Manual

Preface

This manual describes how to install and use the Ethernet Media Converter with the link-fault-pass-through function. The Converter introduced here provides one channel media conversion between 10/100Base-TX and 100Base-FX/BX.

The Converter fully complies with IEEE802.3 10Base-T and IEEE802.3u 100Base-TX/FX standards.

In this manual, you will find:

• Product overview
• Features on the media converter
• Illustrative LED functions
• Installation instructions
• Specifications

Important: Note that XSNet Series manuals may cover multiple models. To establish if a particular feature or specification in this manual applies to the unit at hand, consult the datasheet of the given model.
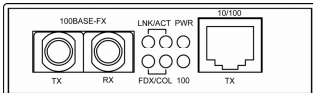
Table of Contents

Introduction

The media converter provides one channel for media conversion between 10/100Base-TX and 100Base-FX/BX.

Product Overview

Product Features

• One-channel media conversion between 10/100Base-TX and 100Base-FX/BX
• Fiber media allows:
  Multi-mode fiber using SC connector
  Single-mode fiber using SC connector
  WDM single-fiber (bi-direction) transceiver: WDM fiber using SC connector:
  -A type: WDM single-fiber (bi-direction) transceiver transmits with 1310nm wavelength and receives with 1550nm wavelength
  -B type: WDM single-fiber (bi-direction) transceiver transmits with 1550nm wavelength and receives with 1310nm wavelength
• Auto negotiation of speed and duplex mode on TX port
• Auto MDIX on TX port
  One DIP switch for configuring link-fault-pass-through, fixed speed, and half/full duplex
• Store-and-forward mechanism
• Non-blocking full wire-speed forwarding rate
• Support broadcast storm filtering
• Back-pressure & IEEE802.3x compliant flow control
• FRONT PANEL STATUS LEDS
• External AC to DC power adapter

<Note> The applied optical transceivers are UL approved.

Packing List

When you unpack this product package, you will find the items listed below. Please inspect the contents, and report any apparent damage or missing items immediately to our authorized reseller.

• The Media Converter
• User's Manual
• AC to DC Power Adaptor

One-Channel Media Converter

Ports

The Converter provides one TX port and one FX/BX port. For the FX/BX port, it provides options of
Multi-mode fiber using SC connector or
Single-mode fiber using SC connector or
Multi-mode/ Single-mode WDM fiber using single SC connector
For the TX port, it uses RJ-45 connector and auto senses the speed of 10/100Mbps.

Port Settings

Port settings are made very simple by means of a DIP (Dual Inline Package) switch at the rear panel of the module.
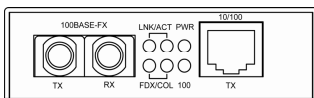
DIP switch

There are six pins on the DIP switch for port settings. Refer to the table below for more details.

DIP switch No.	Down	Up	
1	Enable LFPT	Disable LFPT	LFPT: link-fault-pass-through
2	Enable auto negotiation for TX port	Enable forced mode for TX port	
3	TX port forced to 100Mbps	TX port forced to 10Mbps	
4	TX port forced to full duplex mode	TX port forced to half duplex mode	
5	FX port forced to full duplex mode	FX port forced to half duplex mode	
6			

• First, disconnect the converter from the power. Then toggle Pin 2 of the DIP switch to the up position to enable the forced mode for TX port.

<NOTE>   Pin 2 must be toggled up prior to speed and duplex mode settings manually.

• Toggle down Pin 3 to force the TX port at the speed of 100Mbps. Or toggle up Pin 3 for 10Mbps speed.

• Toggle down Pin 4 to force the TX port at full duplex mode. Or toggle up Pin 4 for half duplex mode.

• Toggle down Pin 5 to force the FX port at full duplex mode. Or toggle up Pin 5 for half duplex mode.

• Toggle up Pin 1 to disable the link-fault-pass-through.

• Connect the converter to the power again. The new setting will come into effect then.

