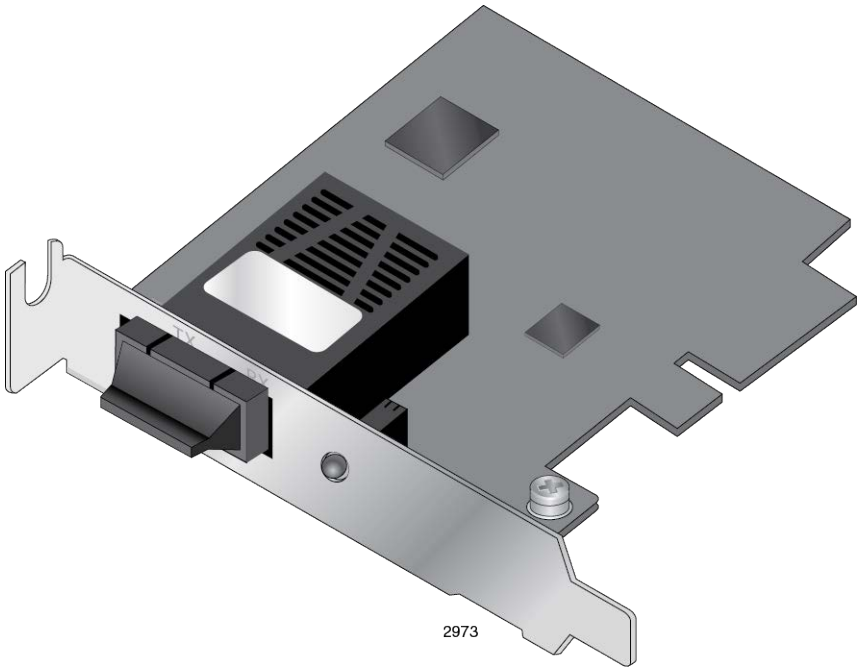
# 2711 Series

## FIBER FAST ETHERNET ADAPTERS

2711FX/SC

2711FX/LC

2711FX/ST




# Installation and User's Guide

613-000525 Rev. C

# Electrical Safety and Emissions Standards

This product meets the following standards:

| U.S. Federal Communications Commission |
|---|
| **Declaration of Conformity** |
| Manufacturer Name: Allied Telesis, Inc. |
| Declares that the product: **Fiber Fast Ethernet Adapter** |
| **Model Numbers: AT-2711FX/SC, AT-2711FX/LC, AT-2711FX/ST** |
| This product complies with FCC Part 15B, Class B Limits: |
| This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device must not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. |
| **Radiated Energy** |
| Note: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of 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 instructions, may 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 or more of the following measures:<br>- Reorient or relocate the receiving antenna.<br>- Increase the separation between the equipment and the receiver.<br>- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.<br>- Consult the dealer or an experienced radio/TV technician for help. |
| Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission rules. |

| Industry Canada |
|---|
| This Class B digital apparatus complies with Canadian ICES-003. |
| Cet appareil numérique de la classe B 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 B, EN55022 Class B, VCCI Class B, C-TICK, CE |
| Immunity | EN55024 Class B |
| Electrical Safety | EN60950-1 (TUV), UL 60950-1 ($_{C}UL_{US}$) |
| Laser Safety | EN60825 |

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# Preface

This manual is the installation and user's guide for the 2711 Series Fiber Fast Ethernet Network Adapters. The network adapters included in this series are:

- 2711FX/SC
- 2711FX/LC
- 2711FX/ST

The Preface contains the following sections:


- "Safety Symbols Used in this Document" on page 8
- "Translated Safety Statements" on page 9
- "Contacting Allied Telesis" on page 10

# 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.

# Translated Safety Statements

**Important:** The ✍ indicates that translations of the safety statement are available in the PDF document **Translated Safety Statements** posted on the Allied Telesis website at **alliedtelesis.com/library/search**.

- ❒ Übersetzte Sicherheitserklärungen

  **Wichtig:** Das ✍ zeigt an, dass Übersetzungen der Sicherheitserklärung in den PDF-**Translated Safety Statements** auf der Allied Telesis-Website unter **alliedtelesis.com/us/en/library/search** verfügbar sind.

- ❒ Declaraciones de seguridad traducidas

  **Importante:** El ✍ indica que las traducciones de la declaración de seguridad están disponibles en las **Translated Safety Statements** en PDF publicadas en el sitio web de Allied Telesis en **alliedtelesis.com/us/en/library/search**.

- ❒ Consignes de sécurité traduites

  **Important:** Le symbole ✍ indique que les traductions de la déclaration de sécurité sont disponibles dans le PDF **Translated Safety Statements** publiées sur le site Web de Allied Telesis à l'adresse **alliedtelesis.com/us/en/library/search**.

- ❒ Dichiarazioni di sicurezza tradotte

  **Importante:** ✍ indica che le traduzioni della dichiarazione di sicurezza sono disponibili nelle **Translated Safety Statements** in PDF pubblicate sul sito Web di Allied Telesis all'indirizzo **alliedtelesis.com/us/en/library/search**.

- ❒ Översatta säkerhetsförklaringar

  **Viktig:** ✍ anger att översättningar av säkerhetsförklaringen finns tillgängliga i PDF-dokumentet **Translated Safety Statements** som publicerats på Allied Telesis webbplats på **alliedtelesis.com/us/en/library/search**.

# Contacting Allied Telesis

If you need Allied Telesis technical support, visit **www.alliedtelesis.com/support.**

Chapter 1

# Overview

This chapter provides an introduction to the Allied Telesis 2711 Series Fiber Fast Ethernet Network Adapters and contains the following sections:


- ❒ “Description” on page 12
- ❒ “Features” on page 14“Features” on page 14
- ❒ “Supported Operating Systems” on page 15
- ❒ “Accessing Documents” on page 16
- ❒ “Contents of Your Shipment” on page 17
- ❒ “Warranty Registration” on page 18

# Description

The 2711 series adapters are Fiber Fast Ethernet PCI Express (PCIe) cards developed based on Broadcom's BCM57762 chipset. The adapter connects a PCIe compliant server or workstation to a Fast Ethernet network using fiber optic cabling and operates at 100 Mbps full-duplex and half-duplex mode.

The 2711 series network adapters include the following models:

- 2711FX/SC
- 2711FX/LC
- 2711FX/ST

The 2711FX/SC network adapter is shown in Figure 1.

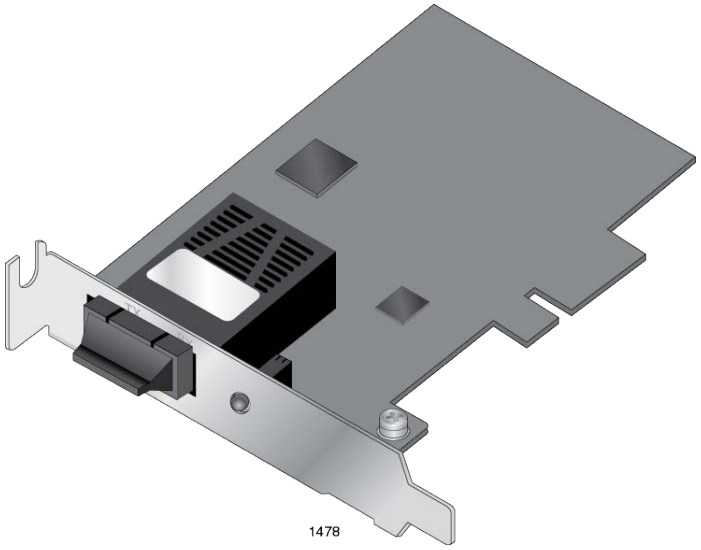



Figure 1. 2711FX/SC Adapter

The 2711 series adapter cards come with a 100BASE-FX port with an SC, LC, or ST adapter. The LED and software drivers are identical for all adapter models.

## SC Fiber Optic Adapter

The 2711FX/SC network adapter is equipped with a 100BASE-FX port with the SC adapter for attaching to the SC fiber optic connector.

The SC adapter is shown in Figure 2.


Figure 2. SC Fiber Optic Adapter

To connect the SC adapter to a network cable, you must have a fiber optic network cable with the SC connector.

## LC Fiber Optic Adapter

The 2711FX/LC network adapter is equipped with a 100BASE-FX port with the LC adapter for attaching to the LC fiber optic connector.

The LC fiber optic adapter is shown in Figure 3.

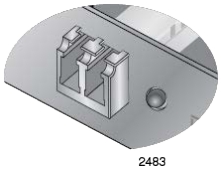



Figure 3. LC Fiber Optic Connector

To connect the LC adapter to a network cable, you must have a fiber optic network cable with the LC connector.

## ST Fiber Optic Adapter

The 2711FX/ST network adapter is equipped with a 100BASE-FX port with the ST adapter for attaching to the ST fiber optic connector.

To connect the ST adapter to a network cable, you must have a fiber optic network cable with the ST connector.

## LED

The network adapter has one LED per model. Table 1 describes the link states that the LED indicates.

Table 1. Fiber LED Status

| State | Description |
|---|---|
| On | Valid link. |
| Off | No link. |
| Flashing | The port is receiving or transmitting network packets at 100 Mbps. |

# Features

The following list shows the features of the 2711 series network adapters:

- One 100BASE-FX port with SC, LC, or ST fiber adapter
- PCI-Express x1 v1.1 interface
- Full/Half duplex MAC
- IPv4 and IPv6 Large Send Offload and Checksum Offload (LSO/TCO)
- Receive Side Scaling (RSS) for multi-core client processors
- Wake on LAN (WOL)
- Statistics for SNMP MIB II, Ethernet-like MIB, and Ethernet MIB (802.3z, Clause 30)
- Flow Control (IEEE 802.3x)
- VLAN Tag support ((802.1Q)
- Ethernet Priority (802.1P)
- Pre-boot Execution Environment (PXE) v2.1
- Audio/Video Bridging (AVB)
- Jumbo Packet
- 40KB Receive Buffer
- 22KB Transmit Buffer
- Link/Activity LED

# Supported Operating Systems

The following list shows the supported operating systems for the 2711 series network adapters:

- Windows 11
- Windows 10
- Windows Server 2022
- Windows Server 2019
- Linux

## Windows Driver

To install driver software for Windows-based operation systems, see Chapter 3, “Installing the Driver Software for Windows Systems” on page 31.

## Linux Driver

To install driver software for Linux operation systems, see Chapter 4, “Configuring the Ethernet Interface for Linux Systems” on page 43.

# Accessing Documents

Documents for 2711 series network adapters are available at Allied Telesis websites.

## Allied Telesis Documents

To access these documents, 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/

2. Enter “2711” in the search box and press Enter.

3. Click one of the listed documents.

   The content of the document is displayed.

# Contents of Your Shipment

The following items are Included with your network adapter:

- Antistatic bag

  The antistatic bag protects the network adapter when stored or shipped. Keep the network adapter in its packaging until ready for installation.

- Standard-profile bracket

  The standard-profile bracket is longer than the low-profile bracket. The 2711 series network adapters are shipped with a low-profile bracket attached.

> **Note**
> The 2711 series network adapter is not shipped with a software driver CD. You must download the driver software from the Allied Telesis website. See Chapter 3, “Downloading the Driver Software” on page 33.

Inform your network equipment supplier of any missing or damaged items. If you need to return the module, you must pack it in the original (or equivalent) packing material or the warranty will be voided. See “Contacting Allied Telesis” on page 10.

# 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
- “Pre-Installation Checklist” on page 23
- “Replacing the Bracket” on page 24
- “Installing a Network Adapter” on page 26
- “Connecting the Network Cables” on page 30

# System Requirements

Before installing the 2711 Series Fiber Fast Ethernet Network Adapter, make sure your system meets the requirements listed below:

- PC with one of the following operating systems installed:
  - Windows 11
  - Windows 10
  - Windows Server 2022
  - Windows Server 2019
  - Linux
- One open PCIe-Ex1 (Express) slot
- 128 MB RAM (minimum)

# Reviewing Safety Precautions

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

**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**
This is a “Class 1 LED product”. ✍ L3

**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 40 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

# Pre-Installation Checklist

Before installing the 2711 series network adapter, check the following list:

1. Check that your computer has an appropriate open PCIe slot.
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.
6. Holding the network adapter by the edges, remove it from its shipping package and place it on an antistatic surface.
7. Check the adapter for visible signs of damage, particularly on the card's edge connector.

**Caution**
Never attempt to install any damaged network adapter. If the network adapter is damaged, report it to Allied Telesis. See "Contacting Allied Telesis" on page 10.

# Replacing the Bracket

The 2711 series network adapter is shipped with the low-profile bracket attached to the adapter. Depending on your system, you may need to replace the bracket attached to your network adapter.

The following procedure describes how to remove the low-profile bracket from the network adapter and replace it with the standard bracket. You can also use this procedure to remove the standard bracket and replace it with the low-profile bracket.

To replace the low-profile bracket with the standard bracket, perform the following procedure:

1. Remove the screws that attach the bracket to the network adapter. See Figure 4.

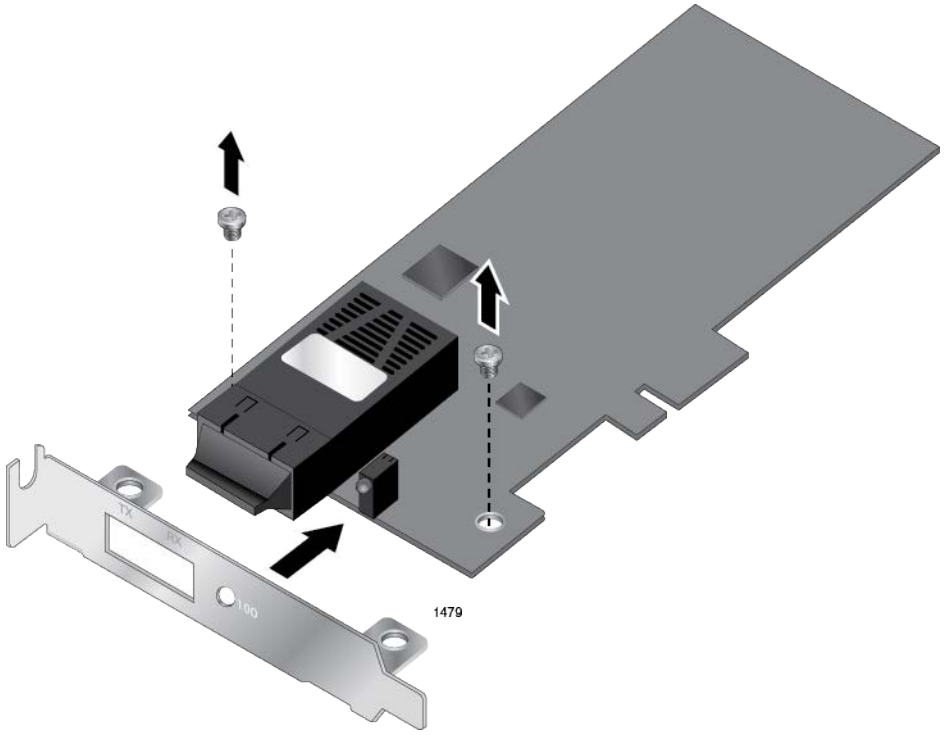



Figure 4. Removing the Low-Profile Bracket

2. Align the tabs of the standard bracket with the holes on the adapter card and fasten the screws onto the adapter card. See Figure 5 on page 25.

