optostar

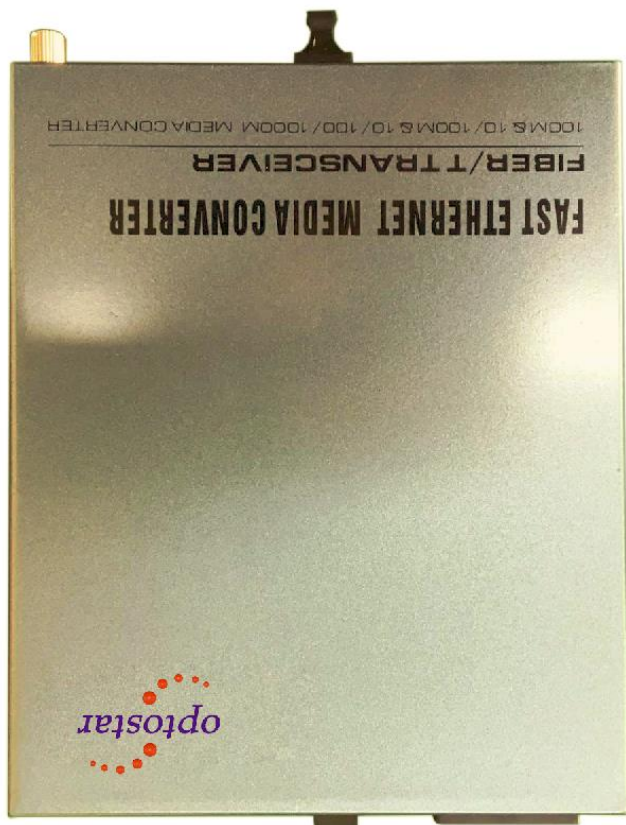# Media Converter

User Manual

Version: V4.1.2

Distance: MM: Multimode SM: Single-mode

☐ 0~2km MM   ☐ 0~5km MM

☐ 0~20km SM   ☐ 0~25km SM

☐ 0~40km SM   ☐ 0~60km SM

☐ 0~80km SM   ☐ 0~120km SM

Optical Port:

☐ SC   ☐ FC   ☐ ST

Fiber:

☐ Dual Fiber   ☐ Single Fiber

Converter type:

☐InsidePower   ☐OutsidePower   ☐Module

Wavelength:

☐ 850nm   ☐ 1300nm

☐ 1310nm   ☐ 1550nm

Management:

☐Yes   ☐ No

Contents

Chapter 1 Introduction

1.1 Descriptions

Media converter transmits IP over fiber, applied in many places where need long distance transmission. Enlarge the TP network range by MM or SM fiber. Low consumption and high resistance to electromagnetic interference of the optical fiber make the transmitting distance spread from 100m to several decades KM or hundred KM, improve the communication quality as well. And make the server, repeaters, switch, terminal PC connect easily. The user manual introduces Media Converter characteristic, function, use and maintenance. Please read the user manual carefully before installation.

1.2 Characteristics

- Supports SNMP management (only for management device)
- Selectable optical link-loss alarm
- Selectable four transmitting modes

- Comply with IEEE 802.3μ 100BASE-FX/TX, IEEE802.3 10BASE-T, Standard
- Comply with IEEE 802.1Q VLAN TAG, Spanning Tree standard
- Supports 10/100M, full/half duplex auto-negotiation
- Supports auto MDI/MDIX crossover
- Supports transmission distance up to 120km
- Same card on rack mounted and desktop
- Supports over-sized packets up to 1600Bytes
- Supports hot-swappable

1.3 Technical Parameters

Mechanical Parameters	Size	21mm x 125mm x 165mm
	Package	78mm x 170mm x 226mm
	Work	-30~50℃
	Storage	-40~70℃
	Power	220V AC /110V AC
		-48V DC/+24V DC
Optical Parameters	MM 2km OR MM 5km	
	Fiber	62.5/125, 50/125,100/140μm
	Output optical power	>-15dBm

Receiving sensitivity	<-28dB
Distance	0~2km or 0~5km
Connector	SC, ST, FC
Wavelength	850nm/1300nm/1310nm
SM	
Fiber	9/125, 8.3/125, 8.7/125 or 10/125 μm
SM 20km	
Distance	0~20km
Output optical power	>-15Bm
Receiving sensitivity	< -32dB
Connector	SC, ST, FC
Wavelength	1310nm
SM 25km	
Distance	0~25km
Output optical power	>-13dBm
Receiving sensitivity	< -32dB
Connector	SC, ST, FC
Wavelength	1310nm

SM 40km	
Distance	0~40km
Output optical power	>-12dBm
Receiving sensitivity	< -33dB
Connector	SC, ST, FC
Wavelength	1310nm，1550nm
SM 60km	
Distance	0~60km (when less than 15km, use attenuator)
Output optical power	>-8dBm
Receiving sensitivity	< -34dB
Connector	SC, ST, FC
Wavelength	1310nm,1550nm
SM 80KM	
Distance	0~80km (when less than 15km, use attenuator)
Output optical power	>-5dBm

