IEEE 802.11 g 54Mbps
Wireless LAN CardBus Adapter
User's Manual

Table of Content

Regulatory Compliance
FCC Warning

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more 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.


Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.
1) 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."

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

Chapter1
Introduction

This 802.11g wireless network adapter is a plug and play 32-bit CardBus PCMCIA adapter and offers high-speed wireless connection up to 54Mbps. It shares the same 2.4GHz radio band with 80.11b products so it can interoperate with existing 802.11b networking products. With the wireless network adapter installed, you can connect to wireless-B (802.11b) and Wireless-G (draft 802.11g) networks.

With this PCMCIA network adapter and appropriate drivers and utility installed, you can transform your wired device into wireless station easily and thus access your wireless and wired network quickly. Fully compliant to Wired Equivalent Privacy (WEP) with 64-bit and 128-bit encryption, so it can offer a reliable and secure wireless communication.

This wireless network adapter provides a fast and convenient way to connect your laptop or desktop to a wireless station or as an integral part of a wired local area network with a wireless network segment. You can configure this network card in Ad-Hoc mode (without an access point) or Infrastructure mode (with an access point).

Currently, we provide device drivers and configuration utility for Windows98SE, ME, 2000 and XP and as well as the installation procedures are described in the following sections.

1.1 Package Content

Open the box and remove all items, please make sure that you have received the following items:

Wireless LAN CardBus Adapter Package Content	
1	Wireless LAN CardBus Adapter
2	Quick Installation Guide
3	Utility CD

If any item is found missing or damaged, please contact your local reseller for replacement.

1.2 System Requirement

To properly use your wireless LAN card, please make sure that your laptop or desktop meets the following minimum system requirements:

- The laptop or desktop must have one of the operating systems, i.e: MS Windows 98SE, ME, 2000 and WinXP
- CD-ROM drive
- Desktop PC: PCMCIA controller in case of desktop PC
- Laptop: PCMCIA Type II card slot.

1.3 Wireless LAN CardBus Adapter Features

This wireless CardBus adapter offers compliance with IEEE 802.11g standard so it allows

communicate with other manufacturers' wireless devices that support this standard. The followings are the main distinguishing features of this wireless adapter.

- Compatible with IEEE 802.11g high rate standard to provide wireless speeds of 54Mbps data rate with OFDM modulation.
- Backward compatible with IEEE 802.11b high rate standard to provide wireless speeds of 11Mbps data rate with CCK modulation
- Dynamic date rate scaling at 54, 48, 36, 24, 18, 12, 9 Mbps in OFDM mode
- Dynamic date rate scaling at 11, 5.5 Mbps in CCK mode; 2 and 1Mbps in DQPSK and DBPSK mode.
- 32-bit cardbus Interface
- Maximum reliability, throughput and connectivity with automatic fallback, auto-switch between OFDM and CCK.
- Supports wireless data encryption with 128-bit WEP and WPA standard for security
- On-board printed patch antenna
- Drivers support Windows 98SE, 2000, ME, XP
- Simple user setup & diagnostics utilities
- Type approval compliant with FCC Part 15.247 for US, EN 300-328 for Europe, and RCR STD-33A and ARIB STD-T66 for Japan

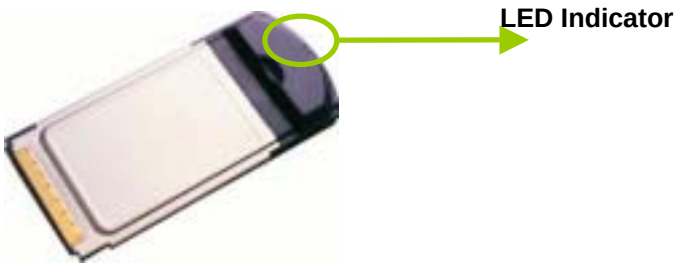
1.4 Wireless CardBus Adapter Specification

Specification	
RF Technology	Direct Sequence Spread Spectrum
Operating Frequency	2400-2497MHz ISM band
Modulation Schemes	DQPSK, DBPSK and CCK
Channel Numbers	11 channels for United States 13 channels for Europe 14 channels for Japan
Data Rate	11Mbps(CCK) with fall back rates of 5.5, 2, and 1Mbps 54Mbps with fall back rates of 48/36/24/18/12/9 Mbps (OFDM)
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power	18 dBm typically
Receiver Sensitivity	Typical -68dBm for 54Mbps @ 10% PER (Packet Error Rate) Typical -86dBm for 2Mbps @ 8% PER (Packet Error Rate)
Range Coverage	Indoor: 35 - 100 meters (depends on environment) Outdoor: 100 - 300 meters (depends on environment)
LED Indicator	Power & Link status
Antenna Type	Printed-on-board antenna
Operating Voltage	5V DC +- 10% (3.3V option)
Current Consumption	250mA at transmit mode typically 200mA at receive mode typically 5mA at sleep mode typically
Form Factor and Interface	PC Card Type II
Temperature	0 ~ 55 ℃ in operating -20~75 ℃ in storage
Humidity	10% ~ 90% Non-condensing
Dimension	115mm x 54mm x 5mm

1.5 Wireless CardBus Adapter Hardware Description

The LED illuminates to indicate that the card is functioning. Please refer to the hardware diagram below. The upper solid red LED indicates this card is associated with an access point and power on. If the LED is off, it means that the network adapter doesn't associate an access point. If the LED is blinking, it means that the network adapter is connecting with access points or transmitting or receiving data.

Hardware Diagram

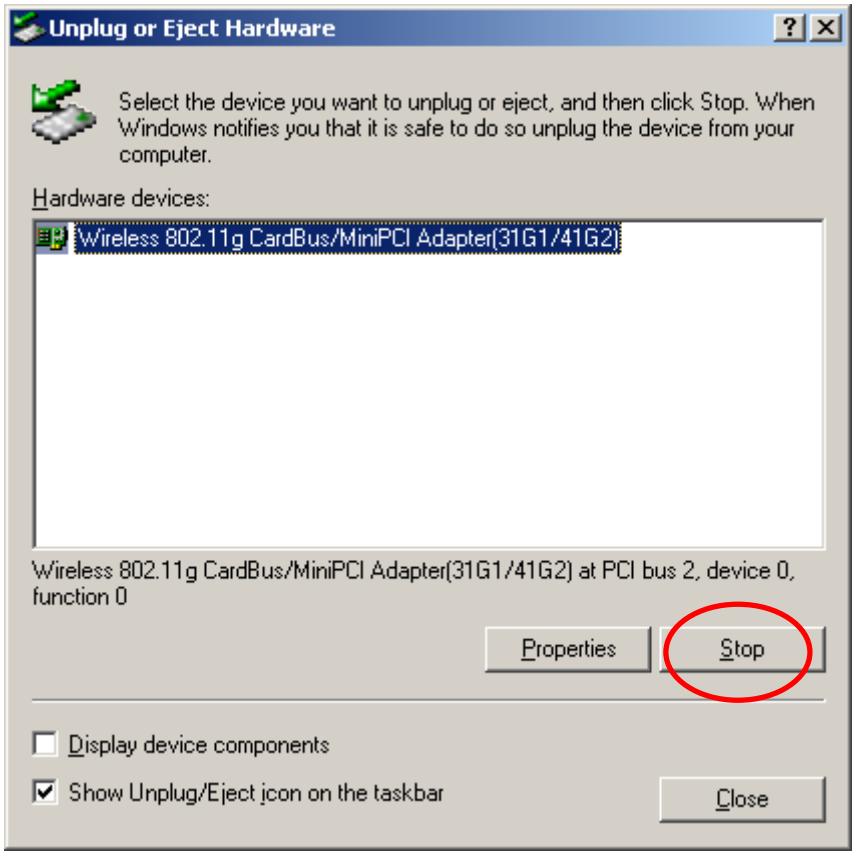


1.6 Ejecting the Wireless LAN CardBus Adapter

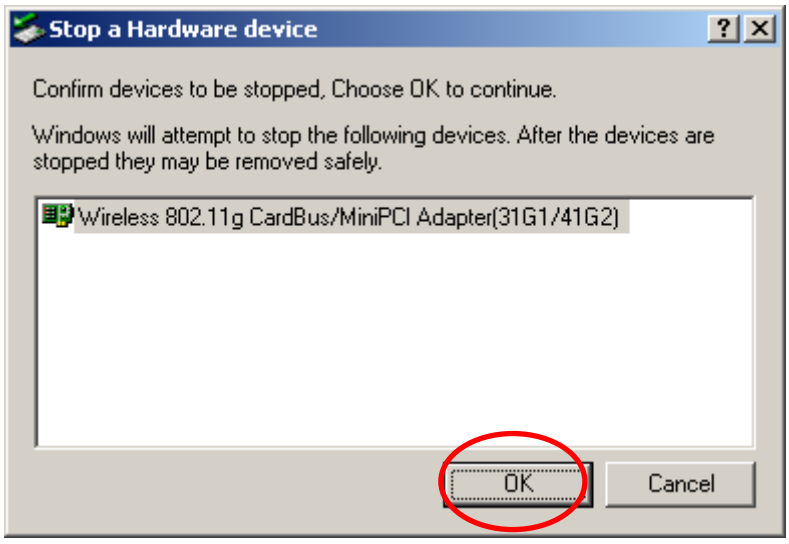
You are advised to always disable the WLAN CardBus adapter prior to removing the adapter from the PCMCIA slot. The wireless LAN adapter support hot-swappable feature so you don't have to power off the notebook to remove the adapter.

Steps:

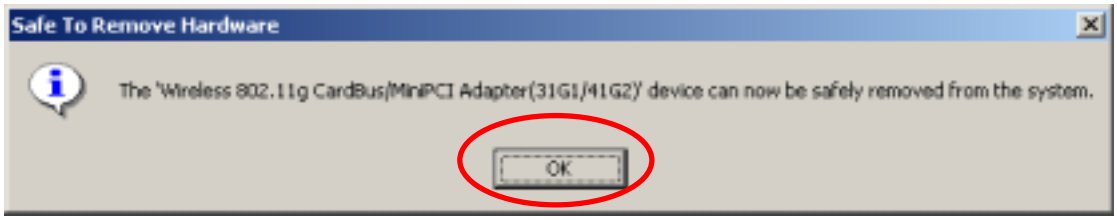
- Double click the **Unplug or Eject Hardware Icon** resides on your system tray and click **Stop** from the Unplug or Eject Hardware dialog box.



- Click **OK** to confirm that you are going to stop the adapter.



- The following screen prompts that you can remove the adapter. Click **OK** button to close the dialog box.



- Push the lever of your notebook to eject the adapter now.

Note:
Don't eject the wireless LAN adapter when data transmission is taking place.

Chapter2
Installation and Configuration Procedures

2.1 Installation Procedures In Windows98

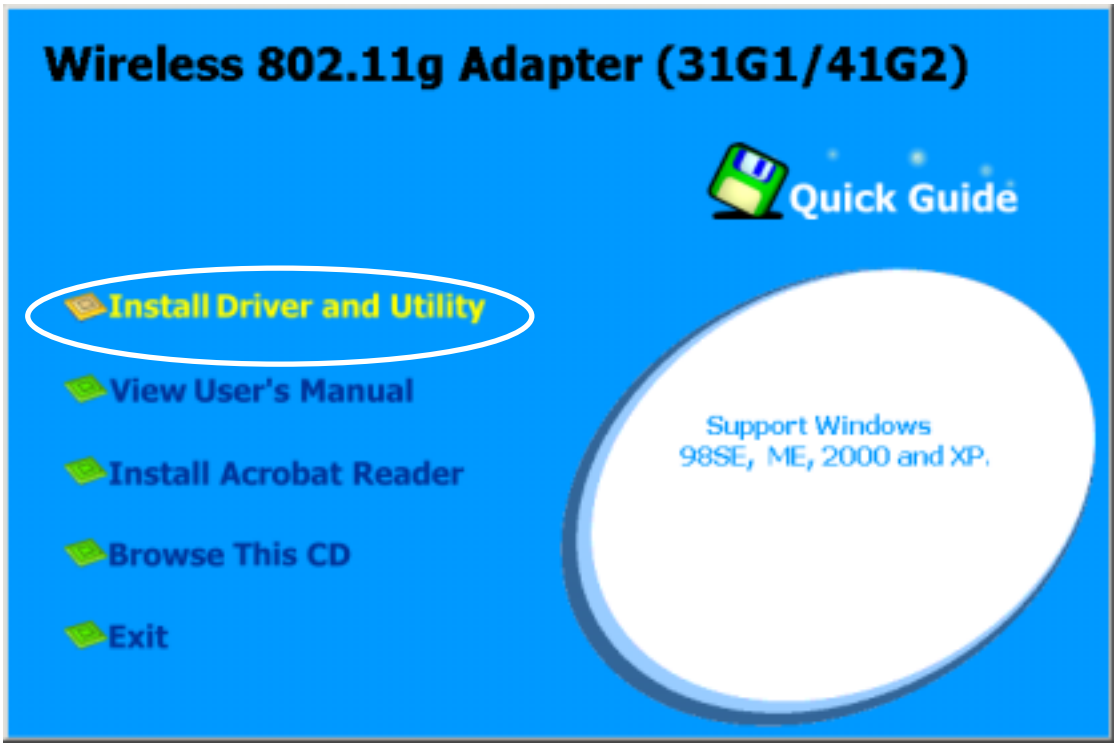
This wireless LAN CardBus adapter driver and utility are contained in the utility CD we provide. Insert the utility CD into your CD-ROM drive and the Autorun function will automatically guide you to start the installation process of configuration utility and drivers. If the Autorun function does not automatically start, please open this utility CD to find the **SETUP.exe** file and double click the **SETUP.exe** icon to start the installation procedure.

Important notice:

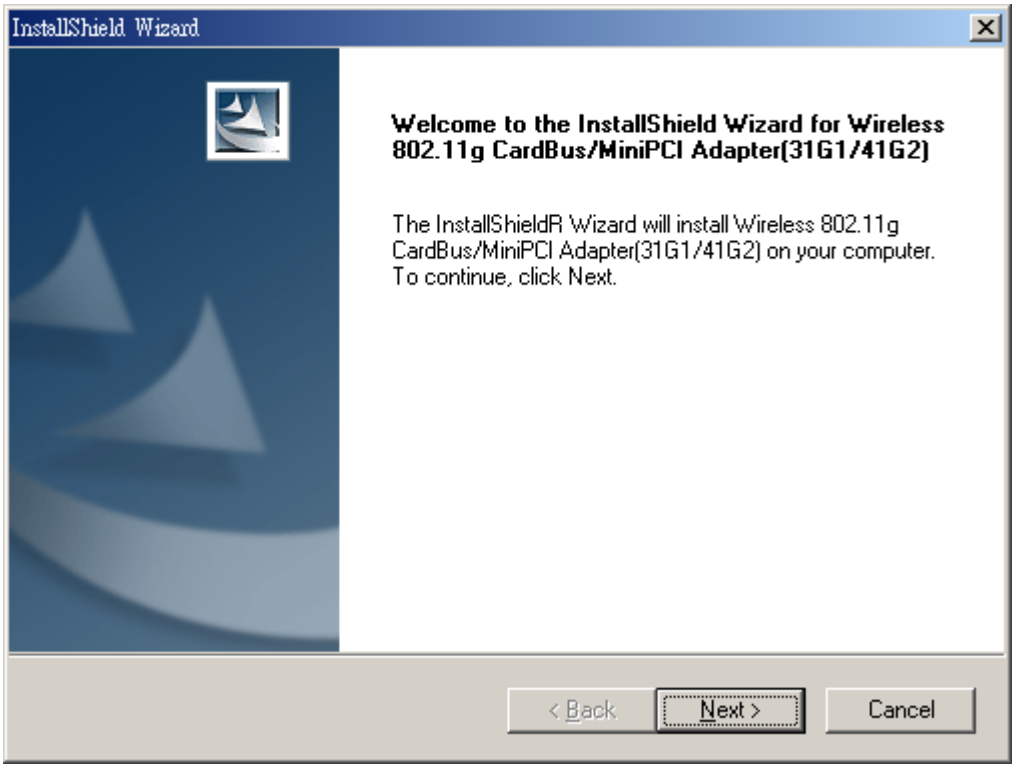
- ✓ Please do not attach or physically connect the wireless LAN CardBus adapter into PCMCIA slot prior to executing the setup program.
- ✓ In Windows98SE, you have to manually install the CardBus driver.

2.1.1 Installing the Wireless LAN CardBus Adapter

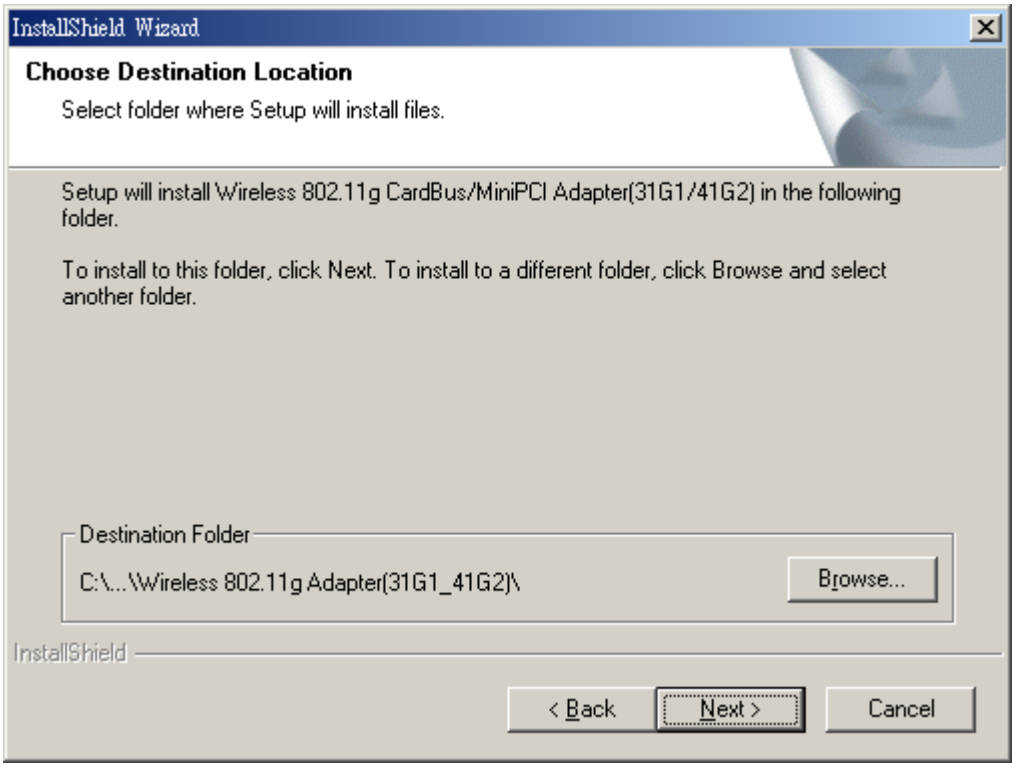
1. Turn on your desktop or notebook.
2. Close any open programs and insert the utility CD into your CD-ROM Drive. The Autorun function will automatically start and the following main screen will be pop-up. Double-click on the **Install Driver and Utility** item to start the software installation. Click the "**View User's Manual**" to view the user's manual and click "**Install Acrobat Reader**" to install this software to view the user's manual. If you don't want to install right now you can click "**Browse This CD**" to view the CD files and click **Exit** to close the main screen.



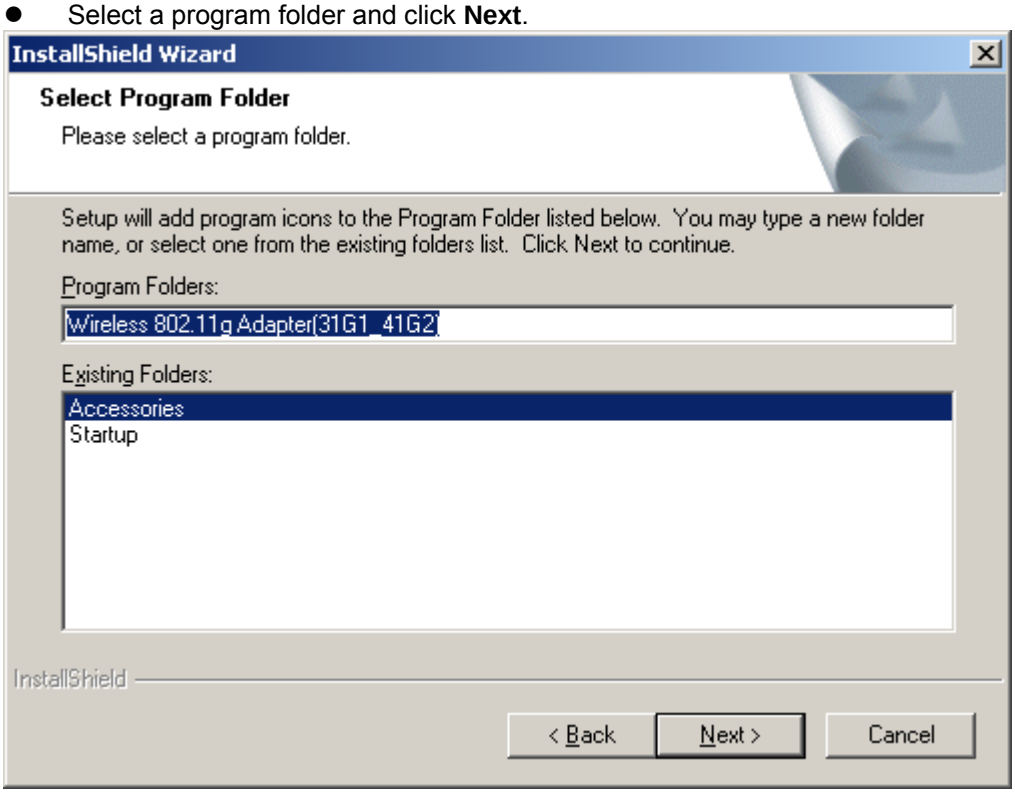
- The InstallShield Wizard is preparing to install the configuration utility and drivers. Click **Next**.



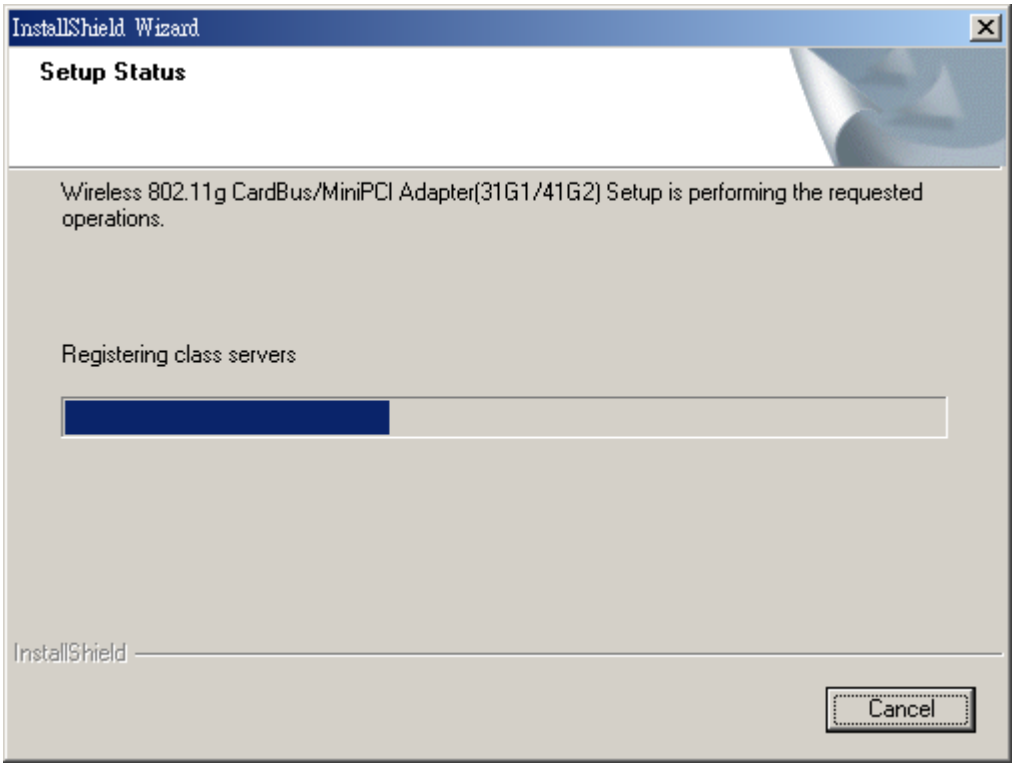
- In the *Destination Folder* screen you are asked to confirm the *Destination Folder* for the application software. If you would like, you may change the destination folder to another location as the directory. Click **Next**.



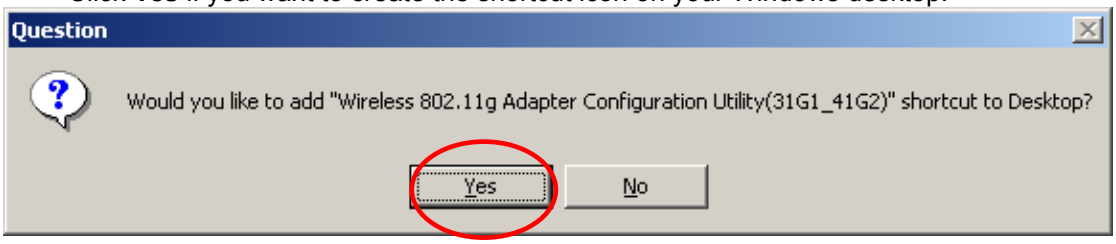
- Select a program folder and click **Next**.



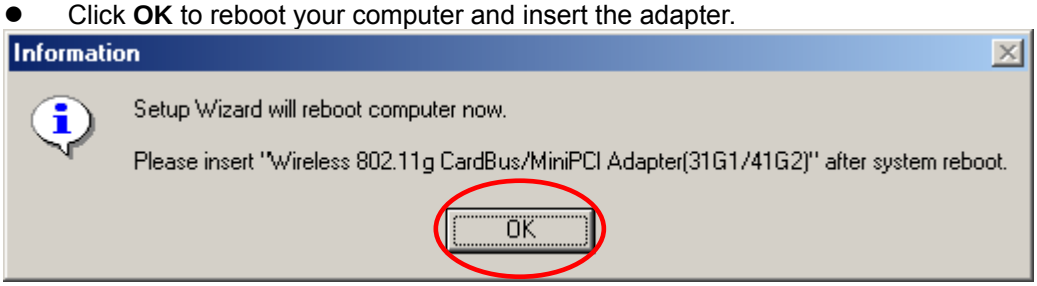
- The InstallShield Wizard is installing utility.



- Click **Yes** if you want to create the shortcut icon on your Windows desktop.