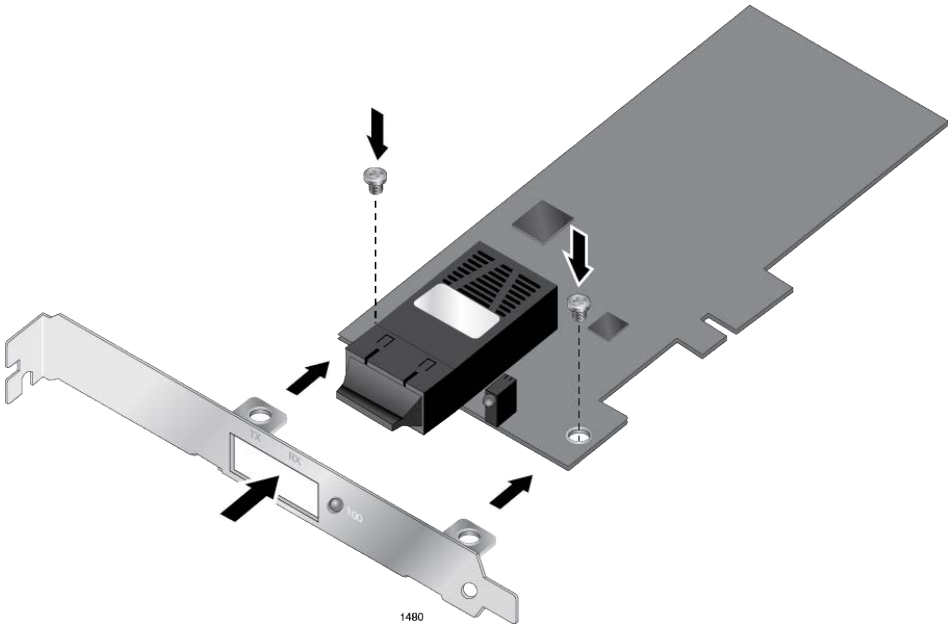



Figure 5. Fastening Screws onto Standard Bracket

# Installing a Network Adapter

The following instructions apply to installing an 2711 series network adapter in most systems. Refer to the manuals that were supplied with your system for details about performing these tasks on your particular system.

To install the network adapter, perform the following procedure:

1. Review the “Pre-Installation Checklist” on page 23 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**
High voltage inside the system presents a safety hazard. Make sure the power is off before removing the cover.

2. Remove the system cover and select any empty PCIe slot. See Figure 6.

   If you do not know how to identify a PCIe slot, refer to your system documentation.

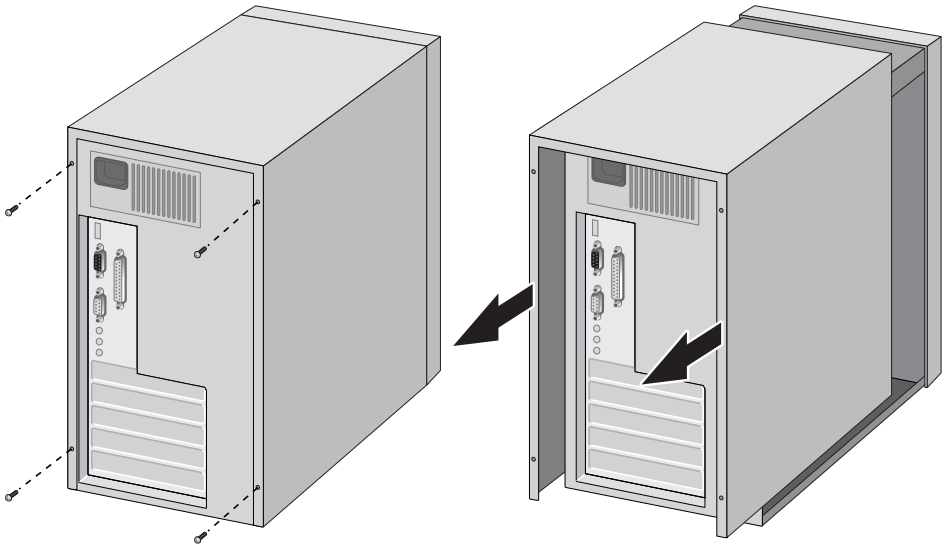


Figure 6. Removing the PC Cover

3. Select an empty, non-shared PCIe slot and remove the faceplate.

   Keep the faceplate in a safe place. You may need it for future use. See Figure 7.

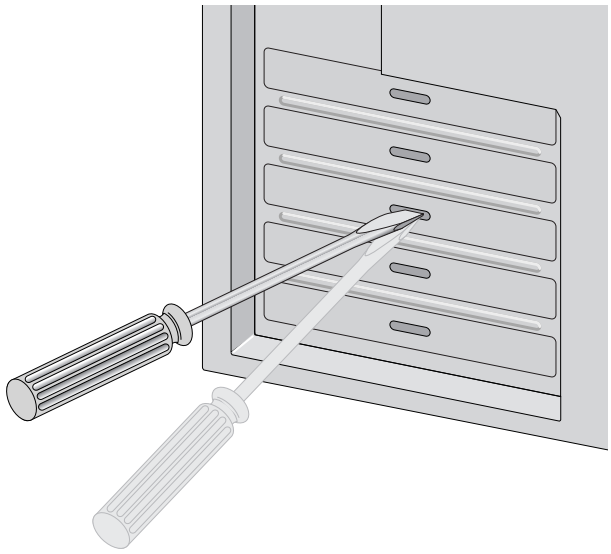


Figure 7. Removing the Faceplate From PCI Slot

**Note**
If you cannot locate or know how to find an PCIe slot, refer to the documentation that came with your system.

4. Remove the network adapter from the shipping package and store the packaging material in a safe location.

**Caution**
Wear a grounding device and observe electrostatic discharge precautions when installing the network adapter in a system. Failure to observe this caution could result in damage to the network adapter.

5. Applying even pressure at both corners of the card, push the network adapter until it is firmly seated in the PCIe slot.

   Make sure the card is securely seated. See Figure 8 on page 28.

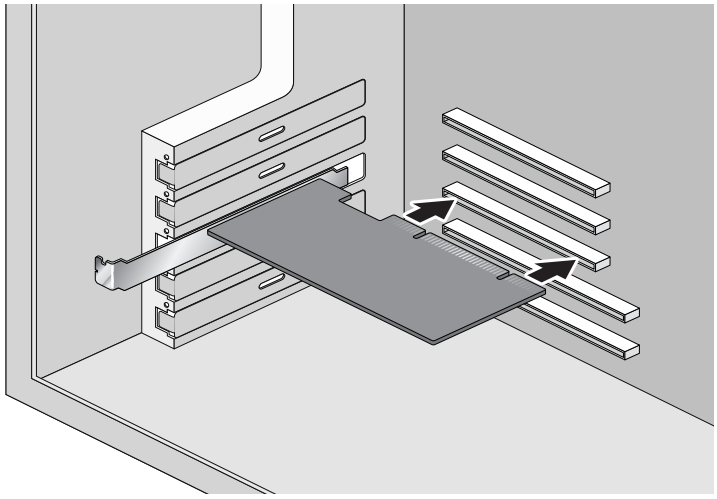


Figure 8. Inserting the Network Adapter Card

**Caution**

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

6. Secure the network adapter card to the chassis with a Phillips-head screw (not provided) as shown in Figure 9.

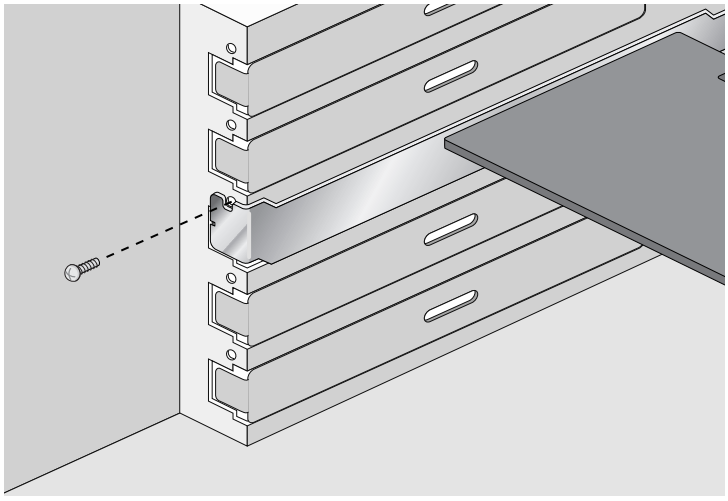


Figure 9. Securing the Adapter Card

7. Replace the system's cover and secure it with the screws removed in Step 2.

8. Disconnect any personal antistatic devices.

9. Power the system on.

**Note**
If you installed the network adapter in a Microsoft Windows system before installing the driver software, the Found New Hardware Wizard launches automatically. For more information, see Chapter 3, “Installing the Driver Software for Windows Systems” on page 31.

When the system returns to proper operation, the adapter hardware is fully installed. Next, connect the network cables. See “Connecting the Network Cables” on page 30.

# Connecting the Network Cables

The 2711 series network adapter card is equipped with one of three types of fiber optic adapters: SC, LC, and ST.

To connect a network cable to the adapter, perform the following procedure:

1. Prepare a fiber optic cable with an appropriate connector to your adapter.

**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.

2. Remove a rubber plug from the adapter.
3. Connect one end of the cable to the adapter.
4. Connect the other end of the cable to the appropriate Ethernet network port or fiber optic port.

**Note**
After the cable is properly connected at both ends, the network adapter LED should be functional. See Table 1 on page 13 for a description of LED operation.

Chapter 3

# Installing the Driver Software for Windows Systems

This chapter describes how to install driver software for the 2711 series network adapter onto your operating system. It contains the following topics:


- ❒ “Overview” on page 32
- ❒ “Downloading the Driver Software” on page 33
- ❒ “Installing the Driver Software” on page 35
- ❒ “Updating the Driver Software” on page 37
- ❒ “Installing the Software Driver in the Silence Mode” on page 40

# Overview

When you install the 2711 series network adapter on your computer, 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 deriver 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 or updating the driver software on your operating system:

- To install or update the driver software, you must have administrative privileges.
- When you install the 2711 series network adapter on your computer and start the Windows system, it detects a new adapter and install a Broadcom driver; however, you must update the driver software that Allied Telesis provides for the 2711 series 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 33
- “Installing the Driver Software” on page 35

## Updating the Driver Using Device Manager

To update the driver software using Device Manager, perform the following tasks:

- “Downloading the Driver Software” on page 33
- “Updating the Driver Software” on page 37

## 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 33
- “Installing the Software Driver in the Silence Mode” on page 40

# Downloading the Driver Software

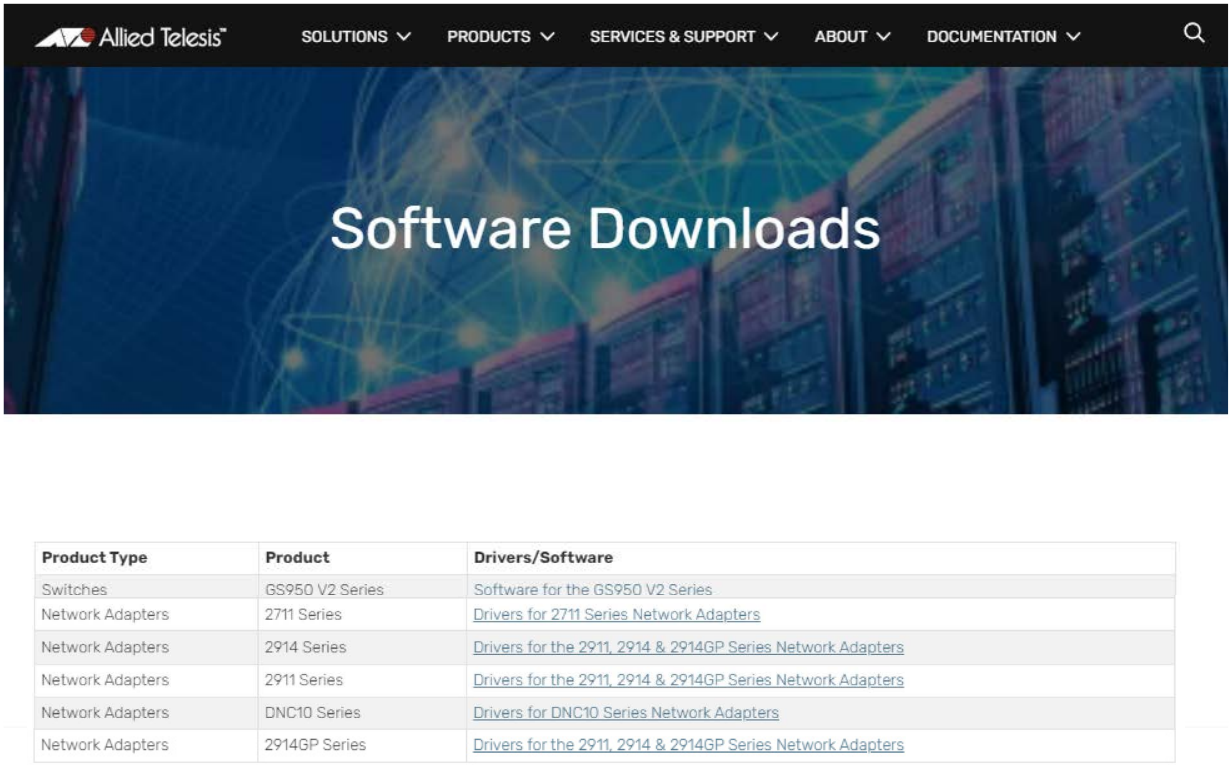
The 2711 series network adapter is not shipped with a software driver CD. You must download driver software from the Allied Telesis website.

