The ELT/333 ECM System can provide both naval and ground platforms with an Active Electronic Defence using smart ECM techniques. The ELT/333 naval version is a solution developed for applications requiring a high power transmitter in small platforms like corvettes or patrol boats. For this specific purpose, Elettronica has studied a specific Active Phased Array (APA) configuration to provide the required ERP through a limited number of TX/RX modules; this solution minimizes the mechanical requirements in terms of mass, dimensions and consumption, and facilitates its installation in any small platform. The ELT/333 ground version is an ECM system suitable for land platforms, provides high frequency band coverage (option full band) and can be employed in EW tactical ECM operations to neutralize Air Attacks against own troops/sites and counter enemy radars. Moreover the reception capability of the ECM can be exploited to search, detect and identify radar transmissions and enemy jammers.

**SYSTEM PERFORMANCE**

- Frequency Range: H to J bands
- Spatial Coverage: Full Az, Wide El
- Instantaneous sectorial coverage in Az and El to consent a real multi-threat capability and counter the “twin missile launch” coming from different directions
- Very high sensitivity to ensure a very favourable Range Advantage Factor (RAF)
- Very high ERP to mask the ship (or ground site) echo and to allow the implementation of smart and effective deception techniques
- Double Polarization both during reception and transmission to be effective against the latest generation missile ECCMs
- Very limited power consumption for a given ERP
- Light weight and small dimensions

The ELT/333 unique system design provides a compact, rugged and cost-effective approach to the protection of naval and ground platforms deployed in today’s challenging threat scenarios.
JASS (JAMMING ANTENNA SUB-SYSTEM) INTERNAL DETAIL

SYSTEM CHARACTERISTICS

The basic ECM characteristics are:

• Automatic Search and detection of radar emissions designated by an associated ESM equipment
• Very high performance, smart ECM techniques, both noise and deception, exploiting DRFM-generated jamming signals to produce coherent jamming techniques and highly credible false targets to mask the real targets.
• Full solid-state design ensuring high ERP and graceful degradation in case of failure
• Electronic beam steering (electronically stabilized)
• Interface with Data Link in order to transmit track data to network associated elements (for passive location purpose)
• Autonomous scenario monitoring in “stand-alone mode” by searching and jamming radar emissions using the ECM search library
• High level of readiness (no warm-up)
• High reliability and maintainability
• Easy on-board integration and installation (no wave guides).

SYSTEM ARCHITECTURE

The ECM architecture is based on three main units:

• The Jammer antenna Unit (JAU), which includes the TX/RX modules and performs emitter signal reception and jamming signal transmission.
• The Monopulse Receiver which performs threat signal search and D/F processing
• The Jamming Source Unit (JSU), which contains DRFM and Processor and represents the heart and the brain of the ECM system

PRODUCT SUPPORT

The ELT/333 is fully supported by a complete set of product support equipment that includes:

• Field test equipment
• Ground support equipment
• Automatic test equipment
• Library programming
• Library loading/unloading.
The system aims to provide aircraft survivability and escort mission success. System design is based on in-house technological developments that constitute the building blocks of this equipment:

- Solid-state Rx/Tx modules and associated antenna elements, suitably arranged to produce multi-beam patterns for accurate multi-threat engagement featuring low power requirements and graceful degradation
- Digital RF Memory (DRFM) for digital storage of high fidelity signal replicas and generation of dedicated Jamming techniques stored in the equipment threat emissions library

The ELT/568 system is basically a dual-band self and mutual protection equipment designed to cope with today’s complex threat scenarios. Its main features are:

- Wide frequency coverage (E-J band)
- Capability to operate in a very dense e.m. environment and to cope with pulse and CW, coherent and non coherent radars (lock-on, TWS, Search radars)
- Very High ERP to optimize jamming effectiveness for Self-Protection and Escort Support functions
- Multi-threat tracking capability to effectively cope with simultaneous threats coming from any direction by exploiting:
  - Active Phased Array Antennas featuring electronic beam steering both during transmission and reception modes
  - Tailored and fully programmable jamming techniques and programs produced by a multi-bit DRFM
- Power management concept implemented through a threat-tailored ECM response
- Stand-Alone mode of operation or RWR Designation
- High level of integration with platform avionics and other on-board Defensive Aids Subsystems (RWR, CF&D, MAW, ...)
- High installation flexibility allowing both internal or pod solutions
- High level of reliability, maintainability and availability
- Operational Support facilities

Based on an advanced system architecture and incorporating proprietary Hi Tech components, the ELT/568 represents ELT’s most advanced and threat-responsive solution to the modern and challenging customer requirements.
The ELT/568 is fully supported by a complete set of product support equipment that includes:

- Automatic test equipment
- Field test equipment
- Ground support equipment for:
  - Library programming
  - Library loading/unloading
  - Mission Planning and Briefing

The solid state component modularity ensures full installation compatibility with a wide range of airborne platforms.