METRObility optical systems

Simply Brilliant Optical Ethernet

T1/E1 Interface

Extending T1/E1 distance up to 100km

- *Copper-to-multimode fiber conversion to 2km, or copper-to singlemode fiber conversion up to 100km*
- *AMI or B8ZS (T1)/HDB3 (E1) bipolar line code support on the copper interface*
- *Local and remote loopback monitoring and BERT 511 testing*
- *No jitter for maximum transmission quality*
- *Eight LED indicators for easy visual diagnostics*
- *MDI-II to MDI-X switch on the copper port eliminates the need for crossover cables*

T1/E1 Copper-to-Fiber

The Metrobility® T1/E1 interface provides cost effective high-speed integration and conversion of T1 (1.544Mbps) or E1 (2.048Mbps) serial copper telco communication lines to fiber optic links. The T1/E1 interface line card can connect to PBX's, multiplexers, ATM/Frame Relay devices, routers, network servers and video CODECS achieving extended distances, high density, high quality of transmission, and improved security.

Regardless of line codes or framing, the copper data stream is converted to optical signals for greater noise immunity and longer transmission. The T1/E1 interface line card supports remote fiber optic links up to 2km over multimode (1310nm) and 100km over singlemode fiber (1550nm). The T1/E1 is available in a bi-directional wavelength division multiplexing (BWDM) model.

The T1/E1 interface operates seamlessly with low bit delay, and all signal activity is converted ensuring accurate communication within connected segments

Flexible Platform Options

These modular interfaces are supported in Metrobility chassis. DC versions of the R5000 and R1000 chasis are NEBS certified.

The standalone version is enclosed in a rugged metal fabrication to offer superior reliability for the most demanding environments. Each standalone is equipped with an external, universal AC power supply.

Extensive SNMP Management

Metrobility's easy to use NetBeacon® element management software provides end-to-end remote management to easily monitor framing errors, parity errors, CRC errors, bipolar violations, and far end fault alarms. NetBeacon displays information about port type (T1/E1), transmit code configuration, line length configuration, line status, and loopback status as well as standard information such as serial number, revision level, date installed, etc.

Unique Remote Test Capability

The T1/E1 Interface provides time and cost saving features such as local and remote loopback testing, built-in BERT (Bit Error Rate Testing) and intelligent software management. A service technician can initiate out-of-band loopback by using NetBeacon to set the fiber port in loopback mode. For remote troubleshooting, the on-board BERT routine can be used to determine line quality. All errors will generate fault messages for diagnostic action and can be accomplished without a technician visiting the far end location.

Product Highlights

Extends T1/E1 distances up to 100km without repeaters

Local and remote loopback capability

ST or SC connectors on the fiber optic ports

Management statistics including:

- Built-in BERT
- Far end fiber fault (FEF)
- Bit error rate
- Bipolar violations

Automatically transmits all ones over fiber link (TAOS)

Signal retiming, regeneration and reamplification for maximum transmission quality

Supports all common line codes

Optional network management with NetBeacon Element Management System 3.1 or higher or any standard SNMP management system

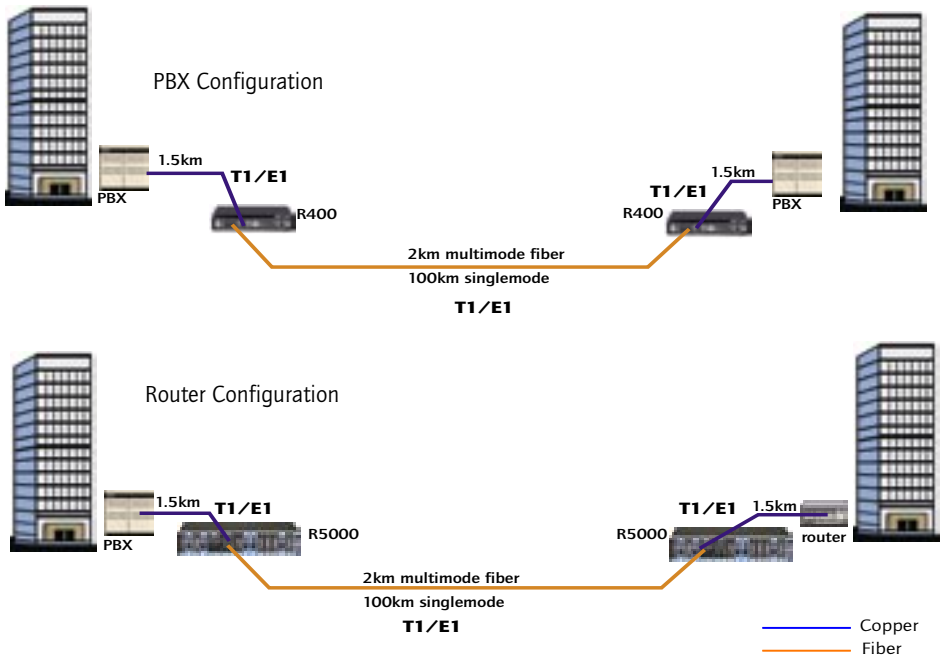
Remote monitoring via the web using the WebBeacon management kernel

