



High-Throughput Communications

The Xenesis Hub

A compact, reduced-complexity, low-cost laser communications transceiver for down-linking data from Earth-orbiting spacecraft, point-to-point communications and private networking.

NASA's Jet Propulsion Laboratory has developed a compact, low-cost laser communications transceiver that surpasses the severe spectrum-allocation and bandwidth limitations of conventional radio-frequency communication systems, and Xenesis is the exclusive licensee for sales, distribution and manufacturing. The innovative design reduces complexity, size, mass, and cost by using readily available flight-grade parts for the compact optics assembly and high-capability electronics assembly. JPL's laser communications transceiver can uniquely and inexpensively satisfy the high-bandwidth communications needs of Earth-orbiting spacecraft.

BENEFITS

- Capable of linking >10 Gb/s from low-Earth-orbit to ground
- Increased laser power can be traded for smaller telescope aperture diameters and vice versa
- Coarse wavelength-division-multiplexing technique enables the use of larger active-area photodetectors at the ground station, minimizing atmospheric turbulence effects
- Target mass/power consumption of 10 kg/60 W for the 400-km orbit and 15 kg/120 W for the 2000-km orbit

technology solution



