11Mbps Wireless LAN Card

User's Manual

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Rev: 01
April 2003

Contents

About This Manual

This manual was written for the following type of wireless adapter:

- 32-bit CardBus Adapter

For brevity, throughout this manual **Wireless LAN Card** is used to indicate all the types. Also, the following terms/abbreviations are used interchangeably:

- Access Point – AP

- Peer-to-Peer – Ad Hoc

- Wireless LAN – WLAN

- Ethernet network – LAN – network

This User's Manual contains information on how to install and configure your Wireless LAN Card. From now on, we will guide you through the correct configuration steps to get your device up and run.

Chapter 1   Introduction

This Wireless LAN Card is an IEEE 802.11b Wireless LAN PCMCIA/USB adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without being bound to the network wires. Operating in 2.4GHz Direct Sequence Spread Spectrum (DSSS) radio transmission, the Wireless LAN Card transfers data at speeds up to 11Mbps. Both Ad-Hoc and Infrastructure mode are supported. For network security concern, 64/128-bit Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any 802.11b networks.

Wireless LAN Basics

This section contains some Wireless LAN basics to help you better understand how the product work together to create a wireless network.

Local Area Network (LAN)

Simply put, a LAN is a network that exists in a relatively limited area. A network is two or more computers connected together sharing files and peripheral devices such as printers.

The Wireless LAN Card allows you to interact with other computers without having to run cables normally associated with networks. This lets you move your computer around while staying connected to your network.

There are two ways to use the Wireless LAN Card. One way is to connect directly to one or more Wireless LAN Card equipped computers, forming an Ad-Hoc wireless network. The second way is to connect to an Access Point that gives you access to an existing wired LAN, forming an Infrastructure wireless network.

Ad-Hoc Mode

The Ad-Hoc Group offers peer-to-peer connections between workstations, allowing communication between computers within range that have a Wireless LAN Card installed. A wireless Ad-Hoc network can also access a wired LAN's TCP/IP service (such as e-mail and the Internet) by using a TCP/IP software router on an Ethernet equipped PowerBook or notebook.
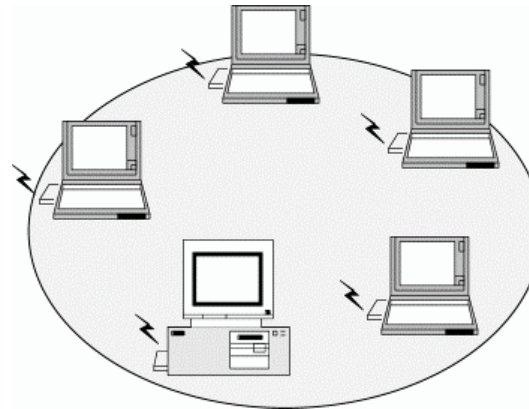

Figure 1-1   Ad-Hoc Mode

Infrastructure Mode

The Infrastructure network uses an AP or several APs as a gateway, linking the wireless network to a wired LAN. As a result, portable workstations or desktops on your wireless network have access to all of the features of your wired LAN including e-mail, Internet access, network printers and file server.
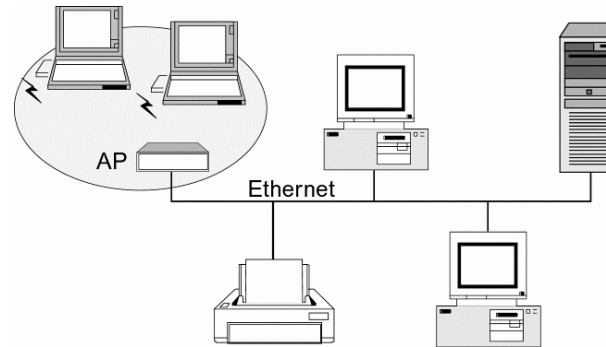
Figure 1-2   Infrastructure Mode

Roaming

Multiple Access Points can be installed to extend the wireless service coverage area for seamless wireless access. Within an extended service area, all Access Points and wireless clients must have the same Service Set Identity (SSID). Roaming among different Access Points is controlled automatically to maintain the wireless connectivity at all times.
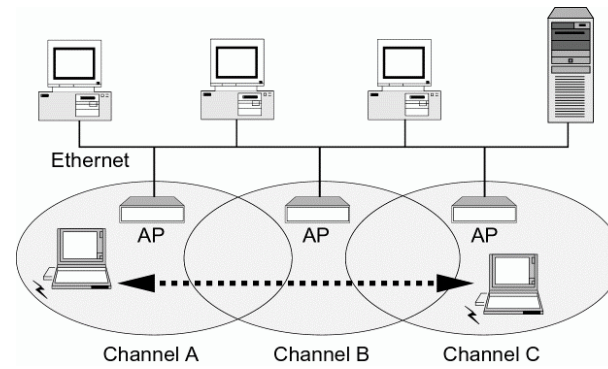
Figure 1-3   Roaming Across Multiple Access Points

Chapter 2   Installing the Wireless LAN Card

This chapter describes the installation process of the driver and software for the Wireless LAN Card. Proper driver installation is to allow the device to operate on your host computer while the utility software, Wireless LAN Utility, is to help you configure and monitor your Wireless LAN Card.

In case you need to install the driver and software for any reason, follow the instructions described in this chapter.

Note: The installation procedures are basically the same in Windows operating system. The following description uses Windows XP as the example environment.