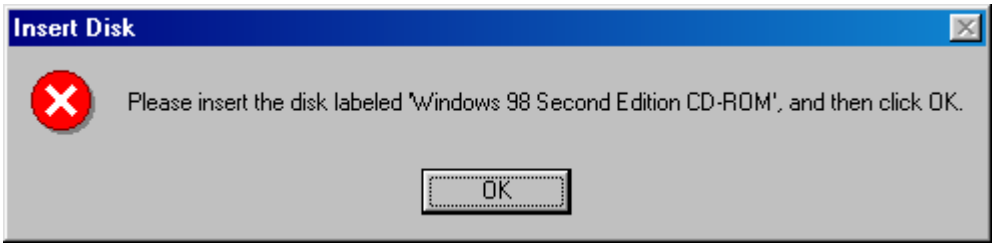
- Click **OK** to reboot your computer and insert the adapter.

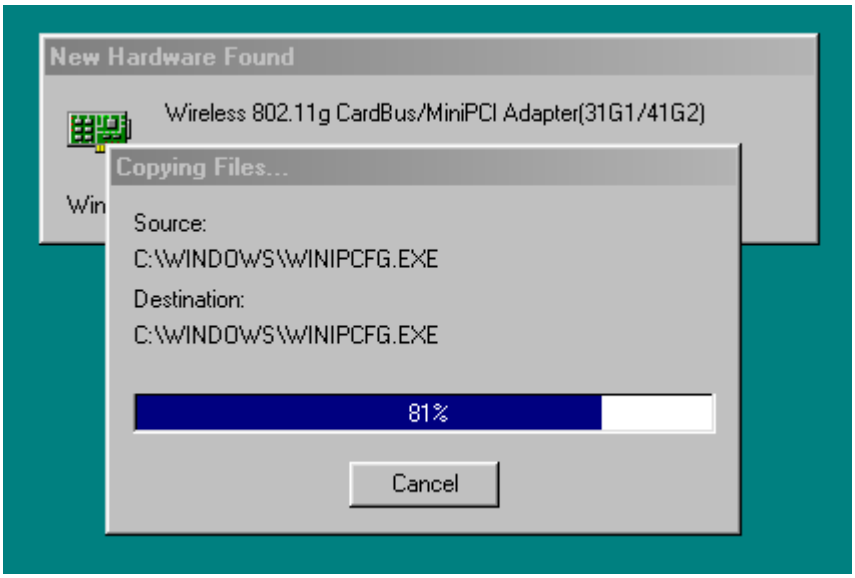


2.1.2 Completing to Install the Wireless LAN CardBus Adapter in Windows98SE

After your computer reboot,

- Plug in the wireless CardBus adapter into the PCMCIA slot and the **New Hardware Found Wizard** will appear. During driver installation, you will be asked to specify the directory of Windows 98 source files path during installation. Please enter the location of the Windows98 setup files and follow the on-screen description.





- After all the necessary drivers are installed, you can open the Utility. On the system tray, you can find that a PCMCIA adapter icon and the utility icon and the Power LED on the adapter is flashing. Now, you have completely finished the whole installation procedure.

(Under Windows 98)

2.2 Installation Procedures In WindowsME

The Wireless LAN CardBus Adapter Windows driver ships with the Wireless CardBus Configuration Utility. If you have connected the Wireless CardBus Adapter to your computer, please remove it, cancel any hardware wizard that may show up, and start here.

Before you start:

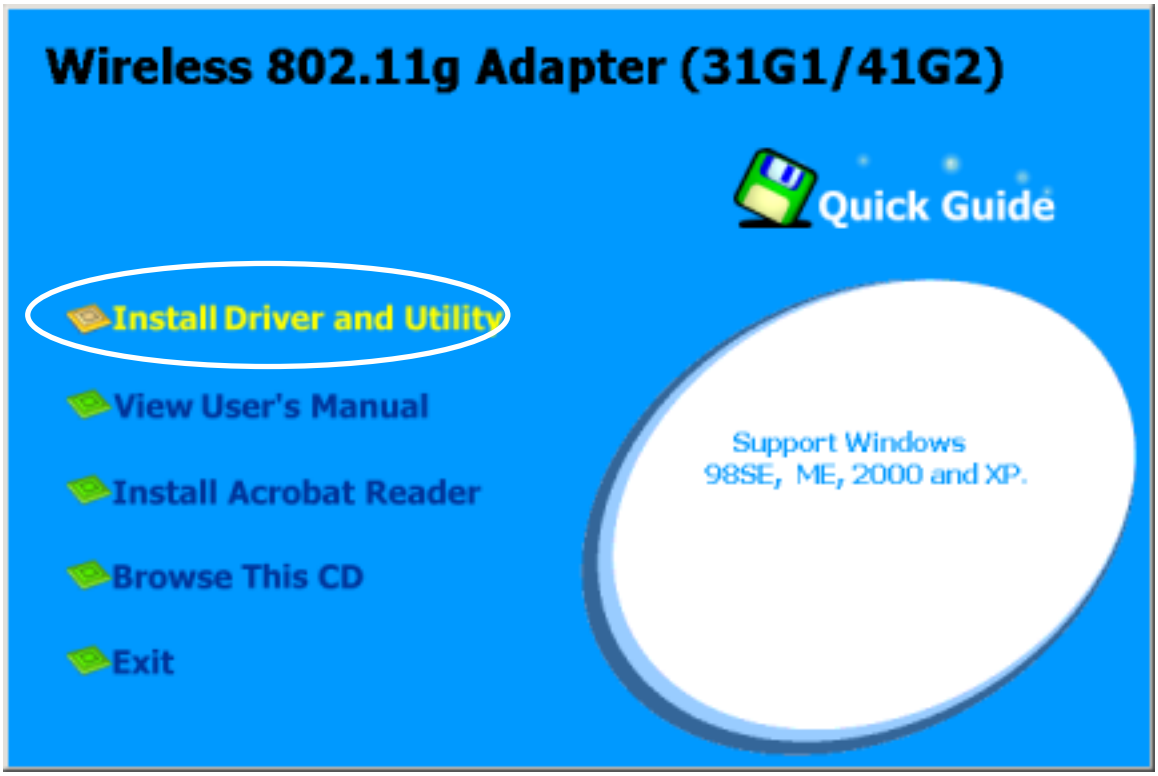
✓ Obtain this Utility CD.

✓ Please do not attach or physically connect the wireless LAN CardBus adapter into PCMCIA slot prior to executing the setup program.

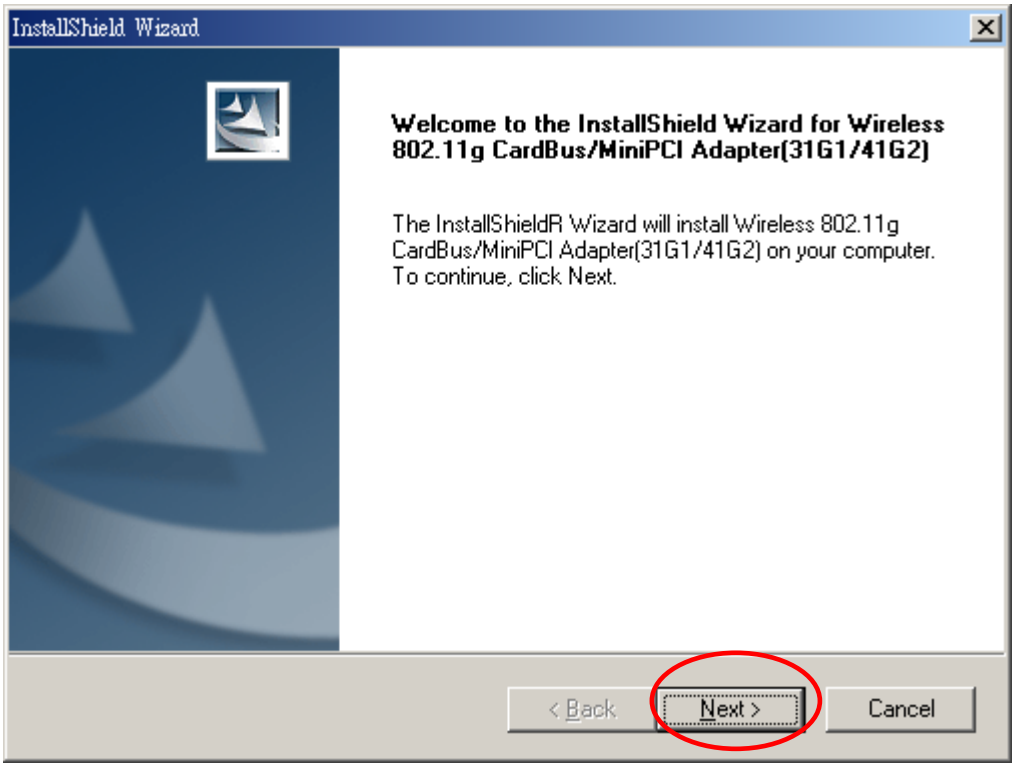
2.2.1 Installing the Wireless LAN Card Driver and Configuration Utility

Close any open programs and insert the utility CD into your CD-ROM Drive. The Autorun function will automatically start and the following main screen will be pop-up. Double-click on the **Install Driver and Utility** item to start the software installation. (If the Autorun function does not automatically start, please open the Installation CD to find the Setup.exe file and double click the Setup.exe icon to continue.) Click the "**View User's Manual**" to view the user's manual and click "**Install Acrobat Reader**" to install software to view the user's manual. If you

don't want to install right now you can click "**Browse This CD**" to view the CD files and click **Exit** to close the main screen.

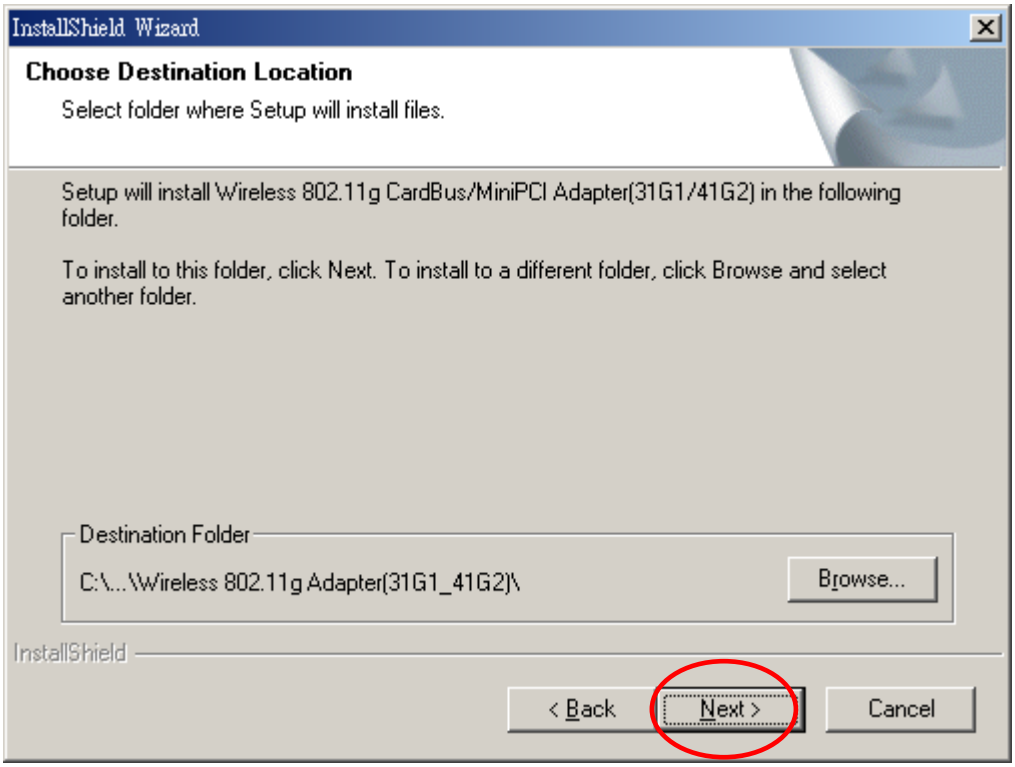


- The InstallShield Wizard is preparing to install the configuration utility and drivers. Click **Next**.

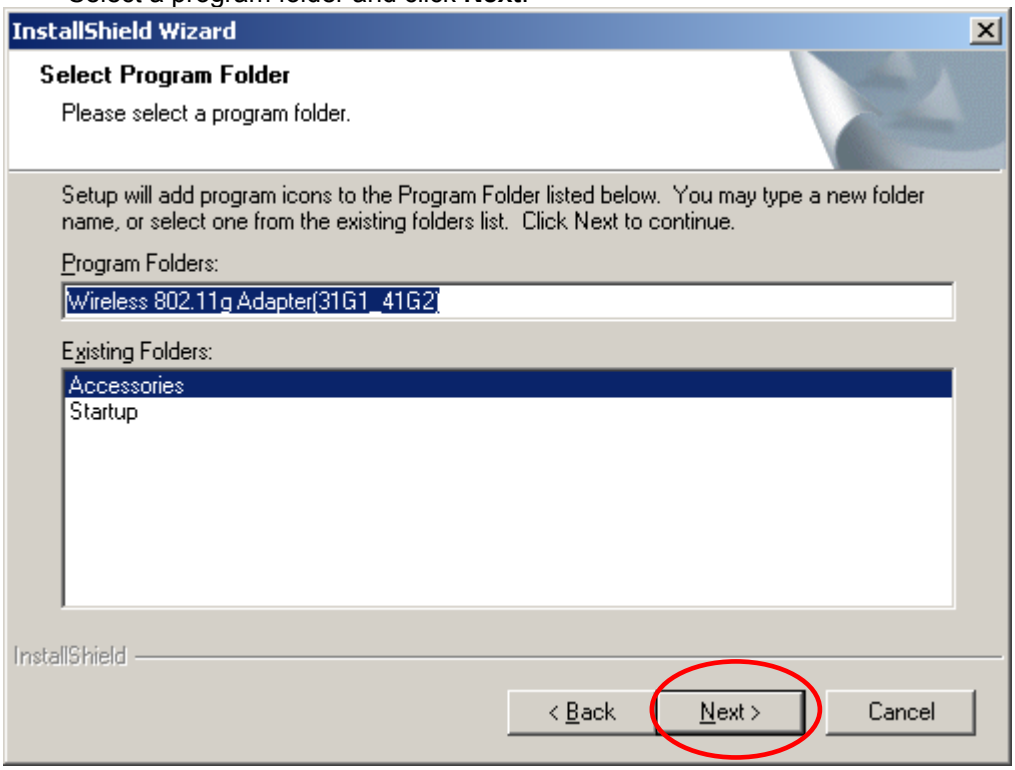


- In the *Destination Folder* screen you are asked to confirm the *Destination Folder* for the application software. If you would like, you may change the destination folder to another

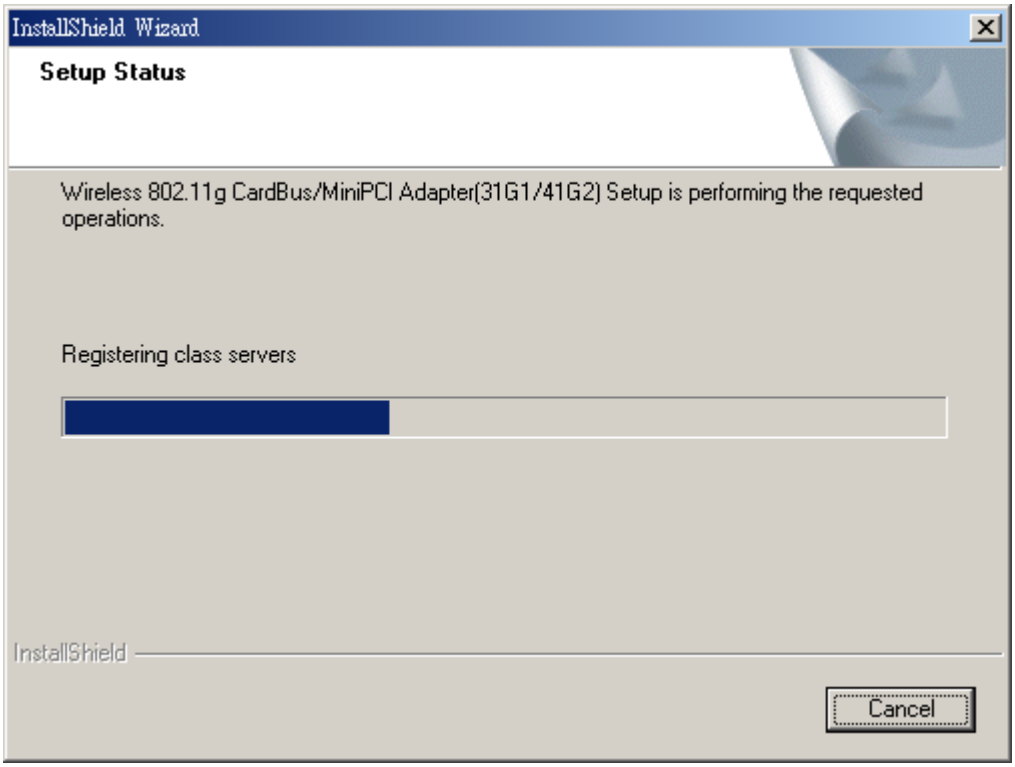
location as the directory. Click **Next**.



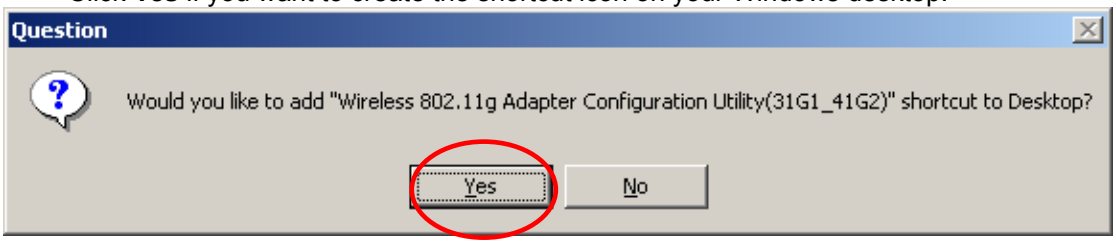
- Select a program folder and click **Next**.



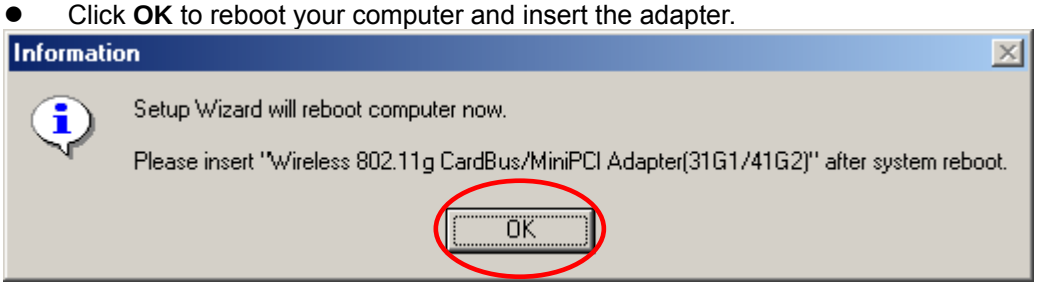
- The InstallShield Wizard is installing utility.



- Click **Yes** if you want to create the shortcut icon on your Windows desktop.

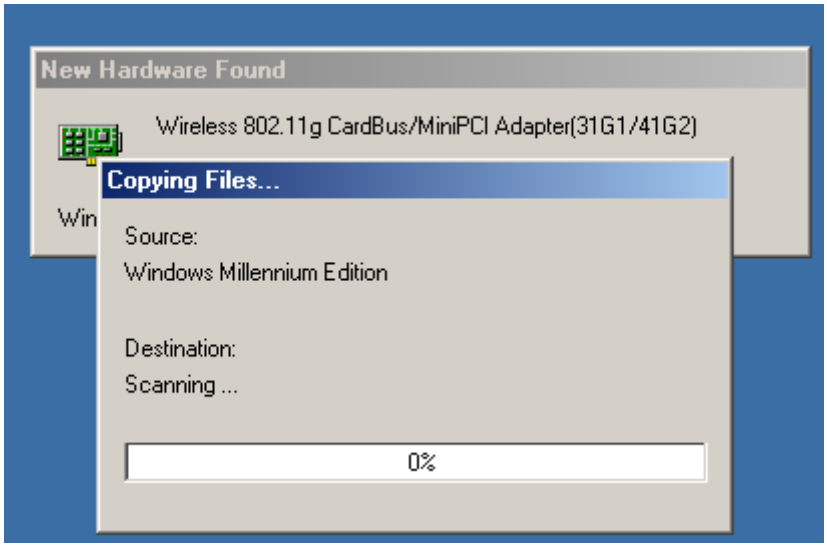


- Click **OK** to reboot your computer and insert the adapter.

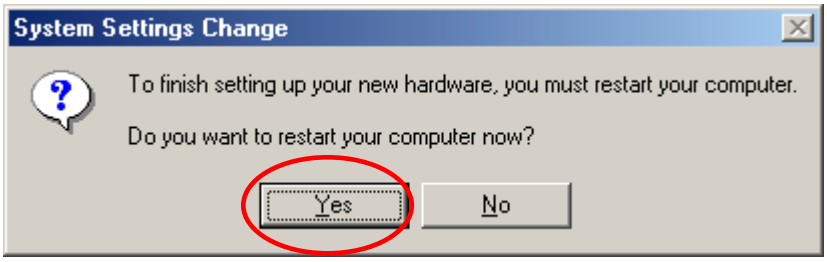


CAUTION:
Forcing a misaligned card into the slot can damage the computer or the adapter.

- After reboot, the system automatically installs the hardware drivers.



- Click **Yes** to reboot your computer.

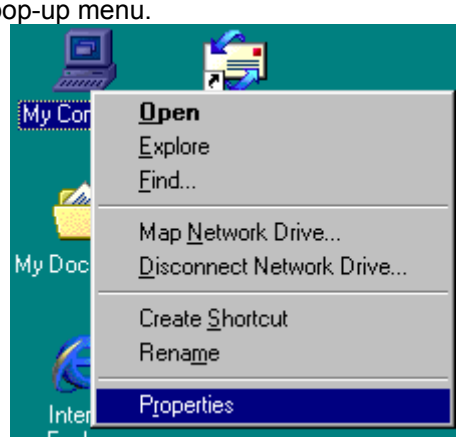


- After reboot your computer, you can find the **Unplug or Eject Hardware** icon and the Utility icon reside on the system tray.

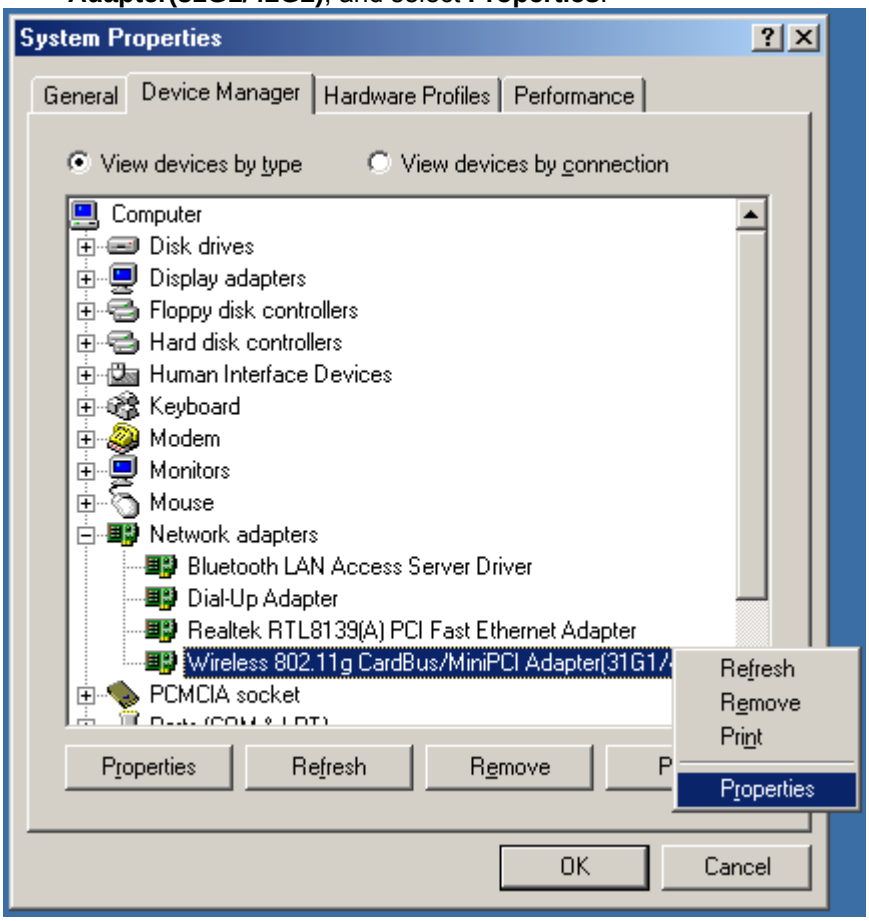
2.2.2 Verifying the Wireless LAN Adapter Driver In Windows98SE & ME

Verifying a Wireless LAN Driver in Windows 98/ME
To check if user has installed the driver successfully, please follow the following steps.

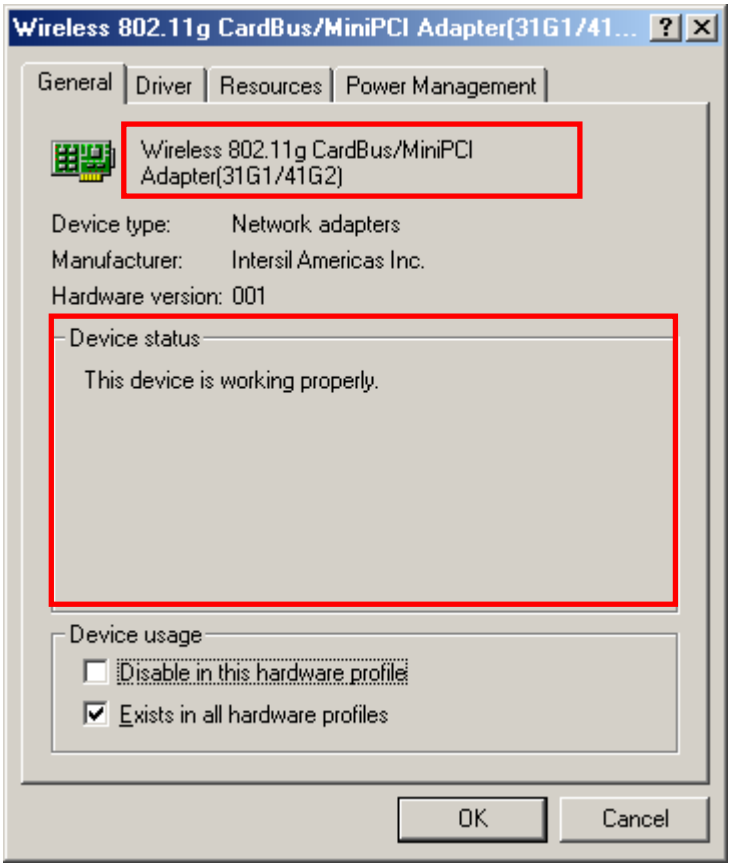
1. Right-click mouse button on the **My Computer** icon on your windows desktop and select **Properties** from the pop-up menu.



2. From the **Device Manager** tab, click the + in front of Network adapters to extend all network adapters. Right-click mouse button on **Wireless 802.11g CardBus/MiniPCI Adapter(31G1/42G2)**, and select **Properties**.