LED Indicators

The LED indicators give you instant feedback on status of the converter:

LEDs	State	Indication
PWR	Steady	Power on
		PWR stands for POWER
	Off	Power off
100 (Mbps)	Steady	Connection at the speed of 100Mbps
	Off	Connection at the speed of 10Mbps
LNK/ACT	Steady	A valid network connection established LNK stands for LINK
	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
	Off	Neither valid network connection established nor transmitting/receiving data
FDX/COL	Steady	Connection in full-duplex mode FDX stands for FULL-DUPLEX
	Flashing	Collision occurred COL stands for COLLISION
	Off	Connection in half-duplex mode

Link-Fault-Pass-Through

Connect the FX ports of two Media Converters A and B through the fiber cable.

Link Fault of the FX port:
A Link Fault condition will be sensed on the TX port whenever the media converter detects a Link Fault condition on the FX port. Thus, the 100, LNK/ACT, and FDX/COL LEDs of the media converter would be off.

Link Fault of the TX port of the Media Converter A:
The Media Converter A: A Link Fault condition will be sensed on the FX port whenever the media converter detects a Link Fault condition on the TX port. Thus, the 100, LNK/ACT, and FDX/COL LEDs of the TX port of the Media Converter A would be off.

The Media Converter B: A Link Fault condition will be informed to the FX port of the Media Converter B. Then a Link Fault condition will be sensed on the TX port of the Media Converter B whenever the Media Converter B

detects a Link Fault condition on the FX port. Thus, the 100, LNK/ACT, and FDX/COL LEDs of the Media Converter B would be off.

Link Fault of the FX port						
		TX Port			FX Port	
LEDs	PWR	100	LNK/ACT	FDX/COL	LNK/ACT	FDX/COL
Media Converter A	ON	OFF	OFF	OFF	OFF	OFF
Media Converter B	ON	OFF	OFF	OFF	OFF	OFF
Link Fault of the TX port of the Media Converter A						
		TX Port			FX Port	
LEDs	PWR	100	LNK/ACT	FDX/COL	LNK/ACT	FDX/COL
Media Converter A	ON	OFF	OFF	OFF	ON	ON
Media Converter B	ON	OFF	OFF	OFF	OFF	OFF

Installation

This chapter gives step-by-step installation instructions for the Converter.

Selecting a Site for the Equipment

As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

● The ambient temperature should be between 32 and 113 degrees Fahrenheit (0 to 45 degrees Celsius).

● The relative humidity should be less than 95 percent, non-condensing.

● Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards for IEC 801-3, Level 2 (3V/M) field strength.

● Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes on each side of the equipment.

● The power outlet should be within 1.8 meters of the product.

Connecting to Power

• This Converter is a plug-and-play device.

• Connect the supplied AC to DC power adaptor to the receptacle on the rear panel of the converter, and then attach the plug into a standard AC outlet.
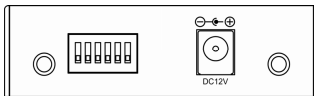
Specifications

Applicable Standards	IEEE 802.3 10Base-T
	IEEE 802.3u 100Base-TX & 100Base-FX
Fixed Ports	1 TX port, 1 FX/BX port
10Base-T speed	10/20Mbps for half/full-duplex
100Base-TX speed	100/200Mbps for half/full-duplex
100Base-FX/BX speed	200Mbps for full-duplex
Switching Method	Store-and-Forward
Forwarding rate	14,880/148,810pps for 10/100Mbps
LED Indicators	Per Unit- (2 LEDs): Power; 100(Mbps)
	Per Port- (2 LEDs): LNK/ACT; FDX/COL
Dimensions	80.3mm (W) x 109.2mm (D) x 23.8mm (H)
	(3.16" (W) x 4.30" (D) x 0.94" (H))
Weight	150g (0.33lb.)
Power	External power adaptor 0.16A @ 12VDC
Power Consumption	1.92W Max.
Operating Temperature	0°C ~ 45°C (32°F ~ 113°F)
Storage Temperature	-10°C ~ 70°C (14°F ~ 158°F)
Humidity	5 ~ 95%, non-condensing
Emissions	FCC Part 15 Class A, CE Mark Class A