System Requirements

To use the Wireless LAN Card, your computer must meet the following minimum requirements:

● Pentium-class PC, 300MHz or better recommended
● 64 MB of RAM, additional memory recommended
● Hard disk space at least 30 Mbytes
● Windows© 98(SE)/Me/2000/XP
● UL listed I.T.E. computers
● For CardBus wireless adapter: 32-bit Cardbus expansion slot

Installing Wireless LAN Driver and Software

Part 1: Installing Driver

Follow these steps to install the Wireless LAN Card driver and software.

1. Close all Windows programs that are running and insert the provided Software Utility CD into your CD-ROM drive

2. Insert your wireless adapter into the PCMCIA slot of your computer. The Windows Plug-and-Play feature will detect the new device.

3. Select **Install from a list or specific location (Advance)** and click **Next**.
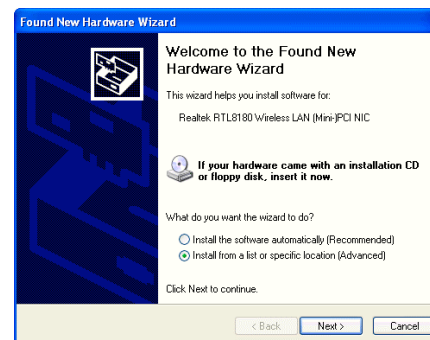
4. With **Include this location …** selected, click **Browse** to locate the driver from **D**:**Utility&Driver** of the Software Utility CD where **D** is the drive letter.
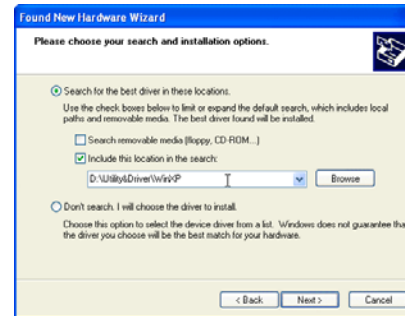
5. If Windows logo compatibility message appears, click **Continue Anyway** to proceed with the installation.

6.   Click **Finish**.
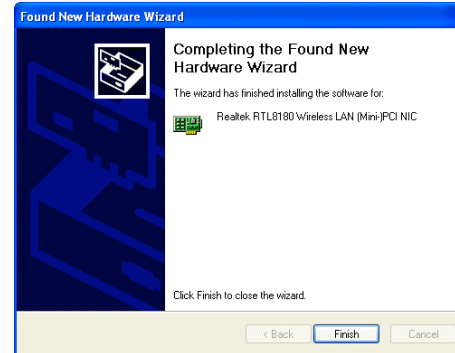
Part 2: Installing Software

1. Run **Setup.exe** from **D**:**Utility&Driver** folder of the Software Utility CD where **D** is the drive letter. When the welcome screen pops up, click **Next**.
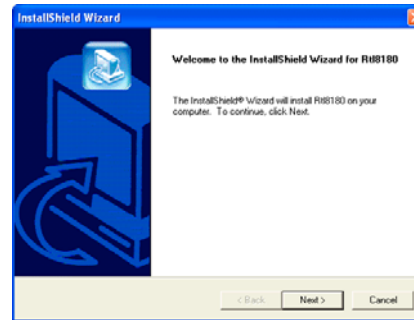
2.   When the **License Agreement** screen appears, click **Yes**.

3.   Click **Finish** when the following screen appears.
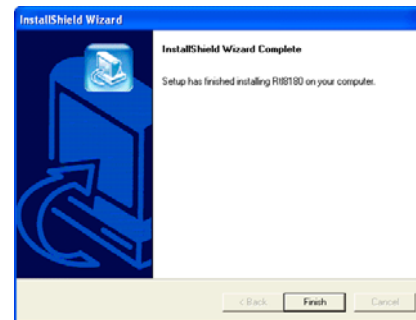
Note: If you need to set up the TCP/IP address or the subnet mask, refer to "Appendix B Setting Up TCP/IP" for details.

Chapter 3   Using Wireless LAN Utility

Once your wireless adapter driver and software is properly installed, the provided Wireless LAN Utility is ready for use. You should be able to find the wireless icon on your system tray. See the ensuing subsections for instructions on using the vendor-provided wireless utility.

Accessing Vendor's Wireless LAN Utility

To access vendor-provided Wireless LAN Utility:

1. Double-click the wireless icon on the system tray.

2. Click the **Advanced** button.
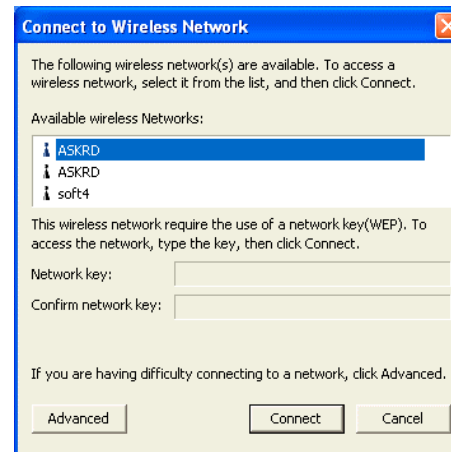
3. The vendor-provided utility is launched. You may click the menu on the left to execute corresponding tasks.
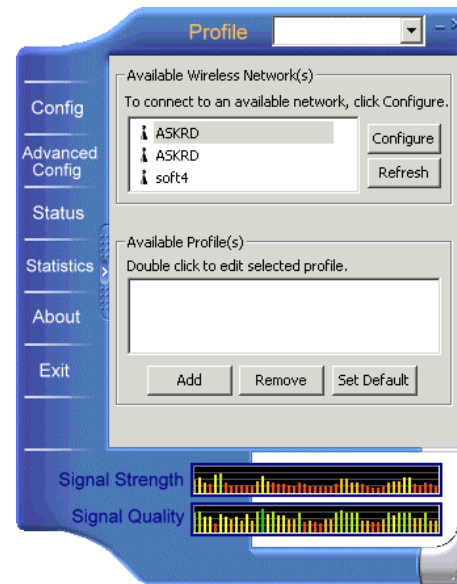
Notice When Assessing Wireless LAN Utility under Windows XP

Aside from using the vendor's WLAN utility for configuration, Windows XP includes a **Wireless Zero Configuration Utility** for you to configure your wireless adapter. By default, your wireless adapter is managed by Windows XP-included wireless utility. Under this circumstance, you will be prompted with the "You are in "Windows Config" mode" message if you try to access vendor-provided utility by double-clicking vendor's wireless icon in the system tray.

