

**IEEE 802.11b 11Mbps  
Wireless LAN CardBus Adapter  
User's Manual**

# Table of Content

<b>CHAPTER1 INTRODUCTION.....</b>	<b>5</b>
1.1 PACKAGE CONTENT.....	5
1.2 SYSTEM REQUIREMENT .....	5
1.3 WIRELESS LAN CARDBUS ADAPTER FEATURES .....	5
1.4 WIRELESS CARDBUS ADAPTER SPECIFICATION .....	6
1.5 WIRELESS CARDBUS ADAPTER HARDWARE DESCRIPTION .....	6
1.6 EJECTING THE WIRELESS LAN CARDBUS ADAPTER.....	7
<b>CHAPTER2 INSTALLATION AND CONFIGURATION PROCEDURES.....</b>	<b>10</b>
2.1 INSTALLATION PROCEDURES IN WINDOWS98/ME.....	10
2.1.1 <i>Installing the Wireless LAN CardBus Adapter.....</i>	<i>10</i>
2.1.2 <i>Completing to Install the Wireless LAN CardBus Adapter .....</i>	<i>12</i>
2.1.3 <i>Verifying the Wireless LAN Adapter Driver.....</i>	<i>14</i>
2.1.4 <i>TCP/IP Configuration Procedure In Windows98/ME.....</i>	<i>16</i>
2.1.5 <i>Removing the Wireless LAN Adapter Utility And Driver In Windows98/ME..</i>	<i>19</i>
2.3 INSTALLATION PROCEDURES IN WINDOWS2000 .....	21
2.3.1 <i>Installing the Wireless LAN Card Driver and Configuration Utility.....</i>	<i>21</i>
2.3.2 <i>Completing to Install the Wireless LAN CardBus Adapter .....</i>	<i>24</i>
2.3.3 VERIFYING YOUR INSTALLATION IN WINDOWS2000 .....	25
2.3.4 TCP/IP SETUP IN WINDOWS 2000.....	28
2.3.5 <i>Uninstalling the Wireless LAN CardBus Adapter Utility And Driver In Windows</i>	<i>32</i>
2000	
2.4 INSTALLATION PROCEDURES IN WINDOWS XP .....	35
2.4.1 <i>Installing the Wireless LAN Adapter Driver and Utility.....</i>	<i>35</i>
2.4.2 <i>Completing to Install the Wireless LAN CardBus Adapter .....</i>	<i>38</i>
2.4.3 VERIFYING YOUR INSTALLATION IN WINDOWS XP.....	41
2.4.4 <i>Uninstalling the Wireless LAN CardBus Adapter Utility And Driver In Windows</i>	<i>44</i>
XP	
<b>CHAPTER3 WIRELESS LAN CARDBUS ADAPTER UTILITY .....</b>	<b>49</b>
3.1 WIRELESS LAN ADAPTER UTILITY.....	49
3.2 WIRELESS LAN CARD UTILITY – LINK INFO TAB.....	49
3.3 WIRELESS LAN ADAPTER UTILITY – CONFIGURATION TAB.....	51
3.3.1 <i>Configuration Tab – Connection .....</i>	<i>52</i>
3.3.2 <i>Configuration Tab – Encryption .....</i>	<i>54</i>
3.3.3 <i>Configuration Tab – Advanced .....</i>	<i>56</i>
3.4 WIRELESS LAN ADAPTER UTILITY – SITE SURVEY TAB.....	59
3.5 WIRELESS LAN CARD UTILITY – STATISTICS TAB .....	59
3.6 WIRELESS LAN CARD UTILITY – DEVICE INFO TAB.....	60
<b>CHAPTER4 .....</b>	<b>62</b>
<b>USING WINXP BUILT-IN WIRELESS NETWORK CONFIGURATION UTILITY .....</b>	<b>62</b>
4.1 OPEN THE LOCAL AREA CONNECTION DIALOG BOX.....	62
4.2 INFRASTRUCTURE MODE SETUP PROCEDURE .....	63
4.3 AD-HOC MODE SETUP PROCEDURE .....	66
4.4 NETWORK OPERATING MODE SELECTION .....	69

## Regulatory Compliance

### FCC Warning

This device, MWL-34B1 (Wireless Lan 802.11b adaptor) 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) *The equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment, under 47 CFR 2.1093 paragraph (d) (2).*
- 2) *This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.*

### SAR Statement

The Wireless Lan 802.11b adaptor has been tested to the FCC exposure requirements (Specific Absorbtion Rate).

# Chapter 1

## Introduction

---

This 802.11b wireless network adapter is a plug and play 32-bit CardBus PCMCIA adapter and offers high-speed wireless connection up to 11Mbps. It complies with the IEEE 802.11b standard and ensures cross vendor interoperability with the greatest range of any Wi-Fi certified products. 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 802.11b standard so it allows

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

- Compatible with IEEE 802.11b high rate standard and provides wireless Ethernet speed of 11 Mbps data rate.
- Dynamic data rate scaling at 11, 5.5, 2 and 1 Mbps.
- Maximum reliability, throughput and connectivity with automatic data rate switching.
- Strong WEP encryption for data security.
- Integrated Microstrip dual diversity antenna for the multi-path environment, no separate antenna required.
- One-piece PC Adapter designed to fully support CardBus defined mechanical and environmental stress conditions.
- Drivers supported Windows98SE, ME, 2000 and XP.
- Simple user setup & diagnostics utilities.
- Type approval compliant with FCC Part 15.247 for US, ETS 300 328 for Europe and ARIB STD-T66 and RCR STD-33A for Japan.

