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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:

- 1 x MCT-5002SFP+ Media Converter
- 1 x AC-DC Power Adapter
- 1 x User's Guide

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

2. Overview

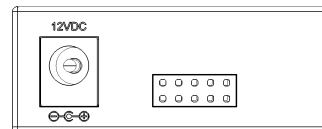
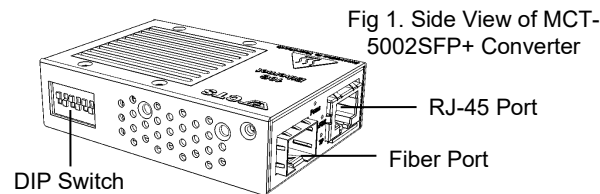
MCT-5002SFP+, a compact media converter, converts Multi-G (100M/1G/2.5G/5G/10G) Base-T to 10G SFP+ fiber. It efficiently extends 10G transmission for data centers, ISP Mobile DUs and enterprise broadband services.

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 series 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.



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 10Gbps link is established. Blink when 10Gbps TP traffic is present
	Orange	Lit when 100M~5Gbps link is established. Blink when 100M~5Gbps traffic present.
F/O	OFF	Fiber port link is down.
	Green	Lit when 10Gbps port link is established. Blink when 10Gbps F/O traffic is present.
FDX	OFF	TP works in the half-duplex mode.
	Green	Lit when TP works in the full-duplex mode.
Status	Green	Lit when the device is in normal operation.
	Orange	Lit when the system is booting up. Blink slowly when firmware version mismatches CTS MCT-RACK-MGM chassis. Firmware upgrade is required. Blink rapidly when the device works abnormally.
	Orange ↕ Green	Blink slowly when the system is upgrading the firmware.

5. DIP SWITCH Setting

The default setting for PIN 1 to PIN 4 is OFF, and PIN 5 is ON.

Pin	Function	OFF	ON
1	Fiber Auto-Negotiation	Disable (10GBase-R)	Enable (10GBase-KR*)
2	Link Alarm	Disable	Enable
3	Fiber Loopback Mode	Disable	Enable
4	TP Port Speed	Auto-Speed	Fixed 10Gbps
5	Software Control	Config. via CTS MCT-RACK-MGM	Configure via DIP Switch
6	Reserved	N/A	N/A

NOTE:

1. Please unplug the power before adjusting the Dip Switch.
2. PIN 1, 2, 3, 4 work only when PIN 5 is set to ON.
3. 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.
4. PIN 1 toggles between **10GBase-R** (OFF, Default) and **10GBase-KR** (ON). *10GBase-KR is a legacy backplane mode supporting Auto-Negotiation & Link Training; however, for stable performance and standard SFP+ compatibility, **please ensure PIN 1 remains in the OFF position.**

6. Install MCT-5002SFP+ in MCT-RACK Chassis Series

The CTS MCT-RACK-12 HW version B can support up to 12 sets of MCT-5002SFP+ installations, while the MCT-RACK-12 HW version A and MCT-RACK-18 can each support up to 6 sets of MCT-5002SFP+ installations.

To ensure proper heat dissipation in the MCT-RACK-18 chassis series, please refrain from using slot 1 and slot 18, and avoid installing any modules adjacent to the slot where the MCT-5002SFP+ is installed to maintain adequate ventilation (refer to Fig. 3). For the MCT-RACK-12 HW version A series, staggered installation of your MCT-5002SFP+ modules is highly recommended (refer to Fig. 4).

For further details, please refer to our MCT-RACK-12/18 series chassis Hardware User's Guide.

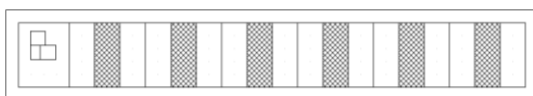


Fig 3. MCT-5002SFP+ Installation on MCT-RACK-18 Chassis Series

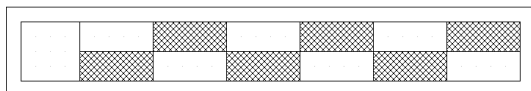


Fig 4. MCT-5002SFP+ Installation on MCT-RACK-12 Chassis Series

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

Standards:	802.3u, 802.3ab, 802.3z, 802.3bz, 802.3ae, and 802.3an
Interfaces:	1 x Multi-G (100M/1G/2.5G/5G/10G) RJ-45 connector 1 F/O port (SFP+)
LEDs:	Power, Status, FDX, Link/ACT of F/O, and Link/ACT/Speed of TP
Power:	I/P AC 100-240V, 50/60Hz O/P DC 12V/1.5A
Power Consumption:	8W
Weight:	97g
Dimensions:	51mm(W)x74mm(D)x20mm(H)
Temperature:	Operating: 0°~50°C Storage: -20°~60°C
Humidity:	5%~90% RH
Certification:	FCC/CE Class A
Media:	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.



MCT-5002SFP+

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

User's Guide

Version 1.2