SIGNAMAX
CONNECTIVITY SYSTEMS

**Signamax™ Connectivity Systems
Gigabit Ethernet SFP Media Converter**

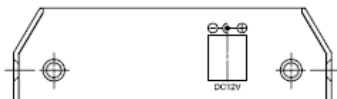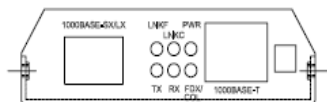**Model - 065-1195SFP
065-1195SFPI**

User's Guide

Quick Start Guide

This quick start guide describes how to install and use the Gigabit Ethernet SFP media converter. The converter introduced here provides a one channel media conversion solution.

Physical Description

Product Overview

This Gigabit Ethernet SFP media converter is a plug-and-play device. Connect the supplied AC to DC power adaptor to the receptacle on the rear panel of the Gigabit Ethernet media converter, and then attach the plug into a standard AC outlet with a voltage range from 100 to 240V AC.

DIP Switch

DIP switch	Up (Default Setting)	Down	
Left-hand side	The fiber port auto detects full and half duplex	Forces the fiber port to full duplex mode	
Right-hand side	Disable LFS	Enable LFS	LFS: Link fault signaling function

The 1000BaseT and 1000BaseSX/LX Connectors

The 1000BaseT Connection
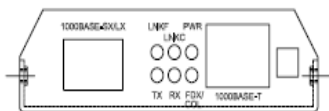**The following lists the pinouts of the 1000BaseT port.**

Pin	Label
1	TP0+
2	TP0-
3	TP1+
4	TP2+
5	TP2-
6	TP1-
7	TP3+
8	TP3-

The 1000BaseSX/LX Connection
The SFP socket accepts standard Gigabit Ethernet Small Form-factor Pluggable (SFP) modules of various types and spectra.

The Port Status LEDs

LEDs	State	Indication
Power	Steady	Power on
	Off	No power
LNKC	Steady	TX port: A valid network connection is established. LNKC stands for LINK/Copper
	Off	No connection
LNKF	Steady	FX port: A valid network connection is established. LNKF stands for LINK/Fiber
	Off	No connection
FDX/COL	Steady	Connection has been made in full duplex mode. FDX stands for FULL DUPLEX
RX	Steady	Receiving data
	Off	No reception
TX	Steady	Transmitting data
	Off	No transmission

Functional Description

- DIP switch configuration for Link Fault Signaling enable/disable and fiber auto/force mode.
- 1000 Mbps, Auto/Full-duplex, Auto-Negotiation, Auto-MDI/MDIX.
- SFP socket for Gigabit fiber optic expansion.
- Full wire-speed forwarding rate.
- 0.8A 12VDC external universal power supply.
- 32℉ to 113℉ (0℃ to 45℃) operating temperature range.
- Aluminum case.
- Supports wall mounting installations or can be used with the 065-1185 media converter chassis system.

FCC Statement

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.

Trademarks

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.

Preface

This manual describes how to install and use the 065-1195SFP Gigabit Ethernet SFP Media Converter. The Converter introduced here provides a one channel media conversion solution:

This media converter supports a 1000BaseT to 1000Base connection (multimode or singlemode fiber, in a variety of light spectra and span lengths) with a Link Fault Signaling function.   A variety of Small Form-factor Pluggable (SFP) modules allow a wide choice of available fiber types and spanning distances to be used in the same converter model.

The Link Fault Signaling function allows a link failure on either the 1000Base fiber optic connection or the 1000BaseT twisted-pair Gigabit Ethernet connection to be propagated to a like device at the opposite end of the fiber optic channel.   This is useful when managed switches are used in a network, so that a dropped link on either twisted-pair connection or the fiber optic cable will be shown to the switch at the other end of the circuit for Spanning Tree/Rapid Spanning Tree circuit reconfiguration by the connected managed switches.   It is switch-defeatable for use during the initial circuit setup or if managed switches are not used.

