

LCT-5 LASERCOM TERMINAL



The bandwidth, speed and distance champion

AOptix lasercom terminals have demonstrated extremely high data rates over extended distances:

- 80 Gbps at 1 km—
Aerostat to fixed and mobile ground vehicle
- 100 Gbps at 28 km—
mountain top to ground
- 40 Gbps at 150 km—
mountain top to mountain top

A Bandwidth Breakthrough Offering 40 Gbps Data Rates

In a military theater of operation, dissemination of sensitive data from ground and air nodes is critical. In a tactical IP network, delivering video, voice and data to command centers requires ultra-high data rates and dynamic connectivity between nodes.

Engineered for these high-fidelity networks, the LCT-5 lasercom ground terminals offer full-duplex, virtual-fiber connectivity that is data rate, protocol and wavelength agnostic. The enabling technology is our proprietary Adaptive Optics (AO) that corrects for atmospheric turbulence and distortions, minimizing the effects of scintillation and dramatically enhancing link availability.

FIELD-READY TACTICAL COMMUNICATIONS

Designed for line of sight (LoS) ground nodes in a rapid mobile ad-hoc network (MANET) or for permanent backbone network connectivity, the LCT-5 opens up new possibilities in secure, real-time terabit data transfers. The ground-based terminal can also be used with AOptix airborne terminals for mobile, airborne or ship-mounted applications.

LCT-5 offers an unprecedented combination of minimal size, weight and power (SWaP). Packaged in a ruggedized waterproof case, the LCT-5 weighs 20.5 kg and requires only 28 watts of DC power. The output optical power complies with ANSI eye safety standards.

With its easy-to-use, web-based graphical user interface, automated acquisition alignment and tracking functionality, non-specialized field personnel can install and operate the link in minutes.

An optional plug-and-play interface configuration box includes wave division multiplexing (WDM), Gig-Ethernet, RF, video and audio interfaces. An 8-hour battery backup is also available.

PROPRIETARY ADAPTIVE OPTICS

The optical adjustments are made with tip-tilt steering and a unique deformable mirror. Through closed-loop control, the deformable mirror actively changes its shape thousands of times per second to compensate for adverse atmospheric conditions in real time. These changes precisely correct for the wavefront distortions, while focusing the beam directly into a single-mode fiber (SMF) or multi-mode fiber (MMF).

ALL-OPTICAL COMMUNICATIONS

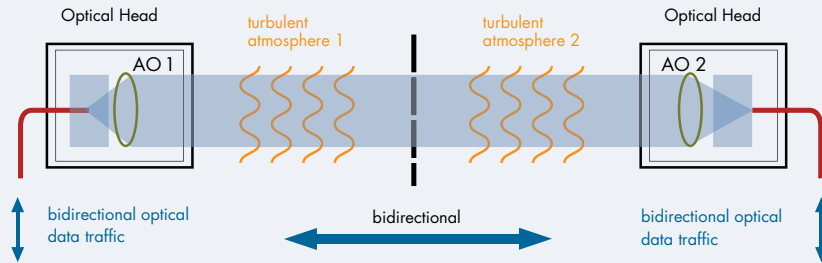
The unique fiber interface enables a transparent all-optical network. The LCT-5 terminals provide a virtual fiber link between two network nodes, never requiring conversion into an electrical signal. The system is also transparent to network protocols and can transmit multiple WDM wavelengths at various data rates using different modulation schemes, including coherent detection.

A beam diameter of only 30 cm at 20 km provides unprecedented low probability of intercept and detection. The optical communication link is also readily encrypted using various techniques, including quantum cryptography.

FROM THE LEADER IN ADAPTIVE OPTICS

AOptix Technologies is the leading developer of advanced lasercom and biometric identification solutions using adaptive optics, an imagery correction technology that compensates for motion and atmospheric disturbances as they happen. These advanced optical solutions are being developed for both government and commercial applications.

MOST CAPABLE LASERCOM SYSTEM IN THE INDUSTRY



PRODUCT SPECIFICATIONS

Maximum link distance	Up to 20 km depending on operating conditions
Wavelength	C band and L band
Beam diameter at the aperture	10 cm
Beam divergence	.016 mrad
Dimensions	23 cm x 34 cm x 39 cm (9" x 13.5" x 15.5")
Weight, transceiver	20.5 kg (45.8 lbs)
Operating temperature range	-20 C to +60 C
Power	30W (33.6W peak power)
Input voltage	28V DC nominal*
Environmental standard	Designed to MIL-STD 810
Mounting	Fixed mount or optional tripod with elevation azimuth gimbal
Communication interface I/O	Integrated in chassis via TCP/IP RJ-45 connection at rear
Data interface	Optical (FC/APC) or electrical (GigE/RJ-45)
Remote operation	Web-based graphical user interface
Control Interface	Ethernet RJ-45 or command-line interface

*Available with optional AC power supply



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