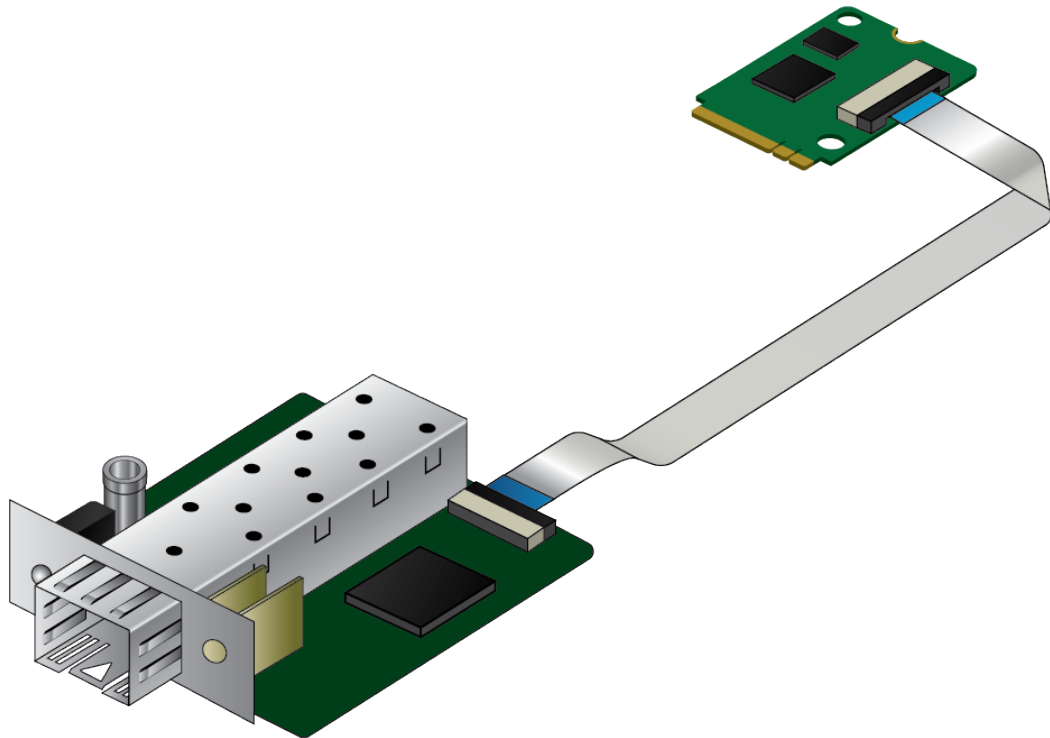


29M2/SP-BA

Fiber Network Adapter with an SFP Port

For Dell OptiPlex 5050, 7050, 5060, 7060, 5070, 7070, 7080 Systems



Installation and User's Guide

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Electrical Safety and Emissions Standards

This product meets the following standards:

Federal Communications Commission Interference Statement

Declaration of Conformity

Manufacturer Name: **Allied Telesis, Inc.**

Declares that the product: **Fiber Network Adapter with an SFP Slot**

Model Number: **29M2/SP-BA**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. *see* E80



Avertissement

Les changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement. *see* E80

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The band from 5600-5650MHz will be disabled by the software during the manufacturing and cannot be changed by the end user. This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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.

Note

For additional regulatory statements, refer to Appendix B, "Regulatory Statements" on page 91.

Safety and Electromagnetic Emissions Certificates

Standard Compliance

- RoHS compliant
- European Union RoHS (Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.)
- China RoHS
- CE


Electromagnetic Compatibility (EMC)

- VCCI Class B
- ICES-003 Issue 6
- EN55024
- EN55032 Class B
- FCC Part 15 Class B

Safety

- UL1950
- CSA22.2 No.950

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 manual is the installation and user's guide for the 29M2/SP-BA Network Adapter with an SFP Slot.

The Preface contains the following sections:

- "Safety Symbols Used in this Document" on page 10
- "Contacting Allied Telesis" on page 11

Safety Symbols Used in this Document

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

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 Authorization (RMA), 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

Introduction

This chapter provides an introduction to the 29M2/SP-BA fiber network adapter.

This chapter contains the following sections:

- ❑ “Description” on page 14
- ❑ “Supported Operating Systems” on page 16
- ❑ “Accessing Documents” on page 17
- ❑ “Warranty Registration” on page 18

Description

The 29M2/SP-BA fiber network adapter is interface boards connected with a ribbon cable designed to be installed into the Dell OptiPlex systems listed in "Supported Dell Systems," below.

The 29M2/SP-BA fiber network adapter is equipped with an SFP slot to add a fiber connection to the Dell systems.

After physically installing the 29M2/SP-BA fiber network adapter in the system, start your Windows 10 and install driver software. To install driver software, see Chapter 3, "Installing the Driver Software" on page 37.

Figure 1 shows the 29M2/SP-BA fiber network adapter.

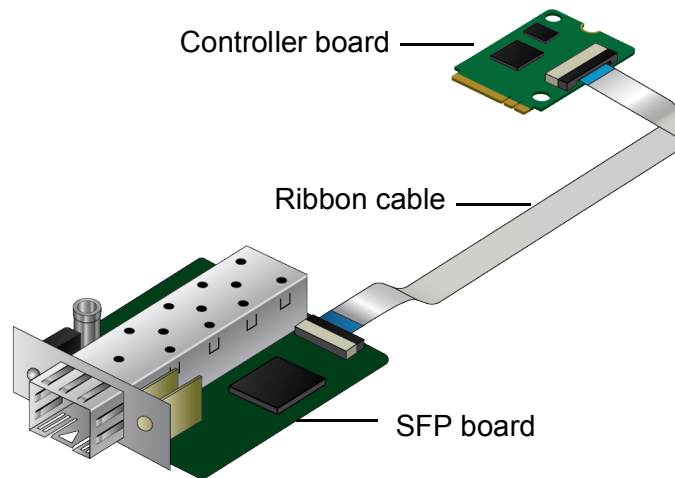


Figure 1. 29M2/SP-BA Fiber Network Adapter

Supported Dell Systems

The he 29M2/SP-BA fiber network adapter is designed to be installed into the following Dell OptiPlex models:

- ❑ 5050
- ❑ 7050
- ❑ 5060
- ❑ 7060
- ❑ 5070
- ❑ 7070
- ❑ 7080

SFP Slot The 29M2/SP-BA fiber network adapter has an SFP slot that you can plug in an SFP transceiver to connect the system to a compatible link partner. The link connected through the SFP slot operates at either 100Mbps or 1000Mbps (depending upon the speed of the installed SFP) and only in full-duplex mode.

LED The 29M2/SP-BA fiber network adapter comes with one LED as shown in Figure 2. The LED indicates the link and activity status of the port.

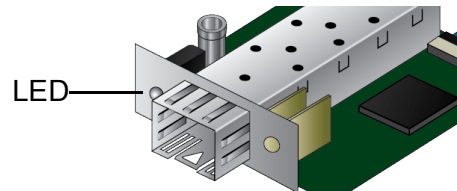


Figure 2. LED

Table 1 describes the link states that the LED indicates.

Table 1. LED Status

State	Description
On	Valid link.
Off	No link.
Flashing	The port is receiving or transmitting network packets.

Supported Operating Systems

The following list shows the supported operating systems:

- ❑ Windows 10 in 32-bit and 64-bit; WHQL certified
- ❑ Linux 3.x and later

For Windows 10, you must install driver software for the 29M2/SP-BA network adapter. To install driver software for Windows 10, see Chapter 3, “Installing the Driver Software” on page 37.

The 29M2/SP-BA fiber network adapter installed on Linux systems uses Linux inbox driver software to operate so that you do not need to install driver software for Linux systems. A driver supplied with an operating system is called an inbox driver.

Accessing Documents

Documents for the 29M2/SP-BA network adapter is available at Allied Telesis websites.

Allied Telesis Documents

To access documents for 29M2/SP-BA fiber network adapter, do the following:

1. Open a web browser, such as Internet Explorer or FireFox, on your system and enter the following:

`http://www.alliedtelesis.com/`

The Allied Telesis home page is displayed.

2. Enter "29M2" in the search box and press the enter key.
3. Click "29M2" from the search results.

The 29M2 product page is displayed.

4. Click one of the listed documents.

The content of the document is displayed.

Warranty Registration

Allied Telesis hardware products are covered under limited warranties.

All Allied Telesis warranties are subject to and provided only on the terms and conditions set out in the Allied Telesis Limited Warranties listed on the Allied Telesis website at <http://alliedtelesis.com/support/warranty>.

Chapter 2

Installing the Hardware

This chapter contains the following sections:

- ❑ “System Requirements” on page 20
- ❑ “Reviewing Safety Precautions” on page 21
- ❑ “Unpacking the Network Adapter” on page 23
- ❑ “Pre-Installation Checklist” on page 25
- ❑ “Installing a Network Adapter” on page 26
- ❑ “Connecting a Network Cable” on page 35

System Requirements

Before installing the 29M2/SP-BA fiber network adapter, make sure your system meets the requirements listed below:

- You have one of the following Dell OptiPlex models:
 - 5050
 - 7050
 - 5060
 - 7060
 - 5070
 - 7070
 - 7080

Note


To determine compatibility with newer systems, contact Allied Telesis Support. See “Contacting Allied Telesis” on page 11.

- The Dell system must have one of the following operating systems installed:
 - Windows 10 in 32-bit or 64-bit; WHQL certified
 - Linux 3.x and later
- Open 2230 M.2 slot with “A” or “E” key on the system motherboard, such as a Wi-Fi module slot.

Reviewing Safety Precautions


Review the following safety precautions before you begin to install a network adapter.

Note

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




Warning

Do not stare into the laser beam.  **L2**




Warning

The fiber optic ports contain a Class 1 laser device. When the ports are disconnected, always cover them with the provided plug. Exposed ports may cause skin or eye damage.  **L4**




Warning

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




Warning


Do not work on this equipment or cables during periods of lightning activity.  **E2**



Warning

Operating Temperature: This product is designed for a maximum ambient temperature of 35 degrees C.  **E7**

Note

All Countries: Install this product in accordance with local and National Electric Codes.  **E8**



Warning

The module is being installed in a system that operates with voltages that can be lethal. Before you remove the cover of your system, you must observe the following precautions to protect yourself and to prevent damage to the system components.

- Remove any metallic objects or jewelry from your hands and wrists.
 - Make sure to use only insulated or nonconducting tools.
 - Verify that the system is powered OFF and unplugged before accessing internal components.
 - Installation or removal of modules must be performed in a static-free environment. The use of a properly grounded wrist strap or other personal antistatic devices and an antistatic mat is strongly recommended. ⚡ **E39**
-



Caution

Do not use excessive force when seating the card, as the force may damage the system or the adapter card. If the card resists seating, remove it from the system, realign it, and try again. ⚡ **E47**

Unpacking the Network Adapter

To unpack the network adapter, perform the following procedure:

1. Remove all components from the shipping boxes.

Note

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

2. Verify that all components listed in Table 2 are included in your shipping boxes.

Table 2. Components in the Shipping Boxes

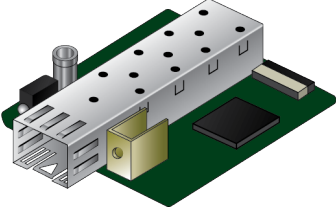
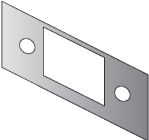
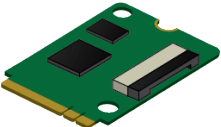
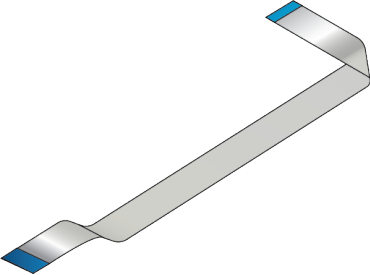



Name	Component
SFP board	
Backplate	
Controller board	
Ribbon cable	
Spacer	

Table 2. Components in the Shipping Boxes (Continued)

Name	Component
SFP mount screws	
M.2 screw	

3. If any item is missing or damaged, contact your Allied Telesis sales representative for assistance.
4. Holding the adapter card by the edges, remove it from its shipping package and place it on an anti-static surface.
5. Check the adapter for visible signs of damage, particularly on the card's edge connector.
6. If any item is missing or damaged, contact your Allied Telesis sales representative for assistance.

Note

Do not attempt to install any damaged adapter card. If the network adapter is damaged, report it to Allied Telesis. See "Contacting Allied Telesis" on page 11.

Pre-Installation Checklist

Before installing the 29M2/SP-BA fiber network adapter, check the following list:

1. Check that your system has the 2230-AE M.2 slot available on your system motherboard.
2. Verify that your system is using the latest BIOS.
3. When you download the driver software from the Allied Telesis website, record the path to where the driver file resides on your system.
4. If your system is active, shut it down.
5. When system shutdown is complete, power OFF and unplug your system.

