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## FCC Warning

This converter has 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 this device is operated in a commercial environment. This device generates, uses, and can radiate radio frequency energy and may cause harmful interference 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 interference which will make the user responsible for the appropriate remedial action at his / her own expense.

## CE Mark Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user will need to consider adequate preventative methods.

## 1. Checklist

The package should contain the following items:

- One Set of the Media Converter
- AC-DC Power Adapter
- This User's Guide

Please notify your sales representative immediately if any items are missing or damaged.

## 2. Overview

This media converter is designed to meet the needs for massive optical fiber network deployment and able to extend a legacy copper based network via fiber cable to a maximum distance of 30KM.

It is fully compliant with IEEE 802.3 & 802.3u standards; the built-in Switching ASIC has turned the function of the equipment more like a 2-port switch than a traditional converter. Users can get all switching benefits such as traffic segmentation, frames checking & error filtering. In addition, Link Alarm (LLF) allows users to monitor & maintain their critical fiber link more easily and effectively.

The installation and operation procedures of the converter are simple & straightforward. Operation status can be monitored through a set of Diagnostic LED indicators on the front panel.

### Major Features:

- Provide one 10/100Base-TX RJ-45 port & one 100Base-FX Fiber port
- Compatible with IEEE 802.3, 802.3u
- Support 9K Jumbo Frames
- Store & Forward Switching Mechanism
- MDI/MDIX Auto-Crossover supported
- Support Auto-Negotiation or Manual mode for TP port's speed & duplex configuration.
- Link Alarm (Link Loss Forwarding) function
- Support 64K bytes packet buffer

## 3. Network Installation

Please follow the steps described below and refer to Figure 1 and 2 to complete the network installation.

- 1 Attach a fiber cable from the converter to the fiber network.
- 2 Attach a UTP cable from the 10/100Base-TX network to the RJ-45 port on the converter.
- 3 Connect the power adapter to the converter and the Power LED will light up. The TX and FO Link/Act LEDs will light up as soon as if all the cable connections are satisfactory.

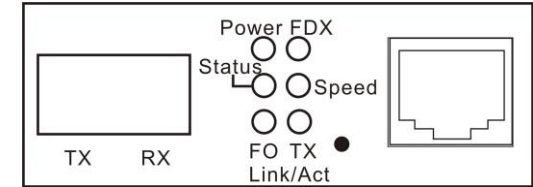


Fig. 1 Front Panel of the Converter



Fig. 2 Rear Panel of the Converter

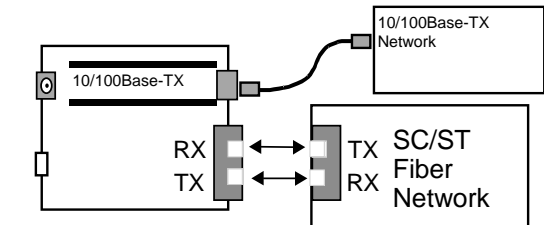


Fig. 3 Basic Network Connection

## 4. DIP SWITCH Setting

The default setting for PIN 1 through PIN 8 is OFF.

PIN NO.	Function	OFF	ON
1	TP Auto-Negotiation	Enable	Disable
2	Manual TP Speed	100M	10M
3	Manual TP Duplex	Full	Half
4	Link Alarm (LLF)	Disable	Enable
5	Reserved	Always Keep OFF	
6	Reserved	Always Keep OFF	
7	Reserved	Always Keep OFF	
8	Reserved	Always Keep OFF	

### NOTE:

1. Before adjusting the configuration of the DIP Switch, the power should be unplugged.
2. Disable TP Auto-Negotiation function before configuring TP speed/duplex manually.

## 5. LED Description

LED	Color	Function
Power	Green	Lit when power is available.
TX Link/Act	Green	Lit when TP port link is up. Blinking when TP port is receiving and transmitting data. Off when TP port link is down.
		Lit when Fiber port link is up. Blinking when Fiber port is receiving and transmitting data. Off when Fiber port link is down.
FDX	Green	Lit when TP port works in full-duplex mode. Off when TP port works in half-duplex mode.
Speed	Green	Lit when TP 100M port link is up. Off when TP 10M port link is up.
Status	Green	Lit when both TP and Fiber port links are up.
	Orange	Lit when either TP or Fiber port link is down.

