

UMC2000/200 Series

Mini Switching Media Converters

- ❑ AT-UMC2000/SC
- ❑ AT-UMC2000/LC
- ❑ AT-UMC2000/SP
- ❑ AT-UMC200/SC
- ❑ AT-UMC200/ST



Installation Guide

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Electrical Safety and Emissions Standards

This product meets the following standards.

U.S. Federal Communications Commission

Radiated Energy

Note: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note: Modifications or changes not expressly approved of by the manufacturer or the FCC, can void your right to operate this equipment.

Industry Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment

This Allied Telesis RoHS-compliant product conforms to the European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment. Allied Telesis ensures RoHS conformance by requiring supplier Declarations of Conformity, monitoring incoming materials, and maintaining manufacturing process controls.

RFI Emissions FCC Class A, EN55022 Class A, C-TICK, VCCI Class A



Warning: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures. *see* E84

Immunity EN55024, EN61000-3-2, EN61000-3-3

Electrical Safety UL60950-1, cUL CAS C22.2 No.60950-1, CE, TUV, EN60950-1, IEEE 802.3-2008, USB 3.0, USB-C



Laser Safety EN60825-1 *see* L7

Translated Safety Statements


Important: The  indicates that a translation of the safety statement is available in a PDF document titled *Translated Safety Statements* on the Allied Telesis website at www.alliedtelesis.com/support.

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Preface

This guide contains the installation instructions for the UMC Media Converter and this preface contains the following sections:

- “Symbol Conventions” on page 12
- “Contacting Allied Telesis” on page 13

Symbol Conventions

This document uses the following conventions:

Note

Notes provide additional information.



Caution

Cautions inform you that performing or omitting a specific action may result in equipment damage or loss of data.



Warning

Warnings inform you that performing or omitting a specific action may result in bodily injury.



Warning

Laser warnings inform you that an eye and skin hazard exists due to the presence of a Class 1 laser device.

Contacting Allied Telesis

If you need assistance with this product, you may contact Allied Telesis technical support by going to the Support & Services section of the Allied Telesis web site at **www.alliedtelesis.com/support**. You can find links for the following services on this page:

- 24/7 Online Support - Enter our interactive support center to search for answers to your questions in our knowledge database, check support tickets, learn about Return Merchandise Authorizations (RMAs), and contact Allied Telesis technical experts.
- USA and EMEA phone support - Select the phone number that best fits your location and customer type.
- Hardware warranty information - Learn about Allied Telesis warranties and register your product online.
- Replacement Services - Submit an RMA request via our interactive support center.
- Documentation - View the most recent installation guides, user guides, software release notes, white papers and data sheets for your product.
- Software Updates - Download the latest software releases for your product.

For sales or corporate contact information, go to **www.alliedtelesis.com/purchase** and select your region.

Chapter 1

Overview

This chapter describes the features and physical description of the UMC2000/200 series media converter and contains the following sections:

- “Introduction” on page 16
- “Features” on page 17
- “Front and Back Panels” on page 19
- “LEDs” on page 21
- “Reset the UMC Media Converter” on page 22

Introduction

The UMC2000/200 series media converter include the following models:

- AT-UMC2000/SC
- AT-UMC2000/LC
- AT-UMC2000SP
- AT-UMC200/SC
- AT-UMC200/ST

The UMC2000/200 series media converter is designed to extend the physical reach of your network by interconnecting your computer or laptop over large distances.

The UMC2000/200 series media converter:

- Provides a smaller-sized space-saving alternative that allows enterprises to directly connect the USB port of a computing device to a fiber Ethernet network.
 - The AT-UMC2000/SC and AT-UMC2000/LC connect a computer's USB port to a 1000Mbps fiber network.
 - The AT-UMC2000/SP connect a computer's USB port to a 100/1000Mbps fiber network.
 - The AT-UMC200/SC and AT-UMC200/ST connect a computer's USB port to a 100Mbps fiber network.
- Is installed on a desktop.
- Is easy to install and requires the installation of a software device driver. However, it does not require any software configuration or management.
- Receives its DC power via the computer's USB port.

Features

Here are the key features of the UMC2000/200 series media converter converters:

AT-UMC2000/SC and AT-UMC2000/LC

The AT-UMC2000/SC and AT-UMC2000/LC features are:

- 1000Base-SX fiber-optic port
- Supports USB 2.0 and 3.1 Gen 1 interface
- Support for Jumbo frames up to 10kB
- LEDs for unit and port status - refer to Table 1, “UMC Media Converter LED Functional Descriptions” on page 21
- External DC power supplied via the USB port - refer to Table 4, “Power Specifications” on page 44

AT-UMC2000/SP

The AT-UMC2000/SP features are:

- SFP port supporting 1000-SX/LX and 100-FX/LX SFP modules
- Supports USB 2.0 and 3.1 Gen 1 interface
- Support for Jumbo frames up to 10kB
- LEDs for unit and port status - refer to Table 1, “UMC Media Converter LED Functional Descriptions” on page 21
- External DC power supplied via the USB port - refer to Table 4, “Power Specifications” on page 44

