

Wireless LAN Card

AT-WCL452



User's Guide



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- Consult the dealer or an experienced radio/TV technician for help.

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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.

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- ETS EN301 489-1, ETS EN301 489-17
- ETS EN300-328

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This is to certify that this product complies with ISO/IEC Guide 22 and EN45014. It conforms to the following specifications.

Electromagnetic Compliance (EMC):

EN55022(1998)/CISPR-22(1997)	Class B
IEC 61000-4-2(2000)	4kVCD, 8kVAD
IEC 61000-4-3(2000)	3V/m
IEC 61000-4-4(2000)	1kV- (power line)
IEC 61000-4-6(2000)	3Vrms
IEC 61000-4-11(2000)	
USA:	FCC (47CFR) Part 15C, Section 15.247
Canada:	ISC RSS-210
Europe:	ETS EN300 328-2, EN301 489-1, EN301 489-17

This product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC, and carries the CE Mark accordingly.

RFI Emission

FCC Class B, EN55022 Class B, VCCI Class B, C-TICK

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Preface

This guide describes how to install and configure your AT-WCL452 Wireless LAN Card.

How This Guide is Organized

This manual contains the following chapters and appendices:

Chapter 1, Introduction, describes the features and components of the wireless card.

Chapter 2, Installation, contains the installation instructions.

Chapter 3, Driver Installation for Windows, provides information on how to install drivers for Windows operating system.

Chapter 4, Installing and Using the Wireless Utility, provides information on how to install the wireless utility onto your system.

Chapter 5, Installing Network Protocols, provides information on network protocols.

Appendix A, FAQs, contains frequently asked questions and information.

Appendix B, Technical Specifications, the Wireless LAN card technical specifications.

Document Conventions

This document uses the following conventions:

Note

Notes provide additional information.



Warning

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



Caution

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

Where to Find Web-based Guides

The installation and user guides for all Allied Telesyn products are available in Portable Document Format (PDF) from our web site at www.alliedtelesyn.com. You can view the documents on-line or download them onto a local workstation or server.

Contacting Allied Telesyn

You can contact Allied Telesyn technical support online or by telephone.

Online Support

You can request technical support online by accessing the Knowledge Base from our web site at <http://kb.alliedtelesyn.com>. You can use the Knowledge Base to submit questions to our technical support staff and review answers to previously asked questions.

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For Technical Support by telephone, contact Allied Telesyn at one of the following locations:

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United States, Canada, Mexico, Central America, South America
Tel: 1 (800) 428-4835

Asia

Singapore, Taiwan, Thailand, Malaysia, Indonesia, Korea, Philippines, China, India, Hong Kong
Tel: (+65) 3815-612

Australia

Australia, New Zealand
Tel: 1 (800) 000-880

France

France, Belgium, Luxembourg, The Netherlands, Middle East, Africa
Tel: (+33) 1-60-92-15-25

Germany

Germany, Switzerland, Austria, Eastern Europe
Tel: (+49) 30-435-900-126

Italy

Italy, Spain, Portugal, Greece, Turkey, Israel
Tel: (+39) 02-41-30-41

Japan

Tel: (+81) 3-3443-5640

United Kingdom

United Kingdom, Denmark, Norway, Sweden, Finland, Iceland
Tel: (+44) 1-235-442560

Management Software Updates

New releases of management software for our managed products can be downloaded from our web site at www.alliedtelesyn.com or our FTP server at [ftp.alliedtelesyn.com](ftp://ftp.alliedtelesyn.com). To use the FTP server, enter 'anonymous' for the user name when you log in and your e-mail address for the password.

Chapter 1

Introduction

The high-speed AT-WCL452 Wireless LAN Card provides you with an innovative wireless networking solution. The Adapter is easy to set up and use. With this wireless technology, you can share files and printers on the network.

The Adapter is a network Adapter with a rate of 1, 2, 5.5, and 11 Mbps operating in the ISM band using Direct Sequence Spread Spectrum (DSSS) transmission implementing the IEEE 802.11b standard. This Adapter provides Device Drivers for Windows Operating Systems. It also provides tools for the configuration of the Adapter. The tool, as well as the installation steps of the plug-and-play procedure for the Windows operating systems, is described in this document.

The sections in this chapter include:

- Features** on page 12
- What is Wireless LAN?** on page 13
- Wireless LAN Modes** on page 14
- Wireless LAN Configuration** on page 15

Features

The AT-WCL452 Wireless LAN Card offers compliance with the IEEE 802.11b specification. This feature allows it to communicate with other wireless devices that support the standard. Features of the adapter are:

- Uses 2.4GHz frequency band, which complies with worldwide requirement
- Wireless interface following the IEEE 802.11b standard
- Using PCMCIA interface
- Enciphering/deciphering of wireless data by the implementation of the WEP algorithm
- Wire-free access to networked resources from anywhere beyond the notebook
- Allows users move between Access Points without resetting their connection reconfiguration
- Delivers data rate up to 11 Mbps
- Supports 11, 5.5, 2, and 1 Mbps rates
- Provide PCMCIA Wireless LAN Card Configuration utility
- The Adapter uses external Antenna with LEDs indicating Power and Link
- Supports most popular operating systems

What is Wireless LAN?

Wireless Local Area Network (WLAN) systems offer a great number of advantages over traditional wired systems. WLAN is flexible and easy to setup and manage. They are also more economical than wired LAN systems.

Using radio frequency (RF) technology, WLAN transmit and receive data through the air. WLAN combine data connectivity with user mobility. For example, users can roam from a conference room to their office without being disconnected from the LAN.

Using WLAN, users can conveniently access-shared information, and network administrators can configure and augment networks without installing or moving network cables.

WLAN technology provides users with many convenient and cost saving features:

- ❑ **Mobility:** WLAN provide LAN users with access to real-time information anywhere in their organization, providing service opportunities that are impossible with wired networks.
- ❑ **Ease of Installation:** Installing is easy for novice and expert users alike, eliminating the need to install network cables in walls and ceilings.
- ❑ **Scalability:** WLAN can be configured in a variety of topologies to adapt to specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users roaming over a broad area.

Wireless LAN Modes

Wireless LANs can be configured in one of two ways:

Ad-hoc Networking

Also known as a peer-to-peer network, an ad-hoc network is one that allows all workstations and computers in the network to act as servers to all other users on the network. Users on the network can share files, print to a shared printer, and access the Internet with a shared modem. However, with ad-hoc networking, users can only communicate with other wireless LAN computers that are in the wireless LAN workgroup, and are within range.

Infrastructure Networking

Infrastructure networking differs from ad-hoc networking in that it includes an access point. Unlike the ad-hoc structure where users on the LAN contend the shared bandwidth, on an infrastructure network the access point can manage the bandwidth to maximize bandwidth utilization.

Additionally, the access point enables users on a wireless LAN to access an existing wired network, allowing wireless users to take advantage of the wired networks resources, such as Internet, email, file transfer, and printer sharing.

Infrastructure networking has the following advantages over ad-hoc networking:

- Extended range: each wireless LAN computer within the range of the access point can communicate with other wireless LAN computers within range of the access point.
- Extended mobile connectivity: the access point enables a wireless LAN computer to move through a building and still be connected to the LAN.
- Wired to wireless LAN connectivity: the access point bridges the gap between wireless LANs and their wired counterparts.

Wireless LAN Configuration

When configuring a wireless LAN (WLAN), be sure to note the following points:

- Optimize the performance of the WLAN by ensuring that the distance between access points is not too far. In most buildings, WLAN Adapters operate within a range of 100 ~ 300 feet, depending on the thickness and structure of the walls.
- Radio waves can pass through walls and glass but not metal. If there is interference in transmitting through a wall, it may be that the wall has reinforcing metal in its structure. Install another access point to circumvent this problem.
- Floors usually have metal girders and metal reinforcing struts that interfere with WLAN transmission.

Chapter 2

Installation

This chapter provides instructions on how to install your AT-WCL452 Wireless LAN Card. The sections in this chapter include:

- ❑ **Package Contents** on page 17
- ❑ **System Requirements for the Adapter** on page 18
- ❑ **Hardware description** on page 19
- ❑ **LEDs** on page 20
- ❑ **Inserting the Wireless LAN Card** on page 21
- ❑ **Ejecting the Wireless LAN card** on page 22

Package Contents

Please make sure that items below are included on package.

- One AT-WCL452 Wireless LAN Card
- One CD containing drivers and documentation
- One Installation Guide

System Requirements for the Adapter

- Operating System: Microsoft Windows 98/ME/2000/XP
- Notebook with CD-ROM drive
- One free PCMCIA slot
- Pentium-Class 90MHz or higher

Hardware description

The AT-WCL452 Wireless LAN Card is encased in a stainless compact frame and has a 68-pin 16-bit socket connector for attaching to the PCMCIA port of your notebook.

LEDs

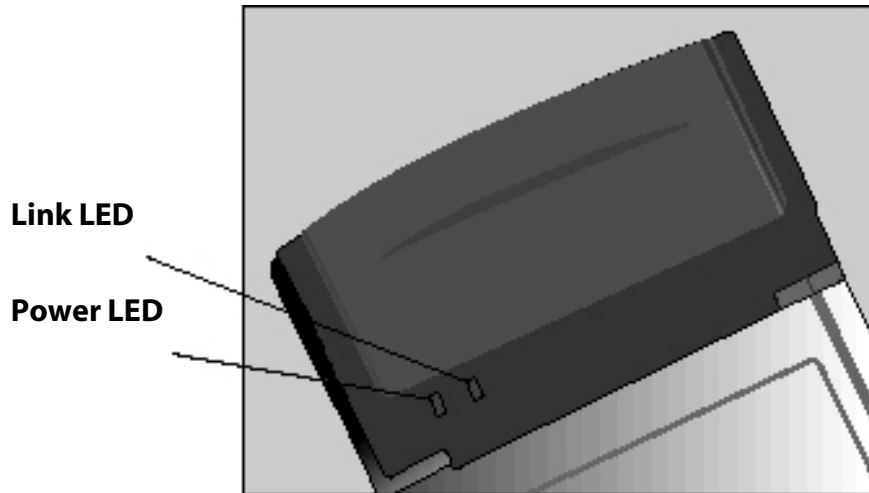


Figure 1 AT-WCL452 Wireless LAN Card LEDs

Table 1 describes the AT-WCL452 Wireless LAN card LEDs.

