

## Trademarks

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## FCC Warning

This equipment 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 these devices are operated in a commercial environment. These devices generate, use, 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 these devices 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

These are Class A products. In a domestic environment these products 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 MCT-5002SFP+ Media Converter
- 1X AC-DC Power Adapter
- This User's Guide

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

## 2. Overview

MCT-5002SFP+, a compact media converter, converts traditional twisted-pair RJ-45 cable with 10G NBase-T technology into a 10G SFP+ slot for pluggable fiber transceiver, extending transmission distance for Data Center 10G NBase-T to 10GBase-R conversion application or ISP Mobile DU (Distributed Unit) and Enterprise broadband service applications.

MCT-5002SFP+ media converter is fully compliant with 802.3u, 802.3ab, 802.3z, 802.3bz, 802.3ae, and 802.3an standards. Operation status can be locally monitored through a set of Diagnostic LEDs located in the front panel.

### Major Features:

- Support Auto-Negotiation for 5-speed options (100M/1G/2.5G/5G/10G) in TP port
- Up to 10G at 100m over Cat.6A cable or better cabling, or 2.5G at 100m over Cat.5E or better cabling. (For more details, please see Section 7.)
- Support MDI/MDI-X Auto-Crossover
- Support Link Alarm
- Support Jumbo Frame 9K bytes (under 10Gbps)
- Support the loopback mode in the fiber port
- Support the fully-transparent mode
- Support Auto & Force mode configuration for the TP port.
- Fully compatible with CTS MCT-RACK-12/18-MGM chassis for in-rack management

## 3. Installation

- Attach the fiber cable from MCT-5002SFP+ to the fiber network. The fiber connections must be matched – transmit socket to receive socket.
- Attach a UTP cable from the NBase-T network to the RJ-45 port on MCT-5002SFP+.
- Connect the power adapter to the power jack on the rear panel of MCT-5002SFP+ and check that if the Power LED lights up. The TP and F/O LEDs will light up when all the cable connections are satisfactory.

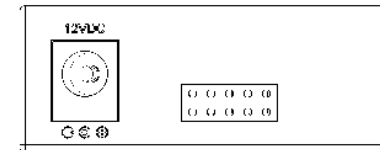
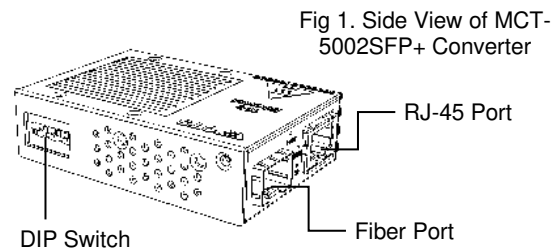


Fig 2. Rear Panel of MCT-5002SFP+ Converter

**CAUTION**  
To prevent suffering from burns due to the high temperature, please wear a protective equipment when you install or remove especially the converters.

## 4. LED Description

LED	Color	Function
Power	Green	Lit when power is available.
TP	OFF	TP port link is down.
	Green	Lit when TP 10Gbps port link is up. Blinking when TP port is receiving and transmitting data at the speed of 10Gbps.
	Orange	Lit when TP port link less than 10Gbps is up. Blinking when TP port is receiving and transmitting data at the speed of less than 10Gbps.
F/O	OFF	Fiber port link is down.
	Green	Lit when Fiber 10Gbps port link is up. Blinking when Fiber port is receiving and transmitting data at the speed of 10Gbps.
FDX	OFF	TP works in the half-duplex mode.
	Green	Lit when TP works in the full-duplex mode.
Status	Green	Lit when the converter module is in normal operation.
	Orange	Lit when the system is booting up. Slowly blinking when the firmware of the converter module is not compatible with CTS MCT-RACK-MGM chassis. The converter module needs to be upgraded with the new firmware. Rapidly blinking when the converter module works abnormally.
	Orange ▲ Green	Slowly blinking when the system is upgrading the firmware.