AT-UMC200/SC and AT-UMC200/ST

The AT-UMC200/SC and AT-UMC200/ST features are:

- 100Base-FX fiber-optic port
- Supports USB 2.0 and 3.1 Gen 1 interface
- Support for Jumbo frames up to 10kB
- Supports Far-End-Fault on 100M
- LEDs for unit and port status - refer to Table 1, “UMC Media Converter LED Functional Descriptions” on page 21
- External DC power supplied via the USB port - refer to Table 4, “Power Specifications” on page 44

Fiber Connection

The UMC2000/200 series media converter supports the following transceiver fiber connections:

- The AT-UMC2000/SC has a fixed dual fiber SC 1000-X connection.
- The AT-UMC2000/LC has a fixed dual fiber LC 1000-X connection.

- The AT-UMC200/SC has a fixed dual fiber SC 100-FX connection.
- The AT-UMC200/ST has a fixed dual fiber ST 100-FX connection.

Note

For the AT-UMC2000/SP model, you must purchase the SFP transceiver separately. For a list of supported transceivers, contact your Allied Telesis distributor or reseller.

Note

For the maximum operating distance and other optical parameters, refer to Table 6 and Table 7 on page 45.

Front and Back Panels

Figure 1 illustrates the front panel of the AT-UMC2000/SC and AT-UMC200/SC Media Converters.

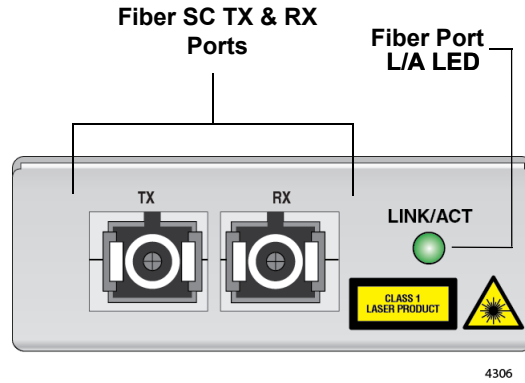


Figure 1. AT-UMC2000/SC and AT-UMC200/SC Front Panel

Figure 2 illustrates the front panel of the AT-UMC2000/LC Media Converter.

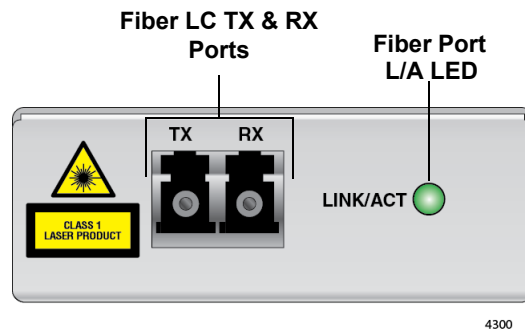


Figure 2. AT-UMC2000/LC Front Panel

Figure 3 illustrates the front panel of the AT-UMC200/ST Media Converter.

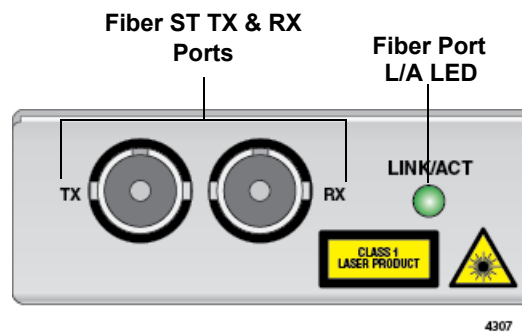


Figure 3. AT-UMC200/ST Front Panel

Figure 2 illustrates the front panel of the AT-UMC2000/SP Media Converter.

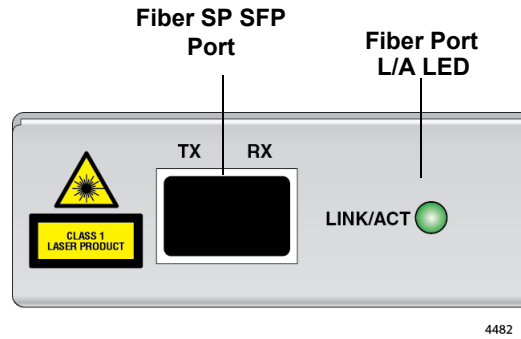


Figure 4. AT-UMC2000/SP Front Panel

The UMC2000/200 series media converter Back Panel is shown in Figure 5.