Table 1 LEDs

LED	State	Description
POWER	OFF	Indicates the adapter is powered OFF.
	Steady Green	Indicates the adapter is powered ON.
LINK	OFF	Indicates that there is no link.
	Flashing Green	Indicates the adapter is searching for possible wireless connection.
	Solid Green	Indicates the wireless connection is linked.

Inserting the Wireless LAN Card

Note

These instructions apply to most notebook computers. For detailed information on inserting PC cards into your notebook, consult the notebook manual.

Follow the procedure below to install the Wireless LAN card.

1. With the 68-pin 16-bit socket connector of the card facing the PCMCIA slots on your notebook, slide the card all the way into an empty slot.

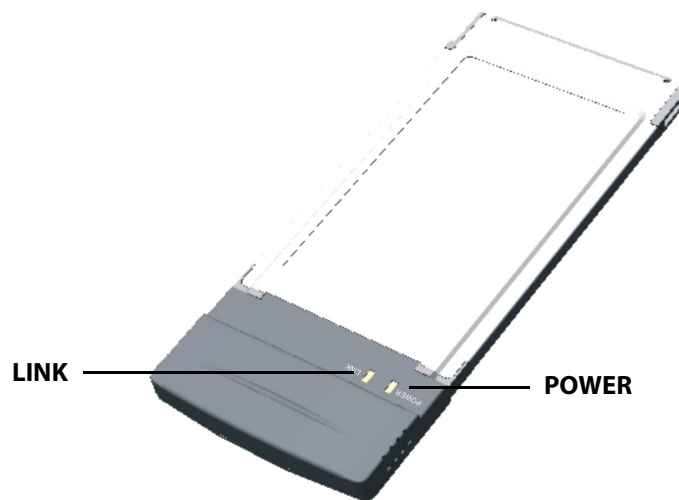


Figure 2 AT-WCL452 Wireless LAN Card

2. Connect to a network.

Ejecting the Wireless LAN card

After disconnecting from the LAN, you can eject the Wireless LAN card from the PC Card slot of your notebook.

Note

In Windows XP/2000/ME/98 operating systems, you do not have to power down the notebook to remove the card. The card is hot-swappable (you can remove the card when the notebook is powered on). However, Microsoft recommends that you stop the card. Refer to your Windows 2000/ME/98 online help for information on stopping the Wireless LAN card.

Most notebooks have an eject lever or button for ejecting PC cards from the PC slots. Consult your notebook manual for details.



Warning

To prevent data loss, do not eject the Wireless LAN card when a data transmission is taking place. Exit your communications program normally, stop the card if necessary, and then remove the card.

Chapter 3

Driver Installation

The following sections cover the AT-WCL452 Wireless LAN Card driver installation for Windows Operating Systems. The sections in this chapter include:

- ❑ **Windows 98** on page 24
- ❑ **Windows 2000** on page 28
- ❑ **Windows ME** on page 31
- ❑ **Windows XP** on page 33

Note

You have to install your hardware first before you begin to install the drivers.

Windows 98

Follow the steps below to install the AT-WCL452 Wireless LAN Card drivers for Windows 98.

1. Insert the AT-WCL452 Wireless LAN Card to the PCMCIA slot of your notebook.

After Windows 98 detects the AT-WCL452 Wireless LAN Card, the *Add New Hardware Wizard* window appears.



Figure 3 Add New Hardware Wizard window

2. Click **Next** to continue the installation.

A window appears prompting you to select an installation method.

3. Select **Search for the best driver for your device (Recommended)** and click **Next** to continue.



Figure 4 Add New Hardware Wizard window

4. Ensure that **Specify a location** is selected.
5. Select **Browse** to the proper location on your CD ROM Drive, for example, `<cdrom>:\drivers\atwcl452` or `<cdrom>:\`). Click **Next** to continue.



Figure 5 Add New Hardware Wizard window

Note

The driver location depends upon the CD version.

- The following window appears showing the driver search result. Click **Next** to continue the installation.



Figure 6 Add New Hardware Wizard window

- Windows 98 copies files to your hard disk. The following window will appear to inform you when the software installation has finished.

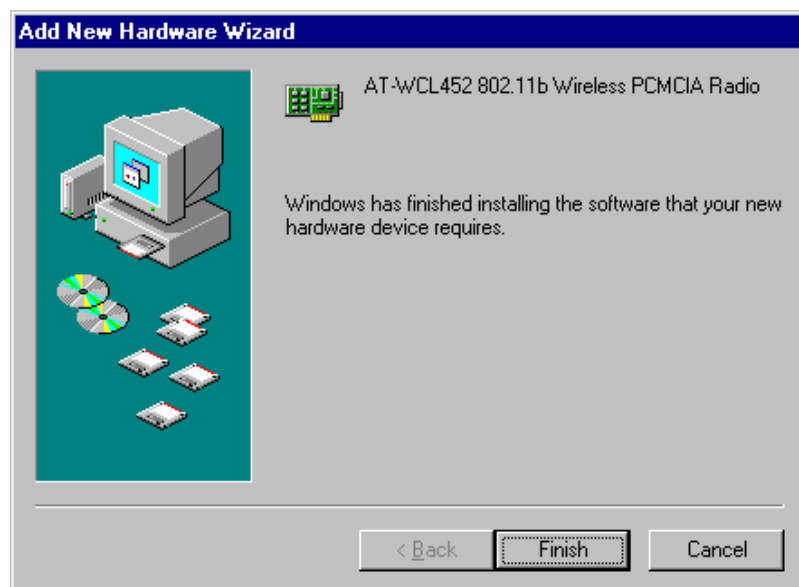


Figure 7 Add New Hardware Wizard window

8. Click **Finish** to finish the installation.
9. The following window will ask you to restart your computer to finish the installation.

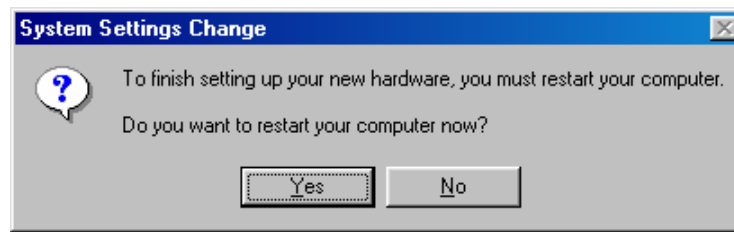


Figure 8 System Settings Change window

10. Click **Yes** to reboot the system.

After system reboot, the Wireless LAN Utility will be installed automatically.

Note

In most cases, Windows will automatically copy all of the files needed for networking. If Windows asks you for the files and prompts you to input the path to the files. Follow the instructions on your screen, and then click OK to continue.

Windows 2000

Follow the steps below to install the AT-WCL452 Wireless LAN Card drivers for Windows 2000.

1. Insert the AT-WCL452 Wireless LAN Card to the PCMCIA slot of your notebook first.

After Windows 2000 detects the AT-WCL452 Wireless LAN Card, the *Found New Hardware Wizard* window appears.

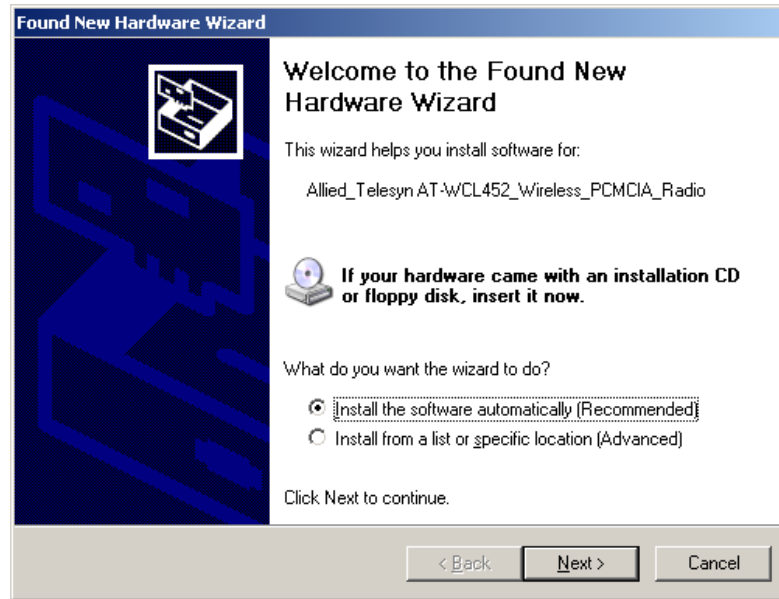


Figure 9 Found New Hardware Wizard window

2. Click **Next** to start the installation.
3. A window appears prompting you to select an installation method. Select **Search for a suitable driver for my device (recommended)**.
4. Click **Next** to continue.



