SIGNAMAX
CONNECTIVITY SYSTEMS

SignamaxÔ Connectivity Systems
Gigabit Ethernet Media Converter

U s e r ' s
G u i d e

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Gigabit Ethernet Media Converter

User's Guide

F C C   S t a t e m e n t

The FCC (Federal Communications Commission) restricts the amount of radio frequency emission and radiation coming from computer equipment.

The equipment introduced in this manual 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 the instruction manual, 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 is required to correct the interference at his/her own expense.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

T r a d e m a r k s

Product names mentioned in this manual may be trademarks or registered trademarks of those products.

All trademarks or brand names mentioned are properties of their respective companies.

P r e f a c e

This manual describes how to install and use the Signamax™ Gigabit Ethernet Media Converter. The Converter introduced here provides one channel media conversion solution:

1000BaseT   1000BaseSX/LX
1000BaseSX/LX   1000BaseLX

The Signamax™ Gigabit Ethernet Media Converter fully complies with IEEE802.3ab 1000BaseT and IEEE802.3z 1000BaseSX/LX Gigabit Ethernet standards.

In this manual, you will find:

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

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Introduction

The Signamax™ Gigabit Ethernet Media Converter, provides one channel for media conversion between 1000BaseSX/LX to 1000BaseLX. It can be used as a stand-alone device or with a standard 19" chassis as shown below.
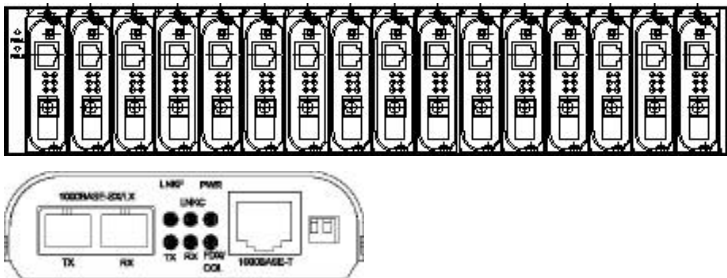
Product Overview

Figure 1: 1000BaseT   1000BaseSX/LX Media Converter

<NOTE>   The chassis is to be ordered separately.

Product Features

- One-channel media conversion between
  1000BaseT and 1000BaseSX/LX
  1000BaseSX/LX and 1000BaseLX

- Fiber media connection allows either:
  1) multi-mode fiber that uses the SC connector, or
  2) single-mode fiber that uses the SC connector

- Full wire-speed forwarding rate

- Front panel status LEDs

- Used as a stand-alone device or with a chassis

- Hot-swappable when used with a chassis

1000T 1000SX/LX Media Converter

- There are two pins on the DIP switch of the 1000BASE-T and 1000BASE-SX/LX one-channel media converter:
Toggle up the pin on the left-hand side to let the fiber port auto detect full and half duplex and toggle down the pin on the left-hand side to force the fiber port to full duplex mode. The pin on the right-hand side should always be toggled up.

- The fiber port should be forced to full duplex mode when two 1000BASE-T and 1000BASE-SX/LX one-channel media converters are connected to each other via fiber port.

- The TX port auto detects full and half duplex

- The TX port supports auto MDIX for uplink purpose

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 your authorized reseller.

• The Media Converter

• User' s Manual

• AC to DC Power Adaptor

• Warranty Card

One-Channel Media Converter

Physical Ports

1000T 1000SX/LX Media Converter

This converter provides one TX port and one FX port. For the FX port, it provides options of either multi-mode or single-mode fiber accommodating the SC connector. For the TX port, it uses RJ-45 connector and supports auto MDIX for uplink purposes.
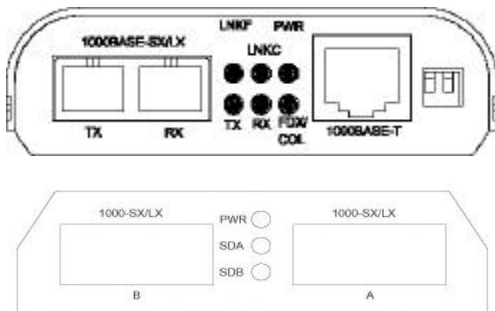
1000SX/LX 1000LX Media Converter

This converter provides two FX ports. For the FX port, it provides options of either multi-mode or single-mode fiber accommodating the SC connector.

