



indra

DEFENSE AND SECURITY

INT-2000ASM

IFF Mode S / Mode 5

Interrogator

Guaranteeing airspace sovereignty

indracompany.com



INT-2000ASM

IFF MODE S/ MODE 5 INTERROGATOR



The equipment is based on “state of the art” technology and complies with the high reliability required for military use

Description

The INT-2000ASM is the most advanced Long Range Interrogator in the market, designed take in account the STANAG 4193 and ICAO Annex 10.

The Interrogator has been tested under the most stringent environmental conditions. Thereby it is equipment capable of operating in any military platform.

Safety and reliability are the key issues in the development process of this unit. The INT-2000ASM is a system easy to use and maintain. It has been designed to minimize the maintaining actions.

The high versatility capability of the equipment allows it to be installed in any platform due to its variable configurations.

The INT-2000ASM operates in Modes SIF (1, 2, 3/A, C), Mode S Level 2 Enhanced Surveillance, Mode 4, Mode 5 (level 1 and level 2) and ADS-B IN. It provides Mk XIIA capability.

The equipment INT-2000ASM can be totally controlled either locally or remotely.

It can be configured to operate with Monopulse (2 channels) or Sliding Window (2 channels) depending on the platform.

This equipment is another outstanding result of INDRA's experience in Identification Products.

Technology

Modular solid-state design, extensive use of modern microprocessors, Digital Signal Processors (DSP's) and Field-Programmable Gate Array (FPGA) technology.

The FPGA technology allows all the interfaces to be programmed by special configurative parameters. This provides an easy adaptation to any platform. In order to minimize maintenance tasks, the equipment INT-2000ASM consists of independent shop-replaceable units (SRUs). This allows an inexperienced operator to repair the equipment in an easy way. SRUs that composes the INT-2000ASM system are:

- The Radiofrequency Assembly which is based on high power, low noise and extensive dynamic range amplifiers.
- The Power Supply Assembly that comprises high reliability AC/DC modules that transform 220/115 VAC input voltage into the different DC voltages used by the equipment internal circuitry.
- The Processor Assembly which performs all process in the system.
- Coder Timing Interface Assembly that generates the base band interrogation signals.

Indra's experience in IFF Systems

Indra has been developing IFF systems (interrogators, transponders and combined interrogator-transponders) for 25 years. This fact has made Indra one of the most important IFF developers of the world.

Indra has developed IFF systems for the most important and restringing platforms such as: • F-18 • P3 Orion • F-100 • F-105 • Airbus A400M • Eurocopter Tiger • Eurocopter NH-90 • S-80 submarine.



Operation

The following main functions can be performed: Independent selection of Modes 1, 2, 3/A, C, S Level 2 Enhanced Surveillance, Mode 4, Mode 5 (level 1 and level 2) and ADS-B IN.

- Interrogation schedule capability according STANAG 4193 and ICAO Annex 10.
- Interlacing of all operation Modes.
- Mode SIF, Mode S, Mode 4 and Mode 5 entry parameters according to STANAG 4193 and ICAO Annex 10.
- Mode SIF, Mode S, Mode 4 and Mode 5 controls according to STANAG 4193 and ICAO Annex 10.

The equipment is operated through multiple buses, such as, RS485/422, RS232, Ethernet interfaces.

Maintenance & Reliability

The INT-2000ASM exhibits very high MTBF and a very low MTTR (due to the use of SRU's).

Additionally and due to the designed Built-In-Test system (PBIT, CBIT, IBIT) a quick and easy maintenance of the equipment is possible.

Versatility and Size

The usage of "State of the Art" technology (DSP and FPGA) allows achieving equipment with reduced dimensions (HxWxD) (<360 x 450 x 465 mm, excluding handle), easy maintenance and high reliability.

Versatility: its multiple configurations allow the installation and integration of the equipment in multiple platforms, with multiple communications configuration (multiple buses are supported).

Qualification

The INT-2000ASM has been subjected to the most restringing environmental conditions: Temperature, Humidity, Altitude, Shock, Vibration, Acceleration, Fungus, Salt and Fog, Explosive Atmosphere, Lightning, Acoustic noise and EMC, according to standards MIL_STD_810, MIL_STD_461 and MIL_STD_462.

Technical Characteristics

General Characteristics

Size	< (H) 360 mm x (W) 450mm x (D) 465 mm
Weight	≤ 75 Kg
Voltage	AC
Type	220 or 115 VAC / 50-60Hz
Consumption	< 2000 W (max.)
BIT	Extensive BITE for easy maintenance (PBITE, CBITE, IBITE)

Receiver Characteristics

Sensitivity (Nominal)	≤ - 82 dBm
Dynamic Range	MDL to -20 dBm
Receiver central frequency	1090 ± 0,5 MHz
Monopulse Detector	Yes

Transmitter Characteristics

Carrier Frequency	1030 ± 0,01 MHz
Peak Power	≥ 63 dBm (Front Panel output)
Duty Cycle (long-term)	5 % maximum

Processing Characteristics

Modes of Operation	1, 2, 3/A, C, S Level 2 Enhanced Surveillance, Mode 4, Mode 5 (level 1 & level 2) and ADS-B IN. Easy growth to higher levels of Mode S
ISLS Operation	YES
RSLs Operation	YES
Target Processing Capability	More than 900 targets in 360 degrees

Environmental Characteristics

Operating Temperature	-40°C to +60°C
Storage Temperature	-62°C to +70°C

Fully qualified

Reliability / Maintainability Characteristics

MTBF / MTTR	Better than 7.500 hours / 28 minutes
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ISO 9001:2000



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