Figure 10 Found New Hardware Wizard window

5. Select **CD-ROM drives** and insert the driver CD-ROM into the notebook CD-ROM drive.
6. Click **Next** to continue.

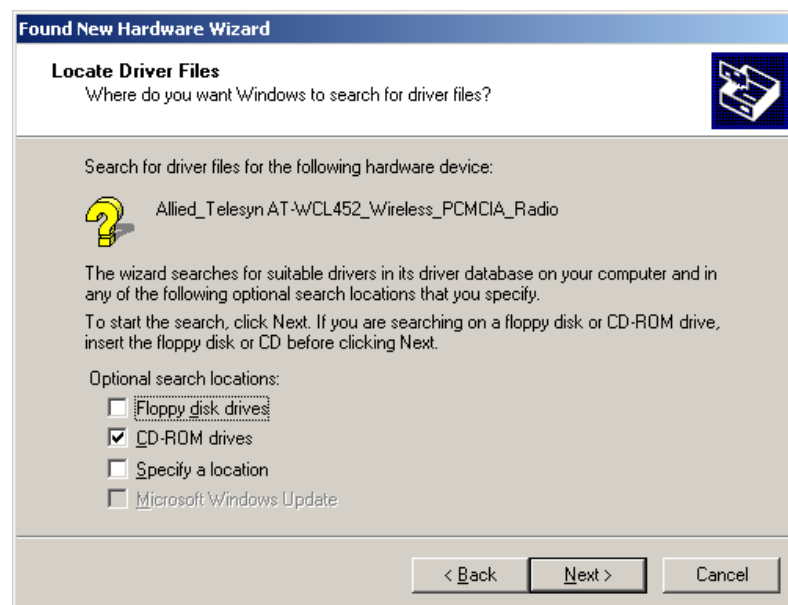


Figure 11 Found New Hardware Wizard window

7. The following window appears showing the driver search result. Click **Next** to continue the installation.

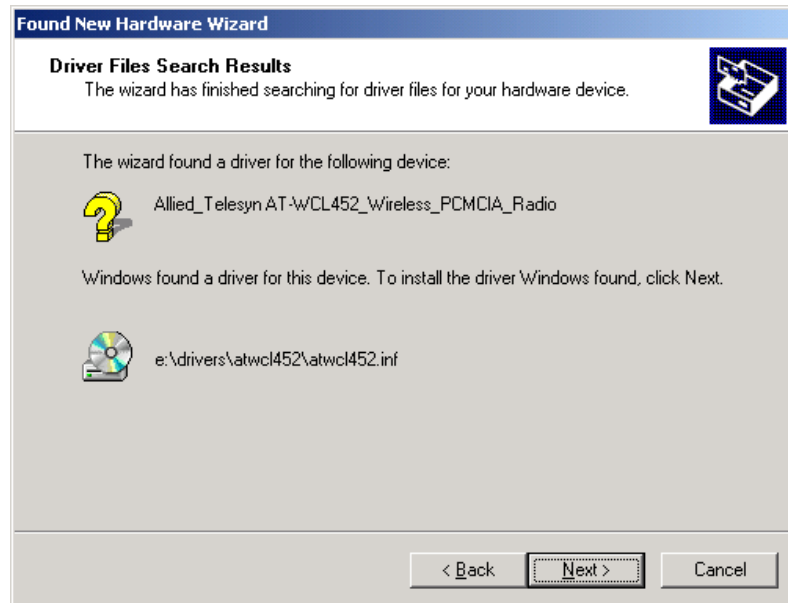


Figure 12 Found New Hardware Wizard window

8. The following window appears. Click **Yes** to continue.

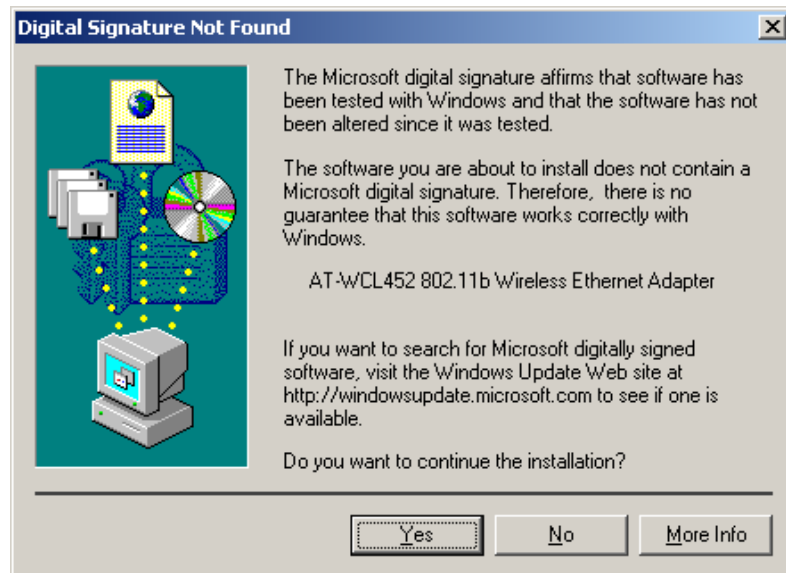


Figure 13 Digital Signature Not Found window

Windows has finished installing the software for the device.

9. Click **Finish** to finish the installation.

Windows ME

Follow the steps below to install the AT-WCL452 Wireless LAN Card drivers for Windows ME.

1. Insert the AT-WCL452 Wireless LAN Card to the PCMCIA slot of your notebook first.

After Windows ME detects the AT-WCL452 Wireless LAN Card, the *Add New Hardware Wizard* window appears.

2. Select **Automatic search for a better driver (Recommended)** and insert the driver CD-ROM into CD-ROM drive.

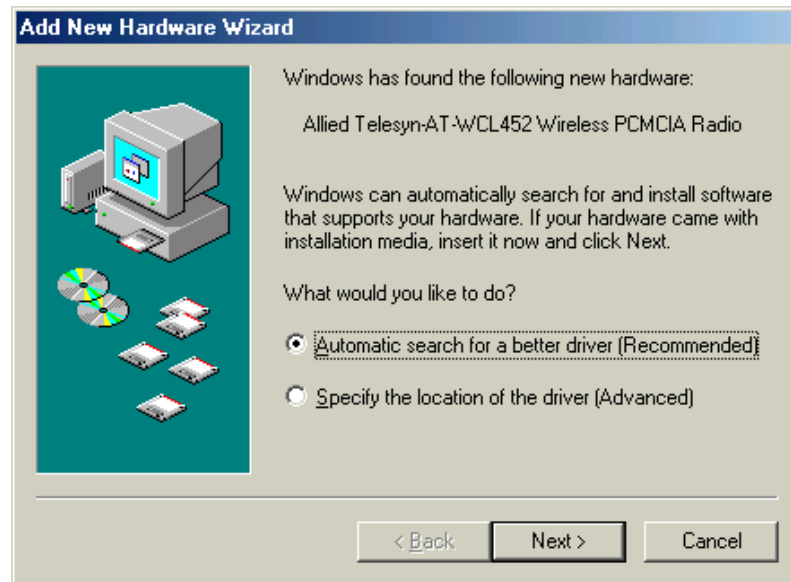


Figure 14 Add New Hardware Wizard window

3. Click **Next** to continue.

- The system will find the setup files and follow the instruction to copy files to your hard disk. The following window will appear when the software installation has finished.



Figure 15 Add New Hardware Wizard window

- Click **Finish** to complete the installation.
- The following window will ask you to restart your computer to finish the hardware setting up.

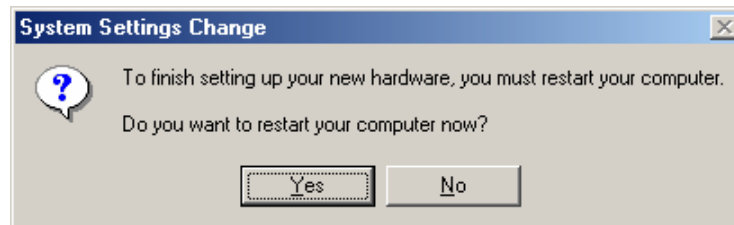


Figure 16 System Settings Change window

- Click **Yes** to reboot the system.

Note

In most cases, Windows will automatically copy all of the files needed for networking. If Windows asks you for the files and prompts you to input the path to the files. Follow the instructions on your screen, and then click OK to continue.

Windows XP

Follow the steps below to install the AT-WCL452 Wireless LAN Card drivers for Windows XP.

1. Insert the AT-WCL452 Wireless LAN Card to the PCMCIA slot of your notebook first.
2. After Windows XP detects the AT-WCL452 Wireless LAN Card, the *Found New Hardware Wizard* window appears, as shown below.

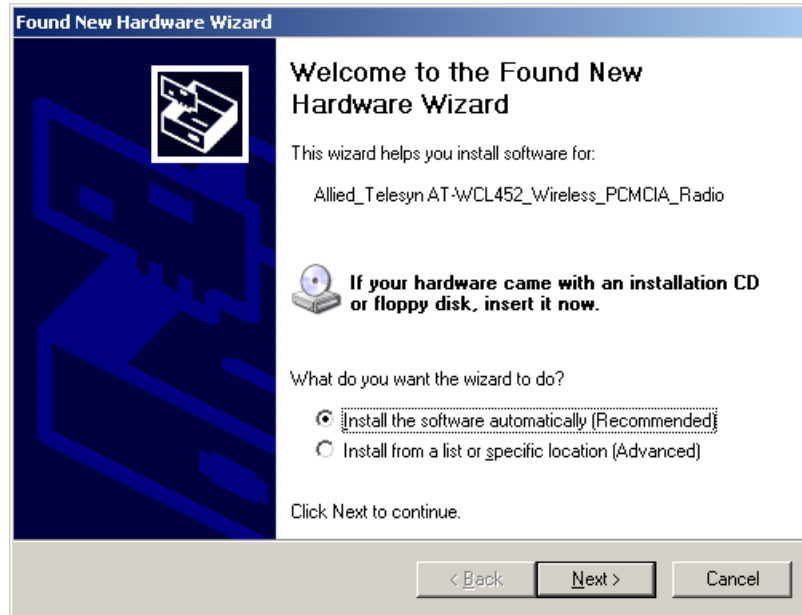


Figure 17 Found New Hardware Wizard window

3. Select **Install the software automatically [Recommended]** from the *What do you want the wizard to do?* field.
4. Insert the driver CD-ROM into CD-ROM drive and click **Next** to continue.

