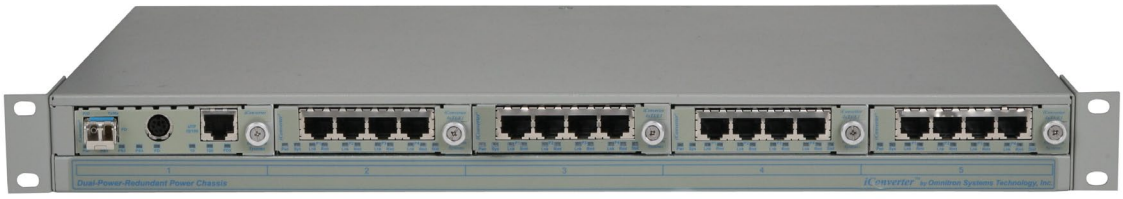
iConverter® T1/E1 MUX/M

Managed T1/E1 Multiplexer



SFP not included

The iConverter T1/E1 MUX/M multiplexes up to sixteen T1 or E1 circuits and one 10/100/1000 Ethernet service onto a 1000Mbps fiber optic transport link, and features remote management testing and configuration capabilities.

The iConverter T1/E1 MUX/M operates in a back-to-back configuration, and can be used in applications such as multiple T1/E1 extension, mobile backhaul and building-to-building PBX connectivity.

The T1/E1 copper interfaces are available in 4, 8, 12 or 16 RJ-48 port configurations for balanced T1/E1 applications. Optional adapter cables are available to convert each RJ-48 interface to a BNC interface for unbalanced E1 transport applications.

Additional hot-swappable 4-Port T1/E1 MUX modules can be installed to increase system capacity up to 16 T1/E1 ports maximum per 1U (1.75 inch) chassis.

The T1/E1 MUX/M is available with fixed-fiber or Small Form Pluggable (SFP) transceivers, enabling easy adaptability to different fiber types, distances and wavelengths. The T1/E1 MUX/M supports multimode, single-mode dual fiber and single-mode single-fiber in standard (850nm, 1310nm and 1550nm) and CWDM/DWDM wavelengths.

The T1/E1 MUX/M features user-selectable local loop-back on both the copper and fiber ports, remote fiber loop-back and circuit test modes. These features facilitate testing of the remote unit, and minimize the need for test equipment and support personnel. Alarm relays and LEDs provide fault notification for loss of power, LOS and AIS.

Configuration of T1/E1 line codes, line build out, loopbacks and circuit test is accomplished via local serial port, Telnet, SNMP, or DIP-switches.

The 1U high iConverter T1/E1 MUX/M chassis can be mounted in a 19-inch or 23-inch rack and features two load-sharing power supplies. It supports hot-swappable universal AC, +/- 24VDC or +/- 48VDC power supplies for power redundancy.

KEY FEATURES

- Multiplexes up to sixteen independent T1 or E1 copper circuits onto one fiber link
- 10/100/1000 copper Ethernet service multiplexed with T1/E1 circuits
- 1000Mbps fixed fiber transceiver or Small Form Pluggable (SFP), in standard and CWDM/DWDM wavelengths
- Supports multimode, single-mode dual fiber and single-mode single-fiber
- Supports AMI, B8ZS and HDB3 line codes
- Easy configuration of T1/E1 line codes and line build-out
- Configurable alarm relay contacts for audio/visual fault notification
- Supports local and remote fiber and copper loop-back modes
- Remotely-managed configuration and testing enables rapid deployment
- Management via local serial port, Telnet, or SNMP
- SNMP management via NetOutlook® provides real-time port and module status information, configuration and trap notification
- Commercial (0 to 50º C) and wide (-40 to 60º C) operating temperature ranges
- TAA, BAA and NDAA Compliant, and Made in the USA
- Lifetime Warranty and free 24/7 Technical Support

