

Polaris™ Link

Ruggedized commercial GPS receiver

Delivering highly reliable GPS technology across multiple platforms.

Polaris™ Link is a ruggedized commercial GPS receiver used to deliver critical data across multiple platforms. This commercial receiver provides the designers of host application equipment and systems with a Standard Positioning Service (SPS) version of their products without the cost of a full redesign or qualification. The small size and features make it ideal for command and control, handheld computers, vehicles, and other platforms that operators are seeking to integrate a ruggedized GPS capability.

Our PolarisLink receiver is intended for use in multiple federal, civilian, Department of Defense, and international platforms requiring SPS real-time GPS data. The receiver is completely interchangeable both with the MPE-S (SAASM) receiver and with the U.S. Army's standard embedded Ground-Based GPS Receiver Application Module (GB-GRAM), except for Precise Positioning Service (PPS) functions providing continued support to current users of legacy MPE™ family of embedded receivers.



By utilizing the same 80-pin I/O connectors and robust MMCX RF connector as prior versions of the MPE, this receiver provides a user-friendly, economical upgrade to our current 12-channel receiver technology.

A low-power time source is able to run continually, even when the device itself is powered off, to allow for rapid acquisition of GPS satellites when the receiver is turned back on. All capabilities require only a single 3.3-volt power source.

Features and benefits

- Built to the same standards as the BAE Systems' MPE-S and GB-GRAM, PolarisLink is interchangeable in all original Type-I form factor integrations for ease of use and high levels of accuracy
- Design is compatible with the U.S. Army Standard Embedded Small Serial Interface (SSI) form factor GPS receiver for commonality
- Tested to military standards for environmental conditions including temperature, vibration, and shock allowing users to be confident in the sensor's reliability
- Three independent serial interfaces with precise time pulse outputs allow users to connect three different devices and switch between them with ease
- 12-channel continuous satellite tracking for true all-in-view operation and advanced accuracy
- Field reprogrammable to allow easy updates of application software
- Typical cold start without time, position or almanac in less than 100 seconds from complete OFF so users do not have to worry about delays
- Area and route navigation uses stored waypoint sequences for increased accuracy
- Provides advanced correlator engine accelerated acquisition capabilities to enhance the SPS functionality

Ruggedized commercial miniature GPS engine card



System performance

Frequency	L1 - C/A
Acquisition time	TTFF <90 sec (warm start), (prob >95%) TTFF <100 sec (cold)
Position accuracy	LADGPS: <3 m typical horizontal SPS: 7.8 m CEP
Velocity accuracy	0.4 m/sec static (3D 95%) GPS time accuracy 111 nanoseconds
Coordinate system	28 predefined
Datums	233 predefined, 6 user defined
Storage capacity	999 waypoints, 15 reversible routes

Physical characteristics

Power	Operating: +3.3 VDC, less than 0.7W typical Keep alive: +3.0 VDC to +6.0 VDC, 2mW typical
Weight	2.5 oz (70 gm) nominal
Size/Volume	3.4" x 2.45" x 0.6" maximum (8.6 cm x 6.2 cm x 1.6 cm)
Temperature range	-40°C to +85°C operating -55°C to +85°C storage
Altitude (operating)	10,000M
Velocity (operating)	515 m/s

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)

Hardware 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
- ICD-GPS-153 compliant
- NMEA-0183 (ver 3.01) data output
- 1 PPS input
- 3 configurable PPS outputs (1PPS UTC, 1PPS T-Mark, 10 PPS)
- L1 active RF antenna port, 3.3 V DC
- Have Quick
- RTCM 194-93/SC 104 differential GPS correction data input

Selection guide

Receiver type	Description	Part number
12-channel embedded SPS	Commercial miniature GPS engine card	987-8760-00X

For more information contact:

BAE Systems

P. O. Box 868
Nashua, New Hampshire 03061-0868

W: baesystems.com/gps

Cleared for open publication on 00/00
Approved for public release: unlimited distribution.
Not export controlled per ES-NSS-000000-0000

Disclaimer and copyright

This document gives only a general description of the product(s) and service(s) and, except where expressly provided otherwise, shall not form any part of any contract. From time to time, changes may be made in the products or the conditions of supply.

BAE SYSTEMS is a registered trademark of BAE Systems plc.
©BAE Systems
20-C96-17