

# MMC Series

## Copper to Fiber Mini Media and Rate<sup>1</sup> Converters

Mini media converters offer a smaller size and smaller carbon footprint to help the environment and save space in the office.



### Overview

The Allied Telesis MMC Series of mini media converters leverages its smaller size to not only help the environment with a small carbon footprint, but also to save space in its working environment. Despite its compact size, the MMC Series delivers all the power and functionality of standard size media converters.

### Extend Networks

The MMC Series are available in 100Mbps or 1000Mbps models. Depending on the model chosen, the fiber-optic port has options for fixed SC, ST, LC or SFP connectors capable of multi-mode or single-mode fiber connectivity. The twisted-pair copper port has an RJ-45 connector supporting either 100Mbps or 1000Mbps, with a maximum operating distance of 100 meters (328 feet).

### VLAN Support

Many new backbone switch products now support the industry-standard IEEE 802.1Q specification for Virtual LANs (VLANs) that send extra-long data packets on the network. The MMC Series are fully compatible with these long packets, enabling them to be used in modern networks. Media converters not supporting this feature discard these extra long packets, making them unsuitable for modern networks.

<sup>1</sup> MMC1000/SP will only accept 100T on the copper side

<sup>2</sup> Over previous models

### Small and Flexible

The smaller size and external power supply of the MMC Series allows them to be used almost anywhere.

### Smart MissingLink (SML)

The Smart MissingLink™ (SML) feature monitors network connections and provides notification when network segments fail, allowing network managers to quickly identify the source and location of failed segments and minimize downtime.

### Smart Link Restoration

Smart Link restoration allows the devices, in cases of power failure, link loss or other interrupted service, to automatically restore the link without the need to restart/reset them.

### Power Saving

The MMC Series continues the Allied Telesis commitment to the environment with over 50% power savings.<sup>2</sup> With just 1.7W of power usage, the MMC Series media converters are some of the most efficient in the market today.

### Link Test

The link test is a fast and easy way for you to test the connections between the media converter ports and the connected end nodes. If a network problem occurs, you can perform a link test to determine which port is experiencing a problem, and focus your troubleshooting efforts on the right cable or end node.

## New Features

- ▶ Extended Temperature rating of 0°C to 50°C (32°F to 122°F)
- ▶ Convert speed as well as media type
- ▶ 2K MAC address tables
- ▶ Store-and-forward switching mode
- ▶ Transparent to IEEE 802.1Q packets
- ▶ Auto Negotiation and Auto MDI/MDIX on copper port
- ▶ EEE support on copper port
- ▶ Far End Fault on Fiber
- ▶ 10K byte Jumbo packets
- ▶ Link/Activity LED per port
- ▶ Smart MissingLink
- ▶ Fixed SC/ST/LC or SFP (100MB or 1000MB) optics
- ▶ 12VDC power supply
- ▶ Wall-mountable using MMCWLMT
- ▶ Locking power supply jack to prevent accidental power disconnects
- ▶ Available in Trade Agreement Act (TAA) models

PRODUCT	FIBER TYPE	FIBER OPTIC DIAMETER	OPTICAL WAVELENGTH (nm)	LAUNCH POWER (dBm)		EFFECTIVE POWER (dBm)			MAX DISTANCE
				Min	Max	Min	Typical	Saturation	
MMC2000/T	RJ45								100 m
MMC200/xx	FDDI/OM1/OM2/OM3	62.5/125	1310	-20	-14	-32	-34	-3	2 km
MMC200LX/xx	OS2	9/125	1310	-15	-5	-32	-34	-3	20 km
	OS1	9/125	1310	-15	-5	-32	-34	-3	10 km
MMC2000/xx	OM2/OM3	50/125	850	-9.5	-4	-17	-20	-3	550 m
	FDDI/OM1	62.5/125	850	-9	-4	-17	-20	-3	220 m
MMC2000LX/xx	OS2	9/125	1310	-10	-1	-22	-24	-1	20 km
	OS1	9/125	1310	-10	-1	-22	-24	-1	10 km

## Specifications

### Status LEDs

Power  
 ON Power  
 OFF No power

SYS  
 ON System operating normally  
 OFF System not operating normally  
 Blinking Fault condition

LAN fiber port (Left)  
 OFF No link is established  
 ON Link is established  
 Blinking Activity is detected

LAN copper port (Right)  
 OFF No link is established  
 ON Link is established  
 Blinking Activity is detected