Installing a Network Adapter

The following instructions apply to installing the 29M2/SP-BA fiber network adapter onto your system.

To install the network adapter, perform the following procedure:

Note

You need a Phillips-head screwdriver.

1. Review the “Pre-Installation Checklist” on page 25 and “Reviewing Safety Precautions” on page 21.

Before installing the network adapter, ensure the system power is OFF and unplugged from the power outlet, and that proper electrical grounding procedures have been followed.



Warning

The module is being installed in a system that operates with voltages that can be lethal. Before you remove the cover of your system, you must observe the following precautions to protect yourself and to prevent damage to the system components.

- Remove any metallic objects or jewelry from your hands and wrists.
 - Make sure to use only insulated or nonconducting tools.
 - Verify that the system is powered OFF and unplugged before accessing internal components.
 - Installation or removal of modules must be performed in a static-free environment. The use of a properly grounded wrist strap or other personal antistatic devices and an antistatic mat is strongly recommended. ⚡ E39
-

- Remove the cover of your system by using the Phillips-head screwdriver. See Figure 3.



Figure 3. Removing the Cover

- While holding the sides of the chassis with your hands, slide the cover using your thumbs to open the system. See Figure 4.



Figure 4. Opening the System

- Remove the 2.5 inch hard drive bay if present.
- Remove any back plate or previously installed device that is occupying the back of the SFP cutout if necessary. See the Figure 5 on page 28.
- Remove an M.2 device, such as a Wi-Fi card, if any. See Figure 5 on page 28.

**Warning**

When removing a Wi-Fi card, secure the antenna wires so that they do not come in contact with the system motherboard.

Note

The M.2 SSD drive in the M.2 space can stay.

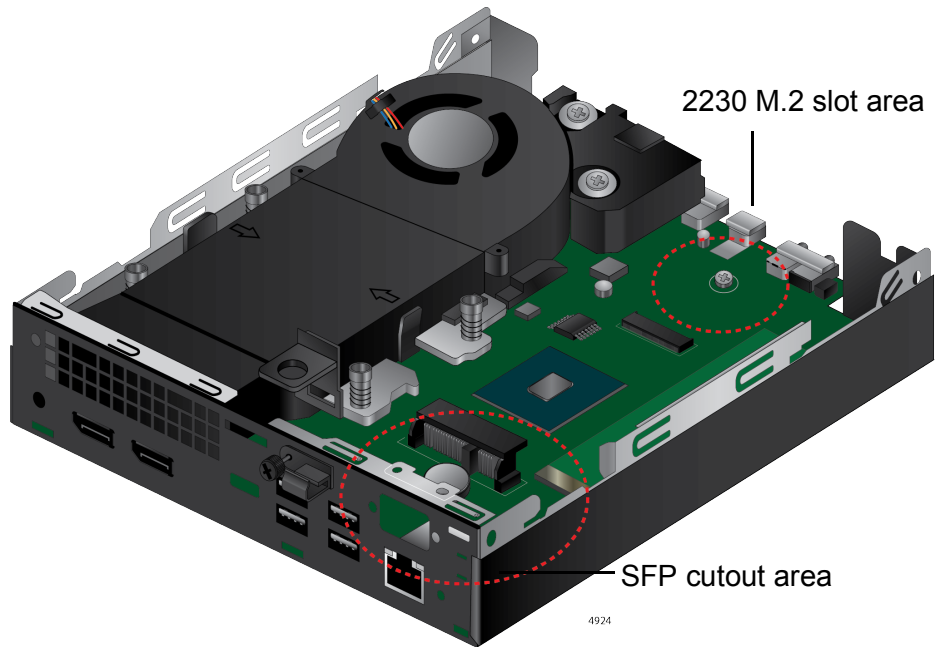


Figure 5. Inside of Dell Platform

7. Align the backplate to the SFP board.

The backplate must be oriented to the SFP board as follows:

- ❑ The part number is located on the right side on the back of the backplate as shown in Figure 6.
- ❑ The top side of the backplate frame is narrower than the bottom side of the frame. See Figure 6.

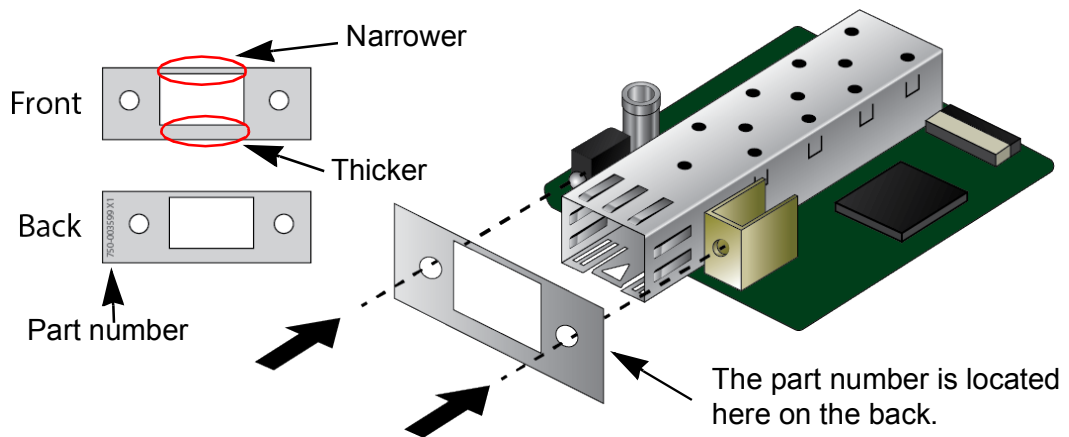


Figure 6. Orienting the Backplate to the SFP Board

8. Ensure that the backplate is installed to the SFP board securely. See Figure 7.

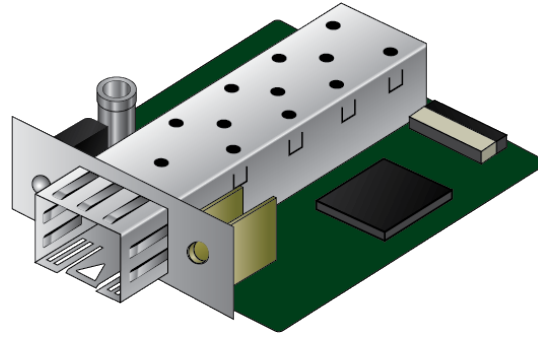


Figure 7. Installing the Backplate to the SFP Board

9. Insert the SFP board inside the system so that the SFP slot goes through the SFP cutout in the back panel of the system. See Figure 8.

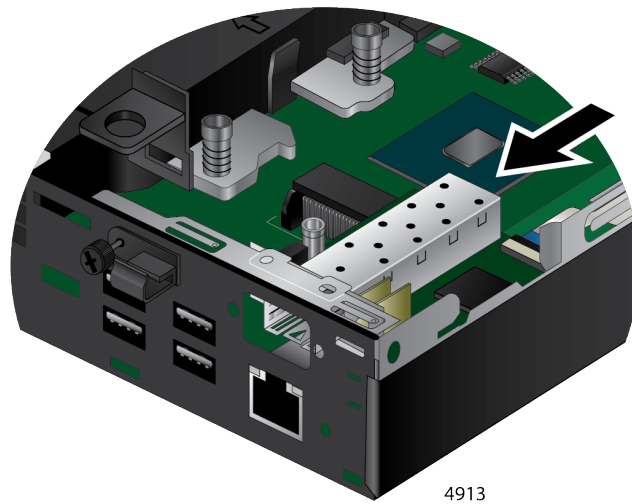


Figure 8. Attaching the SFP Board to the Chassis

10. While the SFP board is in place in the system, slide the spacer in between the edge of the chassis and the top of the mounting standoff as shown in Figure 9.

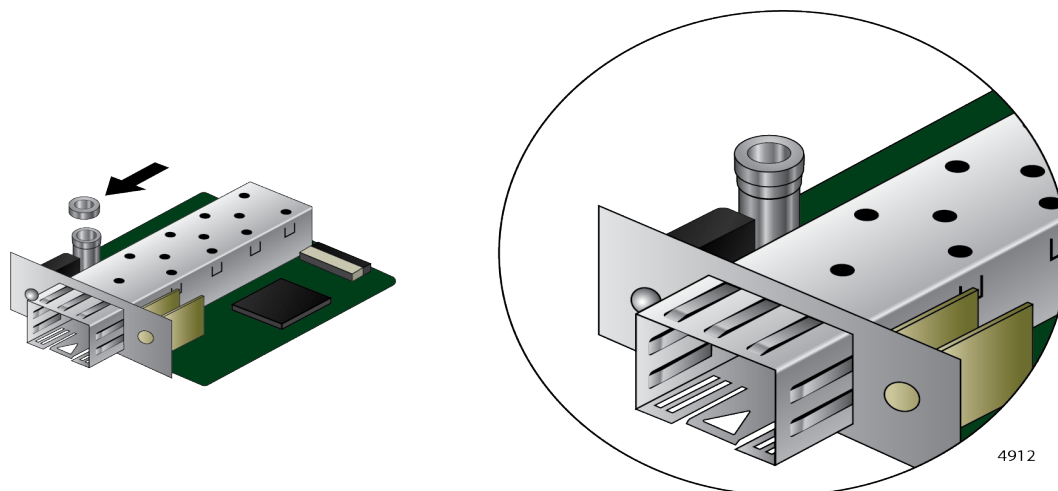


Figure 9. Attaching the SFP Board to the Chassis

11. Secure the mounting standoff on the SFP board to the edge of the chassis using one of the SFP mount screws. See Figure 10.

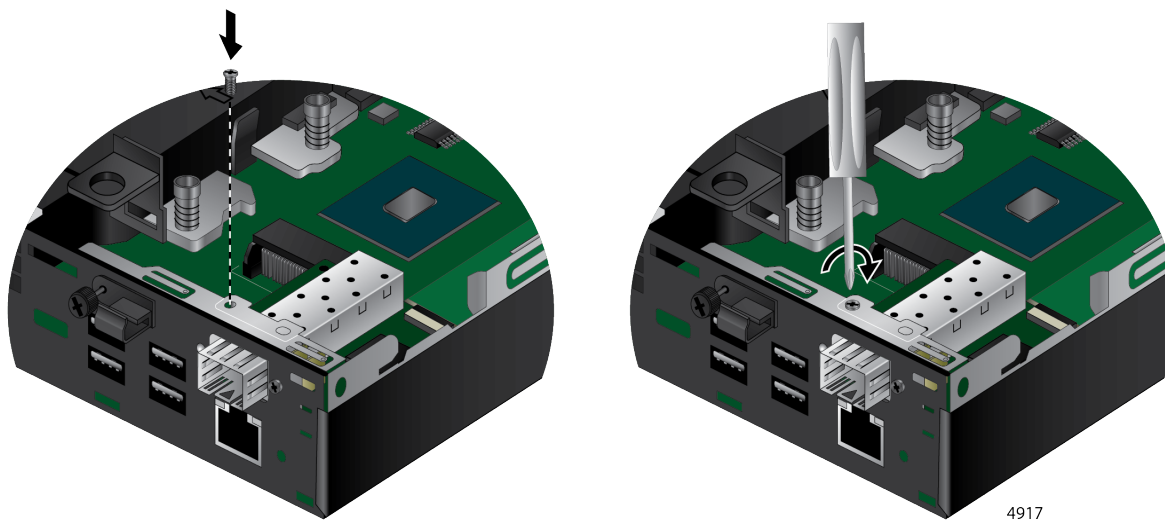


Figure 10. Securing the SFP Board to the Chassis

12. Insert the other SFP mount screw through the chassis into the mounting bracket of the SFP board shown in Figure 11.

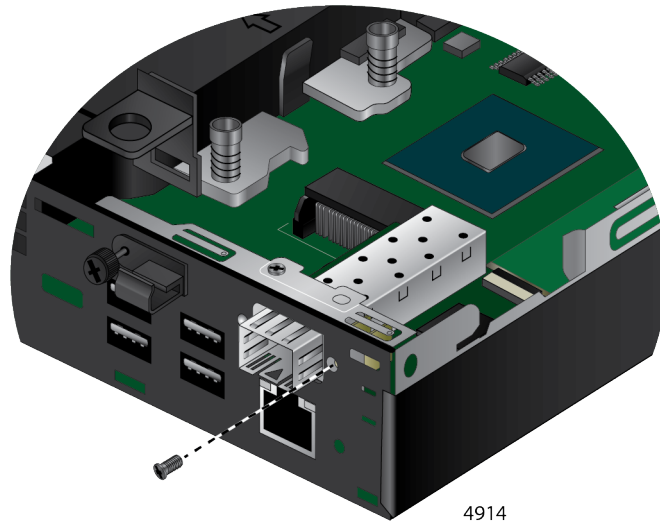


Figure 11. Securing the SFP Board to the Chassis



Caution

Do not use excessive force when seating the adapter, as the force may damage the system or the adapter. If the adapter resists seating, remove it from the system, realign it, and try again. E47

13. Tighten the screw to secure the SFP board to the chassis. See Figure 12.

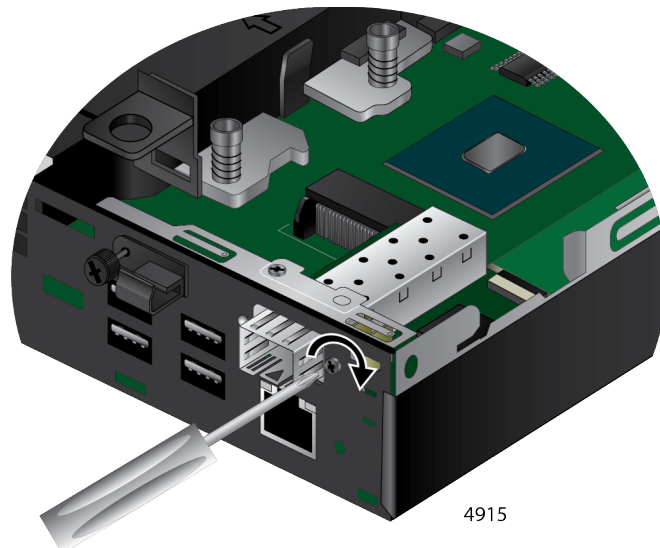


Figure 12. Securing the SFP Board to the Chassis

14. Insert the controller board into the 2230 M.2 slot on the system motherboard and secure with the M.2 screw. See Figure 13.

