

# AN/UPX-41(C)

## Digital interrogator with mode 5

The AN/UPX-41(C) digital IFF interrogator is the U.S. Navy's standard mode 5 level 1 and level 2 interrogator. It is an upgrade to the AN/UPX-37, which replaces all AN/UPX-27 IFF interrogators in the fleet, and has been selected by the U.S. Marines and U.S. Air Force for multiple applications. It is used for Mark XII and Mark XIIA IFF processing, including mode 5, with growth to mode S. The unit 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. The digital interrogator operates autonomously, or in conjunction with a host radar.

### FEATURES

- Open-architecture, VME-based modular design
- Embedded M4/M5 NSA-certified crypto
- Extensive BIT, 98% fault detection
- Growth provided for mode S and target data extractor
- More than 90% processing and memory reserves
- MTBF exceeds 4,000 hours
- MTTR less than 20 minutes
- MIL-STD-461D-compliant
- Compliant with DoD AIMS 03-1000A and STANAG 4193



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

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### SPECIFICATIONS

#### Characteristics

- Peak power output at antenna ports	
Dual outputs	33 dBW
Single combined output	36 dBW
Adjustable by -9 dB in 1-dB steps	
- Duty cycle	2.0% maximum
- Receiver center frequency	1090 ±0.5 MHz
- Receiver bandwidth	-3 dB, 8 MHz nominal
- Sensitivity	-84 dBm min (Mark XII) -90 dBm min (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 Hz
- Dimensions	14.75" wide 10.56" high 18" deep
- Weight	80 pounds maximum

#### Environmental

- Altitude	
Operating	Up to 12,000 feet
Non-operating	Up to 50,000 feet

- Temperature	
Operating	-28°C to +65°C
Non-operating	-40°C to +75°C
- Shock	MIL-S-901C lightweight equipment
- Salt fog	48-hour exposure
- Humidity	90% 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
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)

#### Support services available

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

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