

# SABR™-M

## Superior beamforming and anti-jamming GPS for weapons

Designed to provide highly accurate, hardened GPS data in high-threat environments

As the battlespace continues to evolve, enemy-developed threat systems are increasingly capable of jamming and spoofing GPS signals. U.S. and allied forces require significantly hardened GPS receivers for weapons to operate within highly-contested environments.

Leveraging more than 45 years of military GPS experience and breakthrough technical expertise in anti-jamming, BAE Systems' SABR-M is the most advanced GPS receiver available. It incorporates digital integrated beamforming anti-jamming technology designed for weapons and similar applications.

Developed to provide highly accurate position, velocity, altitude, and time data in extremely high-threat environments, the receiver demonstrates exceptional performance in integrated weapons tests.

SABR-M's design improves the field-proven SAASM based SABR-Y to a modernized GPS/AJ receiver while maintaining the same form factor as the latest SABR-Y.



### Key features

- SABR-M is field programmable, enabling easy updates on the fly
- Fast direct -M or -Y acquisition allows SABR-M to quickly acquire and legitimize signals
- Seven-element controlled radiation pattern antenna compatibility gives signal location confidence, an essential prerequisite for high levels of jamming and spoofing rejection
- Simultaneous L1 and L2 dual-frequency GPS signal protection maintains receiver capability
- 32 channel capacity allows the best and strongest signals to be identified and utilized for increased anti-jamming and anti-spoofing capabilities
- SABR-M contains a security-certified Common GPS Module (CGM), providing the highest confidence level

## Ruggedized for extreme conditions

- Designed and qualified for MIL-STD-810F and MIL-STD-464F to survive harsh operating environments
- Designed and qualified for MIL-STD-461 Rev G to meet EMI requirements

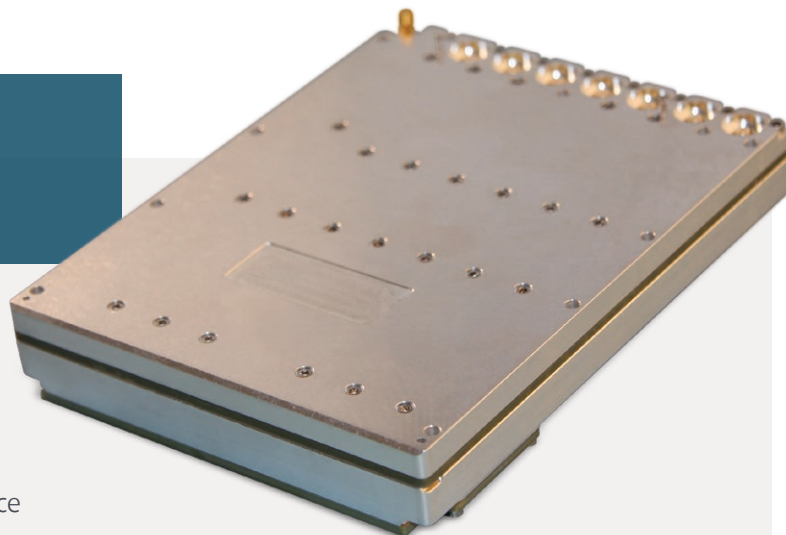
# Proven GPS anti-jamming performance

## Interfaces

- 7 MMBX RF connectors
- 1 SSMB RF connector
- Main I/O nonproprietary 80-pin dual row
  - Serial I/O – RS422/CMOS
  - Timing interfaces
  - Power input
  - RS-485 key load interface

## System characteristics

|                   |  |
|-------------------|--|
| Receiver          | L1 frequency, M, P or Y or C/A code**<br>L2 frequency, M, P or Y code**<br>Modernized security architecture<br>All-in-view tracking and navigation<br>Supports SAASM extended functions<br>Field-reprogrammable software |
| Dynamics          | >10 g acceleration   |
| Time to first fix | <10 sec (conditions apply)   |
| Time accuracy     | <±100 nanoseconds RMS  |
| Position accuracy | <3 m circular error probability**  |
| Velocity accuracy | <0.07 m/sec RMS typical  |
| Crypto key        | Serial port, DS-101<br>Unclassified when keyed<br>Black key operation  |
| AJ performance    | > 110dB/J/S***   |
| Antenna inputs    | 1 Element – non-AJ capable (active antenna)<br>7 Element – AJ capable (passive antenna)  |
| MTBF              | >4,000 hours   |
| Aiding            | Supports host inputs<br>Future growth capable for UTC/DI   |



## Physical characteristics

|                         |  |
|-------------------------|--|
| Power input             | 5 VDCRF @ 4A max<br>5 VDC @ 4A max<br>3 VDC battery backup support |
| Power consumption       | <28 watts (nominal)  |
| Weight                  | 1.5 lb (nominal)   |
| Size                    | 4.6 W x 6 L x .97 D in.  |
| Temperature range       | -54°C to +80°C (operating)<br>-54°C to +90°C (storage)             |
| Shock response spectrum | 350+g max  |

\* Includes GPS inherent anti-jamming of 55 dB/J/S. Dependent on jammer type, number, geometry, and inertial integration. Actual performance is classified.

\*\* Performance and/or functionality consistent with Precise Positioning Service (PPS). 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.

\*\*\* Actual performance for specific threat environment varies and is classified.

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