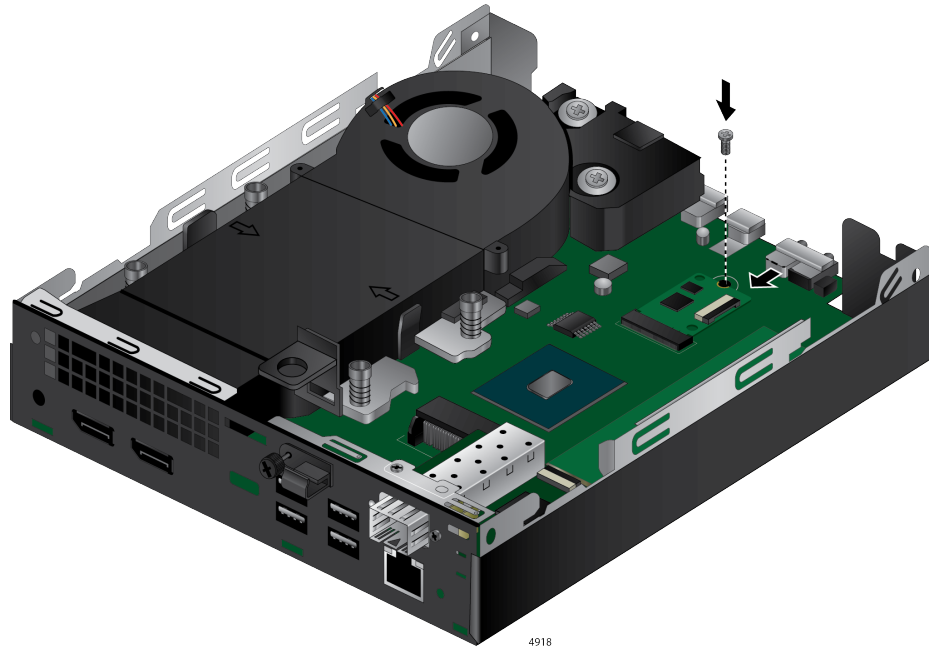


Figure 13. Securing the SFP Board to the Chassis

15. Attach the ribbon cable securely to the SFP board and the controller board inside the system. See Figure 14.

Note

If the ribbon cable does *not* fit properly, you need to adjust the folding location of the ribbon cable. See “Adjusting the Ribbon Cable” on page 33.

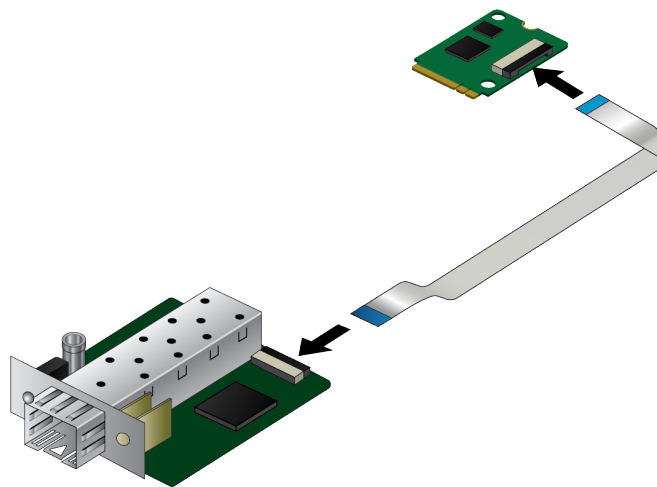


Figure 14. Verifying the Ribbon Cable is Securely Attached

16. Replace the hard drive bay that is removed in step 4 if needed.
17. If you put the hard drive bay back in place, verify the ribbon cable is clear of the 2.5" hard drive bay.

Note

You may need to bend the cable near the SFP board to prevent the hard drive bay from interfering.

18. Put the system's cover back in place and secure it with the screw removed in step 3.
19. Power the system on.

When the system returns to proper operation, the network adapter is fully installed. Next, connect the network cables. See "Connecting a Network Cable" on page 35.

Adjusting the Ribbon Cable

When the ribbon cable does *not* fit properly in the system to connect the SFP board and controller board, you need to re-fold to adjust the ribbon cable.

To re-fold the ribbon cable, perform the following procedure:

1. Unfold the ribbon cable to make it flat as shown in Figure 15.

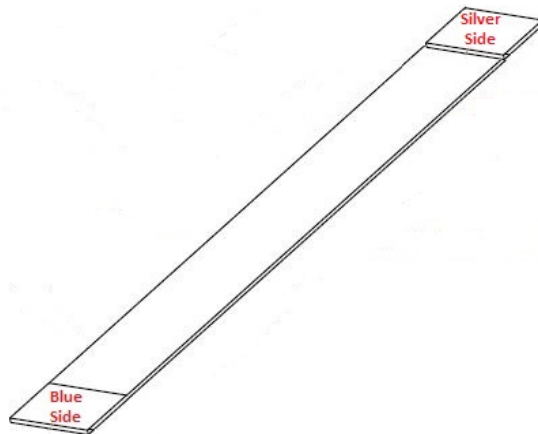


Figure 15. Marking the Ribbon Cable

2. Place the ribbon cable in the system and find a point where the ribbon cable should be re-folded.

3. Fold a 90 degree angle at the mark. See Figure 16.

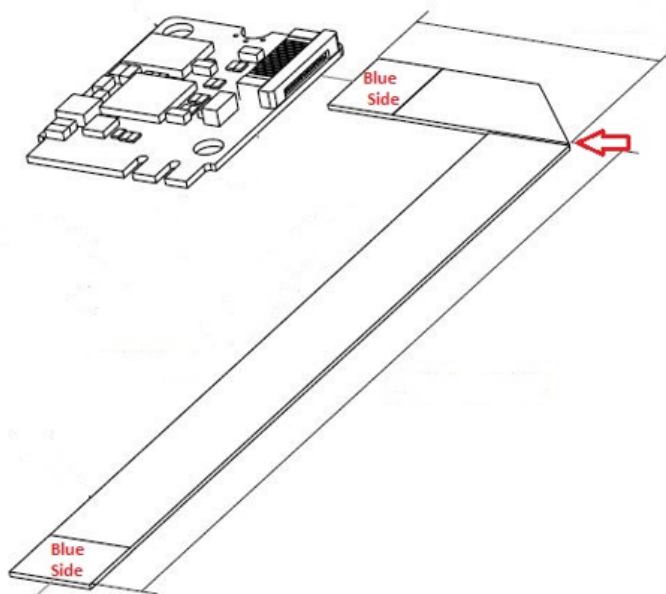


Figure 16. Folding the Ribbon Cable

4. Go back to step 15 on page 32 to finish the installation.

Connecting a Network Cable

The 29M2/SP-BA network adapter is equipped with an SFP slot. To connect the network adapter to the network, you must install an SFP transceiver and connect an appropriate cable to connect to the network.

Connecting an SFP Transceiver

The 29M2/SA-BA network adapter requires an SFP transceiver and an appropriate cable to connect to the network.

1. Insert an SFP transceiver into the SFP slot on the network adapter until the SFP transceiver snaps into place in the slot.
2. Remove a plug from the SFP transceiver.
3. Connect one end of the cable to the SFP transceiver.
4. Connect the other end of the cable to the appropriate Ethernet network port or an appropriate port.

Note

After the cable is properly connected at both ends, the adapter card LED should be functional. See Table 1 on page 15 for a description of LED operation.

After the system is connected to the network and power is supplied, the network adapter attempts to establish the connection as follow:

- ❑ With a Gigabit SFP, the network adapter attempts to negotiate duplex and flow control via the auto-negotiation protocol. If the link partner does not support Auto-negotiation, the network adapter bypasses the process and attempts to establish a link at 1000Mbps in full duplex.
- ❑ With a 100Mbps SFP, the network adapter attempts to establish the connection at 100Mps in full-duplex.

Chapter 3

Installing the Driver Software

This chapter describes how to install driver software for the 29M2/SP-BA network adapter onto your operating system. It contains the following topics:

- ❑ “Overview” on page 38
- ❑ “Downloading the Driver Software” on page 39
- ❑ “Accessing Device Manager” on page 41
- ❑ “Installing the Driver Software” on page 42
- ❑ “Updating the Driver Software” on page 45
- ❑ “Performing the Silent Installation” on page 46

Overview

When you install the 29M2/SP-BA network adapter on your computer system, your next step is to install driver software onto your Windows operating system. You can install driver software using Device Manager or using the silent installation method.

When you install driver software using Device Manager, the dialog boxes guide you through the installation process. On the other hand, using the silent installation method, you can install software without constant interactions by suppressing dialog boxes.

Guidelines

Here are the guidelines for installing and updating the driver software on your operating system:

- ❑ To install or update the driver software, you must have administrative privileges.
- ❑ When you install the 29M2/SP-BA network adapter on your computer and start the system, the system detects a new adapter and may install a default driver. In any case, you must update the driver software for the 29M2/SP-BA network adapter. See “Installing the Driver Using Device Manager”, or “Installing the Driver Using the Silent Installation Method”.

Installing the Driver Using Device Manager

To install or update the driver software using Device Manager, follow the steps below:

- ❑ “Downloading the Driver Software” on page 39
- ❑ “Accessing Device Manager” on page 41
- ❑ “Installing the Driver Software” on page 42

Or

- ❑ “Updating the Driver Software” on page 45

Installing the Driver Using the Silent Installation Method

To install or update the driver software using the silent installation, follow the steps below:

- ❑ “Downloading the Driver Software” on page 39
- ❑ “Performing the Silent Installation” on page 46

Downloading the Driver Software

The 29M2/SP-BA network adapter is not shipped with a software driver CD. You must download driver software from the Allied Telesis website.

To download driver software, do the following:

1. Open a web browser, such as Internet Explorer or FireFox, on your system and enter the following:

<http://www.alliedtelesis.com/support/software>

The Allied Telesis Software Download page is displayed.

2. Perform one of the following steps:

- If you have an account for Download Center, click **Download Center**.
- If you do not an account for Download Center, enter your e-mail address and click **Request Guest Access**. Then, click **Download Center**.

Allied Telesis sends you a guest login ID and password to the email address.

3. Enter the login ID and password, then click **Login**.

The Download Central Home page is displayed.

4. Select **Product Search** from the left side menu.

The Product Search page is displayed as shown in Figure 17.