5. Once Windows has finished installing the software for the device, click **Finish** to finish the installation.

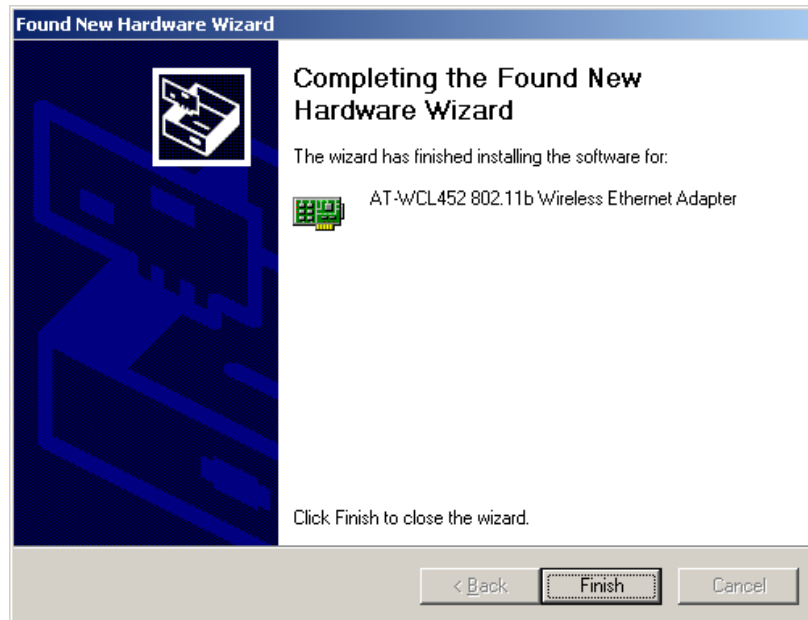


Figure 18 Found New Hardware Wizard window

The system will now start to install the Allied Telesyn Wireless LAN Utility.

Chapter 4

Installing and Using the Wireless Utility

The following sections cover the AT-WCL452 Wireless LAN Card utility installation and configuration. The sections in this chapter include:

- Windows Installation** on page 36
- Firmware Upgrade** on page 40
- Using Windows XP Wireless Utility** on page 41
- Disabling Windows XP Wireless Utility** on page 44
- Using Allied Telesyn Wireless LAN Utility** on page 46
- Using Allied Telesyn Wireless LAN Utility in Windows 98, Windows 2000, and Windows ME** on page 47
- Configuring the AT-WCL452 Wireless LAN Card** on page 48

Windows Installation

After you have installed the necessary drivers for your AT-WCL452 Wireless LAN Card, the system will start to install a Wireless LAN Utility. Please follow the steps below to install the utility.

1. Once you see the following window, click **Next** to continue.

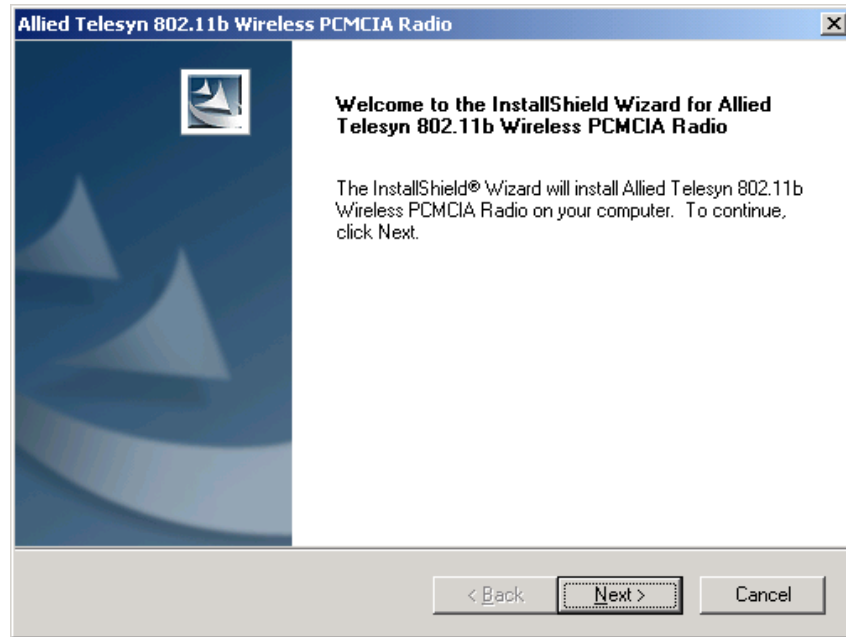


Figure 19 Wireless PCMCIA Radio Wizard Welcome window

- The window will show you the default destination chosen by the utility. Click **Next** to continue or click the **Browse** button to select an alternate destination.

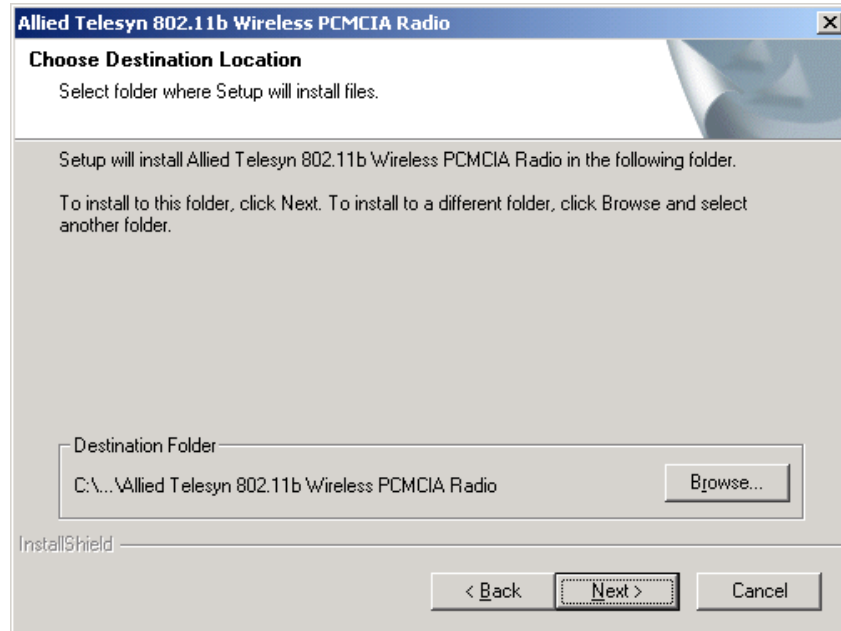


Figure 20 Choose Destination Location window

- The following window will add program icons to the Program Folder. You may type a new folder name or select one from the existing folders list. Click **Next** to continue or click **Back** to review or change any settings.

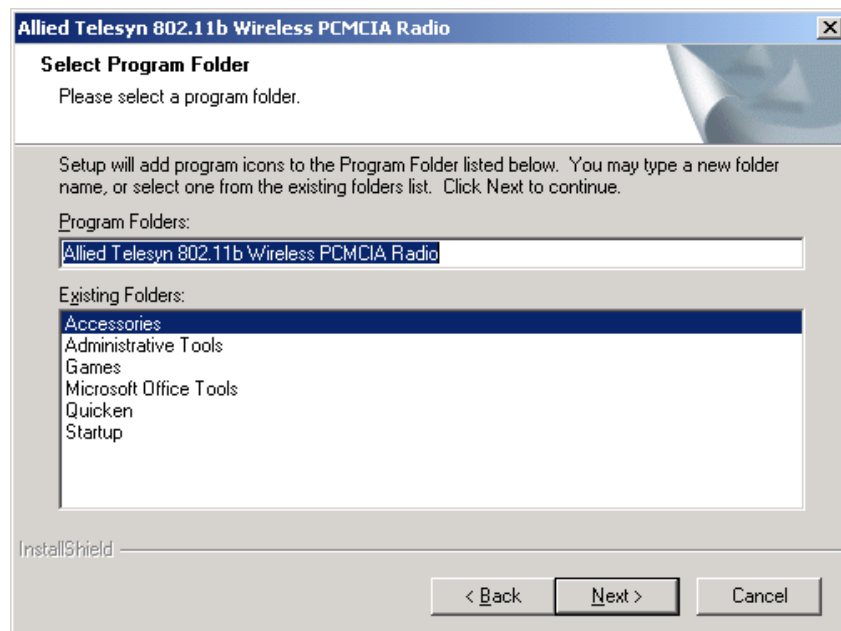


Figure 21 Select Program Folder window

- The following window shows the current settings, click **Next** to continue or click **Back** to change the Destination Folder in step 3.

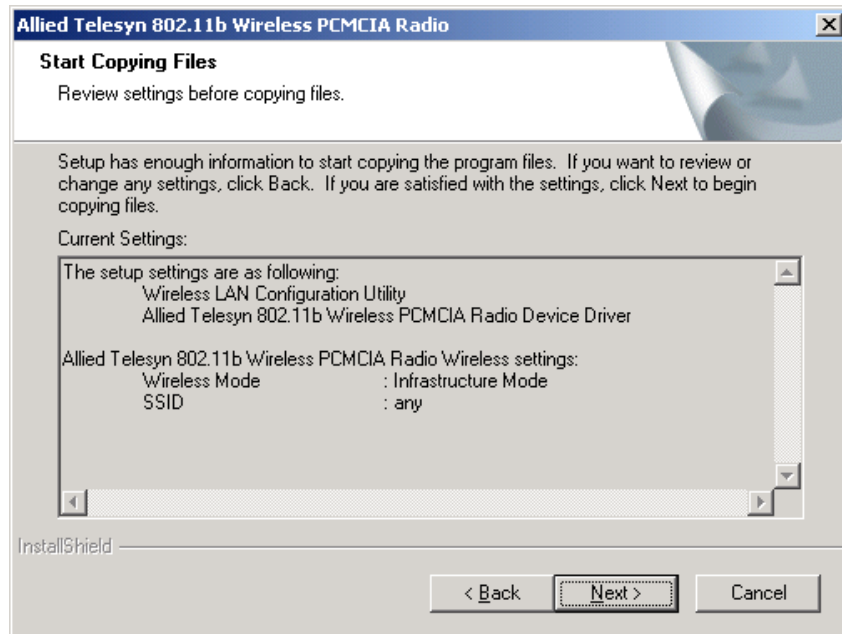


Figure 22 Start Copying Files window

The following window shows you the Setup status by percentage.