## 5. DIP SWITCH Setting

The default setting for PIN 1 through PIN 4 is OFF, and PIN5 is ON.

Pin NO.	Function	OFF	ON
1	Fiber Auto-Negotiation	Disable	Enable
2	Link Alarm	Disable	Enable
3	Fiber Loopback Mode	Disable	Enable
4	TP Port Speed	Auto-Speed	Fixed in 10Gbps
5	Software Control	Configure via software of CTS MCT-RACK-MGM chassis	Configure via DIP Switch
6	Reserved	N/A	N/A

### NOTE:

- Before adjusting the configuration of the Dip Switch, the power should be unplugged.
- PIN1, PIN 2, PIN 3 and PIN 4 work only when PIN 5 is set to ON.
- When the fiber loopback mode is enabled (PIN 3 is set to ON), the media converter will loopback the received packets (The packets are generated from the 3rd-party device) to ensure the circuit quality, and TP port will be forcibly stopped transmitting and receiving the packets.

## 6. Installing MCT-5002SFP+ on MCT-RACK Chassis Series

Up to 6 sets of MCT-5002SFP+ installation can be supported by CTS MCT-RACK-12/18 chassis series. For more details on these installation, you may refer to our MCT-RACK-12/18-MGM chassis HW User's Guide.

For proper heat dissipation for MCT-RACK-18 chassis series, please avoid using slot 1 as well as slot 18, and not to install any modules next to the slot in which MCT-5002SFP+ is installed to keep adequate ventilation. (See Fig. 3). As to MCT-RACK-12 chassis series, the staggered installation for your MCT-5002SFP+ is highly recommended. (See Fig.4).

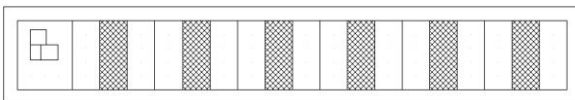


Fig 3. MCT-5002SFP+ Installation on MCT-RACK-18 Chassis Series

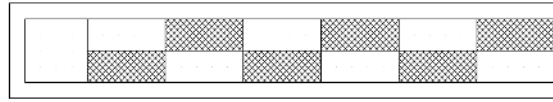


Fig 4. MCT-5002SFP+ Installation on MCT-RACK-12 Chassis Series

## 7. Transmission Distance Using Copper Cables

Cable	Speed (bps)			
	1G	2.5G	5G	10G
Cat. 5E (22~24 AWG)	100	100	N/A	N/A
Cat. 6 (22~24 AWG)	100	100	100*	N/A
Cat. 6A (22~24 AWG)	100	100	100	100

Unit: meter

\*Please refer to the NBase-T specifications.

## 8. Technical Specifications

<b>Standards:</b>	802.3u, 802.3ab, 802.3z, 802.3bz, 802.3ae, and 802.3an
<b>Interfaces:</b>	1 x NBase-T (100M/1G/2.5G/5G/10G) RJ-45 connector 1 X F/O port (SFP+)
<b>LEDs:</b>	Power, Status, FDX, Link/ACT of F/O, and Link/ACT of TP
<b>Power:</b>	I/P AC 100-240V, 50/60Hz O/P DC 12V/1.5A
<b>Power Consumption:</b>	8W
<b>Weight:</b>	97g
<b>Dimensions:</b>	51mm(W)X74mm(D)X20mm(H)
<b>Temperature:</b>	Operating: 0°~50°C Storage: -20°~60°C
<b>Humidity:</b>	5%~90% RH
<b>Certification:</b>	FCC/CE Class A
<b>Media:</b>	TP EIA/TIA-568 CAT 5e, 1000M Fiber 50/125um multi-mode fiber 9/125, 10/125um single-mode fiber

\*Please contact us for further reports and updates.

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

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## MCT-5002SFP+

**100M/1G/2.5G/5G/10G  
NBASE-T to 10GBASE-R  
Standalone Media Converter**

**User's Guide**

**Version 1.1**