To download driver software, do the following:

1. Open a web browser, such as Internet Explorer or FireFox, on your system.
2. Enter the following URL:

   **http://www.alliedtelesis.com/support/software**

   The Software Downloads page is displayed as shown in Figure 10.




| Product Type | Product | Drivers/Software |
|---|---|---|
| Switches | GS950 V2 Series | Software for the GS950 V2 Series |
| Network Adapters | 2711 Series | Drivers for 2711 Series Network Adapters |
| Network Adapters | 2914 Series | Drivers for the 2911, 2914 & 2914GP Series Network Adapters |
| Network Adapters | 2911 Series | Drivers for the 2911, 2914 & 2914GP Series Network Adapters |
| Network Adapters | DNC10 Series | Drivers for DNC10 Series Network Adapters |
| Network Adapters | 2914GP Series | Drivers for the 2911, 2914 & 2914GP Series Network Adapters |

Figure 10. Software Downloads Page

3. Find the driver for the 2711 Series Network Adapters and click the link.
4. Save the zip folder onto your system.

5. Open the ZIP file and extract the driver files.

   The files should have the following extensions:

   - .sys
   - .inf
   - .cat

6. Transfer the files onto an external storage device, such as a flash drive.

7. Transfer the files into a folder on the host device with the 2711 network adapter.

8. Record the location of the folder with the driver files.

9. Perform one of the following options:

   - ❒ To install the driver with Device Manager, go to “Installing the Driver Software” on page 35.
   - ❒ To install the driver with Device Manager, go to “Updating the Driver Software” on page 37.
   - ❒ To install the driver with silent installation, go to “Installing the Software Driver in the Silence Mode” on page 40.

# Installing the Driver Software

To install the driver software onto the 2711 network adapter for the first time, perform the following procedure:

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

1. Open Device Manager.

   There are several ways to open Device Manger. One of them is by opening the Start button in the bottom left corner of the screen, type “device manager,” then click the Device Manger icon.

   The Device Manager window appears as shown in Figure 11.

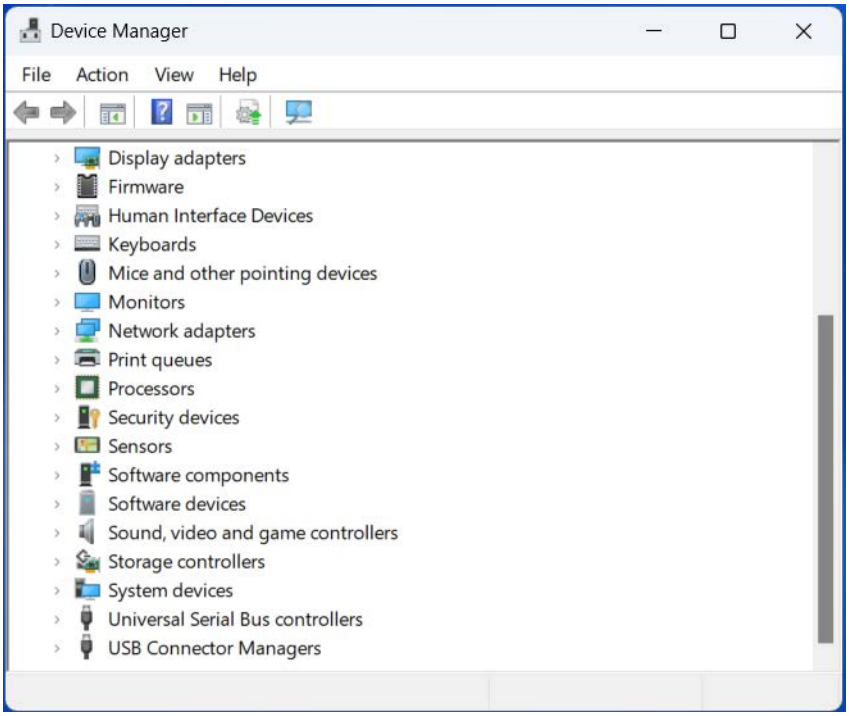



Figure 11. Device Manager

2. In the Device Manager window, double-click **Network adapters** to expand the field.

3. Right-click **Broadcom NetXtreme Ethernet Controller device** to display the shortcut menu.

4. In the shortcut menu, select **Update driver**. See Figure 12.

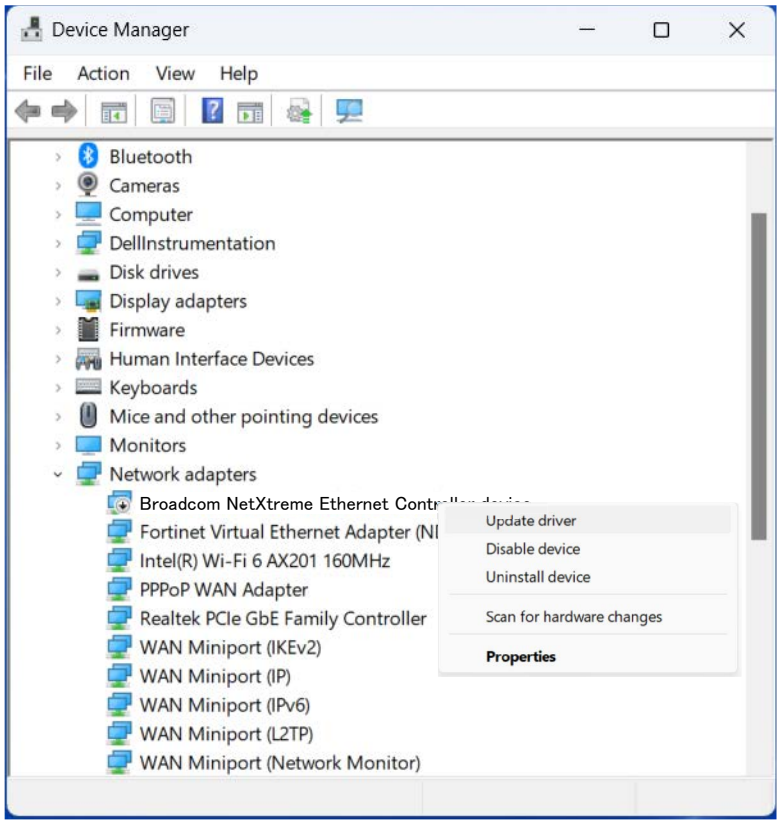



Figure 12. Ethernet Controller in Device Manager

The update driver window prompts you to select either **Search automatically for drivers** or **Browse my computer for drivers**.

5. Select **Browse my computer for drivers**.

6. Navigate folders and locate the driver that you placed for 2711 series network adapter. See “Downloading the Driver Software” on page 33.

7. Click **Next**.

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

8. Click **Close**.

# Updating the Driver Software

To update the driver software, 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 network adapter that Device Manager detects and lists.

Device Manager lists your 2711 network adapter as *Allied Telesis 2711xXv2 100Mb Fiber Ethernet* once you installed the driver software. Before you install the driver software for the first time, Device Manager lists your adapter as a *Broadcom NetXtreme Ethernet Controller device*.

To update the driver software for your 2711 series network adapter, perform the following procedure:

1. Open Device Manager.

   There are several ways to open Device Manger. One of them is by opening the Start button in the bottom left corner of the screen, type “device manager,” then click the Device Manger icon.

   The Device Manager window appears as shown in Figure 11 on page 35.

2. In Device manger, double-click Network adapters to expand the field.

3. Right-click Allied Telesis **2711xXV2 100Mb Fiber Ethernet** to display the shortcut menu.

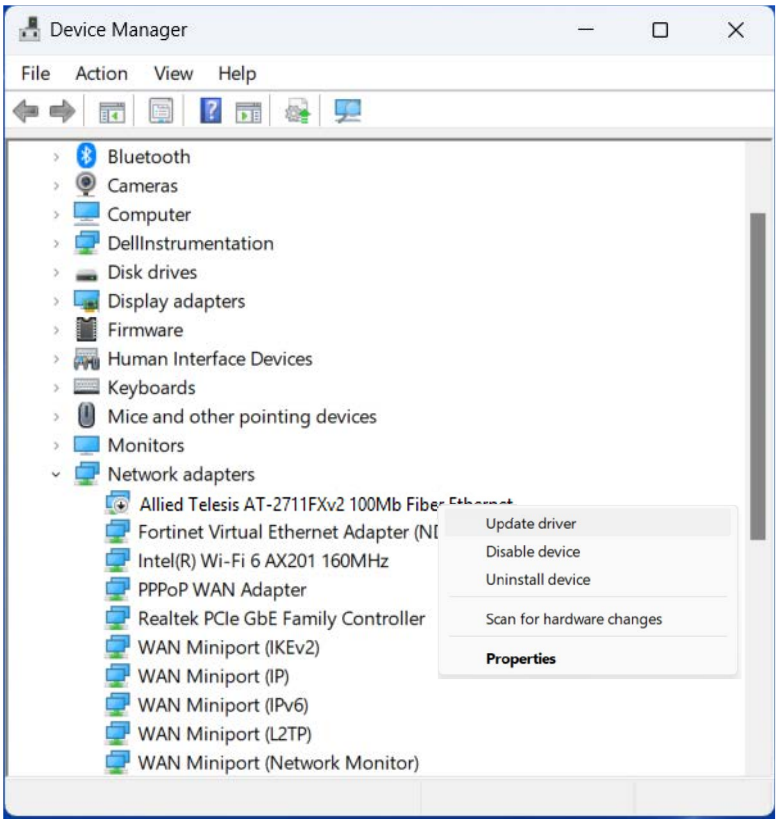



Figure 13. List of Network Adapters in Device Manager

4. In the shortcut menu, select **Update driver** as shown in Figure 13.

   The update driver window prompts you to select either **Search automatically for drivers** or **Browse my computer for drivers**.

5. Select **Browse my computer for drivers**.

6. Navigate folders and locate the driver that you placed for your 2711 series network adapter. See “Downloading the Driver Software” on page 33.

7. Click **Next**.

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

8. Click **Close**.

## Completing the Adapter Driver Installation

To complete the driver installation, restart the host device by performing this procedure:

1. Connect the network adapter to your network.
2. Restart your Windows operating system.

   Wait for the host device to restart the Windows operating system.
3. To test the network adapter, perform “Testing the Network Connectivity with the 2711 Network Adapter” on page 102.
4. To configure the features and parameters on the new network adapter, go to Chapter 5, “Modifying Advanced Properties” on page 49.

# Installing the Software Driver in the Silence Mode

You may install the software driver for the for the 2711 series network adapters in the silence mode. Dialog boxes are suppressed in the silence mode.

> **Note**
> You can apply the silent installation method only to Microsoft certified drivers. The drivers that Allied Telesis provides for the 2711 series network adapters are all 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 2711 series network adapter.

   See “Downloading the Driver Software” on page 33.
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.

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

# Configuring the Ethernet Interface for Linux Systems

This chapter provides procedures for configuring Ethernet interfaces for 2711 series adapters on Linux systems and contains the following sections:


- ❒ “Overview” on page 44
- ❒ “Configuring an Ethernet Interface on Linux Systems” on page 45

# Overview

The 2711 series adapters use a Linux inbox driver to operate. A driver supplied with an operating system is called an inbox driver. Current Linux systems come with the inbox driver that the 2711 series adapters need.

Since the driver software for the 2711 series adapters has already been in place, you do not need to install it; however, the speed and duplex mode are not automatically negotiated. You must disable Auto-negotiation and sets these properties for the 2711 adapter interfaces manually. In addition, you must set the same property values on the port interfaces of the connected switch.

# Configuring an Ethernet Interface on Linux Systems

This section provides how to set speed and duplex mode to the Ethernet interfaces of 2711 series fiber optic adapters. The following is the general instructions for Ubuntu and Red Hat Linux distributions. For other distributions of Linux, consult documentation for your systems.

## Configuring an Ethernet Interface on Ubuntu

To configure Ethernet interfaces of 2711 series adapters:

1. Verify that the `ethtool` utility is installed on your system by entering the following command:

   ```
   ethtool
   ```

   If the `ethtool` utility is not installed on your system, the system shows an error message. If the `ethtool` utility is installed, skip step 2.

2. If your system does not have the `ethtool` utility installed, Install it by entering the following command:

   ```
   sudo apt-get install ethtool
   ```

3. Obtain the name of the Ethernet interface for the 2711 series adapter, such as `eth0` and `eth1`, by entering the following command:

   ```
   ifconfig
   ```

   You have one Ethernet interface per 2711 series network adapter.

   **Note**
   To identify the Ethernet interface of the 2711 series adapter, match the MAC address of the `eth`*N* interface that the `ifconfig` command displays with one on the label of the shipping package.

4. Edit `/etc/network/interfaces` file to disable Auto-negotiation and set the speed and duplex mode by inserting the following statements:

```
auto ethx
iface ethx inet dhcp
pre-up/sbin/ethtool -s ethx speed 100 duplex full autoneg off
```

   **Note**
   Replace "`eth`*x*" with the name of the Ethernet interface that you obtained in step 3. "`eth`*x*" appears three times in the statement.

5. Repeat step 4 for all of the Ethernet interfaces of 2711 series adapters on your system.

6. Save the `/etc/network/interfaces` file.
7. Reboot your Linux system.
8. Verify that your 2711 series adapter is running 100 Mbps in the full-duplex mode by entering the following command:

   `ethtool eth`*x*

   The command output should display:

   ```
   Advertised Auto-Negotiation is No
   Speed is 100
   Duplex mode is Full
   ```

9. Repeat step 8 for all of the Ethernet interfaces of 2711 series adapters on your system.

## Configuring an Ethernet Interface on Red Hat

To configure Ethernet interfaces of 2711 series adapters:

1. Ensure that the `ethtool` utility is installed on your system.

   **Note**
   To verify that the `ethtool` utility is installed or install the `ethtool` utility on your system, consult the documentation for your Red Hat distribution.

2. Obtain the name of the Ethernet interface for the 2711 series adapter, such as `eth0` and `eth1`, by entering the following command:

   `ifconfig`

   You have one Ethernet interface per 2711 series network adapter.

   **Note**
   To identify the Ethernet interface of the 2711 series adapter, match the MAC address of the `eth`*N* interface that the `ifconfig` command displays with one on the label of the shipping package.

3. Create a new file with the name "`ifcfg-eth`*x*" in `/etc/sysconfig/network-scripts` directory.

   For example, if the name of the Ethernet interface that you obtained in step 2 is `eth2`, then create a new file with the name "`ifcfg-eth2`."

