

NavFire™-I GPS receiver



Trusted military GPS for weapons and artillery.

In today's unpredictable battlespace, launching weapons safely and accurately is critical to mission success. NavFire™ is the smallest integrated military Global Positioning System (GPS) and Anti-Jam system in the proven family of Rockwell Collins gun hardened receivers for weapons.

Leveraging over thirty years of military GPS experience and advanced technical expertise in anti-jamming and high-G microelectronics, Rockwell Collins provides you with a 40 mm 25,000 G-hardened GPS receiver for your military needs.

NavFire 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, NavFire provides enhanced Direct-Y acquisition, built-in digital nulling for high jamming immunity and fast initial acquisition.

KEY BENEFITS AND FEATURES

- › Military encrypted GPS for weapons
- › <2m position accuracy (typical with aiding)
- › Small form factor (40 mm)
- › Artillery/gun hardened up to 25,000 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-jam electronics with dual RF inputs (>86 dB J/S while tracking)
- › Fast direct-Y code acquisition (<6 sec, nominal)
- › High speed serial interfaces
- › Low-cost flexible applications (artillery/UAVs)

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Collins**

Building trust every day

SMALL SIZE, HIGH ACCURACY

Small in size yet high in accuracy and reliability, the NavFire™ is a cost-effective system specifically designed to meet the mission needs of gun-hardened applications. The NavFire 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. 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-jam solution utilizes two-element digital nulling for improved jamming immunity. Additionally, this system has an Ultra Tight Coupling (UTC) unit interface option that improves both anti-jam performance and navigation accuracy.

GROWTH PATH

Scalable RF design (one or two channels) 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.

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 GPS or UTC
- Discrettes for GPS programming
- KDP programming, key zeroization

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	<6 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 psuedo range, delta range update rate
Velocity accuracy	<0.07 m/sec RMS typical
Crypto key	Serial port, SKL, CYZ-10

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

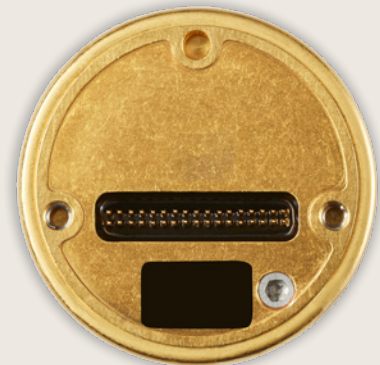
RELIABILITY

- Comprehensive Built-In-Test
- Supports data hold (up to 8 min)
- Field clock recalibration for extended storage
- Storage life >20 years

PHYSICAL CHARACTERISTICS

Power	<2.8 W
Weight	2.8 oz (80 g)
Size	1.64" D x 0.95" H (41.73 mm x 24.13 mm)
Temp range	-45°C to +85°C (-49°F to +185°F) (operating) -54°C to +85°C (-65°F to +185°F) (storage)
Shock	Up to 25,000 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.



NavFire-I back view

Building trust every day.

Rockwell Collins delivers smart communication and aviation electronic solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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