

Defense Advanced GPS Receiver (DAGR)

Portable, versatile, and **precise**

Guiding warfighters to safety

Hold your position in the palm of your hand. When it comes to surface mobility, our GPS-based equipment is proven. BAE Systems' Defense Advanced GPS Receiver (DAGR), while small in size and weight, is high on capabilities. It is portable, versatile, and precise, guiding you in vehicular, handheld, sensor and gun-laying applications.

DAGR provides moving map and situational awareness capabilities, and it meets tough environmental requirements. With more than 450,000 fielded units, DAGR offers proven reliability for combat and interfaces for platform integrations. Rely on the enhanced jammer protection of one of the first handheld GPS receiver programs in the United States to include Selective Availability Anti-Spoofing Module (SAASM) security.

DAGR map system

The DAGR Map System allows you to load and view map sets, including vector maps, raster maps, satellite imagery, and non-geospatial (bitmap) images. It enhances your situational awareness by enabling you to display maps/images, waypoints, routes, and alerts on its moving map displays.



SAASM features

- All-in-view navigation using proven, 12-channel GPS signal processor; expandable to 36 channels
- Accelerated Direct-Y code and C/A code acquisitions
- Next-generation security architecture using key data processor
- Unclassified-when-keyed operation and updated security features

Key features and benefits

- Compact and lightweight
- Velocity accuracy to within 0.4 m/sec 3D 95 percent
- Three independent serial data ports
- Water resistant up to 1 meter
- More than 14 hours of continuous battery life
- Dual-frequency, simultaneous track of L1 and L2 GPS signals
- Maintains internal time to allow quick GPS signal acquisition with every start-up

Advanced GPS features

- 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
 - 41-44 dB J/S maintaining state 5 tracking
 - 54-66 dB J/S maintaining state 3 tracking
 - 24 dB during initial C/A code acquisition
- Receiver autonomous integrity monitoring (RAIM)
- Resistance to multipath effects

Advanced user features

- Situational awareness with moving maps (up to 32 Mbyte)
- Laser range finder, fire support, and CAS 9-line functions
- Transfer data/maps from PC or another DAGR
- User-programmable hot keys
- Area navigation with waypoint storage
- User setup of units, datums, and coordinate formats

Interfaces

- Three (3) independent serial data ports (full duplex)
 - Two (2) standard RS-232 serial data ports
 - One (1) standard TIA/EIA-422 serial data port NMEA-0183 data input/output
 - Laser range finder
- Timing interfaces
 - 1 PPS input
 - 1 PPS UTC and 10 PPS outputs
 - HAVEQUICK output
 - SINGARS time fill output
- L1/L2 active RF antenna port, 3.3 V dc
- RTCM 194-93/SC 104 differential GPS (DGPS) correction data input
- KYK-13/KOI-18/AN/CYZ-10/DS-101/DS-102/SKL key loading input
- External power, data, and antenna inputs

Extended performance in a diverse jamming environment

Specifications

Frequency	L1/L2 dual frequency tracking L1 – C/A, P(Y) L2 – P(Y)
Acquisition time	TTFF < 10 sec (hot) TTFF < 90 sec (warm) FF < 100 sec (cold) TTSF < 15 sec (OFF or STBY < 15 min) TTSF < 22 sec (STBY < 60 min) TTSF < 70 sec (OFF < 60 min)
GPS time accuracy	52 nanoseconds
Dynamics	Velocity: 250 m/s Acceleration: 20 m/s ²
Position accuracy	DGPS: < 2.4 m, 95% horizontal PPS: < 6.7 m, 95% horizontal
Velocity accuracy	0.4 m/sec 3D 95%
Coordinate system	30 predefined, 6 user-defined
Storage capacity	999 waypoints 5 moving waypoints
MTBF	10,000 hours
Datums	233 predefined, 6 user-defined
Compatibility	IS-GPS-153

Physical characteristics

Power	External: 9 to 32 VDC Typical power: ~1 W Batteries: 4 - 1.5V AA cells 1 - 3.6V 1/2 AA cell for memory Battery life: > 14 hours (continuous)
Weight (with batteries)	< 1 lb (454 g)
Size/volume	6.35 x 3.46 x 1.58 in. maximum (16.1 x 8.79 x 4.01 cm)
Display size (viewable)	1.693 (H) x 2.311 in. (43.00 (H) x 58.7 mm)
Temperature range	Operating: -32°C to +70°C Storage: -57°C to +70°C
Humidity	0 to 100% (no precipitation)
Water resistant	Immersible to 1 meter
Altitude (operating)	-400 m to 9,100 m MSL

* 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.

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