Smart 10/100BASE-TX to

100BASE-FX Fast Ethernet

Single Fiber Bi-Direction Media Converter

Quick Installation Guide

FCC Warning

This equipment has been tested and found to comply with the regulations for a Class B 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 B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

VCCI Warning

This is a product of VCCI Class B Compliance

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取扱説明書に従って正しい取り扱いをして下さい。

Introduction

Thank you for choosing the Smart 10/100BASE-TX to 100BASE-FX Media Converter, The Media Converter introduced here provides one channel media conversion between 10/100BASE-TX and 100BASE-FX.

Dual-Wavelength Single-Fiber

These types of Single-Fiber modules combine transmit and receive signals onto one fiber strand using two wavelengths. This design avoids the budget losses incurred b the single-wavelength single-fiber technology, and minimizes any possibility of reflections in the system. The units on both ends of a link are different. One module uses one wavelength to transmit and a second wavelength to receive, while the other module flips that relationship. For this reason these units are sold in pairs.

About Media Converter

The Smart Media Converter is a network technology specified by IEEE 802.3 10BASE-T, IEEE802.3u 100BASE-TX, 100BASE-FX standards.

About Link Pass Through

When LLCF is enabled, the ports do not transmit a link signal until they receive a link signal from the opposite port. Link loss is “carried forward” to the managed switch or hub that is sending the link. LLCF can be used for either the copper or fiber ports.

When LLR is enabled, the fiber port’s transmitter shuts down if its receiver fails to detect a valid receive link. If one of the optical conductors is bad, the card with LLR enabled will return a no link condition to its link partner. LLR is used to detect link problems only on the fiber port.

Product Features

- ✓ A pair of One-channel single fiber media conversion between 10/100BASE-TX and 100BASE-FX.
- ✓ Two different type of transmitting wavelength: One wavelength with bi-directional for both transmits and receives. TX: 1310nm; RX: 1550nm. or TX: 1550nm; RX: 1310nm
- ✓ Auto negotiation of speed and duplex mode on TX port
- ✓ Store-and-forward mechanism
- ✓ Back-pressure & IEEE 802.3x compliant flow control
- ✓ 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
- ✓ Supports Link Pass Through
- ✓ Supports Auto-MDIX for 100BASE-TX port
- ✓ Sliding switch for the duplex mode of Fiber
- ✓ Sliding switch for setting to Forced mode or Auto-negotiation
- ✓ Sliding switch for setting the speed
- ✓ Sliding switch for setting the LLCF, LLR function
- ✓ Hot-swappable when used with a Chassis System Manageable through Intelligent Chassis System

Installation

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

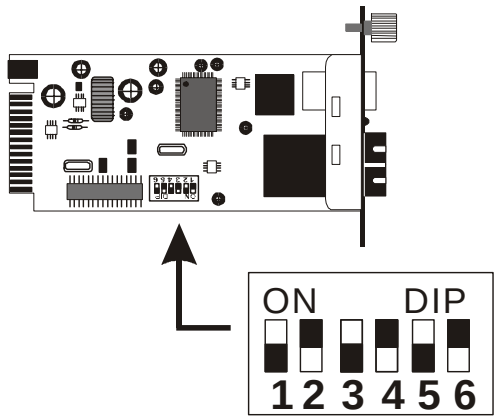
Selecting a Site for the Equipment

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:

1. The ambient temperature should be between 32 and 104 degrees Fahrenheit (0 to 40 degrees Celsius).
2. The relative humidity should be less than 90 percent, non-condensing.
3. Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards for IEC 801-3, Level 2 (3V/M) field strength.
4. 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.
5. The power outlet should be within 1.8 meters of the switch.

Sliding Switch

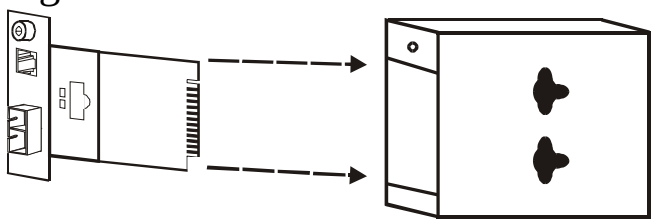
There is a sliding switch for the setting on copper and fiber port. Refer to the table below for more details.