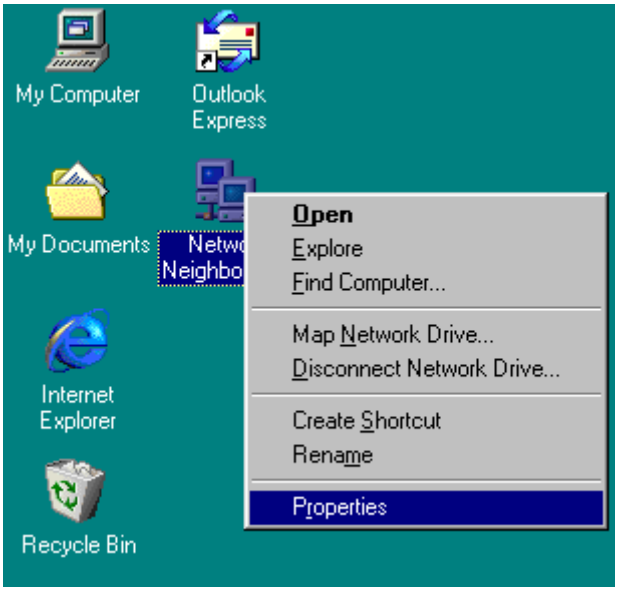
3. Click the **General** tab, if the Device Status field reports that **"This device is working properly"**, it means that the driver has been installed successfully.



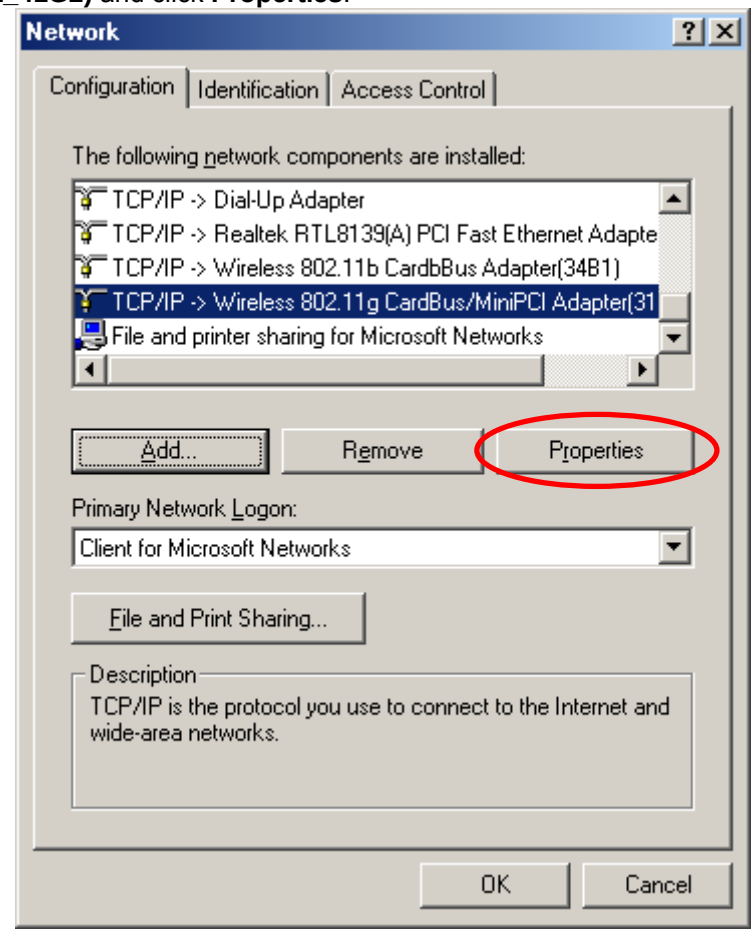
2.2.3 TCP/IP Configuration Procedure In Windows98/ME

Configuring the TCP/IP setup allows the desktop or laptop equipped with a wireless LAN card to operate in infrastructure mode and to have the Internet access. So after the configuration utility and WLAN adapter driver are installed, the TCP/IP address for the wireless LAN card must be configured.

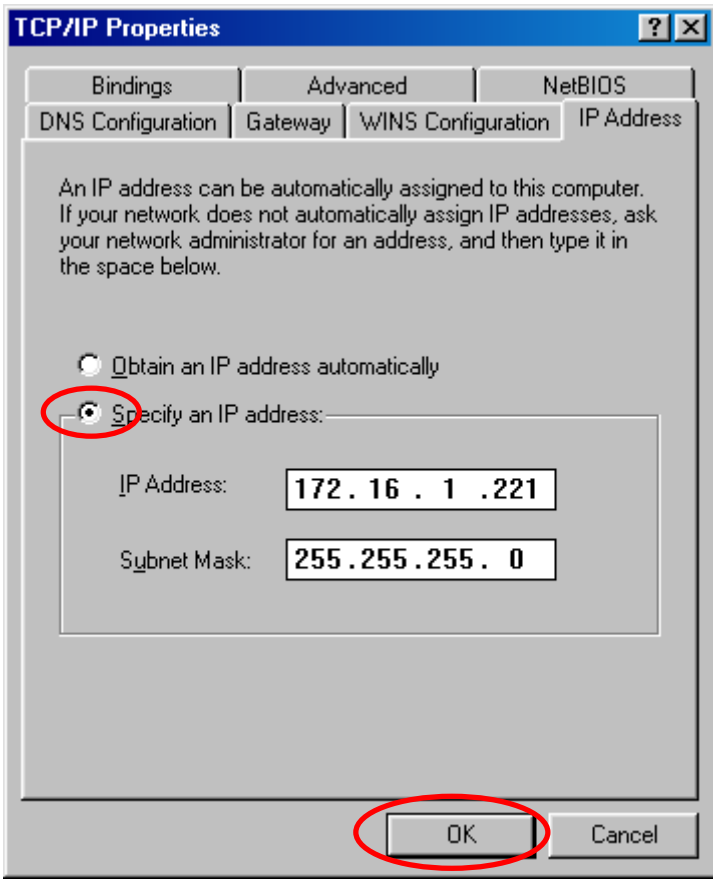
1. Right-click mouse button on the **My Neighborhood** icon on your windows desktop and select **Properties**.



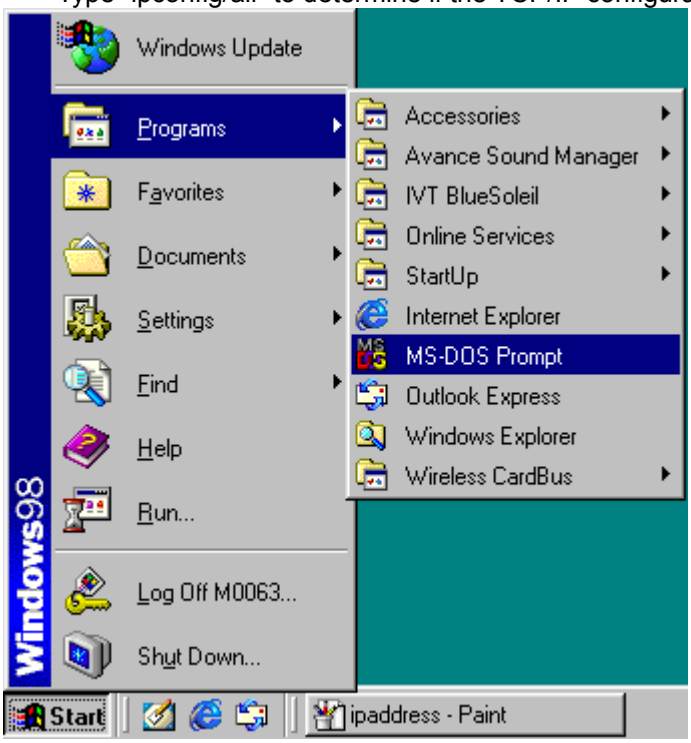
2. From the **Configuration** tab, scroll to **TCP/IP Wireless 802.11g CardBus/MiniPCI Adapter(31G1_41G2)** and click **Properties**.



3. From **"TCP/IP Properties"**, choose **"IP Address"** and select **"Specify an IP address".** Input an IP address and subnet mask. Click **OK** to complete the TCP/IP configuration, and restart the system for the changes to take effect.

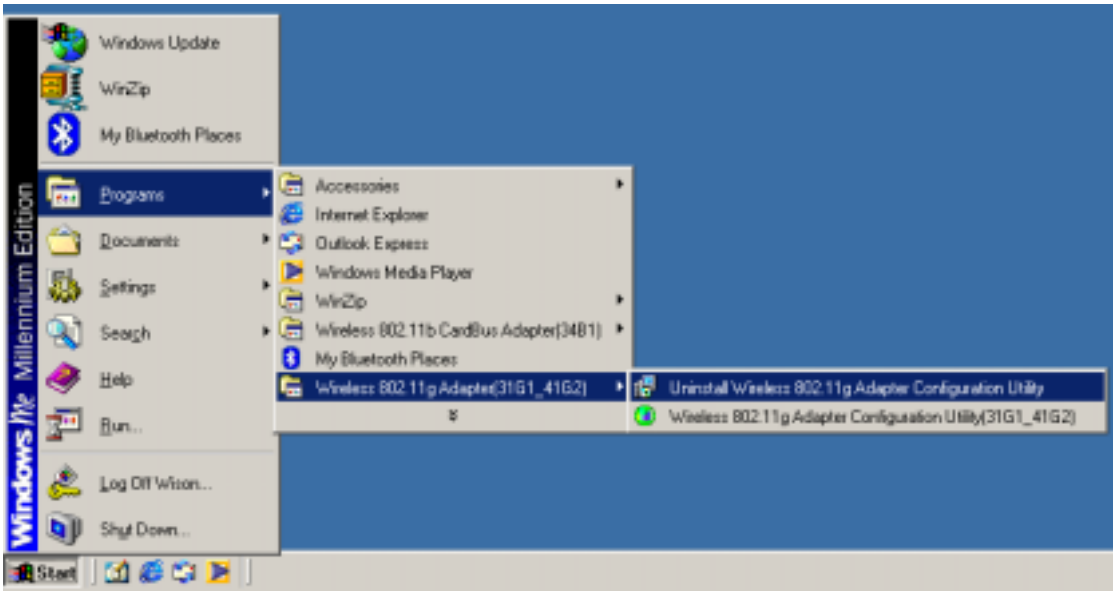


4. Choose **Start > Programs > MS-DOS Prompt** to open the DOS command prompt window. Type “ipconfig/all” to determine if the TCP/IP configuration has taken effect.

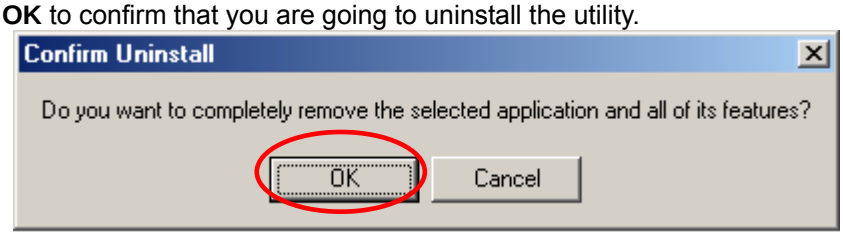


2.2.4 Removing the Wireless LAN Adapter Utility And Driver In Windows98/ME

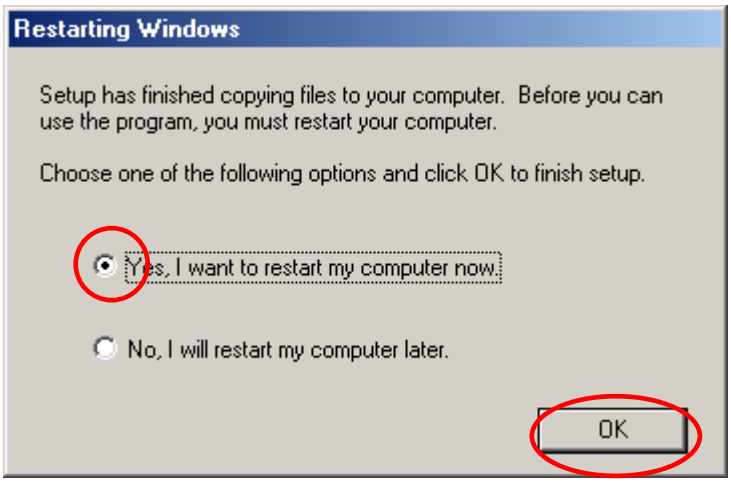
From **Windows Start menu -> Programs -> Wireless 802.11g Adapter(31G1_41G2)-> Uninstall Wireless 80211g Adapter Configuration Utility** to remove the configuration utility from the OS.



- Click **OK** to confirm that you are going to uninstall the utility.



- Click the radio button of **Yes, I want to restart my computer now** and click **OK** to make your configuration take effect.



2.6 Installation Procedures In Windows2000

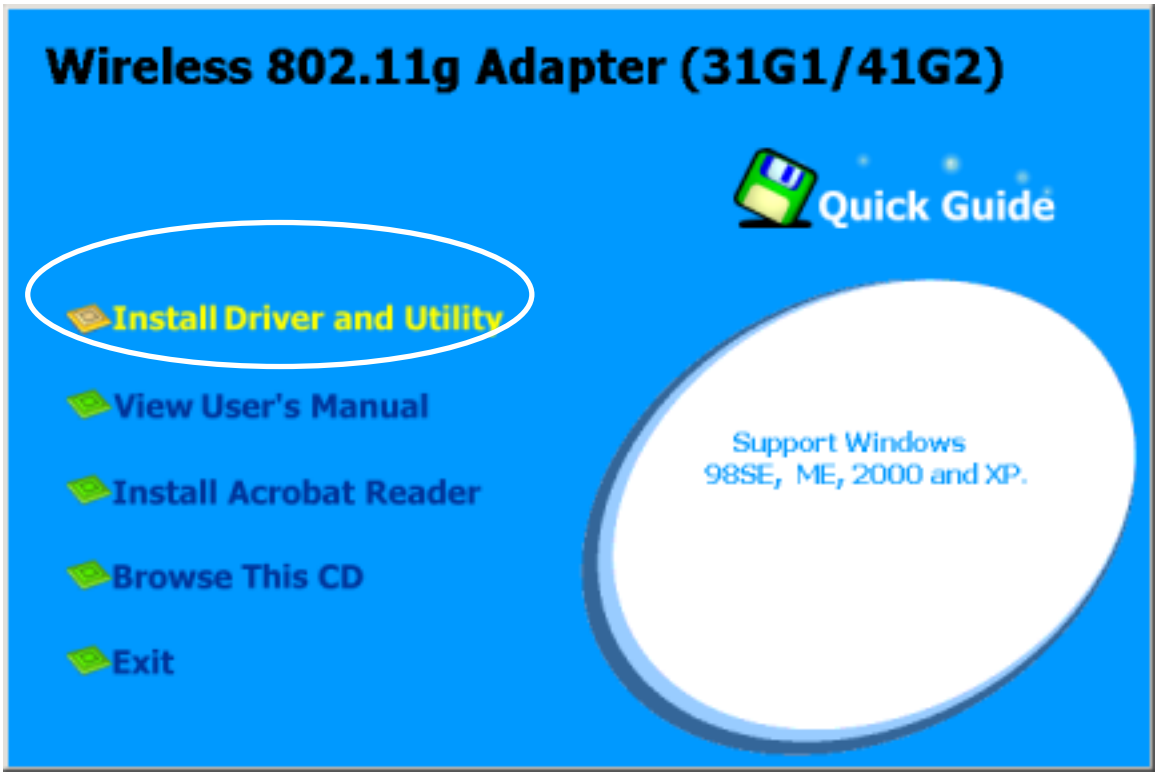
The Wireless LAN CardBus Adapter Windows driver ships with the Wireless CardBus Configuration Utility. If you have connected the Wireless CardBus Adapter to your computer, please remove it, cancel any hardware wizard that may show up, and start here.

Before you start:

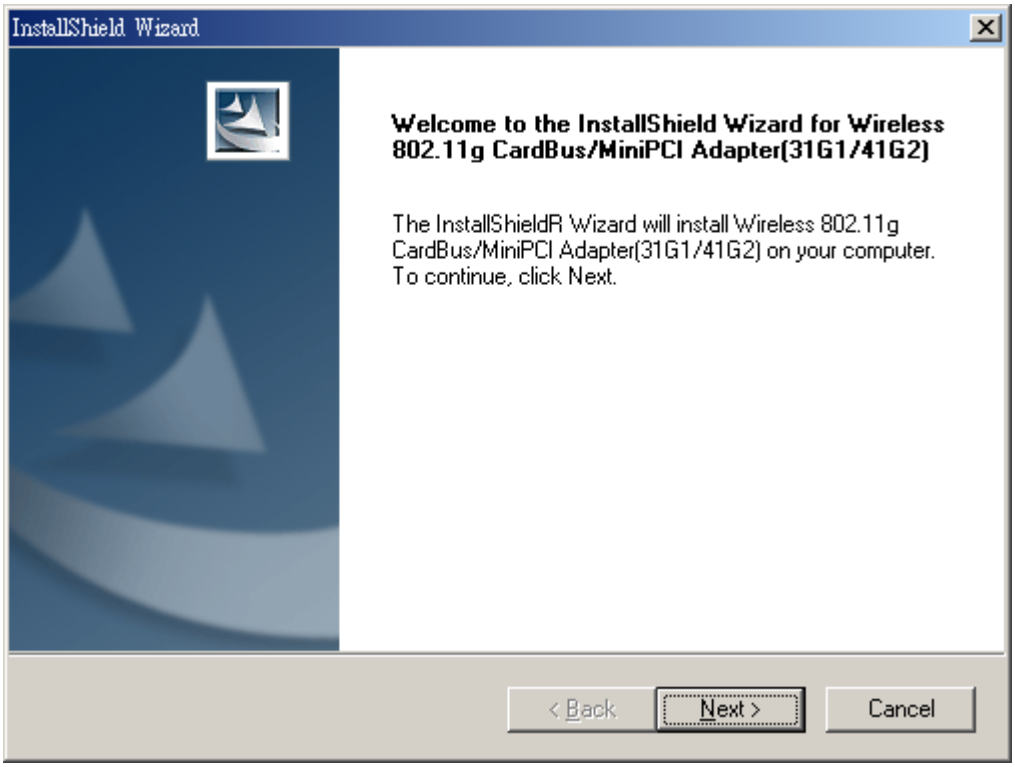
- ✓ Obtain this Utility CD.
- ✓ Please do not attach or physically connect the wireless LAN CardBus adapter into PCMCIA slot prior to executing the setup program.

2.6.1 Installing the Wireless LAN Card Driver and Configuration Utility

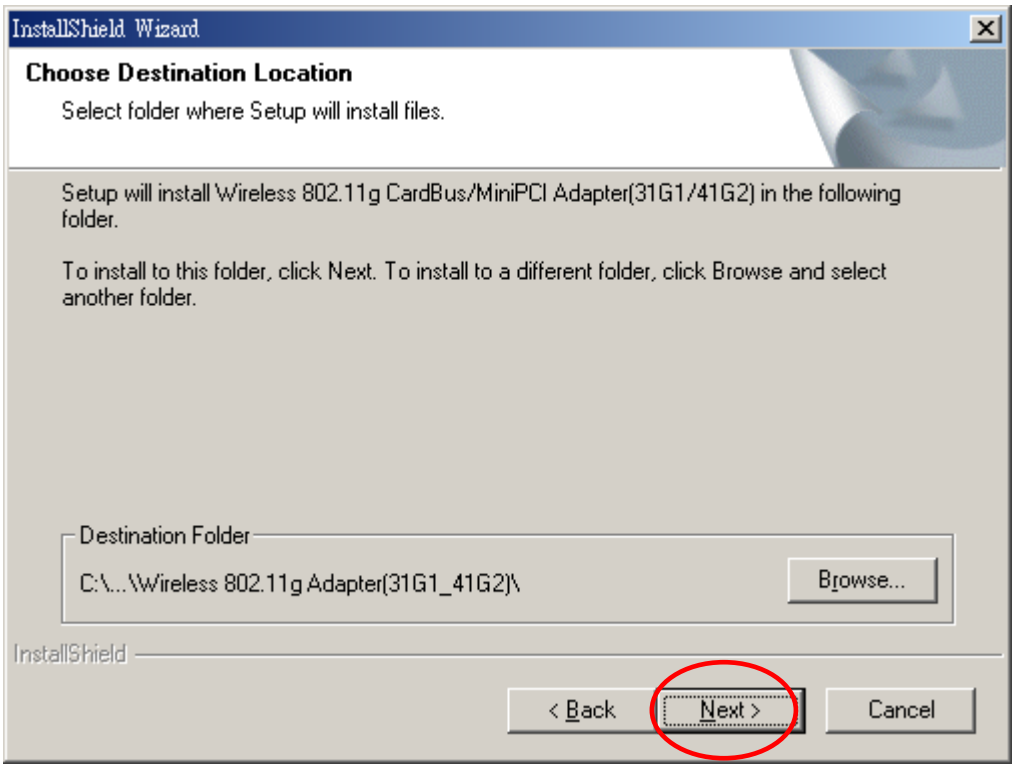
Close any open programs and insert the utility CD into your CD-ROM Drive. The Autorun function will automatically start and the following main screen will be pop-up. Double-click on the **Install Driver and Utility** item to start the software installation. (If the Autorun function does not automatically start, please open the Installation CD to find the Setup.exe file and double click the Setup.exe icon to continue.) Click the "**View User's Manual**" to view the user's manual and click "**Install Acrobat Reader**" to install software to view the user's manual. If you don't want to install right now you can click "**Browse This CD**" to view the CD files and click **Exit** to close the main screen.



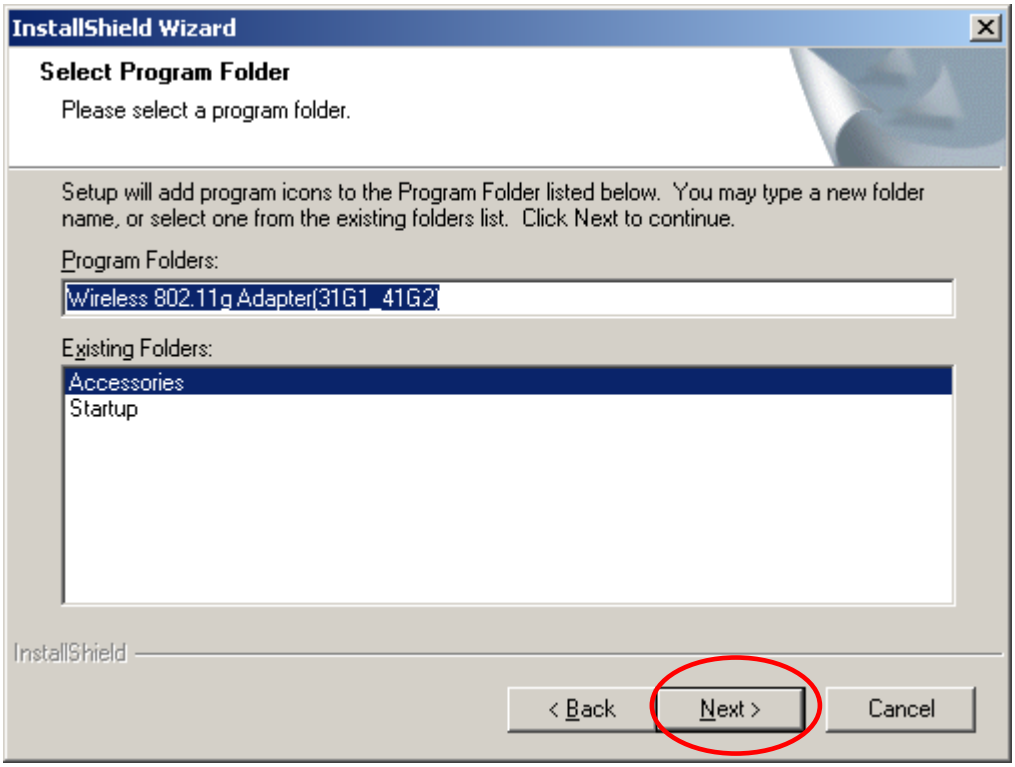
1. The InstallShield Wizard is preparing to install the configuration utility and drivers. Click **Next**.



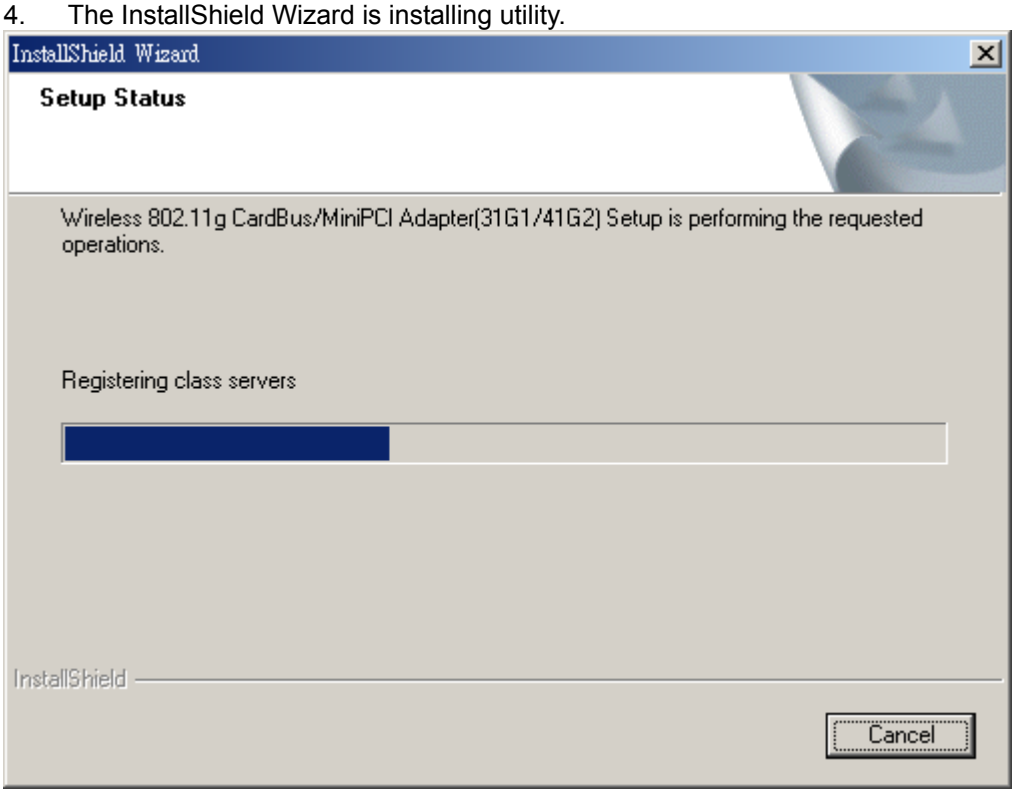
2. In the *Destination Folder* screen you are asked to confirm the *Destination Folder* for the application software. If you would like, you may change the destination folder to another location as the directory. Click **Next**.