You can choose to configure your wireless network via either the vendor's Wireless LAN Utility or Windows XP-included wireless utility.

Using Vendor's Wireless LAN Utility

To use the vendor's WLAN utility for configuration purposes, you should disable the Windows XP-included wireless utility by these steps:

4. Double-click the Windows XP wireless tray icon and then click **Properties** (or **Advanced**). Then select **Wireless Networks** tab.

Windows XP wireless icon _____   _____ Vendor's wireless icon

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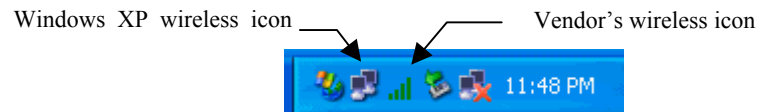
2. On the **Wireless Networks** tab, uncheck the **Use Windows to configure my wireless network settings** box and click **OK**. This will restore the **Wireless Networks** tab in wireless LAN utility.

Reverting back to Windows XP-included Wireless Utility

Double-click the Windows wireless icon (not the vendor's WLAN utility icon) and then click **Advanced** (or **Properties**). Click the **Wireless Networks** tab and check the **Use Windows to configure my wireless network settings** box and click **OK**.

Configuration

The **Config** screen comprises two sections: **Available Wireless Networks** and **Available Profiles**.

Available Wireless Networks

The utility automatically searches and displays available "open" wireless networks in this list. Highlighting a network will pop up the related parameters used by the network.
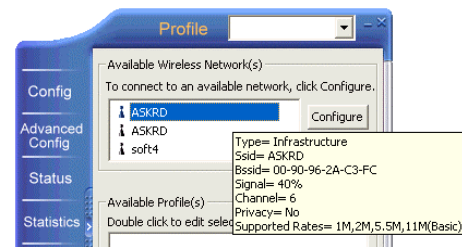
If you select a network and click **Configure**, you can configure the WEP and 802.1x settings.

Available Profiles

This section allows you to add, edit and remove a profile.

To add a new profile, click **Add** and then set up these parameters:

Screen Item	Description
SSID	Specifies the name of the WLAN group you want to participate in. **For Ad Hoc mode:** A network name is **mandatory**. The SSID for all stations in a single Ad Hoc network must be same. **For Infrastructure mode:** If using the special SSID "**any**", your Wireless LAN Card will connect to the first compatible and "open" AP with the best signal strength within the connection range.
WEP	Specifies whether to enable WEP settings. See next section for more information.
802.1x	Do not check the "Enable IEEE 802.1x authentication for this network" option unless you are going to join a 802.1x-enabled wireless network.
Operating Mode	To join an Ad-Hoc network, check the "This is a computer-to-computer (ad-hoc) network…" check box.

Screen Item	Description
	To join an Infrastructure network where an AP is required, leave the "This is a computer-to-computer (ad-hoc) network…" check box unchecked.

WEP Settings

In the **WEP** section you may take additional measures to secure your network by using WEP (Wired Equivalent Privacy). If encryption is not necessary, just leave the **Data encryption(WEP enabled)** check box empty. To enable WEP, take the steps below:

1. Check the **Data encryption (WEP enabled)** check box.

2. In the **Network Authentication (Shared Mode)** item, select this check box to use **Shared Key** or leave it empty to use **Open Key.** You should use the same authentication method as used by your targeted wireless network.

    •   **Open Key:** If your targeted wireless network uses **Open Key**, your authentication request will be always accepted regardless of your WEP keys. You are allowed to join the network assuming that your SSID matches the SSID of the targeted wireless network.

    •   **Shared Key:** If your targeted wireless network uses **Shared Key**, your wireless adapter must be set to use correct WEP to pass the authentication. If selected, your wireless adapter must use identical WEP keys as the targeted wireless network.

3. In the **Network key** and **Confirm network key** fields, enter 40bits or 104bits WEP keys in hexadecimal format. Note that the WEP keys must be the same as your target wireless network.

When using **Hexadecimal** format, only digits 0-9 and letters a-f, A-F are allowed. Make sure to enter the character matching the required key format and length as below:

	Hexadecimal digits
40 bits	10 hexadecimal digits
104 bits	26 hexadecimal digits

4. In the **Key index (advanced)** field, select an index for the key you entered.

After finishing all required settings, click **OK**. You will return to the **Config** screen and found the new profile named after the SSID you entered in the **Available Profiles** list.
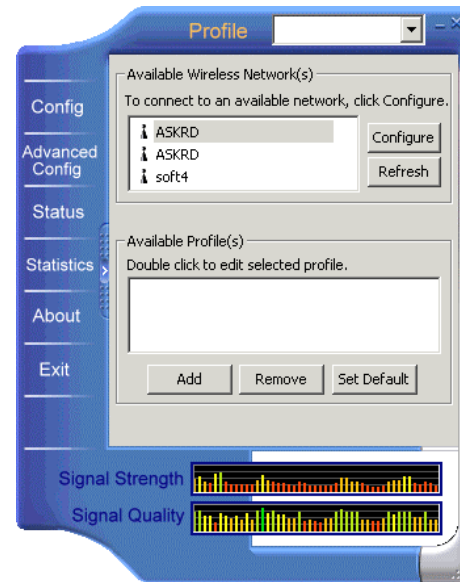
Advanced Configuration

