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# **10/100/1000M Auto Negotiation Media Converter**

(FT14 Series)

## **USER MANUAL**

## Safety Precautions

Please read the following precautions carefully before installation and operation. Manufacture Inc is not responsible for any losses or damages due to any violation of the safety precautions.



The output of the media converter is invisible laser radiation. During the installation, operation and maintenance of this product, never aim the optical fiber connector connecting to the converter output port or optical fiber end at one's body to avoid the injury to eyes or skin.



Avoid any damage from severe vibration or collision since precision optical components are built-in. Shut down the power of the converter before connecting the output port of the media converter to the optical fiber connector.



No disassembly or maintenance is allowed because there are static sensitive components in the media converter. Disassembly or maintenance approved or guided by Ours Inc technicians should be carried out according to the static protection procedures.



Please contact us when there is anything wrong, and do not dismantle media converter without permission; otherwise, it may cause irreversible damage. The company holds that anyone who dismantles it without permission gives up the rights of warranty automatically.

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## 1. Summarization

10/100/1000M auto negotiation media converter has two types: chassis media converter card and standalone type; both of them can be managed or unmanaged according to our customers requirements.

The media converter card type can be used with FT series 1-slot chassis or 17-slot chassis (2U, 19") and support hot swap;

The standalone type can be used in pairs or used with chassis media converter card to be synthetically managed by network management system.



Panel Sketch for Card Type; FT14 Series



Panel Sketch for standalone type; FT14 Series

## 2. Specification

<b>User port</b>	10/100/1000BaseTX (RJ45); 1000BaseFX (SFP module)
<b>Dimension</b>	88 (W) ×25 (H) ×115 (D) (mm) (card-type) 130 (W) ×34 (H) ×160 (D) (mm) (standalone-type)
<b>Weight</b>	0.25KG (card-type); 0.8KG (standalone-type with SFP, built-in power)
<b>Working environment</b>	Temp: -10°C~60°C; RH: 5~95% non-condensing

<b>Storage environment</b>	Temp: -40°C~80°C; RH: 5~90% non-condensing
<b>Power supply</b>	220V/AC; 110V/AC; -48V/AC
<b>Power consumption</b>	≤5W (Standalone type or converter card with 1-slot chassis) ≤4W (Media converter Card) ≤75W(17-slots chassis, full load)

<b>Standards &amp; Protocols</b>	IEEE802.3x full duplex on 10BaseT, 100BaseTX, 1000BaseT IEEE802.3-2002 IEEE802.3u 100BaseTX IEEE802.3ab 1000BaseT IEEE802.3z 1000BaseX IEEE 802.1d Spanning Tree IEEE 802.1p Qos
<b>Fiber link option</b>	Dual fiber/single fiber (WDM)
<b>Max frame size</b>	1518 Bytes (100M); 9728 Bytes (1000M)
<b>Transmission distance</b>	Dual fiber: up to 100km Single fiber: up to 80km
<b>Bandwidth management</b> (when management function is available)	Support bandwidth control by step of 64Kbps (N*64K)
<b>Link monitoring</b> (when management function is available)	Report local events to remote device, including Critical Event (voltage and temperature abnormal) and Dying Gasp (power down).

### 3. LED indicator and panel description

#### 3.1 LED Indicator Introduction

<b>LED</b>	<b>Function</b>
<b>PWR</b>	Indicate if the power is on or not.

<b>TL</b>	Indicating light of connection/activity of Ethernet port of the media converter and the opposite end equipment's Ethernet port. Normal on means Ethernet port is connected; blink means Ethernet port is connected and transmitting or receiving data. When function of LLCF is used, off means abnormal connection of an Ethernet port or fiber optic port at local or remote end in the link, whereas off, when the function of LLCF is shut down, means abnormal connection of the local Ethernet port.
<b>1000</b>	Ethernet port rate indicating light. Normal on is 1000Mbps, while off is 10Mbps or 100Mbps.
<b>TFD</b>	Half-duplex/full-duplex mode of Ethernet port indicating light. Normal on means full-duplex; off means half-duplex; blink means link conflict.
<b>FL</b>	Indicating light of connection/activity of optical fiber port of the media converter and the opposite end equipment optical fiber port. Normal on means fiber optic port is connected; blink means fiber optic port is connected and transmitting or receiving data. When function of LLCF is used, off means abnormal connection of an Ethernet port or fiber optic port at local or remote end in the link, whereas off, when the function of LLCF is shut down, means abnormal connection of the local fiber optic port.

### 3.2 Panel Introduction

3.2.1 The panel has a RJ45 port and one optical port. The RJ45 port is the Ethernet port for client terminal equipment with 10/100/1000M auto negotiable rate .Optical port is adopted SFP optical transceiver module with input rate 100M--1.25G.