## 1.4 Wireless CardBus Adapter Specification

<b>Specification</b>	
<b>RF Technology</b>	IEEE 802.11b Direct Sequence Spread Spectrum
<b>Operating Frequency</b>	2400-2497MHz ISM band
<b>Modulation Schemes</b>	DQPSK, DBPSK and CCK
<b>Channel Numbers</b>	11 channels for United States 13 channels for Europe 14 channels for Japan
<b>Data Rate</b>	11Mbps with fall back rates of 5.5, 2 and 1Mbps
<b>Media Access Protocol</b>	CSMA/CA with ACK
<b>Transmitter Output Power</b>	16 dBm typically
<b>Receiver Sensitivity</b>	Typical -84dBm for 11Mbps @ 8% PER (Packet Error Rate) Typical -88dBm for 2Mbps @ 8% PER (Packet Error Rate)
<b>Range Coverage</b>	Indoor: 35 - 100 meters (depends on environment) Outdoor: 100 - 300 meters (depends on environment)
<b>Data Rate</b>	11Mbps with fall back rates of 5.5, 2 and 1Mbps
<b>LED Indicator</b>	Power & Link status
<b>Antenna Type</b>	Printed-on-board antenna
<b>Operating Voltage</b>	3.3V DC
<b>Current Consumption</b>	270mA at transmit mode typically 190mA at receive mode typically 30mA at sleep mode typically
<b>Form Factor and Interface</b>	PC Card Type II
<b>Temperature</b>	0 ~ 55 in operating -20~75 in storage
<b>Humidity</b>	10% ~ 90% Non-condensing
<b>Dimension</b>	115mm x 54mm x 5mm

## 1.5 Wireless CardBus Adapter Hardware Description

After you have the wireless LAN CardBus adapter driver and utility installed and reboot your PC, please align the wireless LAN CardBus adapter properly and insert it into the PCMCIA Card slot securely. The LEDs illuminate to indicate that the card is functioning. Please refer to the hardware diagram below. The upper solid green LED indicates this card is associated with

other devices and the lower flashing green LED indicates this card is searching other devices.

#### Hardware Diagram



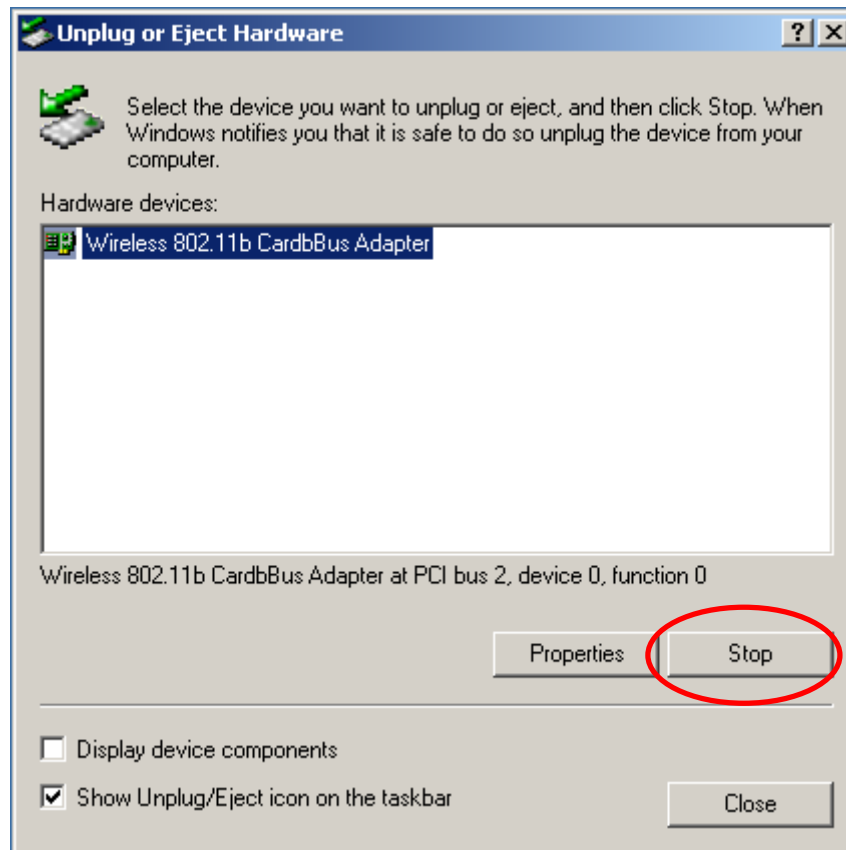
## 1.6 Ejecting the Wireless LAN CardBus Adapter

