Mayflower Communications

DATA SHEET

NavGuard® 720 - Multi-Platform Anti-Jam GPS Navigation Antenna – Integrated (MAGNA-I) GPS Anti-Jam Solution

MAGNA - I (*NavGuard® 720*)

Top View
4.45” Diameter

Bottom View
Fully Conectorized

Side View
1.95” Height

MAGNA-I (NavGuard® 720) is the latest fully integrated and affordable GPS Anti-Jam solution from Mayflower Communications, the technology leader in small SWaP GPS Anti-Jam systems for over 30 years. GPS Anti-Jam capabilities are critical for military operations in today’s NAVWAR-contested environments. The MAGNA-I AJ system is TRL 9 and MRL 9 and has been proven in successful NAVWAR mission operations.

NavGuard® 720 (MAGNA-I) was developed by Mayflower Communications under sponsorship from the U.S. Army PEO Aviation PM Aviation Assured Airspace Access Systems (PM A3S) through the MAGNA Phase III program. It meets GPS protection requirements for severely SWaP-constrained U.S. Army platforms, including rotary-wing aircraft and UAS. The NavGuard® 720 is also well suited for small ships, fixed-wing aircraft, ground combat vehicles, and additional UAS platforms. MAGNA-I leverages operationally proven MAGNA GPS Anti-Jam technology currently fielded across multiple U.S. military and government agency platforms.

The 7-channel NavGuard® 720 MAGNA-I is the smallest fully integrated GPS Anti-Jam system on the market. It features a fully connectorized 4.5-inch diameter CRPA with integrated AJ electronics in an FRPA-compatible footprint. MAGNA-I consistently outperforms many larger antenna solutions. NavGuard® 720 MAGNA-I has completed performance qualification and environmental testing and meets all MAGNA Technical Requirement Document (TRD) specifications. It has been integrated on multiple U.S. government platforms and flown in NAVWAR environments.

MAGNA-I provides an affordable SWaP-C alternative to larger, more expensive anti-jam systems. It is compatible with C/A, SAASM, and M-Code and has been demonstrated in operational military NAVWAR environments.

Multi-Platform Anti-Jam GPS Navigation Antenna (MAGNA-F)
Affordable Low SWaP GPS Anti-Jam System




High level Features and Benefits

- 7-channel AJ design mitigates large number of spatially located WB/NB jammers
- Provides greater than 90 dB J/S anti-jam protection
- FAA TSO C-190 Authorized
- Can mitigate GPS/GNSS spoofing attacks involving the use of collocated jamming and spoofing signals
- Supports BFEA
- Robust RF front-end handles high-power co-site signals
- Protects any GPS receiver (C/A, P(Y), M-Code)
- Software Upgradable with Direction of Arrival (DoA) and Jammer Characterization

Performance Metrics

- Suitable for high dynamic applications
- Designed specifically to counter Rotor Blade modulation effects
- Simultaneous dual frequency (L1 and L2)
- Mitigates multiple CW, partial band, broadband and pulsed jammers even under high dynamics
- Uses multiple element spatial temporal adaptive filtering (STAP)
- Greater than 40 dB of jamming suppression against multiple jammers

jammers

Antenna Electronics External Interface:

- VDC Power & Data I/O : 10-Pin Glenair Power-Data I/O Pin-Out
- Single GPS RF Output Connectors: SMA (Male)

Antenna External Interface:

- Antenna Output Connectors: SMA (Male)
- Built-in-Test (BIT) auto fault detection and logging
- Operating Temperature: -54° C to +85° C
- GPS RF Gain: Adjustable
- Noise Figure: <3.5dB

SWAP Metrics

- Size: AE w/ CRPA: 4.45“ Diameter
  1.95“ Height
- Weight: 16.5 oz or 1.03 lb (AE w/ CRPA)
- Power: 28VDC, <16 Watts

Part Number	Part Description
190-900029	MAGNA-I EMD

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