

Integrated GPS Anti-jam System (IGAS)

Enhance your **accuracy** in any environment

Designed to meet the mission needs of missile and munitions applications

Accuracy is paramount when launching weapons in the field. Your mission success and the safety of your troops depend on it. BAE Systems has proven expertise in delivering reliable, accurate navigation products for precision-guided missile and munitions systems. The Integrated GPS Anti-jam System (IGAS) is no exception.

With its foundation in the field-proven, 12-channel NavStrike™ and Joint Direct Attack Munitions (JDAM) receivers, the IGAS is the first integrated GPS and anti-jamming system in the reliable family of BAE Systems' munitions receivers.

IGAS enhances your attack accuracy through features that include: 24-channel, dual-frequency, all-in-view navigation; fast satellite acquisition with more than 9,000 correlators; and accurate GPS navigation for munitions systems. All in stand-alone or global positioning system/inertial navigation system (GPS/INS) integrations. Leveraging the most advanced GPS and anti-jamming technology available, IGAS delivers fast Direct-Y acquisition in-jamming and high-jamming immunity while tracking.



Key features and benefits

- Latest single-chip, SAASM-based design
- Dual-frequency (L1/L2) tracking
- Enhanced Direct-Y code acquisition/cold start
- High anti-jamming immunity
- 24-channel, all-in-view tracking and navigation
- Field-programmable software
- Designed for high-g vibration
- High-speed serial interface
- SAASM extended functions including black-key
- Clock recalibration
- 24-channel, SAASM-based design
- >85 dB J/S performance***
- High-rate aiding
- SA/AS capable**
- Fast Direct-Y capability
- All-in-view track and navigation
- High accuracy
- Antenna masking selection
- Precise time transfer (timing pulse not needed)
- Continuous ionospheric corrections*

High accuracy in a compact package

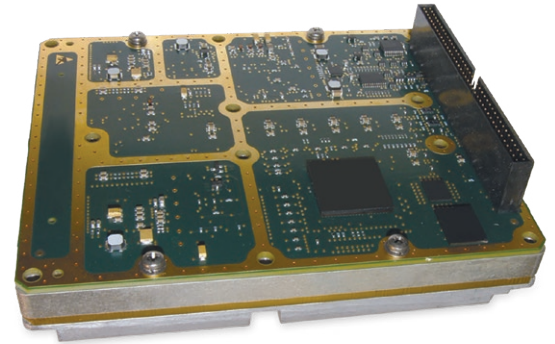
Designed to meet the mission needs of missile and munitions applications, IGAS provides you with a highly accurate, reliable system in a compact, cost-effective package. The IGAS delivers accurate GPS navigation either as a stand-alone system or when integrated with an existing INS or Doppler Reference System.

Precise

This integrated receiver offers full Precise Positioning Service (PPS) accuracy. Simultaneous L1/L2 operation provides real-time ionospheric corrections for further accuracy enhancements. Its primary communication interface is a high-speed RS-422 serial port. The anti-jamming solution uses 12-beam steering. This all-in-view beam steering ensures signals from all satellites in view will receive the full benefits of the system's anti-jamming performance. Additionally, this system has an ultra-tight coupling interface option.

Growth path

Modular design and field-programmable software ease maintenance, provide a growth path and reduce life-cycle cost for use in various jammed environments. Delivery is assured by using common critical components, processes and manufacturing lines that deliver over 100,000 Selective Availability Anti-Spoofing Module (SAASM)-based GPS receivers per year.



Highly accurate, reliable system in a compact, cost-effective package

System characteristics

Receiver	L1 frequency, C/A and P or Y code** L2 frequency, P or Y code**
Dynamics	Velocity: >1,200 m/sec maximum Acceleration: 10 g
TTFF	<10 seconds – time uncert: ≤10 μs <26 seconds – time uncert: ≤10 ms 77 s nominal cold start without initialization data
Time accuracy	<100 nanoseconds RMS
Position accuracy	<3 meters CEP** <2 m typical
Velocity accuracy	<0.07 m/sec RMS (typical)
Altitude	>100,000 ft**
Position update rate	Unaided – 1 Hz pseudo-range based and 10 Hz propagated INS-aided – 1 Hz pseudo-range based and 4-25 Hz dependent on aiding rate
Crypto key input	Serial port, KYK-13/KOI-18/CYZ-10**
MTBF	>6,500 hours

Interfaces

- Serial data: RS-422, up to 230 Kbaud
- 1 PPS/TimeMark/HAVE QUICK
- Four L1/L2 RF antenna ports, keyed
- Keying (DS-101/DS-102/high-speed serial port)
- CRPA power/control

Physical characteristics

Power	<12 watts continuous
Weight	2 pounds maximum
Size/volume	4.35 W x 5.15 H x 0.9 D in. maximum
Temp. range	-54° C to 74° C (continuous) -54° C to 90° C (non-operating)
Shock	150 g operating

* When anti-jamming provides for dual frequency operation.

** Export of PPS units is authorized for GPS Memorandum of Understanding countries only. PPS security modules must be obtained through Foreign Military Sales (FMS) procurement.

*** Anti-jamming performance is based on three spatially diverse BB Jammers. Full performance is classified.

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