### Operational Characteristics

SW1 (left): LOW = Link test  
 HIGH = Smart MissingLink disabled  
 SW2 (right): LOW = Auto-negotiation (normal operation)  
 HIGH = Disable auto-negotiation on copper port - force 100Mbps Full Duplex  
 MAC address table 2k addresses  
 Forwarding/filtering rate 1,488,000 for 1000Mbps  
 148,880pps for 100Mbps  
 14,880pps for 10Mbps  
 Latency 14.3µsec (64 byte packet,100Mbps full-duplex)

### Physical Specifications

Dimensions 5.6 cm × 10.16 cm × 2.18 cm  
 (W × D × H) 2.16 in × 4 in × 0.86 in  
 Weight 6 oz

### Power Characteristics

Power consumption 140mA@12V typical

### Environmental Specifications

Operating temperature 0°C to 50°C (32°F to 122°F)  
 Operating humidity 5% to 95% relative humidity (non-condensing)  
 Storage temperature -40°C to 70°C (-40°F to 158°F)  
 Storage humidity 5% to 95% relative humidity (non-condensing)  
 Altitude Up to 3048 m (10000 ft)

### Electrical and Mechanical Approvals

Safety UL60950-1  
 EN60950-1

Emissions (EMI) FCC Class A  
 EN55022 Class A  
 CISPR 22 Class A  
 C-TICK  
 VCCI

## Ordering Information

**AT-MMC200/SC-xx**  
 10/100TX to 100FX/SC Multi Mode Mini Media and Rate Converter

**AT-MMC200/ST-xx**  
 10/100TX to 100FX/ST Multi Mode Mini Media and Rate Converter

**AT-MMC200/LC-xx**  
 10/100TX to 100FX/LC Multi Mode Mini Media and Rate Converter

**AT-MMC200LX/SC-xx**  
 10/100TX to 100X/SC Single Mode Mini Media and Rate Converter

**AT-MMC200LX/ST-xx**  
 10/100TX to 100X/ST Single Mode Mini Media and Rate Converter

**AT-MMC2000/SC-xx**  
 10/100/1000T to 1000SX/SC Multi Mode Mini Media and Rate Converter

**AT-MMC2000/ST-xx**  
 10/100/1000T to 1000SX/ST Multi Mode Mini Media and Rate Converter

**AT-MMC2000/LC-xx**  
 10/100/1000T to 1000SX/LC Multi Mode Mini Media and Rate Converter

**AT-MMC2000LX/SC-xx**  
 10/100/1000T to 1000LX/SC Single Mode Mini Media and Rate Converter

**AT-MMC2000LX/LC-xx**  
 10/100/1000T to 1000LX/LC Single Mode Mini Media and Rate Converter

**AT-MMC2000/SP-xx**  
 10/100/1000T to 100/1000X SFP Media and Rate Converter

**AT-MMC2000/T**  
 10/100/1000T to 10/100/1000T Media & rate Converter

**AT-MMC1000/SP-60**  
 1000T to 100/1000X SFP Media Converter

Where xx =  
 960 for AC PSU, Multi Region (US, UK, AU, EU), TAA

### Associated Components

**AT-MMCR18**  
 18-slot chassis for MMC Series media converters

**AT-MMCWLMT-05**  
 Wall mount for MMC Series media converters (5 pack)

**AT-MMCTRAY6**  
 1RU rack-mount tray for up to 6 MMC Series media converters

**SFP Modules**  
 SFP modules are only compatible with the SFP ports on the AT-MMC2000/SP

**AT-SPFX/2-90**  
 2 km, 100FX (LC), 1310 nm, TAA Compliant

**AT-SPFX30/I**  
 100FX single-mode 1310 nm fiber up to 30 km

**AT-SPSX**  
 1000SX GbE multi-mode 850 nm fiber up to 550 m

**AT-SPSX-90**  
 1000SX GbE multi-mode 850 nm fiber up to 550 m

**AT-SPLX10a**  
 1000LX GbE single-mode 1310 nm fiber up to 10 km

**AT-SPLX40**  
 1000LX GbE single-mode 1310 nm fiber up to 40 km

**AT-SPZX120**  
 1000ZX GbE single-mode 1310 nm fiber up to 120 km

**AT-SPBD10-13**  
 10 km, 1G, SMF, BiDi, LC (1310Tx/1490Rx)

**AT-SPBD10-14**  
 10 km, 1G, SMF, BiDi, LC (1490Tx/1310Rx)

**AT-SPBD20LC/I-13**  
 20 km, 1G, SMF, BiDi, LC, TAA (1310Tx/1490Rx)

**AT-SPBD20LC/I-14**  
 20 km, 1G, SMF, BiDi, LC, TAA (1490Tx/1310Rx)

**AT-SPTX**  
 1000T 100 m copper

**AT-SPEX**  
 1000X GbE multi-mode 1310 nm fiber up to 2 km