

Connect Fiber to your Home

Ethernet Media Converter Family

User's manual

- 10/100Mbps
- 10/100/1000Mbps
- 1000Mbps
- SFP slot
- Mode converter

Version:3.0

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FCC warning

The series media converter have been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These standards are designed to provide reasonable protection against harmful interference when these devices are operated in commercial environment These devices can use, generate and radiate radio frequency energy and may cause harmful interface to radio communications unless installed in accordance with this User's Guide. Operation of this device in a residential area is likely to cause harmful interface which will make the user responsible for the appropriate remedial action at his/her own expense.

CE mark Warning

These are Class A products. In a domestic environment these products may cause radio interface in which case the user will need to consider adequate preventative measures.

Package Content

Thank you for purchasing our Ethernet Media Converter. Before you start installing the Media Converter, verify the following items in the package

- Media Converter
- User's Manual
- Power Adapter/Cord
- Warranty card

1. MC-10/100 10/100Mbps Fast Media Converter

The MC-10/100 10/100M fast Ethernet media converter is 10/100M auto-adaptation Ethernet fiber optic media converter, supporting the 10/100BASE-TX twisted-pair electrical signal and the 100BASE-FX optical signal interconversion. It expands the network transmitting range limit from the copper wire 100 meters to 2 kilometers (multi-model optical fiber), 120 kilometers (single model optical fiber), and can easily realize the link between HUB, SWITCH, the server, the terminal and long-distance terminal. 10/100M fast ethernet fiber optic media converter support plug and play, which means that it can work either independently or with others in a rack chassis, it has LFPT function(Link Fault Pass Through allowing the network manager to react to a broken link as soon as one occurs) and RoHS compliant.

Key Features

- UTP to Fiber Media converter

- Standalone or Chassis design
- Auto Negotiation Speed, Half/Full Duplex
- TX port support Auto MDI/MDI-X
- Hot swap for chassis
- LFPT function(Link Fault Pass Through)
- Dual fiber or WDM selectable
- 1x9 or SFP module selectable
- Centralized Management(optional)
- LED indicators for working status diagnosis
- RoHS compliant

LED Indication

1.1 Please refer to the following table for LED indication of media converter(external power)

LED	Status	Indication
FEF	Steady	Lit when local FX port receive signal from remote port
	Off	NO Receiving
SPD	Steady	When TP data transmission speed is 100M
	Off	When TP data transmission speed is 10M
	Flashing	Collision occurred
FXLink/Act	Steady	Lit When fiber cable connection with remote device is good
	Flash	FX data exchange
PWR	Steady	The power is on
TXLink/Act	Steady	Lit When fiber cable connection with remote device is good
	Flash	TP data exchange
FDX	Steady	Connection in full duplex mode
	Off	Connection in half-duplex mode

1.2 Please refer to the following table for LED indication of media converter(card type,internal power)

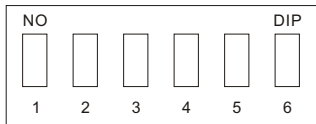
LED	Status	Indication
FEF	Steady	Lit when local FX port receive signal from remote port
	Off	NO Receiving
SPD	Steady	When TP data transmission speed is 100M
	Off	When TP data transmission speed is 10M
	Flashing	Collision occurred
	Off	Connection in half-duplex mode
FXL	Steady	Lit When fiber cable connection with remote device is good
	Flash	FX data exchange
PWR	Steady	The power is on
TXL	Steady	Lit When fiber cable connection with remote device is good
	Flash	TP data exchange
FDX	Steady	Connection in full duplex mode
	Off	Connection in half-duplex mode

Technical specifications

TYPE	MC-10/100-3M02	MC-10/100-3S20	MC-10/100-3S40	MC-10/100-3S80	MC-10/100-5S100
STANDARD	IEEE802.3 10BASE-T:IEEE802.3u 100BASE-TX/FX				

