

AN/UPX-41(C)/45(C)

Digital interrogator

with Mode 5 and Mode S



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

The AN/UPX-41(C) and AN/UPX-45(C) digital Identification Friend or Foe (IFF) interrogators are the U.S. Navy's standard Mode 5 Level 1, Level 2 and Mode S interrogators.

Both are upgrades 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 AN/UPX-41(C) and AN/UPX-45(C) conforms to U.S. DoD, NATO, ICAO, and U.S. FAA requirements. Their 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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