The following table lists the parameters on this screen:

Screen Item	Description
Ad Hoc default channel	This setting determines which channel is to be used if your wireless adapter is the first to start an Ad Hoc network. When selecting a channel, make sure to select a legal channel according to your frequency domain.
Encryption	Specifies the encryption as WEP, TKIP or AES.
Preamble Mode	The preamble is part of the IEEE 802.11b physical layer specification. All 802.11b devices are mandatory to support the long preamble format, but may optionally support the short preamble. This Wireless LAN Card supports the short preamble. The **Short** option allows to communicate with other 802.11b devices which support short preamble to boost the throughput. The **Long** option is typically used in a "noisy" network. Make sure to use the appropriate preamble type according to your network environment.
Show icon in system tray	Specifies whether to show wireless icon in the system tray.

Screen Item	Description
Radio Off	Allows to disable/enable RF signal.
Power Save	Specifies the power save mode to be used.
Rescan	Allows to rescan the current associated network.
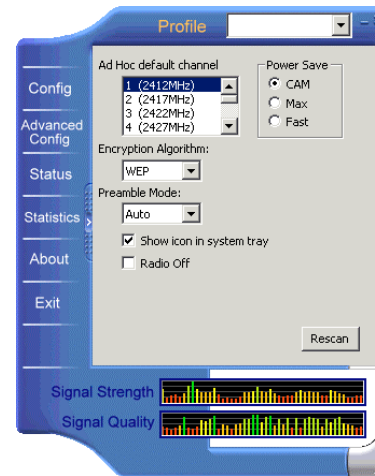
Status

This screen displays the detailed informatoin on your current wireless connecton.
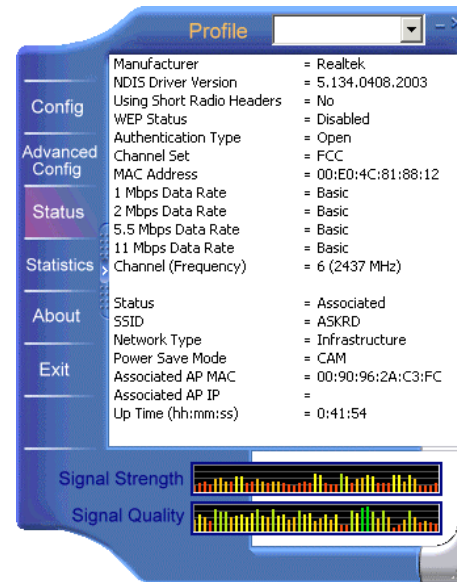
Statistics

This screen displays the statistics data on your current wireless connecton. You can optionally click the **Reset** button to set the couter to zero.
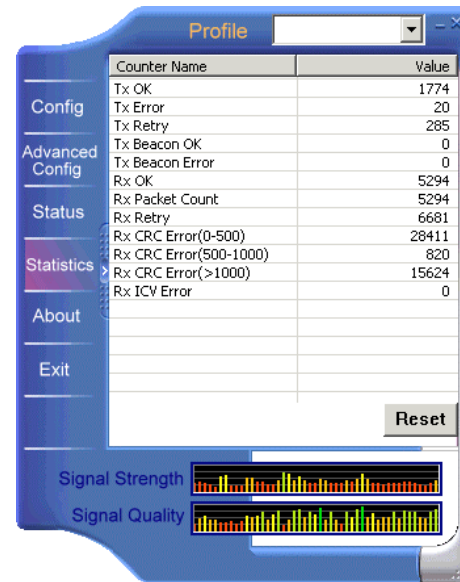
About

The **About** screen displays information about the utility version.
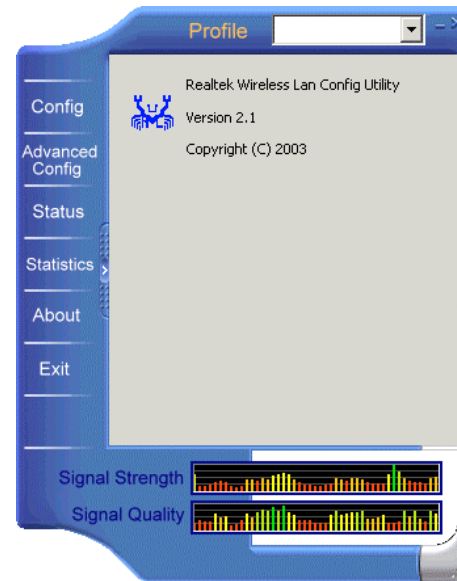
Chapter 5   Windows XP Wireless Zero Configuration Utility

Windows XP provides built-in **Wireless Zero Configuration** utility for wireless configuration and monitoring. You can choose to configure your wireless network via either the wireless LAN utility as described in preceding section, or to use the Windows XP **Wireless Zero Configuration** utility.

This section only provides the essential instructions on using Windows XP wireless utility to get your wireless network established. For more information please refer to Windows XP on-line help.