TP PORT	RJ-45 x 1 (10/100Mbps)			
Fiber port	SC/FC/ST/LC	SC/FC/ST/LC	SC/FC/ST/LC	SC/FC/ST/LC
TP CONNECTIONS	10BASE-T:UTP Category 3,4,5 100BASE-TX:UTP Category 5			
FIBER CONNECTIONS	50/62.5/125µm multi-mode fiber		9 or 10/125µm single-mode	
LED INDICATIONS	FEF,SPD,FXLink/Act,TXLink/ACT,PWR,FDX			
MAX. DISTANCE	2km, 5km		20/40/60/80/120km	
FILTERING/FORWARDING RATE	10Mbps:14,880pps/14,880pps 100Mbps:148,800pps/148,800pps			
ENVIRONMENT	Operating Temp:0~+60℃ Storage Temp:20~+70℃ Relative humidity:5%~90% non-condensing			
POWER	5V@ 1A			
NET WEIGHT	0.45kgs(external power); 1kgs(internal power)			
DIMENSION	95X71X26mm(external power) 156mmX128mmX32mm(internal power)			
EMISSION	FCC Class A, CE			

DIP switch setting for 10/100Mbps



- Set with DIP switch
- Set RJ45 port in full duplex/half duplex or auto-negotiation
- Set RJ45 port at 10Mbps、100Mbps or 10/100Mbps

The DIP switch is marked 1-6 from left to right, the definition of the setting is as below:

DIP switch PIN			Function
1	2	3	
OFF	OFF	OFF	Auto-negotiation(default setting)
ON	OFF	OFF	Force 100M full duplex
ON	OFF	ON	Force 100M half duplex
ON	ON	OFF	Force 10M full duplex
ON	ON	ON	Force 10M Half duplex
4	5		Mode setting
OFF	OFF	--	store-and-forward mode(default setting)
ON	OFF	--	straightforward mode
6			LFPT function
ON	--	--	LFPT function open
OFF	--	--	LFPT function close

Notice: To activate above setting, please pay attention to set the DIP switch(1~6) to according position first, then turn on the power of media converter..

2. MC-10/100/1000 10/100/1000Mbps Gigabit Media Converter

The MC-10/100/1000 10/100/1000Mbps Ethernet fiber converter is designed to make fiber gigabit ethernet conversion between 10/100/1000Base-T/1000Base-SX/LX. It is Gigabit Ethernet converter application. In addition, the converter implements jumbo frame forwarding capability. The overall network flexibility is enhanced, and the network efficiency is also improved to accommodate and deliver high bandwidth applications.

Key Features

- UTP to Fiber Media converter
- Comply with IEEE 802.3a/b and IEEE 802.3z
- Support mutual signal conversion between 10Base-T/100/1000Base-T adaptive and 1000Base-SX/LC
- Extend network span up to 80km
- 10/100/1000Mbps Auto MDI/MDI-X on UTP port
- Powered by AC/DC power adaptor Plug and play
- Standalone or Card module design,feasible to a 14/16 slots rack mount chassis
- Class 1 laser product
- Dual fiber or WDM selectable
- 1x9 or SFP module selectable
- Centralized or standalone management(optional)
- LED indicators for working status diagnosis
- RoHS compliant

LED Indication

2.1. Please refer to the following table for LED indication(external power):

LED	Function	Status	Description
PWR	Power LED	ON	Power is ON
		OFF	Power is OFF
100M	Copper interface speed	ON	Copper port speed at 100M

FX/ACT	Fiber interface link/action status	ON	Fiber link Success
		Blink	Fiber port transmit data
		OFF	Fiber link fail
1000M	Copper interface speed	ON	Copper port speed at 1000M
TP/ACT	UTP interface link/action status	ON	Copper Fiber link Success
		Blink	Copper port transmit data
		OFF	Copper port link fail
FDX	Copper interface duplex mode	ON	Full duplex
		OFF	Half duplex

2.2 Please refer to the following table for LED indication(internal power):

LED	Status	Indication
PWR	Steady	The Power is on
100M	Steady	Ethernet Speed is 100Mbps
FXL	Steady	A valid network connection established on Fiber port
	Off	No connection
1000M	Steady	Ethernet Speed is 1000Mbps
	Off	Ethernet Speed is 100Mbps
TX	Steady	Transmitting data
RX	Steady	Receiving data