Switch 1	On	Fiber Half Duplex
	Off	Fiber Full Duplex
Switch 2	On	TX Forced Mode
	Off	TX Auto-Negotiation
**** When switch to Forced Mode, the Auto MDI-X function will turn off and become MDI mode.***		
Switch 3	On	TX 10M
	Off	TX 100M
Switch 4	On	TX Half Duplex
	Off	TX Full Duplex
Switch 5	On	LLR Enable
	Off	LLR Disable
Switch 6	On	LLCF Enable
	Off	LLCF Disable

Installing in a Chassis

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



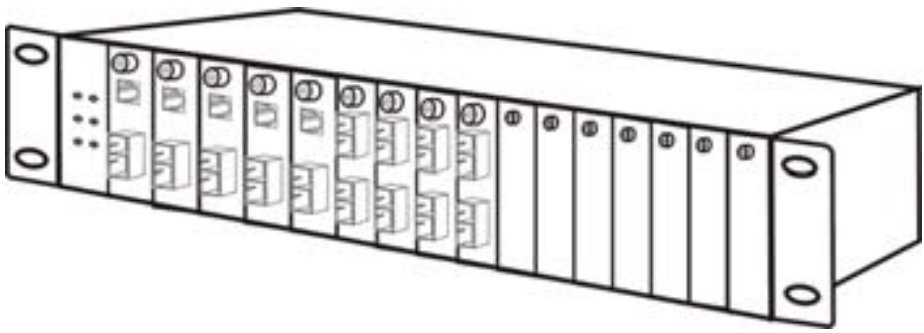
Unscrew and pull out the media converter board

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- Remove the screw on the converter as shown below.

Step 3- Fit the converter onto the carrier and use the screw to secure it.



Management the Media Converter

The optional Management Chassis that can control this Smart Media Converter through the management system, this Smart Media Converter can be controlled through Web Browser, SNMP management utility and terminal emulation program.

The Management Chassis will detect the default reset on the DIP switches and display out the status, also the Management Chassis can control the function through the management system.

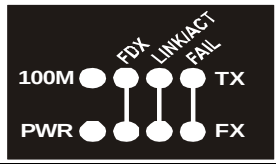
Through the optional Media Converter Chassis System via Management Module, you can control the setting of this Smart Media Converter.

To set the Fiber and UTP (FDX/HDX), UTP (Auto negotiation/Manual), Speed (10M/100M), LLR (Enable/Disable), LLCF (Enable/Disable)

Device Link Setup	To enable or disable the connection of both UTP port and Fiber port
LLCF Setup	To enable or disable the LLCF function of the device
M1 AN Setup	To set the UTP to Auto-negotiation or Forced Mode
M1 Speed Setup	To set the speed of UTP to 10M or 100M
M1 DUP Setup	To set the Duplex Mode of UTP port to Full or Half
M1 FC Setup	To set the Flow Control of the UTP to enable or disable
M1 Link Setup	To enable or disable the connection of the UTP port
M2 LLR Setup	To enable or disable the LLR function of the Fiber port
M2 DUP Setup	To set the Duplex Mode of Fiber port to Full or Half
M2 Link Setup	To enable or disable the connection of the Fiber port

