BAE SYSTEMS

AN/UPX-42(C)

Digital Interrogator

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

The AN/UPX-42(C) Digital Interrogator has been selected as the interrogator of choice for the U.S. Navy's next-generation destroyer.

Description

It is an upgrade to the AN/UPX-41(C), which incorporates SIF/M4, M5 with growth to Mode S. Its modular/digital architecture affords customized configurations and performance optimization for most applications such as; naval air defense, tracking and targeting, weapon systems, and air traffic control. Digital target reports are provided using the target data extractor which eliminates the need for external processing of targets. In addition, the interrogator includes amplitude mono-pulse processing for significant improvement of azimuth accuracy over conventional systems. The unit conforms to U.S. DoD, NATO, ICAO and U.S. FAA requirements.

Features and/or benefits

- Open-architecture, VME-based modular design
- Embedded M4/M5 crypto
- Extensive BIT, 98 percent fault detection
- Growth provided for Mode S
- More than 90 percent processing and memory reserves
- Predicted MTBF exceeds 4000 hours
- MTTR less than 20 minutes
- MIL-STD-461D compliant
- Compliant with DoD AIMS 03-1000/A and STANAG 4193

Digital Interrogator Family

Interrogator	SIF	Mode 4 Evaluator	Mode 5	Mode S	Target Data Extractor	Comments
AN/UPX-37	✓	Option*	Option	Option	Option	U.S. Navy replacement for AN/UPX-27
AN/UPX-41(C)	✓	Option	✓	Option	Option	
AN/UPX-42(C)	✓	✓	✓	Growth	✓	

*Requires external crypto computer

Specifications

Characteristics

Peak power output at antenna ports	Dual output 59 dBm, 65 dBm
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) -90 dBm minimum (Mark XIIA) 90 percent 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	14.75"width, 10.56"height, 18"depth
Weight	85 pounds maximum

Environmental

Altitude	
Operating	Up to 12,000 feet
Non-operating	Up to 50,000 feet
Temperature	25 minutes
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 (minimum)	
Reliability (naval sheltered)	Basic system	>4,000 hours
	Maintainability	<20 minute MTTR
Range accuracy	0.04 nautical miles	
Range resolution	0.06 nautical miles	
Azimuth resolution	Effective beamwidth plus seven PRPs (all modes responding)	

Interfaces

Ethernet, RS-232, RS-422
Support services available

For more information contact:
BAE Systems

Bill Banfi
450 Pulaski Road, M/S GNY010118
Greenlawn, NY 11740
T: 631 262 8220
E: william.banfi@baesystems.us
W: www.baesystems.com/IFF

Cleared for open publication on 03/13