

# EMERALD

AES-212 Airborne ESM/ELINT Family of Systems

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## Modular Airborne ESM/ELINT Systems for Comprehensive Radar Detection

### Overview

The EMERALD AES-212 is an operational and field-proven ESM/ELINT system for all types of manned and unmanned aerial platforms. Designed for the densest and most complex electromagnetic environments, it meets the rapidly evolving needs of today's modern battlefields. The system delivers sophisticated intelligence gathering capabilities for the detection and analysis of all types of radars - ground-based, airborne, and shipborne.

Based on the most advanced technologies, EMERALD AES-212 simultaneously detects and identifies multiple radars, fine direction of the radar and target positioning, acquires radar signals at a very high level of accuracy and clearly distinguishes between them. It measures the electronic parameters emitted by each radar, rapidly processes the data and graphically displays it for the operator in real time. The system can be integrated with stand-off jamming as part of a mission aircraft suite for EW and Intelligence combined missions.

The system creates an EOB (Electronic Order of Battle) - which includes the mapping of all targets in the arena, their parameters, and the location and direction of each target - and incorporates cutting edge integrated self-protection capabilities, including an RWR display in the cockpit. EMERALD AES-212 can detect even the most sophisticated transmitting systems, including those used for the latest surface-to-air missiles, data link transmissions, satellite transmissions and telemetry.

Mission planning and loading are done in advance, and upon completion of the mission, the system runs automatically - independently performing measurement, reception and recording, as well as data processing. The ongoing process is performed while the system is operating - resulting in real-time improvements without affecting performance. Even while in progress, missions can be changed by the operator without impacting on the platform's operation. Data is continuously recorded at all levels for use in ongoing ELINT processing - from raw data to IF signals and processed information. Advanced ELINT debriefing tools ensure the achievement of exceptionally accurate analyses - thus enriching the database and delivering a more precise differentiation of targets.

This modular system can be used in various applications with a number of receivers, channels or antennas, according to customer requirements.

### Main Capabilities:

- Long-range detection, high sensitivity with high probability of intercept
- High POI and high sensitive for LPI Radars
- Accurate direction-finding implemented by Interferometer, Differential Doppler and Time Differential of Arrival (TDoA) techniques
- High density and high signal dynamic range handling
- Fast digital processing of Modulation On Pulse
- Geolocation of emitters
- Interface provision to on-board radars and avionics
- Remote control from Ground Station via Line-of-Site and SATCOM Data Links

### Technical Specifications:

Frequency Coverage:	0.1 to 40 GHz
Receiver type:	Combines digital-based narrow and wide band receivers
Azimuth Coverage:	360°
Sensitivity:	Very high, provides extensive range advantage
Direction Finding Accuracy:	Fine DF: 2° RMS typical
Identification Library:	Over 10,000 emitters
Interface with On-board Systems:	RS-422, RS-232, 1553B, ARINC, LAN, Ethernet
Environmental Conditions:	Designed for MIL-STD-810E; MIL-STD-461/F suitable for all airborne platforms
Weight:	20 to 50 kg (typical configuration for airborne system)
Power Requirements:	250 to 500 W