# 10/100Base TX to 100Base Fx Media Converter

General Description

The media converter transform the transmission media of Ethernet signal from CAT5 to optical fiber. it can extend the transmission distance to several kilometer or hundred kilometer.

Using media converter is a economical solution to achieve long distance transmission base on current status.

FIGURE 1.1 Media converter application
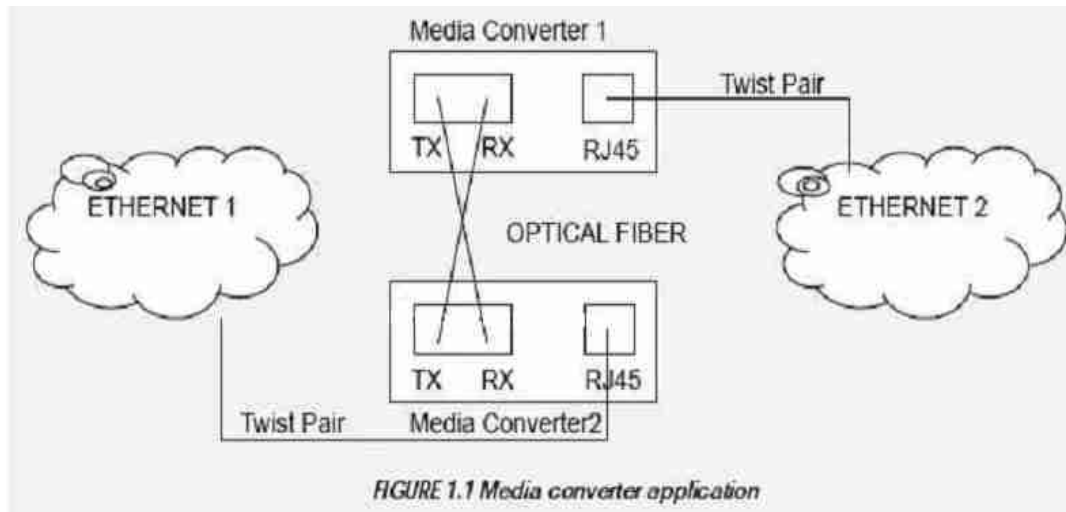
Features

1. Standard: In conformity to IEEE 802.3 10 Base-T standard.
   In conformity to IEEE 802.3u 100 Base-TX/FX standard.
   Support CSMA/CD Protocol
2. Built in 128Kb RAM for data buffer.
3. Back pressure flow control for full duplex
   IEEE802.3 X and half duplex.
4. Automatic identification of MDI/MDI-X cross line.
5. Forward 1600 bytes packets for management. Can also reach 9k bytes(optional, Must inform us ahead).
6. Supports link fault pass through function.
7. Supports far end fault function.
8. Power from external power adapter or USB port.
9. Fiber connector: Choice from SC,ST,FC or LC connector for multimode and single mode.
10. DIP Switch to set configurations.
11. Built in a watchdog timer to monitor internal switch error.
12. LED display for link/activity,full/half,10M/100M.
13. Transmission distance can reach 2km for multimode and 120KM for single mode
14. Can be rack mounted in 14 slots chassis(external Power supply)
15. Support 4KV lighting protection(external power supply,Optional)

LED indicator lamp

Fiber/T Transceiver
10/100/Base-TX To 100Base-FX Media Converter

DIP Switch

USB power

Support DIP switch,can
1.force to adjust LFP
2.force to adjust TX port to be 10/100M adapative
3.force to adjust the bandwidth to be 10M
4.force to adjust to be full/half-duplex state

支持拨码开关，可实现以下功能：
1，强制调节LFP（光电互控）
2，强制调节电口为10/100M自适应
3，强制调节电口带宽为10M
4，强制调节全/半双工

support USB power supply system
can instead power supply by only one
USB line

支持USB供电系统
只需一跳USB线可替代
电源适配器

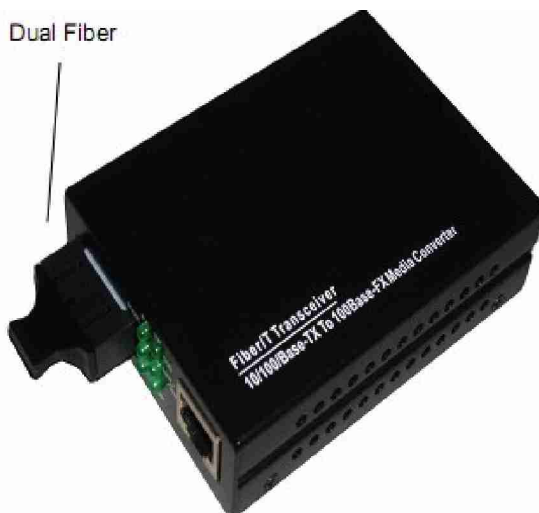**Figure 2.1 10/100M media converter(single fiber,SC,external PSU)**

Dual Fiber

Fiber/T Transceiver
10/100/Base-TX To 100Base-FX Media Converter

FAST ETHERNET MEDIA CONVERTER
FIBER/T TRANSCEIVER
10/100Base-TX to 100Base-FX

Figure 2.2 10/100M Media Converter(Dual fiber,SC,external PSU) Figure 2.3 10/10M Media Converter(Dual fiber,int

10/100Base TX to 100Base Fx Media Converter

LED Function Description

LED indicator lamps serve as device monitoring and trouble display.