4. Edit the `ifcfg-eth`*x* file to include the following information:

```
##############################
DEVICE="ethx"
NM_CONTROLLED="yes"
ONBOOT=yes
HWADDR=xx:xx:xx:xx:xx:xx
TYPE=Ethernet
BOOTPROTO=dhcp
DEFROUTE=yes
PEERDNS=yes
PEERROUTES=yes
IPV4_FAILURE_FATAL=yes
IPV6INIT=no
NAME="auto ethx"
ETHTOOL_OPTS="autoneg off speed 100 duplex full"
##############################
```

**Note**
Replace "ethx" with the name of the Ethernet interface that you obtained in step 2 and *xx:xx:xx:xx:xx:xx* with the hardware address of your adapter. "ethx" appears twice in the file.

5. Save the ifcfg-ethx file.
6. Repeat step 3 to 5 for all of the Ethernet interfaces of 2711 series adapters on your system.
7. Reboot your Linux system.
8. Verify that your 2711 series adapter is running 100 Mbps in the full-duplex mode by entering the following command:

   ```
   ethtool ethx
   ```

   The command output should display:

   ```
   Advertised Auto-Negotiation is No
   Speed is 100
   Duplex mode is Full
   ```

9. Repeat step 8 for all of the Ethernet interfaces of 2711 series adapters on your system.

Chapter 5

# Modifying Advanced Properties

This chapter includes the following topics:


- “Overview” on page 51
- “Accessing Advanced Properties” on page 52
- “802.1p QOS” on page 54
- “802.3az EEE” on page 55
- “ARP Offload” on page 56
- “EEE Control Policies” on page 57
- “Ethernet@WireSpeed” on page 59
- “Flow Control” on page 60
- “Interrupt Moderation” on page 62
- “Checksum Offload” on page 63
- “IPv4 Checksum Offload” on page 64
- “Jumbo Mtu” on page 65
- “Large Send Offload” on page 66
- “Large Send Offload (IPv4)” on page 67
- “Large Send Offload v2 (IPv4)” on page 69
- “Large Send Offload v2 (IPv6)” on page 71
- “Locally Administered Address” on page 72
- “Network Address” on page 74
- “NS Offload” on page 76
- “Priority & VLAN” on page 77
- “Receive Side Scaling” on page 79
- “Maximum Number of RSS Queues” on page 80
- “RSS Queues” on page 81
- “Speed & Duplex” on page 82
- “TCP/UDP Checksum Offload (IPv4)” on page 84
- “TCP/UDP Checksum Offload (IPv6)” on page 86
- “VLAN ID” on page 88
- “Wake Up Capabilities” on page 89
- “Wake on Magic Packet” on page 91

- “Wake on Pattern Match” on page 92
- “WOL Speed” on page 93

# Overview

The 2711 series adapter allows you to modify the advanced properties to meet your requirements. To access the advanced properties, you must 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 2711 series adapter card, and select a feature you want to change its setting.

1. Open the Device Manager.

   There are several ways to open Device Manger. One of them is by opening the Start button in the bottom left corner of the screen, type “device manager,” then click the Device Manger icon.

   The Device Manager window appears as shown in Figure  on page 37.

2. In the Device Manager window, double-click **Allied Telesis** 2711**xXv2 100Mb Fiber Ethernet**.

   The properties window pops up as shown in Figure 14.

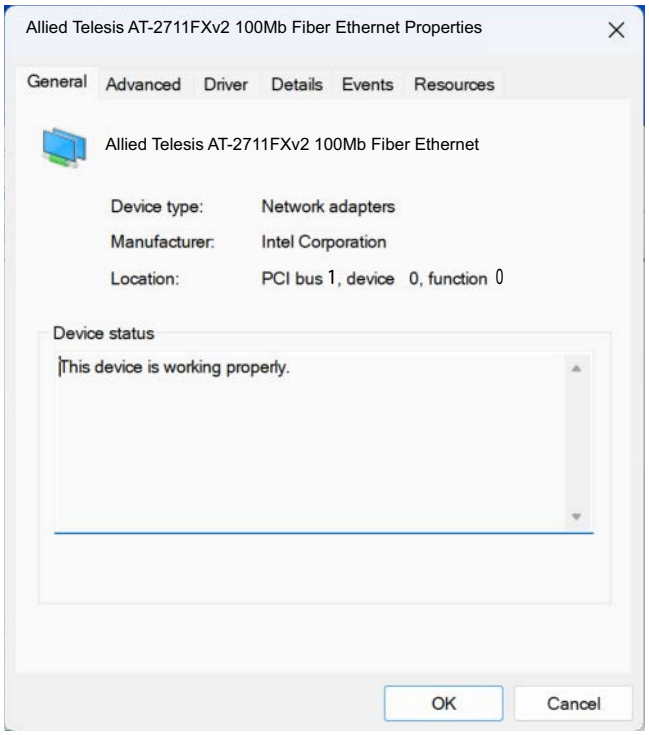



Figure 14. Properties Window

3. Click the **Advanced** tab.

   The Advanced Properties window opens as shown in Figure 15.

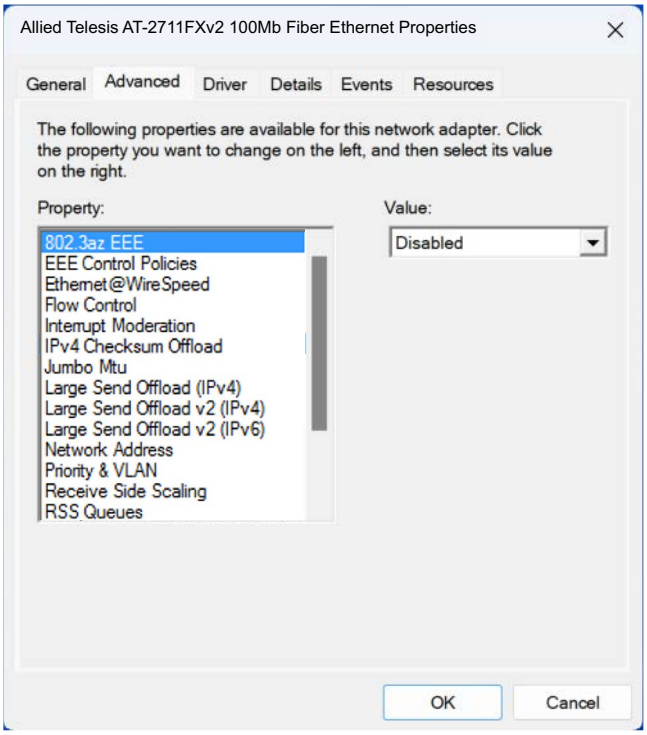



Figure 15. Advanced Properties Window

# 802.1p QOS

The 802.1p QOS property allows you to enable or disable the Quality of Service (QoS) feature on the adapter. QoS is a network standard for managing traffic by assigning priority to packets.

> **Note**
> Enable the 802.1p QOS property only when the network supports QoS.

To enable or disable the 802.1p QOS feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **802.1p QOS** in the Property box.

   The 802.1p QOS page is displayed as shown in Figure 16.

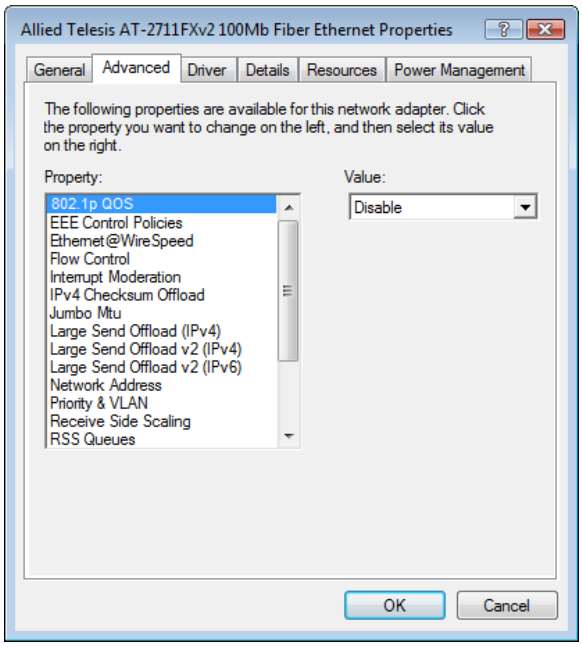



Figure 16. 802.1p QOS Page

3. Select one of the following options:

   - **Disable —** The 802.1p QOS feature is disabled. This is the default setting.
   - **Enable —** The 802.1p QOS feature is enabled.

4. Click **OK**.

# 802.3az EEE

The 802.3az EEE (Energy Efficient Ethernet) is an IEEE standard to optimize the energy usage of copper interfaces over Ethernet.

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

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

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

   The 802.3az EEE page is displayed as shown in Figure 17.

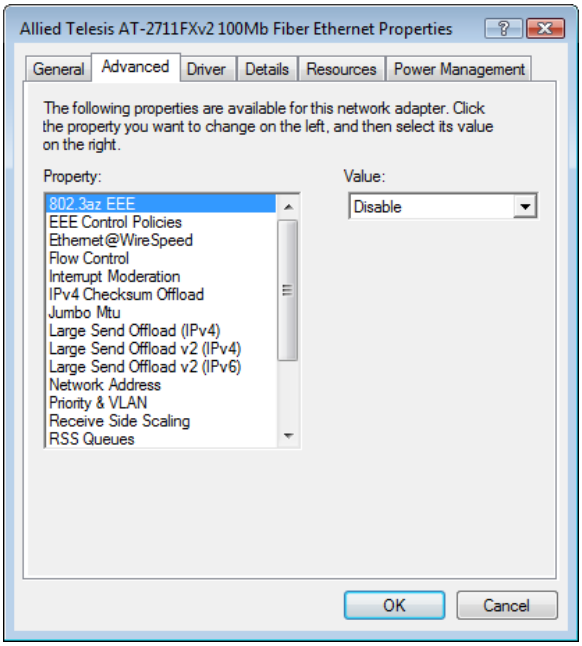



Figure 17. 802.3az EEE Page

   The 802.3az EEE feature is disabled.

3. Click **OK**.

# ARP Offload

The ARP Offload feature enables the adapter not to wake up when responding 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 52.

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

   The ARP Offload page is displayed as shown in Figure 18.

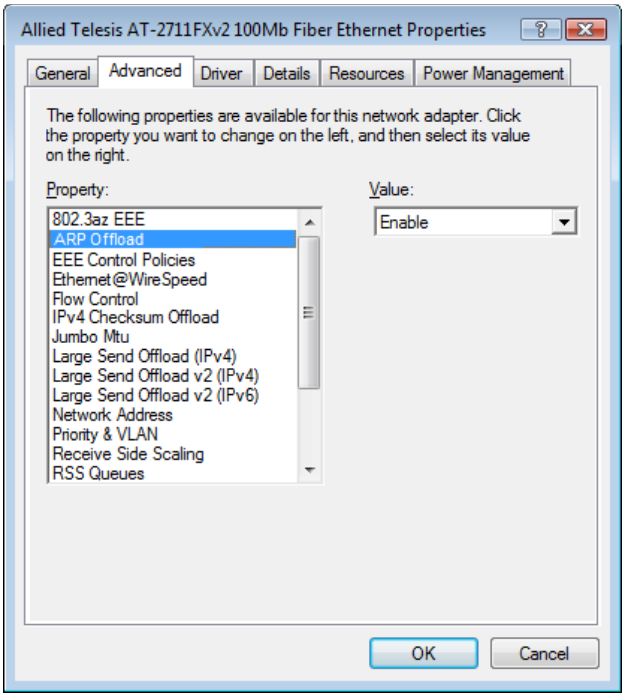



Figure 18. ARP Offload Page

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**.

# EEE Control Policies

The EEE (Energy-Efficient Ethernet) Control Policies feature enables the adapter to manage power for the best performance.

> **Note**
> The options and default setting depend on your operating system and driver version that you installed.

To change the setting of the EEE Control Policies feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **EEE Control Policies** in the Property box.

   The EEE Control Policies page is displayed as shown in Figure 19.

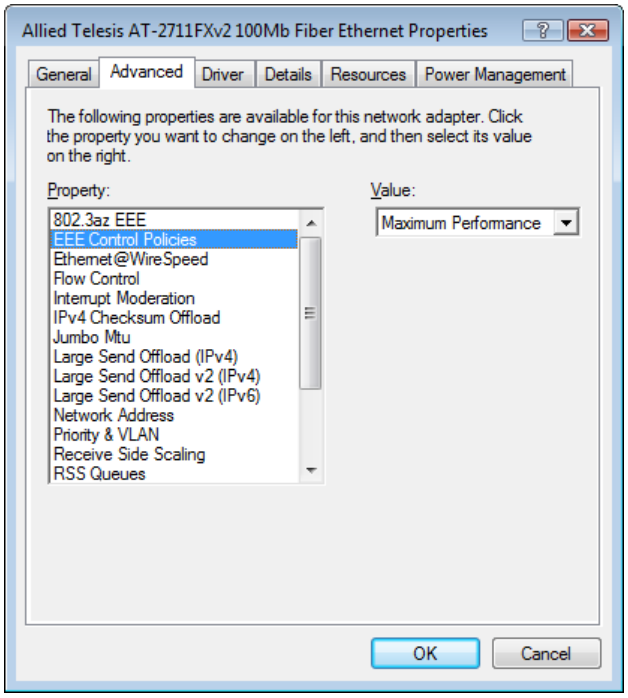



Figure 19. EEE Control Policies Page

3. Select one of the following options if available:

   - **Optimal Power and Performance —** The adapter manages the best trade-off between energy efficiency and performance. This is the default setting.
   - **Maximum Performance —** The adapter manages power for the

best performance.

- **Maximum Power Saving —** The adapter manages power for the best energy saving.

4. Click **OK**.

# Ethernet@WireSpeed

The Ethernet@WireSpeed is a feature to connect two gigabit devices even when the devices are connected through an impaired copper cable.

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

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

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

   The Ethernet@WireSpeed page is displayed as shown in Figure 20.

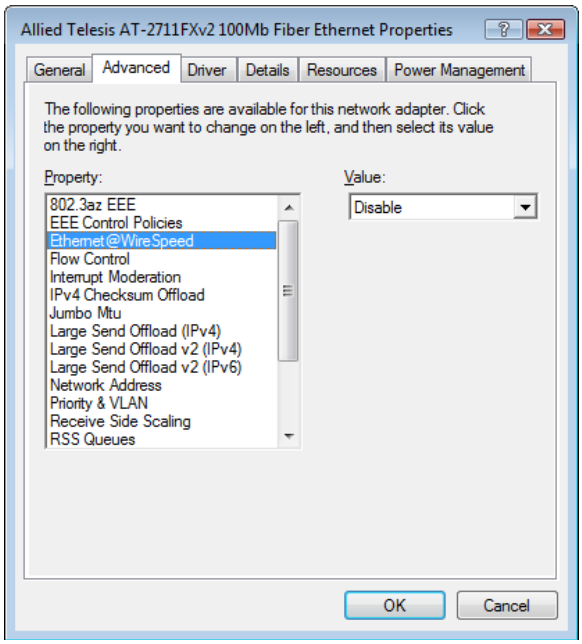



Figure 20. Ethernet@WireSpeed Page

   The Ethernet@WireSpeed feature is disabled.