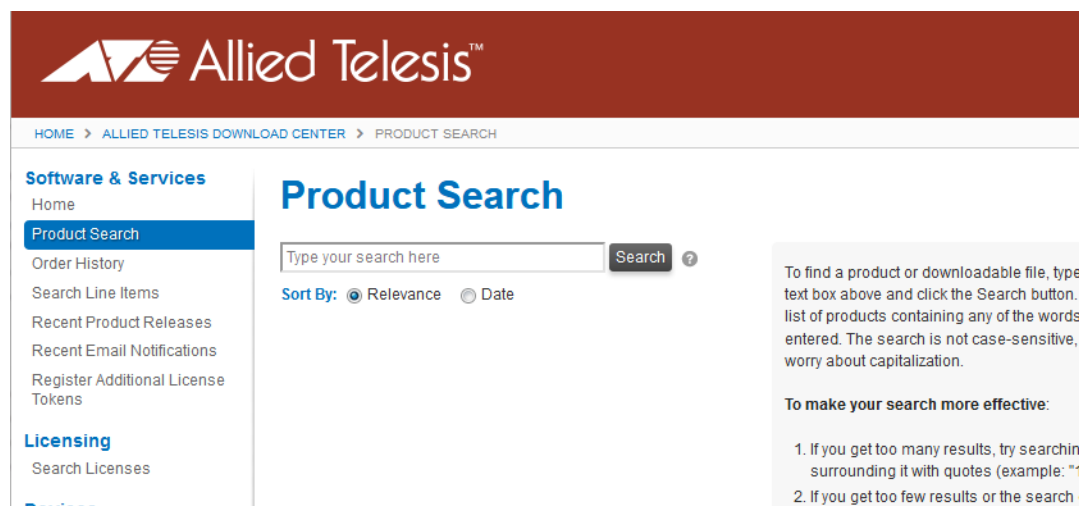


Figure 17. Product Search Page

5. Enter "29M2" in the text field and click **Search**.

The available software for the 29M2 products is listed.

6. Select software you need to download.

The selected file is listed.

7. Select the file with ".img" extension.

The confirmation page pops up.

8. Select **Save File** and click **OK**.

9. Select a folder to store the file and click **Save**.

10. Record the location of the folder.

Accessing Device Manager

When you install or update the driver software for 29M2/SP-BA network adapter, you must first access Device Manager.

To access Device Manager on Windows 10, follow one of the procedures below:

Accessing Device Manager on Windows 10

To access Device Manager on Windows 10, do the following:

1. In the search box on the taskbar, type device manager.

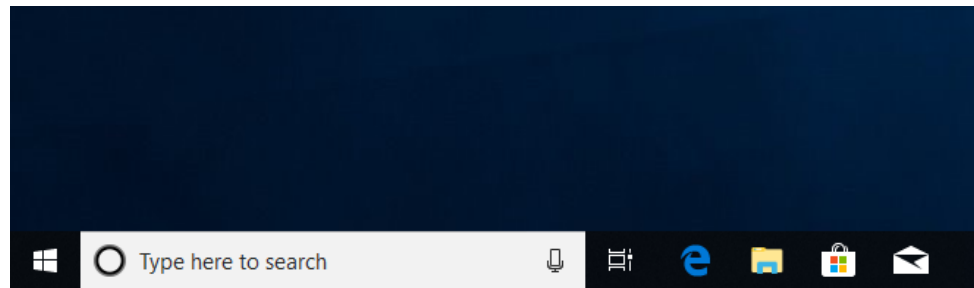


Figure 18. Search Box on Windows 10

2. Select Device Manager from the menu.

The Device Manager window appears as shown in Figure 19.

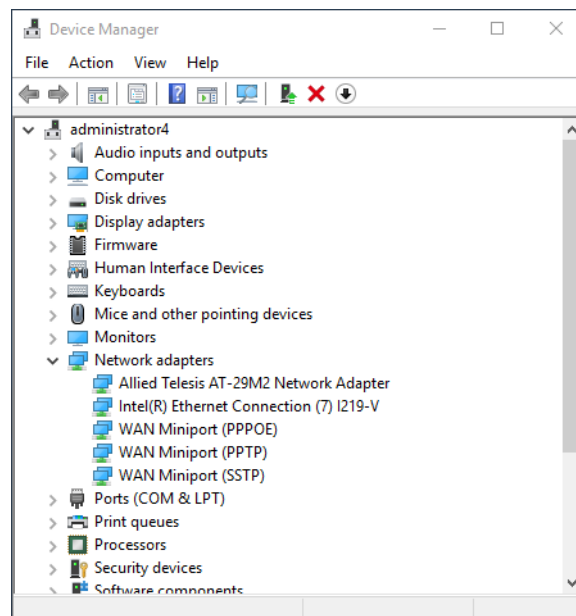


Figure 19. Device Manager on Windows 10

Installing the Driver Software

Once you physically install the 29M2/SP-BA network card, the system detects the new hardware and creates an entry in Device Manager when the Windows operating system first boots up. Shortly after you log in, you need to install the driver software for your adapter card.

Note

To install the driver software, you must have administrative privileges.

To install the driver software, do the following:

1. Access Device Manager. see “Accessing Device Manager” on page 41.
2. In the Device Manager window, double-click **Network Adapters** to expand the field.
3. Right-click **Allied Telesis Device**.

The pop-up menu appears. See Figure 20 as an example.

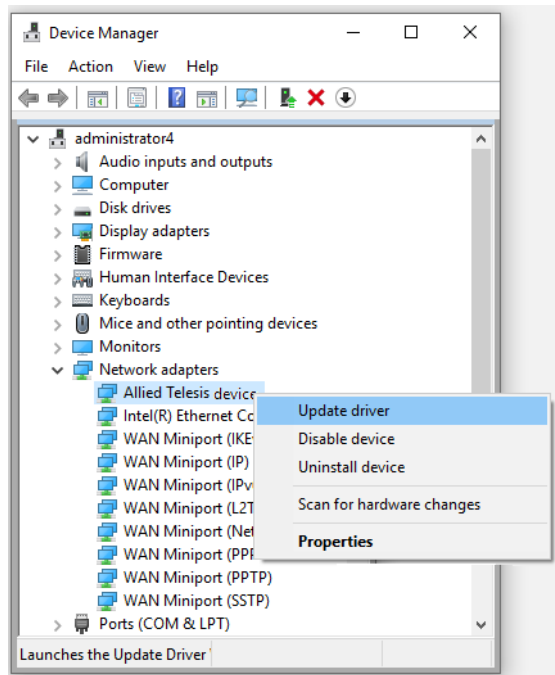


Figure 20. Selecting the 29M2/SP-BA Adapter in Device Manager

4. Select **Update Driver**.

The Update Driver window appears. See Figure 21 as an example.

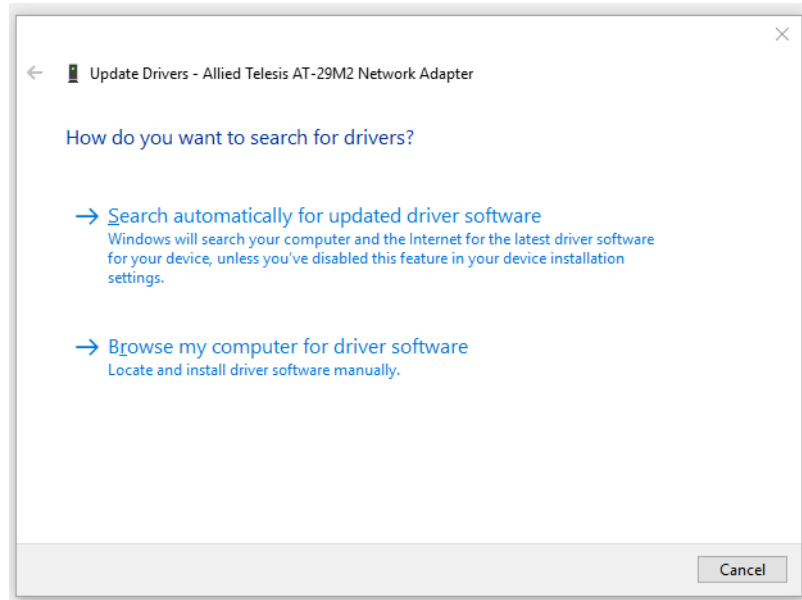


Figure 21. Update Driver Window

5. Select **Browse my computer for driver software**.

The Update Driver Software window prompts you to enter the location of the driver folder. See Figure 22 as an example.

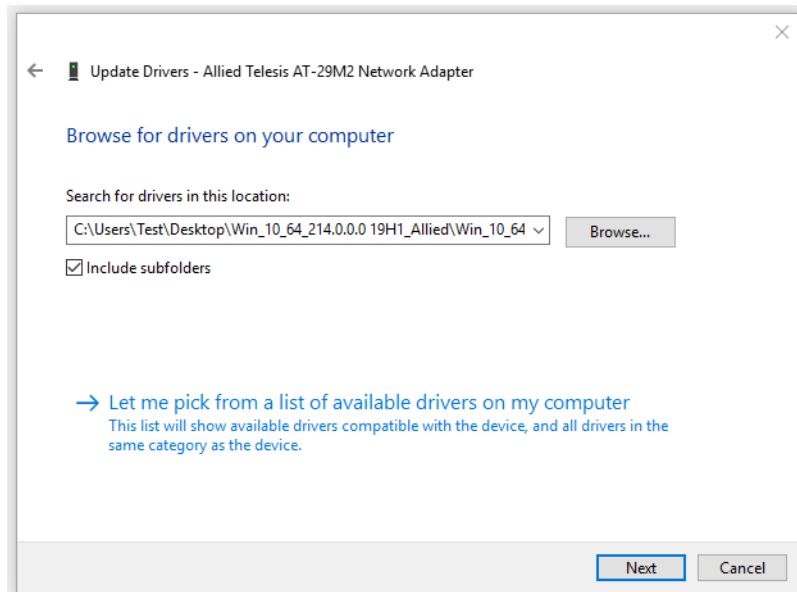


Figure 22. Update Driver Window

6. Specify the location of the driver software. See “Downloading the Driver Software” on page 39 for details.

7. Click **Next**.

The confirmation message appears when the driver software is successfully updated.

8. Click **Close**.

Updating the Driver Software

If your operating system automatically installs a default driver, you need to update the driver software with the driver that you downloaded from the Allied Telesis website. To obtain the latest version of the 29M2/SP-BA driver, see “Downloading the Driver Software” on page 39.

To update the driver software, you use the same procedure for installing the driver software for the first time. The only difference between updating and installing the driver software is the name of your adapter that Device Manager detects and lists.

Device Manager lists your network adapter entry as “Allied Telesis AT-29M2 Network Adapter” once you installed the driver software. Before you installed the driver software, Device Manager may list your network adapter entry as a Broadcom device or Allied Telesis device.

To update the driver software for your 29M2/SP-BA network adapter, see “Installing the Driver Software” on page 42.

Performing the Silent Installation

To simplify the driver installation process, you may perform a silent installation when installing driver software for the 29M2/SP-BA network adapter. The silent installation is a method of installing software in the silent mode without constant interactions by suppressing dialog boxes.

Note

You can apply the silent installation method only to Microsoft certified drivers. The drivers that Allied Telesis provides for the 29M2/SP-BA network adapter is Microsoft certified.

Use a command line utility called Driver package Installer (DPInst) for the silent installation. DPInst is included in the Windows Developer Kit (WDK) provided by Microsoft. You can obtain the latest DPInst by downloading and installing the latest WDK from the Microsoft website.

Installing the Driver Silently

To install the driver silently, perform the following instructions:

1. Create a folder in your Windows system.
2. Download driver software for the 29M2/SA-BA network adapter.

See "Downloading the Driver Software" on page 39.

3. Place the driver files that you downloaded into the folder that you created in step 1.

The folder should include the following driver files:

- .sys
- .inf
- .cat

4. Download the latest WDK to obtain the `dpinst` utility.

Consult Microsoft websites to download WDK.

5. Place the `dpinst.exe` and its supporting files in the same folder where you placed the driver files.

Note

You must place the 64-bit `dpinst` utility if your operating system is the 64-bit version. Place the 32-bit `dpinst` utility for the 32-bit version operating system.

6. Open a command prompt window with administrator privileges.

7. Change the directory to the folder where the `dpinst` utility and the driver files reside.
8. Install the driver in the silent mode by entering the following command:

```
> dpinst /S
```

Note

Adding the `/S` switch to the `dpinst` command suppresses the display of wizard pages, user dialog boxes, and other user intervention requests.

The driver is installed silently.

Viewing Supported DPInst Options

You can display help information about the `dpinst` command-line options.

View all supported `dpinst` options by executing the following command:

1. Open a command prompt window with administrator privileges.
2. Change the directory to the folder where the `dpinst` utility and the driver files reside.

```
> dpinst /?
```

The command displays the help text.