Connecting to an Access Point or Wireless LAN Card

To connect to an existing Access Point/Wireless LAN Card, take out the following steps:

1. Right-click the **Wireless Connection** icon on the system tray and select **View Available Wireless Networks** from the context menu.
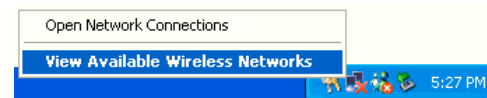
Note: Depending on whether your wireless network is established, the context menu may come with different items.

2. When the **Connect to Wireless Network** window pops up, you will see all the Access Points or Wireless LAN Cards that are available in the air. Select the wireless network you want to connect to .
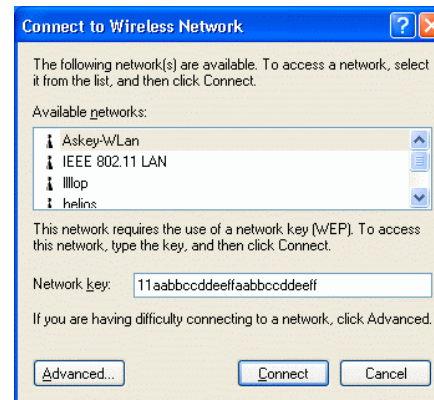
Figure 5-1   Windows XP Configuration Utility-Connect to Wireless Network

3. If the target Access Point/Wireless LAN Card has been set with WEP key, you must enter the same WEP key in the **Network key** field. Otherwise, leave it blank.

4.   Click **Connect**, then you will join the target network and this dialog window will disappear. When your wireless connection is established, the connection icon appears as below:

Note: If the wireless connection can't be established, double-click the connection icon and then click **Properties**. Go to **Authentication** tab first to make sure that you use the correct authentication type for the Wireless LAN Card. For more information, refer to "Authentication" on page 39.

Viewing Wireless Connection Status

After you successfully connect to the Access Point or Wireless LAN Card, double-click the icon in the system tray again. This will open the **Wireless Network Connection Status** window where you can see the general data of the Wireless LAN Card, such as Status, Duration, Speed, Signal Strength, etc.
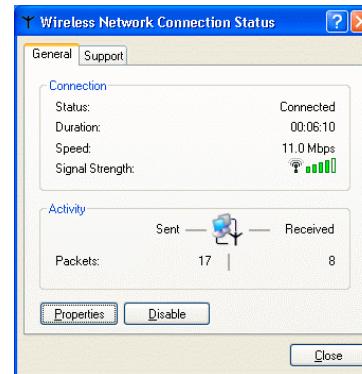
Figure 5-2   Windows XP- Connection Status

Configuring Your Wireless Properties

To configure your wireless properties, open the **Wireless Network Connection Status** window as described above, and then click the **Properties** button. This will open the **Wireless Network Connection Properties** window which allows you to configure more detailed items of the Wireless LAN Card. The following describes each tab of the properties window to help you do more settings of the Wireless LAN Card.

General

This tab allows you to specify the network methods to be used with your Wireless LAN Card. The network policy depends on your wireless network. For TCP/IP protocol, you should configure its properties as instructed by your network administrator. For more information on TCP/IP setting, please refer to "Appendix B   Setting Up TCP/IP" on page 51.
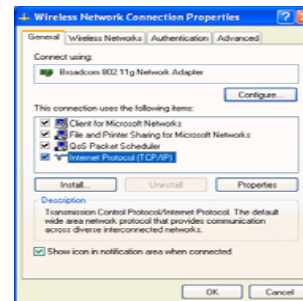
Figure 5-3   Windows XP Connection Properties -General

Wireless Networks

This tab contains two sections: **Available networks** and **Preferred networks** described as below.

Under **Available networks** section, you can also see all the Access Points and Wireless LAN Cards available in the air. Click **Refresh** to update the list of Access Points and Wireless LAN Cards.
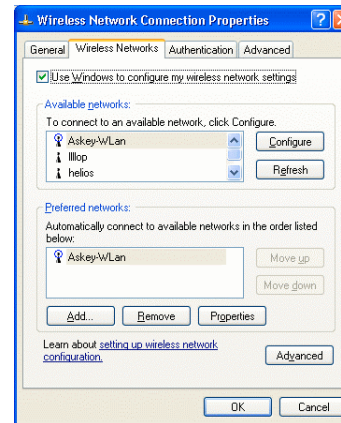
Figure 5-4   Windows XP Connection Properties-Wireless Networks

Under **Preferred networks** section, you can add any wireless networks that you wish to connect to. To do this, just click **Add** to add more Access Points or Wireless LAN Cards to the list.

After you click the **Add** button, the **Wireless Network Properties** window pops up. Type your network name (SSID) and, if needed, the wireless network WEP settings. Once the Access Point or Wireless LAN Card that you want to connect to has been set with WEP key, you must type the same WEP key as the Access Point's or Wireless LAN Card's.
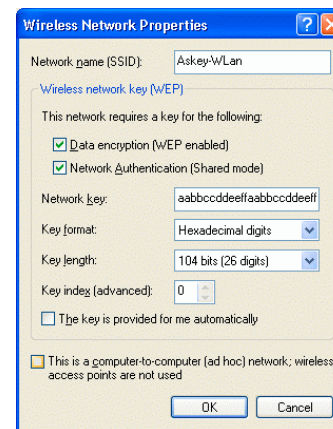
Figure 5-5   Windows XP-Add Preferred Networks

After you add several profiles into **Preferred networks,** you can change the order in which connection attempts to preferred networks are made. Just select the target wireless network and click **Move up** or **Move down** to move it to a desired position.

