

NavStorm™+ GPS Receiver

Battlespace accuracy

Trusted military GPS for weapons and artillery

In today's unpredictable battlespace, launching weapons safely and accurately is critical to mission success. NavStorm™+ is the premier gun-hard integrated GPS and anti-jamming system

in the combat-proven family of BAE Systems' weapons receivers.

Leveraging over 45 years of military GPS experience and advanced technical expertise in anti-jamming and high-g microelectronics, BAE Systems provides you with a g-hardened GPS receiver for your military needs.

NavStorm+ is a 24-channel, dual-frequency, all-in-view receiver capable either as a stand-alone system or integrated with an Inertial Navigation System (INS). Powered by state-of-the-art technology, NavStorm+ provides enhanced direct-Y acquisition, built-in digital nulling for high-jamming immunity, and fast initial acquisition.



Key features and benefits

- Military encrypted GPS for weapons
- <2 m position accuracy (typical with aiding)
- Small form factor (2.8 in)
- Artillery/gun hardened up to 20,000 g-shock
- > Single die SAASM with KDP (GPS directorate approved)
- 24 channels with all-in-view, dual-frequency (L1/L2) track, and navigation (software upgradeable to 48 channels)
- Fully integrated digital anti-jamming electronics with up to five RF inputs (>92 dB J/S while tracking)
- Alternate frequency sensing while nulling
- Fast direct-Y code acquisition (<8 sec, nominal)
- High speed serial interfaces

Small size, high accuracy

Small in size yet highly reliable and accurate, the NavStorm+ is specifically designed to meet the tight size, weight, power, and cost (SWaP-C) requirements of weapons – especially in gun-hardened applications and spinning environments. The NavStorm+ delivers precise GPS navigation either as a stand-alone system or when integrated with an INS.

Precise

This integrated receiver offers full Precise Positioning Service (PPS) accuracy and its simultaneous L1/L2 operation provides real-time ionosphere corrections for further accuracy enhancements. Its primary communication interface is a high-speed LVCMOS serial port. The integrated anti-jamming solution utilizes digital nulling for improved jamming immunity. Additionally, this system has an Ultra Tight Coupling (UTC) unit interface option that improves both anti-jamming performance and navigation accuracy.

Growth path

Scalable RF design and field-programmable software eases maintenance, provides a growth path, and reduces life-cycle cost for use in ever-changing jamming environments. Delivery is assured by using common critical components, processes, and manufacturing lines that deliver over 100,000 Selective Availability Anti-Spoofing (SAASM)-based GPS receivers per year.



Delivers precise GPS navigation

System characteristics

Receiver	L1 frequency, C/A and P or Y code* L2 frequency, P or Y code* SAASM architecture Field-reprogrammable software
Dynamics	>10 g acceleration Supports spinning applications
TTFF	<8 sec (conditions apply)
Time accuracy	<±30 nanoseconds RMS
Position accuracy	<3 m CEP* <2 m typical with aiding* Up to 25 Hz PVT solution update rate 1 Hz pseudo range, delta range update rate
Velocity accuracy	<0.07 m/sec RMS typical
Crypto key	Serial port, SKL CYZ-10

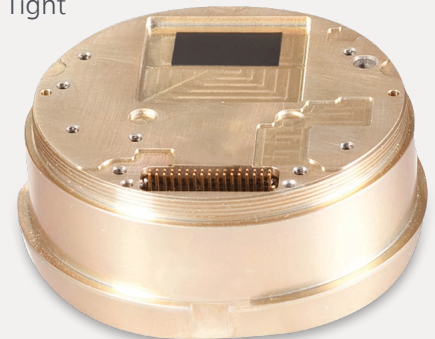
Reliability

- Comprehensive built-in-test
- Supports data hold (up to 8 min)
- Field clock recalibration for extended storage
- Storage life >20 years

Interfaces

- One or two RF antenna inputs (L1/L2)
- Primary power, auxiliary power
- Serial host control – LVCMOS (RS-232), up to 230 Kbaud
- Host controlled Ultra Tight Coupling (UTC)
- DS-101
- 1/10 PPS CPS or UTC
- Discretes for GPS programming
- KDP programming, key zeroization

Power	<5.0 W (depending on RF configuration)
Weight	8.8 oz (250 g)
Size	2.8 D x 1.1 in. H (71.12 x 27.94 mm)
Temp range	-45°C to +85°C (operating) -62°C to +95°C (storage)
Shock	Up to 20,000 g



* Export of Precise Positioning Service (PPS) units is authorized for GPS Memorandum of Understanding countries only. PPS security modules must be obtained through Foreign Military Sales (FMS) procurement.

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