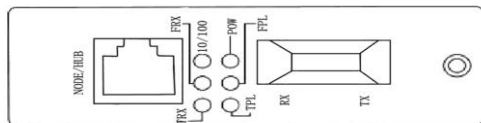|		
Receiving sensitivity	< -36dB	
Connector	SC, ST, FC	
Wavelength	1550nm	
SM 120KM		
Distance	0~120km (when less than 15km, use attenuator)	
Output optical power	>-3dBm	
Receiving sensitivity	< -38dB	
Connector	SC, ST, FC	
Wavelength	1550nm	

Chapter 2 Operation

2.1 Front Panel

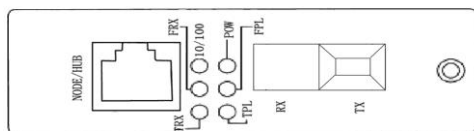Fig 1. Front panel of dual-fiber converter

Fig 2. Front panel of single-fiber converter

2.1.1 Indicators

Six indicators in the front panel of the converter:

Name	Definition	Specification
POW	Indicator of power supply	ON when the power supply is turned on and in normal working status
FRX	optical interface status indicator	Bright when optic fiber cable is connected well, but no data transmission

		Blinking when receiving data
TRX	Ethernet interface status indicator	Bright when twisted pair is connected well, but no data transmission
		Blinking, when receiving data
10/100	rate indicator	ON, 100M
		OFF, 10M
FPL	Optical interface signal detect indicator	ON, when detects the optical signal
		OFF, when no optical signal detects
TPL	Ethernet interface mode indicator	ON, Full duplex
		OFF, Half duplex

2.1.2 Optical Port

➤ RX: Optical signal output

➤ TX: Optical signal input.

2.1.3 Ethernet port (NODE / HUB)

Supports auto MDI/MDIX crossover, the pin definition of RJ-45:

Pin1   TX+   Output +

Pin2	TX-	Output -
Pin3	RX+	Input +
Pin4	NC	Not connect
Pin5	NC	Not connect
Pin6	RX-	Input -
Pin7	NC	Not connect
Pin8	NC	Not connect

2.2 SW1

An 8 bits switch on Media Converter PCB signed "SW1", settings as follows:

NO.	Function	Status	Specification	Default
SW1-1	TP_FORCE Ethernet port auto-negotiation	ON	Disable	**OFF**
		OFF	Enable	

SW1-2	SPEED Ethernet port rate	ON	10M	**OFF**
		OFF	100M	
SW1-3	DUPLEX Ethernet port duplex mode	ON	Half duplex	**OFF**
		OFF	Full duplex	
SW1-4	FX_FULL Optical port duplex mode	ON	Half duplex	**OFF**
		OFF	Full duplex	
SW1-5	LFP Link-loss detect	ON	Enable	**OFF**
		OFF	Disable	
SW1-6 SW1-7	D_WIRE F_FWD Transmission mode	See appendix		**OFF**
SW1-8	X_EN Support IEEE 802.3X	ON	Nonsupport	**OFF**
		OFF	Support	

Appendix:

D_WIRE	F_FWD	Function	Description
OFF	OFF	Storing and	Default

		transmitting mode	
OFF	ON	Modifying cut-through mode	Determine the frontal 64K bytes of the receiving data packet whether to be stored and transmitted. Ethernet port should be forced 100M at this mode.
ON	OFF	cut-through mode	The receiving data packet is not stored but directly transmitted. Ethernet port should be forced 100M, and the packet delay is minimum at this mode.
ON	ON	Auto mode	Adjust the transmitting mode automatically according to the rate of the Ethernet port and optical port.

NOTE:

Keeping SW1 default settings is suggested.

Chapter 3 Installation

3.1 Installation

1) After you received the devices, firstly you should check whether the packing is well, otherwise, please contact with our company or the local agent in time so as to solve the problem.

2) Turn on the power supply of the converter.

3) Connect local RX to remote TX via optical fiber, when local FPL indicator should be bright. And connect local TX to remote RX, when both local and remote FRX, FPL indicators should be bright. If they are single-fiber converters, connect the optical fiber, and it is OK.

4) Turn on the power supply of the connected Ethernet devices.

5) Installation is completed.

NOTE:

Single-fiber bi-directional Media Converter has two types:

Type A: Transmitting wavelength 1310nm, receiving

wavelength 1550nm.

Type B: Transmitting wavelength 1550nm, receiving wavelength 1310nm.

Type A and Type B must be used in pair (i.e. if one end is Type A, then the other end must be Type B)

3.2 Troubleshooting

Failure	Reasons	Check	Troubleshooting
POW OFF	Power supply	※Check whether there is power input. ※Check whether the power switch is turned on	※Examine the external power supply or turn on the power switch
FPL OFF	Optical port fault	※Check whether the fiber link is broken ※Check whether the optical consumption is over-size ※Check whether	※Examine the fiber link ※Correct the connection

User Manual

17-18

		the connection is correct	
TRX OFF	TP port fault	※Check whether the UTP is broken ※Check whether the connection type is matched ※Check whether the rate is matched	※Examine the UTP ※Correct the rate