The 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**
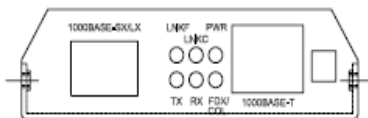- **Installation instructions**
- **Specifications**

Table of Contents

Introduction

The 065-1195SFP Gigabit Ethernet SFP Media Converter provides one channel for media conversion between 1000BaseT and 1000BaseSX/LX with a Link Fault Signaling function. It can be used as a stand-alone device or with the Signamax 065-1185 16-bay Rack Mount Chassis (mountable in a standard 19" rack) as shown below.

Product Overview

Product Features

- **One-channel media conversion between: 1000BaseT and 1000BaseSX/LX using SFP modules; a SFP socket is provided to accommodate Gigabit Ethernet SFP's.**
- **Fiber media can be either multimode fiber, singlemode fiber, or WDM singlemode fiber.**
- **Full wire-speed forwarding rate.**
- **Front panel status LEDs.**
- **Used as a standalone device or with the Signamax 065-1185 rack mount chassis.**
- **Hot-swappable when used with the Signamax 065-1185 rack mount chassis.**
- **A connection to the TX port must be made before making a connection to the fiber port, so that a link condition will be sensed on the fiber port whenever the media converter detects a link condition on the TX port.**

- **There are two pins on the DIP switch of the 1000BaseT and 1000BaseSX/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.**
  - **Toggle down the pin on the left-hand side to force the fiber port to full duplex mode.**
  - **Toggle up the pin on the right-hand side to disable the link-fault-pass-through function.**
  - **Toggle down the pin on the right-hand side to enable the link-fault-pass-through function.**

DIP Switch:	Up (Default Setting):	Down:	Notes:
Left-hand side	The fiber port auto detects full and half duplex	Force the fiber port to full duplex mode	
Right-hand side	Disable LFS	Enable LFS	LFS: Link Fault Signaling function

- **The fiber port should be forced to full duplex mode when two 1000BaseT and**
- **1000BaseSX/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's 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**

One-Channel Media Converter

Physical Ports

065-1195SFP -- 1000BaseT to 1000Base SFP Media Converter

This converter provides one TX port and one Gigabit SFP socket. The Gigabit SFP socket provides the option of using multimode, singlemode, or WDM singlemode fiber with the appropriate SFP module. The TX port uses a RJ-45 connector and supports auto-MDIX for uplink purposes.

Port Status LEDs

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

LEDs	State	Indication
Power	Steady	Power on
	Off	No power
LNKC	Steady	TX port: A valid network connection is established. LNKC stands for LINK/Copper
	Off	No connection
LNKF	Steady	FX port: A valid network connection is established. LNKF stands for LINK/Fiber
	Off	No connection
FDX/COL	Steady	Connection has been made in full duplex mode. FDX stands for FULL DUPLEX
RX	Steady	Receiving data
	Off	No reception
TX	Steady	Transmitting data
	Off	No transmission

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 of the equipment.
- The power outlet should be within 6 feet (1.8 meters) of the product.

Connecting to Power

This Converter is a plug-and-play device.

- **Connect the supplied AC to DC power adapter to the receptacle at the back of the converter.**
- **Attach the plug into a standard AC outlet with a voltage range from 100 to 240 VAC.**

Installing in a Chassis

The 065-1195SFP Converter is designed to fit into any of the expansion slots on a Signamax 065-1185 rack mount chassis.

- **Unscrew the carrier from the desired expansion slot on the chassis.**
- **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 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 1000BaseT to 1000BaseSX/LX:	1 TX port, 1 Gigabit SFP socket
Speed	1000/2000Mbps for half/full-duplex
Forwarding rate	1,488,100pps for 1000Mbps
LED Indicators 1000T to 1000SX/LX:	Power; TX; RX; FDX/COL; LNKF; LNKC
Dimensions	3.16" (W) × 4.3" (D) × 0.94" (H) (80.3mm (W) × 109.2mm (D) × 23.8mm (H))
Weight	0.33lb (150 g.)
Power	External power adaptor 0.2A @ 12VDC
Power Consumption	2.4 Watts Maximum
Operating Temperature	32°F ~ 113°F (0°C ~ 45°C)
Storage Temperature	14°F ~ 158°F (-10°C ~ 70°C)
Humidity	5 ~ 95%, non-condensing
Emissions	FCC part 15 Class A, CE Mark Class A

Please consult our website at www.signamax.com for product information and specifications of currently-available Signamax SFP modules.

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