---

You are advised to always disable the WLAN CardBus adapter prior to remove 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:

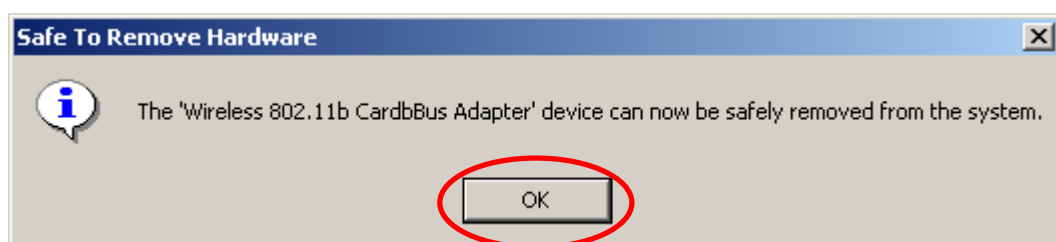
- Double click the **Unplug or Eject Hardware Icon**  resides on your system tray and click **Stop** from the Unplug or Eject Hardware dialog box.



- 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.



Wireless LAN CardBus Card

- 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.



# Chapter 2 Installation and Configuration Procedures

---

## 2.1 Installation Procedures In Windows98/ME

---

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.

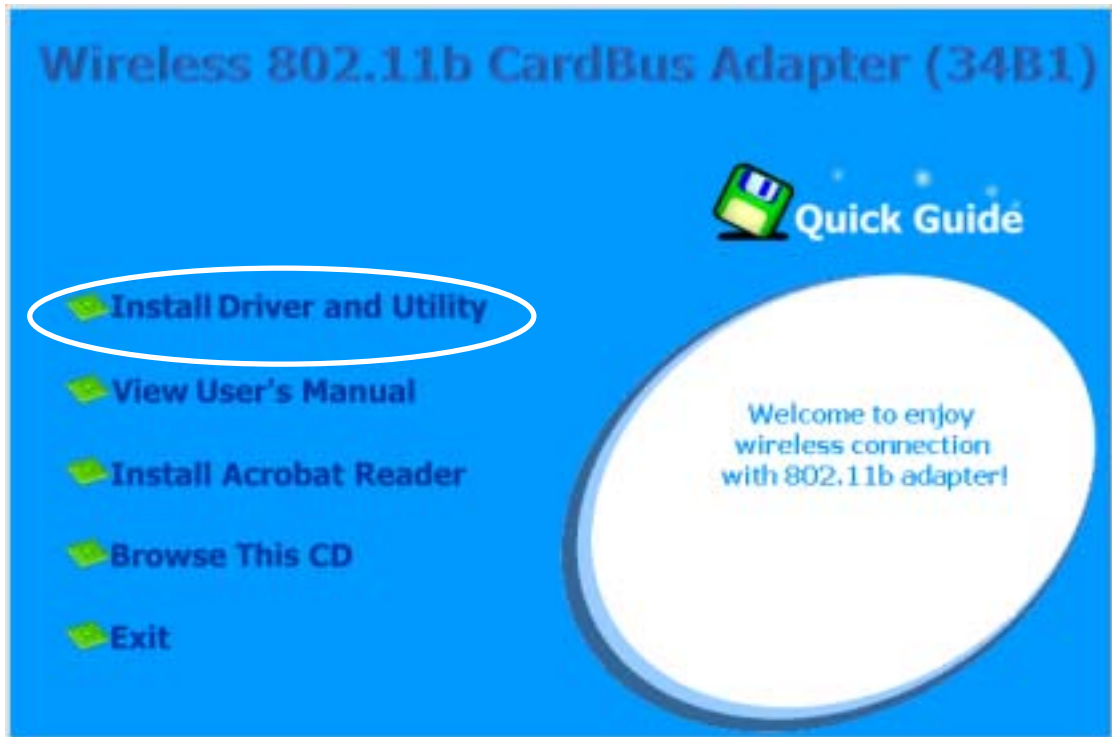
### Before you start:

- ✓ Obtain this Utility CD.
- ✓ Don't insert this wireless LAN CardBus adapter into PCMCIA slot before you complete the whole installation process.