To Access Certain Wireless Network Only

If you just want to access certain wireless network type, click the **Advanced** button on the **Wireless Networks** tab to open the **Advanced** window. You can choose to connect to the following networks:

- Any available network (access point preferred)
- Access point (infrastructure)
- Computer-to-computer (Peer-to-Peer Group)

The default network type is **Any available network (access point preferred)**. In this network type, your device will connect to any Access Points or Wireless LAN Cards available in the air but Access Point always demands higher connection attempt priority.

Once you finish the advanced setting, your wireless station will then connect to your desired network and the connected network will be listed under **Available networks**.
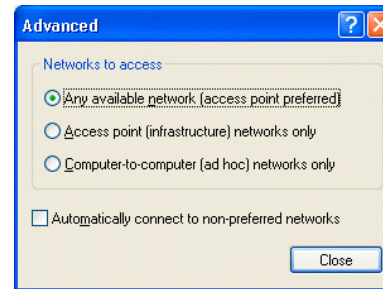
Figure 5-6   Windows XP Configuration Utility-Set up a Network to Aceess

Authentication

This tab allows you to configure the authentication settings of your Wireless LAN Card. The most important setting for the Wireless LAN Card is to disable **Enable network access control using IEEE802.1X** to ensure successful connection between the Wireless LAN Cards and Access Points or other Wireless LAN Cards. You must disable this function for any reason. Otherwise, there may be some problems happening during connection. For other settings, we recommend you keep the default settings to minimize the problems during connection.

Make sure to disable **Enable network access control using IEEE 802.1X**.
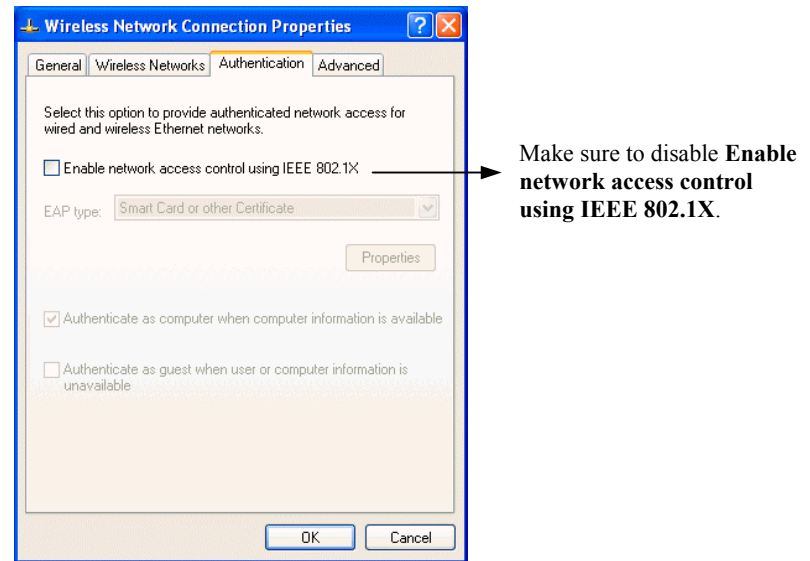
Figure 5-7   Windows XP Connection Properties – Authentication

Chapter 6   Uninstalling the Wireless LAN Card

Should you need to uninstall the Wireless LAN Card and application software for any reason,, you should uninstall the associated software and then remove the hardware from your computer. Please proceed as follows.

Uninstalling the Wireless LAN Card Software

Note: Before uninstalling the Wireless LAN Card software, please disable the utility by right-clicking the utility tray icon and select **Close** from the context menu. The icon will disappear to indicate that the utility is not in operation.

1.   Close all programs that are currently running.

2.   In **Control Panel**, double-click the **Add or Remove Programs** icon.

3.   Select **Rtl8180** from the list and click **Change/Remove**.
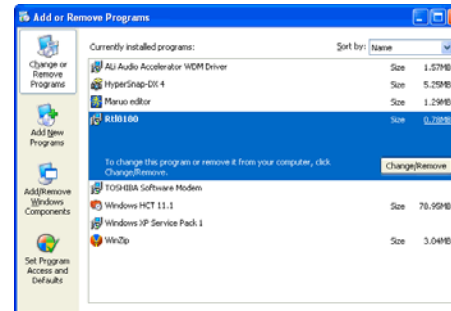
4.   Select **Remove** and click **Next**.

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5.   Click **OK** to proceed.
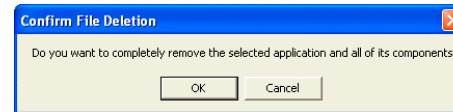
6.   Click **Finish** to complete the removal.
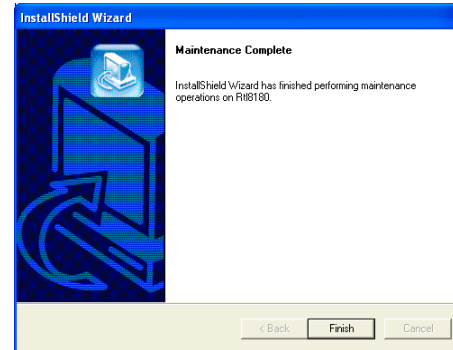
Removing the Wireless LAN Card (For CardBus Adapter)

To permanently remove the CardBus adapter from your computer, make sure that you have removed the software before you proceed to remove the hardware.

The Wireless LAN Card complies with the PCMCIA standard that allows devices to be inserted into and removed from the computer's PCMCIA slot when the computer is powered on. For a PCMCIA device, it is recommended that you follow the standard Windows procedure for disconnecting a PCMCIA device from your computer. The following steps assume a Windows 98 environment:

1. On the system tray, right-click the PCMCIA icon, and then click **Adjust PC Card Properties**.

2. Select the Wireless LAN Card which you want to remove, click **Stop**.

3. When the message appears that tells you it is safe to remove device, click **OK** and remove the Wireless LAN Card from the computer.