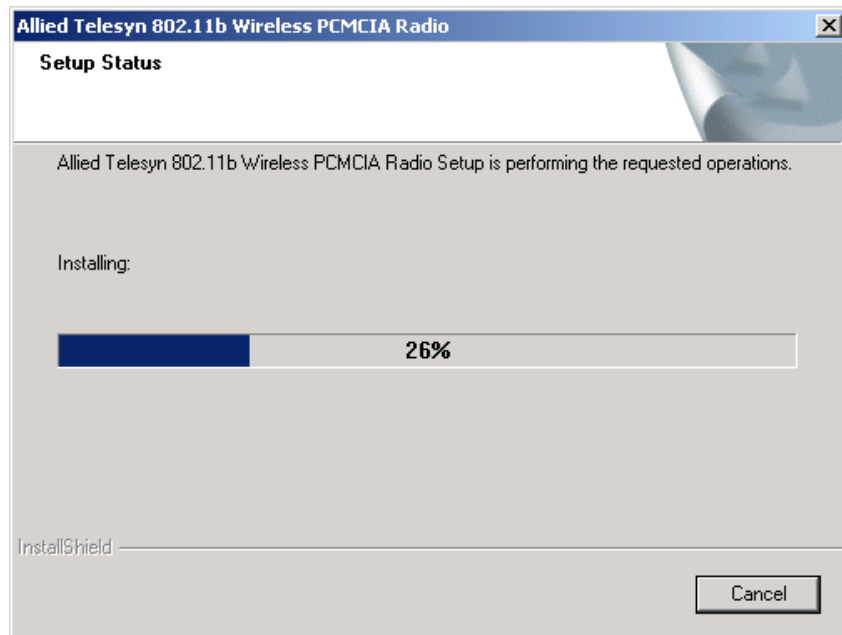


Figure 23 Setup Status window

5. When Windows has finished installing Wireless LAN Utility, click **Finish** to finish the installation.

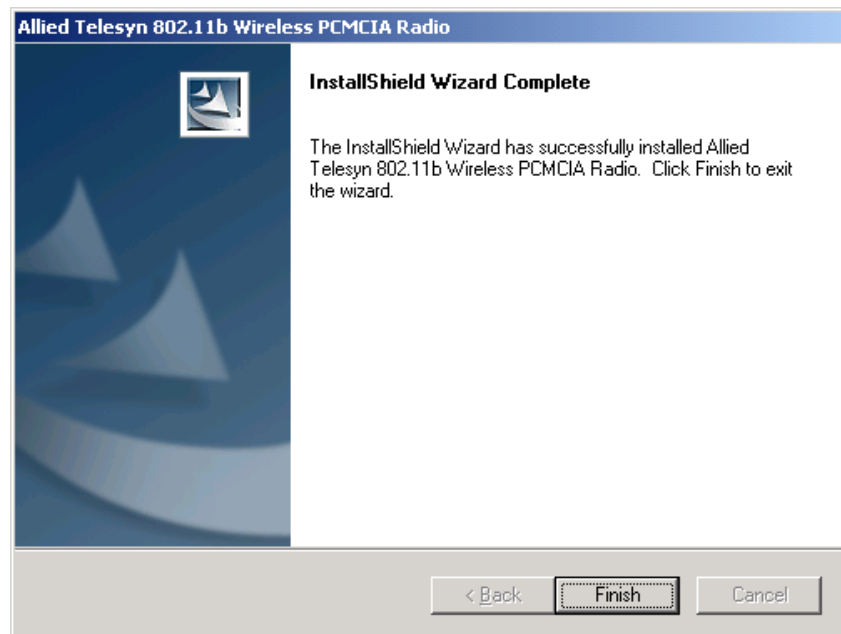


Figure 24 InstallShield Wizard Complete window

Firmware Upgrade

After you have installed the utility, the firmware upgrade window will appear if the firmware of the card is too old or not suitable for running on your environment.

1. Once you see the following window, click **OK** to continue.

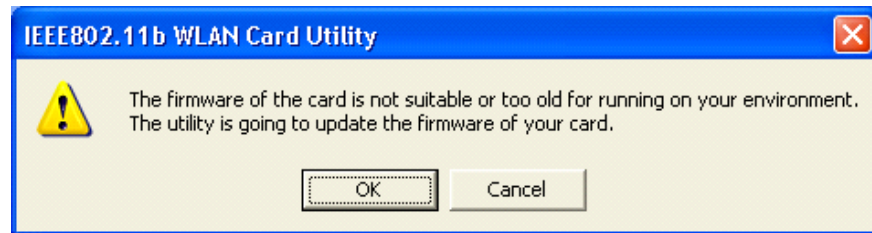


Figure 25 WLAN Card Utility window

2. The Utility has finished upgrading firmware for the device. Click **OK** to finish the upgrade.

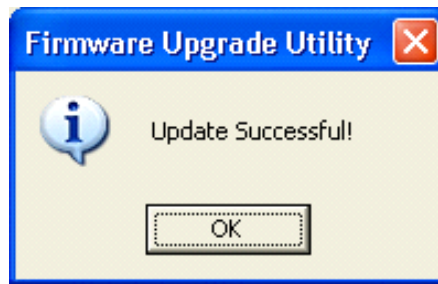


Figure 26 Firmware Upgrade Utility window

Once the installation is complete, you will see the Allied Telesyn Wireless LAN Utility icon in the Windows taskbar.

Using Windows XP Wireless Utility

There are two ways to configure the AT-WCL452 Wireless LAN Card when using Windows XP; Windows XP Wireless Network Configuration or Allied Telesyn Wireless LAN Utility.

To configure your card using Allied Telesyn Wireless LAN Utility, please go to section **Using Allied Telesyn Wireless LAN Utility** on page 46. To configure your card using Windows XP Wireless Network Configuration, perform the steps below.

1. Using your system mouse, click the right mouse key on the system toolbar and **Exit** Allied Telesyn Wireless LAN Utility.



Figure 27 System toolbar

2. Click the Windows XP Wireless Network Configuration icon from the system toolbar.



Figure 28 System toolbar

3. Click on the **Advanced** button from the window.



Figure 29 Connect to Wireless Network window

4. Select **Use Windows to configure my wireless network settings** and click **OK**.

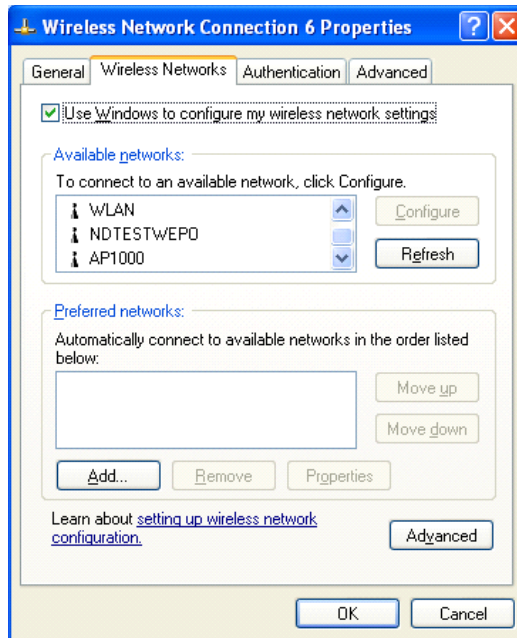


Figure 30 Wireless Network Connection Properties window

5. Click on the Windows XP Wireless Network Configuration icon, as displayed in step 2, to open the Windows XP Wireless Network Configuration window.
6. Select an **Available network** from the available networks field.
7. Click **Connect**.

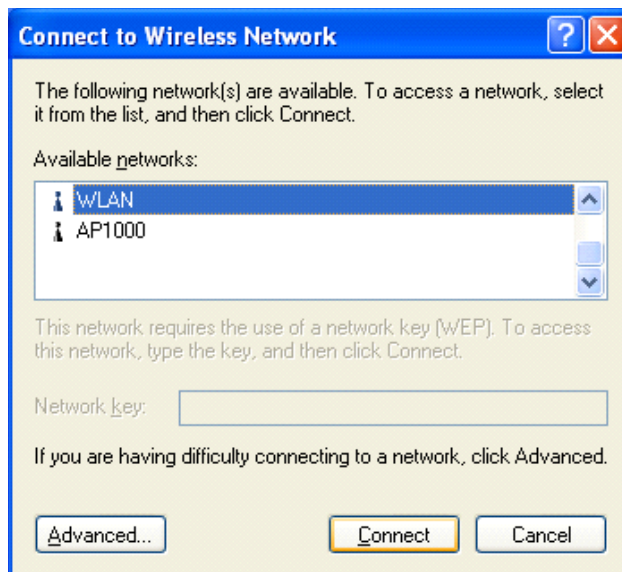


Figure 31 Connect to Wireless Network window

The Windows XP Wireless Network Configuration is now enabled.