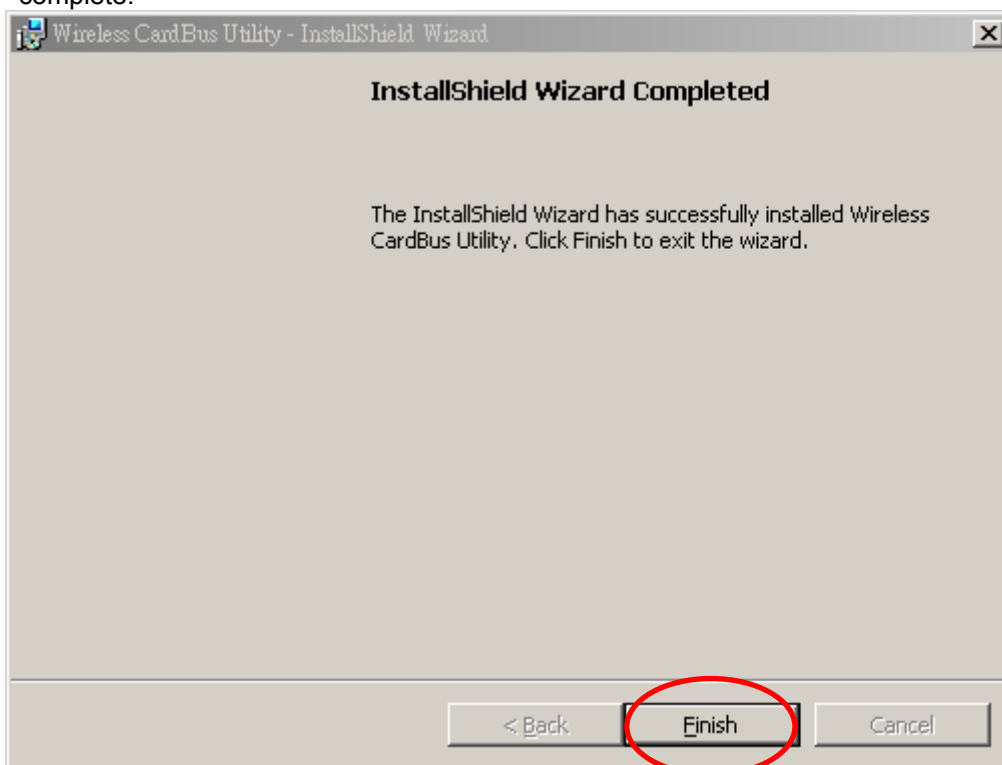
### 2.1.1 Installing the Wireless LAN CardBus Adapter

---

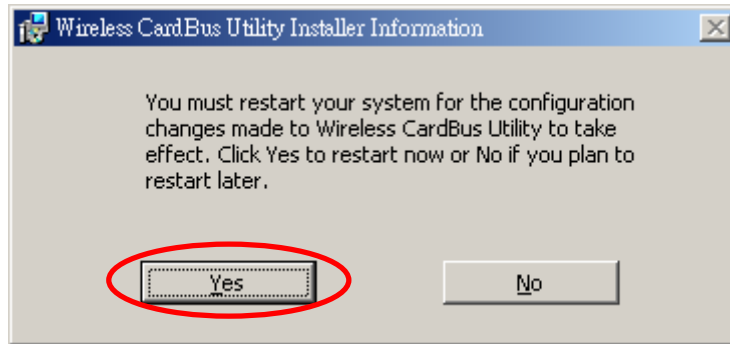
1. Turn on your desktop or notebook.
2. Close any open programs and insert the utility CD into your CD-ROM Drive. The Autorun function will automatically start and the following main screen will be pop-up. Double-click on the **Install Driver and Utility** item to start the software installation. Click 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.



3. Double-click on **Install Driver and Utility**, and the InstallShield Wizard will start to install the configuration utility and drivers automatically.
4. Click **Finish** button when the windows prompts that the installation procedure is complete.



5. Click the **Yes** button to reboot your desktop or laptop.



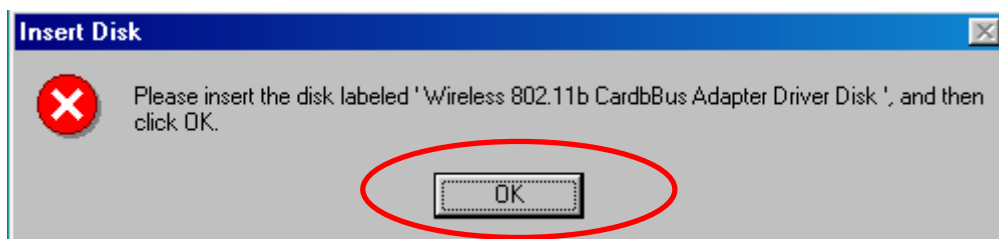
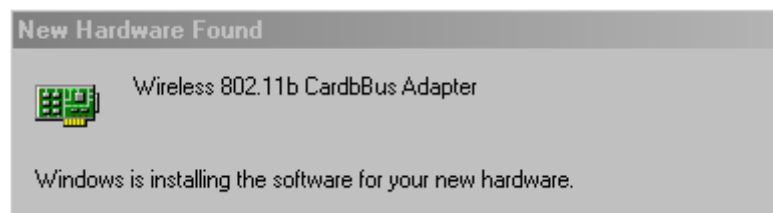
## 2.1.2 Completing to Install the Wireless LAN CardBus Adapter

After reboot your system, you can insert the wireless LAN CardBus adapter into the PCMCIA slot. Align the adapter properly before putting it in the slot. Insert the card firmly without forcing until it seats snugly.