3. Click **OK**.

# Flow Control

The Flow Control feature allows you to control the flow between the 2711 series adapter and its link partner. You can enable or disable the adapter to process received PAUSE frames and transmit PAUSE frames.

> **Note**
> The options and default setting depend on your operating system and driver version that you installed.

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

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

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

   The Flow Control page is displayed as shown in Figure 21.

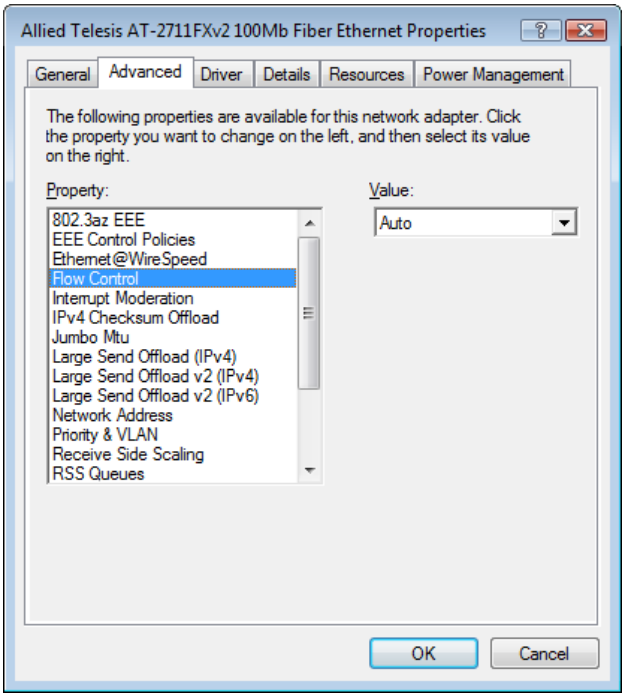



Figure 21. Flow Control Page

3. Select one of the following options:

   - **Auto —** Receiving and transmitting PAUSE frames are optimized.
   - **Disabled —** The adapter ignores PAUSE frames.
   - **Tx & Rx Enabled (Tx/Rx PAUSE) —** The adapter processes PAUSE frames when receiving and transmits PAUSE frames.
   - **Rx Enabled (Rx PAUSE) —** The adapter processes PAUSE frames when receiving, but does not transmit PAUSE frame.
   - **Tx Enabled (Tx PAUSE) —** 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 52.

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

   The Interrupt Moderation page is displayed as shown in Figure 22.

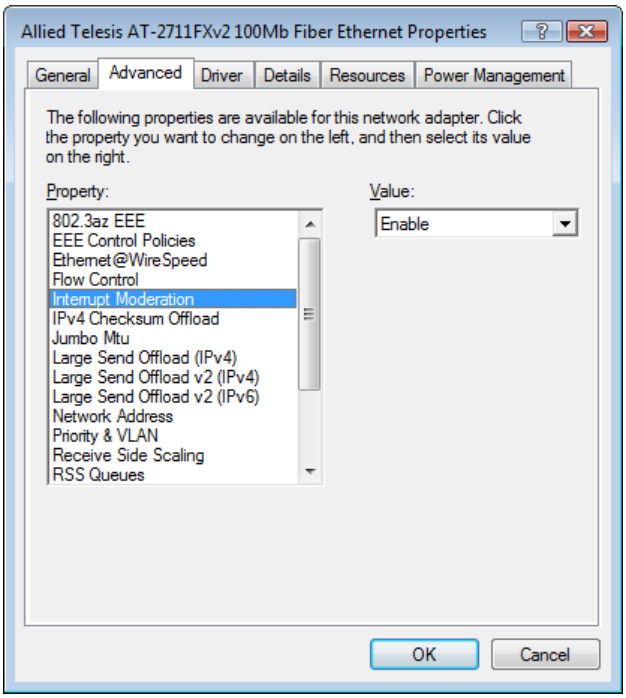



Figure 22. Interrupt Moderation Page

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**.

# Checksum Offload

The Checksum Offload feature allows the adapter to verify the TCP/IP checksum to enhance receive and transmit performance and reduce CPU utilization.

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

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

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

   The Checksum Offload page is displayed as shown in Figure 23.

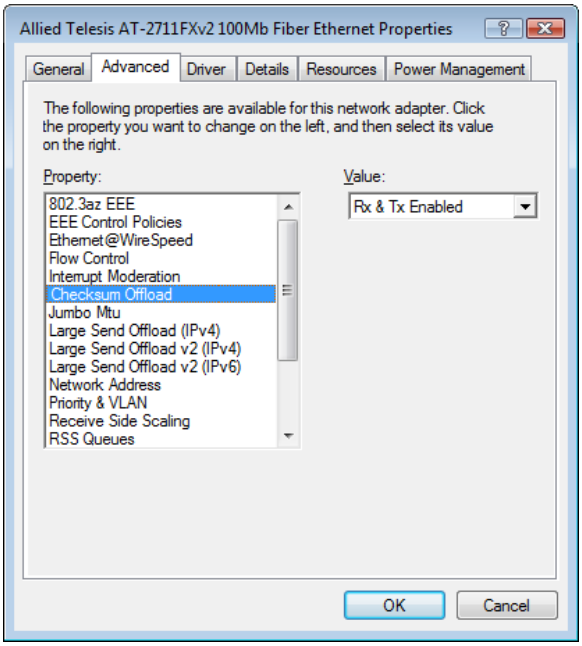



Figure 23. Checksum Offload Page

3. Select one of the following options:

   - **None —** The TCP/IP Checksum feature is disabled.
   - **Rx TCP/IP Checksum —** The adapter verifies TCP/IP Checksum only for receiving packets.
   - **Tx TCP/IP Checksum —** The adapter verifies TCP/IP Checksum only for transmitting packets.
   - **Tx/Rx TCP/IP Checksum —** The adapter verifies Checksum for both receiving and transmitting packets. This is the default setting.

4. Click **OK**.

# IPv4 Checksum Offload

The IPv4 Checksum Offload feature allows the adapter to verify the IPv4 checksum to enhance IPv4 receive and transmit performance and reduce CPU utilization.

To enable or disable the IPv4 Checksum Offload feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **IPv4 Checksum Offload** in the Property box.

   The IPv4 Checksum Offload page is displayed as shown in Figure 24.

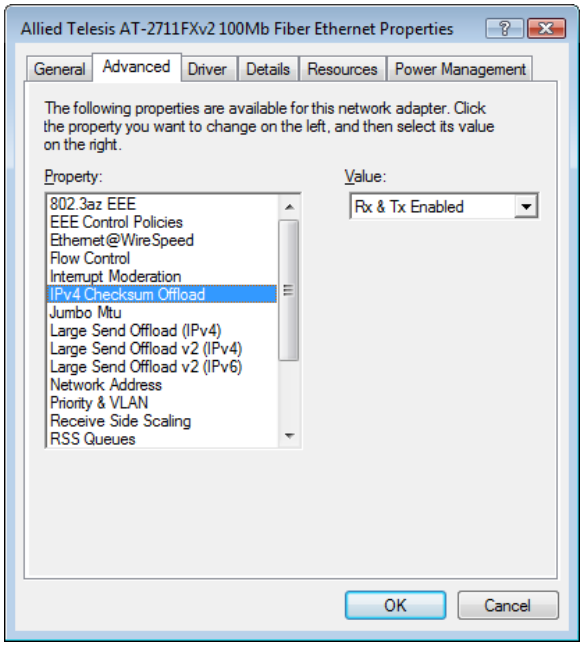



Figure 24. IPv4 Checksum Offload Page

3. Select one of the following options:

   - **Rx & Tx Enabled —** The adapter verifies IPv4 Checksum for both receiving and transmitting packets. This is the default setting.
   - **Disable —** The CPU verifies IPv4 checksum.
   - **Rx Enabled —** The adapter verifies IPv4 Checksum only for receiving packets.
   - **Tx Enabled —** The adapter verifies IPv4 Checksum only for transmitting packets.

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 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 52.

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

   The Jumbo Mtu page is displayed as shown in Figure 25.

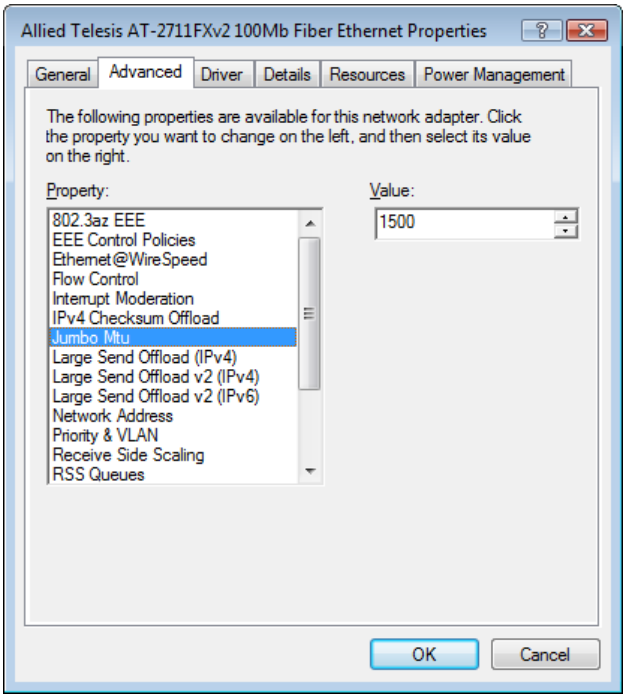



Figure 25. Jumbo Mtu Page

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

The Large Send Offload feature allows you to control the load of sending out large packets. When this feature is enabled, the 2711 series adapter segments large packets and reduces the CPU load.

To enable or disable the Large Send Offload feature, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **Large Send Offload** in the Property box.

   The Large Send Offload page is displayed as shown in Figure 26.

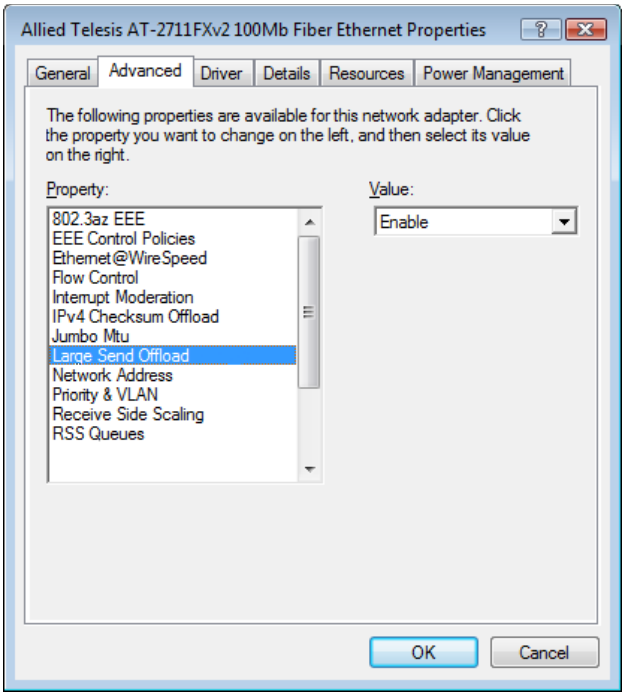



Figure 26. Large Send Offload Page

3. Select one of the following options:

   - **Disable —** This feature is disabled.
   - **Enable —** The adapter segments large packets up to 64kb before sending them out. This is the default setting.

4. Click **OK**.

# Large Send Offload (IPv4)

The Large Send Offload (IPv4) feature allows you to control the load of sending out large packets. When this feature is enabled, the 2711 series adapter segments large packets and reduces the CPU load.

The Large Send Offload (IPv4) feature supports large packets up to 64kb. The Large Send Offload v2 (IPv4), which supports large packets up to 256kb, overrides the Large Send Offload (IPv4) feature if both features are enabled. For more information, see “Large Send Offload v2 (IPv4)” on page 69.

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

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **Large Send Offload (IPv4)** in the Property box.

   The Large Send Offload (IPv4) page is displayed as shown in Figure 27.

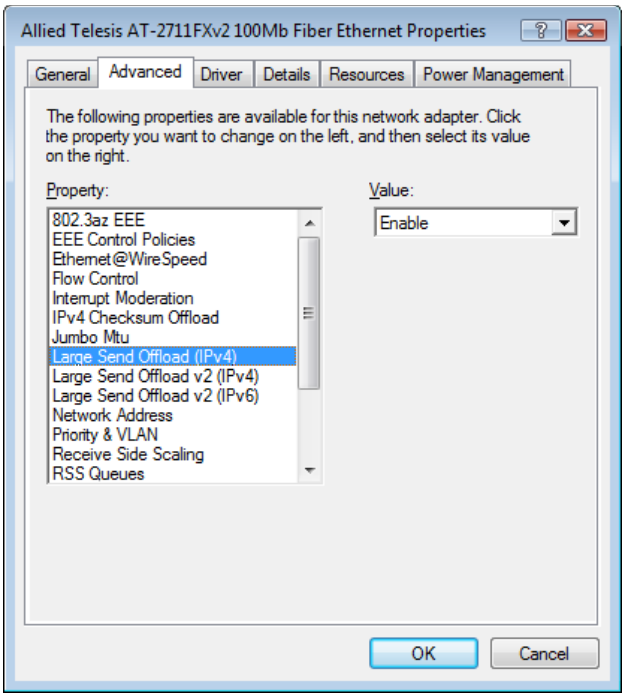



Figure 27. Large Send Offload (IPv4) Page

3. Select one of the following options:

   - **Disable —** This feature is disabled.
   - **Enable —** The adapter segments large packets up to 64kb for IPv4 traffic before sending them out. This is the default setting.

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 2711 series adapter 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 52.

2. Select **Large Send Offload v2 (IPv4)** in the Property box.

   The Large Send Offload v2 (IPv4) page is displayed as shown in Figure 28.

