StarTech.com

Gigabit Single Mode Media Converter (SC - 40km)
ET91000SM40

Introduction

Thank you for purchasing a StarTech.com Single-Mode WDM Media Converter. This product offers a cost-effective method of bridging two Ethernet networks using single-mode fiber optic cable, at distances up to 40km (24.85 miles).

Features

- Simple installation and use
- Supports full or half-duplex operating modes
- Supports link-loss forwarding, loop-back testing, remote monitor status, two frame lengths

Before You Begin

System Requirements

- Fiber Cable
- 10Base-T; Cat 3, 4 or 5 ***or*** 100Base-Tx, Cat 5 or 6 cable
- Power source

Contents (per unit)

- Media Converter (1)
- 12V DC Power Adapter (1)
- Instruction manual (1)

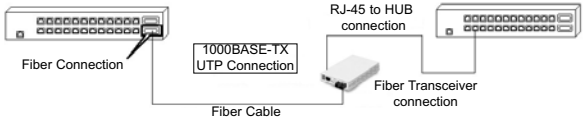
Basic Setup

1. Connect the fiber interface cable to the A-Unit. Using UTP cable, connect the ethernet connection to the RJ45 jack.

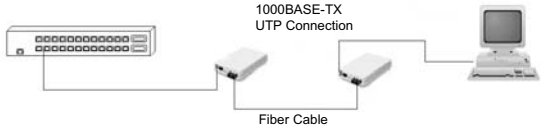
2. Set the **Duplex** switch (full/half) according to the specifications of your equipment.

Media Converter Connections

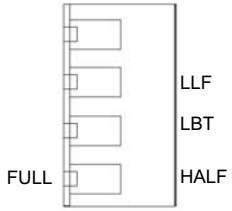
The following example illustrates the connection scheme when connecting from a 1000Base-TX port of one hub to a 1000Base-SX/LX port of another hub, through the fiber converter:



The following example illustrates the connection scheme when connecting from a 1000Base-TX port of one hub to a 1000BASE-TX Network Interface Card (NIC) in a computer through the fiber converter:



Front Panel DIP Switch Settings



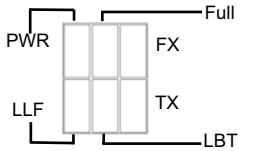
1. **Full/ Half**:
The Fiber and UTP Duplex will be configured in Full-duplex or Half-duplex. ***This switch includes an "Auto Reset" function so the power-reset is not necessary when any modification is made here.**

2. LBT - **Loop-back test and get remote side status** :
(OFF = Not Active, ON = Active) **Please note:** If the local side loop-back test is active, then LEDs (except PWR) will all blink rapidly and refresh to display the remote side status.

3. LLF - Link Loss Forwarding (OFF = Not active, On = Active)

LED Indicators

The following diagram and chart outline the meaning of each LED located on the media converter(s):



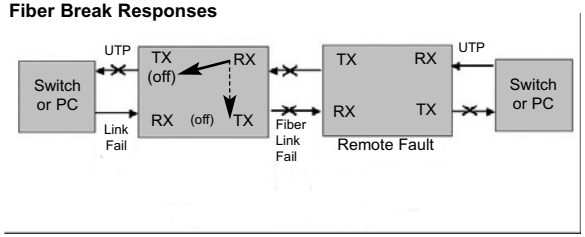
LED	Function	State	Status
PWR	Power Indicator	On	Converter has power
		Off	Converter has no power
		Blinking	LB testing & Get CPE status function enabled
Full	Mode display	On	Fiber side full duplex mode (200mbps)
		Off	Half-duplex mode
FX	Fiber link	On	The fiber link is ok
		Off	No link, or the link is faulty
		Blinking	Receiving data on the fiber
LBT	Mode display	Blinking	LB testing & Get CPE status function enabled
		Off	LB testing & Get CPE status function disabled
LLF	Mode display	On	Link loss forwarding function enabled
		Off	Link loss forwarding function disabled
TX	Ethernet Link	On	The UTP link is ok
		Off	No link, or the link is faulty
		Blinking	Receiving data on Ethernet

Link-Loss-Forwarding (LLF)

ET91000SM40 incorporates a Fiber Link Forwarding feature that allows indirect sensing of a Fiber Link Loss via the 1000 Base-TX UTP connection. Whenever the media device detects a Link Loss on the Receive fiber (Fiber LNK OFF), it disables its UTP transmitter so that a Link Loss condition will be sensed on the receive UTP port (as depicted in the following diagram). The Link Loss can then be easily monitored and reported at the remote UTP port's host equipment.

This feature has no effect on the media converter's UTP LNK LED, which continues to function normally, independent of the state of the Fiber LNK LED and the UTP transmitter. This feature enabled by default.

Fiber Break Responses



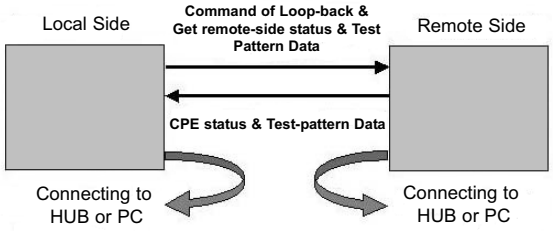
Cont'd on reverse

Loop-back Testing (LBT) & Get CPE status

ET91000SM40 incorporates a Fiber Loop-back Testing feature which allows the system to confirm whether or not the fiber or Ethernet circuit loop is complete. The local-side unit will send out a detect message which includes both command and test-pattern data to the remote-side unit and request for an answer. When the remote-side unit receives the message, it will attempt to recognize the command. After the remote-side unit recognizes the command message, it will deliver the received test-pattern data back to the local-side unit, completing the circuit loop, and enabling the rack mount unit to easily monitor the remote side unit(s). The remote side status message includes the fiber-side link and duplex status, the UTP-side link, duplex, speed, power, transmission and fiber failure status.

Please note that while Loop-back testing is in process, the fiber side transmission will be halted.

If the local-side cannot access the remote-side while in Loop-back Testing mode, only the power LED will flash (rapidly):



General Specifications

Additional Features	Link-loss forwarding, loop-back testing, Remote Monitor status, two frame lengths
Network Standards Compliance	IEEE 802.3 1000Base-TX, IEEE802.3z. 1000Base-SX/LX. Supports Full Duplex Ethernet Mode
Operating temperature	0°C - 50°C, 10-90% Humidity (non-condensing)
Cable Length	40km (max)
Product Dimensions (LxWxH)	122mm x 85mm x 20mm (4.8 x 3.3 x 0.8 in.)
Product Weight	0.75 lb (340 g)
Data Transfer Rate (max.)	2000 Mbits/sec (Full duplex) 1000 Mbits/sec (Half duplex)
Certifications (regulatory etc.)	FCC Class A, CE
Power Adapter	DC 12V, 1A, Center Pos.

Revised:20 July 2006 (A)