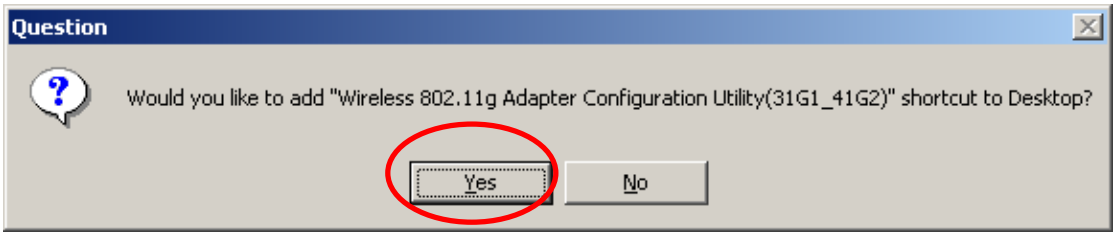
3. Select a program folder and click **Next**.



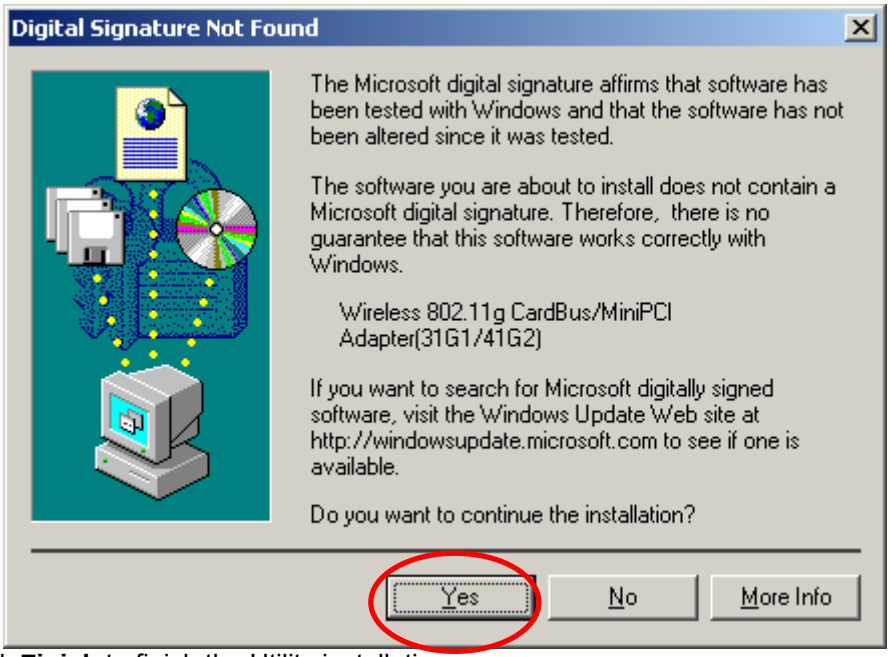
4. The InstallShield Wizard is installing utility.



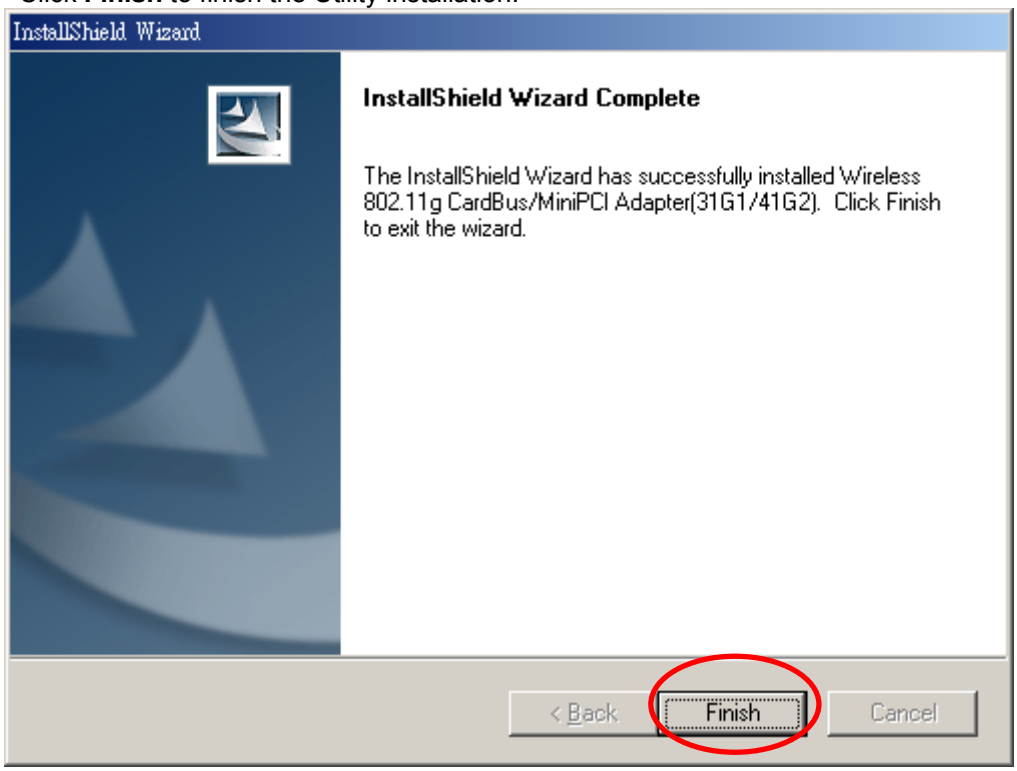
5. Click **YES** button, if you want to create a shortcut icon on your Windows desktop.



6. Click **Yes** from the **Digital Signature** dialog box. A Microsoft digital signature is not required at this moment.

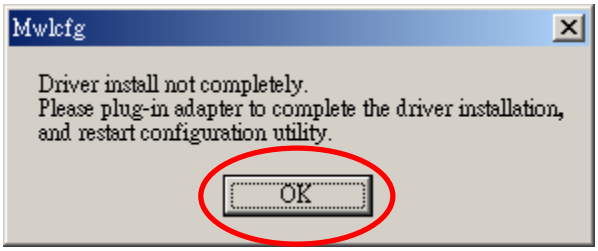


7. Click **Finish** to finish the Utility installation.



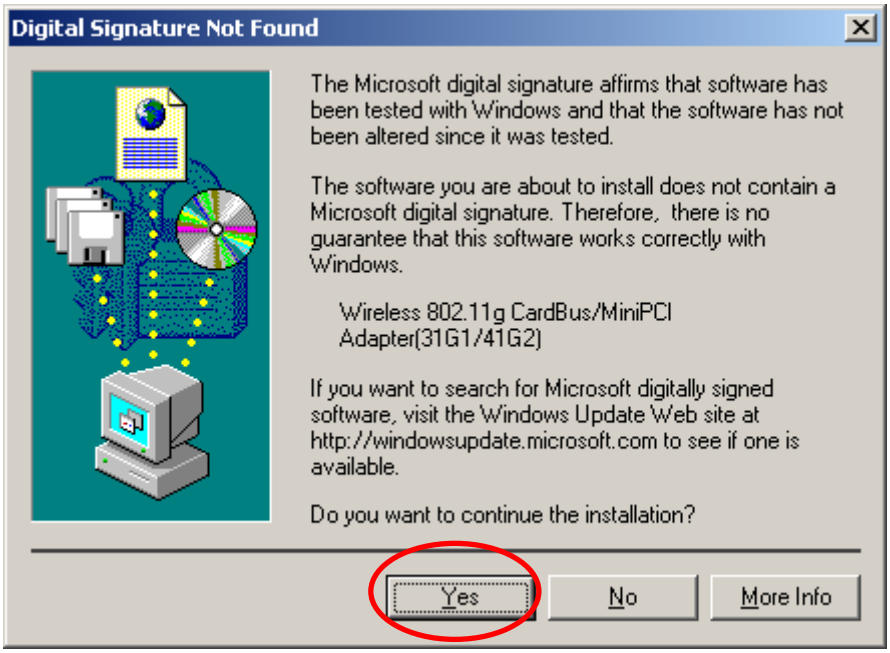
Continue to complete the whole installation:

1. Insert the wireless network adapter now and click **OK**. You system will start to install the drivers.

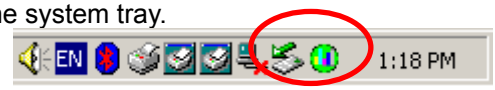


CAUTION:
Forcing a misaligned card into the slot can damage the computer or the adapter.

2. The Microsoft Digital Signature Not Found dialog box could appear at this point in the installation. A Microsoft digital signature is not required for the driver installation. Click "**Yes**" to continue.



3. After the drivers have been installed successfully, you can find that the LED on the wireless adapter lights up. The whole installation is completed. You can find the **Unplug or Eject Hardware** icon resides on the system tray. Open the utility and the utility icon will reside on the system tray.

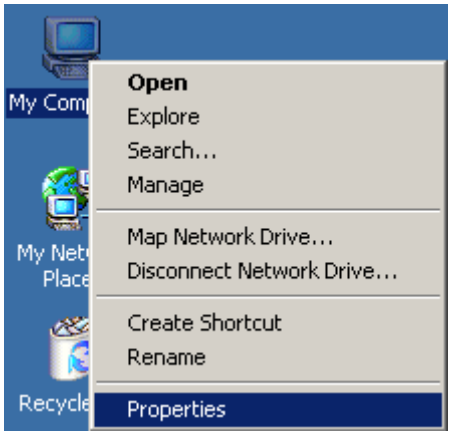


2.6.2 Verifying Your Installation In Windows2000

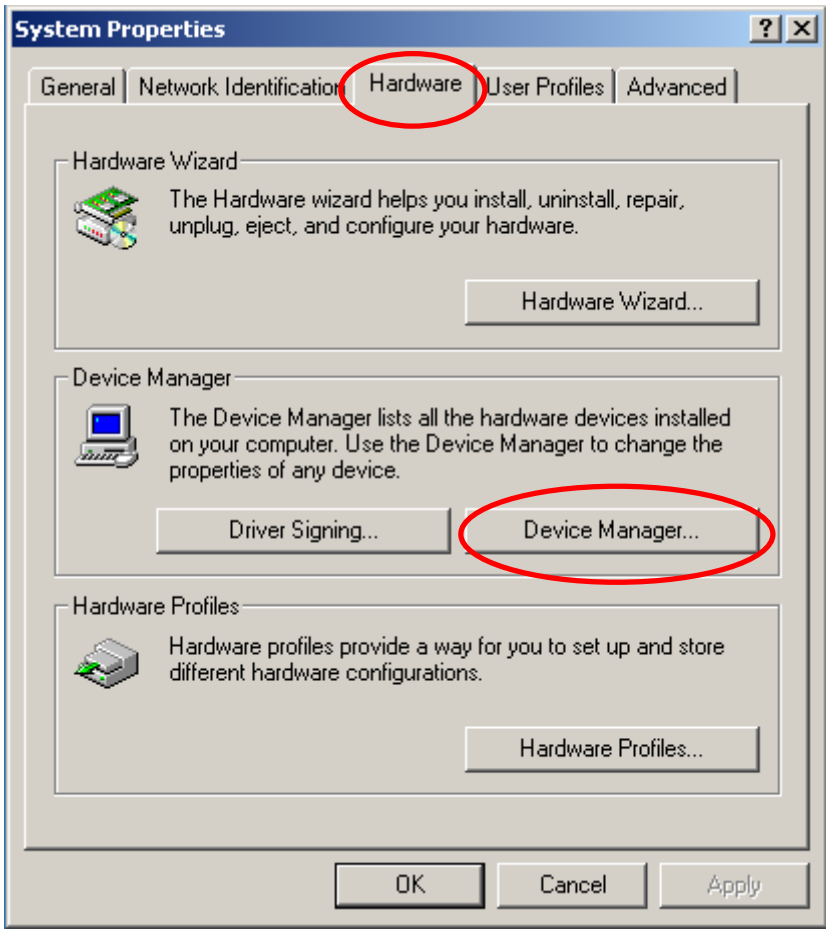
Verify the driver has installed successful

If you want to check if the driver's installation is successful or not, follow the next steps.

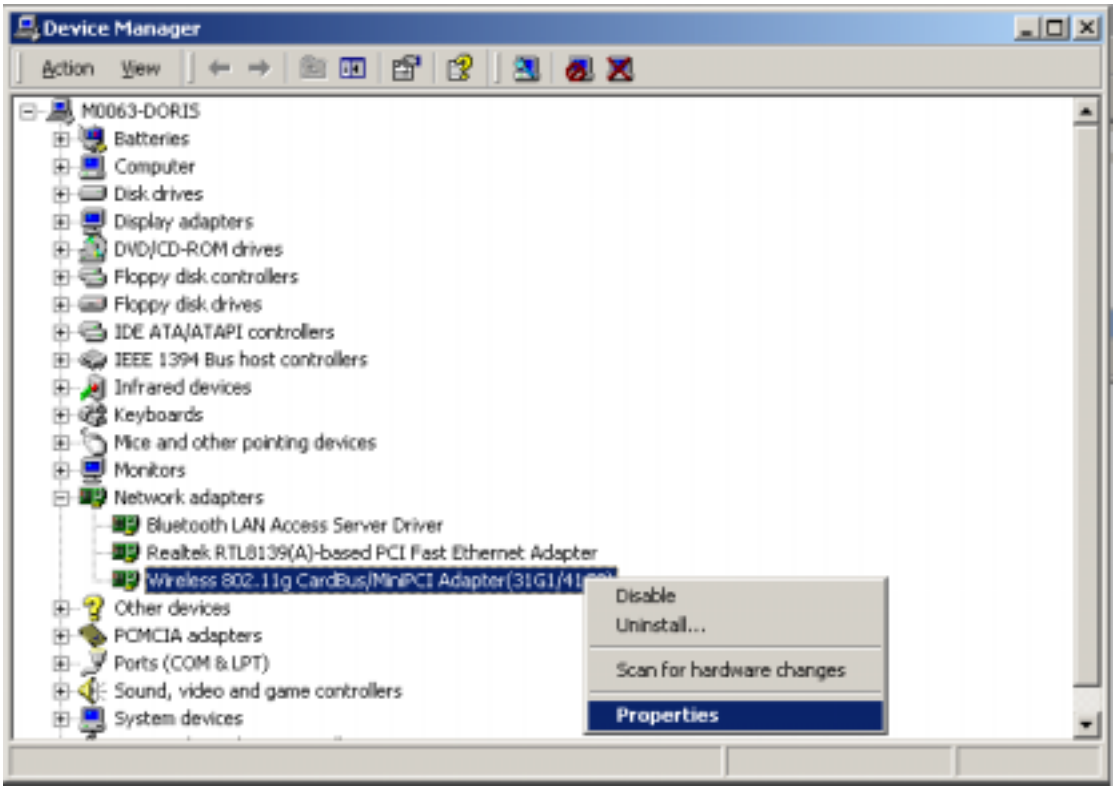
1. Right-click mouse button on the **My Computer** icon on your Windows desktop, and highlight **Properties** from the pop-up menu.



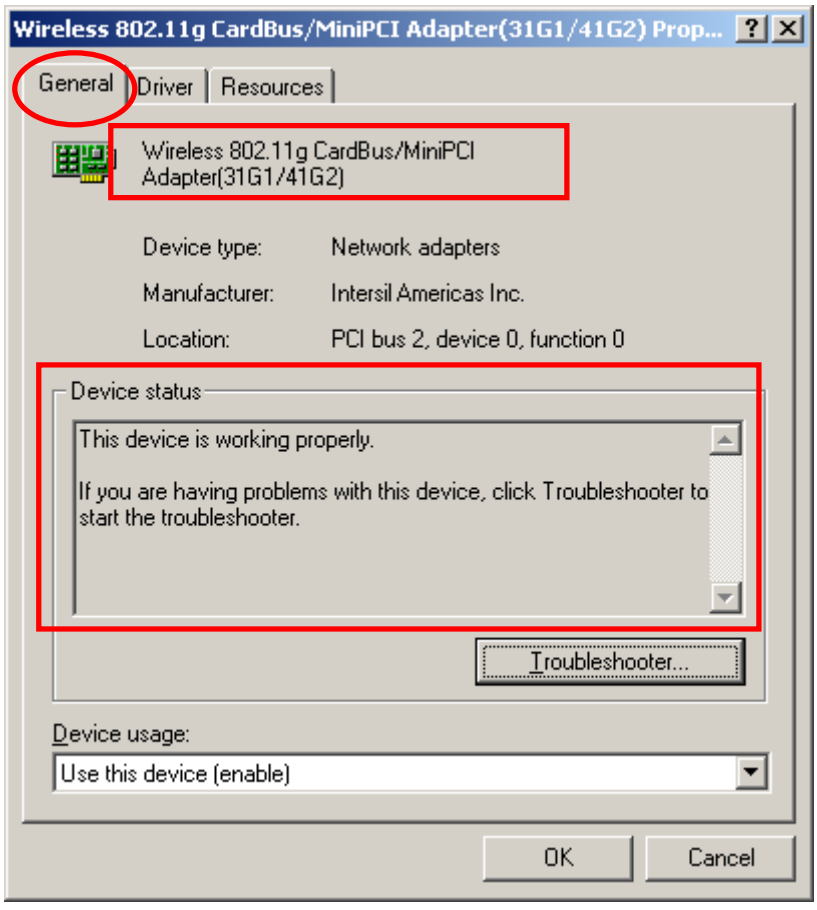
2. The **System Properties** screen will be pop-up. Under **Hardware** tab, click **Device Manager…**.



3. After clicking **Device Manager…**, the following screen will be shown. Click on the + symbol in front of "**Network adapters**" and see if an item labeled **Wireless 802.11g CardBus/MiniPCI Adapter (34G1/41G2)** is visible. If you don't see the item below the network adapter icon but a"?" or "!" symbol is displayed, it means that the driver installation was unsuccessful. Highlight "**Wireless 802.11g CardBus/MiniPCI Adapter (34G1/41G2)**", right-click mouse button and select "**Properties**".



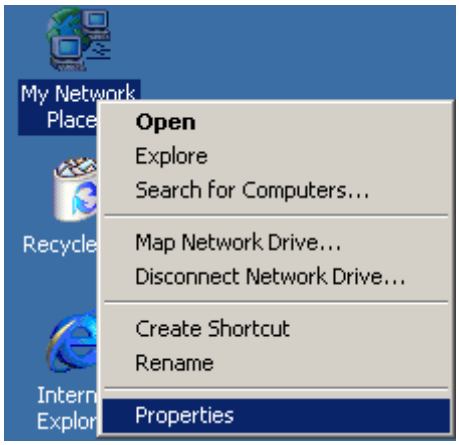
4. Click the **General** tab, if the Device Status field reports that "**This device is working properly**", it means that the driver has been installed successfully.



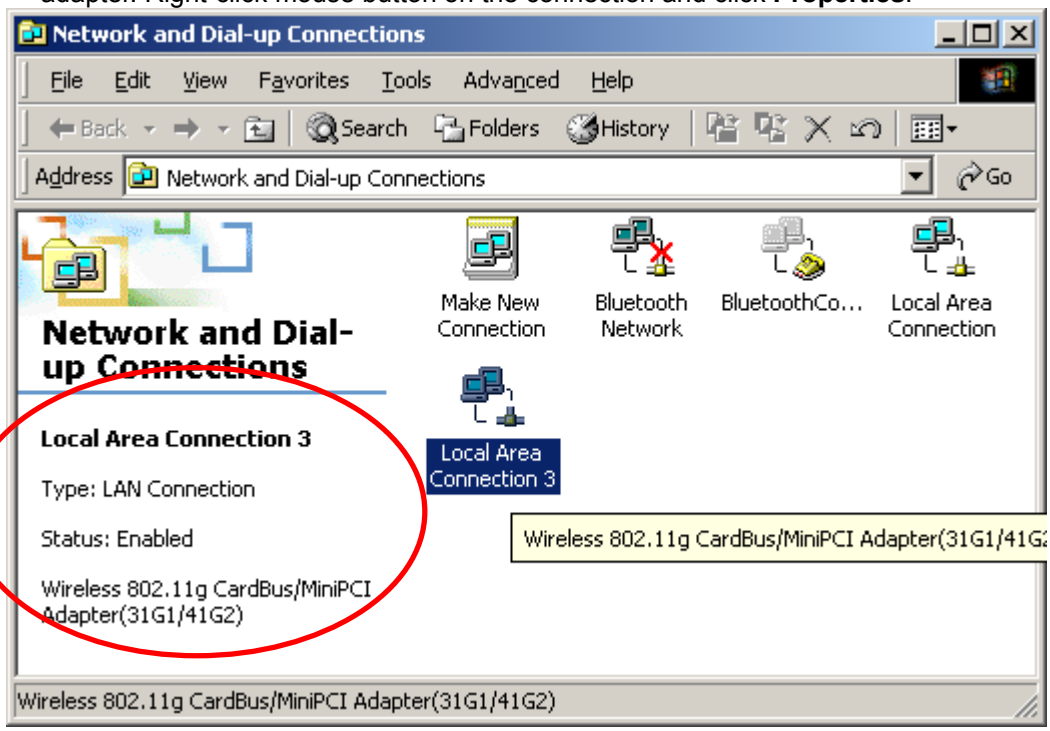
2.6.3 TCP/IP Setup In Windows 2000

Configuring the TCP/IP setup allows the desktop or laptop equipped with a wireless LAN adapter to operate in infrastructure mode and to have the Internet access. So after the configuration utility and WLAN adapter driver are installed, the TCP/IP address for the wireless LAN card must be configured.

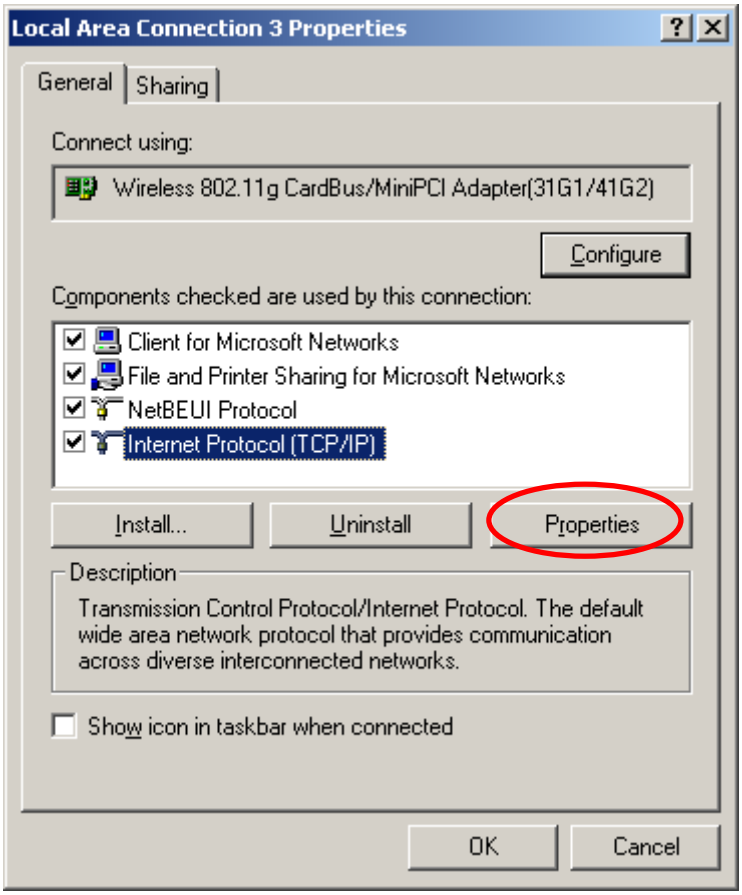
1. Right-click mouse button on the **My Network Places** and highlight **Properties** from the pop-up menu.



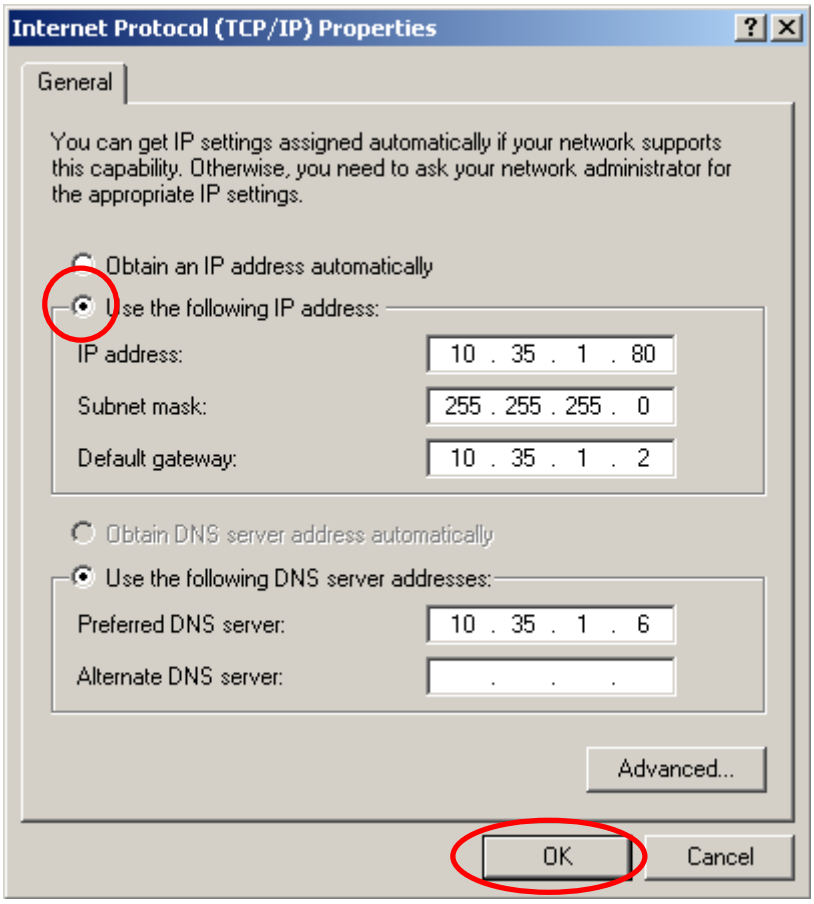
2. Find the "**Local Area Connection**" that is associated with the wireless LAN CardBus adapter. Right-click mouse button on the connection and click **Properties**.