4. Click **OK** to exit the **PC Card (PCMCIA) Properties** window.

Chapter 7   Troubleshooting

Cannot Install under Windows 2000

When I installing the software under Windows 2000, I received the error message: "1608: Unable to create InstallDriver instance" and the program stopped installing.

This error occurs when the **Microsoft Network Client** is not installed under Windows 2000. To install this network component:

1.   Go to **Control Panel** and double-click the **Network and Dial-up Connections** icon. Right-click on the **Local Area Connection**, then select **Properties**.

2.   Click **Install** > **Client** > **Add** > **Client for Microsoft Networks** > **OK**.

3.   The **Microsoft Network Client** is now installed. Manually restart your computer to enable the changes.

4.   Then re-try to install the software as described in this manual.

Radio Interference

You may be able to eliminate any interference by trying the following:

- Reseat the Wireless LAN Card.
- Increase the distance between the wireless computers and the device causing the radio interference.
- Plug the computer equipped with the Wireless LAN Card into an outlet on a different branch circuit from that used by the affecting device.
- Consult the dealer or an experienced radio technician for help.
- Keep the computer with the Wireless LAN Card away from the microwave oven and large metal objects.

Card Not Detected

If the Wireless LAN Card is not detected by Windows, try the following:

- Make sure the Wireless LAN Card is properly inserted in the computer.
- For Cardbus wireless adapter, make sure you are using 32-bit Cardbus expansion slot and the slot is working.
- Contact your dealer for additional testing if there is a hardware problem with the Wireless LAN Card.

Cannot Connect to Another Wireless LAN Card

If you cannot make a connection to another Wireless LAN Card from your computer, it could be due to one of the following reasons:

- Incorrect SSID. Make sure the SSID is the same for all computers that have a Wireless LAN Card.

- Changes are not being recognized by your computer. Restart your computer.

- If in Ad-Hoc mode, make sure the **Log on to Windows NT domain** check box is not selected in the **Client for Microsoft Networks Properties** dialog box in the **Network Configuration** tab.

- Incorrect IP Address or Subnet Mask. Check these settings in the **TCP/IP Properties** dialog box in the **Network Configuration** tab.

Poor Link Quality

If the Link Quality display stays in the poor range, it could be due to one of the following reasons:

- Radio interference.

- Distance between Wireless LAN Card and the target Access Point or wireless client is too far. Decrease the distance between the Wireless LAN Card and Access Point or wireless client.

Cannot Connect to Access Point

If you cannot make a connection to the Access Point, it could be due to one of the following reasons:

- Make sure the Access Point have no physical connection problems.

- Make sure the SSID for the Wireless LAN Card is the same as the Access Point.

- Make sure the security settings are the same as that of Access Point.

Appendix A   Limited Warranty

Wireless LAN Hardware

The seller warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for 1 year from the date of purchase from the seller or its authorized reseller. The seller's sole obligation under this express warranty shall be, at the seller's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, The seller may, in its sole discretion, refund to the Customer the purchase price paid for the defective product. All products that are replaced will become the property of the seller. Replacement products may be new or reconditioned.

Wireless LAN Software

The seller warrants to Customer that each software program licensed from it , except as noted below, will perform in substantial conformance to its program specifications, for a period of 1 year from the date of purchase from the seller or its authorized reseller. The seller warrants the media containing software against failure during the warranty period. No updates are provided. The seller's sole obligation under this express warranty shall be, at the seller's option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable seller published specifications. Customer assumes responsibility for the selection of the appropriate application programs and associated reference materials. The seller makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or software applications products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third party products listed in the seller software product documentation or specifications as being compatible, the seller will make reasonable efforts to provide compatibility, except where the non-compatibility is caused by a defect in the third party's product or from use of the software product not in accordance with the seller's published specifications or user manual.

Appendix B   Setting Up TCP/IP

This section contains instructions for configuring the TCP/IP protocol of the Wireless LAN Card. The IP address policy depends on your wireless network. You should configure your TCP/IP protocol as instructed by your network administrator.

For Windows 98/ME

1.   Double-click the **Network** icon on the **Control Panel**.

2.   Click the **Configuration** tab of the **Network** dialog box.

3. In the network components list, select the TCP/IP protocol of your Wireless LAN Card, e.g., **TCP/IP** ->**Realtek RTL8180 Wireless …** and then click **Properties**.
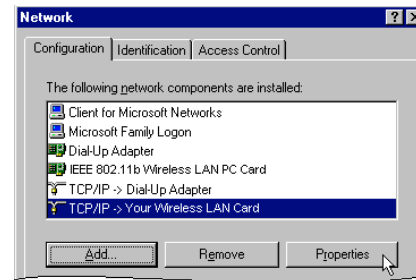
4. On the **IP Address** tab, choose one of the methods as required:

   Option A: Click **Specify an IP address**.

   In the **IP Address** box, enter a valid four-component IP address, either a public or private one as required.

   In the **Subnet Mask** box, enter a valid four-component IP address.

   Then select the **Gateway** tab and enter your gateway information.

   Option B: Select **Obtain an IP address automatically**.

   Then an IP address will be automatically assigned to your computer.

5.   Click **OK** to return to **Network** dialog box and click **OK** again to finish configuration. If your TCP/IP properties have been modified, you will be prompted to restart your computer. Click **Yes** to have new settings take effect.

For Windows 2000/XP

1. Double-click **Network Dial-up Connections** (Windows 2000) or **Network Connections** (Windows XP) on **Control Panel,** then **Network Connections**.

