

Laser Based Free Space Optical Communication System



FEATURES

- Free Space, Wireless Communication
- Full Duplex Wire Speed Connectivity at 100 Mbps Fast Ethernet speed
- Secure Data Transmission
- Lightweight, Compact Design
- Quick Installation and Re-deployment
- Transparent Operation
- IEEE 802.3u Compliant

APPLICATIONS

Typical applications for the PICO series devices include:

- Replace lower speed leased lines or radio links
- Interconnect LAN's in campus or industrial environment
- High bandwidth connection to the Internet
- VoIP applications
- Temporary installations
- Emergency backup



OVERVIEW

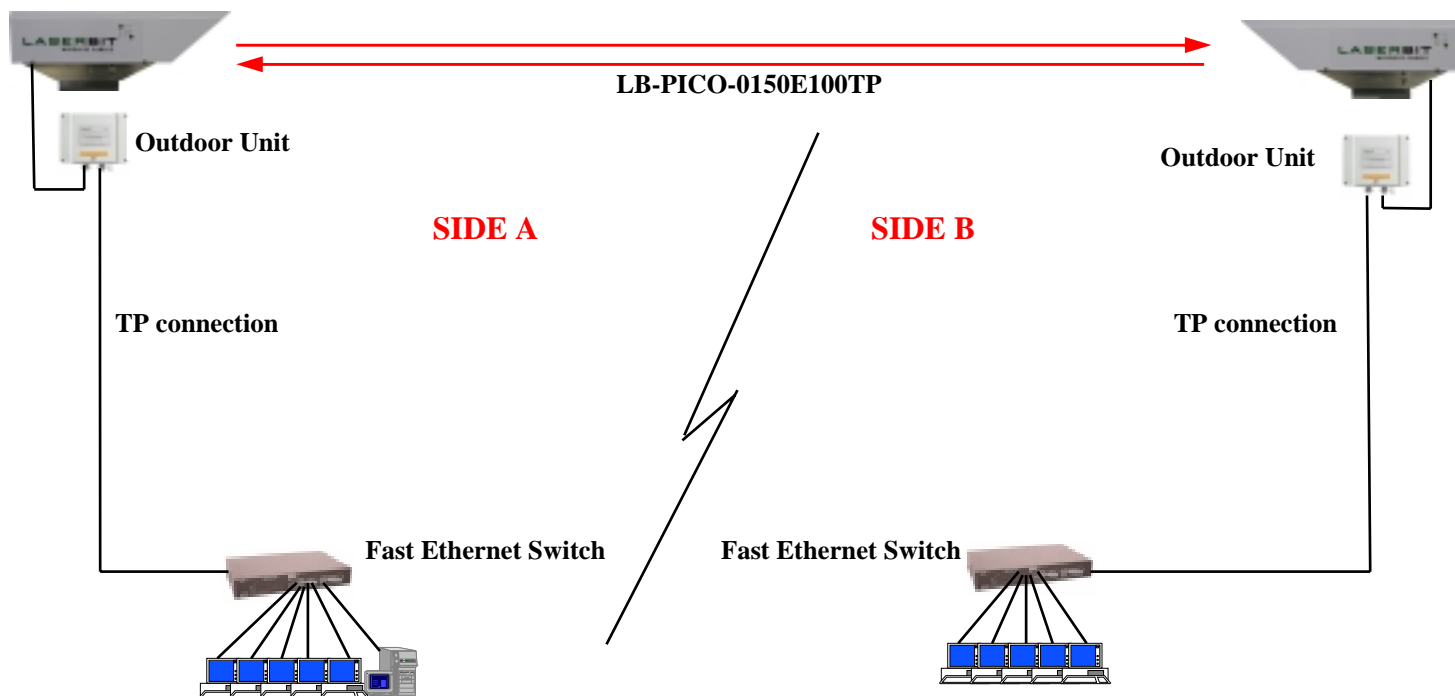
The **PICO** series products from LaserBit set a new standard for Free Space Optical transmission systems. They provide simple and easy to install solution that is unique in laser based networking. This new range of products incorporates a lightweight, compact mechanical design with a factory-set optical system, which allows end-users to benefit from simple and quick installation. The **PICO** is more competitively priced than 2.4 GHz radio solutions and the bandwidth provided is about ten times higher. LaserBit's **PICO** range offers cost effective, reliable and secure laser based free space optical transmission for local area networks (LAN) at full duplex Fast Ethernet wire speed. The transmission carries data using a concentrated laser beam and a unique modulation technique is employed to ensure error free data transfer over distances of up to 150 meter. Transparent and wire speed data transfer together with virtually zero latency ensures that the PICO system can be easily integrated into any environment. The PICO series use laser light as a transmission medium. As with all LaserBit systems this means that frequency licenses are not required and transmission is not affected by electro-magnetic interference. The data transmission via a laser beam is secure as it is extremely hard to intercept, and cannot be detected by spectrum analysers. In the case of a PICO system the laser link is considered a "virtual" fiber in the air.

PRODUCT DESCRIPTION

The LaserBit **PICO** system comprises of two Laser Heads, two Outdoor Interconnection Units (OIU) and two sets of interconnection cables — one at each end. The Laser Heads are installed outdoors, usually on rooftops or sidewalls of buildings, where a clear optical path exists between the two sites. Next to the head the Outdoor Interconnection Unit provides fast and easy interconnection between the laser head and the cable coming from the network equipment. Moreover the OIU houses the Power Supply Unit (PSU) of the system and the network interface. The PSU provides the low voltage power required to operate the laser head while the data port offers direct 100BaseTX connectivity for standard network equipments. Each PICO head contains built-in transmission monitoring service, which features a visual signal strength indicator and LINK status information accessible on the rear side of the head assembly through a window. In addition **PICO** units are equipped with optical aid to target the remote head easily. All that makes the installation real fast and easy even for people who have never dealt with FSO equipment before.

INVESTMENT PROTECTION

By utilizing IEEE standard compliant interfaces LaserBit system protects the customers' investments in long-term projects. The use of today's most popular twisted pair LAN interface provides seamless integration into any LAN environment. The most important feature of LaserBit's PICO system is the quick and easy installation process. The alignment of the equipment is very simple, and a 100 Mbps network can be connected in any environment within an hour without cabling.



Technical Specifications

Electrical Characteristics	
Light source	Laser Diode
Laser diode power (mW)	70
Detector	Si PIN
Dynamic range	>25 dB
Bandwidth	100 Mbps
BER	< 10 ⁻⁹
System latency	< 50 ns
Data In/Out	
Fast Ethernet	100BaseTX UTP available at an IDC panel in the Outdoor Box
Power	
Power required	230 VAC, 50 W max. (110 VAC optional)
Power to head	2 x 8 VDC +30 VDC, 2 x 1 A max.
Optical Characteristics	
Wavelength	785 nm
Beam divergence	20 - 70 mrad
Receiver acceptance angle	8.5 mrad
Physical Characteristics	
Head Housing	Stainless steel
Weight	2.5 kg
Dimensions (with cover and Alignment Unit, mm)	160 x 110 x 350
Environment	
Operating temperature	- 25 to + 60 Centigrade
Storage temperature	- 40 to + 80 Centigrade
Humidity	95% non condensed
Protection rating	IP65 for Head Assembly and Outdoor Unit, IP20 for Indoor Unit

Ordering Information

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LB-PICO-0150E100TP	LaserBit PICO LINK with Fast Ethernet (100BaseTX) interface. Maximum 150 m distance between heads.