## 6. Technical Specifications

<b>Standards</b>	IEEE 802.3 & IEEE 802.3u
<b>Interface</b>	1 X 10/100Base-TX RJ-45 1 X 100Base-FX Fiber Port
<b>MAC Table</b>	2K Entries
<b>Forward &amp; Filter Rate (64 Bytes)</b>	10Base-T: 14,880 pps 100Base-FX/TX: 148,800 pps
<b>LED</b>	Power, FDX, Status, Speed, FO Link/Act, TX Link/Act
<b>Power</b>	DC 5V, 1.6A
<b>Power Consumption</b>	1.5W
<b>Shipping Weight</b>	0.2kg
<b>Dimensions</b>	71(W) x 94(D) x 26(H)mm
<b>Temperature</b>	Operating: 0 ~ 50 °C Storage: -20 ~ 60 °C
<b>Humidity</b>	5% ~ 90% RH non-condensing
<b>Certification</b>	FCC/CE Class A
<b>Media</b>	TP: Cat. 5 UTP cable Fiber: 50/125 or 62.5/125 $\mu$ m multi-mode 9/125 $\mu$ m single-mode

\* Please contact us for further reports and updates.

**NOTE:** Specifications may change without prior notice.

## 7. Link Alarm (Link Loss Forwarding)

Link Alarm (LLF) allows users to easily identify and diagnose the linking status. If Link Alarm is enabled (PIN 4 is set to ON), the UTP and fiber port can link up only when both linking conditions are good. In addition, if the fiber or UTP port link is down during the operation, the other port link will also be turned into the "Down" status to alert the user. Configure Link Alarm DIP switch as "Enabled" status, it provides users transparent link indication between two network devices interconnected by the converter.

If Link Alarm is disabled, the UTP and fiber port will link up based on their individual linking condition. Furthermore, if the fiber port link is down during the operation, the UTP port link will not be turned into the "Down" status, and vice versa.

## 8. Fiber Transceiver Information

### 100M Multi-Mode:

Model	CM-011A-SC	CM-011A-ST
Connector Type	SC	ST
Wavelength	1310nm	1310nm
Typical Distance	2Km	2Km
Min TX PWR	-20.0dBm	-20.0dBm
Max TX PWR	-14.0dBm	-14.0dBm
Sensitivity	-31.0dBm	-31.0dBm
Link Budget	11.0dB	11.0dB

### 100M Single-Mode:

Model	CM-011A-SC(SC/30km)
Connector Type	SC
Wavelength	1310nm
Typical Distance	30Km
Min TX PWR	-15.0dBm
Max TX PWR	-8.0dBm
Sensitivity	-34.0dBm
Link Budget	19.0dB

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# Lantech

## CM-011A-SC

## CM-011A-ST

### 10/100TX to 100FX Media Converter w/ LLF function

User's Guide

Version 5.0

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## 1. Checklist

The package should contain following items:

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- This User's Guide

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## 2. Overview

This media converter is designed to meet the needs for massive optical fiber network deployment and able to extend a legacy copper based network via fiber cable to a maximum distance of 20KM.

It is fully compliant with IEEE 802.3 & 802.3u standards; the built-in Switching ASIC has turned the function of the equipment more like a 2-port switch than a traditional converter. Users can get all switching benefits such as traffic segmentation, frames checking & error filtering. In addition, Link Alarm (LLF) allows users to monitor & maintain their critical fiber link more easily and effectively.

The installation and operation procedures of the converter are simple & straightforward. Operation status can be monitored through a set of Diagnostic LED indicators on the front panel.

### Major Features:

- Provide one 10/100Base-TX RJ-45 port & one 100Base-FX Fiber port
- Compatible with IEEE 802.3, 802.3u
- Support 9K Jumbo Frames
- Store & Forward Switching Mechanism
- MDI/MDIX Auto-Crossover supported
- Support Auto-Negotiation or Manual mode for TP port's speed & duplex configuration.
- Link Alarm (Link Loss Forwarding) function
- Support 64K bytes packet buffer

## 3. Network Installation

Please follow the steps described below and refer to Figure 1 and 2 to complete the network installation.

- 1 Attach a fiber cable from the converter to the fiber network.
- 2 Attach a UTP cable from the 10/100Base-TX network to the RJ-45 port on the converter.
- 3 Connect the power adapter to the converter and the Power LED will light up. The TX and FO Link/Act LEDs will light up as soon as if all the cable connections are satisfactory.

