

Overview

The Fiberdyne Labs FHC 10/100 Series Media Converter makes it possible to mix network media to optimize total cost of ownership when you are extending legacy twisted-pair network to a fiber-optic backbone. It is primarily designed for larger and higher bandwidth demanding workgroups that require expansion of the Ethernet network. The 10/100Mbps media converter series features a RJ45 jack and ST/SC fiber optic connectors, connecting the 10/100Mbps network to the 100BASE-FX (fiber optic) network. At full duplex mode, the converter can extend distance up to 2 kilometers for multimode fiber and up to 100 kilometers for single mode fiber, maximize conversion options and network design flexibility.

FCC warning

The FHC 10/100 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

Features

- Compliant with IEEE802.3 10Base-T, and IEEE802.3u 100Base-TX/FX standards
- Support auto-negotiation function in TP port to detect speed (10/100M) and duplex mode (full/half) automatically
- Support auto uplink (auto MDI/MDI-X) in TP port, no more cross-over cable
- Extend fiber-optic distance up to 100km with single mode fiber
- Provide various fiber-optic interfaces with ST/SC/FC connectors
- Mountable in the FHC-4000 converter chassis (optional card package)

New features (optional)

- Auto Uplink: User can connect to PC or switch/hub by using either straight-through or cross-over

cable. It will automatically detect the type of cable and link the connection.

- Link Fault Pass-Through: When cable in one end is OUT (disconnected/damaged/at fault), it will inform the other end by turning OFF the remote end's link LEDs.

Cable Connection of FHC 10/100 Series Media Converters

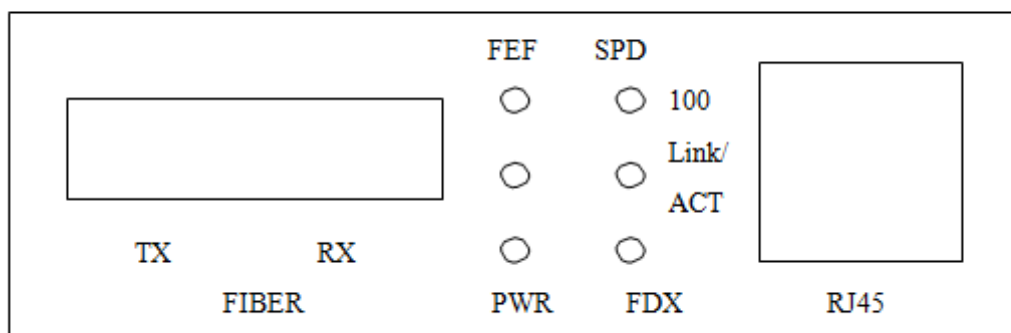
Port type	Cable Type	Max. Length
10/100BASE-T	Cat.3.4.5 UTP. RJ-45	100 meters
100BASE-FX	Multi-mode Fiber of 62.5/125u	2km
100BASE-FX	Single-mode Fiber of 1310nm (9 or 10/125μm)	20~100km

LED Indication

Please refer to the following table for LED indication of FHC 10/100-Series (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
	Off	Connection in half-duplex mode
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 UTP cable connection with remote device is good
	Flash	TP data exchange
FDX	Steady	Connection in full duplex mode
	Off	Connection in half-duplex mode

Physical Description



Specifications of FHC 10/100 Series Media Converter

MODEL	FHC-1000	FHC-1020	FHC-1040	FHC-1060	FHC-1080	FHC-1100	FHC-1120
STANDARD	IEEE802.3 10BASE-T:IEEE802.3u 100BASE-TX/FX						
TP PORT	RJ-45 x 1 (10 /100Mbps)						
100BASE-FX PORT	ST	SC	SC	SC	SC	SC	SC
TP CONNECTIONS	10 BASE-T:UTP Category 3,4,5			100BASE-TX:UTP Category 5			
FIBER CONNECTIONS	62.5/125 Multimode Fiber		9/125 Single Mode Fiber				
LED INDICATION	FEF,SPD,FXLink/ACT,TXLink/ACT,PWR,FDX						
MAX. DISTANCE	2km	2km	20km	40km	60km	80km	100km
FILTERING/FORWARDING RATE	10Mbps:14,880pps/14,880pps			100Mbps5: 148,800pps/148800pps			

ENVIRONMENT	Operating Temp:0~+70℃ Storage Temp:-40~+85℃ Humidity:10~90% non-condensing
POWER	5V 1A
NET WEIGHT	.45 Kg (external power)
EMISSION	FCC Class A, CE

Typical Optical Power Budget

TYPE	FHC-1000	FHC-1020	FHC-1040	FHC-1060	FHC-1080	FHC-1100	FHC-1120
Connector	ST	SC	SC	SC	SC	SC	SC
Type							
Wavelength	1310nm	1310nm	1310nm	1310nm	1310nm	1310nm	1550nm
Typical							
Distance	2Km	2Km	20Km	40Km	60Km	80Km	100Km
Min TX PWR	-19.0dBm	-19.0dBm	-18.0dBm	- 5.0dBm	- 4.0dBm	0dBm	-1-- -3.0dBm
Max TX PWR	-14.0dBm	-14.0dBm	- 7.0dBm	0dBm	2.0dBm	5.0dBm	2.0dBm
Sensitivity	-30.0dBm	-30.0dBm	-32.0dBm	-34.0dBm	-36.0dBm	-37.0dBm	-36.0dBm
Link Budget	11.0dB	11.0dB	14.0dB	29.0dB	32.0dB	37.0dB	33.0dB

Setting of media converter(optional)

Our media converter has DIP switch as follows:



§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 in front panel is marked 1-6 from left to right, the definition of the setting is as below.

1	2	3	Function
OFF	OFF	OFF	Auto-negotiation(default setting)
ON	OFF	OFF	Compelling 100M full duplex
ON	OFF	ON	Compelling 100M half duplex
ON	ON	OFF	Compelling 10M full duplex
ON	ON	ON	Compelling 10M half duplex
4 ,5-mode setting			
4-OFF 5-OFF, store-and-forward mode (default setting)			
4-On 5-OFF, straight forward mode			
6. LFPT function: ON-open; OFF-close			

Note: Prior to start up LFPT function, set the DIP switch 6 to "ON", then power on the device.

Installation

As with any electric device, you should place the equipment where it will not be subject to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

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.