8. Click on the Windows Wireless Configuration icon from your system toolbar.

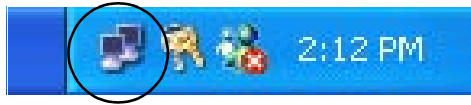


Figure 32 System toolbar

9. Click on the **Properties** button to start Windows XP Wireless Network Configuration.

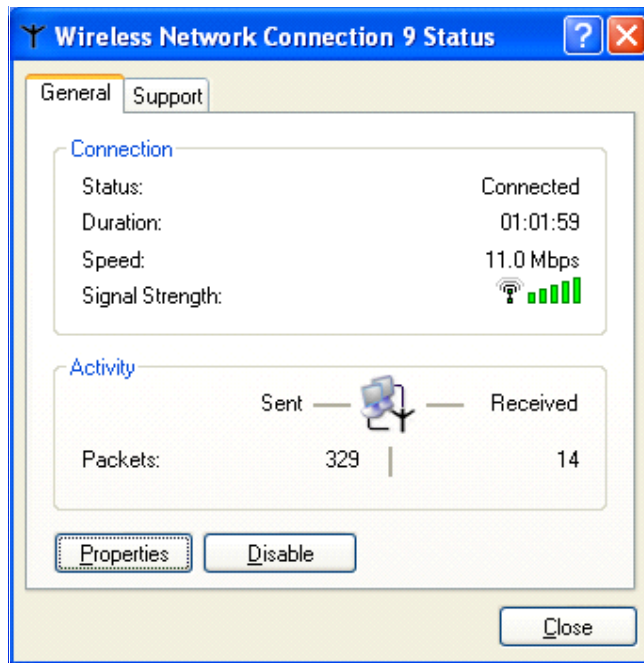


Figure 33 Wireless Network Connection 9 Status window

Disabling Windows XP Wireless Utility

To configure your card using the Allied Telesyn Wireless LAN Utility, you must first disable the Windows XP Wireless Utility. Perform the steps below:

1. Using your system mouse, click the right key on the system toolbar and **Exit** the Allied Telesyn Wireless LAN Utility.



Figure 34 System toolbar window

2. Click on the **Advanced** button, located at the bottom of the window menu, for Windows XP Wireless Utility.

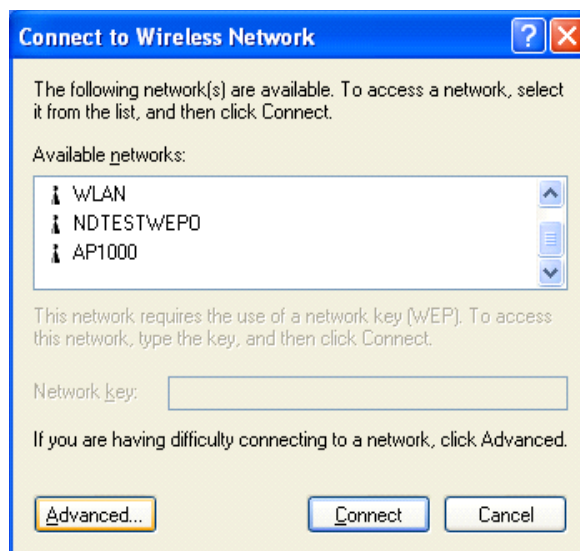


Figure 35 Connect to Wireless Network window

3. If selected, deselect the **Use Windows to configure my wireless network settings** button.

4. Click the **OK** button located at the bottom of the window menu.

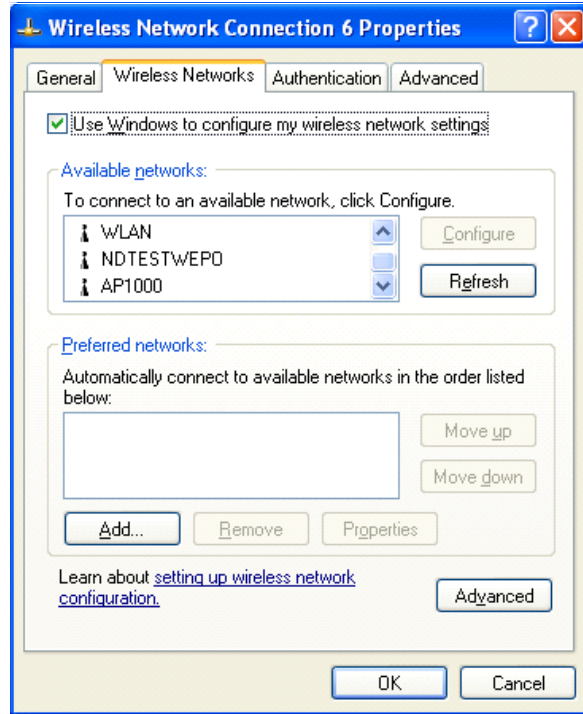


Figure 36 Wireless Network Connection 6 Properties window

Once you have fully disabled the Windows XP Wireless Utility, continue to the next procedure to configure your card with the Allied Telesyn Wireless LAN Utility.

Using Allied Telesyn Wireless LAN Utility

If you are currently using Windows XP Wireless Utility, please see section *Disabling Windows XP Wireless Utility* before configuring your card with the Allied Telesyn Wireless LAN Utility.

Perform the following steps to configure your card with the Allied Telesyn Wireless LAN Utility:

1. From your system toolbar, click on the **Start** menu.
2. Select **All Programs** from the next menu.
3. Select **Allied Telesyn 802.11b Wireless PCMCIA Radio** from the next menu.
4. From the submenu, select **Allied Telesyn 802.11b Wireless PCMCIA Radio Utility** to start the Allied Telesyn LAN Utility.
5. The Allied Telesyn Wireless LAN Utility icon will appear on your system toolbar. Double-click on the icon to open the configuration utility.
6. Click on the **Re-Scan** button to start the Allied Telesyn Wireless LAN Utility.

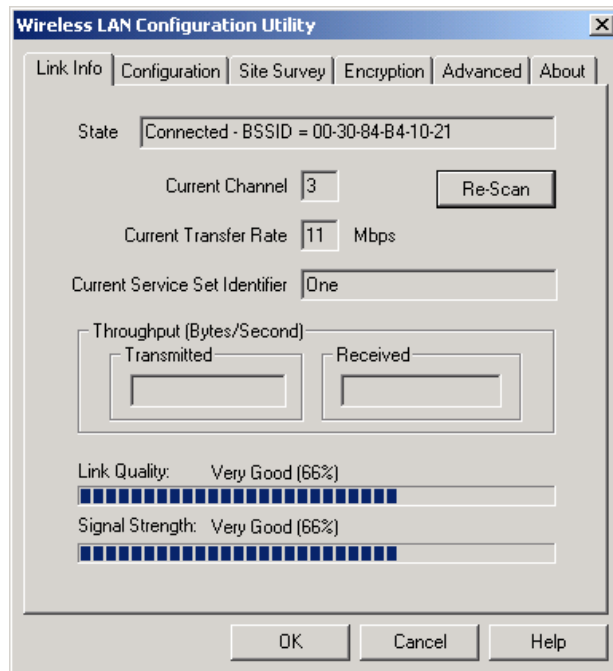


Figure 37 Wireless LAN Configuration Utility - Link Info window



Refer to the **AT-WCL452 Wireless LAN Card User's Guide**, located on our website and in the included documentation CD, for more information on configuring your card.

Using Allied Telesyn Wireless LAN Utility in Windows 98, Windows 2000, and Windows ME

To use the Allied Telesyn Wireless LAN Utility, double-click on the icon, found on your system toolbar, to open the Allied Telesyn Wireless LAN Utility. For more information on configuring your AT-WCL452 Wireless LAN card, refer to section **Configuring the AT-WCL452 Wireless LAN Card** on page 48.

Table 2 describes the Allied Telesyn Wireless LAN Utility icon. The Allied Telesyn LAN Utility icon can be found on your system toolbar.

Table 2 Allied Telesyn Wireless LAN Utility Icon

Icon	State	Description
	Green	Indicates a connection is linked to a wireless network.
	Red	Indicates that the wireless LAN card is looking for an available access point.

Configuring the AT-WCL452 Wireless LAN Card

To configure your AT-WCL452 Wireless LAN card, perform the steps below:

1. This window below shows you the status of your current connection. Click **Re-Scan** to search for wireless connection (the adapter will search for the connection automatically when it is activated).

