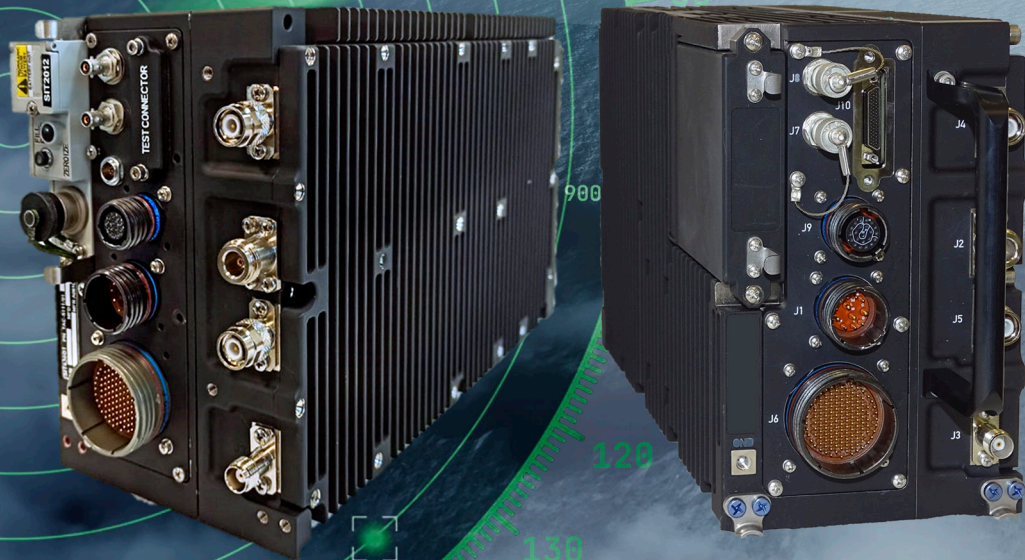


LEONARDO ELECTRONICS

# SIT436G1/EM

IFF Friend or Foe  
Interrogators



SIT436 is the new generation, state of the art IFF interrogators family, a flexible digital solution able to be easily modified for different configurations/requirements, SIT436G1/EM version is suitable for Fighters and Surveillance platforms such as Airborne Early Warning & Control (AEW&C) or Maritime Patrol Aircraft (MPA) both in NATO and NO-NATO countries.

SIT436G1 is the reference interrogator product for operating in SIF Modes (1, 2, 3/A, C), mode S iaw STANAG 4193 ed3, featuring the Mode 5 by the dedicated crypto applique Leonardo SIT2010 compliant to DoD AIMS 04-900A Option B.

SIT436EM can operate with crypto dummy unit and can be adapted to operate in NSM (National Secure Mode) for NO NATO markets (or rather for countries not authorized to use MODE 5).

The interrogator is a ruggedized hard-mounting single LRU with no need for cooling, integrated into the platform mainly via Mil-Std-Bus 1553B.

The equipment has modular construction to facilitate maintenance. A dual-channel transmitter is included to provide full ISLS operation for Mode S surveillance. The receive section provides two matched channels to support both RSLs and azimuth calculation capabilities. Provides 4 RF connectors SUM, DIFF. The OMNI1 and OMNI2 connectors receive the ADS-B data and M5L2 reports (Passive Surveillance).

## KEY FEATURES

- State-of-art IFF Interrogator: operative in SIF, Mode 5 Level 1 and Level 2, in accordance with STANAG4193 ed3.
- Mode S true capability (two transmitters) in accordance with ICAO annex10, volume IV and STANAG4193 ed3
- M5 operations supported by SIT2010 crypto applique, in accordance with DOD-AIMS 04/900A, option B (interoperable with KIV-77)
- ITAR free design
- SW design will be in accordance with DO178C DAL C
- HW design will be in accordance with DO254 DAL C
- Operative on Sector and Target Specific protocol
- Two channels for passive surveillance (reception of Mode 5 Level 2 squitter reports and Mode S squitter replies)
- Ability to operate either with mechanically or electronically steered antennas
- Ability to operate either in fighter or surveillance mode and as such to be installed on the corresponding aircrafts (both fixed and rotary wing)
- Environmental and EMC requirements in accordance with avionic application (Fighter)
- Easy modification to NSM (National Secure Mode) operation.

Multiple options are available to schedule interrogations, including continuous challenge, multi-sector and on target operation. Fully controllable range filtering is available in all modalities.

SIT436G1/EM provides the following main functions:

- Fully automatic interlace of interrogation Modes, based on platform configuration constraints, including Supermode capabilities
- Azimuth determination based on Monopulse processing, supported by a calibration facility
- Friend evaluation (in M5) to improve identification reliability
- Plot extraction providing coordinates, target ID, full decode of replies and special codes processing (Emergency, I/P).

In addition to the IFF equipment, an interrogation system includes a sum/difference directive antenna used to send interrogations and receive replies.

Leonardo can provide a complete configuration with OEM components in case this antenna should not be already present in the platform.

In order to support the Interrogator system, Leonardo can provide a full range of solutions covering:

- Diagnostic software (on OTS platform) for troubleshooting, calibration and operational software loading
- Special Test Equipment
- Automatic Test Equipment.

## TECHNICAL SPECIFICATIONS

### GENERAL

- ITAR free design
- Operating Modes
  - MXA (1, 2, 3/A, C) iaw STANAG 4193 ed3-Annex B
  - Mode S ELS and EHS iaw STANAG 4193 ed3-Annex D
  - Mode 5 Level 1 and 2, iaw. STANAG 4193 ed3-Annex E and F
- System Interface
  - Mil-Std-Bus 1553B (Ethernet as an option)
- Output RF Power
  - > 30.8 dBW (SUM RF connector), @ 1030 MHz
- Input power
  - 28 VDC iaw MIL-STD-704F w/Change1, 110 W max
- Cooling
  - No cooling required

### ENVIRONMENTAL

- Operating Temperature
  - 40°C +71°C
- Environmental Conditions
  - Mil-Std-810G
- EMC
  - Mil-Std-461G

### SUPPORTABILITY

- Reliability
  - SIT436EM, MTBF >6700 , AUC@50°C.
  - SIT436G1, MTBF >5700 h, AUC@50°C, SIT2010 included.
- Maintainability
  - MTTR < 10min @ LRU level
- Testability
  - 95% fault isolation @ 2 SRUs

### PHYSICAL

- Size
  - 193.5mm (H) x 124.7mm (W) x 320.5mm (L) max
- Weight
  - 10 kg max, crypto appliqué included
- Mounting
  - Hard mounted
  - Cooled by natural convection

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EL00026 0325



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