NAVHUB™-200 GNSS NAVIGATION SYSTEM

NAVIGATE WITH CONFIDENCE WITH ASSURED PNT

For military surface mobility, Collins global navigation satellite system (GNSS) equipment is unsurpassed. We designed our Collins NavHub™-200 GNSS navigation system for the fast-moving, demanding combat environments of both ground and maritime platforms. NavHub provides the navigational capabilities, interfaces and upgrade path to ensure long term supportability of the system during future operations.

Employing our next-generation position, navigation and timing (PNT) technology, NavHub-200 offers an integrated navigational solution based on current GNSS technologies. Foundational to the system is the Selective Availability Anti-Spoofing Module (SAASM)-based GPS receiver, which is compliant with the U.S. Global Positioning Systems Directorate GB-GRAM standard.

NavHub, along with the SAASM receiver, includes:

- Simultaneous L1 and L2 dual-frequency GPS signal reception
- 12 channels L1/L2 all-in-view navigation
- 24-channel Pseudo Range, Delta Range and Carrier Phase software available (optional)
- Extended capabilities in a jamming environment
  – 54 dB while tracking
  – 41 dB Direct Y acquisition
- Next-generation security architecture provided by the key data processor
- Unclassified-when-keyed operation
- Black-key capable for Over-The-Air-Rekeying (OTAR), when available
- Upgrade path to M-Code, Galileo and other GNSS solutions*
- Road map: Future upgrade to a hybrid navigation solution with integrated IMU
- Advanced integrated timing source

KEY FEATURES AND BENEFITS

- NavHub-200 is available in ITAR or non-ITAR versions
- Calculated mean time between failures (MTBF) is greater than 15,000 hours
- Improved EMI/EMC and fully compliant with military vehicle environmental standards, with an ingress protection rating of IP67
- Supports PLGR and DAGR standard interfaces via two Mil-C-26482 connectors, allowing direct replacement of PLGR or DAGR receivers with no changes of interface required
- Third connector supports enhanced features and input/output interfaces
- SAASM security (expansion to M-Code)
- Simultaneous L1 and L2 dual-frequency GPS signal reception
- Improved performance due to aggressive acquisition/reacquisition strategies, typical cold start without time, position or almanac in less than 110 seconds from complete OFF

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KEY FEATURES AND BENEFITS, CONTINUED

- Extended performance in a jamming environment
  (e.g., 41 dB while tracking and 24 dB during initial acquisition)*
- Area navigation with waypoint storage (999 waypoints; 15 routes)
- User setup of units, datums and coordinate systems
- Receiver Autonomous Integrity Monitoring (RAIM)
- Embedded high stability time reference***

NavHub-200 provides mission-specific, tailorable solutions for vehicle, maritime or weapon system applications. Its proven design meets desired GNSS, mission and platform connectivity needs and supports the projected life of the host platform.

Its two receiver card slots enable users to select from a variety of GNSS solutions. These can be tailored to meet user requirements through the installation of one or two GNSS receivers from third-party providers. The receivers provide the following capabilities:

- GPS SAASM (P/[Y] Code)
- GPS Open Service (C/A Code)
- GNSS Multi-Constellation, Open service*
- GPS M-Code*
- Galileo PRS*

These capabilities enable vehicle and maritime platform original equipment manufacturers to select a navigation device that meets the needs of particular customers from either an export point of view, a national GNSS mandate (Galileo PRS, GLONASS or M-Code) or a mission-specific point of view (such as low-intensity peacekeeping operations, through to high jamming threat combat environments).

With NavHub-200, a single unit can be adapted, enhanced, updated and supported throughout the life of the host platform. It can accommodate selected GNSS devices, as required to support mission needs throughout the life of a mixed platform fleet. This approach simplifies design, manufacture, logistics, accounting and long-term support.

NavHub-200 provides all interfaces necessary to enable further navigational augmentation, through the integration of additional external sensors (such as IMUs, magnetic sensors or odometers) to enhance performance and to provide Assured PNT in GNSS-challenged and denied environments.

The system also supports both DGPS and RTK operations where necessary and can host specific software to meet these requirements.** Designed with advanced interfaces for modern military vehicles, NavHub-200 is an ideal solution for legacy vehicle upgrade programs as well as new advanced combat vehicle, maritime or weapons platforms.

Specifications subject to change without notice.

PHYSICAL CHARACTERISTICS

Size/volume	235 mm x 94.6 mm x 66.5 mm (9.25 in x 3.72 in x 2.62 in) (L x W x H)
Weight	<1.7 kg
Power	Vehicle operating 9 VDC to 32 VDC <10 W
Temperature storage	–46° C to 71° C
Operating	–40° C to 60° C
Humidity	20° C to 49° C (85% to 95%)
Altitude	–400 m to 3500 m

SIGNAL INTERFACES

- All input/output signals galvanic isolated
- One Ethernet interface (contact us for available protocols)
- Web interface over Ethernet for simplified command and control via use of a web browser
- One CAN-Bus interface (for future use)
- One USB 2.0 interface (for maintenance only)
- Five independent galvanic isolated RS232 interfaces
- Five independent galvanic isolated RS422 interfaces
- DS-101/DS-102 key loading
- 1PPS input (ref. ICD-GPS-153)
- 1PPS and 10PPS output (ref. ICD-GPS-153)
- HAVE QUICK (SS-110990 and ICD-GPS-060)
- RTCM 194-93/SC 104 differential GPS correction data input
- Odometer interface compliant (for future use)

ANTENNA

- NavHub-200 provides an output voltage of 5 VDC for active external antennae (current: <60 mA at the antenna) – an optional second antenna port/antenna can also be fitted
- Optional CRPA AJ antennas available for NavHub-200

PART NUMBERS

- NavHub-200 – Collins Aerospace part number with Non-ITAR SPS (Standard Positioning Service) receiver: 224-2250-001
- NavHub-200 – Collins Aerospace part number with SAASM ITAR PPS (Precise Positioning Service) receiver: 224-2200-002
- Please contact us for information on available accessories

*Subject to future third-party receiver availability and qualifications
**Future optional software dependent upon type of receiver(s) or sensor(s) used
***Future roadmap enhancement. Contact us for availability.

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