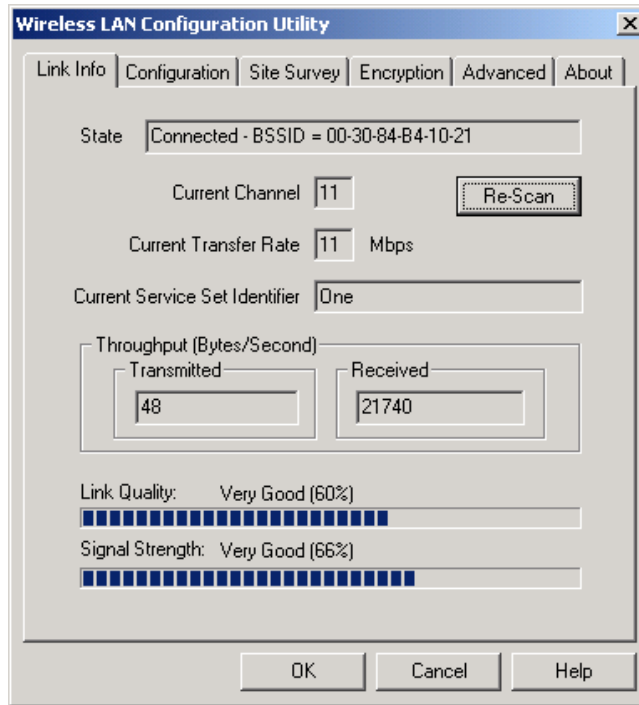


Figure 38 Wireless LAN Configuration Utility - Link Info window

2. Select the **Configuration** tab.

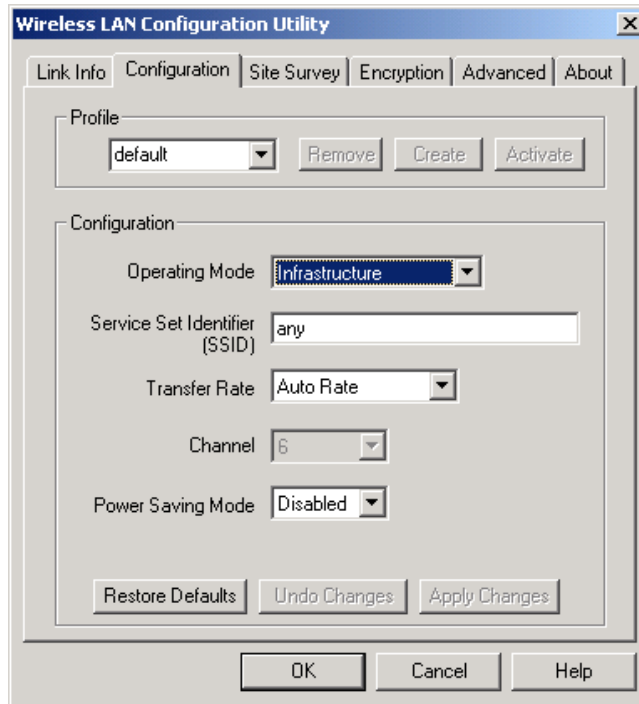


Figure 39 Wireless LAN Configuration Utility - Configuration window

The profile setting allows you to save configurations in different profiles for different working environments. The default profile will contain the initial configuration setting when you install the Card. Under the Operating Mode drop-box, you may choose either Infrastructure or Ad-Hoc. The Infrastructure mode allows a wireless adapter to communicate with a wired network employing an Access Point, while the Ad-Hoc mode allows wireless-to-wireless, peer-to-peer communication. If you choose Infrastructure, the SSID should have the same name as the Access Point. If you choose Ad-Hoc, all clients should share the same SSID name. You may also select which Transfer Rate you wish to use: 1, 2, 5.5, 11Mbps or Auto Rate. Under Power Saving Mode, you can select Enabled to allow your adapter to go to sleep mode while the adapter does not proceed the data transmission. You may also select Disabled to make the adapter never go to sleep mode.

3. Click **Apply** to save the settings.

4. Select the **Site Survey** tab.

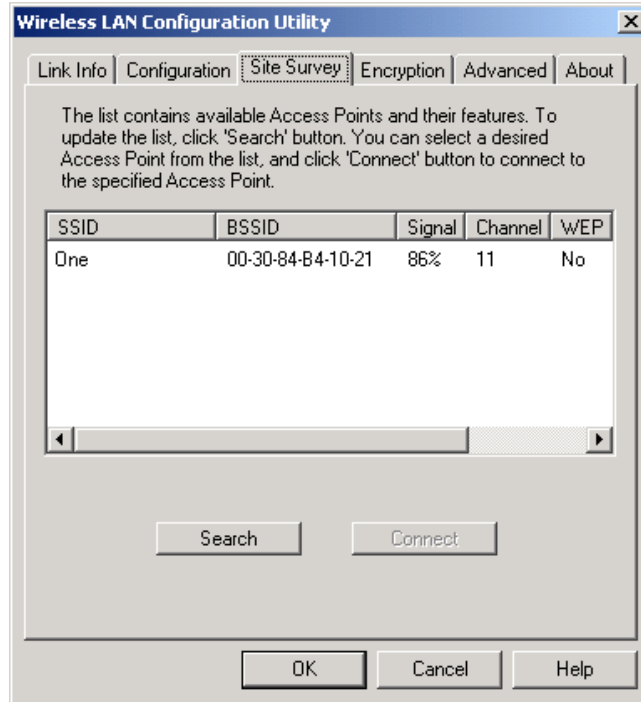


Figure 40 Wireless LAN Configuration Utility - Site Survey window

The list on the adjacent window shows you available Access Points and their features.

5. Click on the desired Access Point, then click **Connect** to connect or **Search** to search for more Access Points.
6. Click **OK** when you are finished.

7. Click on the **Encryption** tab.

Under the drop-box, you can choose to have WEP encryption Disabled, 64-Bit, or 128-Bit. Wired Equivalent Privacy (WEP) is an encryption scheme used to protect wireless data communication. The Disabled setting prevents the sharing of data with other computers on the WEP network. For data sharing to be enabled, select the level of encryption desired, either 64 or 128-bit.

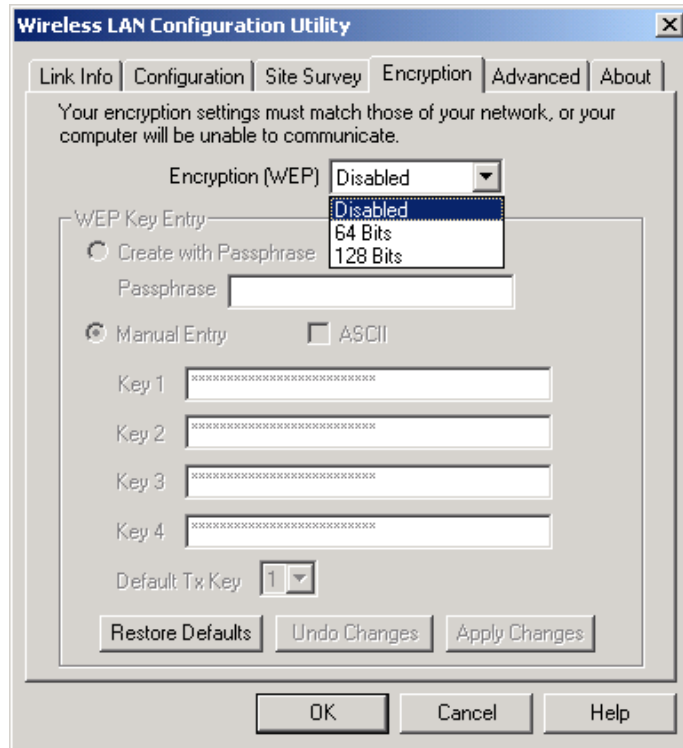


Figure 41 Wireless LAN Configuration Utility - Encryption window

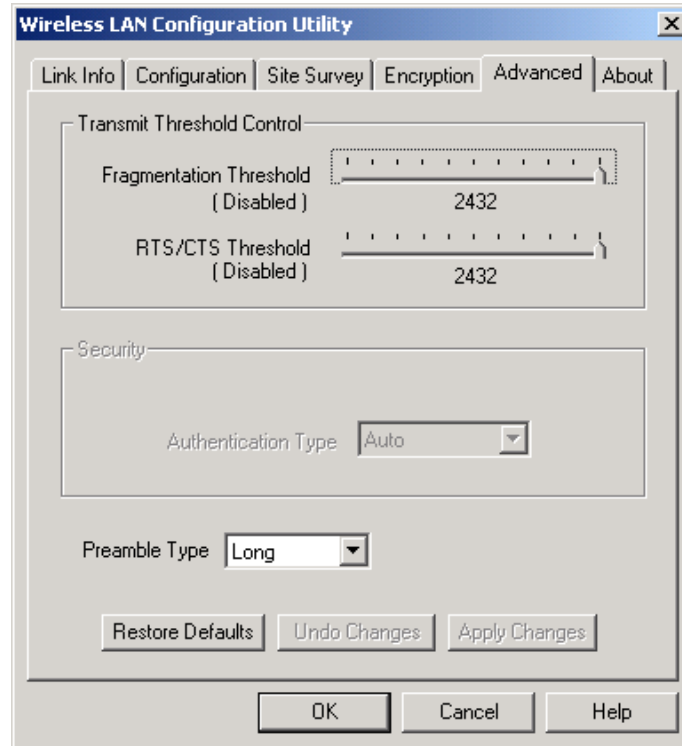
8. Select the **Advanced** tab.

Figure 42 Wireless LAN Configuration Utility - Advanced window

You can choose the fragmentation threshold to define the maximum data frame size your adapter will transmit. When the packet error rate is high, you may set the threshold value to transmit shorter frames. You may select RTS/CTS threshold to define when will your adapter send out RTS/CTS frames to reserve bandwidth for transmission. By using the RTS/CTS function, you may request bandwidth from AP to allow you have better chance to send out your data. For Security, it is only applicable while WEP is enabled.

For the Authentication Type, the current supported algorithms are Open System, Shared Key, and Auto. The algorithm will be invoked when associated to Access Point. To associate to the desired Access Point you must set the same algorithm as the one of the desired Access Point. When select Auto mode, the driver can auto detect the Authentication Type of the Access Point you are going to associate. You can also select Preamble Type which is for framing synchronization. The possible setting are long and Short. The setting must be the same as the setting of the Access Point you are going to associate.

9. Select the **About** tab. It shows you copyright and version information about the driver, the configuration utility, and the firmware.

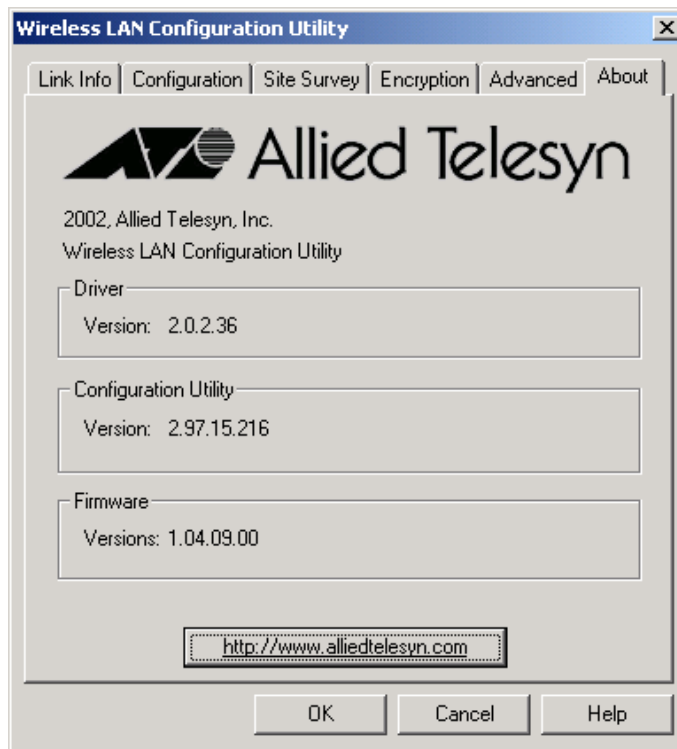


Figure 43 Wireless LAN Configuration Utility - About window

10. Click **OK** to complete the configuration.

Chapter 5

Installing Network Protocols

Protocols are necessary for computers to be recognized on your network. Windows 2000 users need to check their Windows User Guides for protocol installation. The section in this chapter is:

- ❑ **Installing the Network Protocols for Windows 98 and Millennium** on page 55

Installing the Network Protocols for Windows 98 and Millennium

This section describes how to install network protocols. Perform the following procedure to install the network protocols for Windows 98 and Windows ME.