T1/E1 RJ-45 copper to multimode or singlemode conversion

Low power consumption

High MTBF

NEBS Level III compliant



NOTE: Maximum distances shown, distances may vary based on cable plant installations

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Metrobility Optical Systems is an innovative next generation optical networking company whose focus is on delivering optical access platforms and to harness the power of Ethernet and fiber optics to deliver superior network edge access, connectivity and wavelenght multiplexing solutions.

T1/E1 Models

Line Card	Standalone	Port 1 *	Port 2	Max. Supported Segment Length Port 1	Port 2
R105-13	2105-13-01	T1 copper RJ-45	T1 fiber multimode SC	1.5km	2km
R105-14	2105-14-01	T1 copper RJ-45	T1 fiber singlemode SC	1.5km	15km
R105-15	2105-15-01	T1 copper RJ-45	T1 fiber multimode ST	1.5km	2km
R105-16	2105-16-01	T1 copper RJ-45	T1 fiber singlemode ST	1.5km	15km
R105-17	2105-17-01	T1 copper RJ-45	T1 fiber, LH singlemode SC	1.5km	40km
R105-1J	2105-1J-01	T1 copper RJ-45	T1 fiber ELH singlemode SC	1.5km	100km
R165-13	2165-13-01	E1 copper RJ-45	E1 fiber multimode SC	1.0km	2km
R165-14	2165-14-01	E1 copper RJ-45	E1 fiber singlemode SC	1.0km	15km
R165-15	2165-15-01	E1 copper RJ-45	E1 fiber multimode ST	1.0km	2km
R165-16	2165-16-01	E1 copper RJ-45	E1 fiber singlemode ST	1.0km	15km
R165-17	2165-17-01	E1 copper RJ-45	E1 fiber, LH singlemode SC	1.0km	40km
R165-1J	2165-1J-01	E1 copper RJ-45	E1 fiber ELH singlemode SC	1.0km	100km
BWDM					
R105-1X	2105-1X-01	T1 RJ-45	100BASE-FX singlemode SC	20km 1550/1310	
R105-1Y	2105-1Y-01	T1 RJ-45	100BASE-FX singlemode SC	20km 1310/1550	
R165-1X	2165-1X-01	E1 RJ-45	100BASE-FX singlemode SC	20km 1550/1310	
R165-1Y	2165-1Y-01	E1 RJ-45	100BASE-FX singlemode SC	20km 1310/1550	

* - Connector is an 8-pin modular jack wired as RJ-48

Specifications

Standalone:

Power (input)	+5.0vdc @ 1.0 A, 5W average
Oper. Temp.	0°C to 55°C
Storage Temp.	-30°C to 70°C
Relative Humidity	5% to 95% non-condensing
Weight	3 lb, 1.36kg
Dimensions	4.83"L x 3.26"W x 1.71"H 12.3 cm x 8.3 cm x 4.3 cm

Network Connections

Twisted Pair Interface

Connector	Shielded RJ-45, 8 pin jack
Impedance	100 Ohms T1 (balanced pair) 120 Ohms E1 (balanced pair)
Link Length	Up to 1,310 feet (short haul) Up to 4,500 feet (22.5 dbm) (long haul CSU)

Multimode Fiber Interface

Connector	ST or SC
Link Length	Up to 2km full duplex
Rx Input Sensitivity	-31dbm peak minimum
Output Power	-20 dbm to -14 dbm

Singlemode Fiber Interface

Connector	ST or SC		
Link Length	15km	40km	100km
Output Power	-23 to -17	-5 to 0	-3 to 0
Rx Input Sensitivity (dbm peak min)	-32.5	-35	-37

Additional specifications for the BWDM models, including copper port and fiber port specifications, may be found in the BWDM User Manual.

MADE in USA

A6285 ISO 9001

Metrobility Optical Systems,Inc.