### CAUTION:

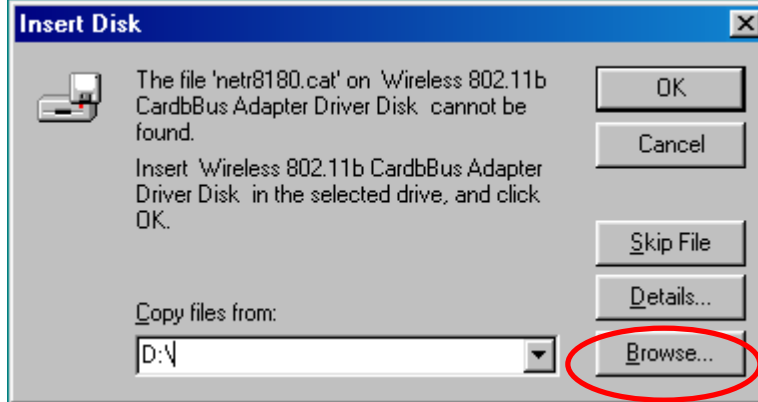
Forcing a misaligned card into the slot can damage the computer or the card

- As soon as you insert the adapter, the **New Hardware Found** dialog box will be pop-up on screen and the system will ask you to insert the utility CD we provide. Please insert the utility CD and click **OK**.

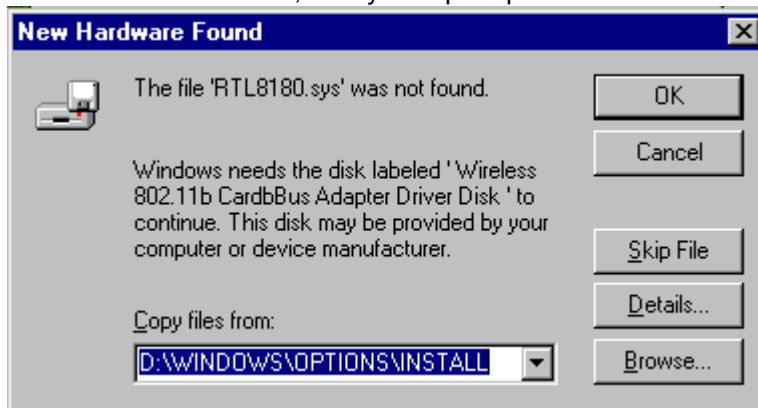


- The system prompts you that the file can't be found, please click **Browse** and specify the correct file path to complete the installation.

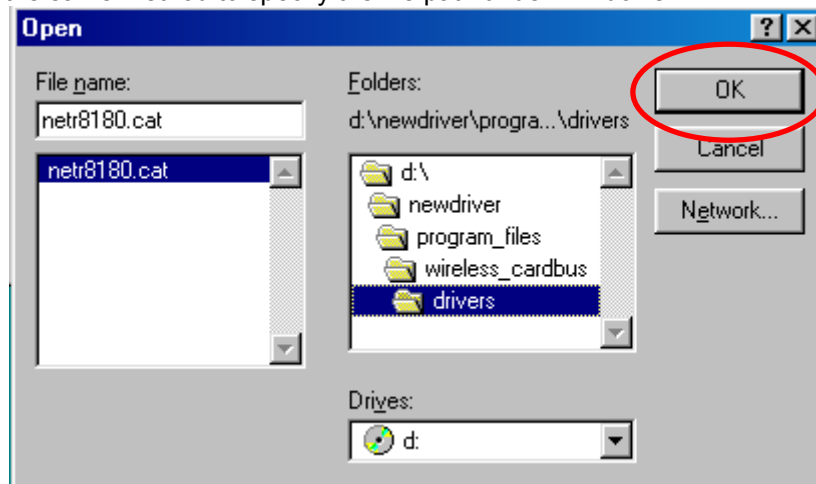
A. Under Windows 98, the system prompts that the file can't be found.



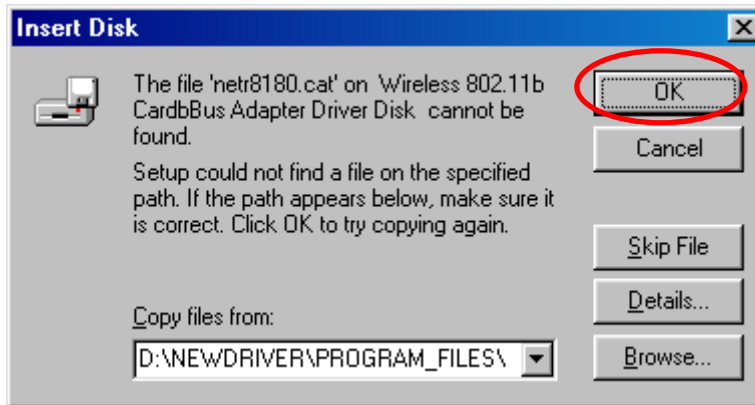
B. Under Windows ME, the system prompts that the file can't be found.



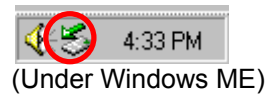
- From the CD we provide to select program files -> wireless cardbus -> drivers to find the file and click **OK** to close the dialog box. The screen is illustrated in Windows 98, please follow the same method to specify the file path under Windows ME.



- The following dialog box displays the location of the file. Click **OK** button.



- After the file has been copied, you can see the PCMCIA adapter icon resides on the system tray and the LEDs on the adapter are flashing. Now, you have completely finished the whole installation procedure.