3. Select "**Internet Protocol (TCP/IP)**" and click **Properties**.

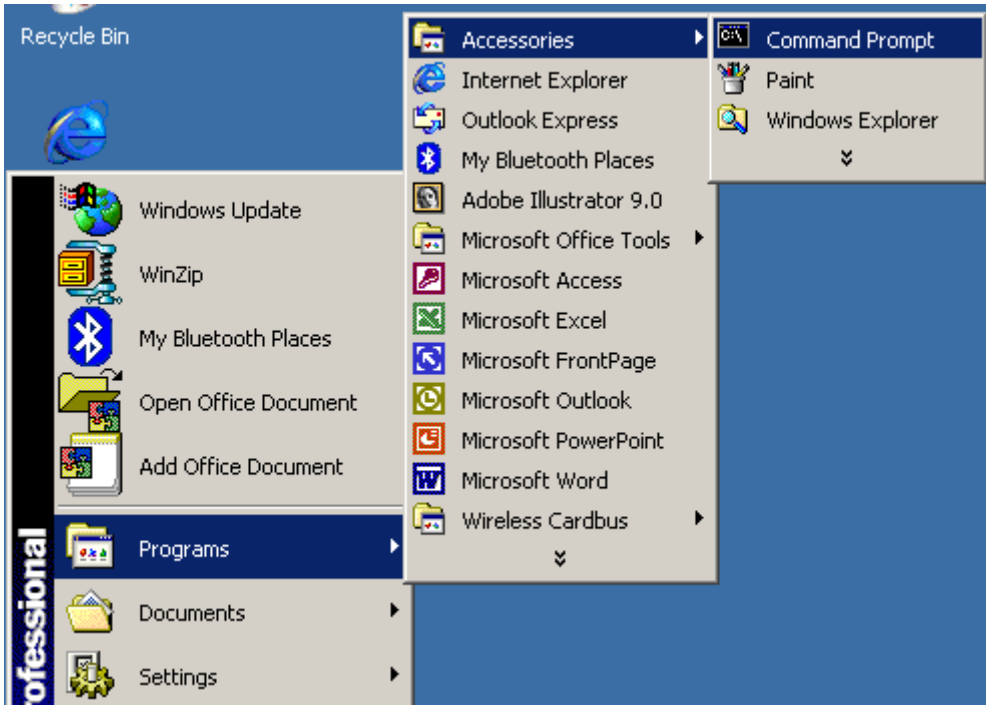


4. Click "**Use the following IP address**" and input an IP address and subnet mask. Assigning an IP address and Subnet mask allows stations to operate in infrastructure mode and to have Internet access. "Default gateway" and "DNS server" information is also required. IP configuration information (DHCP or assigned IP address, Gateway and DNS server IP addresses) is usually obtained from the corporate IT staff.

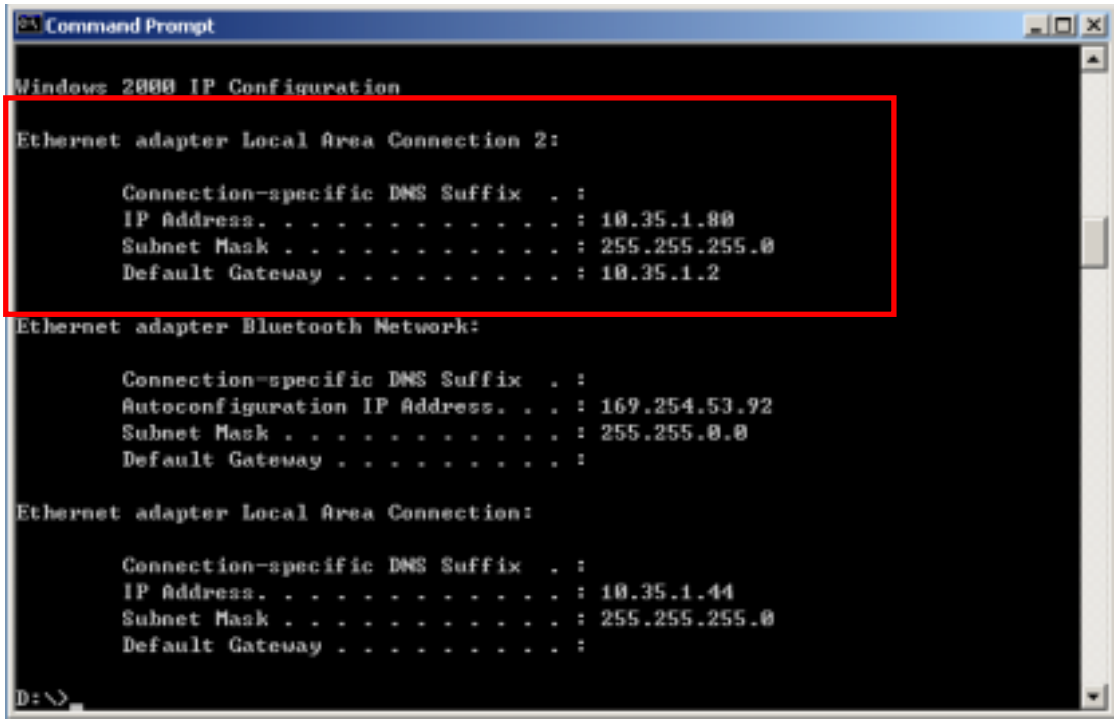


Note:
The IP Address you assign for all computers must be in the same IP Address range, and the Subnet Mask must be the same for all computers on your network. For example:
If the first computer is assigned an IP Address of 10.35.1.3 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP Address of 10.35.1.4 with a Subnet Mask of 255.255.255.0,.. etc.

5. After obtaining IP configuration information from the appropriate IT staff, click **OK** in both "**Internet Protocol (TCP/IP) Properties**" and **"Local Area Connection Properties**" to complete the IP configuration.
6. Choose **Start > Programs > Accessories > Command Prompt** to open the DOS command prompt window.

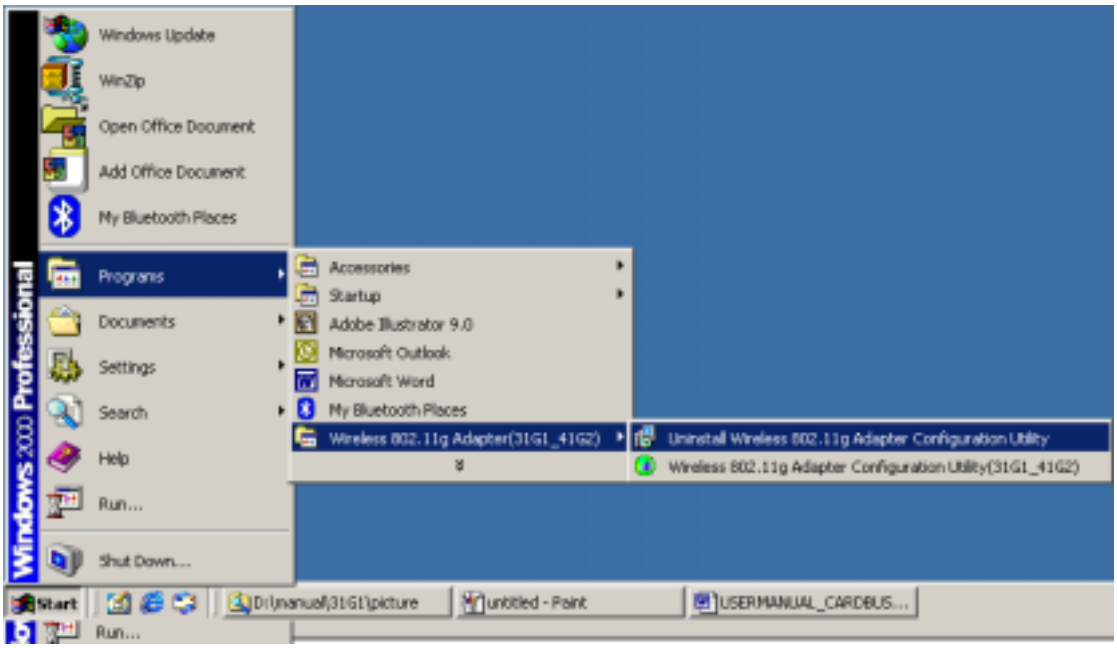


7. Type "**ipconfig**" at the **F:\>** prompt to determine if the TCP/IP configuration has taken effect. To test IP connectivity in ad hoc or infrastructure mode, use the "ping <ipaddress>" command.

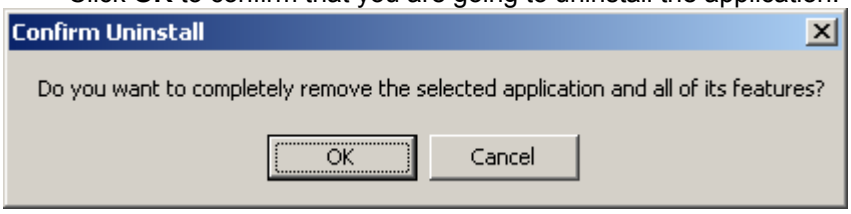


2.6.4 Uninstalling the Wireless LAN CardBus Adapter Utility And Driver In Windows 2000

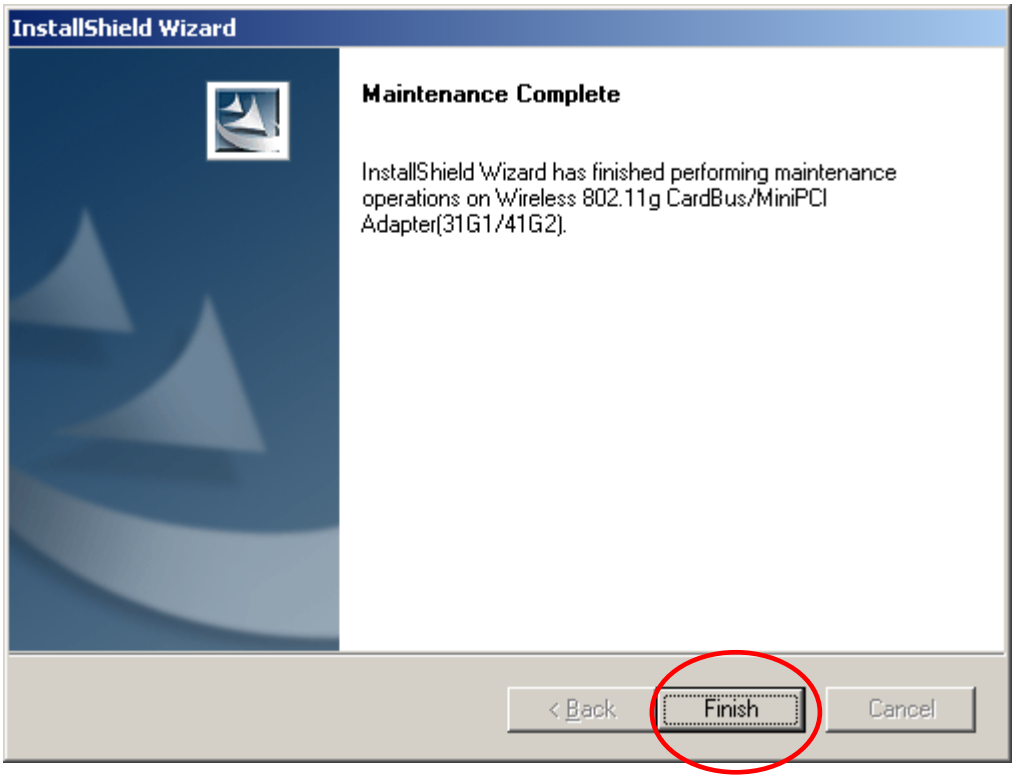
- From **Windows Start menu -> Programs -> Wireless 802.11g Adapter(31G1_41G2) -> Uninstall Wireless 802.11g Adapter Configuration Utility** to remove the configuration utility from the OS.



- Click **OK** to confirm that you are going to uninstall the application.



- Click **Finish** to complete the un-installation.



2. 7 Installation Procedures In Windows XP

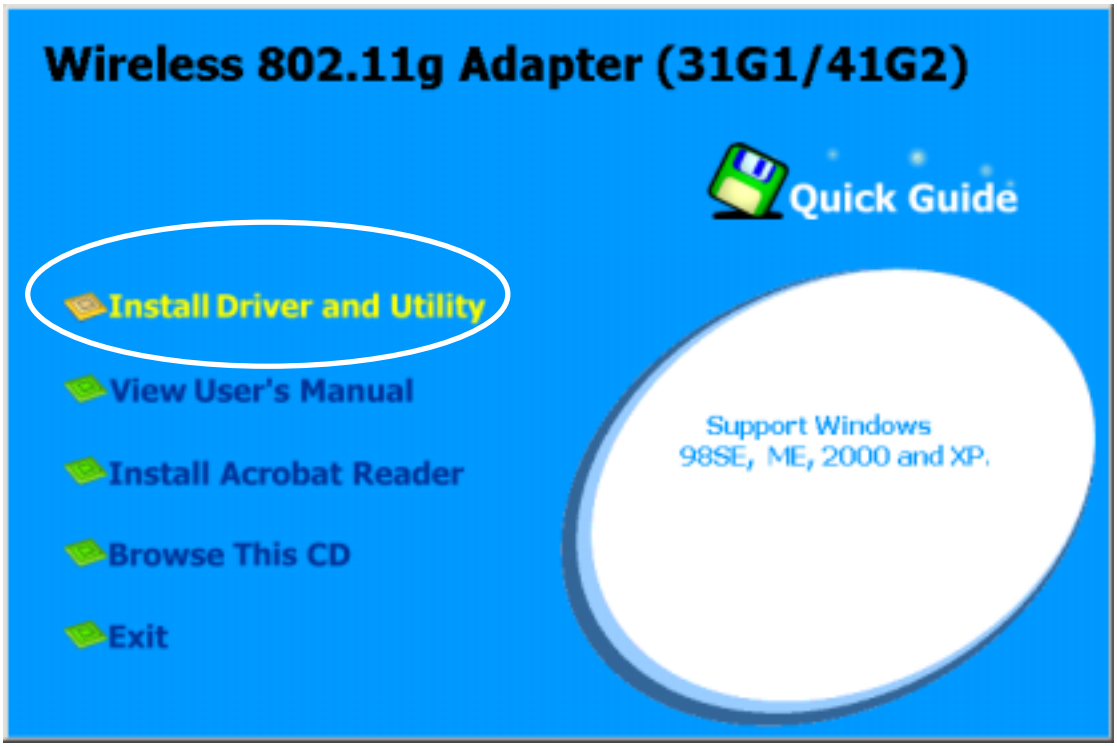
The Windows XP provides a built-in wireless LAN configuration application. No matter you want to use the Windows Zero Configuration utility or the utility we provide, you still have to click the **Install Driver and Utility** icon below to install the necessary drivers and the utility.

Before you start:

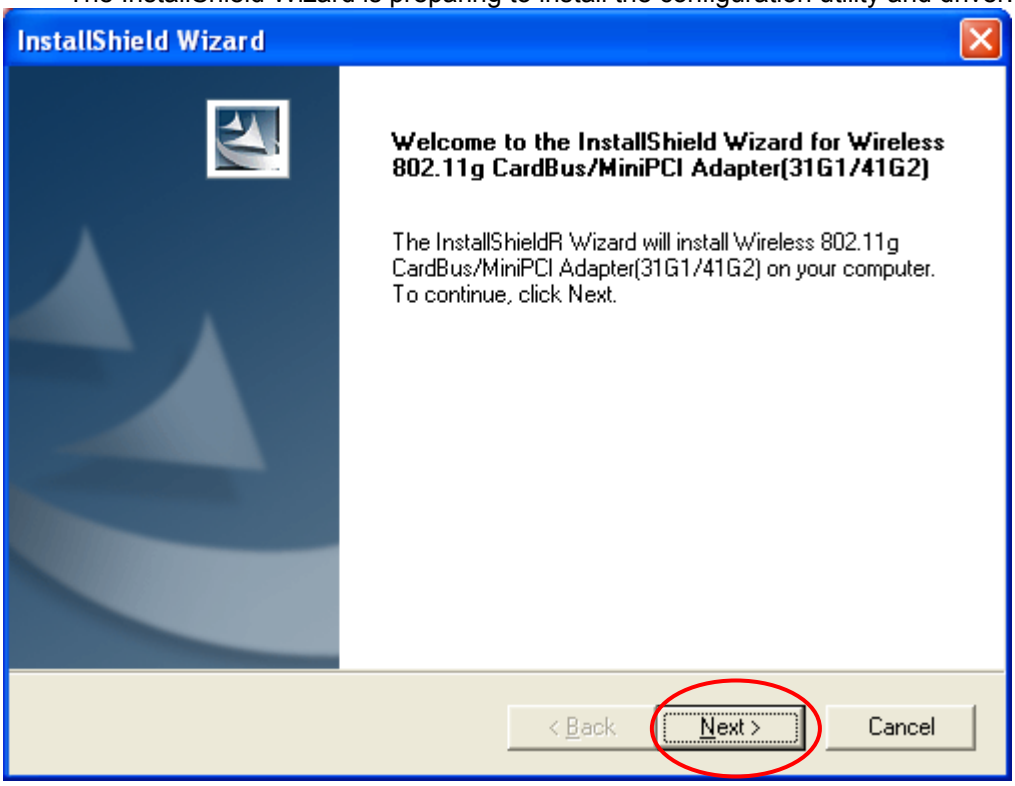
- ✓ Obtain this Utility CD.
- ✓ Please do not attach or physically connect the wireless LAN CardBus adapter into PCMCIA slot prior to executing the setup program.

2. 7.1 Installing the Wireless LAN Adapter Driver and Utility

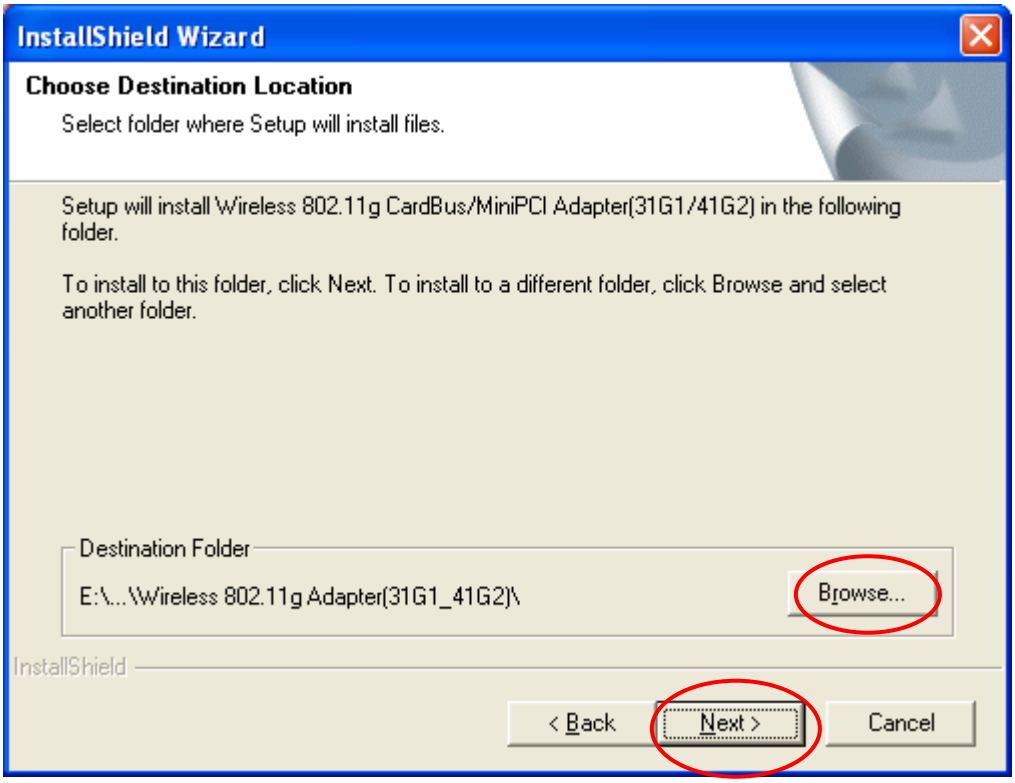
Close any open programs and insert the utility CD into your CD-ROM Drive. The Autorun function will automatically start and the following main screen will be pop-up. Double-click on the **Install Driver and Utility** item to start the software installation. (If the Autorun function does not automatically start, please open the Installation CD to find the Setup.exe file and double click the Setup.exe icon to continue.)



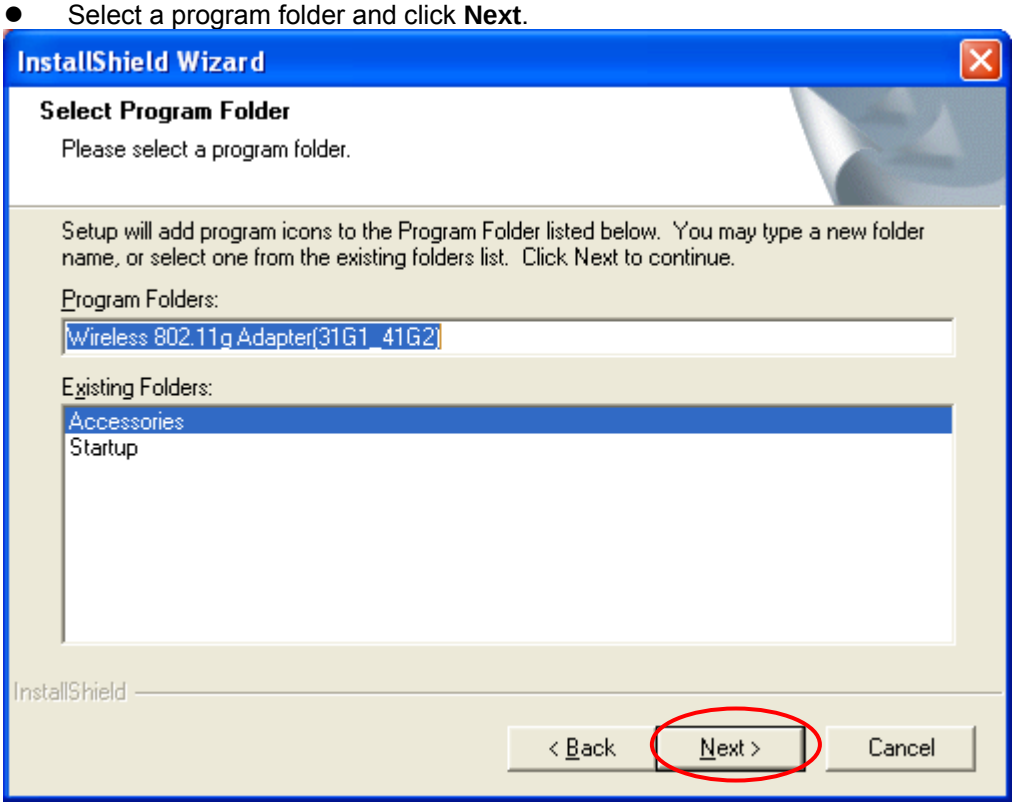
- The InstallShield Wizard is preparing to install the configuration utility and driver.



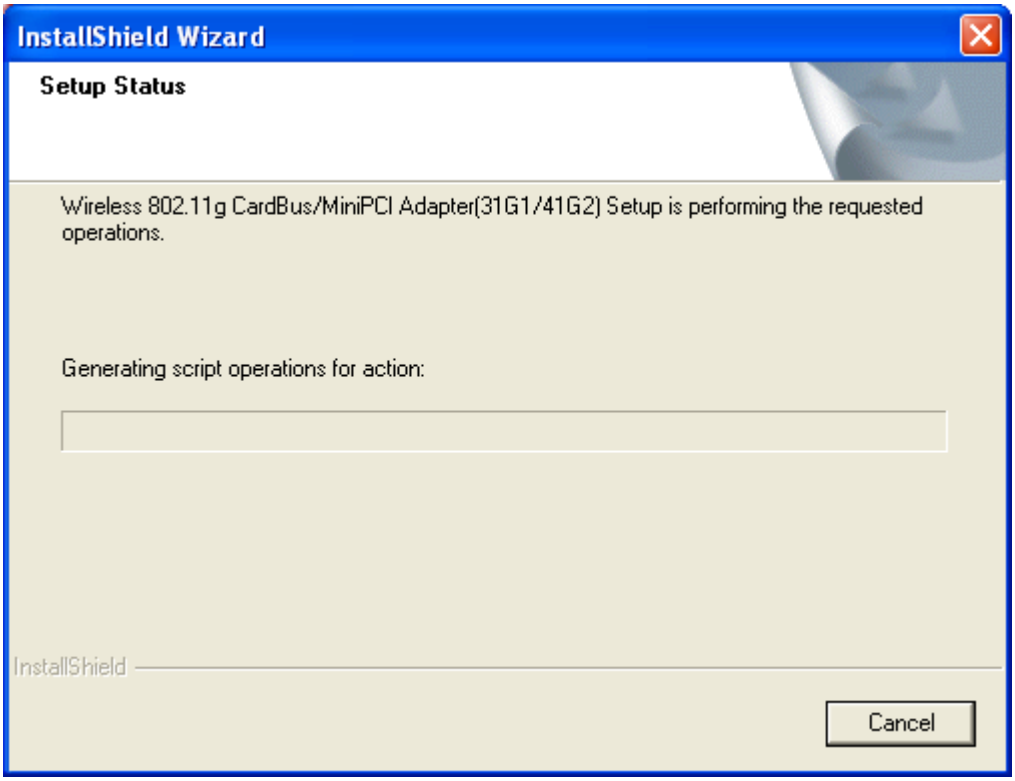
- In the *Destination Folder* screen you are asked to confirm the *Destination Folder* for the application software. If you would like, you may change the destination folder to another location as the directory. Click **Next**.



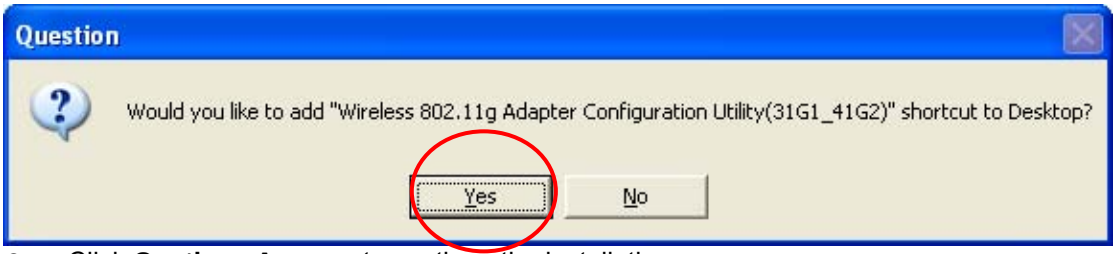
- Select a program folder and click **Next**.



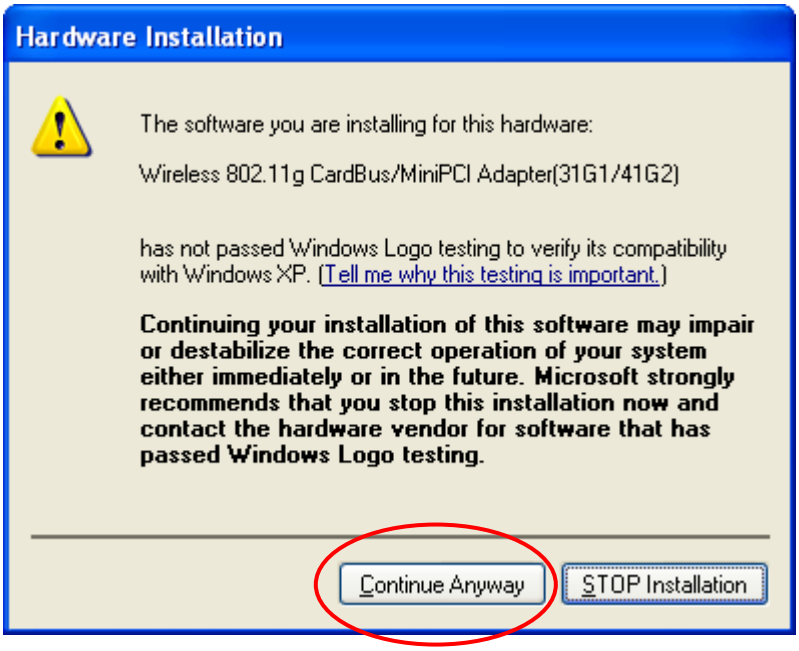
- The InstallShield Wizard is installing utility.



