

LaserBit LB-5000 Modular Series

Laser Based Free Space Optical Communication System



Features:-

- Free Space, Wireless Communication up to 5000 m
- Modular System Design
- Easy Upgrade & Trouble Shooting
- Quick Installation and Re-deployment
- Full Duplex Wire Speed Connectivity
- Wide Selection of Industry Standard Interfaces
- Secure Data Transmission
- Transparent Operation

Applications:-

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



Product Overview

The LB-5000 series of products from LaserBit are laser based free space optical systems designed to provide flexible, reliable and secure solutions for high speed wireless connections up to 5000 m. Due to their modular design the equipment is easy and fast to troubleshoot and upgrade on the field. Adjustable transmitter optical system allow custom configuration of the system for specific installations. The patented **Aperture Control Mechanism** delivers outstanding system availability figures.

The transparent and wire speed data transfer, together with virtually zero latency, assures the easy integration of the system in all environments. LB-5000 series systems can be ordered with an IP based SNMP compatible device management that allows remote control and monitoring of the equipment. Because they use infrared light as their transmission medium, LaserBit systems do not require frequency licenses and the transmission is not affected by electro-magnetic interference. The concentrated laser beam is extremely hard to tap, even to discover as it cannot be detected by spectrum analyzers. **The LaserBit link is a virtual fiber in the air.**

Product Description

The LaserBit LB-5000 systems comprise of two Laser Heads (each containing two transmitters), two Outdoor Interconnection Units (ODU) and two sets of interconnection cables — one at each end. The Laser Heads are installed outdoors, where a clear optical path exists between the two sites. Each head is equipped with a heavy duty Alignment Base Unit, which allows exact positioning and ensures reliable long-term operation of the system.

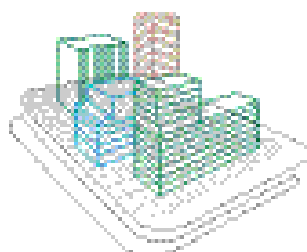
The head assembly features rear and front doors that provide easy access to the internal parts on the field during installation, troubleshooting or upgrade procedures. Next to the head the Outdoor Interconnection Unit provides fast and easy interconnection between the laser head and the cable coming from the network equipment.

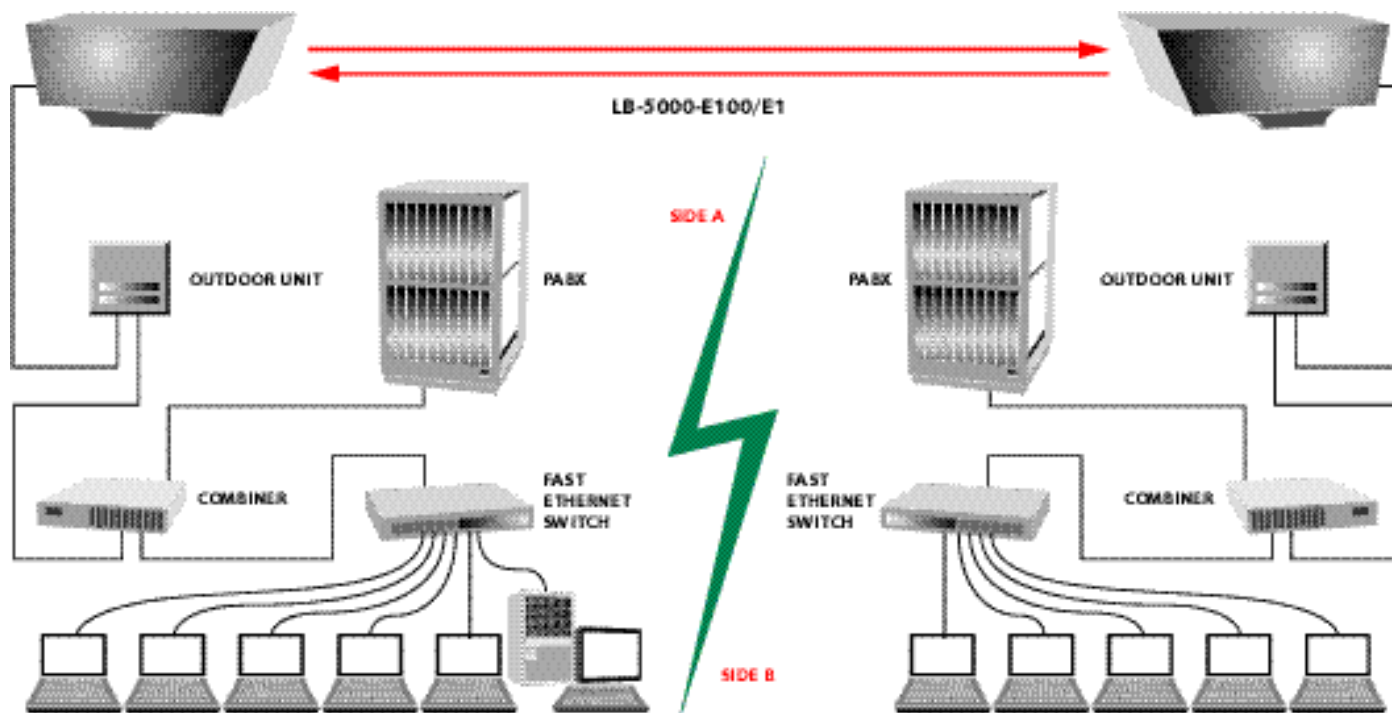
The OIU houses the Power Supply Unit (PSU) of the system and the network interface. The PSU provides the low voltage power required to operate the laser head while the data port offers direct connectivity for standard network equipment. A variety of standard copper and fiber interfaces are available for voice and data applications. The system contains a built-in signal monitoring unit, which features a visual signal strength indicator and LINK status information accessible on the rear of the head assembly.

