AN/APX-113(V) and AN/APX-125(V) Combined interrogator/transponder

F-16 configuration

The AN/APX-113(V) and AN/APX-125(V) combined interrogator/transponder (CIT) are versatile Identification Friend or Foe (IFF) systems specifically developed for the F-16 Falcon. These systems are legacy and have been replaced by the AN/APX-126.

The AN/APX-113(V) is currently used for the Block 15 A/B MLU, Block 20 A/B, Block 30/32, Block 40, Block 50/52 C/D, and Block 60 aircraft. The system’s versatility is demonstrated by other applications that include anti-submarine warfare and surveillance helicopters, aerostats, Mig-29s, Japan’s F-2 fighter, and other international platforms. The AN/APX-113(V) and AN/APX-125(V) includes Mode S elementary and enhanced surveillance (ELS and EHS) transponder capabilities. The AN/APX-125(V) includes Mode 5 interrogator and transponder capabilities.

Features and benefits

- Complete Mark XII or Mark XIA identification system in one unit
- DoD AIMS 97-1000 and 03-1000A certified
- STANAG 4193-compliant
- Compliant with AIMS 03-1000B
- Compliant with ADS-B Out (DO-260B) via 1090 MHz ES
- Includes Mode S, Level 2 (ELS and EHS) in accordance with DO-181E
- Utilizes KIV-6 and KIV-78 cryptographic computer
- Multiple antenna configurations (electronic or mechanical scan)
- Dual-redundant MIL-STD-1553 bus interface
## Specifications

<table>
<thead>
<tr>
<th>Unit</th>
<th>Combined interrogator/transponder</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beam-forming network</td>
</tr>
<tr>
<td></td>
<td>Fuselage-mounted antenna elements</td>
</tr>
<tr>
<td></td>
<td>Lower interrogator antenna</td>
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</tbody>
</table>

### Interrogator subsystem

- **Detection range**: >100 nmi
- **Sector coverage**: ±60 degrees AZ, ±60 degrees EL
- **Azimuth accuracy**: ±2 degrees
- **Range accuracy and resolution**: <500 feet (152 meters)
- **In-beam targets**: 32
- **Modes**: 1, 2, 3/A, C, 4 and 5

### Interrogator antenna

- **Number of antenna elements**: 4
- **Lower antenna**: Conformal

### Interrogator unique features

- **Front-panel transmit**: 2.4 kilowatts minimum
- **Front-panel receive**: -85 dBm typical
- **Monopulse receive**: AJ protection, Mode C altitude report, reply evaluation and degarbling

### Dimensions and weight

- **CIT**: 8.26” height x 6.00” width x 14.50” depth, 32 pounds
- **BFN**: 6.50” height x 8.38” width x 4.00” depth, 10 pounds
- **FMA**: 1.55” height x 3.25” width x 13.10” depth, 0.5 pounds
- **LIA**: 0.60” height x 17.00” width x 14.00” length, 10 pounds

### Transponder subsystem

- **Front-panel transmit**: 500 watts
- **Front-panel receive**: -76 dBm
- **Modes**: 1, 2, 3/A, C, S, 4 and 5

### System parameters

- **MTBF**: 2,000 hours
- **CIT only**: 2,400 hours
- **MTTR**: 0.25 hours
- **Fault detection**: 97 percent
- **Fault isolation**: 99 percent
- **Prime power**: 28 Vdc
- **Voltage**: 200 watts
- **Consumption**: Optional
- **Forced-air cooling**: CIT unit only
- **Integral fan**: Optional

## AN/APX-113(V) and AN/APX-125(V) Combined Interrogator/Transponder F-16 Configuration

<table>
<thead>
<tr>
<th>CIT</th>
<th>Mark XII</th>
<th>Mode 5</th>
<th>Mode 5 Transponder</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN/APX-113(V)</td>
<td>✓</td>
<td>Upgradeable*</td>
<td>✓</td>
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<tr>
<td>AN/APX-125(V)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

* - SX CIT LRU and up

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