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A N/ALQ-217 Electronic Support Measures (ESM) System



Northrop Grumman's Integrated Systems and Aerostructures sector has called upon Lockheed Martin's ESM expertise to help expand the theater air defense capability of the U.S. Navy's E-2C Hawkeye aircraft fleet.

Lockheed Martin Federal Systems in Owego, N.Y., teamed with Anaren Microwave, Inc., in Syracuse, N.Y., is supporting Northrop Grumman's efforts on their wider-scope U.S. Navy E-2C Hawkeye 2000 program by providing a powerful, new ESM system upgrade for the U.S. Navy E-2C Aircraft. The AN/ALQ-217 ESM system will passively detect ground-based and airborne radar transmitters and precisely locate and identify those radars with greater efficiency and at lower cost than the predecessor system.

Best-Value, High-Performance ESM Solution for the U.S. Navy's E-2C Hawkeye 2000



This advanced-ESM capability is an integral element of the E-2C Hawkeye 2000 mission system. The aircraft supports air and surface surveillance, intercept control, strike control, tanker coordination, search-and-rescue and drug interdiction missions.

Lockheed Martin's AN/ALQ-217 ESM system interfaces with the E-2C's central mission computer and tactical displays to provide the U.S. Navy with greatly enhanced capability to passively detect "friend or foe" radar systems and communicates the tactical picture to command centers at sea or on shore.

The system upgrade incorporates Owego's proven digital receiver technology with a militarized commercial architecture to provide significantly improved system performance at 64 percent system hardware weight reduction (55 percent weight reduction for the installed system) and an eight-fold reliability improvement, offering the customer a low-risk, low-cost, high-performance solution. This weight reduction is attributed to several factors: advanced antenna design, Radio Frequency component miniaturization and increased module functionality. The weight reduction allows other sensors key to the multi-role mission of the E-2C to be implemented without changes to the airframe.

The AN/ALQ-217 production systems consist of front-end amplifiers, four antenna arrays and one receiver/processor, the heart of which is the Owego-designed SP-103A PowerPC 603e/704e/740™ Single Board Computer. By leveraging technology inherent to the AN/ALQ-210 ESM system, currently built at the Lockheed Martin facility in Owego for the SH-60R Multi-Mission Helicopter program, Lockheed Martin greatly reduced the cost of the new AN/ALQ-217 ESM system solution, resulting in increased function to the customer at lower cost.

Lockheed Martin Federal Systems in Owego, N.Y., is a premier provider of integrated, advanced-technology system solutions for defense, civil and industrial customers worldwide. The company's successful aerospace heritage spans more than four decades, and the site is a recognized ESM solutions provider, with proven performance on such programs as the AN/APR-48A Radar Interferometer system for the U.S. Army's AH-64D and the UK's WAH-64 helicopters, and the AN/ALQ-210 ESM system for the U.S. Navy's SH-60R Multi-Mission Helicopter.



AN/ALQ-217 ESM System Profile

Unparalleled target acquisition and precision targeting capability

- High POI in open-ocean and dense littoral environments
- Rapid targeting solutions against all radar threats
- Emitter ID for high-confidence fratricide avoidance
- Fast reaction time and threat-mode change detection

Single, scalable receiver processor unit with five available spare slots for future growth provisions

- No redesign or Group A mods will be required

High commonality with the AN/ALQ-210 on the SH-60R

NDI-based Active Front Ends for additional sensitivity

Employs Open Systems Architecture (VME) and Commercial-Off-The-Shelf (COTS) Processing (PowerPC) to ensure additional long-term supportability and growth

Very high Mean Time Between Failure (MTBF): more than 1,400 hrs.

Uses currently available antenna locations

System size: Approximately 5.2 cu. ft.

- Receiver/processor: 1.7 ft.
- Active Front Ends/Antennas: 3.5 ft.

System weight: Approximately 190 lbs. total

- Receiver/processor/tray: 93 lbs.
- Active Front Ends/Antennas: 97 lbs.

For more information, please contact:

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