

Digital Interrogator Product Family

AN/UPX-37 | AN/UPX-41 | AN/UPX-42



The **AN/UPX-37** and the **AN/UPX-41(C) Digital Interrogators** are the U.S. Navy's standard interrogators.

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

The AN/UPX-37 replaces all AN/UPX-27 IFF interrogators in the fleet and has been selected by the U.S. Marine Corps. and U.S. Air Force for multiple applications. The AN/UPX-41(C) is an upgrade to the AN/UPX-37, adding Mode 5 Level 1 and Level 2 capability. The AN/UPX-42(C) is an upgrade to the AN/UPX-41(C), adding additional capabilities. Upgrades are available to add target data extraction for digital target reports and Mode S Level 1 and Level 2.

The systems conform with U.S. DoD AIMS, NATO, ICAO, and FAA requirements. 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. They operate autonomously or in conjunction with a host radar.

Key features and benefits

- VME-based modular design facilitates technology insertion and additional capabilities
- Maintainability features provide the following benefits to users and maintainers:
 - Extensive BIT, 98 percent fault detection
 - Mean time between failures exceeds 5,000 hours for AN/UPX-37
 - Mean time between failures exceeds 4,000 hours for AN/UPX-41(C) and AN/UPX-42(C)
 - Mean time to repair less than 20 minutes
- More than 90 percent processing and memory reserve enables future growth
- DoD AIMS certified and STANAG 4193 compliant configurations ensure ease of use for U.S. Navy

Interrogator	Standard interchange format	Mode 4 evaluator	Mode 5	Mode S	Target data extractor	Comments
AN/UPX-37	✓	Available*	Upgrade kit available	Upgrade kit available	Available	U.S. Navy replacement for AN/UPX-27
AN/UPX-41(C)	✓	Available	✓	Available	Available	Standard U.S. Navy Mode 5 Interrogator
AN/UPX-42(C)	✓	✓	✓	Growth	✓	U.S. Navy DDG 1000 Interrogator

*Requires external crypto computer

Specifications

Characteristics	Peak power output at antenna ports - AN/UPX-37 and AN/UPX-41(C)	
	Dual outputs	63 dBm
	Single combined output	66 dBm
	Adjustable by -9 dB in 1-dB steps	
	Peak power output at antenna ports – AN/UPX-42(C)	
	Dual outputs	65 dBm
	Adjustable by -6 dB	
	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 inches width, 10.56 inches height, 18 inches depth	
Weight	85 pounds maximum	
Environmental	Altitude	
	Operating	Up to 12,000 feet
	Non-operating	Up to 50,000 feet
	Temperature	
	Operating	-28 degrees Celsius to +65 degrees Celsius
	Non-operating	-40 degrees Celsius to +75 degrees Celsius
	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 AN/UPX-41(C) and AN/UPX-42(C) >5,000 hours AN/UPX-37
	Maintainability	<20 minute MTTR
	Range accuracy	0.04 nautical mile
	Range resolution	0.06 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	
Interfaces	Ethernet, RS-232, RS-422	
	Support services available	

For more information contact:

BAE Systems

450 Pulaski Road, M/S GNY010118

Greenlawn, NY 11740

T: 631 262 8220

E: william.banfi@baesystems.com

W: www.baesystems.com/IFF

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