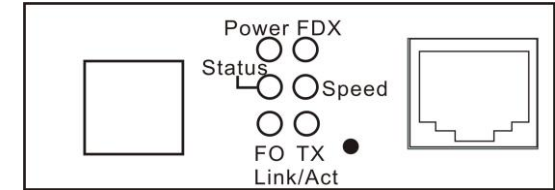


Fig. 1 Front Panel of the Converter

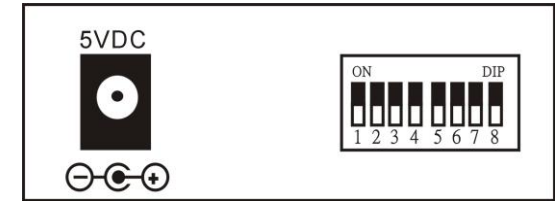


Fig. 2 Rear Panel of the Converter

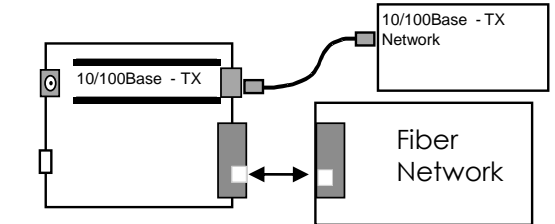


Fig. 3 Basic Network Connection

## 4. DIP SWITCH Setting

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4	Link Alarm (LLF)	Disable	Enable
5	Reserved	Always Keep OFF	
6	Reserved	Always Keep OFF	
7	Reserved	Always Keep OFF	
8	Reserved	Always Keep OFF	

### NOTE:

1. Before adjusting the configuration of the DIP Switch, the power should be unplugged.
2. Disable TP Auto-Negotiation function before configuring TP speed/duplex manually.

## 5. LED Description

LED	Color	Function
Power	Green	Lit when power is available.
TX Link/Act	Green	Lit when TP port link is up.
		Blinking when TP port is receiving and transmitting data. Off when TP port link is down.
FO Link/Act	Green	Lit when Fiber port link is up.
		Blinking when Fiber port is receiving and transmitting data. Off when Fiber port link is down.
FDX	Green	Lit when TP port works in full-duplex mode. Off when TP port works in half-duplex mode.
Speed	Green	Lit when TP 100M port link is up. Off when TP 10M port link is up.
Status	Green	Lit when both TP and Fiber port links are up.
	Orange	Lit when either TP or Fiber port link is down.

## 6. Technical Specifications

<b>Standards</b>	IEEE 802.3 & IEEE 802.3u
<b>Interface</b>	1 X 10/100Base-TX RJ-45 1 X 100Base-FX Fiber Port
<b>MAC Table</b>	2K Entries
<b>Forward &amp; Filter Rate (64 Bytes)</b>	10Base-T: 14,880 pps 100Base-FX/TX: 148,800 pps
<b>LED</b>	Power, FDX, Status, Speed, FO Link/Act, TX Link/Act
<b>Power</b>	DC 5V, 1.6A
<b>Power Consumption</b>	1.5W
<b>Shipping Weight</b>	0.2kg
<b>Dimensions</b>	71(W) x 94(D) x 26(H)mm
<b>Temperature</b>	Operating: 0 ~ 50 °C Storage: -20 ~ 60 °C
<b>Humidity</b>	5% ~ 90% RH non-condensing
<b>Certification</b>	FCC/CE Class A
<b>Media</b>	TP: Cat. 5 UTP cable Fiber: 50/125 or 62.5/125 $\mu$ m multi-mode 9/125 $\mu$ m single-mode

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## 7. Link Alarm (Link Loss Forwarding)

Link Alarm (LLF) allows users to easily identify and diagnose the linking status. If Link Alarm is enabled (PIN 4 is set to ON), the UTP and fiber port can link up only when both linking conditions are good. In addition, if the fiber or UTP port link is down during the operation, the other port link will also be turned into the "Down" status to alert the user. Configure Link Alarm DIP switch as "Enabled" status, it provides users transparent link indication between two network devices interconnected by the converter.

If Link Alarm is disabled, the UTP and fiber port will link up based on their individual linking condition. Furthermore, if the fiber port link is down during the operation, the UTP port link will not be turned into the "Down" status, and vice versa.

## 8. Fiber Transceiver Information

### 100M Wave-Length WDM:

Model	CM-011A-WDM13	CM-011A-WDM15
Connector Type	SC	SC
Wavelength	TX:1310nm RX:1550nm	TX:1550nm RX:1310nm
Typical Distance	20Km	20Km
Min TX PWR	-15.0dBm	-15.0dBm
Max TX PWR	-3.0dBm	-3.0dBm
Sensitivity	-31.0dBm	-31.0dBm
Link Budget	16.0dB	16.0dB

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# Lantech

## CM-011A-WDM13 CM-011A-WDM15 10/100TX to 100FX Media Converter w/ LLF function

User's Guide

Version 5.0