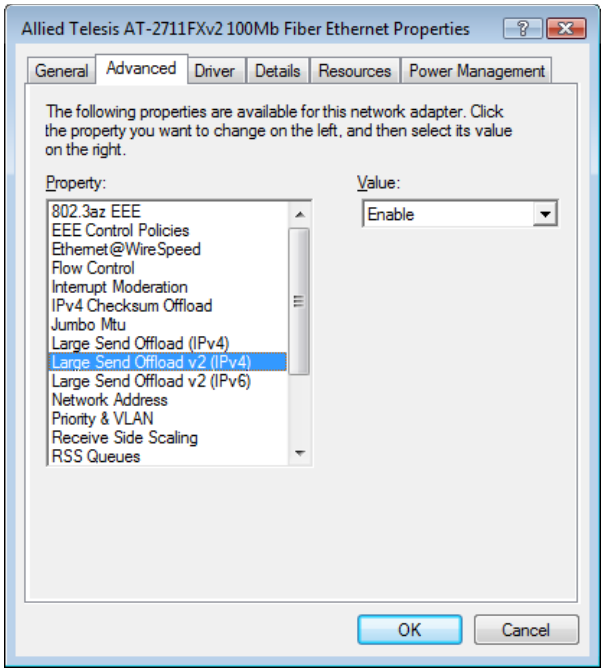



Figure 28. Large Send Offload v2 (IPv4) Page

3. Select one of the following options:

   - **Disable —** The feature is disabled.
   - **Enable —** The adapter 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 2711 series adapter 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 52.

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

   The Large Send Offload v2 (IPv6) page is displayed as shown in Figure 29.

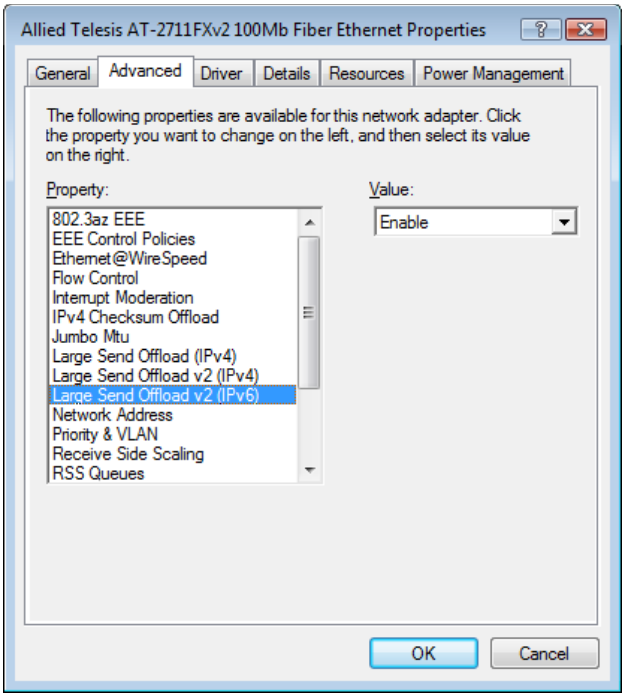



Figure 29. Large Send Offload (IPv6) Page

3. Select one of the following options:

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

4. Click **OK**.

# Locally Administered Address

The Locally Administered Address 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 2711 series network adapter. When you change the MAC address, ensure that a unique MAC address is assigned.

## Guidelines for Assigning a Locally Administered Address

Here are guidelines for assigning a locally administered address:

- The address must be unique.
- The address consists of a 12-digit hexadecimal number, for example, “020C46005501.”
- The address must start with “02” in the most significant byte, for example, “020304050607.”
- Do not assign “0000 0000 0000” or “FFFF FFFF FFFF.”
- The range is from 0200 0000 0000 to 02FF FFFF FFFF.

## Assigning the Locally Administered Address

To assign or change the Locally Administered Address, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **Locally Administered Address** in the Property box.

   The Locally Administered Address page is displayed as shown in Figure 30 on page 73.

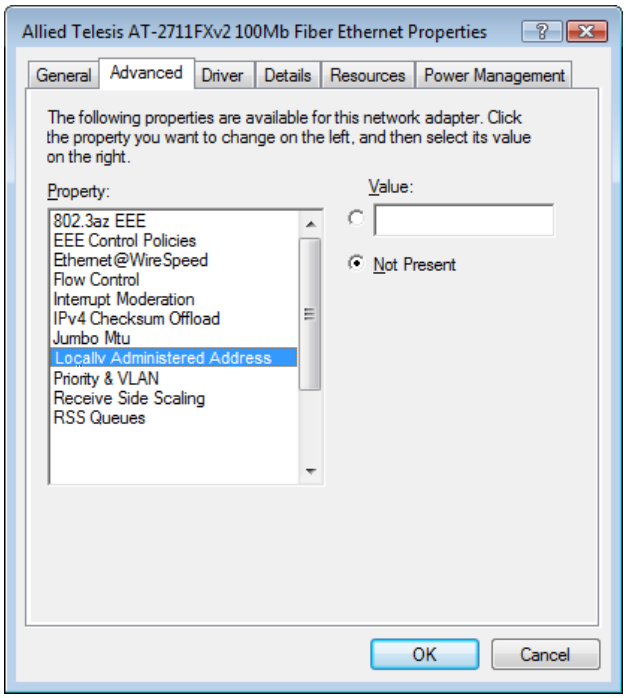



Figure 30. Locally Administered Address Page

3. In the **Value** text box, enter a locally administered address for the 2711 series adapter card.

   By default, no locally administered address is assigned.

   For more information, see “Guidelines for Assigning a Locally Administered Address” on page 72.

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**
The network address overrides the original MAC address stored in the 2711 series network adapter. When you change the MAC address, ensure that a unique MAC address is assigned.

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

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

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

   The Network Address page is displayed as shown in Figure 31.

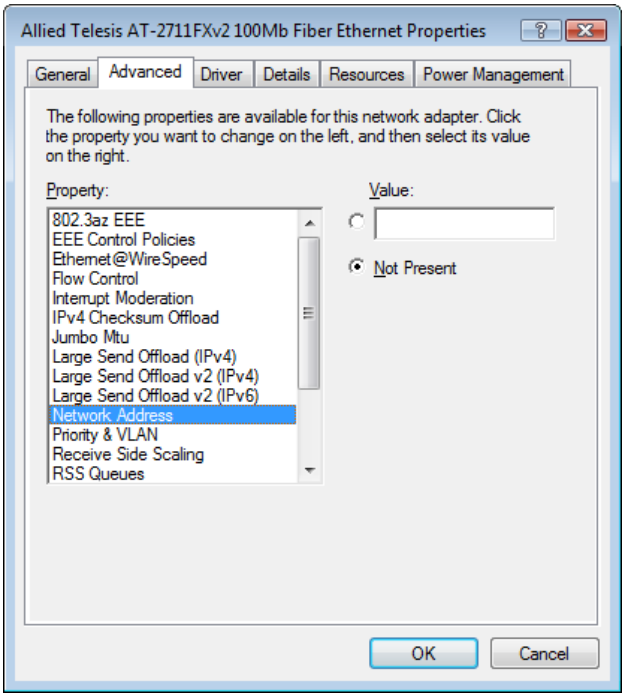



Figure 31. Network Address Page

3. In the **Value** text box, enter a locally administered address for the 2711 series adapter card.

   By default, no locally administered address is assigned.

   For more information, see “Guidelines for Assigning a Locally Administered Address” on page 72.

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 52.

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

   The NS Offload page is displayed as shown in Figure 32.

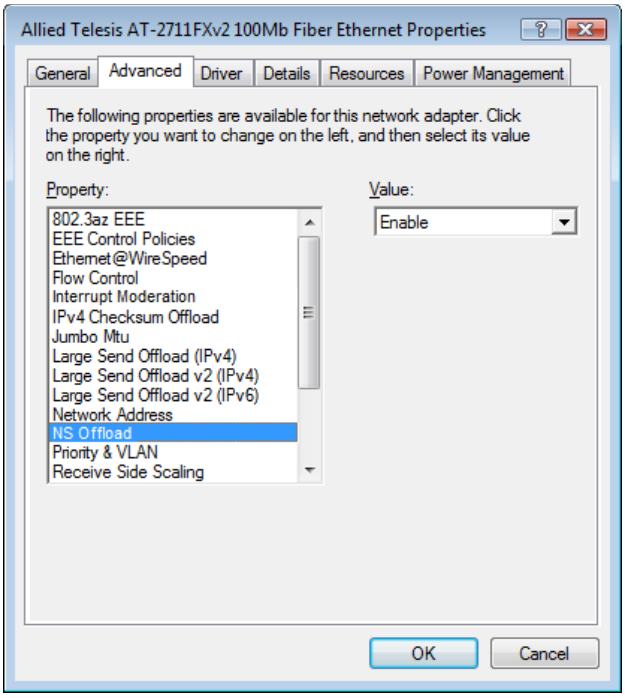



Figure 32. NS Offload Page

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 88.

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

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

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

   The Priority & VLAN page is displayed as shown in Figure 33.

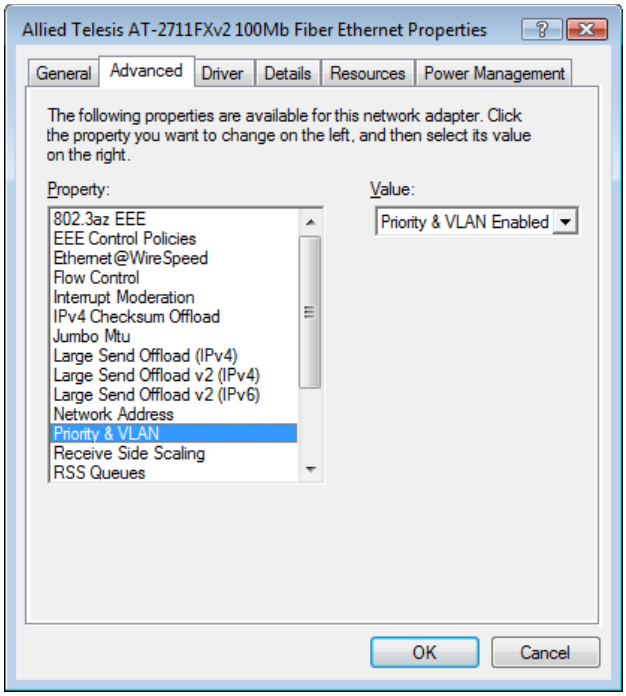



Figure 33. Priority & VLAN Page

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 52.

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

   The Receive Side Scaling page is displayed as shown in Figure 34.

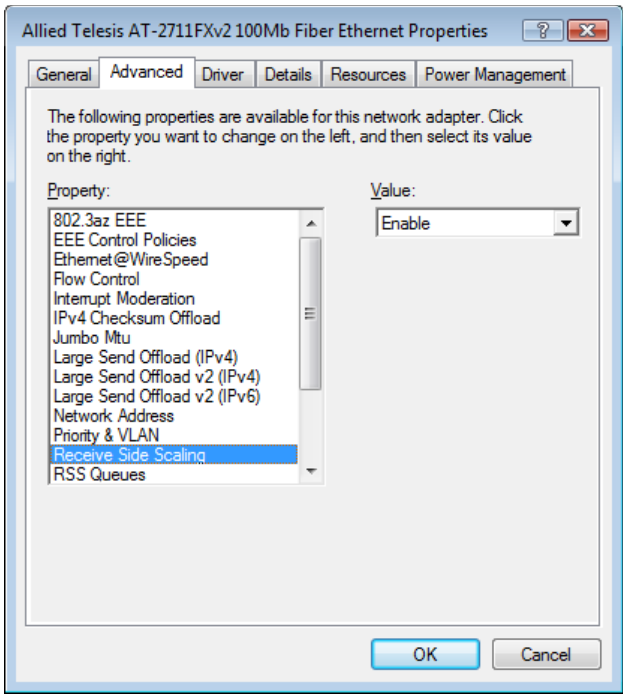



Figure 34. Receive Side Scaling Page

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**.

# Maximum Number of RSS Queues

The Maximum Number of RSS Queues property allows you to specify the maximum number of RSS queues that the adapter assigns receiving data to.

To Specify the Maximum Number of RSS Queues, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **Maximum Number of RSS Queues** in the Property box.

   The Maximum Number of RSS Queues page is displayed as shown in Figure 35.

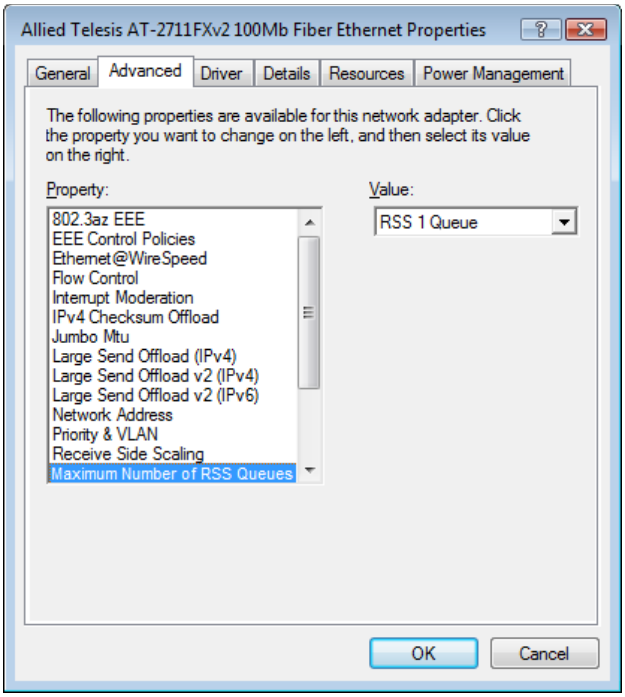



Figure 35. Maximum Number of RSS Queues Page

3. Select one of the following options:

   - **RSS 1 Queue —** The system allocates one RSS queue. This is the default setting.
   - **RSS 2 Queues —** The system allocates two RSS queues.
   - **RSS 4 Queues —** The system allocates four RSS queues.

4. Click **OK**.

# RSS Queues

The RSS Queues feature allocates queue space between the adapter and processor, and allows you to specify the number of RSS queues that the adapter assigns receiving data to.

To Specify the RSS Queues value, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **RSS Queues** in the Property box.

   The RSS Queues page is displayed as shown in Figure 36.