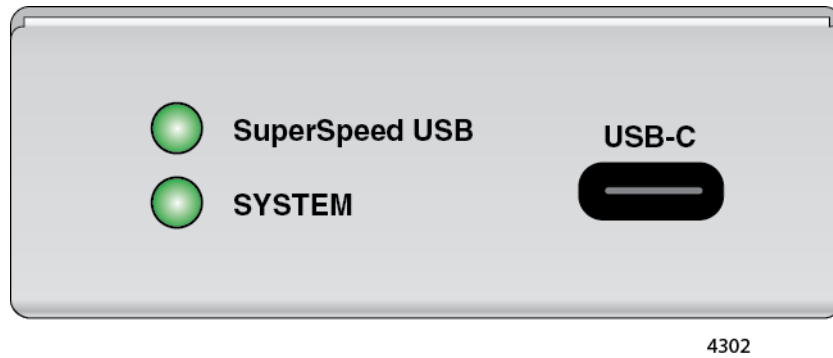


Figure 5. UMC2000/200 series media converter Back Panel

LEDs

The LEDs are located on both the front and rear panel of the UMC2000/200 series media converter. Refer to Figure 1, Figure 2 and Figure 3 on page 19 for the location of the FIBER Link/Activity LED. Figure 5 on page 20 shows the SuperSpeed USB and SYSTEM LED locations. The functional descriptions of these LEDs are listed in Table 1.

Table 1. UMC Media Converter LED Functional Descriptions

LED	State	Description
FIBER Link/Activity	Off	The fiber port has not established a link.
	Steady Green	The port has an established link to a network device, but it is not transmitting or receiving network packets.
	Rapid Blinking Green	The port is transmitting or receiving network packets.
SuperSpeed USB	Off	USB port is not connected at SuperSpeed. Data throughput is reduced.
	Steady Green	The USB port is connected at SuperSpeed.
SYSTEM	Off	The media converter is not operational and is not passing traffic.
	Steady Green (with Heartbeat)	The media converter is operational. Note: The SYS LED will flicker briefly (Heartbeat) at a regular interval. The Heartbeat indicates that the internal system is running normally.
	Slow Blinking Green	An error is present within the media converter.

Reset the UMC Media Converter

Reset the UMC2000/200 series media converter by powering the unit OFF then powering it back ON. This can be done by unplugging the USB cable from the computer and plugging it back in again.

Chapter 2

Installation

This chapter contains the following sections:

- “Reviewing Safety Precautions” on page 24
- “Selecting an Installation Site” on page 26
- “Planning the Installation” on page 27
- “Unpacking the UMC Media Converter” on page 28
- “Installing the UMC Media Converter” on page 31

Reviewing Safety Precautions


Review the following safety precautions before you begin to install the UMC Media Converter.

Note


The  indicates that a translation of the safety statement is available in a PDF document titled *Translated Safety Statements* on the Allied Telesis website at www.alliedtelesis.com/support.



Caution


Air vents must not be blocked and must have free access to the room ambient air for cooling.  E6

Note

All Countries: Install product in accordance with local and National Electrical Codes.  E8




Warning

Operating Temperature. This product is designed for a maximum ambient temperature of 50° degrees C.  E57



Warning

In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.  E84



Warning

Do not stare into the laser beam.  L2



Warning

Do not look directly at the fiber-optic cable ends or inspect the cable ends with an optical lens. ⚡ L6



Warning

Laser Safety: EN60825-1. ⚡ L7



Warning

An SFP transceiver can be damaged by static electricity. Be sure to observe all standard electrostatic discharge (ESD) precautions, such as wearing an antistatic wrist strap, to avoid damaging the transceiver. ⚡ E86

Selecting an Installation Site

Observe the following requirements when choosing a site for your UMC Media Converter:

- Verify that the table where you are installing the media converter is level and secure.
- Air flow around the unit and through its vents on the side should not be restricted so that the media converter can maintain adequate cooling.
- Do not place objects on top of the media converter.
- Do not expose the media converter to moisture or water.

Planning the Installation

Be sure to observe the following guidelines when planning the installation of your media converter.

- On the AT-UMC2000 media converter, the end node connected to the fiber port must operate at 1000 Mbps, except the AT-UMC2000/SP model when using a 100Mbps SFP module.
- On the AT-UMC200 media converter, the end node connected to the fiber port must operate at 100 Mbps.
- The device connected to the fiber port on the UMC Media Converter could be a network adapter card, repeater, switch, media converter, or a router.

Note

For the fiber-optic port specifications, refer to “Fiber-Optic Port Specifications” on page 45.

- The USB port on the UMC Media Converter is a USB Type-C connector and can interface with a USB Type-A or Type-C port on a computer.

Note

Refer to “Unpacking the UMC Media Converter” on page 28 for the two different USB cables provided with the unit.

- In addition to needing the physical UMC Media Converter, you need to install the UMC device driver on your computer so that it can communicate with media converter. This driver is available at www.alliedtelesis.com.

Note

Refer to “Installing UMC Drivers” on page 31 for the driver installation instructions.

Unpacking the UMC Media Converter

To unpack the media converter, perform the following procedure:

1. Remove all of the components from the shipping package.

Note

Store the packaging material in a safe location. We recommend that you use the original shipping material if you need to return the unit to Allied Telesis.