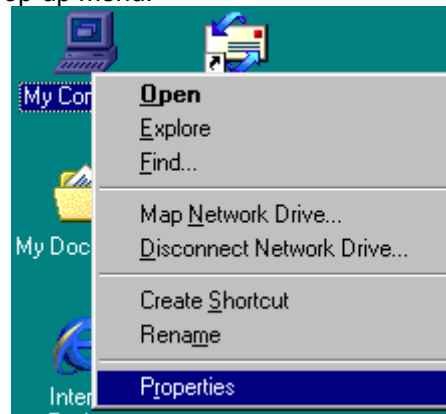


## 2.1.3 Verifying the Wireless LAN Adapter Driver

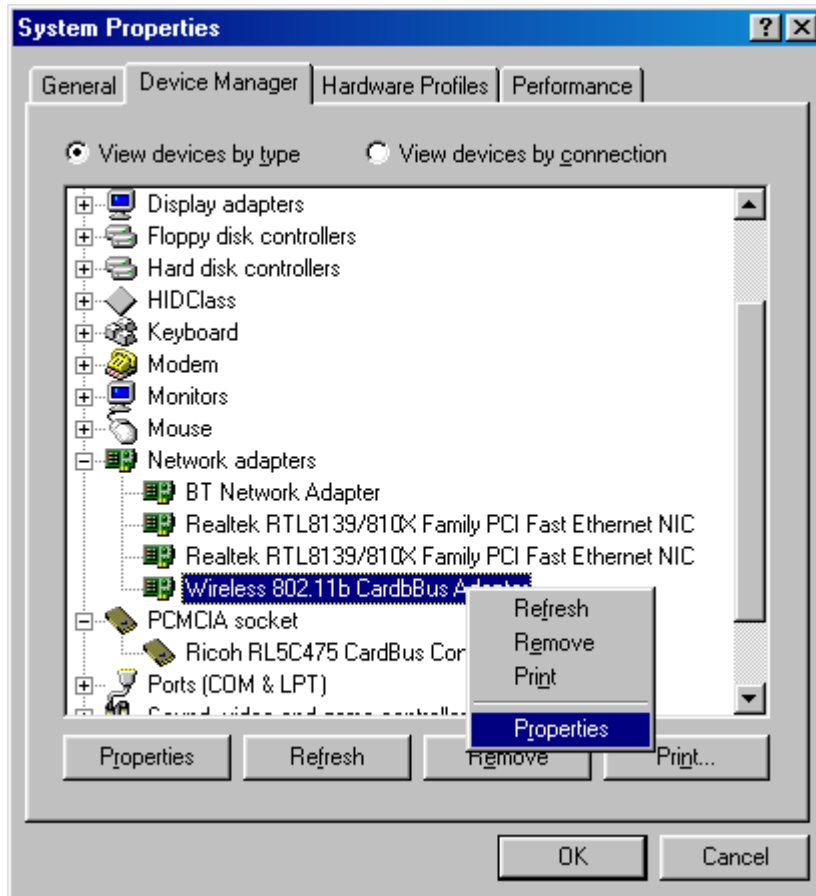
### Verifying a Wireless LAN Driver in Windows 98/ME

To check if user has installed the driver successfully, please follow the following steps.

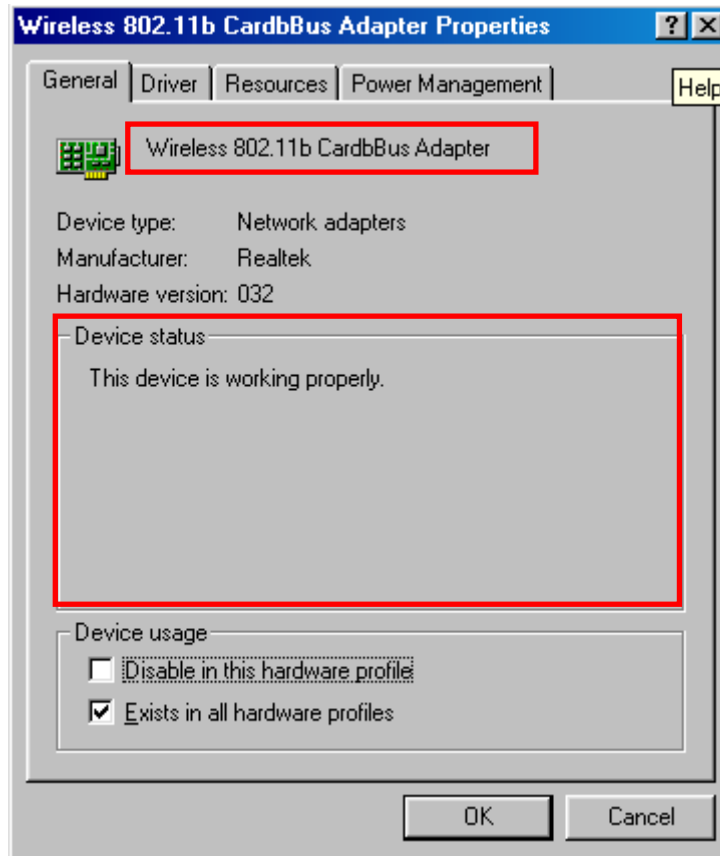
1. Right-click mouse button on the **My Computer** icon on your windows desktop and select **Properties** from the pop-up menu.