2. Right-click the **Realtek RTL8180 Wireless …** icon and click **Properties**.
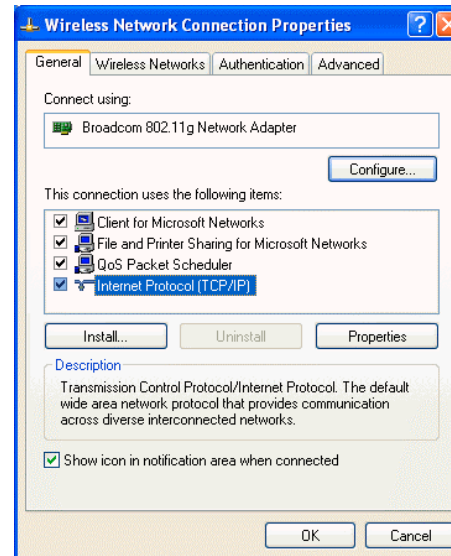
3.   On the **General** tab, highlight **Internet Protocol (TCP/IP)** and then click **Properties**.

   Option A: Use fixed IP address.

   Enable the **Use the following IP Address** option. Enter the **IP address**, **Subnet Mask** and **Default gateway**. Then click **OK**.

   Option B: Use dynamic IP address

   Select **Obtain an IP address automatically**.

4.   Close the **Local Area Connection Properties** window. For Windows 2000, if prompted, click **Yes** to restart your computer.

Glossary

10BaseT An IEEE standard (802.3) for operating 10 Mbps Ethernet networks (LANs) with twisted pair cabling and a wiring hub.

Access Point An internetworking device that seamlessly connects wired and wireless networks. Access Points combined with a distributed system support the creation of multiple radio cells that enable roaming throughout a facility.

Ad-Hoc A network composed solely of stations within mutual communication range of each other (no Access Point connected).

BSS *Basic Service Se*t. A set of stations controlled by a single coordination function.

Channel A medium used to pass protocol data units that can be used simultaneously in the same volume of space by other channels of the same physical layer, with an acceptably low frame error ratio due to mutual interference.

ESS *Extended Service Set*. A set of one or more interconnected Basic Service Sets (BSSs) and integrated Local Area Networks (LANs) can be configured as an Extended Service Set.

Ethernet The most widely used medium access method, which is defined by the IEEE 802.3 standard. Ethernet is normally a shared media LAN; i.e., all the devices on the network segment share total bandwidth. Ethernet networks operate at 10Mbps using CSMA/CD to run over 10BaseT cables.

Gateway A network component that acts as an entrance to another network.

IEEE 802.11 The IEEE 802.xx is a set of specifications for LANs from the Institute of Electrical and Electronic Engineers (IEEE). Most wired networks conform to 802.3, the specification for CSMA/CD-based Ethernet networks or 802.5, the specification for token ring networks. 802.11 defines the standard for wireless LANs encompassing three incompatible (non-interoperable) technologies: Frequency Hopping Spread Spectrum (FHSS), Direct Sequence Spread Spectrum (DSSS), and Infrared. IEEE standards ensure interoperability between systems of the same type.

Infrastructure A wireless network centered about an Access Point. In this environment, the Access Point not only provides communication with the wired network but also mediates wireless network traffic in the immediate neighborhood.

IP *Internet Protoco*l. The standard protocol within TCP/IP that defines the basic unit of information passed across an Internet connection by breaking down data messages into packets, routing and transporting the packets over network connections, then reassembling the packets at their destination. IP corresponds to the network layer in the ISO/OSI model.

IP Address An IP address is a 32-bit number that identifies each sender or receiver of information sent across the Internet. An IP address has two parts: the identifier of a particular network on the Internet and an identifier of the particular device (which can be a server or a workstation) within that network.

LAN	*Local Area Networ*k. A communications network that serves users within a defined geographical area. The benefits include the sharing of Internet access, files, and equipment, such as printers and storage devices. Special network cabling (10BaseT) is often used to connect the PCs together.
Radio Frequency	*R*F, Terms: GHz, MHz, Hz —The international unit for measuring frequency is Hertz (Hz), equivalent to the older unit of cycles per second. One megahertz (MHz) is one Million-Hertz. One giga hertz (GHz) is one Billion-Hertz. The standard U.S. electrical power frequency is 60 Hz, the AM broadcast radio frequency band is 0.55–1.6 MHz, the FM broadcast radio frequency band is 88–108 MHz, and wireless 802.11 LANs operate at 2.4GHz.
SSID	*Service Set I*D. A group name shared by every member of a wireless network. Only client PCs with the same SSID are allowed to establish a connection.
Subnet Mask	A value that defines whether your computer communicates only within your LAN or communicates outside of your LAN, where it is routed out to the rest of the Internet. A Subnet Mask that has the same first three components (for example, 255.255.255.0) is the routing pattern for a Class C address.
TCP	*Transmission Control Protoco*l. The standard transport level protocol that provides the full duplex, stream service on which many applications' protocols depend. TCP allows a process on one machine to send a stream of data to a process on another. Software implementing TCP usually resides in the operating system and uses the IP to transmit information across the network.

WEP   *Wired Equivalent Privac*y. The optional cryptographic confidentiality algorithm specified by 802.11. The algorithm is being used to provide data confidentiality that is subjectively equivalent to the confidentiality of a wired LAN medium that does not employ cryptographic techniques to enhance privacy..

Federal Communication Commission Interference Statement

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

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

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

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

This device complies with FCC RF Exposure limits set forth for an uncontrolled environment, under 47 CFR 2.1093 paragraph (d)(2).

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