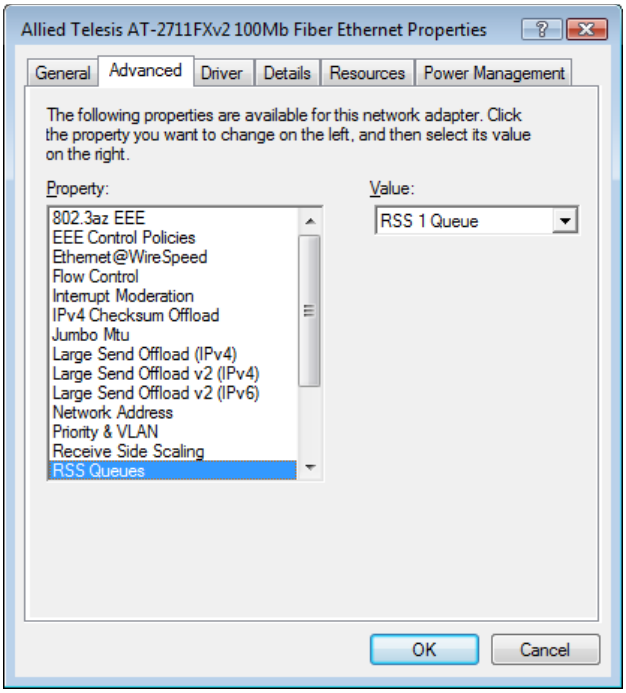



Figure 36. RSS Queues Page

3. Select one of the following options:

   - **RSS 1 Queue —** The system allocates one RSS queue. This is the default setting.
   - **RSS 2 Queues —** The system allocates two RSS queues.
   - **RSS 4 Queues —** The system allocates four RSS queues.

4. Click **OK**.

# Speed & Duplex

The Speed & Duplex feature sets the link speed and duplex mode of the adapter.

> **Note**
> When you change the duplex mode of the adapter, change the duplex mode of the link partner, such as a switch. The mismatch duplex mode may degrade performance and cause CRC errors.

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

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

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

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

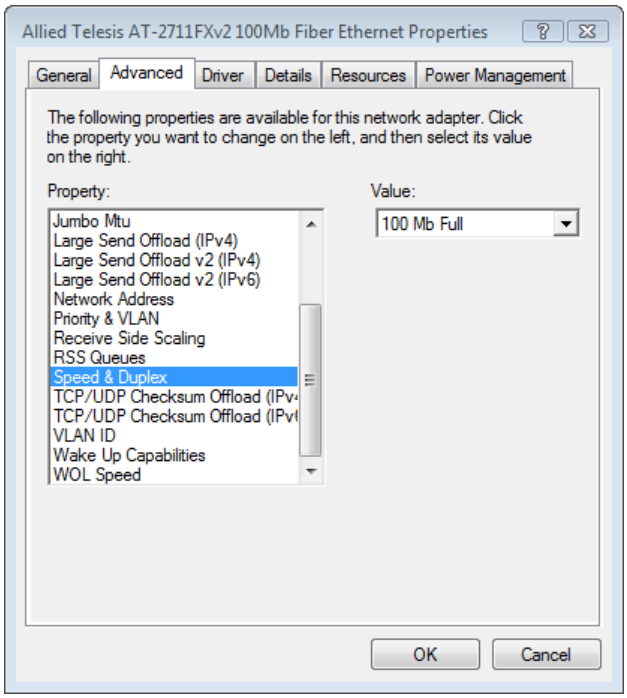



Figure 37. Speed & Duplex Page

3. Select one of the following options:

   - **100 Mb Full (100 Mbps Full Duplex) —** 100 Mbps speed in the half duplex mode. This is the default setting.
   - **100 Mb Half (100 Mbps Half Duplex) —** 100 Mbps speed in the full duplex mode. This is the default setting.

4. Click **OK**.

# TCP/UDP Checksum Offload (IPv4)

The TCP/UDP Checksum Offload (IPv4) function enables the adapter 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 52.

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.

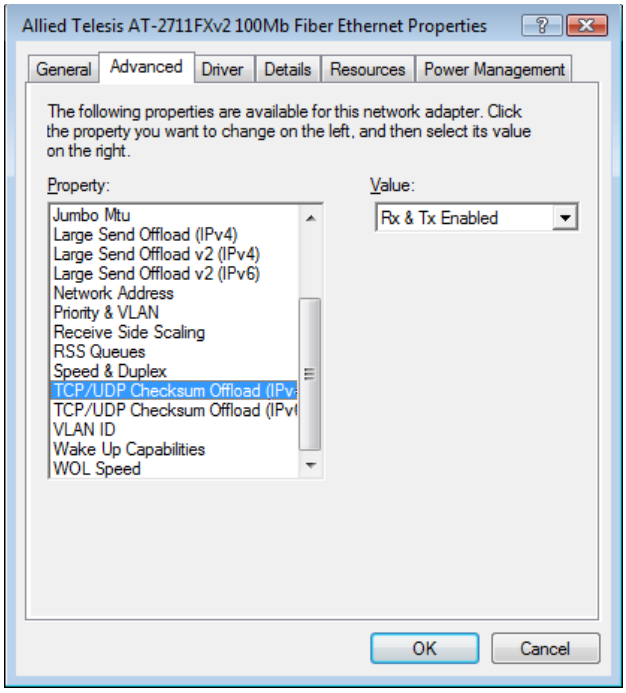



Figure 38. TCP/UDP Checksum Offload (IPv4) Page

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 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 52.

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.

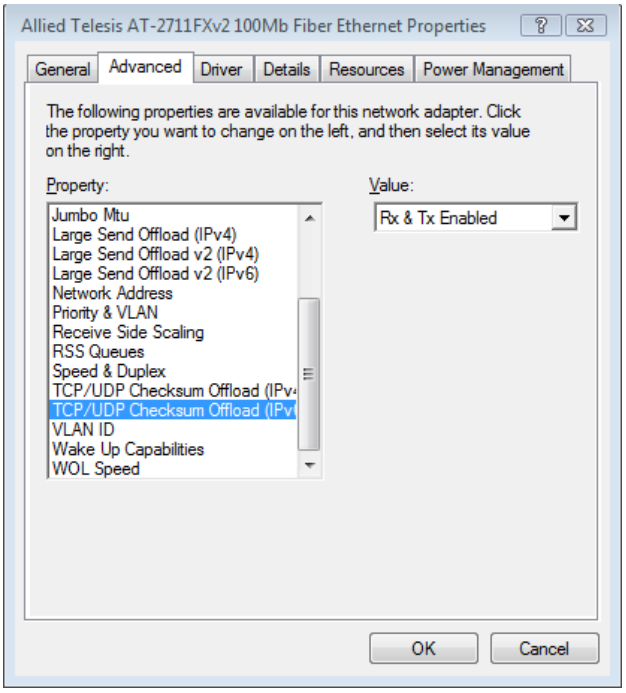



Figure 39. TCP/UDP Checksum Offload (IPv6) Page

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. The adapter 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 52.

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

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

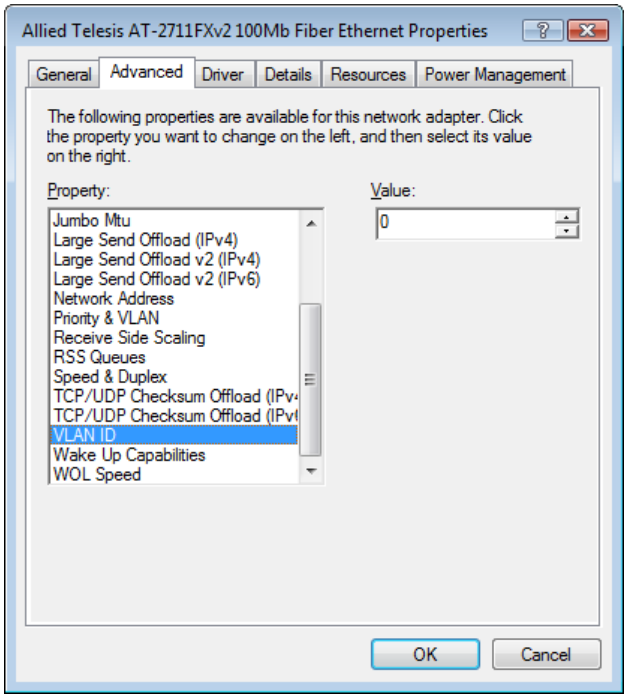



Figure 40. VLAN ID Page

3. Specify an 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 Up Capabilities

The Wake Up Capabilities feature enables the network adapter to wake up from a low-power mode when the adapter receives a network wake-up data unit. Two types of wake-up data units can be accepted: Magic packet and Wake Up frame.

To change the Wake Up Capabilities property, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **Wake Up Capabilities** in the Property box.

   The Wake Up Capabilities page is displayed as shown in Figure 41.

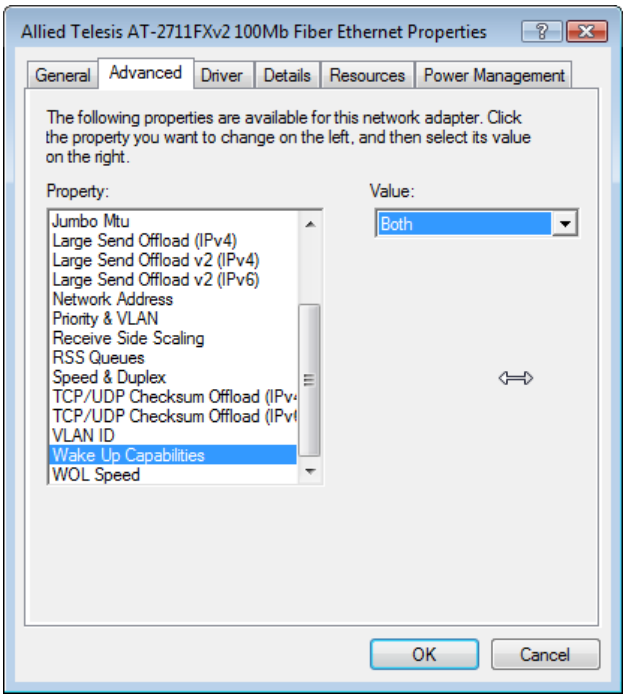



Figure 41. Wake Up Capabilities Page

3. Select one of the following options:

   - **Both —** The adapter wakes up from a low-power mode when receiving a Magic packet or Wake Up frame. This is the default setting.
   - **Magic Packet —** The adapter wakes up from a low-power mode when receiving a Magic packet.
   - **None —** The adapter stays in a low-power mode.
   - **Wake Up Frame —** The adapter wakes up from a low-power mode when receiving a Wake Up frame.

4. Click **OK**.

# Wake on Magic Packet

The Wake on Magic Packet feature enables the network adapter to wake up from a low-power mode when the adapter 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 52.

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

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

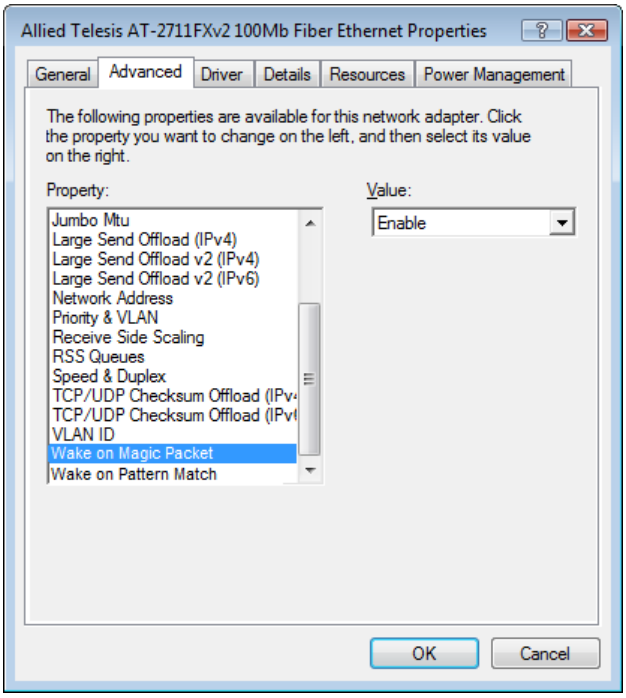



Figure 42. Wake on Magic Packet Page

3. Select one of the following options:

   - **Enable —** The adapter wakes up from a low-power mode when receiving a Magic Packet. This is the default setting.
   - **Disable —** The adapter 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 network adapter to wake up from a low-power mode when the packet matches the wake patterns specified in the operating system.

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

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

2. Select **Wake on Pattern Match** in the Property box.

   The Wake on Pattern Match page is displayed as shown in Figure 41.

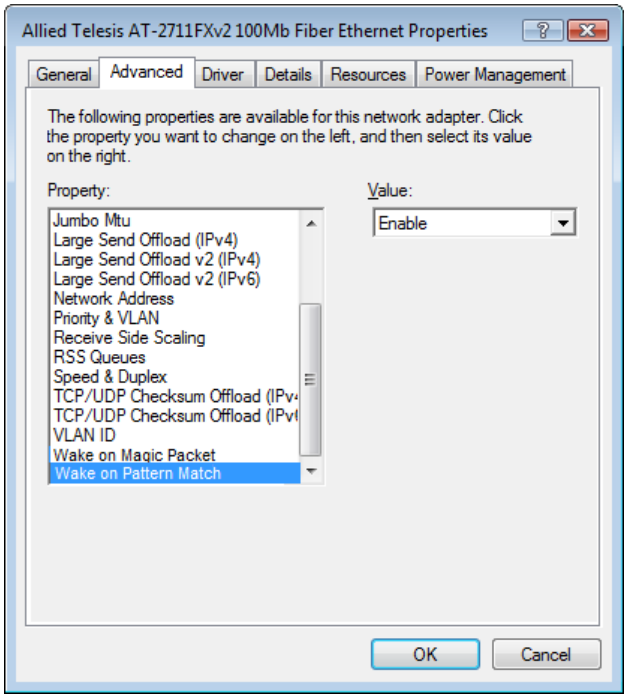



Figure 43. Wake on Pattern Match Page

3. Select one of the following options:

   - **Enable —** The adapter wakes up from a low-power mode when receiving a packet that matches one of the patterns specified in the operating system.
   - **Disable —** The adapter stays in a low-power mode.

4. Click **OK**.

# WOL Speed

The WOL Speed property indicates the speed of Wake-on-LAN setting on your adapter.

To view this setting, do the following:

1. Access the Advanced Properties.

   See “Accessing Advanced Properties” on page 52.

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

   The WOL Speed page is displayed as shown in Figure 41.

