

AN/UPX-50(C)

Digital interrogator

with Mode 5, Mode S, and passive acquisition



Mark XIIA IFF interrogator for naval, land-based air defense, airborne surveillance, and air traffic control applications

The AN/UPX-50(C) digital Identification Friend or Foe (IFF) interrogator is the upgraded U.S. Navy's Mode 5 Level 1 and Level 2 & Mode S interrogator.

The AN/UPX-50(C) is a tech refresh upgrade to the AN/UPX-41(C) and AN/UPX-45(C) IFF interrogators in the fleet. It is used for Mark XII and Mark XIIA IFF processing, including Mode 5 and Mode S. It also adds a third receive channel for passive acquisition of Mode 5 Level 2 and ADS-B In.

The AN/UPX-50(C) conforms to U.S. DoD, NATO, ICAO, and U.S. FAA requirements. Its modular and digital architecture affords customized configurations and performance optimization for most applications: air defense, weapon systems, air traffic control, and range instrumentation. Digital target reports can be provided in addition to wideband video for subsequent passive and active decoding. The digital interrogator also provides amplitude monopulse for significant improvement in azimuth accuracy over conventional systems. It operates autonomously, or in conjunction with a host radar.

Features and benefits

- Open architecture, VME based modular design
- Embedded M4/M5 NSA certified crypto
- Extensive BIT, 98 percent fault detection
- Growth provided for target data extractor
- More than 90 percent processing and memory reserves

Specifications

Characteristics

Peak power output at antenna ports	
Dual outputs	33 dBm
Single combined output	36 dBm
Adjustable by -9 dB in 1-dB steps	
Duty cycle	2.0 percent maximum
Receiver center frequency	1090 ±0.5 megahertz
Receiver bandwidth	-3 dB, 8 megahertz nominal
Sensitivity	-84 dBm minimum (Mark XII and Mode S) -90 dBm minimum (Mark XIIA) 90% decode measured at antenna port
Extractor instrumented range	>300 nautical miles
Power input configuration	115 or 230 Vac, <1100 VA, 47 to 440 hertz
Dimensions	10.56" height x 14.75" width x 18.00" depth
Weight	85 pounds maximum

Environmental

Altitude	
Operating	Up to 12,000 feet
Non-operating	Up to 50,000 feet
Temperature	
Operating	-28 degrees celcius to +65 degrees celcius
Non-operating	-40 degrees celcius to +75 degrees celcius
Shock	MIL-S-901D lightweight equipment
Salt fog	48 hour exposure
Humidity	90 percent relative
EMC	MIL-STD-461D

Performance parameters

Capacity	1,000 targets per scan 100 in-beam targets
Reliability (naval sheltered)	
Basic system	>4,000 hours MTBF
Maintainability	19 minute MTTR
Range accuracy	0.03 nautical mile
Range resolution	0.05 nautical mile
Azimuth resolution	Effective beamwidth plus seven PRPs (all modes responding)

Certifications

MIL-STD-461D compliant
DoD AIMS 03-1000A/B compliant
STANAG 4193 compliant

Support services available

Full support to field units available for life of system
Two-level performance-based logistics support available

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