1. From the Start Menu, select Settings and bring up the Control Panel.
2. From the Control Panel, double-click on the Network icon.

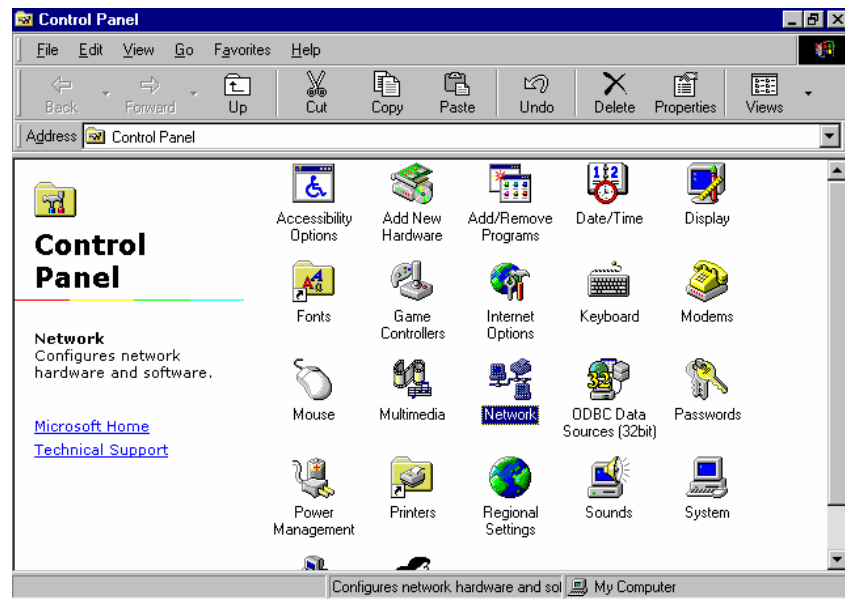


Figure 44 Control Panel window

Note

Before adding any network protocols, verify that the protocol is not already installed. Never install duplicate protocols.

3. Select **AT-WCL452 802.11b Wireless PCMCIA Radio** from the list and click the **Add** button.

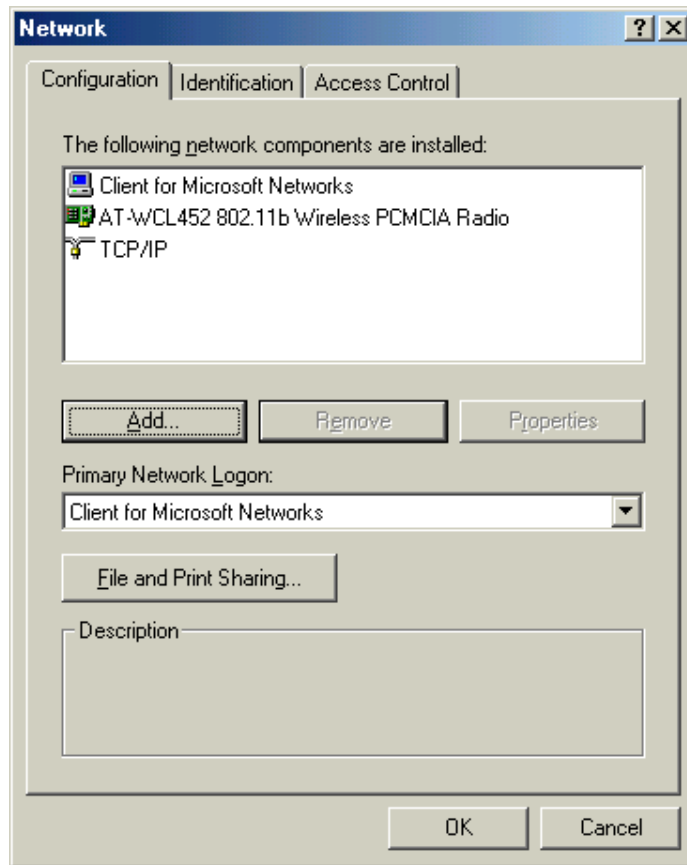


Figure 45 Network window

4. Select **Protocol** and click the **Add** button.

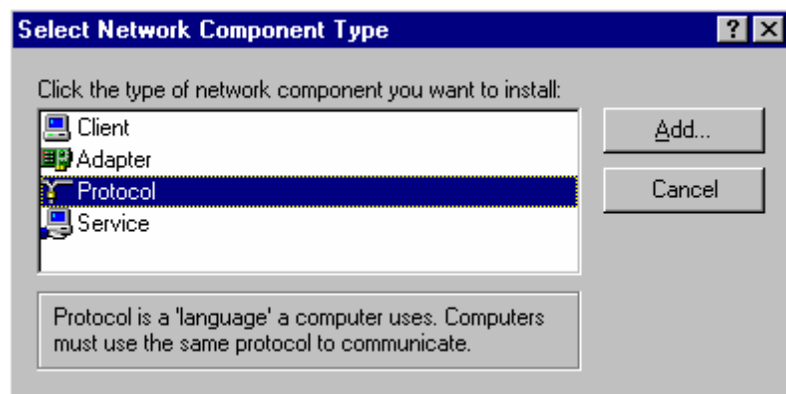


Figure 46 Update Network Component Type window

5. Select **Microsoft** from the list of Manufacturers and **TCP/IP** from the list of Network Protocols.

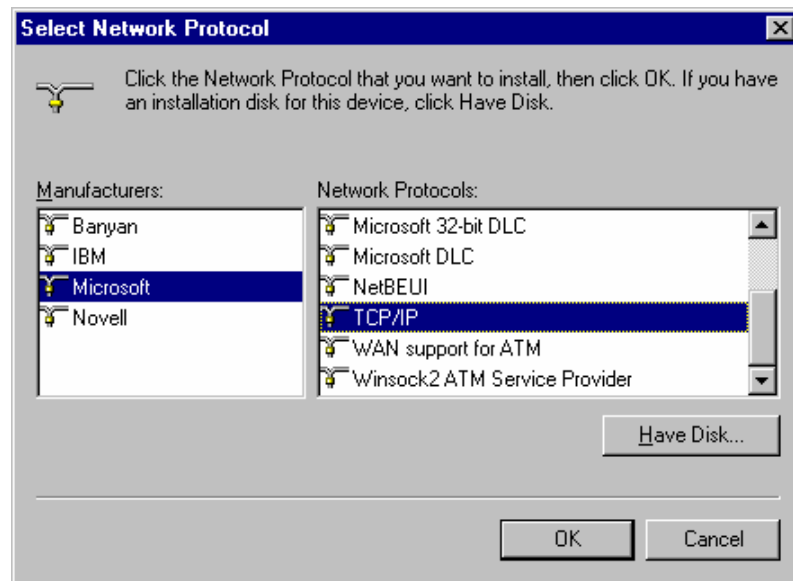


Figure 47 Select Network Protocol window

6. Click the **OK** button to finish the installation.

Appendix A

FAQs

1. What is IEEE 802.11 standard?

The IEEE 802.11 is a wireless LAN industry standard, and the objective of IEEE 802.11 is to make sure that different manufactures wireless LAN devices can communicate to each other.

2. What is WEP?

As described in the IEEE 802.11 standard, WEP (Wired Equivalent Privacy) is a data privacy mechanism based initially on a 40 bit shared key algorithm.

3. Why can't Windows recognize the AT-WCL452 Wireless LAN Card?

Please make sure that the LAN Card is inserted into the PCMCIA slot of your notebook properly (check this when the notebook is powered off).

Please check if PC Card support is installed. Double-click the PC Card icon on Control Panel. If PC Card support is not activated, you should activate it now.

4. In Infrastructure mode, my notebook cannot communicate with the others notebooks on the network.

First, make sure that the SSID is same as the others notebook.

Check if the WEP is enabled on the Access Point, if it is, set your Adapter's WEP to the same setting as the Access Point.

Also check the Access Point Authentication Type and Preamble Type and match those settings.

5. In ad-hoc mode, my notebook cannot communicate with the others notebooks on the network.

Make sure the SSID and the Channel number are the same as other wireless stations.

Check if the WEP settings are the same in all wireless stations.

Check the Network Properties and make sure the proper protocol is installed. Also, verify that File and Printer Sharing is enabled.

Appendix B

Specifications

Standards

IEEE 802.11b
PCMCIA 2.1
JEIDA 4.2 Standard

Channels

11 Channels (US, Canada)
13 Channels (Europe)
14 Channels (Japan)

Antenna

Built-in strip Antenna

Frequency

2.4 to 2.4835GHz (Industrial Scientific Medical Band)

Data Rate

up to 11Mbps

Operating Ranges

Indoor (varies depends on the environment):	Up to 50M @ 11Mbps Up to 80M @ 5.5Mbps
Outdoor (varies depends on the environment):	Up to 200M @ 11Mbps Up to 300M @ 5.5Mbps

Temperature

Operating:	0° - 55° C
Storage:	-25° - 70° C

Humidity

10% to 90% (non condensing)