

■ Features

- Three-axis, high torque, inertially stabilized gimbal
- Short-, mid-, and long-wave IR cameras
- IR spectrometer
- Visible light CCD camera
- Real-time video/status display system
- Distributed digital data acquisition and recording system
- Fiberoptic data transmission

■ Description and Operation

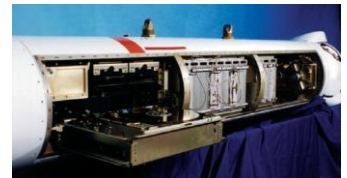
- The SATIRS pod is Kratos SRE's second generation airborne instrumentation pod. The SATIRS derives many proven attributes from its predecessor, the Beam Approach Seeker Evaluation System (BASES) pod. The SATIRS is a highly flexible, airborne test platform that is packaged in an aerodynamically shaped 22-inch diameter pod. The SATIRS may be carried on the left, right, or centerline station of an F-15 or other aircraft having 30-inch stores mounting lug spacing (BRU-32). Designed for tests involving high-performance fighter aircraft, the SATIRS has been proven at airspeeds of Mach 1.2 at an altitude of 35,000 feet. In addition, the pod has been flown on a UH-1 helicopter for missions involving low-altitude or ground-based targets.
- The SATIRS pod has four equipment bays, three-axis stabilized gimbal system, a high-pressure gas coolant system, a digital data acquisition and recording system, an optional video-tracking system, and a real-time data displaysystem.
- Payloads can be pointed in almost any direction with the gimbal's roll, azimuth, and elevation axes. The high-torque design permits stabilized control of payloads protruding into the airstream even at supersonic speeds. The gimbal can be pointed

manually through the cockpit joystick control, slaved to an external control source (i.e. missile guidance control unit configured as a payload), or slaved to a video tracking system. The gimbal can be caged in several user-definable positions through use of the cockpit hand controller.

- On-board high-pressure nitrogen (800 in3 at 3500psig) is available for cooling infrared sensors. One common configuration includes longwave and shortwave infrared (IR) cameras, an IR spectrometer, and the missile seeker being tested. Other payload configurations can be supported as well.
- A charge coupled device (CCD) camera with a field of view that matches the IR camera may be used as a source for monitoring, tracking, and recording. System status is overlaid on the video by the real-time display system. By boresighting the other sensors to the selected camera and controlling the gimbal by the video tracker, the entire sensor suite can be locked on a target while the pilot and backseat operator view the scene in the visible band.
- The SATIRS pod has a distributed digital data acquisition and recording system. Digital video from each IR camera and the spectrometer are combined with IRIG time code and other auxiliary data measured from the pod, and recorded. Data acquired from the payload electronics unit, and the central electronics unit are distributed through the pod to the digital data formatter and data display units by way of a fiber-optic ring network. The data can be reduced with a data reduction system also available from Kratos SRE.



SATIRS pod



SATIRS pod with the doors removed

■ **Specifications**

Video

- Visible CCD camera 7° FOV
- Video recorder
- Infrared cameras
 - › LW: 7°x 7° FOV 8-12μ
 - › MW: 7°x 7° FOV 3-5μ
 - › SW: 7°x 7° FOV 1-3μ
 - › Each camera has a remotely operated filter and aperture mechanism for narrowband measurement and varying amplitude targets.

Electrical

- Stall torque
 - › Elevation 200 ft-lbs
 - › Azimuth 360 ft-lbs
 - › Roll 75 ft-lbs
- Slew rate 30°/s for Az, El, & Roll
- Acceleration (fully loaded)
 - › Elevation 456°/s/s
 - › Azimuth 140°/s/s
 - › Roll 270°/s/s
- Look angles
 - › Elevation ±25°
 - › Azimuth ±160°
 - › Roll ±180°

■ **Digital data acquisition system**

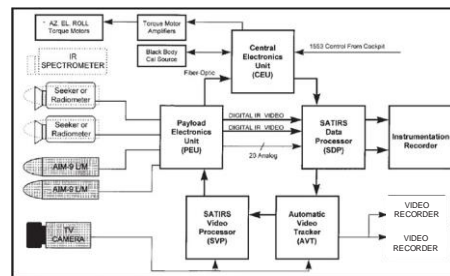
- 10-bit/pixel video data stream & pod auxiliary data
- VME based real-time data acquisition & data display system
- IRIG B time code

■ **Power requirements**

- 28VDC
- 115VAC, 3ø, 400Hz

■ **Mechanical**

- Length: 14ft., 3.5 inches
- Diameter: 22 inches
- Weight: 1250 lbs.



SATIRS pod



VME avionics chassis



www.KratosDefense.com