

Antenna deployment and pointing mechanism XTAR & SPAINSAT



ANTENNA DEPLOYMENT AND POINTING MECH- ANISM XTAR & SPAIN- SAT

Sener developed ten antenna deployment and positioning mechanisms for XTAR and SPAINSAT communication satellites. Sener was responsible for the detail design, manufacturing, integration and testing of the mechanisms (all critical activities for the success of the satellites).

The work developed by Sener for SPAINSAT/XTAR program proved Sener's capability to work under extremely constrained delivery times. Moreover gave Sener the opportunity to confirm its leadership in the field of aerospace mechanisms and also to enter successfully in the American space market.

SYSTEM COMPONENTS:

- Pointing mechanism based on two rotary actuators arranged in orthogonal axes.
- Antenna hold-down and release mechanism conducted by a pyrotechnic cutter.

- Operating Characteristics:
- **Point range:** half-cone of 5.3° on each axis.

- **Point accuracy:** 0.032° (peak-peak).
 - **Mass:** 7.2 kg, including fixing mechanism for launching.
 - **Maximum power consumed:** 17W motor, 16W heaters.
 - **Stiffness:** launch configuration 70 Hz, orbit 25 Hz.
 - **Reflector:** diameter 0.9m, 2.5kg.
 - **Mechanical environment:** sine 15g (vertical), 10.4g (lateral); Random 18.2 grms.
 - **Thermal environment:** operating -50C, + 85C, non-operating -60C, + 90C.
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