Ground Support Equipment

Jena-Optronik supplies a wide range of equipment to test the function of attitude control systems for satellites

The Ground Support Equipment (GSE) for star sensors perfectly covers all individual testing needs. In each development phase of an Attitude and Orbit Control System (AOCS) for a spacecraft, star sensors can be complemented by the smart, powerful and reliable GSE test Equipment.

Jena-Optronik's **Optical Sky Stimulator (OSI)** is a lightweight, intelligent and powerful device for the testing of star sensors (star trackers). The OSI enables the high-resolution direct mapping of celestial bodies (e.g. stars, moons, planets and other celestial bodies) and dynamic scenarios onto the star sensor. This enables a direct end-to-end test of all relevant functions and parameters of the star tracker in dynamic mode.

The standard OSI is suitable for ambient test conditions, while the OSI TV can be used in thermal vacuum chambers.
Highlight: Due to its light mass the OSI can be used to test star sensors which are already integrated on the satellite.

The **Optical Star Pattern Stimulator (OSPS)** is a simple and robust optical test system for Jena-Optronik's ASTRO APS star sensor. It statically shows a real star pattern.

The OSPS is available in different variants to perfectly meet various customer requirements: The standard OSPS is suitable for ambient test conditions, while the OSPS-TV can be used in thermal vacuum chambers. The OSPS is plug and play ready for the ASTRO APS. This enables a quick and easy integration of the OSPS into the customer's test setup.

For its smallest, most robust and compact ASTRO CL star sensor we offer OSI and

OSPS with additional test and alignment functions.

This OSPS allows the simulation of a static star pattern for basic functional testing of the ASTRO CL. However, it also provides optimal alignment of the star tracker at the satellite level and it enables alignment measurements at the satellite integration level without the need to attach permanently an alignment cube to the star tracker.

The **ASTRO APS Unit Tester (UT)** takes over the role of the spacecraft AOCS in case of stand-alone testing for Star Sensors. It powers the ASTRO APS, controls and communicates with it and receives data from it. Together with an Optical Sky Simulator (OSI) it offers the capability for closed loop tests of the ASTRO APS.

The Unit Tester comprises a power supply unit, a standard industrial PC and a user friendly graphical user interface allowing the comfortable control of all Unit Tester functions. The whole system is integrated into a rugged standard 19-inch industrial rack, which is best suited for use in laboratory or manufacturing environments.