LED indicator lamp	Status	Explanation
FX Link/Act	On	Connection status display for fiber link. "ON" indicates that Fiber link is in correct connection.
	Blink	Active status display of fiber link "Blink" indicates packet goes through Fx end.
TP Link/Act	On	Connection status display for electric link. "ON" indicates that electric link is in correct connection.
	Blink	Active status display of electric link "Blink" indicates packet goes through Tx end.
DUP	On	Transceiver works in the full duplex mode.
	Off	Transceiver works in the half duplex mode.
PWR	On	Power is on and normal.
SD	On	Fiber signal is detected.
100	On	Transfer rate of electric interface is 100Mbps.
	Off	Rate of electric interface is 10Mbps

Table 3.1 Explanation for LED indicator lamp

Transmission characteristics of single and dual fiber transceiver

Dual fiber	Interface	Wavelength(nm)	Transmitting optical power (dBm)	Receiving sensitivity(dBm)	Transmission distance(km)	Loss allowed(dBm)
MM	ST/SC/FC	1310	$-14 \sim -9$	-34	2	10
SM	ST/SC/FC	1310	$-13 \sim -4$	-33	20	19
SM	SC	1310	$-8 \sim -3$	-35	40	27
SM	SC	1310	$-5 \sim 0$	-36	60	34
SM	SC	1550	$-5 \sim -0$	-36	80	27
SM	SC	1550	$-5 \sim 0$	-36	100	31
SM	SC	1550	$-2 \sim 3$	-37	120	35

Single fiber	Interface	Wavelength(nm)	Transmitting optical power (dBm)	Receiving sensitivity(dBm)	Transimission distance(km)	Loss allowed(dBm)
SM	SC	1310/1550	$-12 \sim -3$	-35	20	Standard loss:1310nm 0.4/km 1550nm 0.25/
SM	SC	1310/1550	$-8 \sim -3$	-35	30	
SM	SC	1310/1550	$-5 \sim 0$	-36	40~60	
SM	SC	1310/1550	$-3 \sim 3$	-36	60~80	

Table 3.2 Transmission characteristics of single and dual fiber transceiver

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Technical Parameter

Table4 .1 parameter

	10/100M Multimode Media converter	10/100M Single Media converter
Cable	MM fiber/twist pair	SM fiber/twist pair
Operation Mode	full duplex mode or half duplex mode	
Connector	One UTP RJ-45connector,oneSC/ST/FC or one LC connector	
Power Supply	outside: 5V DC 1A built-in: 110-265V AC or 48V DC or 12V DC(optional)	
Data Buffer	128Kb	
Environmental temperature	0~60 degrees	
Transfer Fiber	multi-mode: 50/125, 62.5/125 or 100/140μm single mode:: 8.3/125, 8.7/125, 9/125 or 10/125μm	
Ralative Humidity	5%-90%	
Size	94mm x 71mm x 26mm (Power external type) 150mm x 110mm x 26mm(Power internal type)	

DIP function(only for external power supply):

DIP1:"ON" enable LFP alarm function,"OFF" disable LFP function;

DIP2:"ON" force TX port work under 10M,"OFF" force TX port work under auto negotiation;

DIP3:"ON" force TX port work under 10M,"OFF" force TX port work under 100M;

DIP4:"ON" force TX port work under Half Duplex,"OFF" force TX port work under Full Duplex;

DIP function(only for card type,internal power supply):

DIP1:"ON" enable LFP alarm function,"OFF" disable LFP function;

DIP2:"ON" force TX port work,"OFF" force TX port work under auto negotiation;

DIP3:"ON" force TX port work under 10M,"OFF" force TX port work under 100M;

DIP4:"ON" force TX port work under Half Duplex,"OFF" force TX port work under Full Duplex;

DIP5:"ON" force fiber port work under Half Duplex,"OFF" force fiber port work under Full Duplex;

DIP6:"ON" fiber port and TX port are not in comformity to IEEE802.3X protocol,"OFF" fiber port and TX port are not in comformity to IEEE802.3X protocol;

DIP7 and DIP8:

Both are "OFF", work under the storage and forward exchange mode(default mode);

DIP7"ON" and DIP8 OFF",work under the improved quick exchange mode;

DIP7 "OFF" and DIP "ON",work under converter mode,no date storage,TX must be forced to be 100M;

Both are "ON",work under converter mode,automatically convert to forward mode when the speed of optical ports and TX port

Ordering Information

Table5.1 ordering information

Product	Description	Unit
10/100M Media Converter(Telecom Network Products, 220V power outside, standalone, suitable to 2U 14 slots rack mount media converter)	dual fiber,multi-mode,2KM,1310nm	set
	dual fiber,single-mode,20KM,1310nm	set
	dual fiber,single-mode,40KM1310nm	set
	dual fiber,single-mode,60KM,1310nm	set
	dual fiber,single-mode,80KM,1550nm	set
	dual fiber,single-mode,100KM,1550nm	set
	dual fiber,single-mode,120KM,1550nm	set
	single-mode,20km,1310nm/1550nm	pair
	single-mode,40km,1310nm/1550nm	pair
	single-mode,60km,1310nm/1550nm	pair
	single-mode,80km,1310nm/1550nm	pair
	single-mode,100km,1310nm/1550nm	pair
	single-mode,120km,1310nm/1550nm	pair