



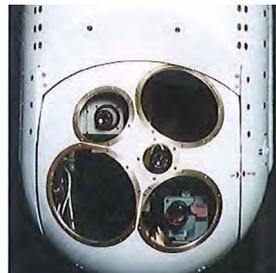
■ Features

- Line of sight stabilization <math>< 30 \mu\text{rads}</math>
 - Large payload volume and capacity (up to 120 lbs.)
 - Automatic video tracker
 - Rugged operational environment (UH-60 & UH-1)
 - Rack mount control electronics
- The SEAIP (Stabilized Electro-optical Airborne Instrumentation Platform) is a four-axis gimbaled turret for airborne instrumentation and sensor testing. The turret system provides an operational platform where the line-of-sight stability is on the order of $30 \mu\text{rads}$. This level of stability allows for testing of state-of-the-art active and passive sensors. (i.e. scanners, focal plane arrays, spectrometers, radar, etc.)

- The SEAIP electronics rack includes a VME chassis, transition panel, power supply chassis, and power inverter. The VME chassis houses the front panel, host processor, servo controller, video tracker, and power supply. The electronics include a high-speed serial data link which allows the VME servo controller to communicate with the near gimbal electronics (NGE). The NGE consists of power amplifiers to drive the gimbal torque motors, local signal conditioning, and processing circuits for the inertial and position sensors. The transition panel provides an easy-to-use method of reconfiguring the system interconnections.
- The control system for SEAIP is a set of VME circuit card assemblies which perform stabilization and control of the turret, video tracking, and graphics overlay. SEAIP features Southern Research's Advanced Digital Tracker which offers centroid and correlation tracking from TV or IR imaging sensors. The line-of-sight may be controlled by a joystick, video tracker, payload mounted within the turret, or as a slave from another SEAIP mounted on the aircraft. The VME electronics are available in either commercial or ruggedized configurations depending on the application. SEAIP's size and weight have been optimized through extensive use of finite element modeling and design. The innermost gimbal is completely removable to allow for large, single payloads, or multi-sensor suites to be mounted in the turret.

■ Specifications

- Outside diameter: 30 inches
- Weight: Turret: 310 lbs.
- Off gimbal electronics & cables: 158 lbs.
- Gimbal angles: EL: +30/-110*
+90 for stow
Az: +/-180*
- Operating modes: Position, rate, tracker & slave
- Stabilization: 30 microradians RMS
- Slew rate: 30 degrees/sec
- Acceleration: 300 degrees/sec²
- Operational altitude: 0 to 35,000 ft (10,700M)
- Airspeed: 220kt (407 km/hr) IAS
- Power: Caged: 28 VDC @ 31 amps
Full torque: 28 VDC @70 amps



SEAIP on test stand



ABOUT SOUTHERN RESEARCH

Founded in 1941 in Birmingham, Alabama, Southern Research is a scientific and engineering research organization that conducts preclinical drug discovery and development, advanced engineering research in materials and systems development, and energy and environmental technologies research. SR supports clients and partners in the pharmaceutical, biotechnology, defense, aerospace, environmental, and energy industries.

We pursue entrepreneurial and collaborative initiatives to develop and maintain a pipeline of intellectual property and innovative technologies that contribute to the growth of the organization and positively impact real world problems.

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