EMERALD

AES-212 Airborne and Maritime ESM/ELINT Family

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Mission planning

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 with no impact on platform operation. Data is continuously recorded at all levels for use in ongoing ELINT processing – from raw data to RF signals and processed information. Advanced ELINT debriefing tools ensure the achievement of exceptionally accurate analyses – thus enriching the database and delivering more precise target differentiation.

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

EMERALD AES-212 for maritime applications was specially designed for combat and patrol vessels operating in the most challenging maritime arenas, and is optimized for surveillance and patrol applications.

Main Features

- · Long-range detection, high sensitivity with
- · high Probability Of Intercept (POI)
- · Highly 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
- · Interfaces with on-board systems such as radar, navigation, avionics, CMS and more
- · Remote control from ground station via Line-of-Sight and SATCOM data links

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Technical Specifications

Feature	Specification
Frequency Coverage	0.1 to 40GHz
Receiver Type	Combines digital-based narrow and wideband receivers
Azimuth Coverage	360º
Sensitivity	Very high, provides extensive range advantage
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 500W

ELBIT SYSTEMS ISTAR & EW - Elisra
ew-elisra.info@elbitsystems.com
www.elbitsystems.com

EMERALD
Modular Airborne and Maritime ESM/ELINT Systems for Comprehensive Radar Detection

Overview

The EMERALD AES-212 is an operational and field-proven ESM/ELINT system optimized for various types of manned and unmanned marine and 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.

Simultaneous Detection and Identification

Based on the most advanced technologies, EMERALD AES-212 simultaneously detects and identifies multiple radars and their direction, including target positioning (for aerial applications). It acquires radar signals at a very high level of accuracy, clearly distinguishes between them, and identifies them according to a predefined mission library. 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 capabilities as part of a mission aircraft suite for combined EW and Intelligence missions.

Electronic Order of Battle (EOB)

The system creates an EOB – 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.