Technical Specifications

TYPE	MC-10/100/1000-8M05	MC-10/100/1000-3SXX/5SXX
STANDARD	IEEE802.3 10Base-T Ethernet, IEEE802.3u 100Base-TX/FX Fast Ethernet,	

	IEEE802.3ab 1000Base-T , IEEE802.3z 1000Base-SX/LX Gigabit ethernet, IEEE802.1qVLAN, IEEE802.1p QoS,IEEE802.1d Spanning Tree	
INTERFACE	RJ-45 port x 1 (10/100/1000 Mbps) SC/LC connector Fiber port x 1 (1000 Mbps)	
TP CONNECTIONS	10/100/1000BASE-T:UTP Category 5, 5E	
FIBER CONNECTIONS	1000BASE-SX:62.5/ 125µm or 50/125µm Multi-mode fiber, SC/LC connector	1000BASE-LX:9or 10/125µm Single-mode fiber, SC/LC connector
LED INDICATIONS	PWR ,100M;FXL,1000M,TX,RX;	
MAX DISTANCE	550m/220m	10/20/40/80km
FILTERING /FORWARDING RATE	1000Mbps:1,488,000pps/1,488,000pps	
ENVIRONMENT	Operating Temp:0~+60℃ Storage Temp:-20~+70℃ Humidity:5%~90% non-condensing	
POWER	input:220VAC/110VAC/-48VDC 50/60Hz output:5V 1A	
NET WELGHT	0.45kgs(external power)1kgs(internal power)	
DIMENSION	95 X 71 X 26 mm (external power) 156mmX128mmX32mm(internal power)	
EMISSION	FCC Class A, CE	

3 MC-1000 1000/1000Mbps Gigabit Media Converter

The MC-1000 1000Mbps media converter supports two types of media for network connection such as 1000Base-T and 1000Base-SX/LX fiber.

The MC-1000 media converter is used to convert one type media signal to other type equivalent that allows two

types of segments to be connected easily and inexpensively. The Converter can be used as a standalone unit to the 2U 19" converter rack (up to 14 units) for use at a central wiring closet.

Key Features

- UTP to Fiber Media converter
- Comply with IEEE 802.3ab and IEEE802.3z
- Support mutual signal conversion between 10Base-T/100/1000Base-T adaptive and 1000Base-SX/LC
- Extend network span up to 80km
- 1000Mbps Auto MDI/MDI-X on UTP port
- Powered by AC/DC power adaptor Plug and play
- Standalone or Card module design,feasible to a 14 slots rack mount chassis
- Class 1 laser product
- Dual fiber or WDM selectable
- 1x9 or SFP module selectable
- LED indicaforc for working status diagnosis
- RoHS compliant

LED Indication

3.1 Please refer to the following tables for LED indication

LED	Function	Status	Description
PWR	Power LED	ON	Power is ON
		OFF	Power OFF
100M	Copper interface speed	ON	Copper port speed at 100M
FX/ACT	Fiber interface link/ action status	ON	Fiber link Success
		Blink	Fiber port transmit data
		OFF	Fiber link fail
1000M	Copper interface speed	ON	Copper port speed at 1000M
TP/ACT	UTP interface link/action	ON	Copper Fiber link Success
	Status	Blink	Copper port transmit data
		OFF	Copper link fail

