



SIR-M5-C EVO IFF Interrogator

Leonardo's SIR-M5-C EVO IFF Interrogator solution provides real-time, accurate identification of friendly forces in even the most challenging environments, for operations in crowded airspace or in remote, hostile locations.

The SIR-M5-C EVO technology is designed to meet the latest NATO and US Department of Defence (DoD) standards, ensuring full interoperability with allied nations.

A major challenge in modern military and security operations is the ability to identify friendly forces swiftly and accurately. In today's fast-moving airspace and ever-evolving environment, it is both critical and mission essential to distinguish rapidly between friendly and hostile forces.

The SIR-M5-C EVO IFF Interrogator draws on over 45 years of consolidated company expertise in developing Identification Friend or Foe (IFF) and Secondary Surveillance Radar technologies for Land, Naval, and Avionic applications and platforms.

The SIR-M5-C EVO is a compact, single-box interrogator supporting modes 1, 2, 3/A, C, and S (ELS and ENH), as well as Mode 5 (up to Level 2). Fully compliant with military standards (NATO STANAG 4193 Edition 3, US DoD AIMS 17-1000) and civilian requirements (ICAO Annex 10 and EUROCONTROL), it also features ADS-B-in capability.

KEY FEATURES

- Use of state-of-the-art technology:
- Latest generation of RF power transistors
- Very Large Scale Integration (Surface-Mount Device - SMD technique)
- Latest generation processors and architectures
- Various antenna solutions: rotating and non-rotating
- BITE and status reporting with Malfunction detection at LRU level
- Auto-test procedure for receiver channel
- Test Target Generator (RF Signal)

The SIR-M5-C EVO Interrogator can be paired with different antennas to meet customer system requirements. These include both rotating and non-rotating antennas designed for naval or ground-based applications.

The system is designed as “fitted for” Mode 5, but it can also be supplied without this mode, ensuring readiness for future capability growth.

The SIR-M5-C EVO Interrogator is integrated in-Service on a wide range of land, transportable, and naval systems (FADR, FPS-117, TPS-77, KRONOS, RAN40L, RAN21S, FREMM, NUM, IFF Conformal Array) and is capable of detecting targets at extended ranges of up to 256 nm.

This powerful processing platform is based on COTS equipment and is fully software-programmable.

This design allows the system to benefit from continuous improvements in commercial platforms while mitigating obsolescence risks.

Furthermore, it provides all the programmable functions of the transmitter and receiver units.

Its digital, programmable signal and data processing capabilities, as well as its modular architecture, support customised configurations and performance optimisation for a variety of systems (naval, land, transportable, and more.)

The SIR-M5-C EVO IFF Interrogator, as per optional system configuration, can operate in Monopulse SSR Mode-S Enhanced Surveillance mode, and can perform full Mode-S data link operations with Level 5 transponders. No hardware modifications are required to upgrade the system from one configuration to another.

TECHNICAL INFORMATION

TECHNICAL DATA	Environmental conditions:	MIL-STD-810 G
	Operating temperature:	0°C to +50°C
	Electromagnetic compatibility:	MIL-STD-461G
	Sensitivity:	<ul style="list-style-type: none"> • MkXII: better than -84 dBm • Mode S: better than -84 dBm • Mode 5: better than -90 dBm
	Dynamic range:	from MTL to -15 dBm
	Output power:	better than 34 dBW
	Maintainability & Testability MTTR:	< 20 min
	Input power:	115VAC/220VAC
CHARACTERISTICS TRANSMITTER UNIT	Technology:	CMT 640X512 px
	Bandwidth:	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 in accordance with ICAO Annex 10 and Eurocontrol requirements
	Power Control	31 dB range, ~1 dB steps
	Modulations:	PPM, BPSK, MSK
CHARACTERISTICS RECEIVER UNIT	Technology: Full solid-state and plug-in devices	
	2 or 3 logarithmic channel configurations	
	Centre Frequency: 1090 ± 0.1MHz	
	Frequency Response: STANAG/DOD AIMS/ICAO compliant	
	DOD AIMS/STANAG Anti-Jam compliant	
SIR-M5-C EVO CRYPTO INTERFACE	US DoD AIMS 04-900(A) Option B (SIT2010 or KIV-77)	
SIR-M5-C EVO DIMENSIONS	SIR-M-C EVO Cabinet (W x H x D)	550 mm x 500 mm x 550 mm

The SIR-M5-C EVO is AIMS Box Certified vs AIMS 17-1000 and NATO NGIFF Box Certified

For more information:
infomarketing@leonardo.com

Leonardo Electronics
Via Tiburtina, Km 12,400 - 00131 Rome - Italy
T +39 06 41501, F +39 06 4131133

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