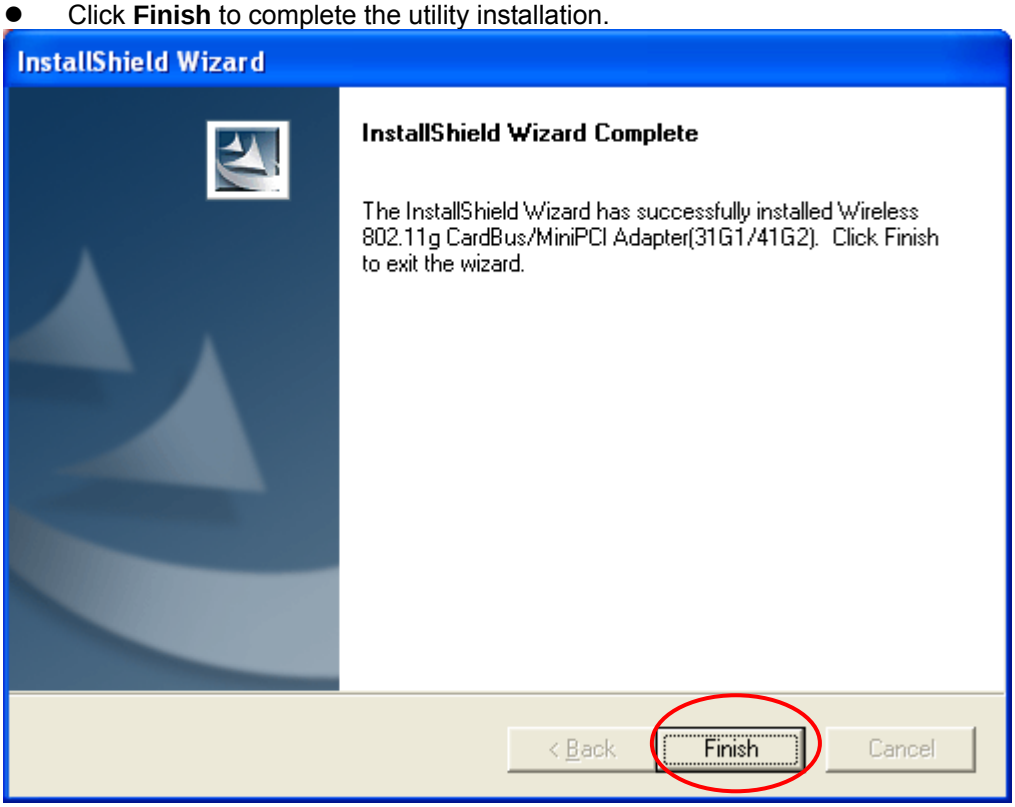
- Click **Yes** if you want to create the shortcut on your Windows desktop.



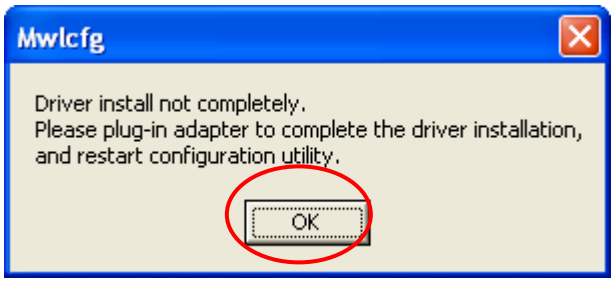
- Click **Continue Anyway** to continue the installation.



- Click **Finish** to complete the utility installation.

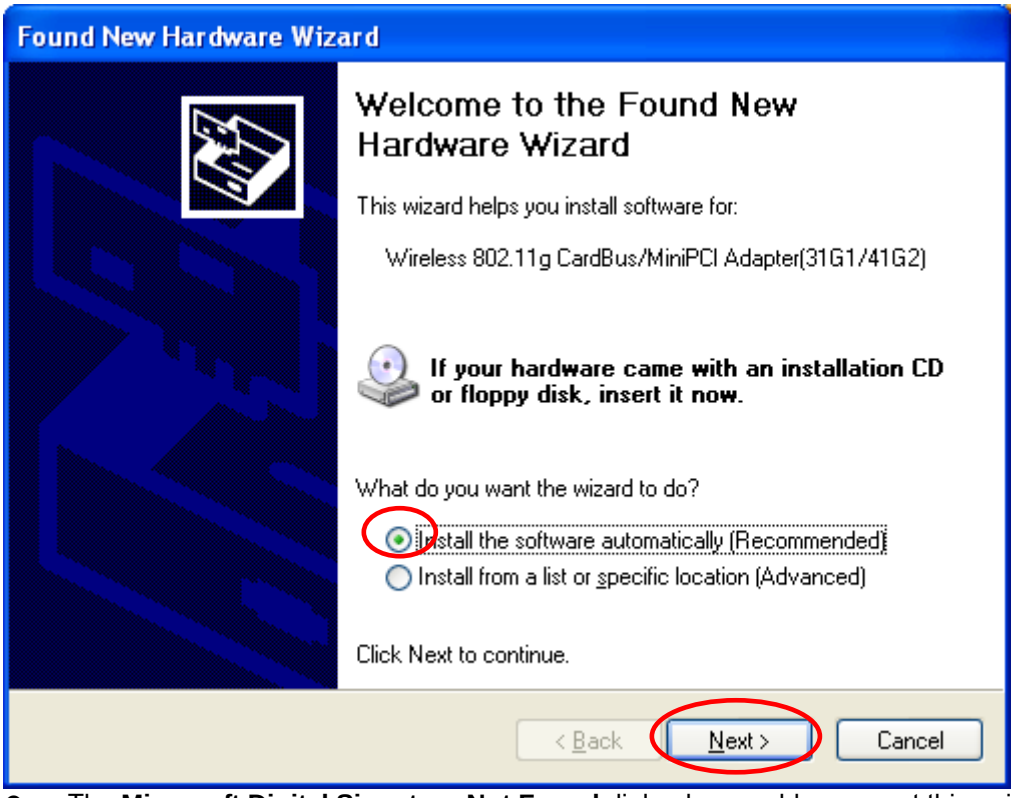


- Please insert the wireless LAN CardBus adapter firmly without forcing until it seats snugly.

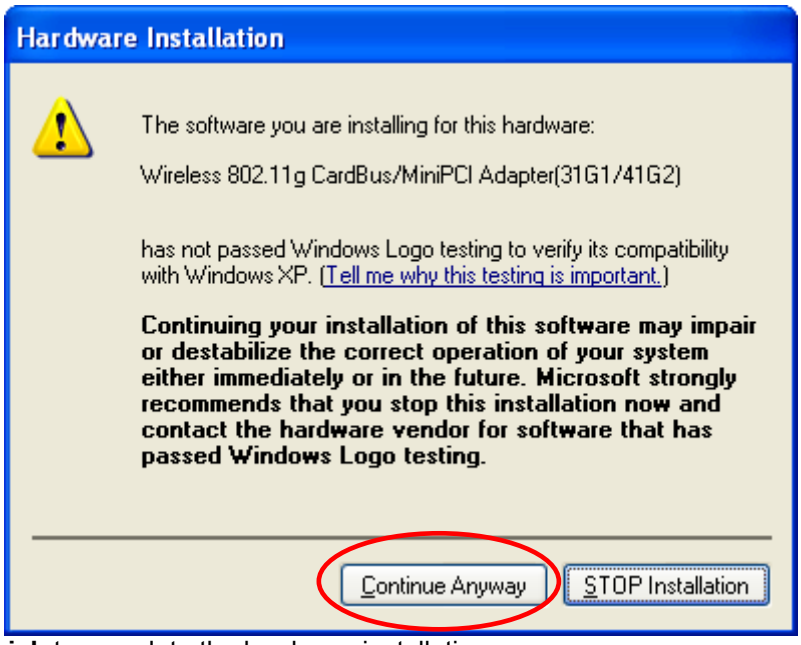


CAUTION:
Forcing a misaligned card into the slot can damage the computer or the adapter.

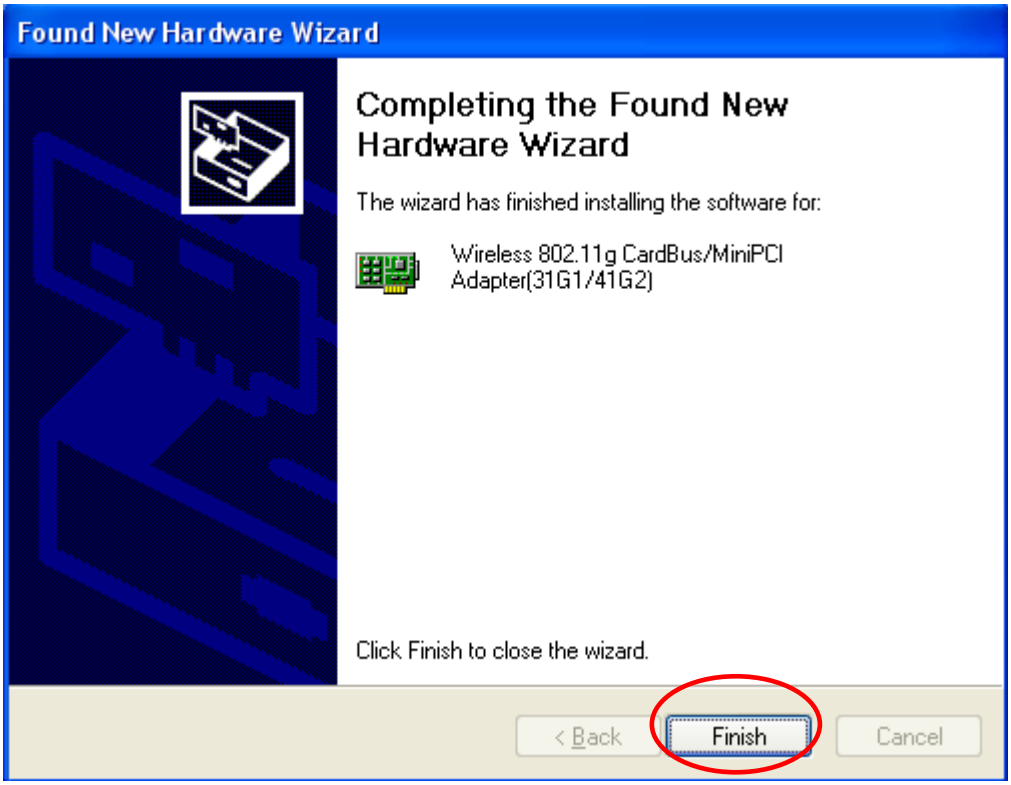
- Click the radio button of Install the software automatically (Recommended) and click **Next.**



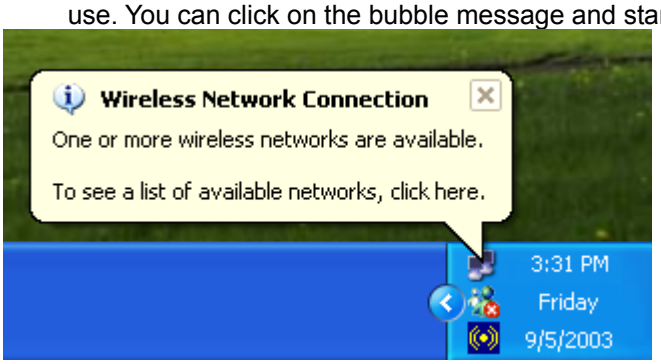
- The **Microsoft Digital Signature Not Found** dialog box could appear at this point in the installation. A Microsoft digital signature is not required for the driver installation. Click **"Continue Anyway"** to continue.



- Click **Finish** to complete the hardware installation.



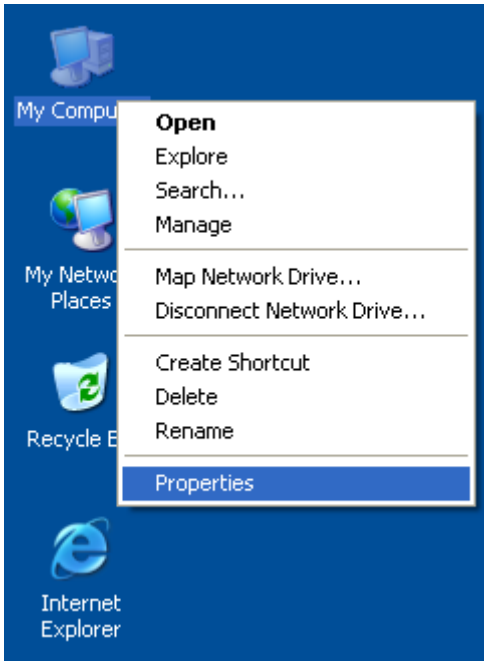
- The bubble message on the system tray indicates that the network adapter is ready to use. You can click on the bubble message and start to configure the network adapter.



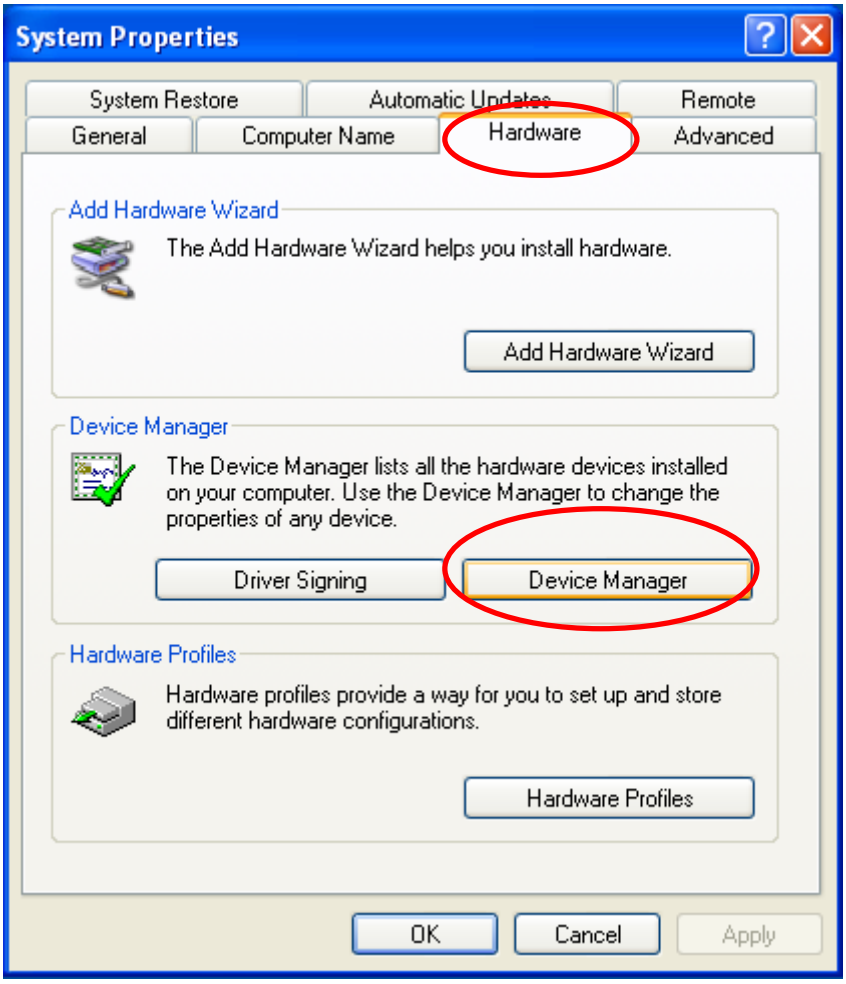
2.7.2 Verifying Your Installation In Windows XP

To check if you have installed the driver successfully, please follow the following steps.

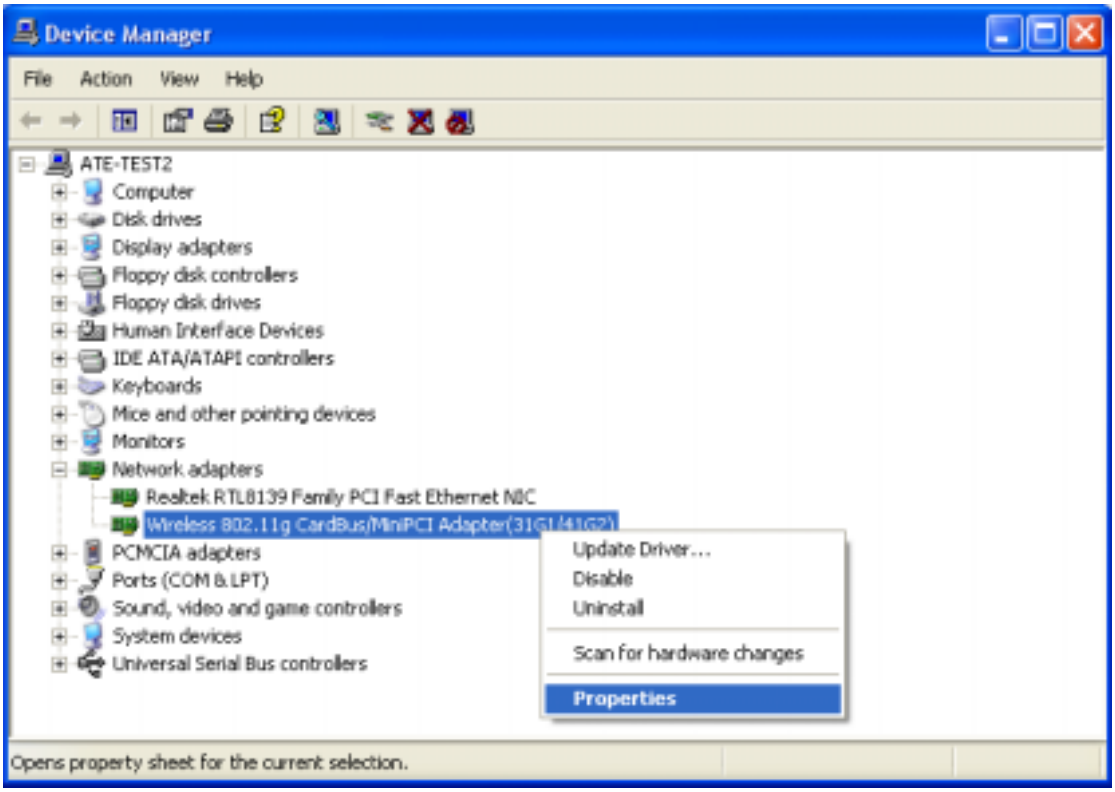
- Right-click mouse button on the **My computer** icon on your windows desktop and select **Properties** from the pop-up menu.



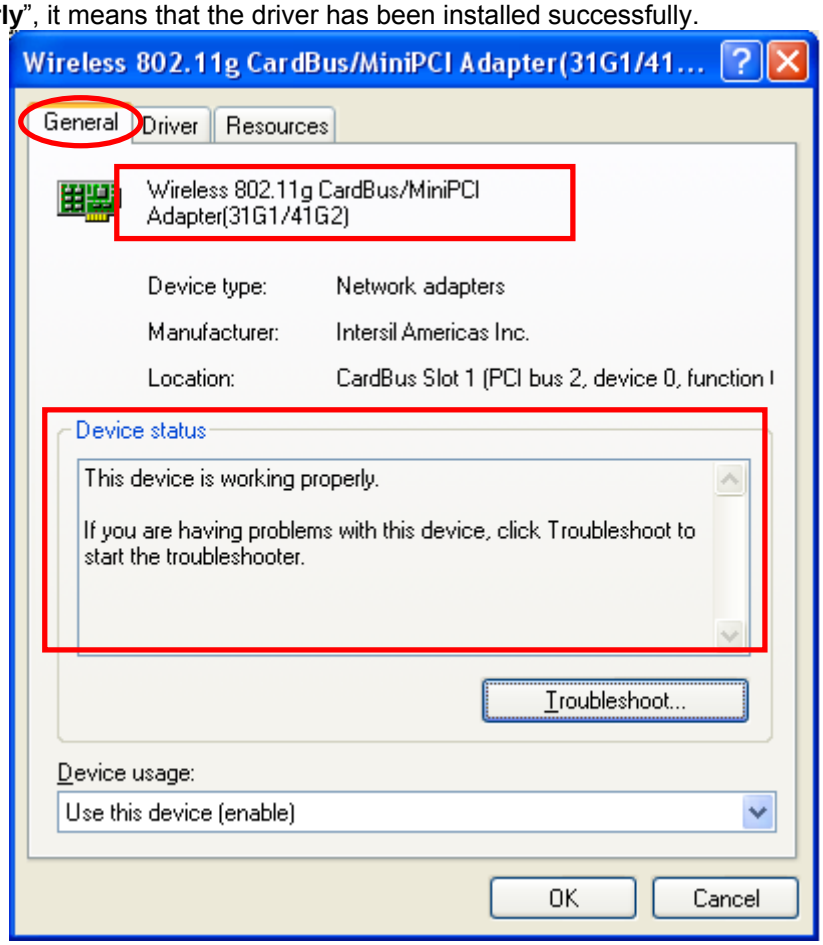
- Under **Hardware** tab, click **Device Manager.**



- Double-click **Network adapters**. Right-click mouse button on "**Wireless 802.11g CardBus/MiniPCI Adapter (31G1/41G2)**" and select "**Properties**".



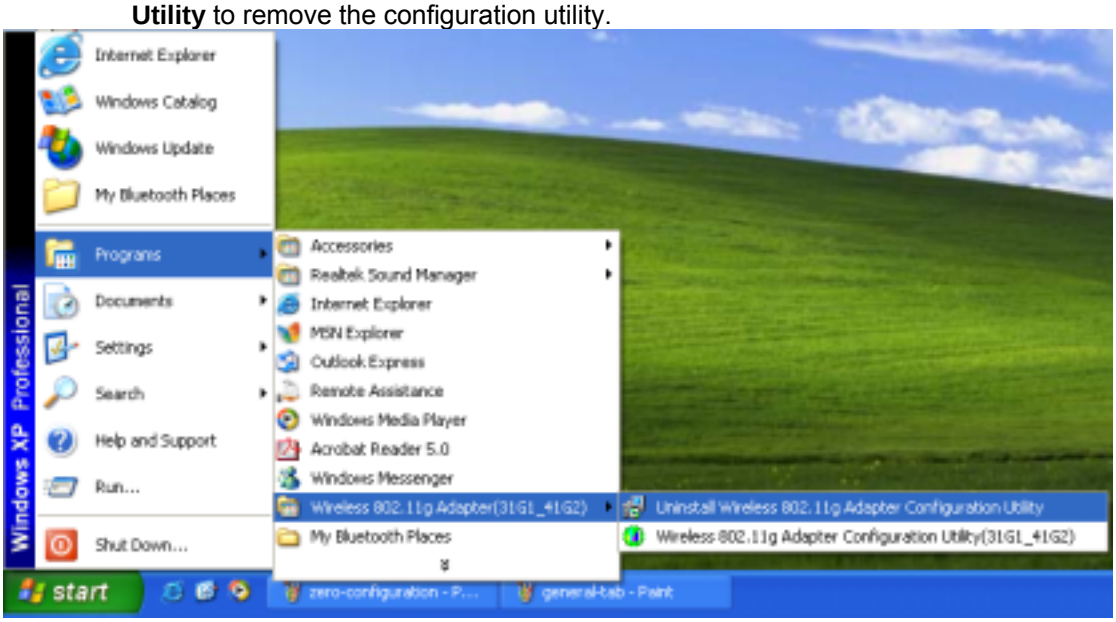
- Click the **General** tab, if the Device Status field reports that "**This device is working properly**", it means that the driver has been installed successfully.



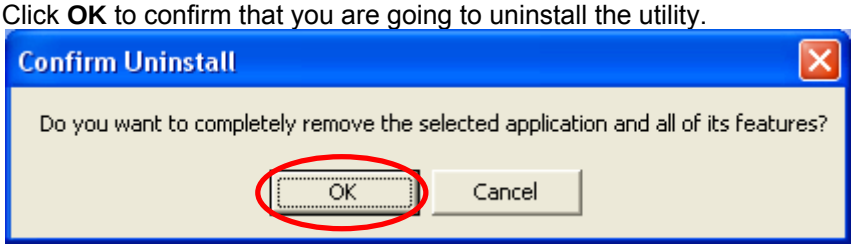
Note:
As for how to do TCP/IP setup in Windows XP, please refer to the TCP/IP setup procedure in Windows 2000 section.

2.7.3 Uninstalling the Wireless LAN CardBus Adapter Utility And Driver In Windows XP

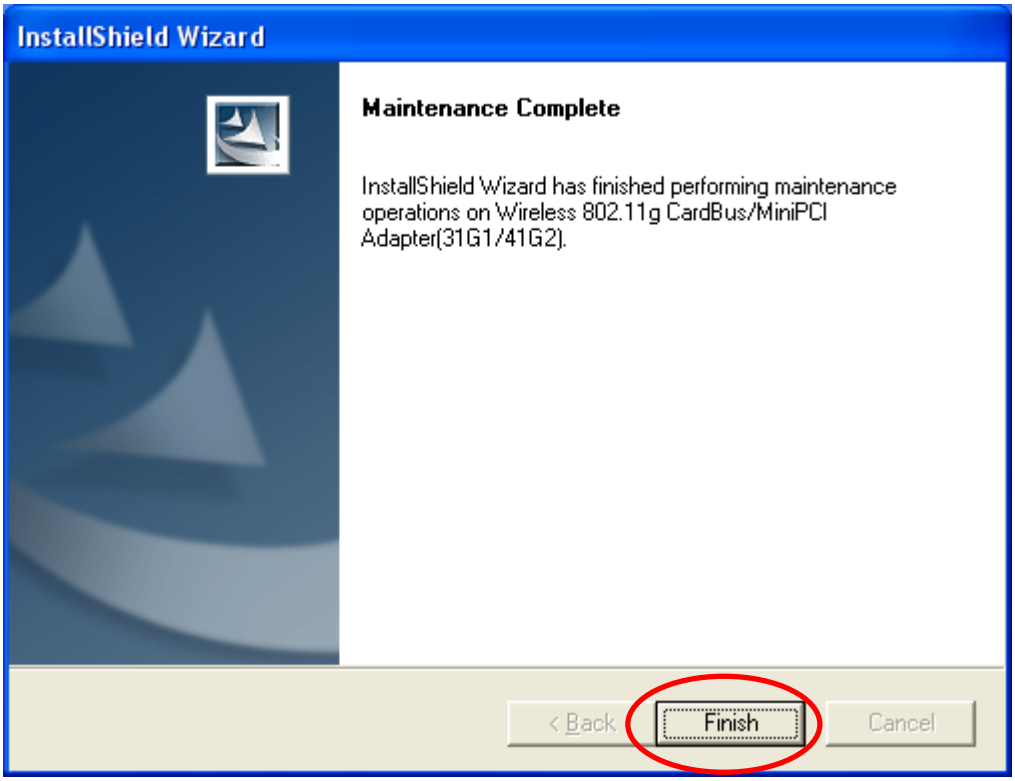
- From the **Windows Start menu -> Programs -> Wireless 802.11g Adapter(31G1_41G2) -> Uninstall Wireless 802.11g Adapter Configuration Utility** to remove the configuration utility.



