FlexPoint T1/E1

T1/E1 Copper to Fiber Media Converters

The FlexPoint T1/E1 is a modular T1/E1 copper to fiber media converter that provides reliable and cost-effective extension of devices such as PBXs, CSUs and routers via fiber.

Designed as a transparent repeater, the FlexPoint T1/E1 supports standard T1, E1 and Primary Rate Interface (PRI), voice or data. The converter also supports AMI, B8ZS and HDB3 line codes. Manual switch settings with on-the-label descriptions enable easy configuration of T1/E1 line codes and line lengths.

A crossover switch makes it simple to connect the FlexPoint T1/E1 converter to PBXs or CSUs and eliminates the need for crossover and custom cables to connect devices.

The fiber port operates at 1310nm and supports SC or ST connectors. Multimode fiber models support distances of up to 5km, and single-mode fiber models support distances of up to 60km.

Diagnostic features include local loopback, remote loopback and all 1's insertion (AIS) modes for the copper or fiber segments. Local loopback validates connectivity to local T1/E1 lines, while remote loopback validates the entire fiber segment from one unit without having to make adjustments on both ends. Dry contact relay option allows a separate T1/E1 alarm circuit to be notified when a loss of power is detected.

The FlexPoint T1/E1 features descriptions of the LED indicators on the label for easy in-the-field configuration, installation and maintenance. The LEDs report the availability of power, connection status, diagnostic or loopback modes of operation and the detection of all 1's by the fiber and UTP ports.

FlexPoint modules can be mounted utilizing optional wall-mounting hardware or with DIN-rail mounting brackets. They can also be rack-mounted in a 5-Module shelf or in a high-density 14-Module, power-redundant Powered Chassis.

FlexPoint modules installed in the 5-Module shelf or used as standalone devices can be powered by an external AC to DC power adapter, or through the 5VDC chassis connector. Standalone modules can also be powered by attaching an external DC power supply (18-60VDC). When used in the 14-Module power-redundant Powered Chassis with any combination of AC and DC power supplies, the installed modules are powered via the 5VDC chassis connector.

The wide variety of FlexPoint mounting and power options provide flexible upgrade paths as network requirements change and grow.

FlexPoint unmanaged media converters are easy to use and provide dependable fiber connectivity in Enterprise and Government networks around the world.

KEY FEATURES

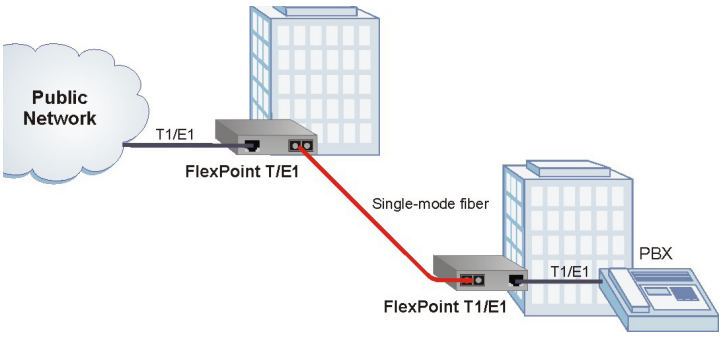
- The FlexPoint T1/E1 is a modular copper to fiber media converter that supports ANSI, AT&T, ITU and ETSI standards
- Supports AMI, B8ZS and HDB3 line codes
- Fiber port supports multimode or single-mode fiber SC or ST connectors, and distances up to 60km
- Labeled status LEDs and switches for quick and easy installation
- Features a crossover switch for easy connections to PBXs or CSUs
- Local and remote fiber loopback switches with optional all 1's insertion (AIS) to facilitate easy installation
- Equipped with dry relay contacts for connection to alarm equipment
- Wall-mount or rack-mount on a 5-Module shelf or in a 14-Module power-redundant FlexPoint Powered Chassis
- Completely software independent with no installation of drivers required
- Peace-of-mind reliability backed by a lifetime warranty and free 24/7 technical support