Chapter 4

Modifying Advanced Properties

This chapter includes the following topics:

- ❑ “Overview” on page 50
- ❑ “Accessing Advanced Properties” on page 51
- ❑ “802.3az EEE” on page 52
- ❑ “ARP Offload” on page 53
- ❑ “Ethernet@WireSpeed” on page 54
- ❑ “Flow Control” on page 55
- ❑ “Interrupt Moderation” on page 57
- ❑ “Jumbo Mtu” on page 58
- ❑ “Large Send Offload v2 (IPv4)” on page 59
- ❑ “Large Send Offload v2 (IPv6)” on page 61
- ❑ “Maximum Number of RSS Queues” on page 62
- ❑ “Network Address” on page 64
- ❑ “NS Offload” on page 66
- ❑ “Priority & VLAN” on page 67
- ❑ “Receive Side Scaling” on page 69
- ❑ “Speed & Duplex” on page 70
- ❑ “TCP/UDP Checksum Offload (IPv4)” on page 71
- ❑ “TCP/UDP Checksum Offload (IPv6)” on page 73
- ❑ “VLAN ID” on page 75
- ❑ “Wake on Magic Packet” on page 76
- ❑ “Wake on Pattern Match” on page 77
- ❑ “WOL Speed” on page 78

Overview

The 29M2/SP-BA fiber network adapter allows you to modify advanced properties to meet your requirements. To access the advanced properties, access Device Manager, then go to each advanced property page.

Guidelines

Here are the guidelines to modifying the advanced properties:

- ❑ To change the advanced property settings, you must have Administrator privileges.
- ❑ When you upgrade the driver software, the settings of the advanced properties may change. Verify the settings after upgrading the driver software.

Accessing Advanced Properties

To modify advanced properties, first access Device Manager, open the properties of your adapter, and select a feature you want to change its setting.

1. Access Device Manager. See “Accessing Device Manager” on page 41.
2. In the Device Manager window, double-click **Allied Telesis AT-29M2 Network Adapter**.

The properties window pops up.

3. Click the **Advanced** tab.

The Advanced Properties window opens as shown in Figure 23.

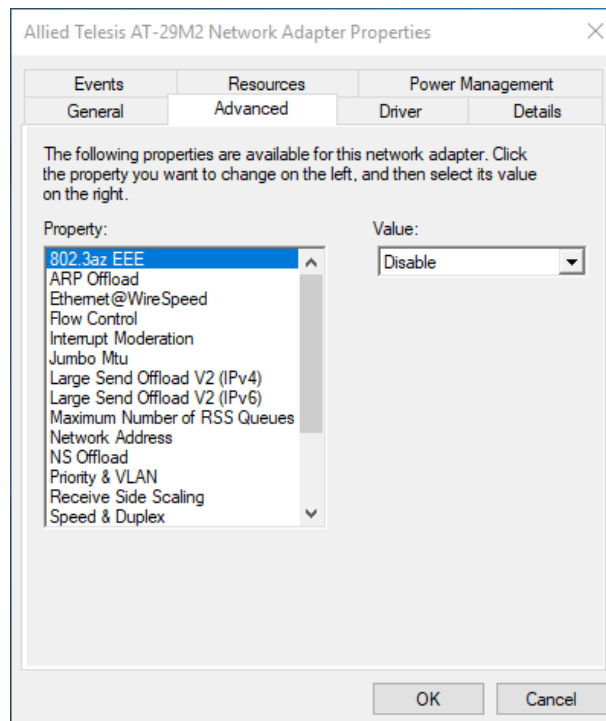


Figure 23. Advanced Properties Window

802.3az EEE

The 802.3az EEE (Energy Efficient Ethernet) property allows you to optimize the energy usage of the interface over Ethernet.

Note

This feature is valid only for copper ports and *not* applicable for the 29M2/SP-BA fiber network adapter. The setting is always disabled.

To view the 802.3az EEE feature, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **802.3az EEE** in the Property box.

The 802.3az EEE page is displayed as shown in Figure 24.

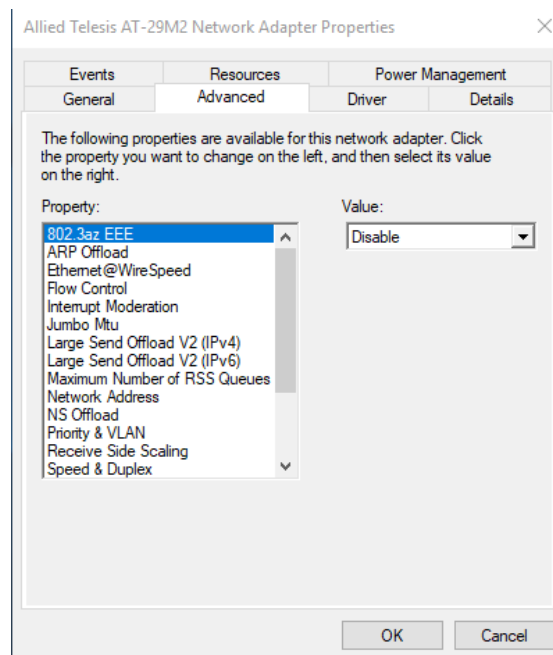


Figure 24. 802.3az EEE Page

3. Click **OK**.

ARP Offload

The ARP Offload feature enables the adapter not to wake up when responding to an ARP request. ARP is used to verify whether a computer is still present on the network and resolute an IP address into a MAC address.

To enable or disable the ARP Offload feature, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **ARP Offload** in the Property box.

The ARP Offload page is displayed as shown in Figure 25.

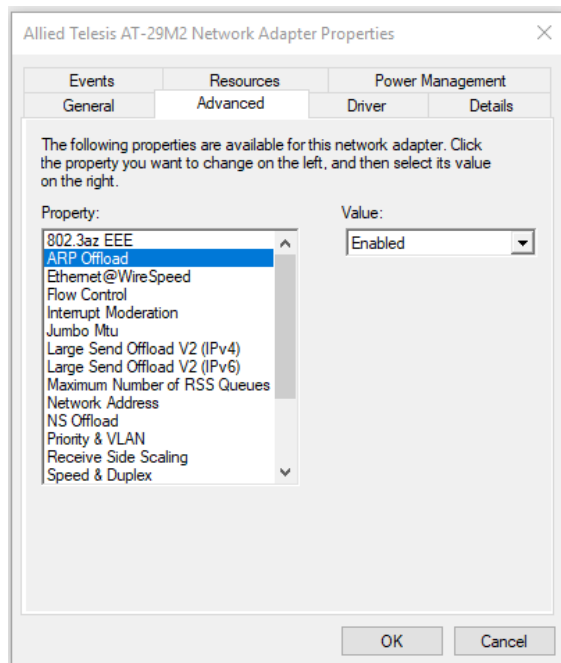


Figure 25. ARP Offload Page

3. Select one of the following options:

- Disable** — This feature is disabled.
- Enable** — The adapter does not wake up when responding to an ARP request. This is the default setting.

4. Click **OK**.

Ethernet@WireSpeed

The Ethernet@WireSpeed feature connects two devices even when the devices are connected through an impaired copper cable.

Note

This feature is valid only for copper ports and *not* applicable for the 29M2/SP-BA fiber network adapter. The setting is always disabled.

To view the Ethernet@WireSpeed setting, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Ethernet@WireSpeed** in the Property box.

The Ethernet@WireSpeed page is displayed as shown in Figure 26.

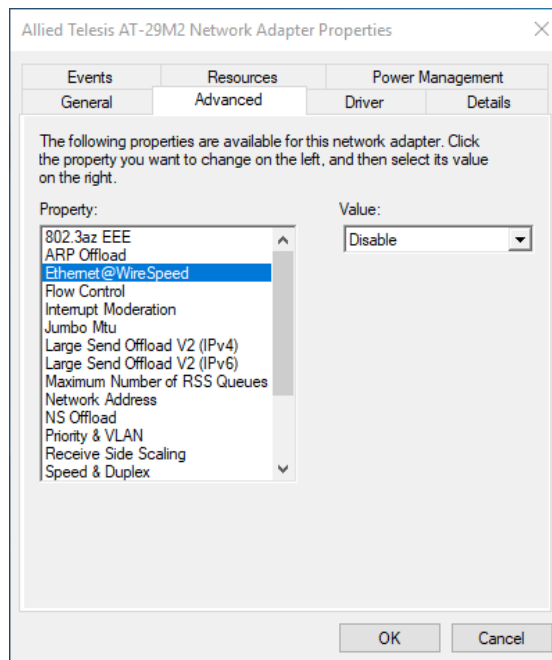


Figure 26. Ethernet@WireSpeed Page

3. Click **OK**.

Flow Control

The Flow Control feature allows you to control the flow between the port of the 29M2/SP-BA fiber network adapter and its link partner. You can enable or disable the adapter port to process received PAUSE frames and transmit PAUSE frames.

To enable or disable the Flow Control feature, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Flow Control** in the Property box.

The Flow Control page is displayed as shown in Figure 27.

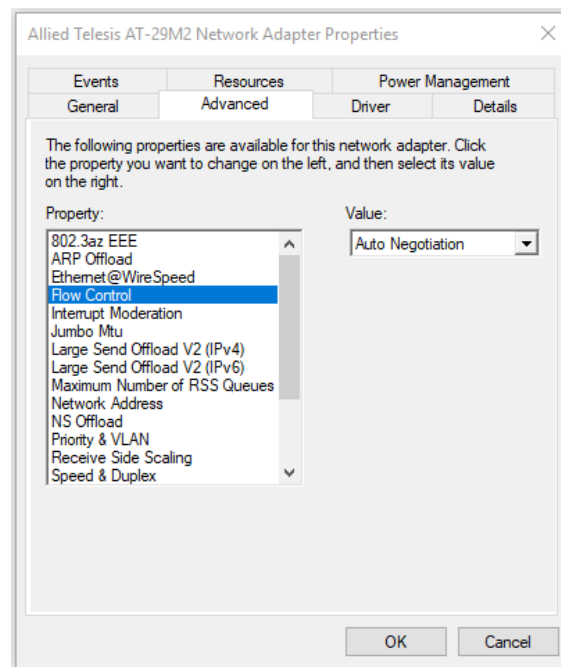


Figure 27. Flow Control Page

3. Select one of the following options if available:

Note

The options and default setting depend on your operating system and the version of the driver that you installed.

- Auto Negotiation** — The setting of the Flow Control property is determined during the auto-negotiation process.
- Disabled** — The adapter ignores PAUSE frames.

- Tx & Rx Enabled** — The adapter processes PAUSE frames when receiving and transmits PAUSE frames.
 - Rx Enabled** — The adapter processes PAUSE frames when receiving, but does not transmit PAUSE frame.
 - Tx Enabled** — The adapter transmits PAUSE frames, but ignores PAUSE frames when receiving.
4. Click **OK**.

Interrupt Moderation

The Interrupt Moderation feature allows you to limit the rate of interrupts to the CPU during packet transmission and packet reception. When this feature is enabled, interrupts are handled as a group so that the CPU utilization decreases; however, the latency may increase.

To enable or disable the Interrupt Moderation feature, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Interrupt Moderation** in the Property box.

The Interrupt Moderation page is displayed as shown in Figure 28.

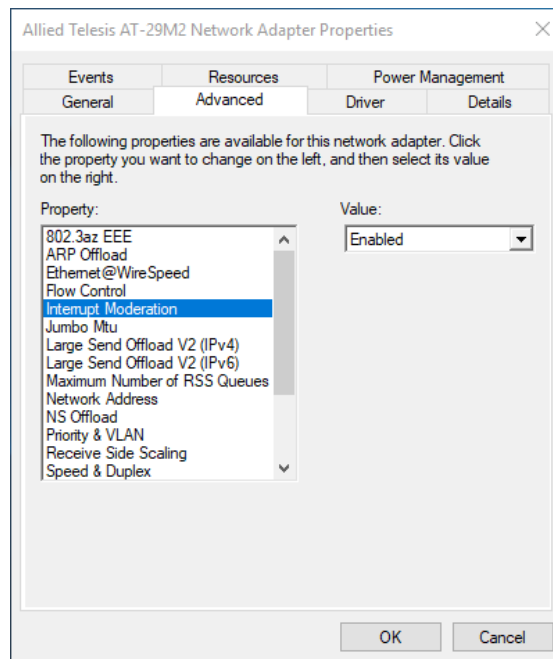


Figure 28. Interrupt Moderation Page

3. Select one of the following options:

- Disable** — The Interrupt Moderation feature is disabled
- Enable** — The Interrupt Moderation feature is enabled. This is the default setting.

4. Click **OK**.

Jumbo Mtu

The Jumbo Mtu (Maximum transmission unit) feature allows you to specify the size of the Ethernet frame that the adapter port supports. The network performance usually improves when the larger frame size is specified; however, the network must be capable of supporting the oversized Ethernet frames.

To change the Jumbo Mtu setting, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Jumbo Mtu** in the Property box.

The Jumbo Mtu page is displayed as shown in Figure 29.