- Click **OK** to confirm that you are going to uninstall the utility.



- Click **Finish** to complete the un-installation.


InstallShield Wizard
Maintenance Complete
InstallShield Wizard has finished performing maintenance operations on Wireless 802.11g CardBus/MiniPCI Adapter(31G1/41G2).
< Back
Finish
Cancel

Chapter3
Wireless LAN CardBus Adapter Utility

3.1 Wireless LAN Adapter Utility

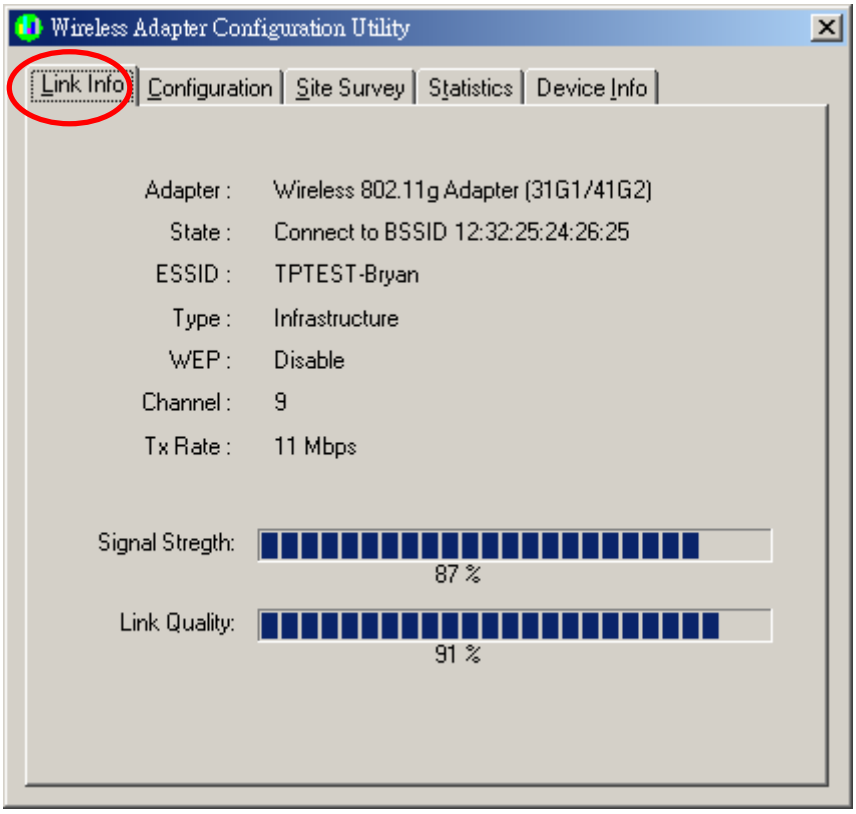
The user-friendly wireless LAN CardBus Adapter Utility helps you to configure this WLAN adapter and monitor its connection status. You can change configuration parameters while the adapter is active. You can open the utility for the utility from the **Windows Start menu -> Programs -> Wireless 802.11g Adapter (31G1_41G2) -> Wireless 802.11g Adapter Configuration Utility (31G1_41G2)** or **double-click** the utility icon 

on your Windows desktop and there will be a WLAN icon  resides on the system tray. This WLAN utility icon will reside on the system tray when you reboot your PC. Double-click on this icon and the wireless LAN adapter utility window will be pop-up on screen. Right-click mouse button on the utility icon and you can select option from the pop-up menu. 

- **Open Utility** – Open the utility main window.
- **Exit** – Close the Wireless CardBus Adapter utility and the icon will exit from the system tray.

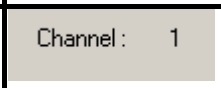
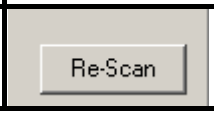
3.2 Wireless LAN Card Utility – Link Info Tab

Click WLAN Utility icon  once and the wireless LAN CardBus adapter Utility window will be shown on screen displaying the related information of Link Info tab. From the **Link Info Tab**, you can know the adapter's name, get the adapter's configuration and connection information. This page is intended to provide the adapter's information only so you can view the information listed here but can't change any item. You may change several parameters from the **Configuration** Tab.



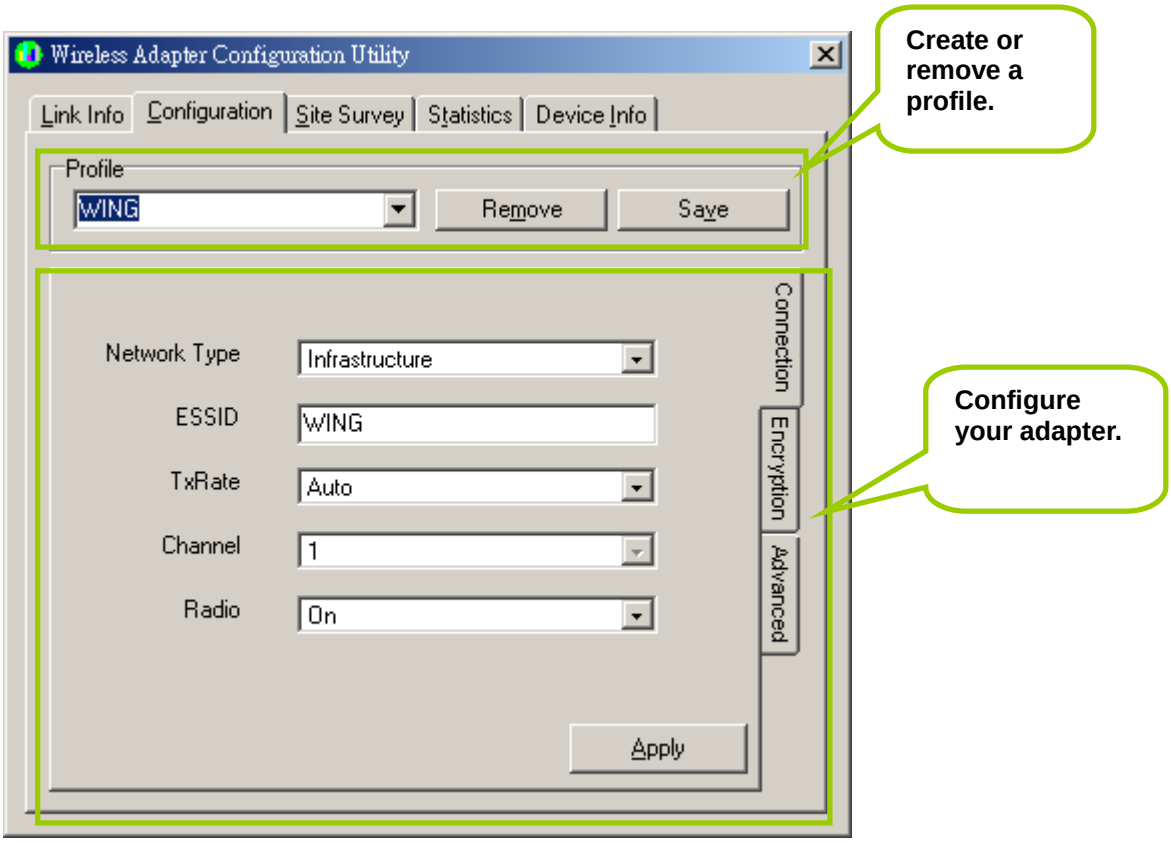
Link Info Tab

Item	Description	Figure
Adapter	Displaying the name of the adapter.	Adapter : Wireless 802.11b CardBus Adapter (34B1)
State	Displaying the working status of the adapter. **Scanning:** Indicating the adapter is searching other wireless devices in service range. **Not Associated:** Indicating that the adapter is not connected with any wireless device yet. **Connect to BSSID: xx:xx:xx:xx:xx:xx** Indicating the adapter is connected with an access point or other wireless LAN adapter and the associated device's MAC address is displayed in the form of hex digits.	State : Connect to BSSID 00:05:5D:AA:D1:EE
ESSID	Indicating the ESSID of the connected wireless device.	ESSID : WING
Type	Indicating the current network type the adapter uses. It could be **Ad hoc** or **Infrastructure**.	Type : Infrastructure
WEP	Indicating whether the connected device enable WEP function or not. **Disable**: It means that the connected device doesn't enable	WEP : Disable

	WEP function. **Enable:** It means that the connected device uses WEP function.	
Channel	In infrastructure mode, it indicates the channel number the associated access point uses. In Ad hoc mode, it indicates the channel number the adapter uses.	
Signal Strength	The blue bar indicates the signal is weak or strong. The longer the blue bar is, the stronger the signal is.	
Link Quality	The blue bar indicates the link quality is good or bad. The longer the blue bar is, the better link quality is.	
Re-Scan	Click this button and then the card will start to re-scan other wireless devices in service range.	

3.3 Wireless LAN Adapter Utility – Configuration Tab

Click the **Configuration Tab** and the following information will be displayed. The top pane of this page is to remove or save configuration settings. You can configure the wireless network adapter through the bottom pane of this page. The bottom pane includes three sub-tabs locating on the right side. Click each sub-tab, and the corresponding items will be displayed on the bottom pane of Configuration tab. Remember to click **Apply** button after your configuration; otherwise, the changes you make won't take effect.



Profile: Creating a profile will save your time to re-configure network links you have established.

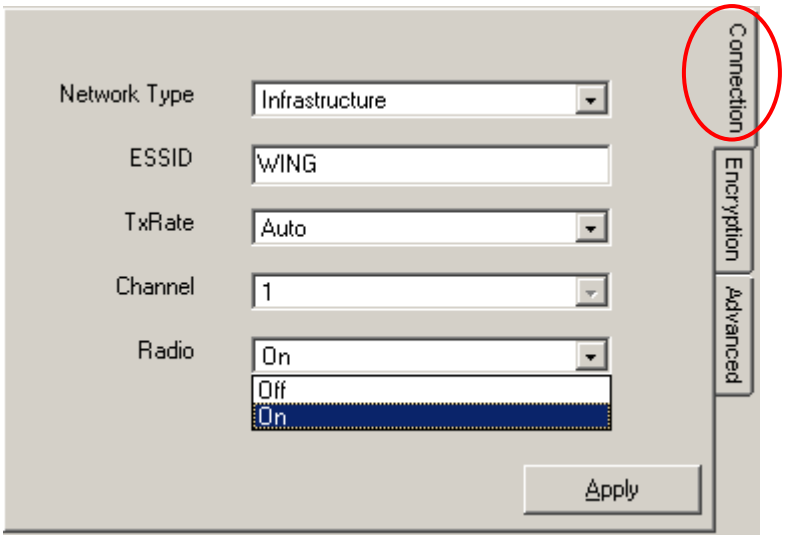
Remove – Click the **Remove** button, and then the selected profile will be deleted.

Save – Click the **Save** button, and then the profile will be saved for further use.

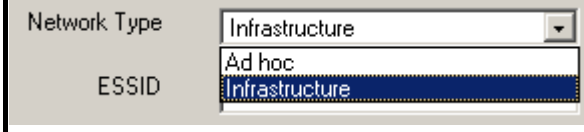
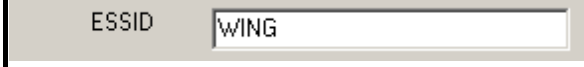
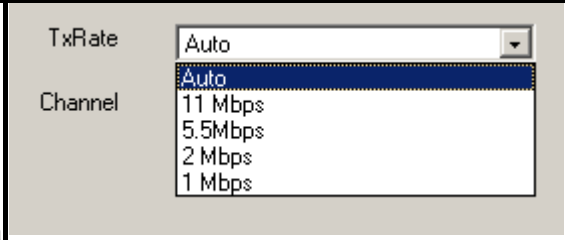
Click the drop-down menu, select one profile you have created and click **Save**, then the profile you select will be applied to the current connection.

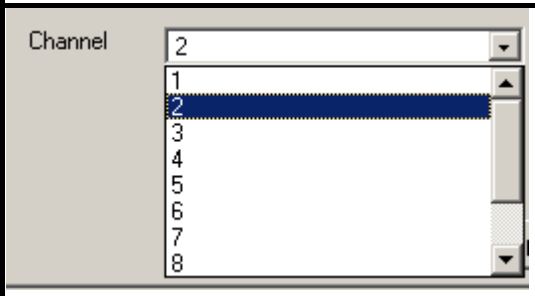
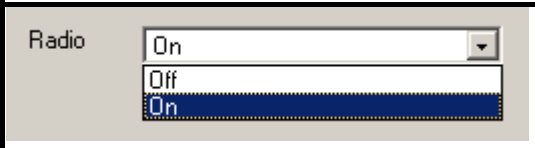
3.3.1 Configuration Tab – Connection

From the **Configuration tab**, click the **Connection tab** on the right side of the bottom pane and the following screen will be displayed.



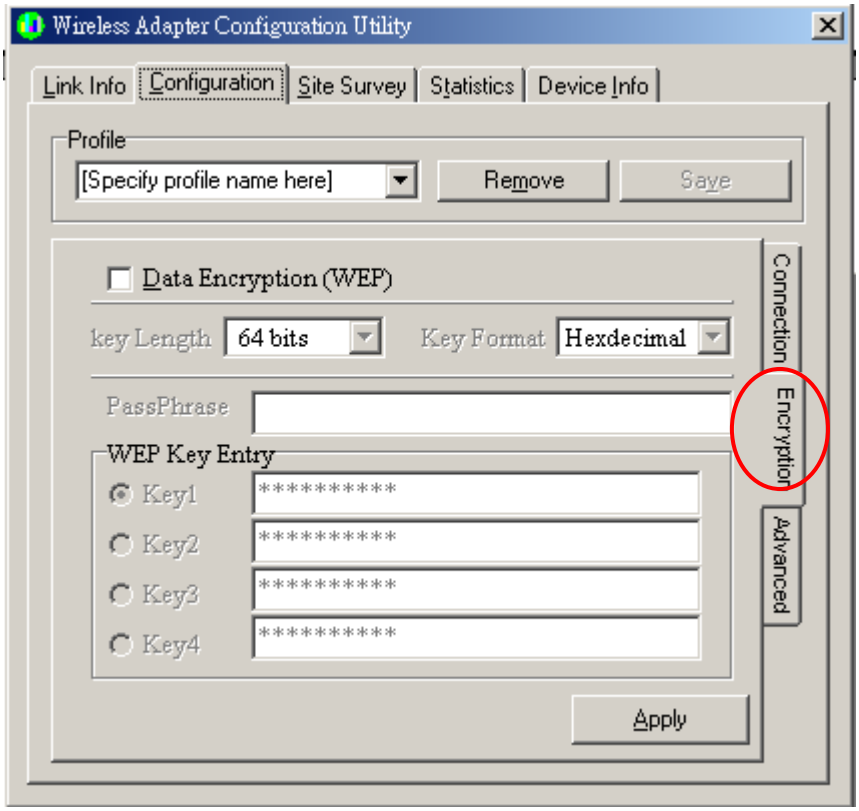
Connection Tab

Item	Description	Figure
Network Type	This wireless LAN adapter supports two network types – Infrastructure and Ad hoc. You can click the down-arrow button to select one network type. **Infrastructure** – This type of network connection needs an access point in range. All communication is done through this access point. **Ad hoc** – A peer-to-peer mode of operation. This type of link is established from client to client without any access point.	
ESSID	You can type a specific ESSID in this field in order to establish the link with an access point or other computer equipped with a wireless LAN adapter. If you leave this field blank, and then the wireless LAN adapter will try to build the link with an access point or other computer equipped with a wireless LAN adapter that has the better signal and link quality.	
TxRate	This field provides options for selecting data-transmitting rate of the wireless LAN adapter. There are five options – Auto, 1 Mbps, 2 Mbps, 5.5 Mbps and 11 Mbps. You can click the down-arrow button to select one option. By default, the data rate is set to Auto, allowing the wireless LAN adapter to adaptively set the Tx rate to	

	the highest possible rate for the WLAN condition. It's recommended that you select the Auto option. If there is an 802.11g access point in the radio range, the Tx Rate will be changed to 54, 48, 36, 24, 18, 12, 9 and Auto.	
Channel	This field shows the channel number the current link uses. In infrastructure mode, this field shows the channel that the connected access point uses. So you can't modify this field in infrastructure mode. In Ad hoc mode, this function is available and you can click the pull-down menu to select one channel. There are 14 channels available for communication with a Wireless Access Point, but there may be restrictions on which channel can be used in some countries. ● 11 channels for United States ● 13 channels for Europe countries ● 14 channels for Japan	
Radio	Click the drop-down menu to enable or disable the wireless LAN adapter. When you select the **Off** option and the utility icon resides on the system tray will be changed to  .	
Apply	Click **Apply** button to make your parameters take effect.	

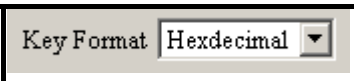
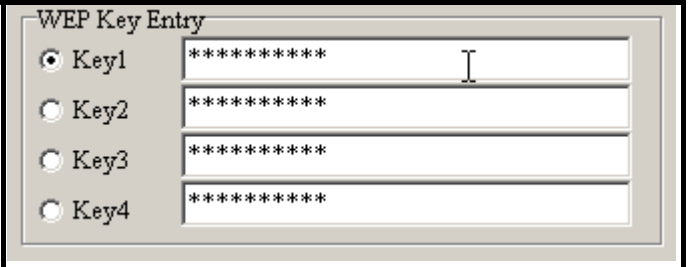
3.3.2 Configuration Tab – Encryption

From the **Configuration tab**, click the **Encryption tab** on the right side of the bottom pane and the following screen will be displayed. The Encryption tab provides WEP (Wired Equivalent Privacy) function to ensure a more secure networking communication and prevent unauthorized access to your wireless network. The WEP keys configured for your wireless device must be the same as the WEP keys configured for the access point or wireless LAN adapter it associates.



Encryption tab

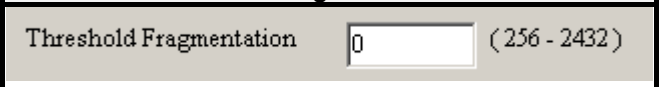
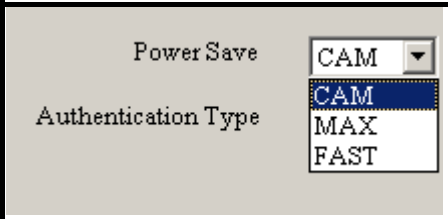
Item	Description	Figure
Data Encryption (WEP)	Click the box in front of Data Encryption (WEP) to enable the WEP function. You can set four different WEP keys in WEP Key Entry and specify one of them to use. If the box is not checked, then you can't change WEP related parameters.	
Key Length	Click the drop-down menu to select 64 bits or 128 bits. The 128 bits gives a higher level of security. The selection must be the same between these two connected devices. You can see that as the key length option is changed, the number of available characters in the WEP Key Entry field is changed automatically.	

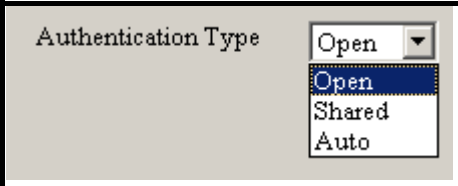
Key Format	This utility supports both Hexadecimal and ASCII key formats. Click the drop-down menu to choose one format. Only digits 0-9 and letters A-F are valid entries if you select hexadecimal format.	
PassPhrase	PassPhrase function is used as a seed to randomly generate the WEP encryption keys. If you use a key generated from a PassPhrase, you must use the same PassPhrase and keys on each station.	
WEP Key Entry	These four fields allow you to set four different 64-bit or 128-bit alphanumeric keys for encryption. This item is a very convenient and useful function when you want to match the WEP keys with different vendor's products. After you have set the WEP keys for specific AP or wireless LAN card, instead of entering the WEP key every time, you just click the radio button in front of the WEP key to enable the WEP key of the associated device.	

3.3.3 Configuration Tab – Advanced

From the **Configuration tab**, click the **Advanced tab** on the right side of the bottom pane and the following screen will be displayed. In this page, this utility gives you more flexibility to manage the wireless LAN adapter. You can change advanced configurations, such as fragmentation threshold, RTS/CTS threshold, Preamble type, Power Save mode and Authentication Type.

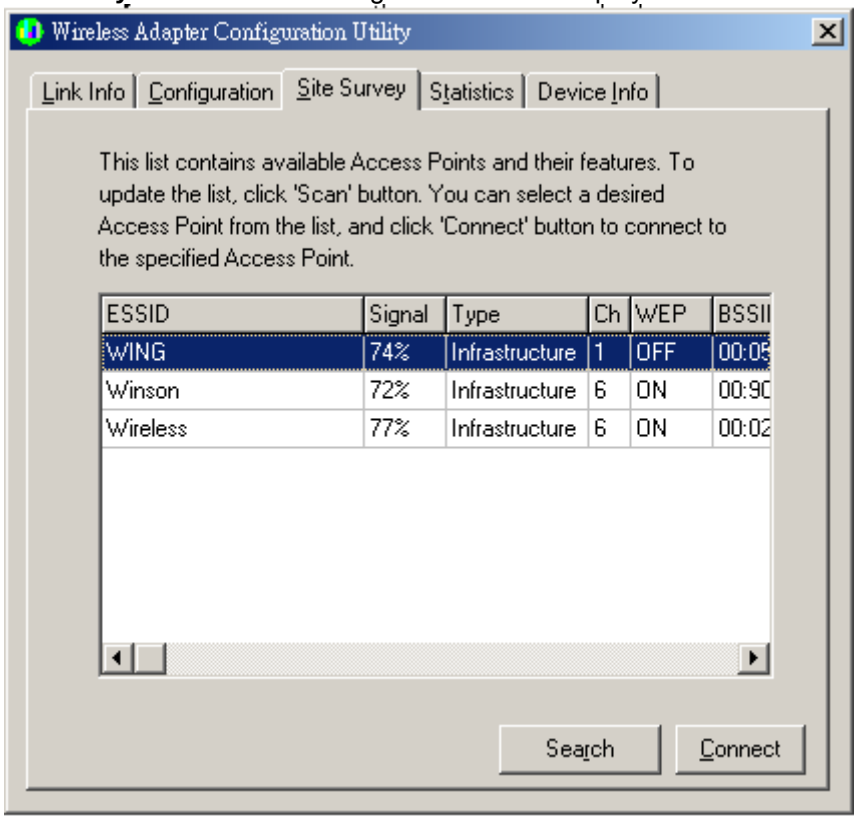
Advanced tab

Item	Description	Figure
Threshold Fragmentation	This field is to define the maximum data frame size this wireless LAN adapter will transmit and to improve the efficiency of data transmitting.	
Threshold RTS/CTS	This field is to define when will the wireless LAN adapter send out RTS/CTS frames to reserve bandwidth for transmission. Type the value in this field and the effective range is from 0 to 3000.	
Preamble	There are two options in this field. The Short Preamble option improves throughput performance. The default setting is Long.	
Power Save	This field provides three options for the configuration of power management. There are three power saving modes. Click the pull-down menu to select the mode you desire. ● **CAM –** It represents **C**ontinuous **A**ccess **M**ode. Select this option and the wireless LAN adapter is always on. ● **MAX –** It represents the maximum (MAX) power saving mode. Select this option to save the maximum power of the wireless LAN adapter. ● **FAST –** It	

	represents the fast power saving mode. This power mode provides the best combination of network performance and power usage.	
Authentication Type	Click the pull-down menu to select Auto, Shared or Open type. The authentication function is invoked when associated to access point. The authentication type you select should be the same between these connected devices. If you select Auto mode, the driver will auto detect the authentication type of the access point you are going to associate. ● **Open:** With this setting any station in the Wireless LAN devices can associate with an Access Point to receive and to transmit data. ● **Shared:** With this setting only stations using a shared key encryption identified by the Access Point are allowed to associate with it. ● **Auto:** With this setting stations can communicate with or without data encryption.	

3.4 Wireless LAN Adapter Utility – Site Survey Tab

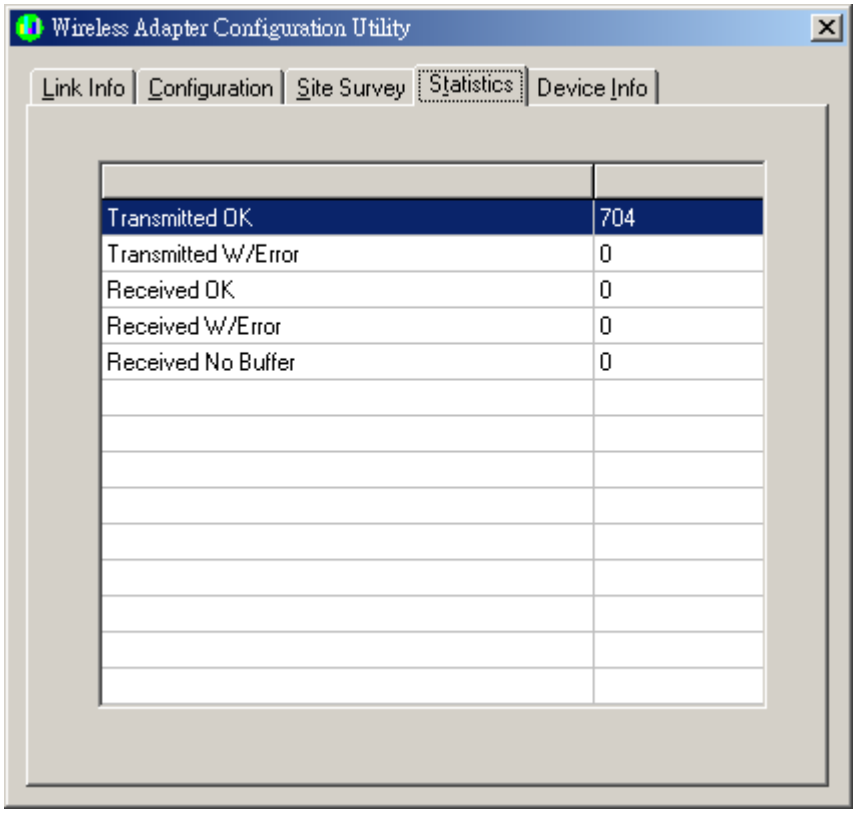
Click the **Site Survey tab** and the following screen will be displayed.



From the Site Survey page, you can search all access points and wireless LAN adapters that are within the service range of the wireless LAN adapter. The service range the wireless LAN card supports is up to 100 meters indoor or 300 meters outdoors. Click **Search** button, and the wireless LAN card will start to search access points and WLAN adapters and show the result in the list. The list includes information about the ESSID and BSSID of the access point and WALN adapter, the signal strength, the channel where the access point and WLAN adapter operates, and whether or not WEP encryption is used. You can highlight the access point or WLAN adapter you want to associate and click **Connect** or double click on your choice, and the system will take you back to the **Link Info** tab showing you the parameters of the connection newly established. If the wireless device you attempt to connect uses WEP function, then the system will take you to the Configuration tab/Encryption page.
In the above figure, you can see there are three access points within the service range of the wireless LAN card. You may click the **Search** button to update this list and click the scroll bar to right to see more information the list provides.