2. From the **Device Manager** tab, click the + in front of Network adapters to extend all network adapters. Right-click mouse button on **Wireless 802.11b CardBus adapter**, 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.

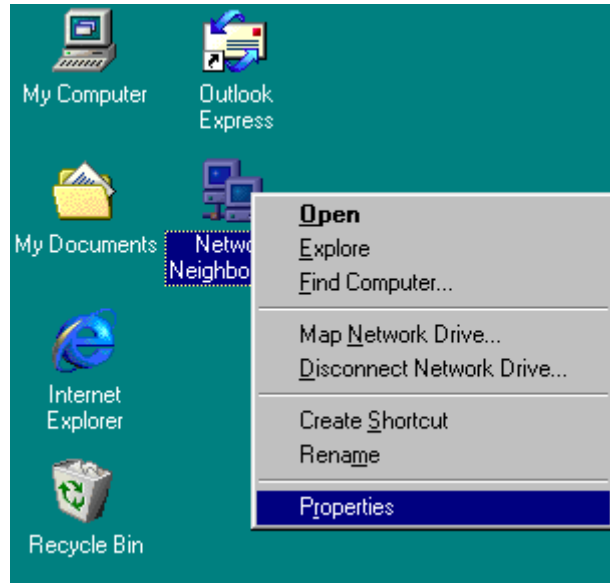


## 2.1.4 TCP/IP Configuration Procedure In Windows98/ME

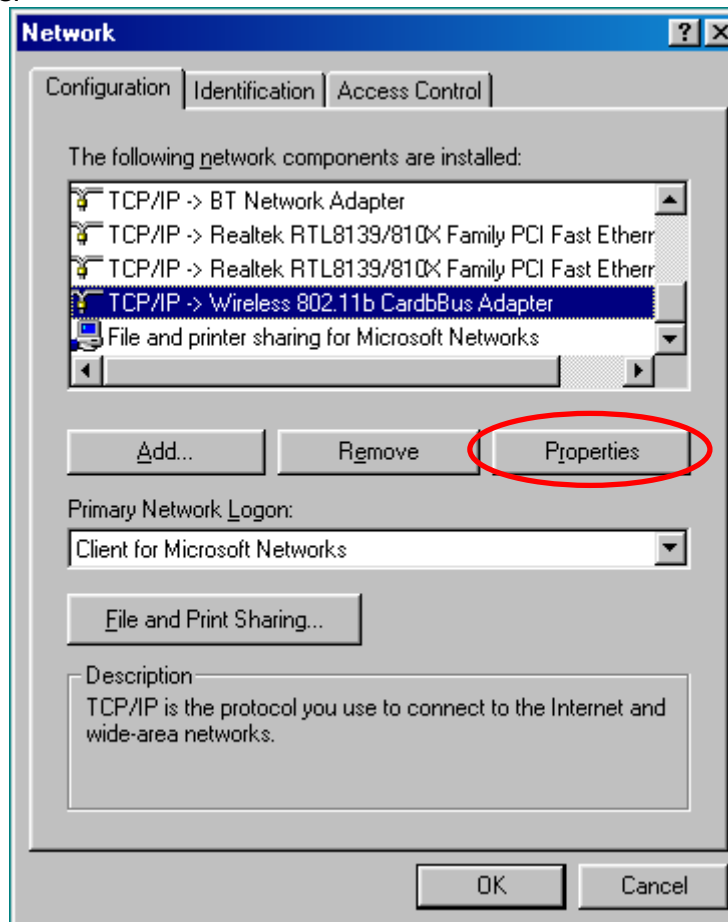
---

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**.