FDX	Copper interface duplex mode	ON	Full duplex
		OFF	Half duplex

Technical specifications

TYPE	MC-1000-8M05	MC-1000-3SXX/5SXX
STANDARD	IEEE802.3ab 000BASE-T	IEEE802.3ab 1000BASE-T
	IEEE802.3z 1000BASE-SX	IEEE802.3z 1000BASE-LX
INTERFACE	RJ 45 port x 1 (1000 Mbps) SC/LC connector Fiber port x 1 (1000 Mbps)	
TP CONNECTIONS	1000BASE-T:UTP Category 5, 5E	
FIBER CONNECTIONS	1000BASE-SX:62.5/125µm or 50/125µm Multi-mode fiber, SC/LC connector	1000BASE-LX:9or 10/125µm Single-mode fiber, SC/LC connector
LED INDICATIONS	FX,TX,FEF,RX,PWR,1000M	
MAX.DISTANCE	550m/220m	10/20/40/80km
FIL TERING /FORWARDING RATE	1000Mbps:1,488,000pps/1,488,000pps	
ENVIRONMENT	Operating Temp:0~+60°C Storage Temp:-20~+70°C Humblbty:5%~90% non-condensing	
POWER	Input:220VSC/110VAC/-48VPC output:5V 1A	
NET WELGHT	0.45kgs	
DIMENSION	95 x71 x 26mm(external)	
EMISSION	FCC Class A, CE	

Installation

As with any electric device, you should place the equipment where it will not be subject to extreme temperatures, humidity, or electromagnetic interference.

Please follow the steps to install the media converter. This Converter is a plug-and-play device.

1. Turn off the power of the device/station in the network in which the media converter will be installed.
2. Ensure that there is no activity in the network.
3. Attach fiber cable from the media converter to the fiber network. The fiber connections must be Matched-Transmit socket to receive socket
4. Attach a UTP cable from the 100Base-Tx network to the RJ-45 port on the product
5. Connect the power cord to the media converter and check if the power LED lights up. The TP Link and FX link LEDs will light when all the cable connections are satisfactory.
6. Turn on the power of the device/station.

4. Gigabit Ethernet Media Converter with One SFP slot

MC-10/100/1000-SFP 10/100/1000Mbps SFP Media Converter

Overview

The MC-10/100/1000-SFP 10/100/1000M Gigabit Ethernet Media converter series are designed to meet the massive need for network deployment and able to extend a copper based network via fiber cable to a maximum 80km distance. The MC-10/100/1000-SFP 10/100/1000M Gigabit Ethernet Media Converter series are fully compliant with IEEE802.3, IEEE802.3U, 10/100/1000Base-Tx, 1000Base-Fx, standards. It can be installed into to standard Converter chassis. The installation and operation procedures are simple straightforward. Operation status can be locally monitored through a set of diagnostic LED located in front panel.

Features

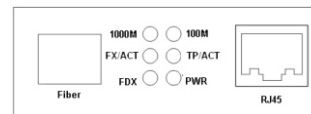
- 10/100/1000Base-Tx to 1000Base-Fx Converter
- Standards: IEEE802.3, IEEE802.3U, 10/100/1000Base-Tx, 1000Base-Fx
- One 10/100/1000 Mbps Ethernet port
- One SFP slot for Gigabit Ethernet link
- Auto MDI/MDI-X support on RJ-45 port
- Flow control: IEEE802.3x flow control for duplex mode, Backpressure flow control for half duplex mode.
- Status LEDs for easy monitoring of device's status
- Extends distance up to 500m(1,650ft) for multi-mode fiber module, 110km(317,625ft) for single-mode fiber module (depends on SFP)

Technical Specifications

ITEM	SPECIFICATION
ETHERNET STANDARDS	IEEE802.3 10BASE-T IEEE802.3u 100BASE-TX IEEE802.3ab 1000Base-T IEEE802.3x Flow Control and Back pressure
ETHERNET PORT	CAT-5 (100/1000Mbps) unshielded twisted pair cable. Auto-crossover(MDI/MDI-X) and auto-negotiation support.
FIBER PORT	SFP 3.3V with LC/SC connector
LEDS	PWR, 1000M, 100M, FX/ACT, TX/ACT, FDX
POWER	External 5V 1A
DIMENSIONS	95mmx71mmx26mm
SAFETY	UL
TEMPERATURE	Operating: 0 ~ 45°C (32~113oF) Storage: -10 ~ 70°C (14~158oF)
HUMIDITY	Operating: 10 ~ 90% (non-condensing) Storage: 10 ~ 90% (non-condensing)
EMC	FCC Part15 (Class A) CE EMC (Class A)