2. Place the media converter on a level, secure surface.
3. Verify that the shipping container includes the following items as follows:
 - Figure 6 shows shipping container items for the AT-UMC2000/SC and AT-UMC200/SC.
 - Figure 7 on page 29 shows shipping container items for the AT-UMC2000/LC.
 - Figure 8 on page 29 shows shipping container items for the AT-UMC200/ST.
 - Figure 8 on page 29 shows shipping container items for the AT-UMC2000/SP.



One AT-UMC2000/SC
or AT-UMC200/SC
Media Converter



One fiber port
dust cover (pre-installed)



1 meter USB-C to
USB-C cable



1 meter USB-A to
USB-C cable

Figure 6. AT-UMC2000/SC and AT-UMC200/SC Shipping Package Contents



One AT-UMC2000/LC
Media Converter



One fiber port
dust cover (pre-installed)



One USB-C to
USB-C cable



One USB-A to
USB-C cable

Figure 7. AT-UMC2000/LC Shipping Package Contents



One AT-UMC200/ST
Media Converter



One pair ST fiber port
dust cover (pre-installed)



One USB-C to
USB-C cable



One USB-A to
USB-C cable

Figure 8. AT-UMC200/ST Shipping Package Contents

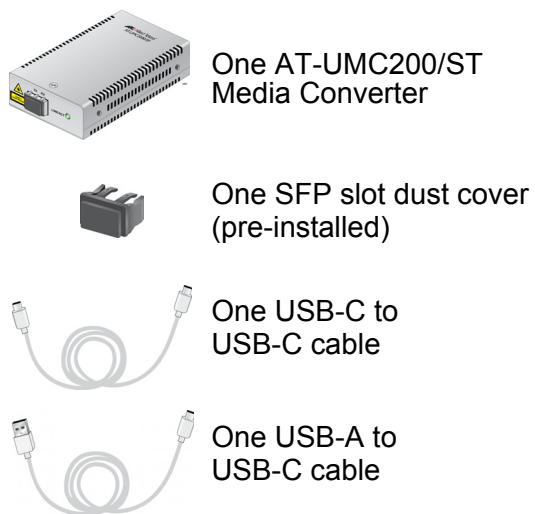


Figure 9. AT-UMC2000/SP Shipping Package Contents

Installing the UMC Media Converter

Desktop Installation

When installing the UMC Media Converter on a desktop, place it on a flat, secure surface (such as a desk or table) that is close to your computer. Leave enough space around the unit for ventilation.

Powering ON the Media Converter

To apply power to the media converter, perform the following steps:

1. Plug the media converter's USB cable into the computer's USB port.

Note

Two USB cables are provided in the shipping box. The UMC Media Converter's USB connector type is USB-C.

If the computer's USB port type is Type-A, install the Type-A to Type-C USB cable.

If the computer's USB port type is Type-C, install the Type-C to Type-C USB cable.

2. Turn the power on to your computer. This applies power to the UMC Media Converter via the USB port.
3. Verify that the SYSTEM LED is illuminated as solid green. If the SYS LED is off or is slowly blinking, refer to "Troubleshooting" on page 41.

Installing UMC Drivers

The UMC Media Converter requires that a specific software driver be installed on your computer for it to communicate via the computer's USB port. The UMC software driver is available on the ATI website at www.alliedtelesis.com.

Perform the following procedure to install the UMC software driver.

1. Connect the UMC Media Converter to the computer's USB port.
2. Copy the driver files to a folder on the computer where the UMC device driver is being installed.

3. Open a Command Window and enter the following command:

```
devmgmt . msc
```

The Device Manager window will open and show an AX88179 device with no driver installed under the “Other devices” icon. Refer to Figure 10.