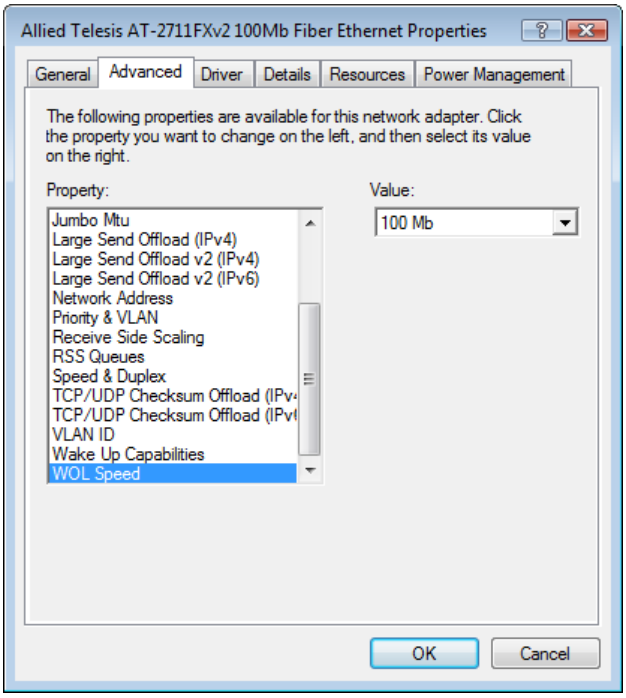



Figure 44. WOL Speed Page

   The WOL Speed is set to 100Mb and has no option.

3. Click **OK**.

Chapter 6

# Uninstalling the Driver Software

This chapter describes how to uninstall the driver software for the 2711 series adapter.

This chapter contains the following topics:


- “Overview” on page 96
- “Uninstalling the Driver Software Using Device Manager” on page 97
- “Uninstalling the Driver Software Silently” on page 98

# Overview

When you no longer use the 2711 series adapter card for your computer, you may want to uninstall the driver software from your operating system.

As you can install driver software for the 2711 series adapter card 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 97
- ❒ “Uninstalling the Driver Software Silently” on page 98


## Guidelines

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

- ❒ You must have Administrator privileges to remove the driver software.
- ❒ Before uninstalling the Allied Telesis device, 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 “Installing the Driver Software” on page 35.
3. In the Device Manager window, expand the Network Adapters folder.
4. Right-click **Allied Telesis AT-2711xXv2 xx 100Mb Fiber Ethernet**.

   The shortcut menu appears. See Figure 45.

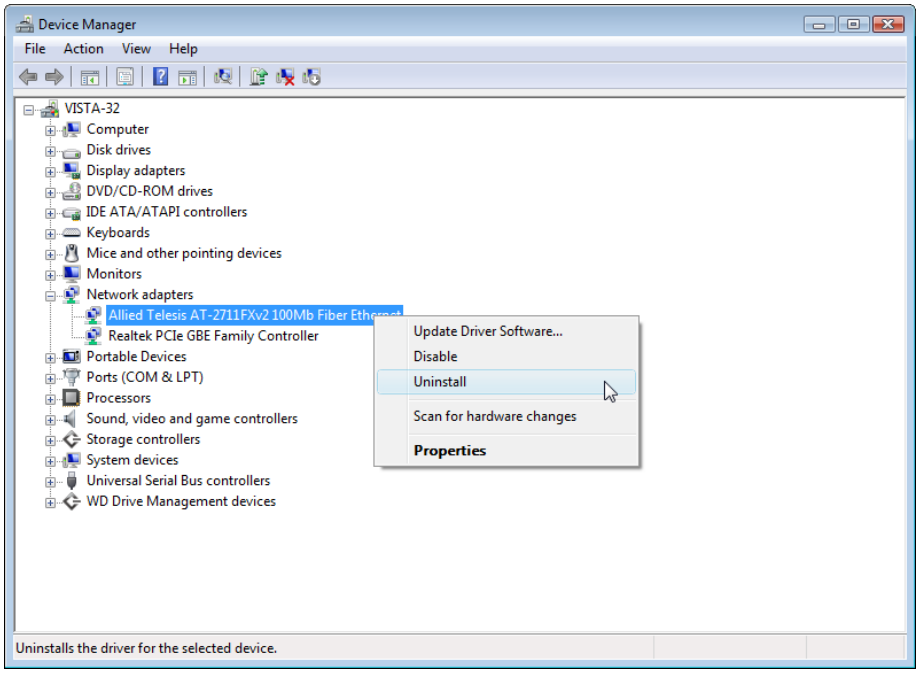



Figure 45. Confirm Device Uninstall Window

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 uninstall.

# Uninstalling the Driver Software Silently

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

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 7

# Troubleshooting

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


- ❒ “Checking the Port LED on the Adapter” on page 100
- ❒ “Troubleshooting Checklist” on page 101
- ❒ “Testing the Network Connectivity with the 2711 Network Adapter” on page 102

# Checking the Port LED on the Adapter

The 2711 fiber network adapter has one port LED. You can use the status of the port LED for troubleshooting.

**Note**
Before the port LED can provide troubleshooting information, the driver software for your particular operating system must be installed and the network adapter must be connected to the network. See Chapter 3, “Installing the Driver Software for Windows Systems” on page 31 or “Configuring the Ethernet Interface for Linux Systems” on page 43.

Table 2 describes the link states that the LED indicates.

Table 2. Fiber Optic Port 100 LED Status

| State | Description |
|---|---|
| On | The port is operating at 100 Mbps and has a valid link. |
| Off | No valid link is present. |
| Flashing | The port is receiving or transmitting network packets at 100 Mbps. |

# Troubleshooting Checklist

The following checklist provides recommended actions to take to resolve problems installing the 2711 series network adapter or running it in your system.

**Warning**
Before opening the cabinet of 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 the Network Cables” on page 30."
- ❒ Check the adapter installation by reviewing Chapter 2, “Installing the Hardware” on page 19.
- ❒ Make sure that the adapter card is properly seated in a PCIe slot. Check for specific hardware problems, such as obvious damage to board components or the PCIe edge connector.
- ❒ 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.
- ❒ Try inserting the adapter card in another slot. If the new position works, the original slot in your system may be defective.
- ❒ Replace the failed network adapter with one that is known to work properly. If the second network adapter works in the slot 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.
- ❒ Remove all other adapter cards from the system and run the tests again. If the adapter card passes the tests, the other adapter cards may be causing contention.

# Testing the Network Connectivity with the 2711 Network Adapter

This section describes how to test network connectivity in Windows and Linux system.

You can test the connectivity of the 2711 network adapter either from the host device or another device in the same network. Choose a test method from the following options:

- For the Linux system, go to “Linux” on page 103.
- If the host device where you installed the 2711 network adapter has other network adapters, go to “Testing the 2711 Network Adapter from Another Device,” next.
- If the 2711 network adapter is only one network adapter installed in the host device, you can use either method:
  - “Testing the 2711 Network Adapter from Another Device,” next
  - “Testing the 2711 Network Adapter from the Host Device” on page 103

## Testing the 2711 Network Adapter from Another Device

If the host device where you installed the 2711 network adapter has other network adapters, test the connectivity from another device in the network.

To test the connectivity of the network adapter from another device in the network, perform the following procedure.

1. Complete the adapter driver installation. See “Completing the Adapter Driver Installation” on page 39.
2. Assign an IP address to the 2711 network adapter.

   The IP address can be a static address that you manually assigned it or a dynamic address from a DHCP server.
3. If you do not know the IP address of the 2711 network adapter, start Command Prompt.

   There are several ways to start Command Prompt. One of therm is by clicking the Start icon in the bottom left corner of the host device’s screen. In the search box, type `cmd` and press Enter.
4. Issue the `ipconfig /all` command at the prompt and remember the IP address of the 2711 network adapter.
5. From another device in the same network, issue `ping` command with the IP address of the 2711 network adapter at Command Prompt.
6. Check the ping results.

## Testing the 2711 Network Adapter from the Host Device

If the 2711 network adapter is only one network adapter installed in the host device, you can test the connectivity from the host device of the 2711 network adapter.

To test the connectivity of the network adapter, perform the following procedure.

1. Complete the adapter driver installation. See “Completing the Adapter Driver Installation” on page 39.
2. Assign an IP address to the 2711 network adapter.

   The IP address can be a static address that you manually assigned it or a dynamic address from a DHCP server.
3. Start Command Prompt.

   There are several ways to start Command Prompt. One of therm is by clicking the Start icon in the bottom left corner of the host device’s screen. In the search box, type `cmd` and press Enter.
4. Issue the `ping` command with the IP address of another device in your network at the system.

   Example: `ping 192.168.1.30`
5. Check the ping results.

### 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: | 7.7 cm x 6.9 cm (3.0 in. x 2.7 in.) |
| Weight: | 50 g (1.76 oz) |

## Environmental Specifications

| | |
|---|---|
| Operating Temperature: | 0°C to 50°C (+32°F to +122°F) at full load |
| Storage Temperature: | -25°C to +70°C (-°13F to +158°F) |
| Relative Humidity: | 5% to 90%, non-condensing |

## Power Specifications

| | |
|---|---|
| Signaling Voltage: | 3.3V |
| Power Consumption: | 2.0 Watts max |

## Maximum Cabling Distances

Up to 2000m (6,560 ft.) in the full-duplex mode

Up to 412m (1,351 ft.) in the half-duplex mode

## Appendix B

# Cleaning Fiber Optic Connectors

This appendix provides how to clean fiber optic connectors and consists of the following sections:


- ❒ “Overview” on page 108
- ❒ “Cleaning Using a Cartridge-Type Cleaner” on page 109
- ❒ “Cleaning Using a Swab” on page 111

# Overview

The fiber optic connector consists of a fiber optic plug and its adapter. The end of the fiber optic cable is held in the core of the ferrule in the plug as shown in Figure 46. Light signals are transmitted through the core of the fiber.

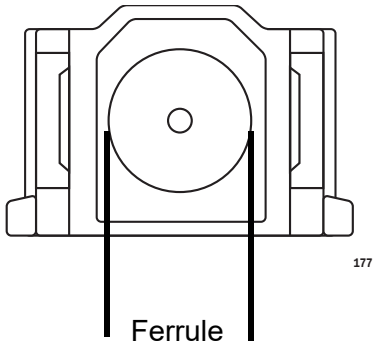



Figure 46. Ferrule in an SC Connector Plug

Even minor smudges or dirt on the end face of the fiber, completely invisible to the naked eye, can disrupt light transmission and lead to failure of the component or of the entire system. Figure 47 shows part of the end face of an unclean and clean ferrule.

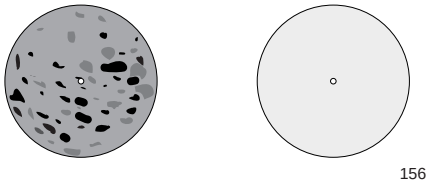



Figure 47. Unclean and Clean Ferrule

## Guidelines

Here are general guidelines and warnings for fiber optic connectors:

- ❒ Always keep a dust cap on a fiber optic cable when it is not in use.
- ❒ Do not touch the end face of the ferrule in the connector.

**Warning**
Do not stare into the laser beam. 2

**Warning**
Do not look directly at the cable ends or inspect the cable ends with an optical lens. 31

# Cleaning Using a Cartridge-Type Cleaner

Fiber optic cartridge cleaners are available from many vendors and are typically called “cartridge cleaners,” as shown in Figure 48.

Figure 48. Cartridge Cleaner

**Note**
Do not use compressed air or aerosol air to clean a fiber optic connector.

To clean a fiber optic connector using a cartridge cleaner, perform the following procedure:

1. With one hand, hold the cartridge cleaner and push the lever on the cleaning cartridge in the direction of the arrow to expose the cleaning surface, as shown in Figure 49.

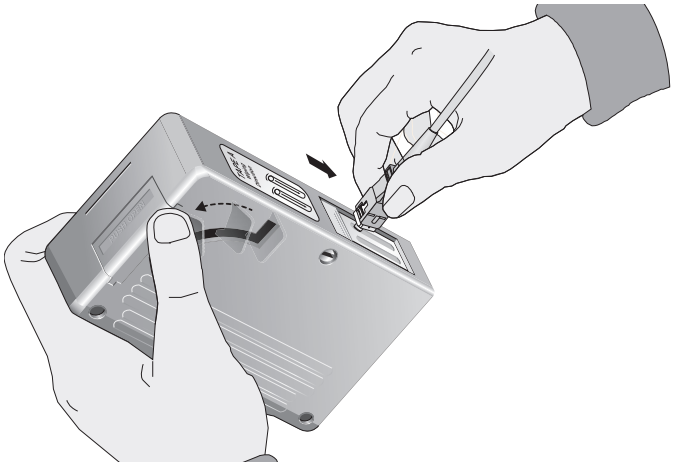


Figure 49. Rubbing the Ferrule Tip on the Cleaning Surface

2. Place the ferrule tip on the exposed cleaning surface and rub the ferrule in a downward direction, as shown in Figure 49.

**Note**
Rub the ferrule tip on the cleaning surface in one direction only.

3. When you reach the end of the cleaning surface, pick up the ferrule tip, rotate and place it at the top and rub downwards at least 2 times.

**Caution**
Failing to pick up the ferrule tip when you reach the bottom of the cleaning surface can result in static electricity that can damage the fiber optic cable.

4. If desired, repeat steps 2 and 3.
5. If a fiber inspection scope is available, use the scope to inspect the ferrule end face to make sure that it is clean.
6. Reconnect the cable to the port or protect the ferrule tip with a dust cap.

# Cleaning Using a Swab

Specially treated swabs (stick cleaners) are available for cleaning inside connector adapters or hard-to-reach ferrule tips. These swabs, often referred to as “lint free” or “alcohol free” swabs, are available from many vendors. See Figure 50. Stick cleaners are available in both 2.5 mm and 1.25 mm sizes for use on SC and MU connectors respectively.

**Note**
NEVER use a household cotton swab and/or alcohol to clean a fiber optic connector. A cotton swab or alcohol may leave a residue on the ferrule tip.

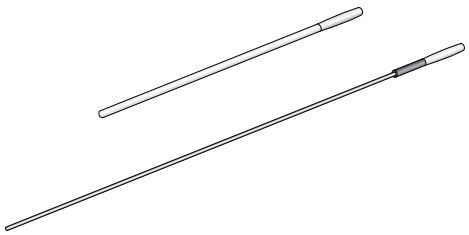


Figure 50. Lint-Free and Alcohol-Free Swabs

**Note**
Do not use compressed air or aerosol air to clean a fiber optic connector.

To clean a recessed ferrule using a swab, perform the following procedure:

1. Insert the swab into the adapter as shown in Figure 51 and rub the ferrule tip with the swab.

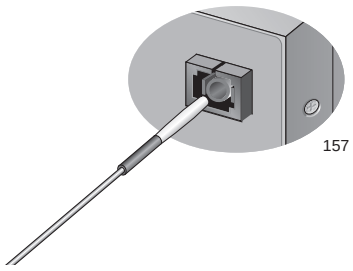



Figure 51. Cleaning a Recessed Ferrule

2. If desired, repeat step 1.

3. If a fiber inspection scope is available, use the scope to inspect the connector to make sure that it is clean.

4. Reconnect the cable to the port or protect the ferrule tip with a dust cap.