FL LED turns green when the optical fiber connects correctly.

3.2.2 All fiber connector and the head of jumper should keep clean and intact.

3.2.3 Information like manufacture date and item No. can be seen on PVC label.

3.2.4 Customer can choose different types of front panel according to customer's demand.

## 4. Installation and operation procedure

### 4.1 Installation

The media converting cards should be installed together with the 17-slot chassis or 1-slot chassis. Install the 17-slot chassis on the standard 19" cabinet before inserting the media converting cards into the chassis in order. Pay attention to fixing screw caps on the media

converting cards tightly.

The standalone media converter can be set directly on a desk.

Notes: Indoor installation is recommended to avoid weather exposure.

## **4.2 Operation procedure**

- 4.2.1 Ensure that optical fiber used matches the media converter. When single mode optical fiber is used, select a media converter with a port for single mode optical fiber; While multi mode optical fiber is used, select a media converter with a port for multi mode optical fiber.
- 4.2.2 Ensure that the power supply meets the requirement of the media converter and the wire is connected correctly .Make sure that the power is off before connection .The device offer AC 220V power or DC -48V.When choosing DC -48V, the cable connection in NOC (Network Operation Center) .should connect (+) ,-48 V .The protection cable connect to the ground of the device .
- 4.2.3 To ensure operating to the best, the configuration of the media converter should match the Ethernet port connected to it. The FT10/100/1000M media converter supports the auto negotiable function. This working mode should be selected when it is connected with Ethernet equipment that also supports auto negotiable functions. When different working mode is necessary during operation, ensure that the working modes of the corresponding ports of both media converter and Ethernet equipment are the same. (Please refer to 3.3 mode matching table)
- 4.2.4 Connect the twister and fiber to the corresponding ports of the media converter. The connectors of the twister and fiber should comply with related standards. Arrange the fiber as straightly as possible. When bending is necessary, the bending diameter should not be less than 50cm. The twister should not be too short or bundled too tight. After tied up, a length of 5 – 10cm should be left.

## **4.3 Mode matching**

To make your Ethernet networking equipments function well such as hub, switch, and media converter, etc, you should ensure modes between the interfaces matching each other during operation. If incorrect setting, not only the full loaded operation is impossible, but also it may lead to connection blockage.

When connecting with Ethernet equipment under different mode, set the DIP switch of the media converter as shown in the following table. Due to new technology emerging continuously, different equipment need different configurations. Please contact a network engineer or the corresponding

manufacturers whatever is unclear.

<b>Port Configuration of switch/HUB</b>	<b>Management Setting of Media Converter</b>
Auto negotiation	Auto negotiation
1000M,full-duplex	auto negotiation e disable, 1000M, full-duplex
1000M,full-duplex	auto negotiation e disable, 1000M, half-duplex
100M,full-duplex	auto negotiation e disable, 100M,full-duplex
100M,half-duplex	auto negotiation e disable, 100M,half-duplex

## 5. Trouble Shooting

<b>Malfunction</b>	<b>Solutions</b>
No Lamp is on.	In standalone media converter and 17-slot chassis there are lamps to indicate if the power supply operates in normal way. Check if the power supply cable connected correctly when the power supply indicating light is not on, and if the power supply meets the requirement of the media converter used.
TL LED at the end of twister is off.	Check if the connection (are firm) between RJ45 and the Ethernet port is reliable; if the twistors are made correctly; if the speed matches that of the network equipment; if the Ethernet equipment connected works normally.
TFD LED blinks.	Carefully check if the Ethernet port of the media converter matches that of the equipment connected according to 3.3 Mode matching table. It is recommended to set both electric interfaces under same working mode of 1000M full duplex.
FL LED is off	Check if the fiber connector matches the type of the port of the fiber; if the head face is clean; if the fiber connector is plugged properly; if transmission of one end (TX) is connected with the receiving of the other end (RX); if the fiber is wrong.
LLCF is enabled, the fiber is connected, physical connection of Both Ethernet port are correct, but only PWR LED is on.	The connection of an Ethernet port or fiber optic port at local or remote end in the link is broken down. Check if the connection of the network cable is reliable; if the connection of the optical fiber is reliable.



LED is in normal mode; but it can't be pinged.	Check if the corresponding Ethernet equipment works normally; if the configuration of the equipment at both ends is correct.
All links are correct and Ping is available, but the speed is too slow.	Carefully check modes between electric interfaces of the media converter and equipment connected match each other according to 3.3 Mode matching table.

**Notice:** Please refer to Network Management Card User Manual for the details about network management.

## 6. Order Information