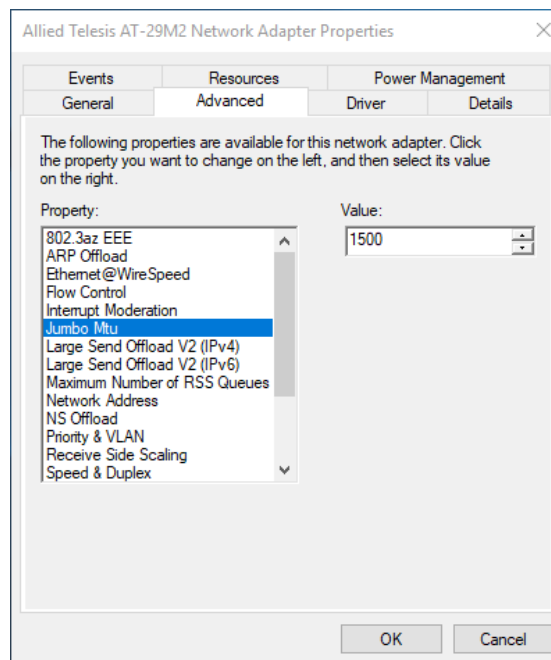


Figure 29. Jumbo Mtu Page

3. Specify the size of the frame in the Value box.

The range of the value is from 1,500 to 9,000. The default value is 1,500.

4. Click **OK**.

Large Send Offload v2 (IPv4)

The Large Send Offload v2 (IPv4) feature allows you to control the load of sending out large packets. When this feature is enabled, the adapter port segments large packets for IPv4 traffic and reduces the CPU load.

This feature, which supports large packets up to 256kb, overrides the Large Send Offload (IPv4) feature if both features are enabled.

To enable or disable the Large Send Offload v2 (IPv4) feature, do the following:

1. Access the Advanced Properties.
See “Accessing Advanced Properties” on page 51.
2. Select **Large Send Offload v2 (IPv4)** in the Property box.

The Large Send Offload v2 (IPv4) page is displayed as shown in Figure 30.

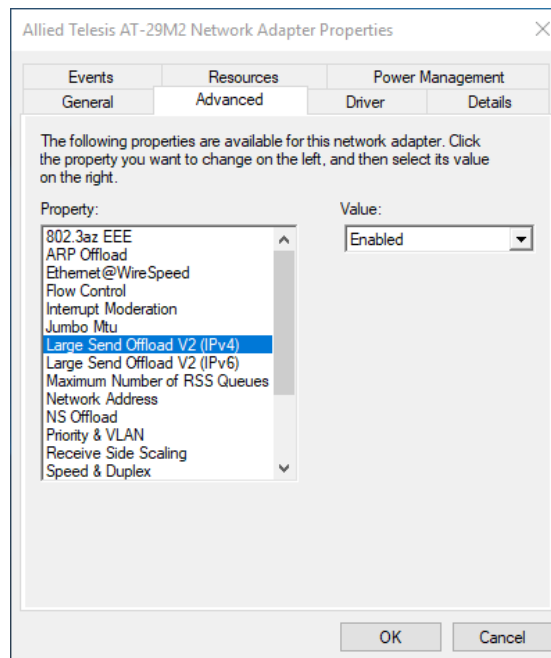


Figure 30. Large Send Offload v2 (IPv4) Page

3. Select one of the following options:
 - Disable** — The feature is disabled.
 - Enable** — The adapter port segments large packets up to 256kb for IPv4 traffic before sending them out. This is the default setting.
4. Click **OK**.

Large Send Offload v2 (IPv6)

The Large Send Offload v2 (IPv6) feature allows you to control the load of sending out large packets. When this feature is enabled, the adapter port segments large packets for IPv6 traffic and reduces the CPU load.

To enable or disable the Large Send Offload v2 (IPv6) feature, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Large Send Offload v2 (IPv6)** in the Property box.

The Large Send Offload v2 (IPv6) page is displayed as shown in Figure 31.

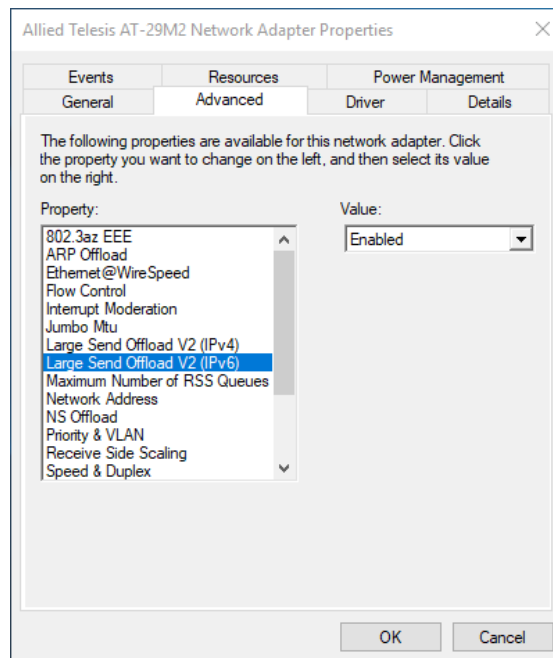


Figure 31. Large Send Offload (IPv6) Page

3. Select one of the following options:

- Disable** — The adapter does not segment packets for IPv6 traffic.
- Enable** — The adapter port segments large packets up to 256kb for IPv6 traffic before sending them out. This is the default setting.

4. Click **OK**.

Maximum Number of RSS Queues

The RSS Queues feature allocates queue space between the network adapter and processor. You can specify the maximum number of RSS queues that the network adapter assigns receiving data to.

To specify or change the maximum number of RSS Queues, do the following:

1. Access the Advanced Properties.
See “Accessing Advanced Properties” on page 51.
2. Select **Maximum Number of RSS Queues** in the Property box.

The Maximum Number of RSS Queues page is displayed as shown in Figure 32.

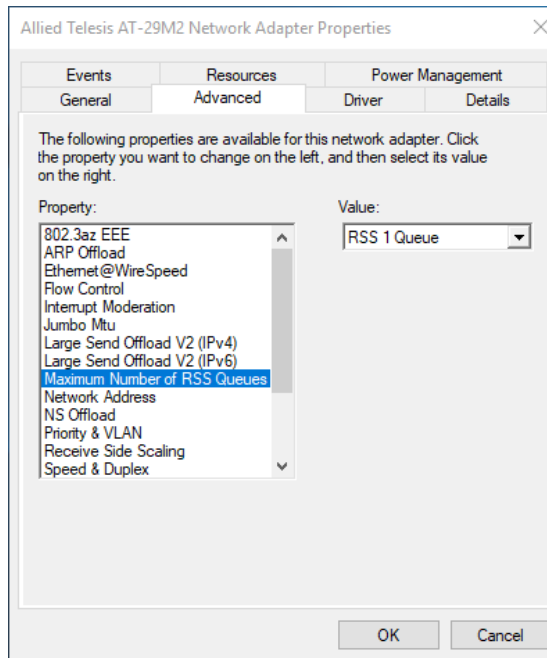


Figure 32. Maximum Number of RSS Queues Page

3. Select one of the following options:

Note

The supported number of RSS queues and default setting depend on the network adapter and operation system. You might not see all options listed below.

- RSS 4 Queues** — The system allocates up to four RSS queues.

- RSS 1 Queue** — The system allocates up to one RSS queue.
 - RSS 2 Queue** — The system allocates up to two RSS queues.
4. Click **OK**.

Network Address

The Network Address property allows you to replace the MAC address originally assigned to the adapter with a user-defined address. The user-defined address that you assign to the adapter is called a locally administered address.



Caution

A locally administered address overrides the original MAC address stored in the hardware. When you change the MAC address, be sure to assign a unique MAC address. **E81**

To assign or change the Network Address, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Network Address** in the Property box.

The Network Address page is displayed as shown in Figure 33.

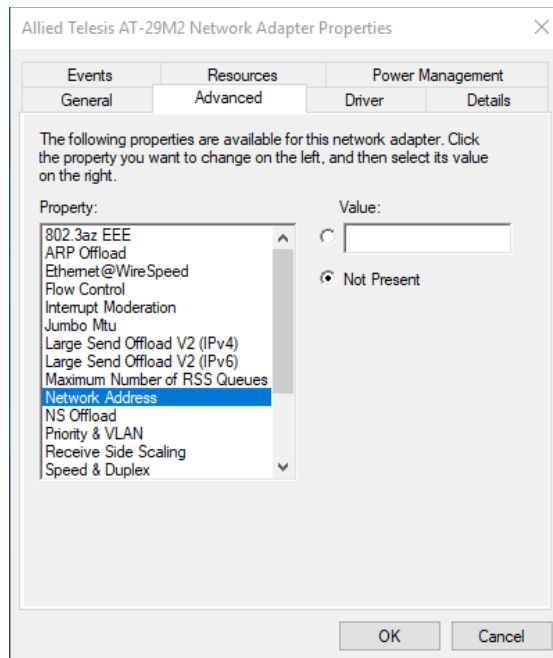


Figure 33. Network Address Page

3. In the **Value** text box, enter a locally administered address for the 29M2/SP-BA fiber network adapter.

By default, no locally administered address is assigned.

Here are guidelines to assigning a locally administered address:

- The address must be unique.
 - The address consists of a 12-digit hexadecimal number, for example, "000C46005501."
 - The range is from 0000 0000 0001 to FFFF FFFF FFFD excluding multicast MAC addresses, which cannot be used. The multicast MAC address has the least significant bit of the most significant octet as 1.
4. Click **OK**.

NS Offload

The NS (Neighbor Solicitation) Offload feature enables the adapter not to wake up when responding to an NS request.

To enable or disable the NS Offload feature, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **NS Offload** in the Property box.

The NS Offload page is displayed as shown in Figure 34.

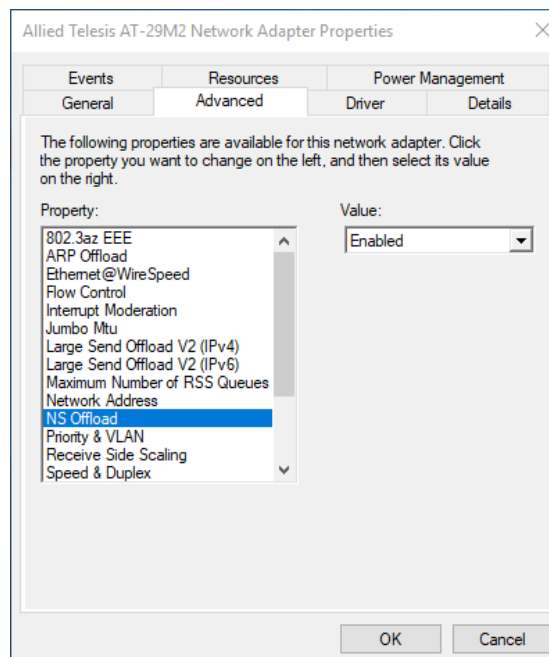


Figure 34. NS Offload Page

3. Select one of the following options:

- Disable** — This feature is disabled.
- Enable** — The adapter does not wake up when responding to an NS request. This is the default setting.

4. Click **OK**.

Priority & VLAN

The Priority & VLAN feature allows you to control sending and receiving tagged frames of QoS and VLAN.

When the property is set to Priority & VLAN Enabled, the adapter sends and receives QoS and VLAN tagged frames; with Priority Enabled, the adapter sends and receives QoS tagged frames; with VLAN Enabled, the adapter sends and receives VLAN tagged frames. To assign a VLAN ID to the adapter, see “VLAN ID” on page 75.

To enable or disable the Priority & VLAN feature, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Priority & VLAN** in the Property box.

The Priority & VLAN page is displayed as shown in Figure 35.

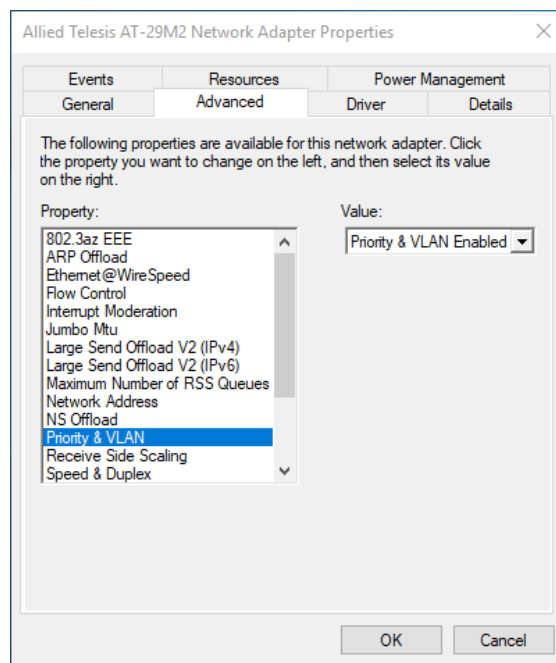


Figure 35. Priority & VLAN Page

3. Select one of the following options:

- Priority & VLAN Enabled** — The adapter sends and receives QoS and VLAN tagged frames. This is the default setting.
- Priority & VLAN Disabled** — The adapter does not send and ignores QoS and VLAN tagged frames.

