

SNC[®]

AE-4500 Auto ESM System



The Sierra Nevada Corporation (SNC) AE-4500 System provides small form factor radar detection and collection capabilities designed for installation onto small airborne platforms requiring reduced size, weight and power solutions.

AE-4500 Auto ESM System

System Attributes

- Precision geolocation and targeting to 40 GHz
- 240-degree instantaneous azimuth coverage
- Turnkey ESM system interfaces to tactical datalinks
- Processes pulsed, CW, FMCW and LPI emitters
- Mature TRL-9 System (software and firmware)
- Modular architecture supports UAVs, wingtip pods, turbo-prop aircraft, business jets
- Light-weight, low-power

Detects, Identifies and Locates

The AE-4500 System is a COTS solution intended for installation on both manned and unmanned airborne platforms supporting wingtip, fuselage and pod mounted installations. The system provides TRL 9 maturity with no development required for UHF through K/Ka band operation. As a flexible, open architecture solution, it uses a 3U OpenVPX Receiver Processor Assembly (RPA) integrated with different antenna arrays and advanced RF electronics to provide precision direction finding. The AE-4500 System has been designed to use 5 different antenna arrays to meet various customer application needs and platform sizes. The system provides a software-defined radio architecture that supports third party application development for affordable system growth through available software and firmware developer's kits (SDK & FDK).

The AE-4500 System's default, fully Automatic Search Mode provides hands-off operation during short or long missions. Search Mode may be stopped by an operator for manual Set-On collection for recording of complex signal patterns.

The system provides precision direction finding (DF) accuracy and wide instantaneous azimuth coverage using phase interferometer antenna arrays. The system is designed for remote control over a datalink or by an on-board operator.

The AE-4500 System detects, identifies and locates modern radars. Its mature, field-proven hardware and software has

been installed and flown on small UAV, turboprop and business jet platforms. It is configurable for operations over multiple frequency ranges using a variety of antenna arrays, and is small enough to support wingtip antenna installations for optimal field-of-view coverage. The AE-4500 System is a stand-alone collection and processing system that includes all antenna, RF and digital signal processing hardware and software needed for on-board emitter detection, deinterleaving, identification, geo-location, correlation and reporting. Available options support frequency extension, additional antennas and distributed installations for larger platforms. The open architecture design includes firmware and software applications for pulsed and low powered LPI emitters. Ground Processing Exploitation and Dissemination (PED) software controls airborne collection and provides situational awareness for users.

In-Air Signal Processing

- Remote Control from ground through datalink
- Interfaces to Platform INS/GPS for NAV data
- Detection, identification and location of pulsed, CW, FMCW and LPI emitters
- On-board emitter deinterleaving and emitter identification
- On-board emitter geolocation, correlation and reporting
- Provides single-ship geolocation and supports multi-ship geolocation by triangulation or TDOA methods
- Pre-Mission Planning Tools allow users to create and optimize Scan Plans and Emitter Databases
- Post-Mission Analysis Tools allow users to play back, sort, isolate and examine recorded data

Related Equipment

- RPA - Receiver Processor Assy
- APA - 18 GHz Antenna Panel Assy
- REA - RF Electronics Assy
- APA-X - 40 GHz Antenna Panel Assy
- REA-X - RF Frequency Extension
- ILA - In-Line Amplifier, Optional