The optional IP Based management Hardware is placed in an Indoor Interconnection Unit (IDU). The bar graph of the IDU displays the actual signal strength level while the LED indicators show the presence of Minor or Major alarm conditions. With the help of the relay contacts an external alarm monitoring equipment may be connected to the system to process the alarm signals further. Additionally, LaserBit's BitView™ software allows the monitoring of the link's operation through a proprietary graphical interface (GUI) via Ethernet or RS-232 ports or a third party SNMP manager via TCP/IP connection.

Investment Protection

Industry standard network interfaces and clear upgrade path for higher bandwidth protect the customer's investments in LaserBit systems. LB-5000 systems offer a high level of network flexibility due to their modular design, which makes them ideal to follow network topology changes.





LaserBit LB-5000 Modular Series - Technical Specifications

ELECTRICAL CHARACTERISTICS

Light source	Laser Diode
Laser diode power	8 x 70 mW
Detector	APD Photodiode
Dynamic range	>40 dB
Bandwidth	1 — 155 Mbps depending on model
BER	< 10 ⁻⁹
System latency	< 50 ns

DATA IN / OUT

Fast Ethernet E1, 4xE1 and 16xE1 series	RJ-45 socket MM fiber between the head and IDU, 75 Ohm BNC (unbalanced) and 120 Ohm RJ-45 (balanced) for G.703 connection on the IDU
E1/100 series	MM fiber between the head and IDU, 75 Ohm BNC and 120 Ohm RJ-45 for E1 G.703 and RJ-45 (100BaseTX) connection for LAN on the IDU
Transparent Channel, ATM 155 series	62.5/125 MM fiber at 1300 nm with SC connectors (SM optional)

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

POWER

Power required	230 VAC, 50 W max. (110 VAC and 48 VDC optional)
Power to head	2x12 VDC, 2x1 A max.

OPTICAL CHARACTERISTICS

Wavelength	785 nm
Beam divergence	0.5 - 15 mrad
Receiver acceptance angle	8.5 mrad

PHYSICAL CHARACTERISTICS

Head Housing	Hardened Aluminium
Weight	32kg
Dimensions (with cover and Alignment Unit, mm)	750 x 467 x 480

ORDERING INFORMATION

LB-5000-E100TP	LaserBit LINK with Fast Ethernet (100BaseTX) interface. Max. 5000 m distance between heads.
LB-5000-TC100	LaserBit LINK, Up to 100 Mbit/sec MM fiber optic I/F with SC connector. Max. 5000 m distance between heads.
LB-5000-ATM155	LaserBit LINK, 155 Mbit/sec MM fiber optic I/F with SC connector. Max. 5000 m distance between heads.
LB-5000-E1	LaserBit LINK+LE-E1-1300M/1E1 LINK (2 Mbps G.703 balanced & unbalanced IF. Max. 5000 m distance between heads).
LB-5000-4E1	LaserBit LINK+LE-E2-1300M/4E1 LINK (4x2 Mbps G.703 balanced & unbalanced IF. Max. 5000 m distance between heads)
LB-5000-16E1	LaserBit LINK+LE-E3-1300M/16E1 LINK (16x2 Mbps G.703 balanced & unbalanced IF. Max. 5000 m distance between heads)
LB-5000-E1/100	LaserBit LINK + LE-COMB-E1/100/1300M LINK (G.703 + 100BaseTX IF. Max. 5000 m distance between heads)

ORDERING INFORMATION

LB-MGM-BASE*	Basic IP based management system (inc. 2 x LB-MGM-HW and BitView-Light-8), 110 VAC or 230 VAC PSU (per LINK)
--------------	--------------------------------------------------------------------------------------------------------------