Product Illustrations

Front panel



Rear panel



LED Indicators

LED	Function	Status	Description
PWR	Power LED	ON	Power is ON
		OFF	Power OFF
100M	Copper interface speed	ON	Copper port speed at 100M
FX/ACT	Fiber interface link/ action status	ON	Fiber link Success
		Blink	Fiber port transmit data
		OFF	Fiber link fail
1000M	Copper interface speed	ON	Copper port speed at 1000M
TP/ACT	UTP interface link/ action status	ON	Copper port speed at 1000M
		Blink	Copper Fiber link Success
		OFF	Copper link fail
FDX	Copper interface duplex mode	ON	Full duplex
		OFF	Full duplex

MC-1000-SFP 1000Mbps SFP Media Converter

Overview

The MC-1000-SFP 1000M Gigabit Ethernet Media converter series are designed to meet the massive need for network deployment and able to extend a copper based network via fiber cable to a maximum distance up to 80km.

The MC-1000-SFP 1000M Gigabit Ethernet Media Converter series are fully compliant with IEEE802.3, IEEE802.3U, 1000Base-Tx, 1000Base-Fx, standards. It can be installed into to standard Converter chassis. The installation and operation procedures are simple straightforward. Operation status can be clearly monitored through a set of diagnostic LED located in front panel.

Features

- 10/100/1000Base-Tx to 1000Base-Fx Converter
- Standards: IEEE802.3, IEEE802.3U, 10/100/1000Base-Tx, 1000Base-Fx
- One 10/100/1000 Mbps Ethernet port
- One SFP slot for Gigabit Ethernet link
- Auto MDI/MDI-X support on RJ-45 port
- Flow control: IEEE802.3x flow control for duplex mode, Backpressure flow control flow control for half duplex mode.
- Status LEDs for easy monitoring of device's status
- Extends distance up to 500m(1,650ft)for multi-mode fiber module, 110km,(317,625ft) for single-mode fiber module

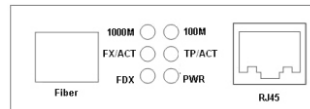
(depends on SFP)

Specifications

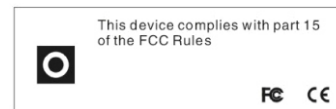
ITEM	SPECIFICATION
SPECIFICATION	IEEE802.3ab 1000Base-T IEEE802.3x Flow Control and Back pressure
ETHERNET PORT	CAT-5 (100/1000Mbps) unshielded twisted pair cable. Auto-crossover(MDI/MDI-X) and auto-negotiation support.
FIBER PORT	SFP 3.3V with LC/SC connector
LEDS	PWR, 1000M, 100M, FX/ACT, TP/ACT, FDX
POWER	External 5V 1A
DIMENSIONS	95mmx71mmx26mm
SAFETY	UL
TEMPERATURE	Operating: 0 ~ 45°C (32~113oF) Storage: -10 ~ 70°C (14~158oF)
HUMIDITY	Operating: 10 ~ 90% (non-condensing) Storage: 10 ~ 90% (non-condensing)
EMC	FCC Part15 (Class A) CE EMC (Class A)

Product Illustrations

Front panel



Rear panel



LED Indicators

LED	Function	Status	Description
PWR	Power LED	ON	Power is ON
		OFF	Power OFF
100M	Copper interface speed	ON	Copper port speed at 100M(cannot communicate)
		OFF	Copper port speed at 1000M
FX/ACT	Fiber interface link/ action status	ON	Fiber link Success
		Blink	Fiber port transmit data
		OFF	Fiber link fail
1000M	Copper interface speed	ON	Copper port speed at 1000M
		OFF	Copper port speed at 100M
TP/ACT	UTP interface link/ action status	ON	Copper Fiber link Success
		Blink	Fiber port transmit data
		OFF	Copper port link fail
FDX	Copper interface duplex mode	ON	Full duplex
		OFF	Half duplex