APPLICATION

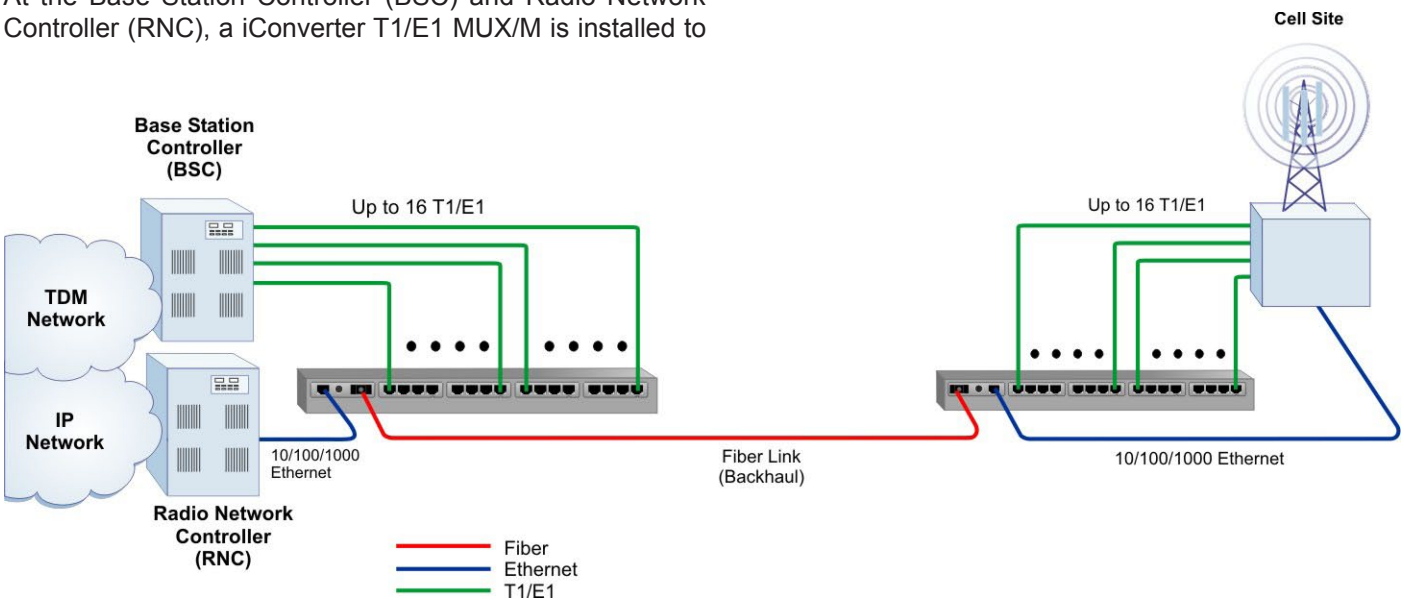
Mobile Backhaul

The following application shows an example of the iConverter T1/E1 MUX/M used in a hybrid TDM/Ethernet transport network.

A wireless service provider has enhanced their network to support 3G/4G services. The new equipment uses Ethernet for backhaul at the Cell Site, while their existing legacy 2G equipment uses TDM (T1) for backhaul.

At the Base Station Controller (BSC) and Radio Network Controller (RNC), a iConverter T1/E1 MUX/M is installed to extend the TDM and IP Networks to the Cell Site. The service provider is able to multiplex up to 16 T1/E1 circuits and one 10/100/1000 Ethernet service on a common fiber link.

The fiber carries the multiplexed traffic to a second iConverter T1/E1 MUX/M installed at the Cell Site where the T1/E1 circuits and Ethernet service provides connectivity to the equipment at the site.



SPECIFICATIONS

Description	*iConverter* T1/E1 MUX/M	
Data Rates	T1 or ISDN PRI:	1.544Mbps
	E1:	2.048Mbps
	Ethernet:	10/100/1000 (900Mbps max)
Standard Compliances	ANSI:	T1.403, T1.102
	AT&T:	T62411
	ITU:	G.703, G.704, G.706, G.736, G.755, G.823, G.824, G.8261
	ETSI:	ETS 300 166
	IEEE	802.3
Regulatory Compliances	Safety:	UL, CE, UKCA
	EMI:	FCC Class A,
	ACT:	TAA, BAA, NDAA
Environmental	RoHS, WEEE, REACH	
Port Types	Copper:	T1/E1 (RJ-45/RJ-48) 10/100/1000BASE-T (RJ-45)
	Fiber:	1000Mbps (ST, SC, Single-fiber SC, SFP)
Cable Types	Copper:	Cat 3 or Higher for T1/E1 (T1: 100 Ohm, E1: 120 Ohm) (Active Pairs are Pins 1, 2 and 4, 5) EIA/TIA 568A/B, Cat 5 UTP and higher for Ethernet
	Fiber:	Multimode: 50/125µm, 62.5/125µm Single-mode: 9/125µm

