

# SIR-AI/200 IFF Interrogator

Leonardo's SIR-AI/200 IFF Interrogator is designed to provide real-time, precise identification of friendly forces in the most demanding conditions, for operations in congested airspace or in remote, hostile locations.

Fully compliant with the latest NATO and US DoD standards, SIR-AI/200 technology ensures full interoperability with allied forces.

A key challenge in modern military and security operations is the need to identify friendly forces swiftly and accurately. In today's constantly changing airspace and evolving secure communications environment, it is mission essential to reliably distinguish between friendly and hostile entities.

SIR-AI/200 IFF Interrogator System leverages over 45 years of company expertise in the development of Identification Friend or Foe (IFF) and Secondary Surveillance Radar technology for Land, Naval, and Avionic applications. SIR-AI/200 IFF Interrogator System integrates a Flat-Panel IFF Antenna and all electronic components within a single chassis (single box). SIR-AI/200 is designed to operate with the antenna positioned in a fixed direction while electronically scanning its beams to cover a 90° azimuthal sector (-45°/ + 45°).

## KEY FEATURES

- Use of state-of-the-art technology:
- Latest generation of RF power transistors
- Very Large Scale Integration (SMD technique)
- Antenna solutions: rotating and non-rotating
- BITE and status reporting with Malfunction detection at LRU level
- Auto-test procedure
- Test Target Generator (RF Signal)

SIR-AI/200 can also operate in rotation mode, enabling full 360° azimuthal coverage.

SIR-AI/200 is US DoD AIMS Box Certified in accordance with AIMS 17-1000 and NATO Box Certified vs STANAG 4193 Edition 3.

SIR-AI/200 IFF Interrogator System integrates both the IFF Antenna's radiating elements and the Interrogator into a single compact chassis (single box)

This system offers:

- Operation in Stare Mode with a 90-degree sector via an embedded an Electronic Scan Antenna
- Operation in Rotation Mode for full 360 degrees scanning
- High performance: line-of-sight coverage of up to 200 km
- Compact size, allowing integration or co-mounting with several types of Primary Radar Antennas
- Continuous Surveillance Mode
- Sectorised Mode
- On-request Interrogation
- Tracker Embedded
- Output: LAN/Ethernet RJ45 or Fibre Optic

## TECHNICAL INFORMATION

|  |                      |  |
|--|----------------------|--|
| <b>CAPABILITY</b>                        | Interrogation Modes: | Mode 1, 2, 3/A, C, S, 5 Level 1, 5 Level 2   |
|  | ADS B Embedded       |  |
|  | Monopulse            |  |
| <b>INTERFACE</b>                         | Data interface:      | Ethernet LAN (electrical and optical); TCP/IP; UDP   |
|  | Time:                | NTP Protocol   |
|  | Encoder Data:        | ACP/ARP (for Rotating Antenna functionality only) or Serial Line   |
| <b>CRYPTO INTERFACE</b>                  |                      | US DoD AIMS 04-900(A) Option B (SIT2010 or KIV-77)   |
| <b>ENVIRONMENTAL CONDITIONS</b>          |                      | MIL-STD-810 G  |
| <b>OPERATING TEMPERATURE</b>             |                      | 0°C to +50°C   |
| <b>ELECTROMAGNETIC COMPATIBILITY</b>     |                      | MIL-STD-461G   |
| <b>SENSITIVITY</b>                       | MkXII:               | better than -84 dBm  |
|  | Mode S:              | better than -84 dBm  |
|  | Mode 5:              | better than -90 dBm  |
| <b>DYNAMIC RANGE</b>                     |                      | from MTL to -15dBm   |
| <b>OUTPUT POWER</b>                      |                      | better than 34 dBm   |
| <b>MAINTAINABILITY &amp; TESTABILITY</b> | MTTR:                | < 30 min   |
| <b>INPUT POWER</b>                       |                      | 115VAC/220VAC  |
| <b>TRANSMITTER UNIT</b>                  | Technology:          | Full solid-state with plug-in modules  |
|  | TX frequency:        | 1030MHz ± 0.01MHz  |
|  | TX Duty Cycle:       | High Power Duty Cycle to support the Mode S Enhanced   |
|  | Power Control:       | 31 dB range, ~1 dB steps   |
|  | Modulations:         | PPM, BPSK, MSK   |
| <b>RECEIVER UNIT</b>                     | Technology:          | Full solid-state and plug-in devices   |
|  |                      | Three logarithmic channel configurations   |
|  | Centre Frequency:    | 1090 ± 0.1 MHz   |
|  | Frequency Response:  | <ul style="list-style-type: none"> <li>• STANAG/DOD AIMS/ICAO compliant</li> <li>• STANAG/DOD AIMS/ICAO compliant</li> </ul> |
| <b>ANTENNA SECTION</b>                   | Antenna Gain:        | approximately 16 dBi   |
|  | Antenna Beamwidth:   | approximately 12 Degrees   |
|  | Beams:               | Main (SUM), Control (OMNI), Difference (Monopulse)   |
| <b>DIMENSIONS</b>                        | Length:              | less than 1900 mm  |
|  | Height:              | less than 600 mm   |
|  | Depth:               | less than 400 mm   |
|  | Weight:              | approximately 150 Kg   |
|  | Coolant:             | Coolant Liquid   |

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EL00042 10-25

