

Polaris™Guide



Providing the rugged, small, light-weight handheld GPS receiver.

For surface mobility, Rockwell Collins' GPS-based equipment is unsurpassed. Our portable, versatile Polaris™Guide GPS receiver provides guidance capabilities for vehicular, handheld and sensor applications. This commercial GPS receiver is a rugged, small and low weight handheld receiver, with an easy-to-use man-machine interface (Graphical User Interface (GUI) and moving maps) and a proven design that passes environmental, serial port and software testing.

Our 12-channel All-in-View Standard Positioning Service (SPS) C/A code module is incorporated into the PolarisGuide. This commercial GPS receiver is the 12-Channel companion to the Rockwell Collins 5-Channel PLGR, 12-Channel PLGR II and 12-Channel DAGR. Our receiver is interchangeable with the DAGR receiver, having the same mechanical

size, fit and electrical interfaces. This SPS version application reduces the investment of a full redesign or requalification when transitioning to/from a DAGR receiver is required.

Our receiver is intended for use in multiple federal, civilian, DoD and international platforms requiring SPS real-time GPS data. The small size and features of our commercial receiver make it attractive for vehicles and other handheld receiver applications where a ruggedized GPS capability is needed.

For backwards compatibility, our commercial receiver also provides continued support to current users of our legacy SPS PLGR GPS receivers.

When turned off, a low-power time source runs continuously to allow rapid acquisition of the GPS satellites when the receiver is turned on.

ADVANCED GPS FEATURES

- › Low power, 14 hour+ battery life (continuous)
- › Low weight <1 pound
- › 12-channel continuous satellite tracking for All-In-View operation
- › Aggressive strategies to improve acquisition/reacquisition performance and reduce power consumption
- › Cold start without time, position or almanac in less than 100 seconds from complete OFF
- › Extended performance in a diverse jamming environment
 - J/S 24 dB during initial C/A code acquisition and track
- › Receiver Autonomous Integrity Monitoring (RAIM)
- › Resistance to multi-path effects
- › Outstanding GPS performance and history
- › Mature, proven GPS technology

**Rockwell
Collins**

Building trust every day

SPECIFICATIONS

Frequency	L1 – C/A
Acquisition time	TTFF <90 sec (warm) (J/S <24 dB) STBY <15 min TTFF <100 sec (cold)
GPS time accuracy	111 nanoseconds*
Dynamics	Velocity: 250 m/s Acceleration: 20 m/s ²
Position accuracy	DGPS: <3 m, typical horizontal* SPS: <16 m, 95% horizontal*
Velocity accuracy	0.4 m/sec 3D 95% (Static Handheld)
Coordinate system	30 predefined, 6 user-defined
Storage capacity	999 waypoints 5 moving waypoints 15 user-definable reversible routes of up to 999 legs each
MTBF	10,000 hours
Datums	233 predefined, 6 user-defined
Compatibility	ICD-GPS-153, AN/PSN-13, AS/PN-11

INTERFACES

- Three (3) independent serial data ports (full duplex)
 - Two (2) standard TIA/EIA-232 serial data ports
 - One (1) standard TIA/EIA-422 serial data port
 - ICD-GPS-153 compliant
 - NMEA-0183 (ver 3.01) data output
 - Laser range finder
- Timing interfaces
 - 1 PPS input
 - 1 PPS UTC, 1 PPS T-Mark and 10 PPS outputs
- L1 active RF antenna port, 3.3 V DC
- RTCM 194-93/SC 104 differential GPS (DGPS) correction data input
- External power, data and antenna inputs

PHYSICAL CHARACTERISTICS

Power	External: 9 to 32 VDC Typical power: ~1 W Batteries: 4 - 1.5V AA cells for prime power 1 - 3.6V 1/2 AA cell for memory power Battery life: >14 hours (continuous)
Weight (with L91 primary cells)	<1 lb (454 g)
Size/volume	6.35 in x 3.46 in x 1.58 in maximum (16.14 cm x 8.79 cm x 4.02 cm)
Display size (viewable)	1.693 in (H) x 2.311 in (43.00 mm (H) x 58.7 mm)
Temperature range	Operating: -32°C (-26°F) to +70°C (+158°F) Storage: -57°C (-70°F) to +70°C (+158°F)

Humidity	0 to 100% (no precipitation)
Water resistant	Immersible to 1 meter
Altitude (operating)	-400 m to 9,100 m MSL

*SA off

ACCESSORIES AND SOFTWARE VARIANTS

A complete set of accessories available at:
www.rockwellcollins.com/ecat/gps/Government_bu.html

Software variants available

- Department of Commerce
 - Standard
 - Situation Data Advisor (SDA) based upon DoC standard
- Department of State ITAR Controlled - CAT XV (F)
 - Military Use
 - Military Use Link (MUL) DoC Standard + Call for Fire, CAS 9 Line, Gun/Mortar Laying
 - Situation Data Advisor (SDA) based upon Military Use Link

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

SELECTION GUIDE

Receiver Type	Description	Part Number
12-channel Handheld SPS	Commercial Handheld GPS Receiver	822-2428-00X

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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