Port Status LEDs

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

Figure 2: 1000BaseT 1000BaseSX/LX, 1000BaseSX/LX 1000BaseLX Media
        Converter

1000T to 1000SX/LX:

LEDs	State	Indication
Power	Steady	Power feed is OK
	Off	No power
LNKC	Steady	TX port: A valid network connection has been established
		LNKC stands for LINK/Copper
	Off	No connection
LNKF	Steady	FX port: A valid network connection has been established
		LNKF stands for LINK/Fiber
	Off	No connection
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
RX	Steady	Receiving data
	Off	No reception
TX	Steady	Transmitting data
	Off	No transmission

1000SX/LX to 1000LX:

LEDs	State	Indication
PWR	Steady	Power on
	Off	Power off
SDA/ SDB	Steady	A valid network connection has been established,
		Transmitting and Receiving
	Off	Neither valid network connection nor transmitting established

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 switch or the fan exhaust port on the side or rear of the equipment.
-   The power outlet should be within 1.8 meters of the media converter.

Connecting to Power

This Converter is a plug-and-play device.

Step 1:	Connect the supplied AC to DC power adapter to the receptacle at the back of the converter.
Step 2:	Attach the plug into a standard AC outlet with the appropriate AC voltage.

Installing in a Chassis

The Converter is designed to fit into any of the expansion slots on a Signamax™ FO-065-1185 rackmount chassis.

Step 1:	Unscrew the carrier from the desired expansion slot on the chassis.
Step 2:	Fit the converter onto the carrier and use those four screws to secure it.
Step 3:	When the converter is completely seated onto the carrier, insert the carrier to the guide rails of the expansion slot.
Step 4:	Carefully slide in the carrier until it is fully and firmly fit the chassis.
Step 5:	Fasten the carrier to the chassis by the screws.

<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 802.3ab 1000BaseT, IEEE 802.3z 1000BaseSX/LX
Fixed Ports	1000T to 1000SX/LX:
	One twisted-pair port meeting IEEE 802.3ab standard specification; Category 5e or better cable, 100 meters maximum distance
	One fiber optic port meeting IEEE 802.3z standard specification; 50/125 micron multi-mode fiber optic cable, 550 meters maximum distance or 10/125 micron single-mode fiber optic cable, 20 km maximum distance
	1000SX/LX to 1000LX:
	Two fiber optic ports meeting IEEE 802.3z standard specification; 50/125 micron multi-mode fiber optic cable, 550 meters maximum distance or 10/125 micron single-mode fiber optic cable, 20 km maximum distance
Speed	1000/2000Mbps for half/full-duplex
Forwarding rate	1,488,000pps for 1000Mbps
LED Indicators 1000T 1000SX/LX 1000SX/LX 1000LX	Power; TX; RX; FDX/COL; LNKF; LNKC PWR; SDA; SDB
Dimensions	L110 × W81 (max.) × H23 mm
Weight	150 g
Power	External power adaptor, 9 ~ 20 Volts DC, 600mA
Power Consumption	5W 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
Safety	UL

Appendix A: Ordering Information

Please include the following information when ordering:

1. Fiber type: multi-mode or single-mode

2. Fiber connector type: SC

3. Segment distance range for the fiber port

Available Models:

FO-065-1195: 1000BaseT to 1000BaseSX Multi-Mode 550m Converter -- SC

FO-065-1197: 1000BaseT to 1000BaseLX Single-Mode 10km Converter -- SC

FO-065-1197ED: 1000BaseT to 1000BaseLX Single-Mode 20km Converter -- SC

FO-065-1194: 1000BaseSX Multi-Mode 550m -- SC to 1000BaseLX Single-Mode 10km Converter -- SC

FO-065-1194ED: 1000BaseSX Multi-Mode 550m -- SC to 1000BaseLX Single-Mode 20km Converter -- SC

FO-065-1198XLD: 1000BaseLX Single-Mode 20km -- SC to 1000BaseLX Single-Mode 20km Converter – SC

Appendix B: Contact Information

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