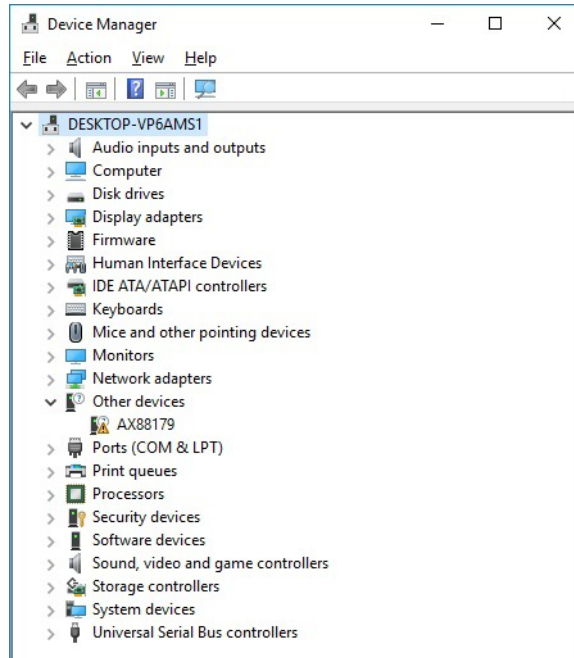


Figure 10. Device Manager Window

4. Right-click on the AX88179 device and select “Update Driver Software”. Refer to Figure 11.

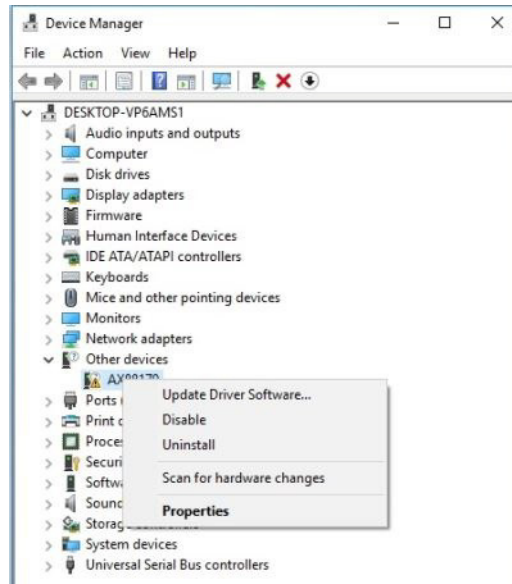


Figure 11. Select “Update Driver Software”

The “Update Driver Software” window is displayed. Refer to Figure 12.

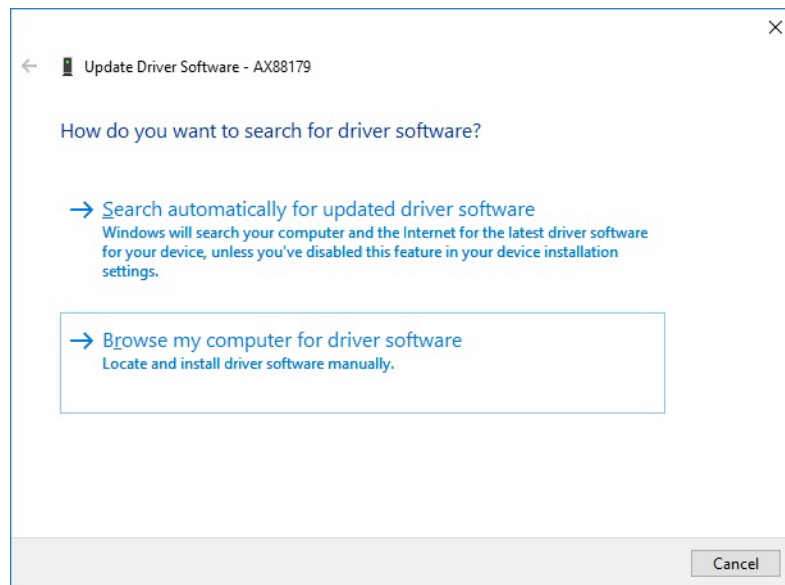


Figure 12. Update Driver Software Window

5. Select the second option in the Update Driver Software Window - “Browse my computer for driver software”. The Browse option is displayed. Refer to Figure 13.

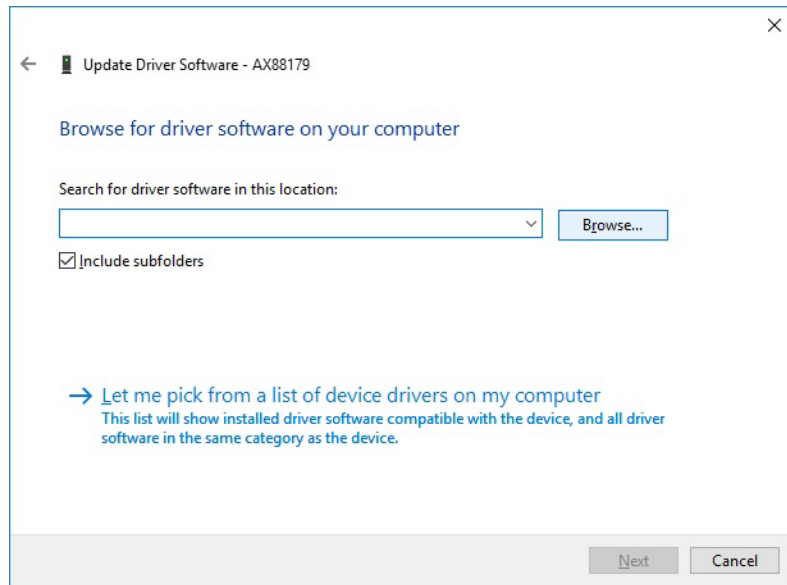


Figure 13. Browse for Driver Software Location

6. Click the Browse button to find the folder containing the drivers. The “Browse for Folder” window opens. Refer to Figure 14.

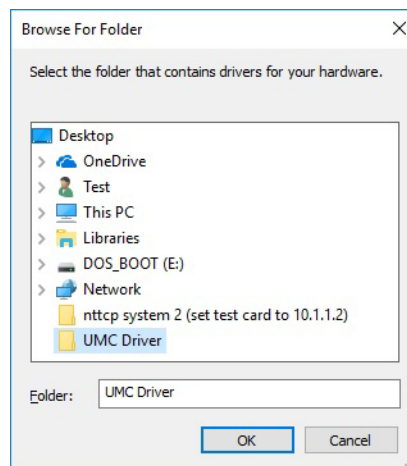


Figure 14. Browse for Folder

7. Navigate to the folder where you saved the drivers in **Step 2** and highlight the folder. Then select the folder by clicking OK.

