SIGNAMAX
CONNECTIVITY SYSTEMS

Signamax™ Connectivity Systems 100BaseTX/FX to 100BaseFX Converter Series

USER'S GUIDE

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User's Guide

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Trademarks

Product names mentioned in this manual may be trademarks or registered trademarks of those products and are hereby acknowledged.

- Ethernet is a trademark of Xerox Corporation.
- Microsoft Windows is a trademark of Microsoft Corporation.
- Signamax™ is a trademark of Advanced Electronic Support Products, Inc.

Preface

This manual describes how to install and use the Signamax™ Ethernet Media Converter with the link-fault-pass-through function and USB bus power. The Signamax™ Ethernet Media Converter introduced here provides one channel media conversion between 10/100BaseTX and 100BaseFX.

The Signamax™ Ethernet Media Converter fully complies with IEEE802.3 10BaseT and IEEE802.3u 100BaseTX/FX standards.

In this manual, you will find:

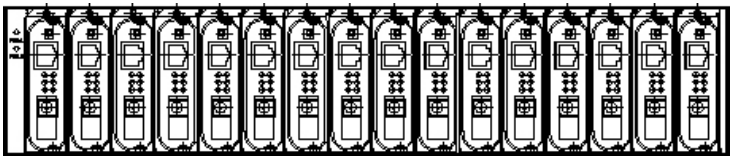
- Product overview
- Features on the media converter
- Illustrative LED functions
- Installation instructions
- Specifications

Table of Contents

Introduction

The media converter provides one channel for media conversion between 10/100BaseTX and 100BaseFX. It can be used as a stand-alone device or with a standard 19" chassis as shown below.

Product Overview



<NOTE> The chassis is to be ordered separately.

Product Features

- One-channel media conversion between 10/100BaseTX and 100BaseFX
- Fiber media allows:
- Multi-mode fiber using SC, ST, VF-45, MT-RJ or LC connector
- Single-mode fiber using SC connector
- WDM single-fiber (bi-direction) transceiver: Single-mode WDM fiber uses 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 13100nm 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
- USB bus power and/or external AC to DC power adapter
- External AC to DC power adapter
- Used as a stand-alone device or with a chassis
- Hot-swappable when used with a chassis

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

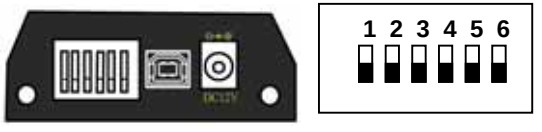
One-Channel Media Converter

Ports

The Converter provides one TX port and one FX port. For the FX port, it provides options of multi-mode fiber using SC, ST, VF-45, MT-RJ or LC connector, single-mode fiber using SC connector, and WDM single-fiber (bi-direction) transceiver using 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 (Default Setting)	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 down Pin 1 to disable the link-fault-pass-through.
- Connect the converter to the power again. The new setting will come into effect then.

Front Panel & LEDs

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 Converter 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 104 degrees Fahrenheit (0 to 40 degrees Celsius).
- The relative humidity should be less than 90 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.

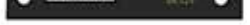
Connecting to Power

This Converter is a plug-and-play device.

Connect the USB powering cable to the USB bus power connector on the rear panel of the converter.

<NOTE> Don't connect two media converters to the USB ports of the PC or notebook computers through the USB power cables at the same time.

And/ or 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 with a voltage range from 100 to 240VAC.



Installing in a Chassis

The Converter can be fit into any of the expansion slots on a special designed chassis.

- First, install the converter onto a carrier supplied with the chassis:
- Step 1- Unscrew the carrier from the desired expansion slot on the chassis.
- Step 2- Fit the converter onto the carrier.
- When the converter is completely seated onto the carrier, insert the carrier to the guide rails of the expansion slot.
- Carefully slide in the carrier until it is fully and firmly fit the chassis. Fasten the screws onto the carrier.

<NOTE> Never insert any converter into the chassis directly without using the supplied carriers. The carriers allow secure and consistent placement of the converters into the chassis' backplane without causing any damage.

Specifications

Applicable Standards	IEEE 802.3 10BaseT IEEE 802.3u 100BaseTX & 100BaseFX
Fixed Ports	1 TX port, 1 FX port
Speed 10BaseT	10/20Mbps for half/full-duplex
100BaseTX/FX	100/200Mbps for half/full-duplex
Switching Method	Store-and-Forward
Forwarding rate	14,880/148,800pps for 10/100Mbps
LED Indicators	Per Unit- (2 LEDs): Power; 100(Mbps)
	Per Port- (2 LEDs): LNK/ACT; FDX/COL
Dimensions	L110 × W81 (max.) × H23 mm
Weight	190 g
Power	USB bus power 5VDC, 0.5A External power adaptor 12VDC, 0.6A
Power Consumption	7W Max.
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-25°C ~ 70°C (-13°F ~ 158°F)
Humidity	10 ~ 90%, non-condensing
Emissions	FCC part 15 Class A, CE Mark

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