- Priority Enabled** — The adapter sends and receives QoS tagged frames.
 - VLAN Enabled** — The adapter sends and receives VLAN tagged frames.
4. Click **OK**.

Receive Side Scaling

The Receive Side Scaling (RSS) feature allows the adapter to efficiently distribute receive processing across multiple CPU's and to prevent from overloading a single CPU. To make this feature effective, the computer must have multiple CPU's in a multiprocessor system.

To enable or disable the Receive Side Scaling feature, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Receive Side Scaling** in the Property box.

The Receive Side Scaling page is displayed as shown in Figure 36.

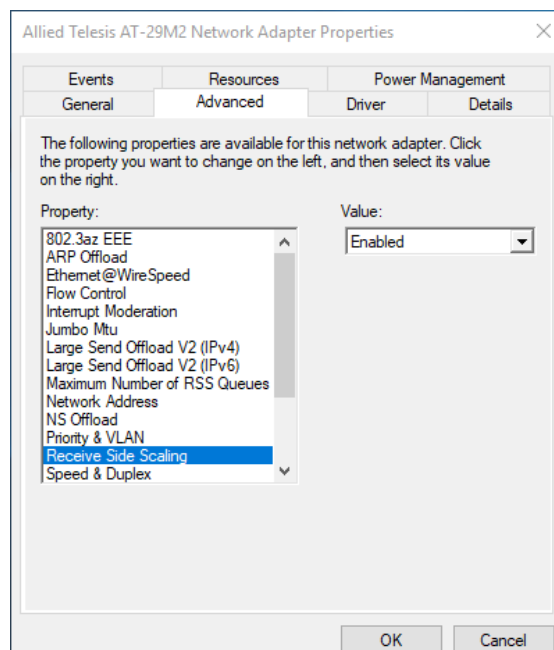


Figure 36. Receive Side Scaling Page

3. Select one of the following options:

- Enable** — Receiving data is processed by multiple CPU's. This is the default setting.
- Disable** — Receiving data is processed by a single CPU.

4. Click **OK**.

Speed & Duplex

The Speed & Duplex property sets the link speed and duplex mode for the copper port. For the fiber port, Auto Negotiation is specified.

Note

This setting should always be Auto Negotiation.

To view the Speed & Duplex property, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Speed & Duplex** in the Property box.

The Speed & Duplex page is displayed as shown in Figure 37 on page 70.

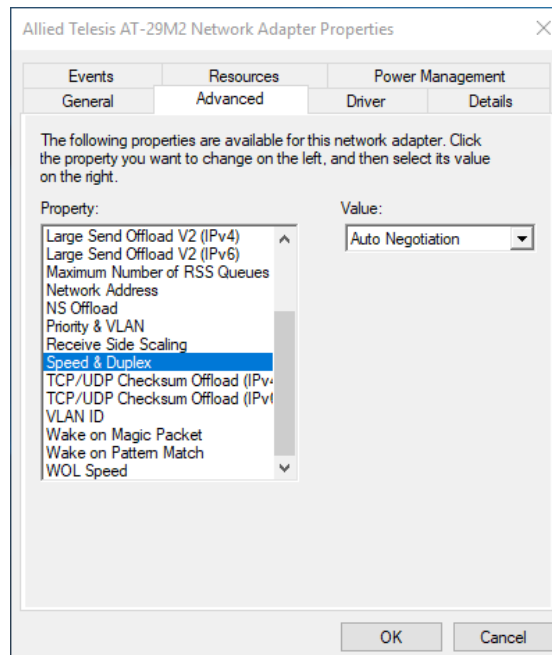


Figure 37. Speed & Duplex Page

3. Click **OK**.

TCP/UDP Checksum Offload (IPv4)

The TCP/UDP Checksum Offload (IPv4) function enables the adapter port to compute the checksum of transmitting IPv4 packets and verify the checksum of receiving IPv4 packets, taking load off from the CPU.

To modify the TCP/UDP Checksum Offload (IPv4) setting, do the following:

1. Access the Device Manager on your operating system.
See “Accessing Advanced Properties” on page 51.
2. Select **TCP/UDP Checksum Offload (IPv4)** in the Property box.

The TCP/UDP Checksum Offload (IPv4) page is displayed as shown in Figure 38.

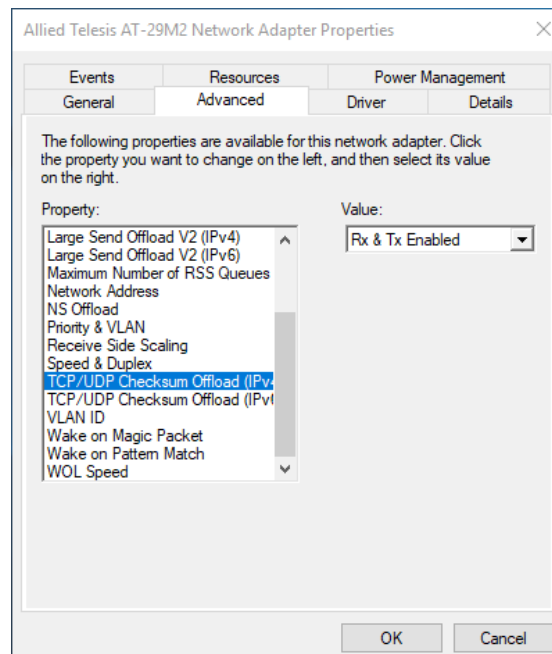


Figure 38. TCP/UDP Checksum Offload (IPv4) Page

3. Select one of the following options:
 - Rx & Tx Enabled** — Enables the TCP/UDP Checksum Offload (IPv4) function for both receiving and transmitting IPv4 packets. This is the default setting.
 - Disabled** — Disables the TCP/UDP Checksum Offload (IPv4) function for both receiving and transmitting.
 - Rx Enabled** — Enables the TCP/UDP Checksum Offload (IPv4) function only for receiving IPv4 packets.

- Tx Enabled** — Enables the TCP/UDP Checksum Offload (IPv4) function only for transmitting IPv4 packets.

4. Click **OK**.

TCP/UDP Checksum Offload (IPv6)

The TCP/UDP Checksum Offload (IPv6) function enables the adapter port to compute the checksum of transmitting IPv6 packets and verify the checksum of receiving IPv6 packets, taking load off from the CPU.

To enable or disable the TCP/UDP Checksum Offload (IPv6) feature, do the following:

1. Access the Device Manager on your operating system.
See “Accessing Advanced Properties” on page 51.
2. Select **TCP/UDP Checksum Offload (IPv6)** in the Property box.

The TCP/UDP Checksum Offload (IPv6) page is displayed as shown in Figure 39.

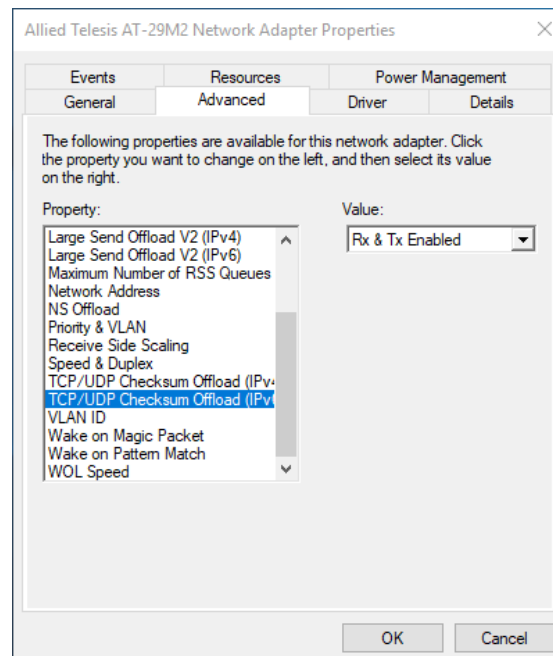


Figure 39. TCP/UDP Checksum Offload (IPv6) Page

3. Select one of the following options:
 - Rx & Tx Enabled** — Enables the TCP/UDP Checksum Offload (IPv6) function for both receiving and transmitting IPv6 packets. This is the default setting.
 - Disabled** — Disables the TCP/UDP Checksum Offload (IPv6) function for both receiving and transmitting.
 - Rx Enabled** — Enables the TCP/UDP Checksum Offload (IPv6) function only for receiving IPv6 packets.

- Tx Enabled** — Enables the TCP/UDP Checksum Offload (IPv6) function only for transmitting IPv6 packets.

4. Click **OK**.

VLAN ID

The VLAN ID property allows you to specify a VLAN ID on your network to the adapter port. The adapter port adds the value of the VLAN ID to a frame in the VLAN tag before transmitting the frame.

To change the VLAN ID value, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **VLAN ID** in the Property box.

The VLAN ID page is displayed as shown in Figure 40.

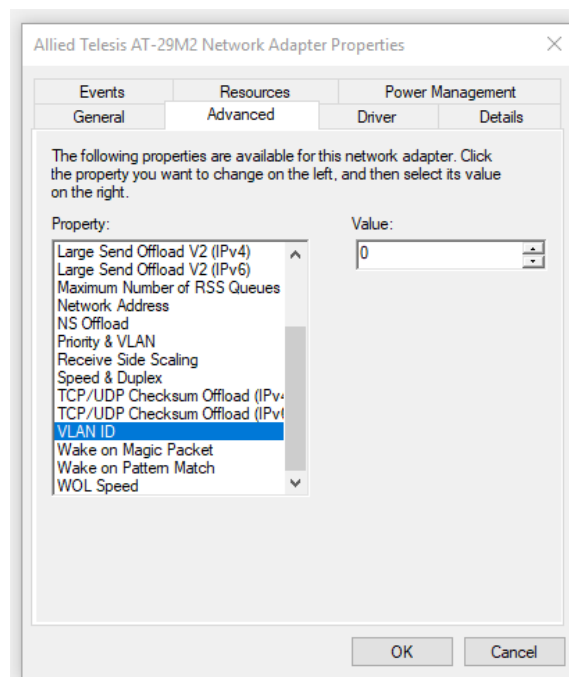


Figure 40. VLAN ID Page

3. Specify a VLAN ID in the Value box.

The range of the value is from 0 to 4094. The default value is 0.

4. Click **OK**.

Wake on Magic Packet

The Wake on Magic Packet feature enables the system to wake up from a low-power mode when the adapter port receives a Magic packet.

To enable or disable the Wake on Magic Packet feature, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **Wake on Magic Packet** in the Property box.

The Wake on Magic Packet page is displayed as shown in Figure 41.

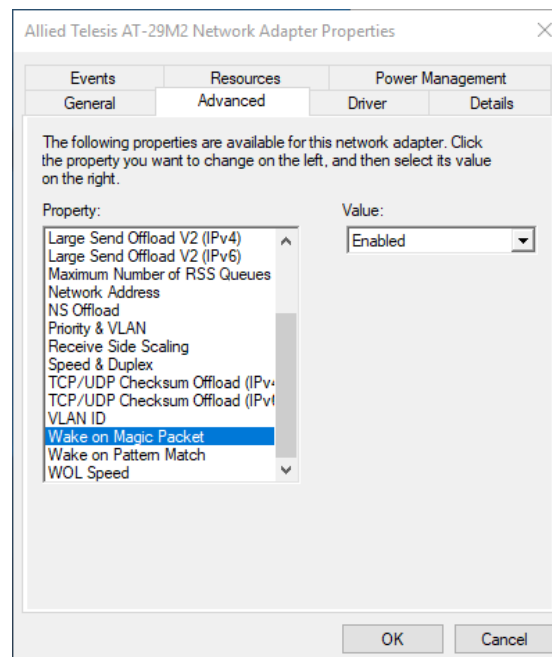


Figure 41. Wake on Magic Packet Page

3. Select one of the following options:

- Enable** — The system wakes up from a low-power mode when receiving a Magic Packet. This is the default setting.
- Disable** — The system stays in a low-power mode when receiving a Magic Packet.

4. Click **OK**.

Wake on Pattern Match

The Wake on Pattern Match feature enables the system to wake up from a low-power mode when the packet matches the wake patterns specified in the operating system.

To enable or disable the Wake on Pattern Match feature, do the following:

1. Access the Advanced Properties.
See “Accessing Advanced Properties” on page 51.
2. Select **Wake on Pattern Match** in the Property box.

The Wake on Pattern Match page is displayed as shown in Figure 42.