The path to the driver folder is shown in the Browse field. Refer to Figure 15.

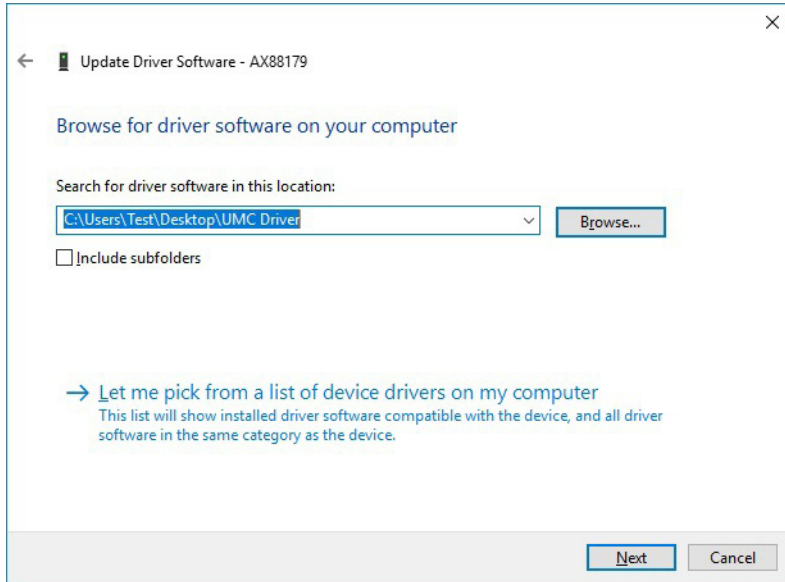


Figure 15. Path Displayed to UMC Driver Folder

8. Click Next to install the driver.
9. After the installation is complete, click the Close button to exit the driver install process. Refer to Figure 16.

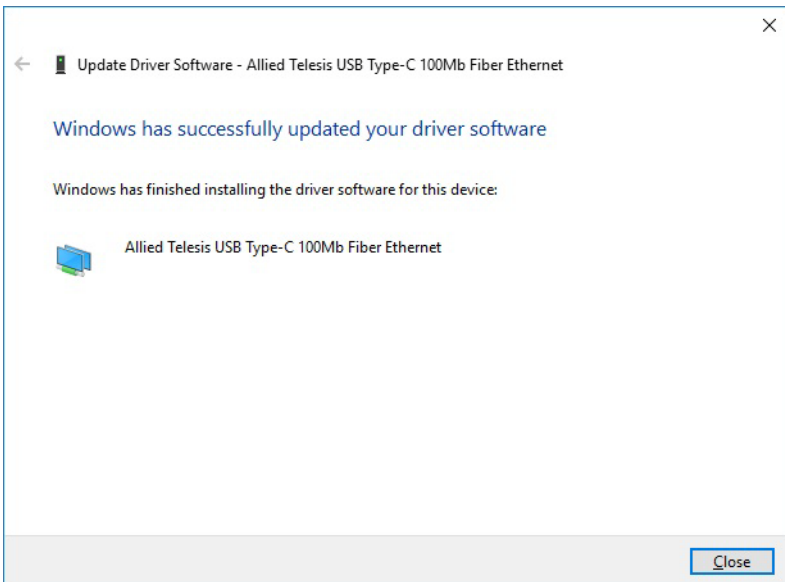


Figure 16. Progress Bar for Installing UMC Driver Software

10. Open a Command Window and enter the following command to reopen the Device Manager window:

`devmgmt.msc`

The Device Manager window will open and show the “Allied Telesis USB Type-C ...” device driver installed under the “Network Adapters” icon. Refer to Figure 17.

Note

In order for the Allied Telesis Inc. USB device driver to be displayed in the Device Manager window, the UMC Media Converter must be plugged into the computer’s USB port.

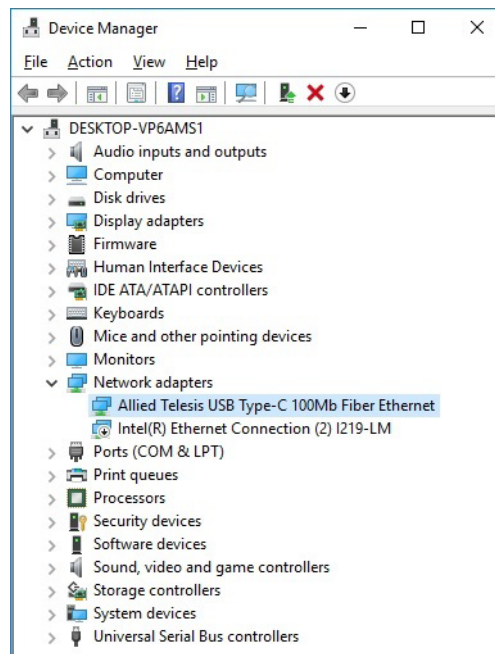


Figure 17. Device Manager Window Displaying UMC Device

11. If no errors are reported in this installation process, the UMC Media Converter device driver is operational.

Connecting the Network Cables

When the fiber-optic cable is connected to the fiber port of the UMC Media Converter, the fiber connector should fit snugly and be locked into place.

