

AN/APX-121(V) Mode S Mark XII IFF Transponder

The AN/APX-121(V) includes advanced microwave and digital design features that fully support organic maintenance concepts. The transponder design incorporates all Mode S and Mode 5 requirements.



The AN/APX-121(V) includes advanced microwave and digital design features that fully support organic maintenance concepts.

The transponder design incorporates all Mode S and Mode 5 requirements. Design features include Mode S Elementary (ELS) and Enhanced (EHS) operation, support of existing KIT-1 INFOSEC, and a removable INFOSEC appliqué supporting Mode 5 growth. The AN/APX-121(V) is the ideal solution for replacing existing transponders to meet Mode S and Mode 5 mandates.

The AAMSI AN/APX-121(V)/RT-1909 Mode S Transponder is designed to meet the latest AIMS (DOD AIMS 03-1000, 04-900) and STANAG 4193 specifications.

The AN/APX-121(V) utilizes advanced RF and digital processing to increase reliability, maintainability, and to permit product upgrades and future growth.

Features of the AN/APX-121(V) include the ability to operate with existing KIT-1 Computers and Mode 5 operation with the addition of an NSA-certified INFOSEC appliqué. The AN/APX-121(V) offers interface flexibility through either an optional 1553B MUX BUS or a C-12718/APX Remote Control Unit (RCU), for Mode S control. The features of the AN/APX-121(V) include:

- Advanced design for all airborne and shipboard applications
- Mode S Level 3 Enhanced Surveillance (EHS) with growth to Level 4 and ADS-B
- INFOSEC appliqué eliminates external KIT-1 Computer
- 1553B or RCU interface
- Capable of growth to Mode 5 (all levels)
- Supports TCAS via ARINC-429 or 1553B
- >4,000 hours mean time between failure
- 99% internal fault detection
- Designed to replace older IFF transponders including the AN/APX-100, AN/APX-101, AN/APX-108, and others.

AN/APX-121(V) Mode S Mark XII IFF Transponder



Decoder/Encoder

Modes 1, 2, 3/A, C, S (Level 3), 4 capable of growth to ADS-B, and Mode 5

Dual SIF/Secure Mode Decoding

Pulse-Width Filtering Digital

Receiver

Type Dual-channel superheterodyne

Frequency 1,030 ± 0.5 MHz

Bandwidth -3 dB points, 7.0 to 10.0 MHz
-40 dB points, <±12 MHz
-90 dB points, <±22 MHz

Sensitivity -77 dBm

Dynamic Range >55 dB

Transmitter

Type Solid state

Frequency 1,090 ± 0.01 MHz

Reply Rate 1,200 Hz - SIF modes
1,000 Hz - Mode 4

VSWR Output is protected against all mismatches

Droop ≤1 dB

BIT/BITE

Passive Monitoring Power, SWR, pulse-width
Active RF Testing Sensitivity, diversity operation, decoder, encoder, power, SWR, pulse width

>99% Fault Detection
90% isolation to one SRU
95% isolation to two SRUs
98% isolation to three SRUs

Environmental

Altitude 70,000 ft

Operating Temperature -40°C to +71°C

Specification MIL-E-5400T

EMI MIL-STD-461D

Power Requirements

Input Power +28 Vdc, 50 watts nominal, 60 watts max. (including appliqué)

Specification MIL-STD-704A

Mechanical

Dimensions	Width	Height	Depth
	5.375 in.	5.12 in.	8.375 in.
	13.65 cm	13.00 cm	21.27 cm
Weight	10.0 lb/4.6 kg (with appliqué)		