3.5 Wireless LAN Card Utility – Statistics Tab

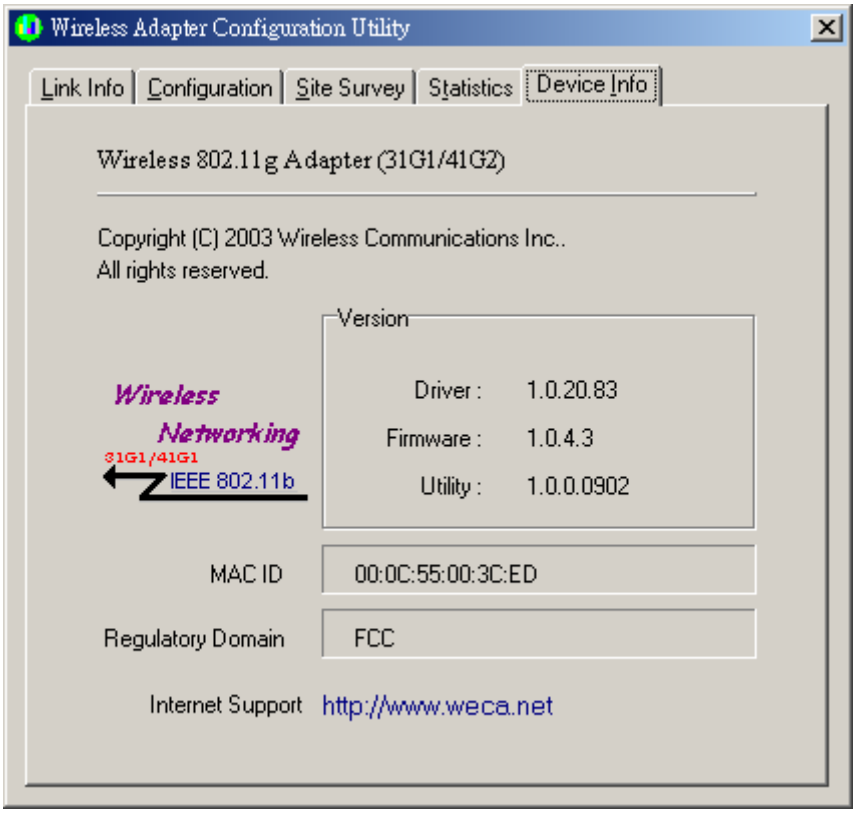
Click the **Statistics tab** and the following screen will be displayed.



From the Statistics tab page, you can view the instantaneous wireless receive and transmit data information.

3.6 Wireless LAN Adapter Utility – Device Info Tab

Click the **Device Info** tab and the following screen will be displayed.



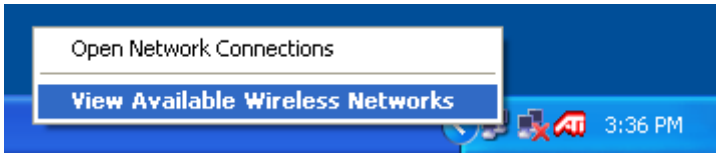
From the **Device Info (information)** page, you can view the copyright and the product version including the diver version and utility version. The MAC address of the wireless LAN adapter and the regulatory domain are also shown on this page.

Chapter4
Using WinXP Built-in Wireless Network Configuration Utility

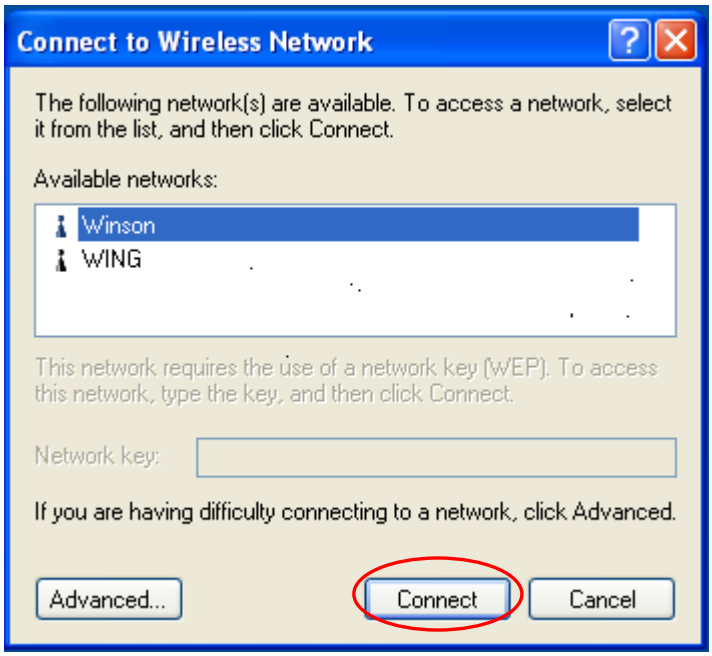
There are two ways to configure the wireless LAN adapter under Windows XP operating system. One is wireless LAN utility we provide and the other one is the Windows wireless network configuration utility Windows XP provides. If you want to use the configuration utility we provide, please refer to Chapter 3. The following section guides you how to use the wireless network configuration utility Windows XP provides.

4.1 Open the Local Area connection dialog box

- Right-click mouse button on the network connection icon resides on the system tray, and click **"View Available Wireless Networks**".

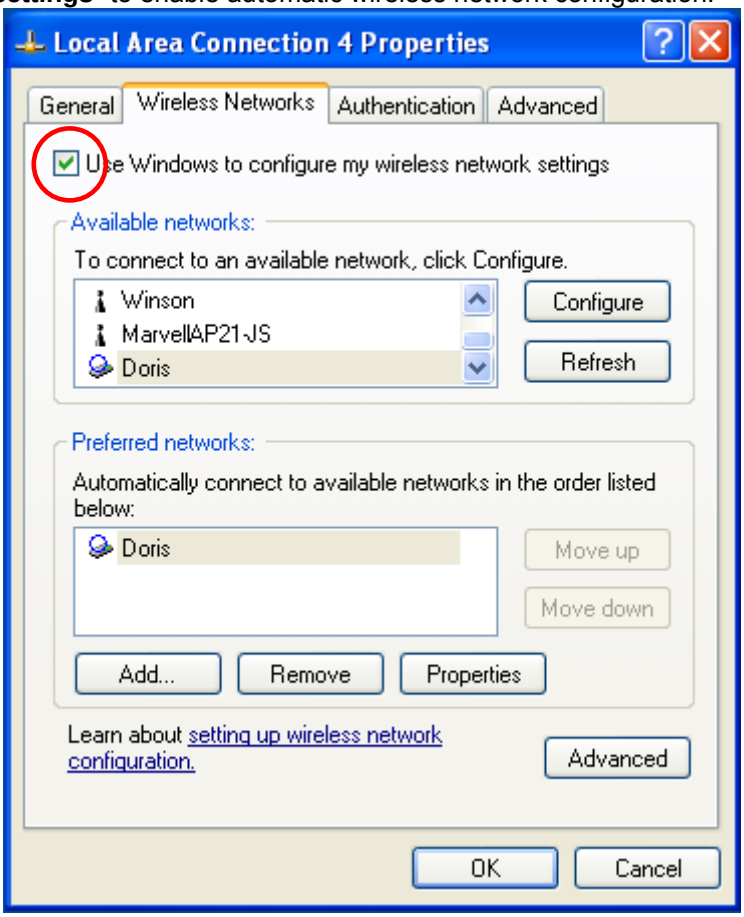


- The following **Connect to Wireless Network** dialog box will be displayed. You can click **Connect** to start the wireless connection or click **Advanced** button to do further configuration.



- Click the **Advanced** button and the Local Area Connection Properties dialog box will be displayed. Click the **Wireless Networks tab** from the **Wireless Network Connection**

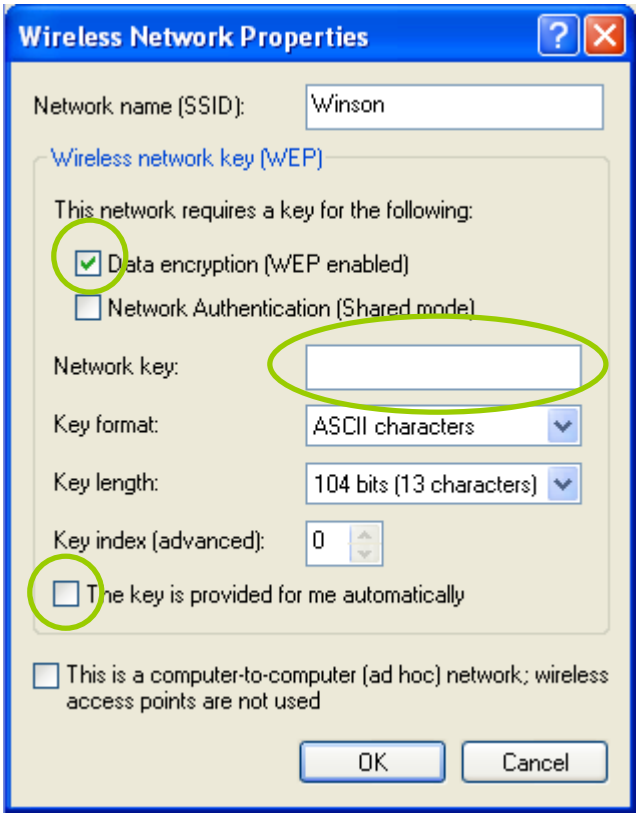
Properties dialog box. Select the box of "**Use Windows to configure my wireless network settings**" to enable automatic wireless network configuration.



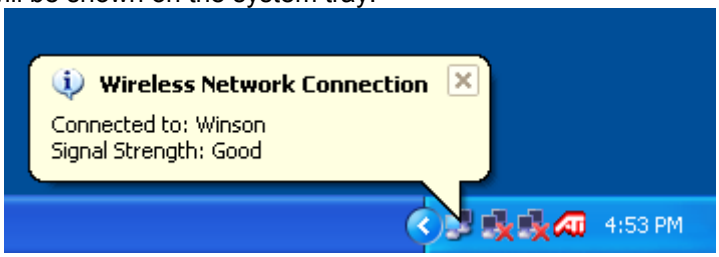
Note:
If you want to use the configuration utility we provide, you have to clear the check of "Use Windows to configure my wireless network settings" item.

4.2 Infrastructure Mode Setup Procedure

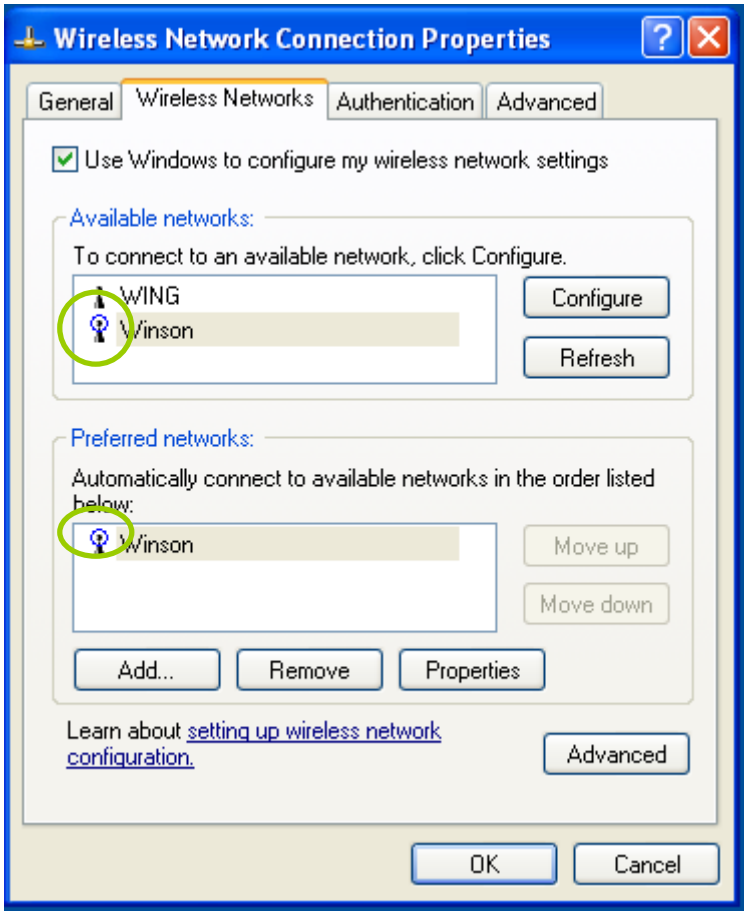
- From the **Wireless Network tab,** click **Refresh** button to update all the available network devices in range.
- Click the network name under the "**Available networks**" and click **Configure**. The Wireless Network Properties dialog box will be displayed.



- If the network you select requires WEP key, then the "**Data encryption (WEP enabled)**" check box is selected by default. Select the **"The key is provided for me automatically"** check box if the WEP key is automatically provided for you. The driver will then use the Default Encryption key. If not, you have to clear the check and manually enter the network key. In this example, you have to type the WEP keys. After you enter the WEP keys, you can click **OK** to close the Wireless Network Properties dialog box and the system will take you back to Wireless Network Connection Properties dialog box.
- Click **OK** to save your configuration and the Wireless Network Connection Properties will be closed.
- When the network connection you have configured is available, the following bubble message will be shown on the system tray.



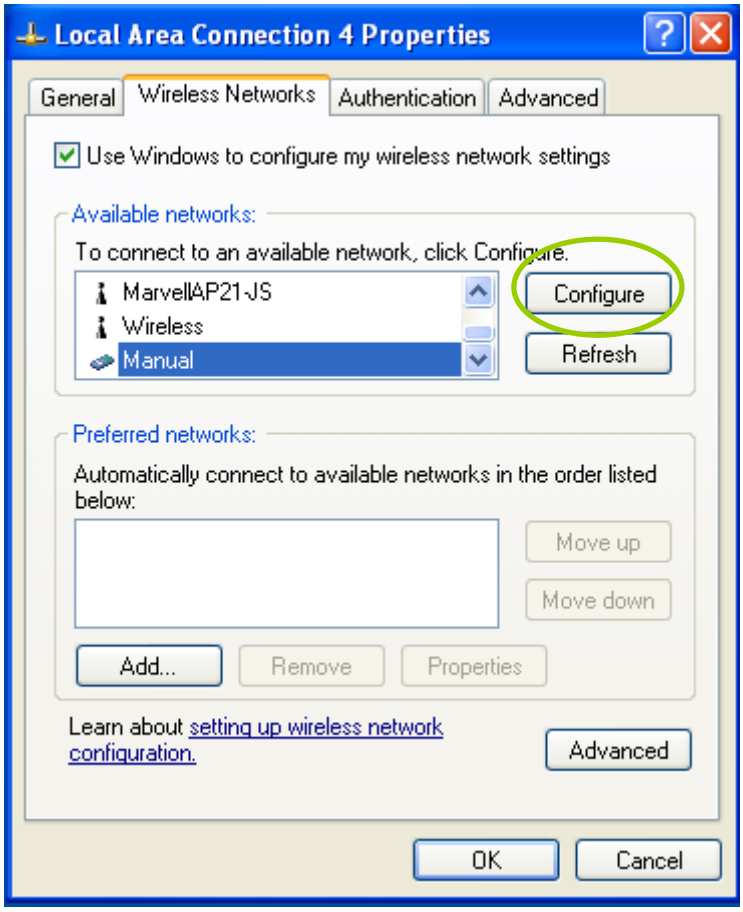
- Right-click mouse button on the network icon and select "**View Available Wireless Network**". Click **Advanced** button from the **Connect to Wireless Network** dialog box and you can find that there is a blue circle on the ESSID: Winson you have configured in Wireless Network Connection Properties dialog box. It means that you have successfully built the connection. You may refer to how to do TCP/IP setup in Windows 2000 section to configure you wireless LAN adapter in Windows XP. After the TCP/CP configuration is done, you can access the Internet through the wireless connection you have built.



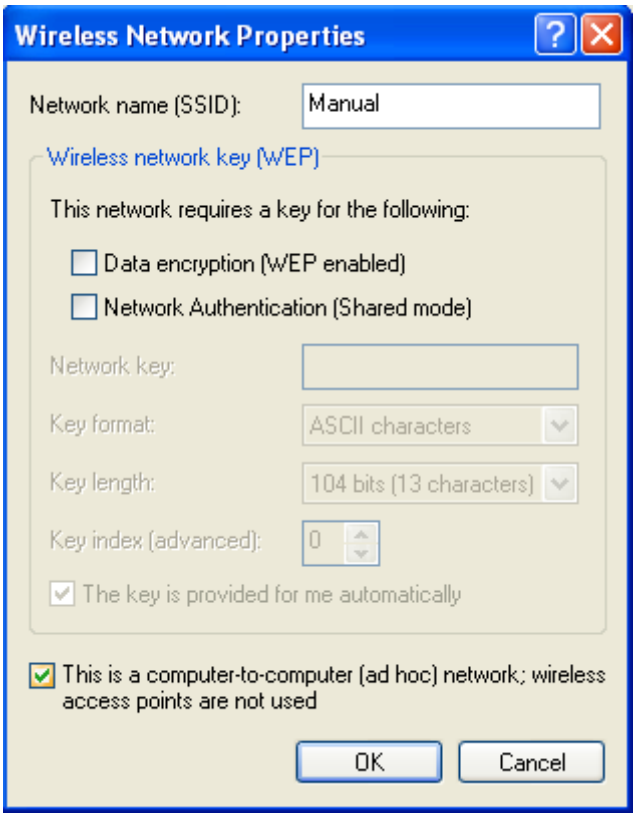
- Furthermore, you can highlight a network connection and click **Move up** or **Move down** to change the order of the wireless networks in the **Preferred networks**. For Windows XP, it will always choose the first one in the **Preferred networks** to connect. To remove a wireless network from the list of preferred networks, select the wireless network that you want to remove, and then click **Remove**.

4.3 Ad-hoc Mode Setup Procedure

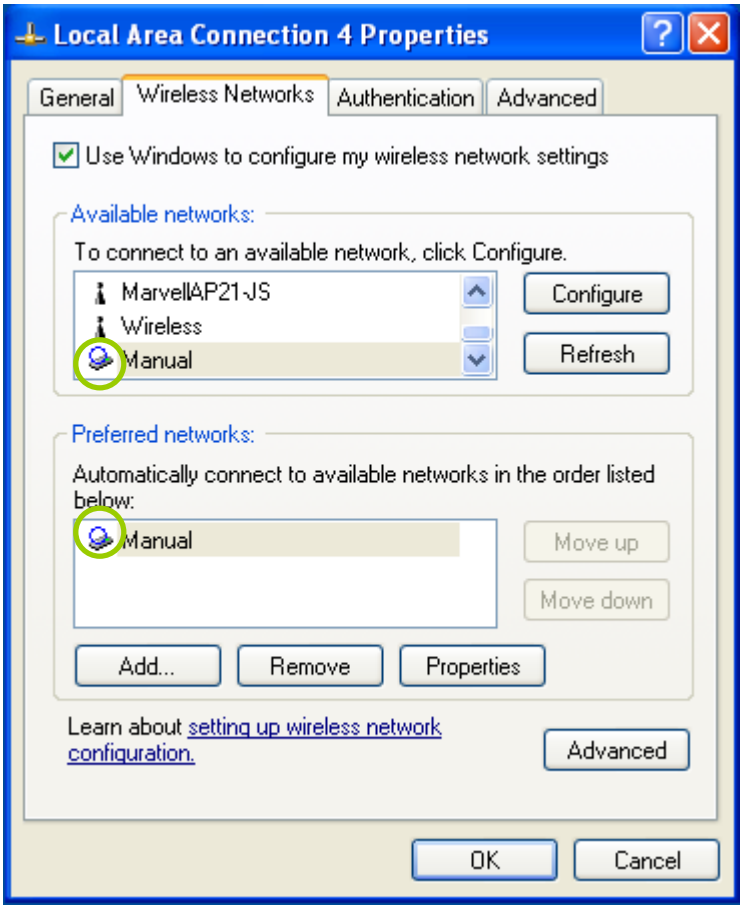
- Click **Refresh** button to update all available devices in range from Wireless Network Connection.
- Select the ad hoc network name under "**Available networks**" in the **Wireless Networks** tab, and click **Configure**.



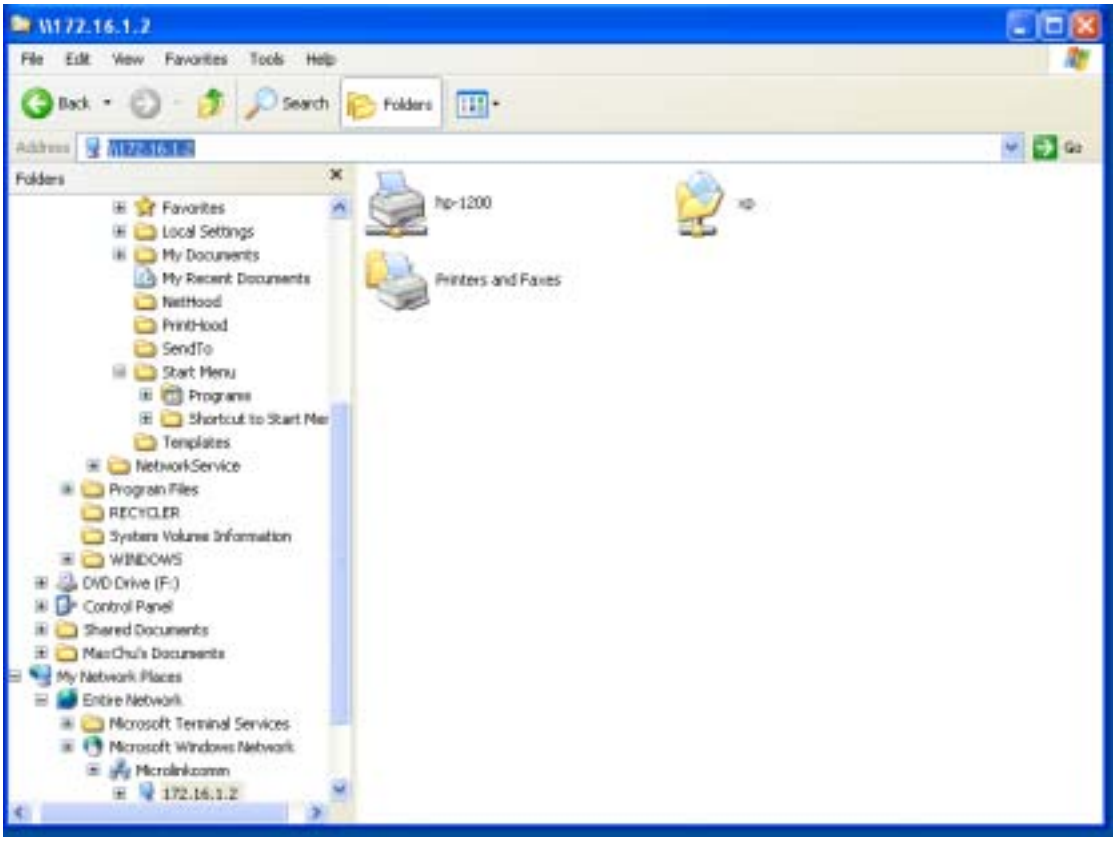
- In the Wireless Network Properties dialog box, the "This is a computer-to-computer (ad hoc) network; wireless access points are not used" check box is selected by default.
- If the network adapter you want to connect has enabled the WEP function and then the "Data encryption (WEP enabled)" check box is checked. You can select the "**The key is provided for me automatically"** check box if the WEP key is automatically provided for you. The driver will then use the Default Encryption key. If not, you have to clear the check and manually enter the network key. In this example, you have to type the WEP keys. After you enter the WEP keys, you can click **OK** to close the Wireless Network Properties dialog box and will go back to Wireless Network Connection Properties dialog box.



- Click **OK** to save your configuration and close the Local Area Connection Properties dialog box. Right-click mouse button on the network icon on the system tray and open the Connect to Wireless Network dialog box again. Click **Advanced** button, and you can see that there is a blue circle on the wireless network adapter icon.

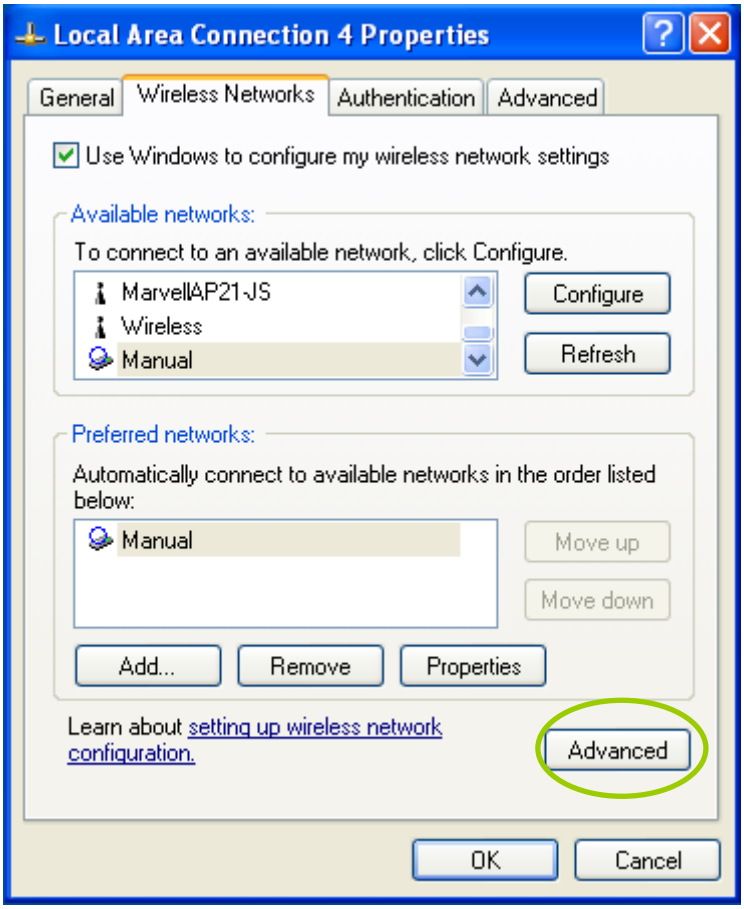


- You may refer to how to do TCP/IP setup in Windows 2000 section to configure you wireless LAN adapter in Windows XP. After the TCP/CP configuration is done, you can share data between these wireless devices.
- Open Windows Explorer and type the connected wireless network adapter IP address in the **Address** field. The folder that remote WLAN adapter share will be displayed. Now , you can share data between these two desktop or laptop equipped with a wireless network adapter.



4.4 Network Operating Mode Selection

Click “**Advanced**” button from the Local Area Connection dialog box, and you can select network operating mode you want to use.



If you want to connect to an ad hoc network only, you can click the radio button of "**Computer-to-computer (ad hoc) networks only**". Click the radio button of "**Access point (infrastructure) networks only**", and only the available access points in range will be displayed in the available networks box. You can click the radio button of "**Any available network (access point preferred)"**, and then both access points and wireless network adapters will be displayed in the available networks box.