TP-to-SC Single Fiber WDM Fast Ethernet Converter
10/100 NWay TP to 100FX
User's Manual   (620−0492−000)

1. Overview

IEEE802.3u 100Mbps Fast Ethernet supports two types of media, 10/100Base-TX and 100Base-FX, for network connection. The single fiber converter is designed with an optic Wavelength Division Multiplexing (WDM) technology that transports bi-directional full duplex signal over a single fiber simultaneously. This converter can be used as a standalone unit or as a slide-in module to the 19" converter rack (up to 10 units) for use at a central wiring closet.

2. Model Description

Model	TX, RX Wavelength	
1310nm Single-Mode 20Km	TX (Transmit)	1310nm
∗ 40/60Km models are option	RX (Receive)	1550nm
1550nm Single-Mode 20Km	TX (Transmit)	1550nm
∗ 40/60Km models are option	RX (Receive)	1310nm

Note:
The 1310nm and 1550nm models must be installed in pairs, i.e., install 1310nm model at one end and 1550nm model at the other one.

3. Checklist

Before you start installing the Converter, verify that the package contains the following:
— The TP-Fiber WDM Converter
— AC-DC Power Adapter
— This User's Manual
Please notify your sales representative immediately if any of the aforementioned items is missing or damaged.
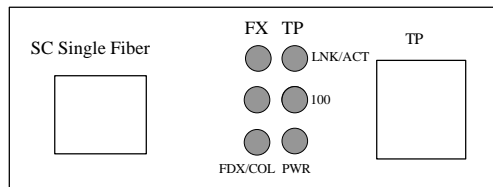

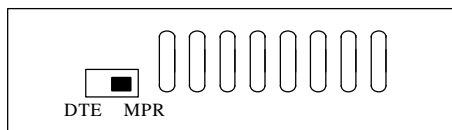Fig. 1 TP-SC Single Fiber Converter Front Panel

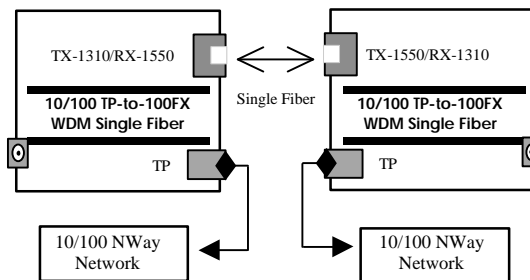Fig. 2 TP-SC Single Fiber Converter Side Panel

Fig. 3 Basic Network Connection

4.   Installing the Converter

Note: The Media Converter is hot-swappable.
⇒   Wear a grounding device for electrostatic discharge
For as a standalone unit:
⇒   Verify that the AC-DC adapter conforms to your country AC power requirement and then insert the power plug
⇒   Install the media cable for network connection
For as a slide-in unit:
⇒   Verify that the media converter is the right model and conforms to the chassis slot. The Media Converter and Rack are built to match each other in dimensions, DC jack, DC receptacle and power safety
⇒   Locate +5VDC power jack on converter back, and carefully slide in and plug to 19" rack +5VDC power receptacle
⇒   Install the media cable for network connection

Fiber Port	Attach the single fiber cable
	Install 1310nm and 1550nm models at the ends of the single fiber cable. "100FDX" is only for WDM
TP Port	Attach Cat. 5 UTP cable to TP port
	MPR(Default) : To a switch or hub DTE : To a workstation or NIC "DTE"/"MPR" slide switch is on the side panel

Note for TP port cable connection:
a. Use the straight-through cable.
   Cable pin-outs for RJ-45 jack 1, 2, 3, 6 to 1, 2, 3, 6
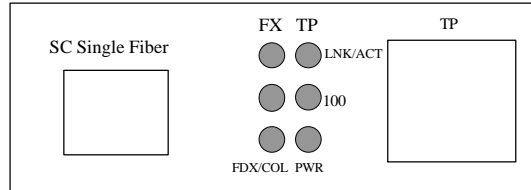b. MPR (Default):   To a switch or hub
   DTE   :   To a workstation or NIC (Network Interface Card)
   (DTE pin-outs is crossover on board already)
Configure the MPR-DTE slide switch on the side panel for connecting to a hub or NIC (Network Interface Card).

5. LED Description

LED	Color	Function
FX LNK/ACT	Green	Lit when fiber connection is good Blink when fiber data is present
FX 100	Green	Lit for fiber 100Mbps operation
FX FDX/COL	Amber	Lit when full-duplex mode is active WDM is "100FDX" only
TP LNK/ACT	Green	Lit when TP connection is good Blink when TP data is being received
TP 100	Green	Lit when TP speed is 100Mbps Off when TP speed is 10Mbps
PWR	Green	Lit when +5V power is coming up

6. DC Jack and AC-DC Power Adapter

The DC jack's central post is 2.5mm wide and conforms to the DC receptacle (2.5mm) on the 19-inch Converter Rack slot.
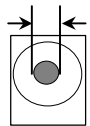
DC Jack : 2.5mm
DC Input: +5V
(DC current: full load consumption 0.7A)

Keep the AC-DC adapter as spare parts when Media Converter is installed in a 19-inch Media Converter Rack.

7. TP-SC Fiber Technical Specifications

• **Standards :** IEEE802.3u 10/100Base-TX, 100Base-FX
• **Models :**

Model	TX, RX Wavelength	
1310nm Single-Mode 20Km	TX (Transmit)	1310nm
∗ 40/60Km models are option	RX (Receive)	1550nm
1550nm Single-Mode 20Km	TX (Transmit)	1550nm
∗ 40/60Km models are option	RX (Receive)	1310nm

• **UTP Cable:** Cat. 5 cable and up to 100m
• **Single Fiber Cable:**
  Recommended: 9/125mm single-mode
  Optional: 8.3/125, 8.7/125 or 10/125mm single-mode
• **LED Indicators:**
  POWER, FX LNK/ACT, 100, TP LNK/ACT, FDX/COL
• **Data Transfer Rate:**

Speed	Forwarding Rate
100Mbps	148,800 PPS
10Mbps	14,880 PPS

• **Flow Control:**
  IEEE802.3x compliant for full-duplex
  Back pressure flow control for half-duplex
• **Power Requirement :** 1A@+5VDC
• **Ambient Temperature :** 0° to 50°C
• **Humidity :** 5% to 90%
• **Dimensions:** 26.2(H) × 70.3(W) × 94(D) mm
• **Complies with FCC Part 15 Class A and CE Mark**

Note: For connecting this device to Router, Bridge or Switch, please refer to the device's Technical Manual.

8. Ethernet Network Connection

100Base-X network allows 512-bit time delay between any two node-stations in a collision domain. This switch-based converter breaks up the TP as well as Fiber segments' collision domain and extends the cabling distance.

Warning:
— The converter TP port(10/100 NWay) must be connected to a NWay TP device
— When TP NWay port is connected to TP (force mode) 100FDX or 10FDX instead of 10/100 NWay partner, it will result in 100HDX with invalid collision signal
— Ensure that all network nodes are configured at an identical operation mode. Improper operation and flow control mode between TP and Fiber port connections will render the LAN to work poorly