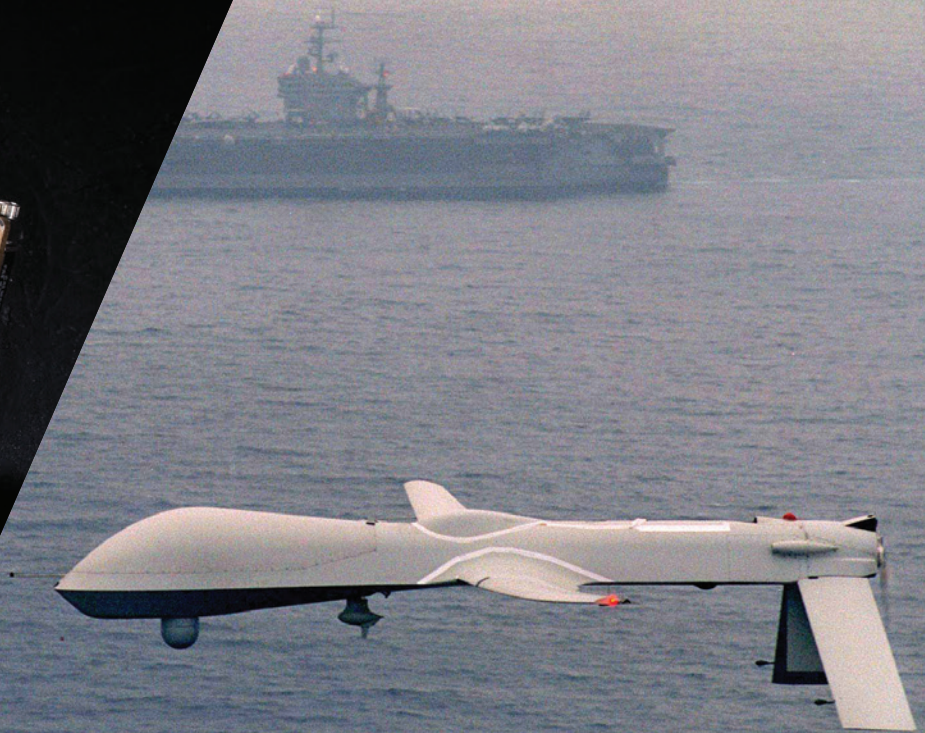


ASR



The Rockwell Collins ASR – offering big performance in a small package.

Supporting both NAVWAR and Global Air Traffic Management (GATM) requirements, the Rockwell Collins Airborne SAASM Receiver (ASR) is a 12-channel, all-in-view, dual frequency, GPS receiver. ASR incorporates Rockwell Collins third generation of Selective Availability Anti-Spoofing Module (SAASM) and is designed in accordance with the GPS “Receiver Application Module Guidelines” (GRAM-S). Specifically designed to meet small package requirements, the ASR provides GRAM-S performance in less than half the volume of a SEM-E receiver.

To resist the effects of jamming, the ASR incorporates field proven techniques used on all Rockwell Collins receivers including advanced software algorithms, dual frequency (L1/L2) operations, fast direct-Y acquisition and inertial aiding.

The ASR flexible I/O supports open systems architectures. Industry standard interfaces include RS-422 (serial) in accordance with ICD-GPS-155, plus a RS-422 instrumentation port, a RS-232 PLGR Hot Start, and various discrete signals. Antenna interfaces support AE-1, GAS-1, and both active and passive FRPA installations.

Building upon the GPS Embedded Module (GEM™) legacy begun in 1990, the ASR incorporates numerous advanced features. Additional functions and features are continually being added to an already vast list of capabilities and user-configurable software options.

KEY FEATURES

- › All-in-view satellite tracking for optimized geometry and satellite drop-out immunity
- › Fault Detection and Exclusion (FDE) per DO-229 providing navigation solution integrity
- › Switchable SPS/PPS function to facilitate civil airspace interoperability
- › Carrier phase measurement outputs enabling precision navigation solutions

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SYSTEM FEATURES

- GPS Directorate-approved SAASM (KDP-II, OPSW 1.01)
- 12-channel, all-in-view tracking and navigation (dual frequency)
- SPS/PPS switchable operation for use in civil air space
- Fast direct-Y code acquisition
- Ultra low-power time maintenance
- Stand-alone (unaided) or integrated (aided) operation
- Field reprogrammable through serial port
- Fault Detection Exclusion (FDE) per DO-229 (A, B, C)
- Supports enroute, terminal and NPA per TSO-C129a
- PLGR Hot Start (RS-232)
- 10 Hz pseudo range and carrier phase measurements
- LOS outputs unclassified even when keyed
- 65 dB J/S

INTERFACES

- 1 PPS time input and output
- Enhanced accuracy Have Quick output
- Active RF antenna support (AE1, GAS-1, FRPA)
- Passive RF antenna support (FRPA)
- ICD-GPS-155 compatible interface (high-speed serial)
- ICD-GPS-150 instrumentation port
- DS 101/102 crypto-variables
- ICD-GPS-153 PLGR Hot Start (RS-232)

SPECIFICATIONS

Performance

Receiver	L1 frequency, C/A and P or Y code L2 frequency, P or Y code
Dynamics	Velocity: 1,200 m/s Acceleration: 10 g maximum SPS velocity: 1,000 knots
TTFF1	<80 seconds (prob >.95)
PLGR Hot Start	5 seconds (direct-Y)
Time accuracy	PPS:<30 nanoseconds RMS SPS:<45 nanoseconds RMS
Position accuracy	PPS:<5.6 m RMS horizontal SPS:<6 m RMS horizontal (per DoD policy)
Velocity accuracy	PPS:<0.1 m/s RMS steady rate SPS:<0.3 m/s RMS steady rate
Altitude	80,000 feet
Position update rate	<u>Unaided</u> : once-per-second pseudorange based, 5 Hz delta range based, 10 Hz propagated <u>INS-aided</u> : once-per-second pseudorange based, 4-25 Hz dependent on aiding rate
MTBF	>20,000 hours @ 55°C (MIL-HDBK-217)

Physical characteristics

Power	<2.0 W
Weight	<0.6 lb
Size/volume	4.9" W x 3.2" H x 0.80" D max
Temperature range	-54°C to +85°C (continuous) -62°C to +95°C (storage)
Shock	Operating: 15 g Service crash: 35 g
Random vibration	12.6 g/RMS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

The ASR has been granted the NAVSTAR Global Positioning System GPS Directorate Security Approval.

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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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