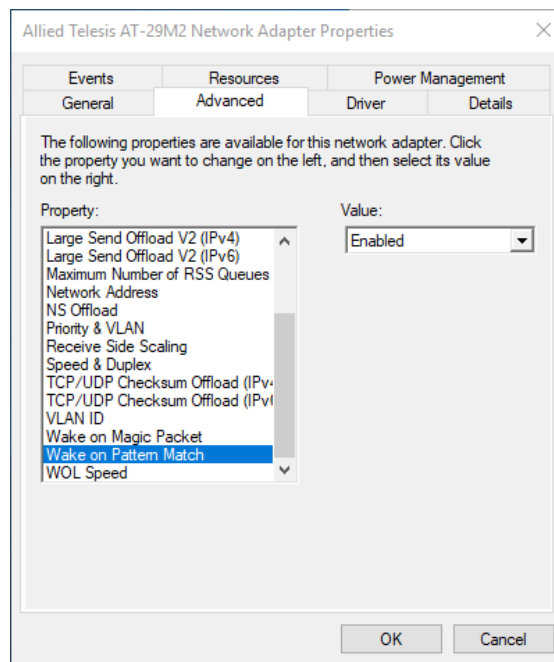


Figure 42. Wake on Pattern Match Page

3. Select one of the following options:
 - Enable** — The system wakes up from a low-power mode when receiving a packet that matches one of the patterns specified in the operating system.
 - Disable** — The system stays in a low-power mode.
4. Click **OK**.

WOL Speed

The WOL Speed property specifies the speed of Wake-on-LAN on the adapter port. This speed does not affect the speed of the fiber connection to your network.

Note

Leave the WOL Speed property to Lowest Speed Advertised, the default setting. The fiber link always stays up at its normal link speed.

To view this setting, do the following:

1. Access the Advanced Properties.

See “Accessing Advanced Properties” on page 51.

2. Select **WOL Speed** in the Property box.

The WOL Speed page is displayed as shown in Figure 43.

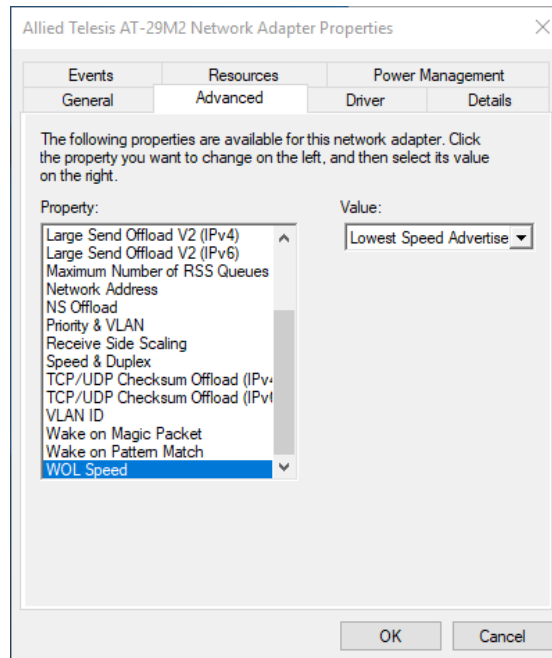


Figure 43. WOL Speed Page

3. Click **OK**.

Chapter 5

Uninstalling the Driver Software

This chapter describes how to uninstall the driver software for the 29M2/SP-BA network adapter.

This chapter contains the following topics:

- ❑ “Overview” on page 80
- ❑ “Uninstalling the Driver Software Using Device Manager” on page 81
- ❑ “Uninstalling the Driver Software Silently” on page 82

Overview

When you no longer use the 29M2/SP-BA fiber network adapter for your computer, you can uninstall the driver software from your operating system.

As you can install driver software for the 29M2/SP-BA fiber network adapter using Device Manager or the silent installation method, you can also uninstall driver software in two ways:

- ❑ “Uninstalling the Driver Software Using Device Manager” on page 81
- ❑ “Uninstalling the Driver Software Silently” on page 82

Guidelines

Here are the guidelines for uninstalling the driver software from your system:

- ❑ You must have Administrator privileges to remove the driver software.
- ❑ Before uninstalling the network adapter, capture all of the Advanced Property settings for later use. The properties are lost during the uninstall process.

Uninstalling the Driver Software Using Device Manager

To uninstall the driver software from your operating system, do the following:

1. Start your Windows operating system and log in.
2. Access the Device Manager.

See “Accessing Device Manager” on page 41.

3. In the Device Manager window, expand the Network Adapters folder.
4. Right-click the **Allied Telesis AT-29M2 Network Adapter**.

The shortcut menu appears as shown in Figure 44.

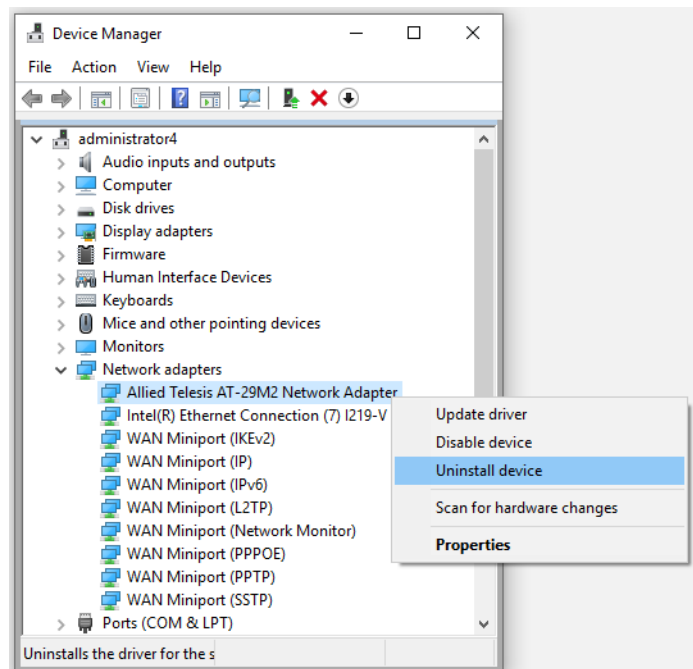


Figure 44. Device Manager Shortcut Menu

5. Select **Uninstall**.

The Confirm Device Uninstall window pops up.

6. Check the check box if you want to remove the driver software for your adapter.
7. Click **OK** to complete the uninstalling.

Uninstalling the Driver Software Silently

You can apply the silent installation method to uninstall the driver.

To uninstall the driver without user-intervention, perform the following steps:

1. Open a command prompt window with administrator privileges.
2. Change the directory to the folder where the `dpinst` utility and the driver files reside.
3. Uninstall the driver silently by executing the following command:

```
> dpinst /U inf_file_name.inf /S
```

Note

Replace *inf_file_name* with the name of `.inf` file.

The driver is uninstalled without user-intervention.

Chapter 6

Troubleshooting

This chapter describes troubleshooting procedures. It contains the following sections:

- ❑ “Checking the Port LED on the Adapter” on page 84
- ❑ “Troubleshooting Checklist” on page 85
- ❑ “Testing Network Connectivity” on page 86

Checking the Port LED on the Adapter

The 29M2/SP-BA fiber network adapter comes with one LED. The LED indicates the link status for the fiber connection.

Note

Before the port LED can provide troubleshooting information, the driver software for your particular operating system must be installed and the adapter must be connected to the network. See Chapter 3, "Installing the Driver Software" on page 37.

Table 3 describes the link status that LED's indicate.

Table 3. LED Status

State	Description
On	Valid link.
Off	No link.
Flashing	The port is receiving or transmitting network packets

Troubleshooting Checklist

The following checklist provides recommended actions to take to resolve problems installing the 29M2/SP-BA fiber network adapter or running it in your system.

Note

Before opening your system for removing or inserting the network adapter, review all precautions outlined under “Reviewing Safety Precautions” on page 21.

- Inspect all cables and connections. Verify that the cable connections between the adapter and the switch are attached properly. Make sure that the cable length and rating are compliant with the requirements listed in “Connecting a Network Cable” on page 35.”
- Open the cover of the system and inspect the ribbon cable are properly connected the SFP board and controller board. See Figure 14 on page 32.
- Verify that you match the wavelength of the network adapter port with the wavelength of the switch port. The wavelength of the SFP installed to the network adapter must be matched with the wavelength of the switch port.
- Verify that the network adapter port and switch port are set to the same supported speed. The speed of the SFP installed to the network adapter must be supported and matched with the speed of the switch port.
- Check the adapter installation by reviewing Chapter 2, “Installing the Hardware” on page 19.
- Make sure that the network adapter is properly seated inside the system. Open the cover of the system and check for specific hardware problems, such as obvious damage to the board components or edge connectors.
- Check the configuration settings and change them if they are in conflict with another device.
- Make sure that your system is using the latest BIOS.
- Replace the failed network adapter with one that is known to work properly. If the second network adapter works where the first one failed, the original network adapter is probably defective.
- Install the network adapter in another functioning system and run the tests again. If the network adapter passed the tests in the new system, the original system may be defective.

Testing Network Connectivity

This section describes how to test network connectivity for Windows and Linux networks.

Guidelines Here are the guidelines to testing the network connectivity:

- ❑ Verify Both the adapter and the switch must be set to the same duplex mode and the same supported speed.
- ❑ Before entering the ping command, disconnect or disable all other network connections. Otherwise, the ping command may succeed through the network connection that you do not intend to test.

Windows To test the network connectivity for the Windows driver software, perform the following procedure.

Use the ping command to determine if network connectivity is working.

1. Click the icon at the left bottom corner of the Windows.
2. In the search box, type **cmd** and click **OK**.
3. Type **ipconfig /all**

The command window opens, as shown in Figure 45.

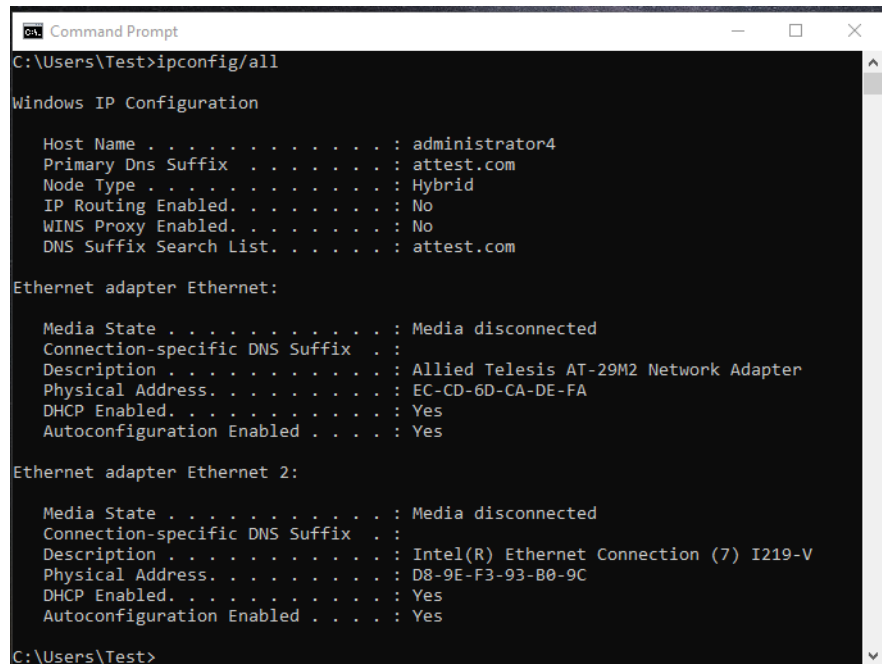


Figure 45. Command Window with ipconfig/all displayed

4. Type **ping <IP address>** from the command line, then press **Enter**.

Linux To verify that the Ethernet interface is up and running, run 'ifconfig' to check the status of the Ethernet interface. In addition, you can use the 'netstat -i' command to check the statistics on the Ethernet interface. Consult the manual pages for more information about the 'ifconfig' and 'netstat' commands.

To ping an IP host on the network to verify connection has been established, perform the following procedure.

1. From the command line, type **ping <IP address>**.
2. Press **Enter**.

The command displays the packet send/receive status.

Appendix A

Specifications

Physical Specifications

Dimensions: Controller board	22mm x 30mm (0.9in. x 1.2in.)
SFP board	40mm x 40mm (1.6in. x 1.6in.)
Weight:	18.7g (0.66 oz)
(Controller board, SFP board, and ribbon cable)	

Environmental Specifications

Operating Temperature:	0°C to 35°C (32°F to 95°F)
Relative Humidity:	10% to 90% (non-condensing)

Power Specifications

Signaling Voltage:	3.3 V
Power Consumption:	2.0 Watts

Appendix B

Regulatory Statements

This appendix contains the following regulatory statements:

- “Federal Communication Commission Interference Statement” on page 92

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



Caution

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. ⚡ E80



Caution

Avertissement de la FCC: Les changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur à utiliser cet équipement. ⚡ E80

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 32cm between the radiator & your body.