Management	IPv4 address, Telnet, SNMPv1/v2c/v3 In-Band via Ethernet port, Out-of-band via serial port	
Frame Size	Ethernet:	Up to 10,236 bytes
AC Power Requirements	AC Input:	100 to 240VAC 50/60Hz 0.5A @ 120VAC IEC 320 Socket
DC Power Requirements	24VDC Input:	+/- 18 to 36VDC; 1.4A @ 24VDC 3-Pin Terminal (isolated)
	48VDC Input:	+/- 36 to 60VDC; 0.7A @ 48VDC 3-Pin Terminal (isolated)
Dimensions W x D x H	17.15" x 9.0" x 1.75" (435.6 mm x 228.6 mm x 44.5 mm)	
Weight	1 Power Supply: 2 Power Supplies:	7.5 lbs (3.40 kg) 9.0 lbs (4.08 kg)
Temperature	Commercial: Wide: Storage:	0 to 50°C -40 to 60°C -40 to 80°C
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
MTBF (hrs)	16 Ports w/ Redundant AC/DC PS:	83,000
Warranty	Lifetime warranty with 24/7/365 free Technical Support	

ORDERING INFORMATION

Step 1: Choose the Base Part Number (xxxx-x-mpt)

Fiber Type	Distance	Connector Type			Tx / Rx Lambda (nm)	Min. Tx Power (dBm)	Max. Tx Power (dBm)	Min. Rx Power (dBm)	Max. Rx Power (dBm)	Min. Attenuation (dB)	Link Budget (dB)
		ST	SC	SFP							
-	-	-	-	2439-0-mpt	-	-	-	-	-	-	-
MM/DF	220/550m[1]	2420-0-mpt	2422-0-mpt	-	850 / 850	-10	-4	-17	-3	-	7
SM/DF	12km	2421-1-mpt	2423-1-mpt	-	1310 / 1310	-9.5	-3	-19.5	-3	-	10
SM/DF	34km	-	2423-2-mpt	-	1310 / 1310	-5	0	-23	-3	3	18
SM/DF	80km	-	2423-3-mpt	-	1550 / 1550	-5	0	-23	-3	3	18
SM/DF	110km	-	2423-4-mpt	-	1550 / 1550	0	5	-24	-3	8	24
SM/DF	140km	-	2423-5-mpt	-	1550 / 1550	2	5	-28	-8	13	30
SM/SF[2]	20km	-	2430-1-mpt	-	1310 / 1550	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	20km	-	2431-1-mpt	-	1550 / 1310	-9.5	-3	-20	-3	-	10.5
SM/SF[2]	40km	-	2430-2-mpt	-	1310 / 1550	-3	0	-20	-3	3	17
SM/SF[2]	40km	-	2431-2-mpt	-	1550 / 1310	-3	0	-20	-3	3	17

[1] 62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m.

[2] When using single-fiber (SF) models, the Tx wavelength on one end has to match the Rx wavelength on the other.

MM = Multimode, SM = Single-mode, DF = Dual Fiber, SF = Single-fiber

Contact Omnitron for other fiber options. Order the appropriate 1000Mbps SFPs separately. Visit the Omnitron Optical Transceivers web page.

Step 2: Choose the number of MUX modules (xxxx-x-mpt)

1 = One 4-Port MUX Module (4 ports total)
2 = Two 4-Port MUX Module (8 ports total)
3 = Three 4-Port MUX Module (12 ports total)
4 = Four 4-Port MUX Module (16 ports total)

Step 3: Choose your Power Option (xxxx-x-mpt)

1 = One AC Power Supply, 100 to 240VAC 50/60Hz, with IEC 320 Socket
2 = Two AC Power Supply, 100 to 240VAC 50/60Hz, with IEC 320 Socket
3 = One 48VDC Power Supply, +/- 36 to 60VDC, with 3 Pin Terminal (isolated)
4 = Two 48VDC Power Supply, +/- 36 to 60VDC, with 3 Pin Terminal (isolated)
5 = One 24VDC Power Supply, +/- 18 to 36VDC, with 3 Pin Terminal (isolated)
6 = Two 24VDC Power Supply, +/- 18 to 36VDC, with 3 Pin Terminal (isolated)

Step 4: Choose an Operating Temperature Range (xxxx-x-mpt)

<leave blank> = Commercial temperature (0 to 50°C)
W = Wide temperature (-40 to 60°C)

ACCESSORIES

Model Number	Description		Model Number	Description
8220-9	Spare AC Power Supply		9140-3	RJ-48 to Coax Adapter Cable (3 meters)
8226-9	Spare 24VDC Power Supply		9142-1	RJ-48 Alarm Breakout Cable
8225-9	Spare 48VDC Power Supply		8092-2	23" (wide) Rack Mount Kit
8485-4	Spare 4-Port T1/E1 MUX Module			