SPECIFICATIONS

Model Type	**T1/E1**		
Data Rates	T1: 1.544 Mbps, E1: 2.048 Mbps		
Standards	ANSI, AT&T, ITU AND ETSI		
Encoding/ Decoding	AMI, B8ZS and HDB3		
Connectors and Cables	Coax: BNC, 75 Ohm E1 Twisted Pair: RJ45/RJ48, 100 Ohm T1/120 Ohm E1 *(Active Pairs are Pins 1 , 2 and 4 , 5)* Fiber: SC or ST Multimode: 50/125, 62.5/125, 100/140µm Single-mode: 9/125µm		
LED Displays	Power, RJ45/RJ48 Link/AIS, Fiber Link/AIS, Diagnostic		
Diagnostic Functions	Local loopback on RJ45/RJ48 and fiber Transmit all 1s into RJ45/RJ48 (AIS) Transmit all 1s into fiber (AIS) Remote loopback on fiber		
Alarm Connectors	RJ45/RJ48 pins 3 and 6		
Dimensions	W: 3.0" x D: 4.0" x H: 1.0"		
Weight	6 oz. (without power adapter)		
Compliance	UL, CE, FCC Class A		
Power Requirements	**Nominal Voltage:** **Voltage Range:** **Power Nominal:** **Maximum Power:**	**Barrel Connector** 9VDC 6.0 to 15.0VDC 0.5A @ 9VDC 1A @ 9VDC	**Molex Connector** 5VDC 4.75 to 5.25VDC 0.6A @ 5VDC 0.75A @ 5VDC
Temperature	0 to 50º C		
Humidity	5 to 95% (non-condensing)		
Altitude	-100m to 4000m		
MTBF (Hours)	Module without Power Adapter: 680,000 Module with Power Adapter **-1**: 250,000 Module with Power Adapter **-2**: 100,000		

APPLICATION EXAMPLE

FlexPoint T1/E1 provides a cost-effective solution for extending telecom demarcation points. A pair of FlexPoint T1/E1s are used to extend the demarcation between buildings via fiber. Multimode or single-mode fiber can be used, and fiber links can be extended up to 60km using single-mode fiber.



Line Types / Descriptions		
Line Type	**Copper Distance/Budget**	**Line Impedance**
E1	2.37V / Standard	75 Ohm
E1	2.37V / Long Haul	75 Ohm
E1	3.0V / Standard	120 Ohm
E1	3.0V / Long Haul	120 Ohm
DSX-1	0' - 133'	100 Ohm
DSX-1	133' - 266'	100 Ohm
DSX-1	266' - 399'	100 Ohm
DSX-1	399' - 533'	100 Ohm
DSX-1	533' - 655'	100 Ohm
DS-1	-0 db	100 Ohm
DS-1	-7.5 db	100 Ohm
DS-1	-15 db	100 Ohm
DS-1	-22.5 db	100 Ohm

ORDERING INFORMATION

Fiber Type	Distance Copper / Fiber	Connector Type		Tx / Rx Wave-length (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Sense (dBm)	Max. Rx Power (dBm)	Optical Power Budget
		ST	**SC**						
Copper RJ-45 / RJ-48 to Fiber									
MM	6,000 ft. / 5km	**4472-x**	**4470-x**	1310	-24	-14	-31	-14	7
SM	6,000 ft. / 30km	**4473-x**	**4471-x**	1310	-15	-8	-31	-8	16
SM	6,000 ft. / 60km	**-**	**4474-x**	1310	-5	0	-31	-3	26
Copper Coax + RJ-45 / RJ-48 to Fiber									
MM	6,000 ft. / 5km	**4492-x**	**4490-x**	1310	-24	-14	-31	-14	7
SM	6,000 ft. / 30km	**4493-x**	**4491-x**	1310	-15	-8	-31	-8	16
SM	6,000 ft. / 60km	**-**	**4494-x**	1310	-5	0	-31	-3	26

Power Adapter Kits (-x): -0 = No power adapter included **-1** = 110-120 VAC/60 Hz (US plug), **-2** = 100-240 VAC/50-60 Hz (IEC plug, no power cord)
Contact Omnitron for other fiber options and operational temperature ranges.
Coax models are not supported in the 5-Module Rack-mount Shelf.

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