Installation

1. Locate the Converter in a clean, flat and safe position that has easy access to AC power.
2. Insert a 3.3V SFP (Small Form-factor Pluggable) transceiver module connector into the SFP slot.
3. Remove the dust plugs from the SFP transceiver module.
4. Identify the signal transmission direction of the fiber-optic cable and the SFP transceiver module. Insert one end of the fiber-optic cable into the SFP transceiver module.
5. Insert the other end of the fiber-optic cable into a remote device.
6. Connect an Ethernet cable from a switch to this port. This port is auto- negotiating and auto-crossover.
7. Insert the power cable plug directly into its receptacle located at the back of the device.
8. Plug the power adapter into an available socket.
9. Check the LEDs as the device is powered on to verify that the Power LED is lit. If not, check that the power cable is correctly and securely plugged in.

Notices

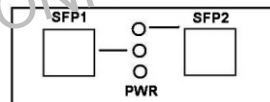
- This product is suitable for indoor usage application
- Put on the dust cover of SFP transceiver when not in use
- It's forbidden to stare at the TX fiber transmission end with naked eyes.

5. MC-SFP-2.5G SFP-SFP Mode Converter 10/100M / 1.25G/2.5G

Overview

The MC-SFP-SFP-2.5G SFP-SFP Mode converters allow network operators to incorporate multiple fiber types within a network. The SFP-SFP Mode converter provides the ability to accomplish this by working with existing equipment and thus, eliminating replacement costs. With the flexibility to convert fiber between single-mode, multi-mode, single-strand and CWDM wavelengths, one can easily extend network range to reach more remote locations. Additionally, since the Mode Converter is an Industrial Equipment device, the unit operates in environments that demand extended operating temperatures.

LED Description



Front View of Gigabit Converter

P1	Lit when SFP1 connection is good.
P2	Lit when SFP2 connection is good.
PWR	The indicator light means power work normally

Features and Benefits

Cost-effective and flexible

- Interchangeable SFP modules allow for multiple fiber mode/type conversion options (single mode, multi-mode, long haul, short haul, etc.)
- Extended operating temperatures

Multiple mounting options
Compact size conserves space
AC or DC power options

Protocol-Independent

Supports a full range of SFP modules offering various transmission speeds, from 10Mbps to 2.5Gbps
Supports OC3, OC12, OC48

Maximizes network uptime

SFP Modules are hot-Swappable; no need to power-down chassis when upgrading or trouble-shooting a single module

Troubleshooting features:

Diagnostic LEDs

*Both SFPs used in the Mode Converter must support the same data rate.

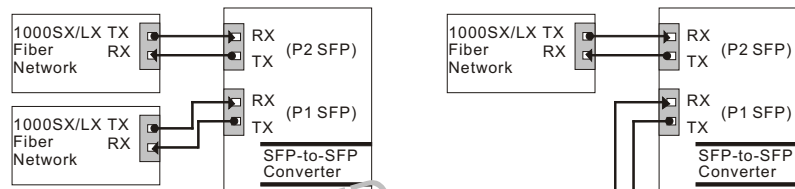
Technical Specifications

The Converter conforms to the following standards:

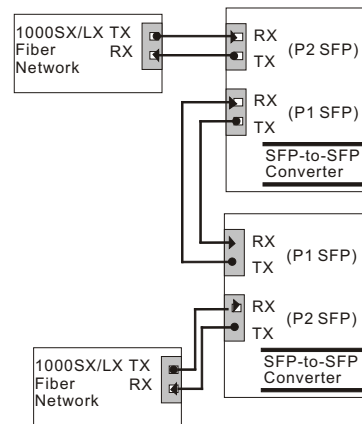
Includes two SFP ports
Protocol-independent operation
Converts between dissimilar fiber modes and Wavelengths
Includes diagnostic LEDs
Hot-swappable architecture Small Form Factor
External 5VDC power
Extended temperature range from 0°C to 50°C
Can use all standard MSA compliant SFP devices
Provides Extensive Diagnostic LED function

Installing the Converter

1. Verify the AC-DC power adapter (for External Power Converter) and conforms to your country AC power requirement
2. Install the media cable for network connection



Basic Network connection 1



Basic Network connection 2

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