LED Indicator

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

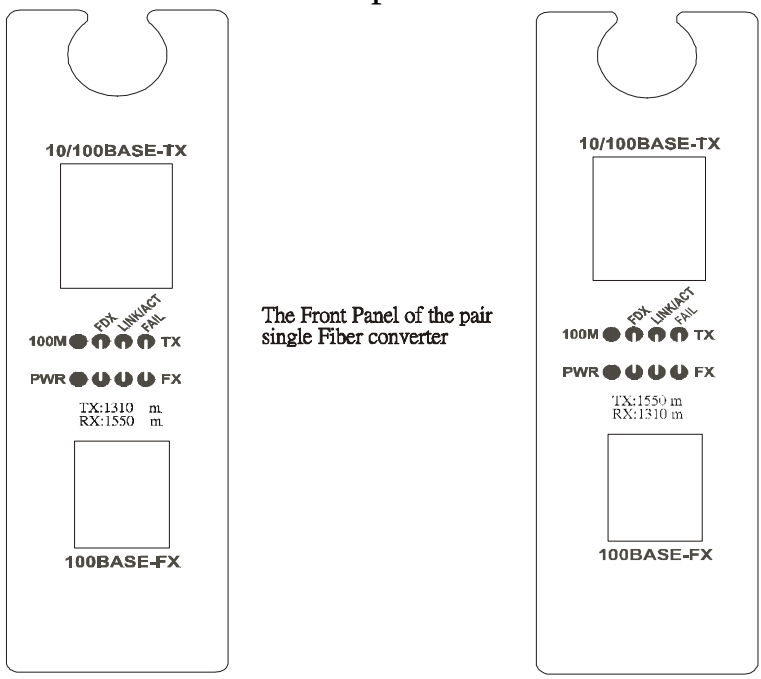


LEDs	Status	Indication
PWR (Power)	Lights on	Power on
	Off	Power off
100M (100Mbps)	Lights on	Runs at 100Mbps on TX port
	Off	Runs at 10Mbps on TX port
FDX/COL	Lights on	Connection in full duplex mode
	Lights off	Connection in half duplex mode
	Blinking	Data collision
LINK/ACT	Lights on	A valid network connection established
	Lights off	Not Linking
	Blinking	Data transmitting or receiving
FAIL	Lights on	The physical line is broken
	Lights off	The physical line is fine

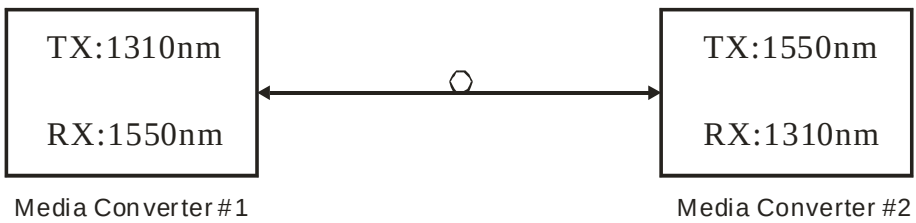
Dual Wavelength Single Fiber

The converter combine transmit and receive signal onto one fiber strand using two kind of wavelength. The units on both ends of a link are different. One module uses one wavelength to transmit and a second wavelength to receive,

while the other module flips that relationship. For this reason these units are sold in pairs.



When using a converter that the TX (transmit) is 1310nm and the RX(receive) is 1550nm, then the other end need to have a combination of converter that the TX(transmit) is 1550nm and the RX(receive) is 1310nm.
The TX needs to connect to the other end's RX with the same wavelength.

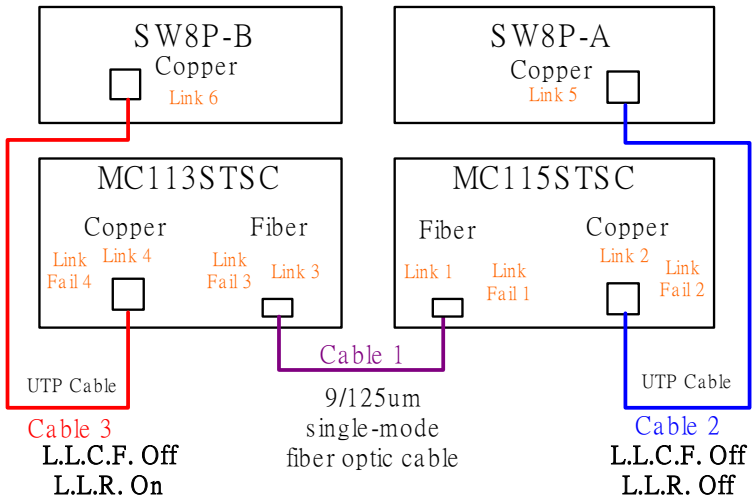


Link Pass Through Function

LLR (Link Loss Return)

When a device connected to the converter and the fiber line loss the link, the converter's fiber will disconnect the link of transmit.

