



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

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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.



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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

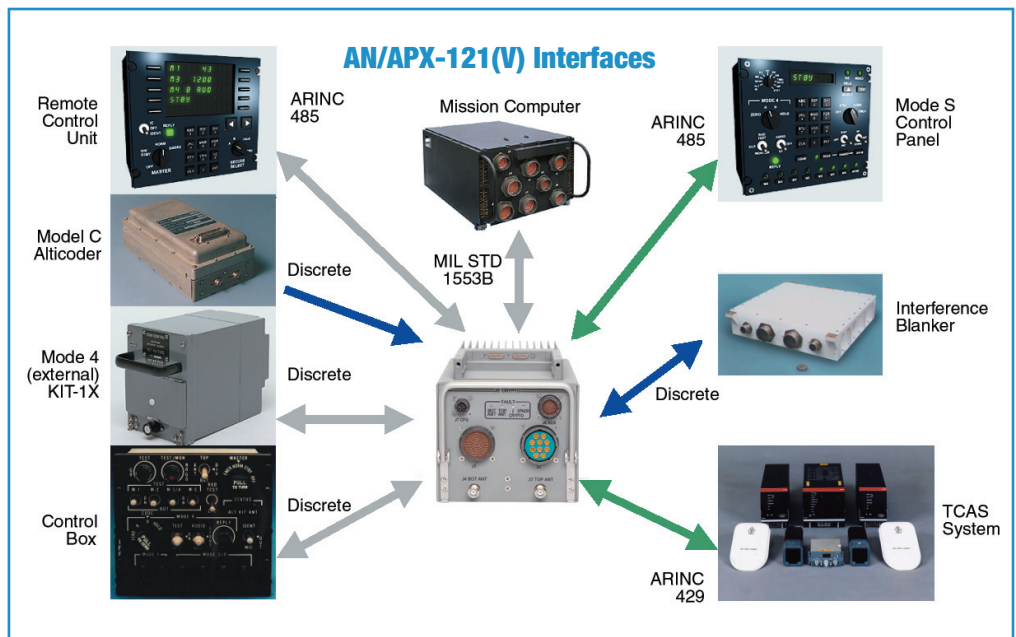
Altitude 70,000 ft
 Operating Temperature -40°C to +71°C
 Specification MIL-E-5400T
 EMI MIL-STD-461D

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)



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