To connect the network cable, perform the following steps:

1. Remove the dust cover from the fiber-optic connector and store it for use in the future.
2. Connect the cable to the fiber-optic port. The tab on the connector should lock the connector into place.
3. Power ON the UMC Media Converter (refer to “Powering ON the Media Converter” on page 31) and power on its fiber end node.
4. Verify that the fiber LINK/ACT LED is illuminated or blinking. If not, refer to “Troubleshooting” on page 41.
5. Your UMC Media Converter is ready for use.

Installing the SFP Transceiver

This procedure applies only to the AT-UMC2000/SP model.

To install an SFP transceiver, perform the following procedure:

Note

The transceiver can be hot-swapped; you do not need to power off the media converter to install a transceiver. However, always remove the cable before removing the transceiver.

Note

You should always install the transceiver before connecting the fiber-optic cable to it.

1. Remove the transceiver from its shipping container and store the packaging material in a safe location.



Warning

An SFP transceiver can be damaged by static electricity. Be sure to observe all standard electrostatic discharge (ESD) precautions, such as wearing an antistatic wrist strap, to avoid damaging the transceiver. ⚡ E86

2. Remove the dust plug from the SFP slot. See Figure 18.



Figure 18. Removing the Dust Plug from an SFP Slot

3. Position the SFP transceiver with the label facing up.
4. Slide the transceiver into the SFP slot until it clicks into place. See Figure 19.

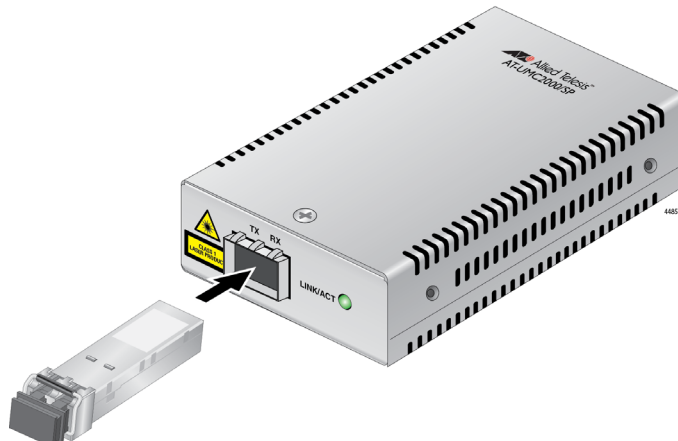


Figure 19. Inserting the SFP

5. Verify that the handle on the transceiver is in the upright position, as shown in Figure 20. This secures the transceiver and prevents it from being dislodged from the slot.

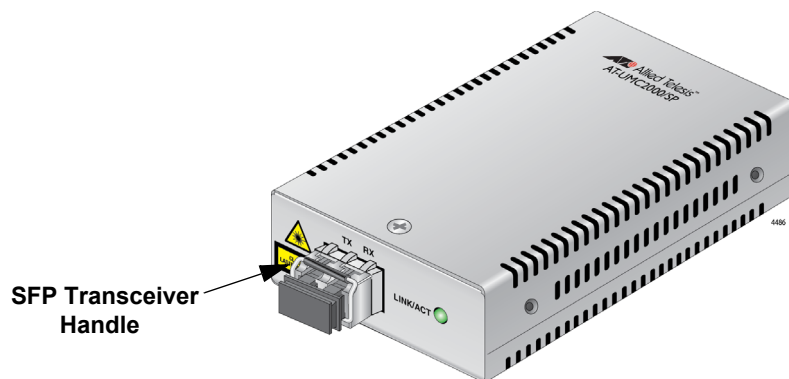


Figure 20. Positioning the SFP Handle in the Upright Position

Note

SFP transceivers are dust-sensitive. Always keep the plug in the optical bores when a fiber-optic cable is not installed, or when storing the SFP. When you do remove the plug, keep it for future use.

Note

Unnecessary removal and insertion of an SFP can lead to premature failure.

For information on the cable specifications of the SFP, consult the documentation shipped with the SFP.

Chapter 3

Troubleshooting

This chapter contains information on how to troubleshoot the media converter if a problem occurs.

Note

For further assistance, please contact Allied Telesis Technical Support at www.alliedtelesis.com/support.

Problem 1: The SYSTEM LED on the media converter is off.

Solutions: The unit is not receiving power. Try the following:

- Verify the computer is powered on where the media converter USB cable is connected.
- Verify that the media converter USB cable is fully inserted into the computer's USB port. If this is not the case, try re-seating the connector.
- An internal component on the unit may be damaged or not working properly. Try power cycling the unit by removing the USB cable and re-inserting into the computer's USB port. If power cycling does not clear the fault, contact Allied Telesis technical support.

