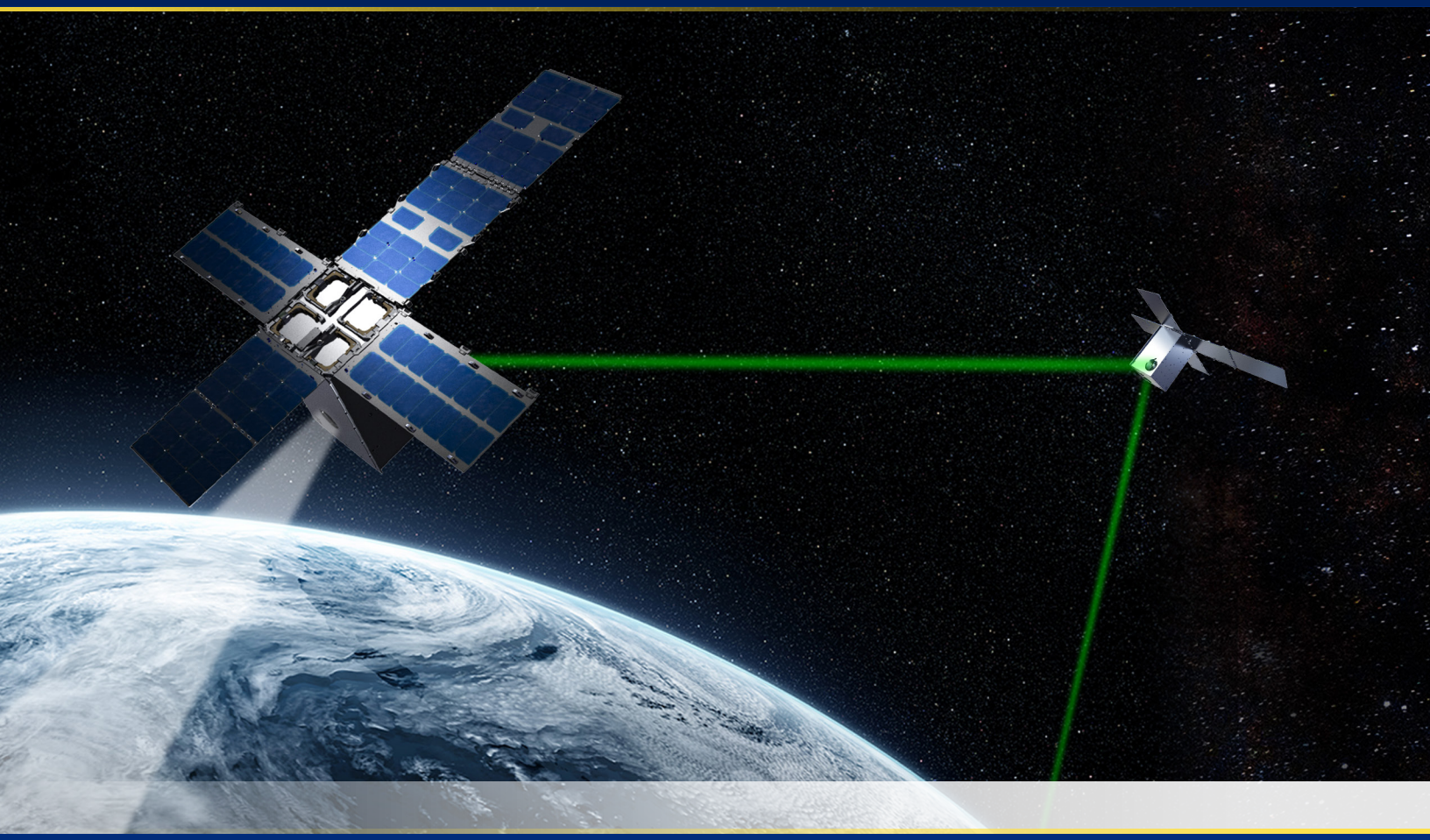
# LCT

LASER COMMUNICATION TERMINAL



General Atomics Electromagnetic Systems' (GA-EMS) Laser Communication Terminals (LCTs) are enabling faster, higher fidelity communication transmissions through modern Optical Inter-Satellite Links (OISL). LCTs support vast networking of satellites, the sharing of data and information, and collective on-orbit computing resources in space. GA-EMS' LCTs are facilitating the next evolution of modular, space-based communications services, providing a more resilient architecture to ensure 24/7 total connectivity from earth, to space, and beyond.

GENERAL ATOMICS
ELECTROMAGNETICS

# LASER COMMUNICATION TERMINAL

## OVERVIEW

GA-EMS' LCTs enable robust space-to-space, space-to-air, and space-to-ground communications between multiple spacecraft in a variety of orbits. The LCTs improve resiliency and security as well as providing increased satellite crosslink and downlink data rates when compared to legacy radio-frequency (RF) systems.

## 2021 DEMONSTRATION DATA

### LCT

**Wavelength:** 1550 nm

**Data Rate:** Up to 5GB per sec

**Max Range:** 5000 km

### SATELLITE

**Mission:** Department of Defense contracted inter-satellite LCT payload technology demonstration

**Satellites:** Two GA-EMS 12U CubeSats

**Orbit:** Low Earth Orbit (LEO)

## OPERATIONAL CHARACTERISTICS

### Higher Directivity with Less Power and Lower Mass

The smaller aperture size required for optical communication relative to conventional RF technology, allows for a smaller, lighter LCT package with the additional benefit of less beam spreading.

### High Bandwidth

The optical system's higher carrier frequency increases its information carrying capacity.

### Less Crowded Spectrum

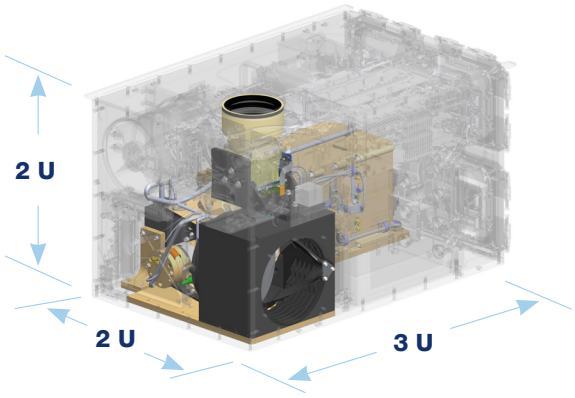
Narrow, optical beams reduce interference with adjacent carriers, reducing overall spectrum congestion.

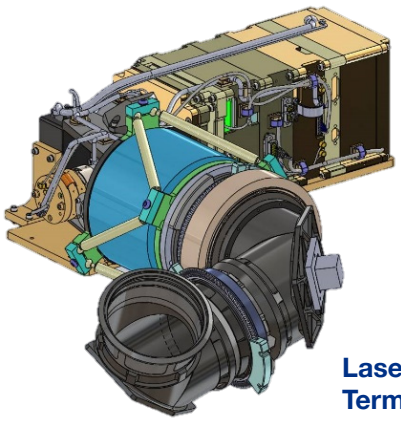
### High Security

The highly directional, narrow beam divergence of optical communication has inherent low probability of intercept and detection (LPI/LPD).

### Scalable for Cislunar Operation

GA-EMS' LCTs provide communication throughout the cislunar environment to support Space Domain Awareness and other missions.



**Laser Communication Terminal (LCT)**





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