SOUTHERN RESEARCH

Engineering

Systems Development
AIM-9X Captive Carry Test Pod

Features
- Flight certified for F/A-18 C/D
- Access doors on both sides of Pod
- Removable front and rear spun aluminum domes
- Removable VME electronics chassis
- Power distribution system
- Instrumentation recorder

Description and Operation

The AIM-9X Captive Test Unit (CTU) was designed for captive carry testing of the new air-to-air missile seeker developed under the AIM-9X DEMVAL program.

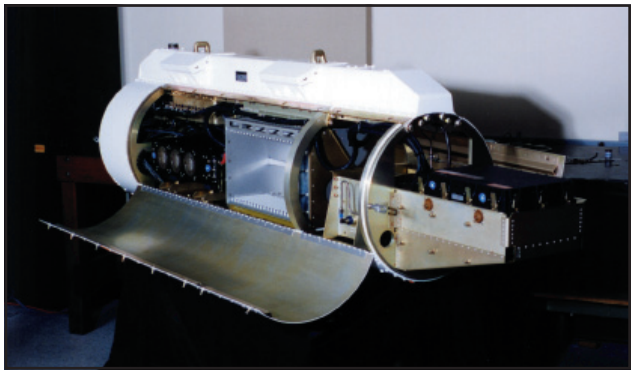
In this application the seeker mounts to a simulated missile body which mounts to the forward bulkhead. A cutout in the nose cone allows it to be removed without removing the seeker. A closeout bushing around the seeker mount closes out the nose cone. Power, control wiring, and cooling gas are provided to the seeker through holes in the forward bulkhead.

A 490 in^3 pressure vessel is provided for storage of cooling gas (up to 6000 psig). A solenoid controlled gas valve allows gas to be cycled as needed.

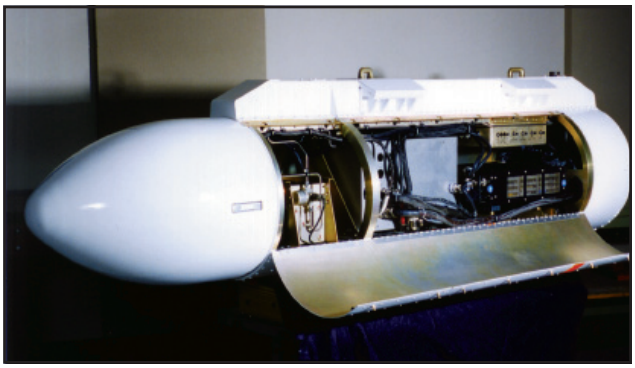
The electronics system consists of an air-cooled VME chassis capable of holding 21 6Ux160mm modules. Thermostatically controlled fans control the airflow to maintain an acceptable operating temperature. The VME chassis is removable and can be fitted with brackets for rackmounting in a 19” standard rack. Alternate or backup chassis can be easily swapped into the pod as needed.

A DCRSi-107R airborne instrumentation recorder was integrated into the pod for the AIM-9X application. A different recorder can easily be integrated with minor changes to the mechanical mounts.

The power system consists of several Mil-spec power supplies feeding a power distribution box. The power distribution box provides for routing of +/- 28VDC, +5, +12 VDC to various systems. The power supplies are individually breakered to protect each system and to aid in integration and testing.



AIM-9X CTU, Right Side



AIM-9X CTU, Left Side

The baseline unit allows for payloads to be hard mounted to the forward bulkhead. The Systems Development Department (SDD) has several designs for two, three, and four axis turrets that could be added to the basic pod to meet requirements for a stabilized platform.

A digital data acquisition and recording system serves as a fundamental part of this captive test pod. Video from the device under test can be digitized, combined with other auxiliary data and recorded on the instrumentation data recorder as well as recording the video in analog form with the VHS video recorder. The data can be reduced with a data processing system also available from the SDD.

AIM-9X CTU on Wing Pylon

Specifications

VIDEO

- VHS Video Recorder, RS-170 video plus two audio channels

DIGITAL DATA ACQUISITION SYSTEM

- VME based real-time data acquisition & data display system
- IRIG B time code
- DCRSi-107R Airborne Digital Instrumentation Recorder

POWER

- Inputs *28VDC*
  115VAC 3ø,400 Hz
- Regulated Outputs *+5VDC @ 92A*
  +12VDC @ 2A
  -12VDC @ 2A
  +28VDC @ 4A
  +15VDC @ 3A
  -15VDC @ 3A

MECHANICAL

- Length: *9 feet, 11.8 inches*
- Diameter: *19.65 inches*
- Weight: *<250 lbs. (w/o VME electronics)*
- Double Side doors
- Removable tail and nose cone
- High Pressure Gas storage vessel
  490 cu-in
  6000 psig mean operating pressure

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