Problem 2: The SYSTEM LED on the media converter is blinking slowly.

Solutions:

- An error is present on the unit. Try power cycling the unit.
- For the AT-UMC2000/SP model, the slow blinking might indicate that the SFP module is invalid or improperly seated. Try a different module or re-seat the SFP module.

Problem 3: The FIBER LINK/ACT LED for the fiber-optic port is off.

Solutions: The fiber-optic port on the transceiver is unable to establish a link to an end node. Try the following:

- Verify that the end node connected to the fiber-optic port is operating properly.
- Verify that the fiber-optic cable is securely connected to the port on the media converter and to the port on the remote end-node.
- Verify that the end node connected to the media converter is operating at the same speed.

- Verify that the end node connected to the media converter is operating at the same optical wavelength. Make sure the UMC fiber connector and the end node are the same connector type; i.e. SC connected to SC or LC connected to LC.
- Verify that the transmitter port (TX) is connected to the end node's receiver port (RX) and that the media converter's receiver port (RX) is connected to the end node's transmitter port (TX).
- Verify that the correct type of fiber-optic cabling is being used.
- Verify that the port is connected to the correct fiber-optic cable. This is to eliminate the possibility that the port is connected to the wrong remote end-node, such as a powered-off device.
- Try connecting another end node to the fiber-optic port using a different cable. If the port is able to establish a link, then the problem is with the original cable or with the other end node.
- If the remote end-node is a managed device, use its management firmware to determine whether its port is enabled.
- Test the attenuation on the fiber-optic cable with a fiber-optic tester to determine whether the optical signal is too weak (sensitivity) or too strong (maximum input power).

Appendix A

Technical Specifications

Below are the technical specifications for the UMC Media Converters. The specification categories are as follows:

- “Physical Specifications”
- “Environmental Specifications”
- “Power Specifications” on page 44
- “Safety and Electromagnetic Emissions Certifications” on page 44
- “Fiber-Optic Port Specifications” on page 45

Physical Specifications

The physical specifications of each model of the UMC Media Converter Series are the same and are listed in Table 2.

Table 2. Physical Specifications

Dimensions W x D x H	50.8 mm x 99.1 mm x 20.3 mm (2.0 in x 3.9 in x 0.8 in)
Weight	0.2 kg (0.4 lb)

Environmental Specifications

The environmental specifications of each model of the UMC Media Converter Series are the same and are listed in Table 3.

Table 3. Environmental Specifications

Operating Temperature	0° C to 50° C (32° F to 122° F)
Storage Temperature	-15° C to 65° C (-5° F to 149° F)
Operating Humidity	5% to 90% non-condensing
Storage Humidity	5% to 95% non-condensing
Operating Altitude Range	Up to 3,000 m (9,843 ft)

Power Specifications

The input power specifications given in Table 4 apply to the USB connector on each model of the UMC Media Converter Series.

Table 4. Power Specifications

Input supply voltage	5 VDC
Input current	0.5 A

Safety and Electromagnetic Emissions Certifications

The safety and electromagnetic emissions certifications of the UMC Media Converter Series are given in Table 5.

Table 5. Safety and Electromagnetic Emissions Certifications

Safety	UL60950-1, EN60950-1, EN60825-1
Emissions (EMI)	FCC Class A, CISPR 22 Class A, EN55022 Class A, C-TICK, VCCI Class A
Immunity	EN55024, EN61000-3-2, EN61000-3-3
Environmental Compliance	EU-RoHS compliant, WEEE China RoHS compliant

Fiber-Optic Port Specifications

The fiber type for each model of the UMC Media Converter Series is multimode. The fiber-optic port specifications for the AT-UMC2000 media converter are listed in Table 6 and Table 7.

Note

Fiber-optic port specifications for the AT-UMC2000/SP depends upon the type of SFP inserted.

Table 6. AT-UMC2000 Fiber-Optic Port Specifications

Fiber Optic Diameter (microns)	Optical Wavelength	Launch Power (dBm) ¹		Receive Power (dBm)			Max. Distance
		Min.	Max.	Min.	Typical	Saturation	
50/125	850 nm	-9.5	-4	-17	-20	-3	500 m (1,640 ft)
62.5/125	850 nm	-9	-4	-17	-20	-3	220 m (722 ft)

1. The launch power is measured 1 meter (3.28 feet) from the transmitter.

Table 7 lists fiber-optic port specifications for the AT-UMC200 media converter.

Table 7. AT-UMC200 Fiber-Optic Port Specifications

Fiber Optic Diameter (microns)	Optical Wavelength	Launch Power (dBm) ¹		Receive Power (dBm)			Max. Distance
		Min.	Max.	Min.	Typical	Saturation	
62.5/125	1310 nm	-20	-14	-32	-34	-3	2 km (6,562 ft)

1. The launch power is measured 1 meter (3.28 feet) from the transmitter.

