformations, vector coordinate transformations and flexible modules, ready to be incorporated in user’s applications.