Mayflower Communications

DATA SHEET

NavGuard® 700 - Multi-Platform Anti-Jam GPS Navigation Antenna - Federated (MAGNA-F) GPS Anti-Jam Solution

MAGNA–F (*NavGuard® 700*)

Antenna Electronics

Antenna Harness
Available in multiple Lengths

CRPA Antenna

MAGNA-F (NavGuard® 700) is the latest Non-ITAR federated 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 essential for military operations in today's NAVWAR-contested environments. The MAGNA-F system is TRL 9 and MRL 9 and has been proven in successful NAVWAR mission operations.

NavGuard® 700 (MAGNA-F) 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 was designed to meet GPS protection requirements for severely SWaP-constrained platforms, including rotary-wing and fixed-wing aircraft, UAS, ground tactical vehicles, and small ships.

The 7-channel NavGuard® 700 MAGNA-F is the smallest SWaP federated GPS Anti-Jam system on the market. It uses a connectorized 3.5-inch CRPA with a detachable RF cable in an FRPA-compatible footprint that outperforms many larger antenna solutions. NavGuard® 700 MAGNA-F has completed performance qualification and environmental testing and meets all MAGNA Technical Requirement Document (TRD) specifications. It leverages proven MAGNA GPS Anti-Jam technologies currently integrated across multiple U.S. military and government platforms. The system is operationally validated in NAVWAR environments and is in full-rate production.

MAGNA-F 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 real-world military NAVWAR operational environments.

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



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

Antenna Electronics External Interface:

- DC Power: 4-pin Glenair 801-009-02NF6-4PA
- RS-422 Data I/O: 51-pin Glenair GMDE1-51S-RMI-6K7-4SU-MC130
- Dual GPS RF Output Connectors: SMA (Female)

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: 5.73" x 3.00" x 1.26“
  CRPA: 3.50” Diameter x 1.75” Height
- Weight: <1.35 lbs (AE), <0.7 lb (CRPA)
- Power: 28VDC, <17 Watts

Part Number	Part Description
190-900028	MAGNA-F EMD AE
190-500028	MAGNA-F EMD Antenna
190-210022-1	Antenna Harness – 18 in length
190-210022-2	Antenna Harness – 34 in length
190-210022-3	Antenna Harness – 72 in length
190-210022-5	Antenna Harness, MAGNA-F - 33.5" 90-degree connector
190-210022-6	Antenna Harness, MAGNA-F - 70.75" 90-degree connector

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