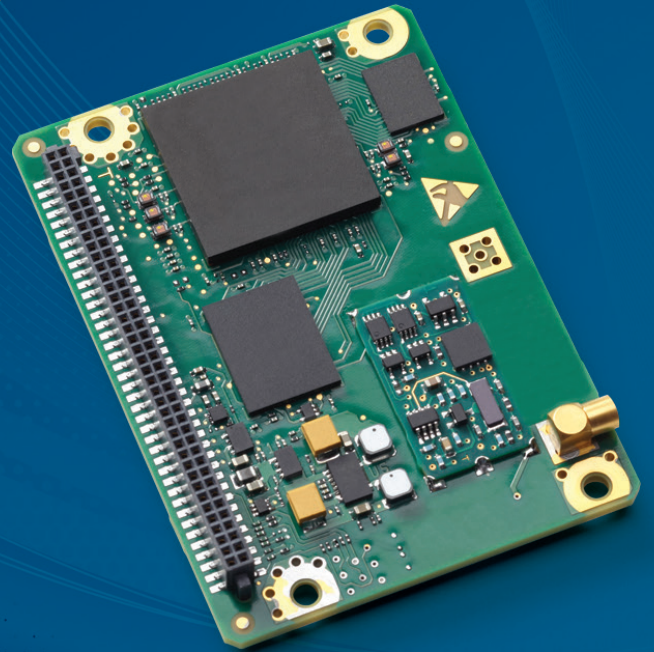


MPE™-S Type II GPS Receiver



MPE-S Type II is the only fully compliant GB-GRAM Type II receiver.

Today's warfighters must be prepared to find their way in unfamiliar environments. Enhanced situational awareness allows them to adapt more quickly than the enemy. Rockwell Collins' proven U.S. Army Standard Embedded Receiver, Ground Based GPS Receiver Application Module (GB-GRAM) family of products facilitates surface mobility, augmenting alertness and preparedness.

Smaller and lighter weight than its predecessor version, MPE™-S, yet retaining all functionality, Rockwell Collins' Miniature PLGR Engine-SAASM (MPE-S) Type II delivers geolocation and precise positioning capabilities for military navigation, tactical communications, battlefield computing and other Command, Control, Computers, Communication and Information (C4I) equipment. At its core, the MPE-S contains the Selective Availability Anti-Spoofing Module (SAASM). SAASM encapsulates all classified data and signal processing into one tamper-proof module, increasing the security of the MPE-S.

KEY FEATURES

- › Trusted SAASM-based military GPS*
- › Fully backward compatible with GB-GRAM Type I (MPE-S)*
- › Small size (1/2 MPE-S). Same mounting
- › GPS Directorate approved*
- › High integrity signal quality*
- › Anti-jamming and anti-spoofing for GPS-degraded environments*
- › All-In-View navigation with 12 tracking channels
- › Direct-Y code acquisition
- › Unclassified when keyed operation
- › Hardware supports 36 channels

*Not available with consumer-grade commercial GPS receivers

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KEY FEATURES (MPE-S)

- Small serial interface (SSI) Ground Based GPS Receiver Application Module (GB-GRAM) Type II compliant
- Selective Availability Anti-Spoofing Module (SAASM) security
- Field reprogrammability of the receiver application software
- 12-channel continuous satellite tracking for true All-In-View operation
- Simultaneous L1 and L2 dual frequency GPS signal reception
- Aggressive acquisition/reacquisition strategies to improve performance and reduce power consumption
- Cold start without time, position or almanac in less than 110 seconds from complete OFF
- Extended requirements in a jamming environment
 - 54 dB while tracking
 - 41 dB Direct Y acquisition
- Area navigation with waypoint storage
- User setup of units, datums and coordinate formats
- Mature, proven GPS technology
- Cryptographic key retention when not powered
- SPS & M-Code on product roadmap
- 24 channel pseudorange, delta range and carrier phase (option)

BACKWARDS COMPATIBLE

The Type II version of the Rockwell Collins MPE-S is backwards compatible for current users of the MPE embedded GPS receiver. The familiar 80-pin I/O connector and robust MMCX RF connector will be easily recognizable for current users. The signal pin-out of the I/O connector is identical with the Type I version of the MPE-S. While the physical size has been reduced to 2.45" x 1.76" x 0.285", the connector location remains the same relative to the edge of the board. This allows for economical upgrade to an embedded SAASM-based receiver.

DUAL FREQUENCY RF

An advanced dual frequency RF front end allows continuous track of both L1 and L2 GPS satellite frequencies. Even when turned off, a precision accuracy, low power, time source runs continuously to allow rapid acquisition of the GPS satellites when the receiver is turned on. Of course, all this capability requires only a single 3-volt power source.

SPECIFICATIONS

System characteristics

Dynamics	Velocity: 1,200 m/sec maximum* Acceleration: 9 g maximum
Time accuracy	100 nanoseconds
Position accuracy	SDGPS: <2 meters CEP* WAGE: <4 meters CEP* PPS: <12 meters CEP*
Acquisition time	TTFB <10 sec hot start, (prob >95%) <85 sec warm start (C/A handover) TTSF <18 sec, probability >95% (Stby <15 min) TTSF <25 sec (Stby <60 min) TTFB <70 sec (Direct-Y warm start) (Off <60 min)
Velocity accuracy	0.04 m/sec steady rate (3D 95%)
Coordinate system	28 predefined
Datums	233 predefined, 6 user-defined
Storage capacity	999 waypoints, 15 reversible routes

INTERFACES

- Connectors
 - Power and data (SAMTEC P/N SFM-140-L2-S-D-LC)
 - RF Input (Huber Suhner P/N 85MMCX-50-0-1/III)
- HW Interfaces
 - Three (3) independent serial data ports (full duplex)
 - Two (2) low power CMOS serial data ports
 - One (1) standard RS-232 serial data port
 - IS-GPS-153
 - NMEA-0183 data output
 - 1PPS input
 - Three independent 1PPS/10PPS configurable outputs
 - L1/L2 active RF antenna port, 3.3 V dc
 - DS-101 and DC-102 key loading, zeroize discrete
 - HaveQuick (SS-110990 and ICD-GPS-060A compliant)
 - RTCM 194-93/sc 104 differential GPS correction input

PHYSICAL CHARACTERISTICS

Power	Operating : +3.3 V dc, 0.7 W typical Keep alive: +3.0 V dc to +6.0 V dc, 4 mW typical
Weight	1.4 oz [40 gm] nominal
Size/volume	2.45" x 1.76" x 0.285" maximum (6.2 cm x 4.5 cm x 0.724 cm)
Temperature range	-40°C to +85°C operating -55°C to +85°C storage

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

** 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.*

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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