The switch 5 is to enable or disable the LLR function of the media converter.



Test Result:

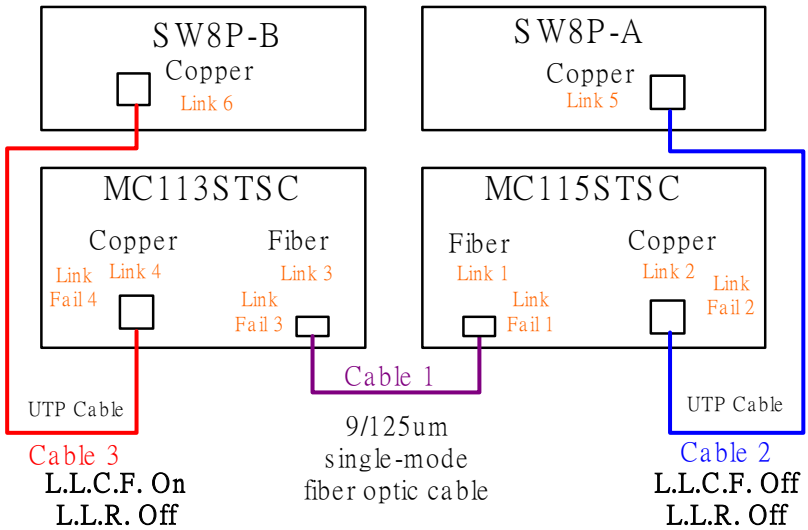
Link Status / Disconnect	Link 1	Link 2	Link 3	Link 4	Link 5	Link 6	Link Fail 1 LED	Link Fail 2 LED	Link Fail 3 LED	Link Fail 4 LED
Cable 1	Off	On	Off	On	On	On	On	Off	On	Off
Cable 2	On	Off	On	On	Off	On	Off	On	Off	Off
Cable 3	On	On	On	Off	On	Off	Off	Off	Off	On

Note: When using two converters, don't enable the both device's LLR function at the same time.

LLCF (Link Loss Carry Forward)

When a device connected to the converter and the TP line loss the link, the converter's fiber will disconnect the link of transmit, so that the other ends will know that there is a linkage error on this end. And when the Fiber line loss the link, the converter's TP will disconnected, and the other end will know that there is linkage problem exist.

The switch 6 is to enable or disable the LLCF function of the media converter.



Test Result:

Link Status / Disconnect	Link 1	Link 2	Link 3	Link 4	Link 5	Link 6	Link Fail 1 LED	Link Fail 2 LED	Link Fail 3 LED	Link Fail 4 LED
Cable 1	Off	On	Off	Off	On	Off	On	Off	On	Off
Cable 2	On	Off	On	On	Off	On	Off	On	Off	Off
Cable 3	Off	On	Off	Off	On	Off	On	Off	Off	On

Specifications

Applicable Standards	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX, 100BASE-FX
Ports	1 x 10/100BASE-TX port, 1 x 100BASE-FX port
Speed	10/20Mbps for half/full-duplex 100/200Mbps for half/full-duplex
LED Indicators	Per Unit-: Power
	TP: FDX/COL, LINK/ACT, FAIL, Speed Fiber: FDX/COL, LINK/ACT, FAIL
Cable	10BASE-T: 2-pair UTP Cat. 3,4,5, up to 100 m 100BASE-TX: 2-pair UTP Cat. 5, up to 100 m 100BASE-FX:10/125um single mode fiber optic cable
Dimensions	L120 × W88 × H25 mm
Power	External power adapter 7.5V 1.5A
Power Consumption	3W 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 Class B, CE Class B, VCCI Class B

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