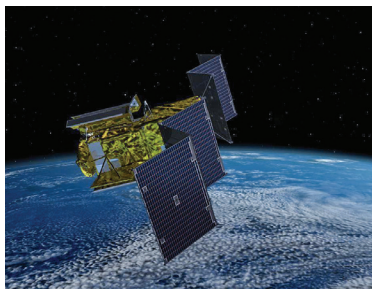
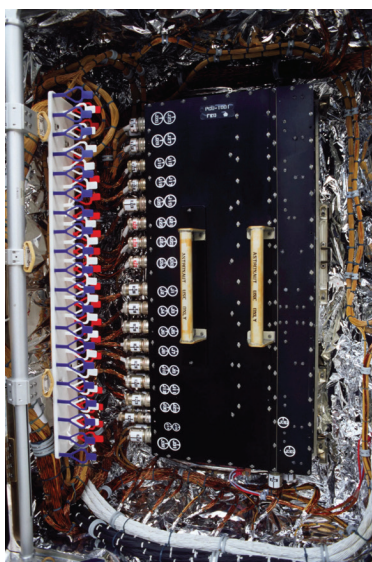


Technology overview

APPLICATIONS



Hinged solar panel bonding



Battery / power distribution
module grounding



Chassis-to-payload grounding

Function in Spacecraft Systems

Glenair ground straps and ESD bonds serve two essential roles:

1. Electrical Grounding
 - Provide a low-impedance return path for electrical current, particularly in power systems (e.g., batteries, power buses).
 - Maintain electrical continuity across mechanically separated parts, such as between a solar panel and the spacecraft body.
 - Absorb vibration and thermal cycling stresses due to their flexible, fatigue-resistant design.
2. Electrostatic Bonding
 - Maintain equipotential bonding between surfaces and structures to prevent differential charging, which can lead to damaging ESD arcs.
 - Ensure that exposed surfaces (e.g., solar arrays, radiators) are kept at the same electrical potential as the main spacecraft chassis.

Compliance with Space Standards

Glenair's space-grade grounding and ESD straps directly support the requirements of leading space charging and grounding standards:

- NASA-STD-4005 specifies that all conductive surfaces in a LEO spacecraft must be bonded to chassis ground with less than 2.5 milliohms resistance. Glenair straps meet or exceed this requirement with reliable, gas-tight connections and rugged construction.
- ECSS-E-ST-20-07 calls for equipotential bonding networks to mitigate surface and internal charging risks. Glenair's ESD straps offer flexible, conductive connections that remain effective even across deployable structures like articulated solar arrays or sensor booms.

Typical Applications in Spacecraft

- Solar Panel Deployment Mechanisms: Used to maintain electrical continuity across hinges and rotating joints that would otherwise be electrically isolated.
- Battery and Power Distribution Modules: Provide grounding between the battery frame and spacecraft bus, allowing safe discharge of fault currents and suppressing EMI.
- Payload Instruments: Prevent differential potentials across instrument chassis and mounting points, reducing noise and risk of ESD damage.
- Thermal Radiators and Exterior Panels: Keep isolated or painted surfaces bonded to spacecraft ground to avoid surface charging.

Advantages of Glenair Bonding Straps in Space Applications

- Flight-qualified: Built to survive launch, thermal cycling, and vacuum conditions.
- Flexible and Lightweight: Ideal for mass-constrained systems where rigid grounding cannot accommodate movement or stress.
- Reliable Performance: Proven in space applications, with high fatigue resistance and consistently low resistance over time.

Glenair's flexible ground and ESD bonding straps provide a vital layer of protection in modern spacecraft—especially in LEO—where managing electrical continuity, ESD, and EMI is crucial. Their performance aligns with stringent standards such as NASA-STD-4005 and ECSS-E-ST-20-07, making them an ideal choice for high-reliability satellite systems where failure is not an option.