IFF Interrogator

DoD AIMS Certified for All-Mode Mark XIIA and Mode S Applications

Mahindra TELEPHONICS

The Common Module IFF Interrogator (IFFI) represents a family of universal All-Mode Monopulse IFFI systems that can be found in the Telephonics Corporation's line of products. Whether configured for shipboard, airborne or ground-based applications, the IFFI can be used with common hardware and software modules for civil or military applications. The IFFI includes interfaces and capabilities to support a wide range of configurations for any application.

Identification Friend or Foe Interrogator (IFFI)

The IFFI is a single unit configuration consisting of a Weapons Replacements Assembly or Line Replaceable Unit designed to perform IFF Interrogator functions in conjunction with a Host Mission System. The system can be used as a standalone interrogator or can be coupled to a primary radar where both the primary radar sensor and IFF share the same antenna pedestal. In the latter configuration, the modes of operation for the IFFI may be driven by the operational radar modes, the resulting antenna rotation rate and antenna scanning modes of the primary radar.

The IFFI administers an auto-adaptive Interrogation Rate Management capability when operating standalone or in conjunction with a multi-mode primary radar system to optimize IFF performance. This overcomes the limitations of operating in conjunction with variable scan-rate antenna systems.

The system delivers reply processing, target detection and tracking capabilities for all interrogator modes. The IFFI makes use of a two or three channel secondary surveillance radar or monopulse antenna configurations for broadcasting interrogations and receiving replies.

Operating Capabilities

The Common Module IFFI complies with all paragraphs of U.S. and international specifications that define required interrogator modes, performance, control, reporting and interface. All of Telephonics' IFFI systems are also compliant to STANAG 4193, ICAO Annex 10 Volume III and IV for Modes 1, 2, 3/A, C, and S. Telephonics is also certified for DoD AIMS specifications 97-900, 04-900 and 03-1000A (through change note 3). The Interrogator is designed to meet strict TEMPEST standards, EMC requirements of MIL-STD-461E and various military standards including; HERO, HERP, HERF, electrostatic discharge and lightning.

The IFFI provides monopulse processing and tracking for superior performance with interrogator side lobe suppression and receiver capability. The IFFI provides an interrogation and processing capability for all Mark XIIA modes (Mode 1, 2, 3/A, C, 4, and 5 with Level 1 and Level 2 and Mode S, with Elementary and Enhanced Surveillance) complete with multi-channel passive ADS-B reporting.

P-8A Poseidon Maritime Surveillance Aircraft

Mahindra TELEPHONICS

Mahindra Telephonics Integrated Systems
Ranvir Singh: +91-1275-249605 (phone)
singh.ranvir@mahindra.com

Interfaces

The IFFI provides all interfaces for ground, shipboard or airborne applications and will interact with host platforms or site interfaces for the greatest capability.

NOMENCLATURE	INPUT POWER	APPLICATION
AN/UPX-44(V)	270 VDCDR 110-24 VAC, 47-63 Hz	Airborne, Ground, Shipboard
AN/UPX-43(V)	110-240 VAC, 47-63 Hz or 400 Hz	Airborne, Ground, Shipboard
AN/UPX-505(V)	110-240 VAC, 47-63 Hz or 400 Hz	Airborne, Ground, Shipboard

Main Features

- Connectors for two or three antenna channels (sum, difference and Omni)
- Internal cooling fans and receives ambient air from the host shelter or host platform
- Discrete signals to and from the platform

Technical Specifications

Surveillance Range	> 320 NM
Antenna Rotation Rate	0 RPM to > 150 RPM
Code Performance	Availability > 98%, Reliability > 99%
Target Detection	≥ 99.5%
RF Output Power	3.2 KW (with single chassis configuration)
Receiver Sensitivity	< -87 dBm
ATR Format	1½
Weight	< 90 lb.
Temperature	-15°C and +55°C
Range Accuracy	< 45 ft
Range Resolution	< 225 ft
Azimuth Accuracy	< 0.06°
Azimuth Resolution	0.6° (with LVA antenna)

Dual Channel Ground-Based or Shipboard IFF System Configuration

Main Features

- Dual Common Module Interrogators and Transponders
- Automatic Interrogator switchover available
- Internal transaction manager
- Maintenance display unit and data logger
- Multiple platform and crypto interfaces