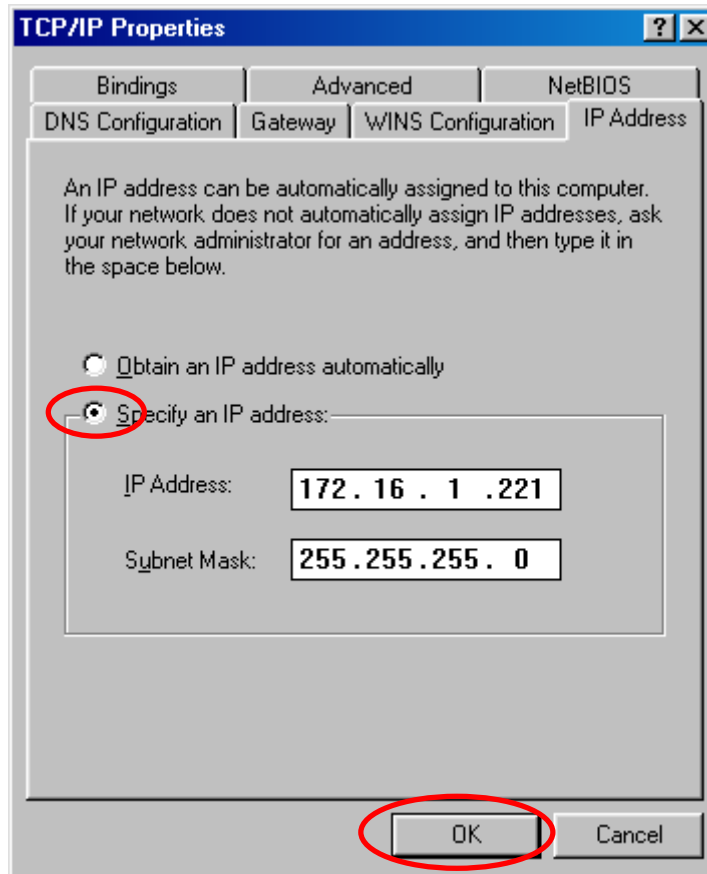


2. From the **Configuration** tab, scroll to **TCP/IP Wireless 802.11b CardBus Adapter** and click **Properties**.



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.



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

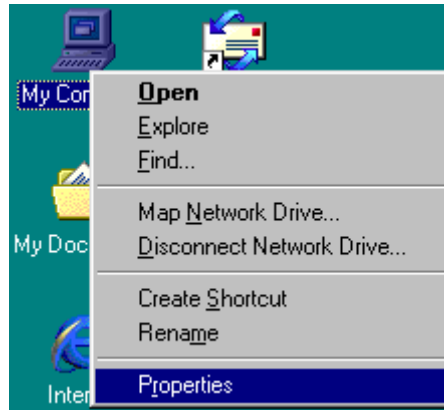
---

### Uninstall the Utility:

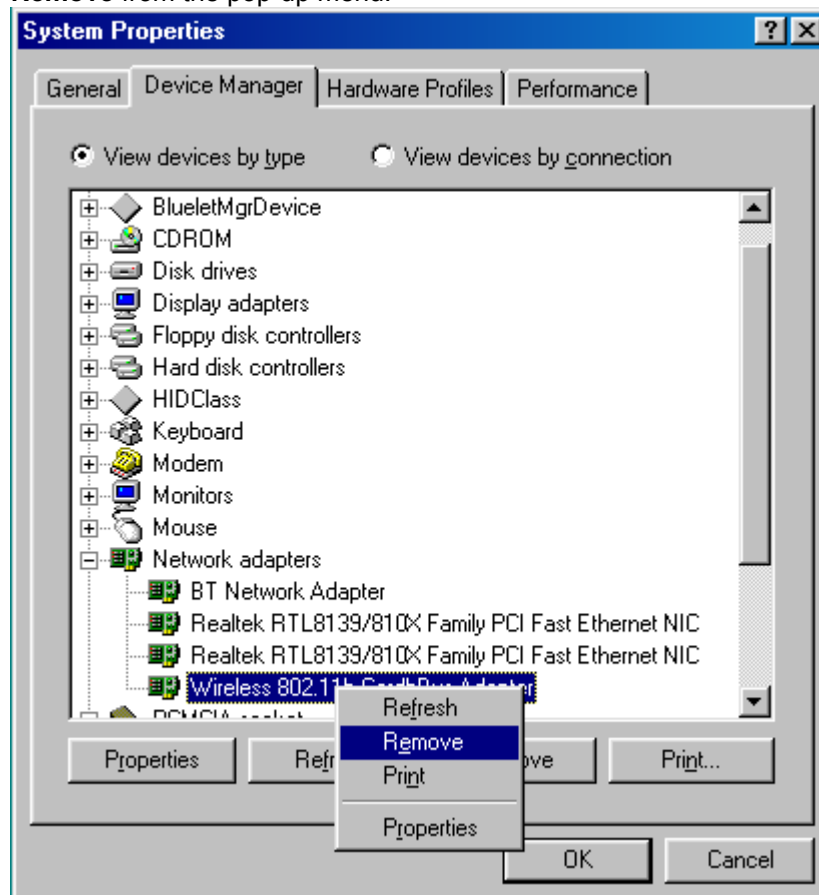
From **Windows Start menu -> Programs -> Wireless CardBus -> Uninstall** to remove the configuration utility from the OS.

### Uninstall the Driver:

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**, click the + in front of Network adapters to extend all network adapters. Right-click mouse button on **Wireless 802.11b CardBus adapter**, and select **Remove** from the pop-up menu.



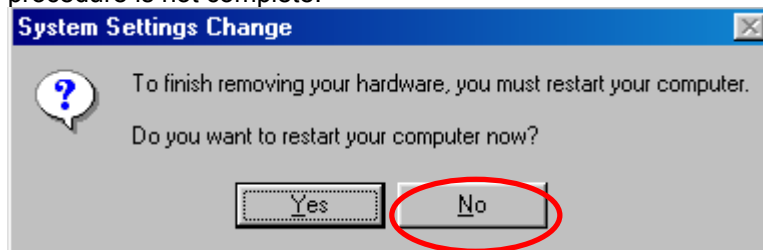
Wireless LAN CardBus Card

---

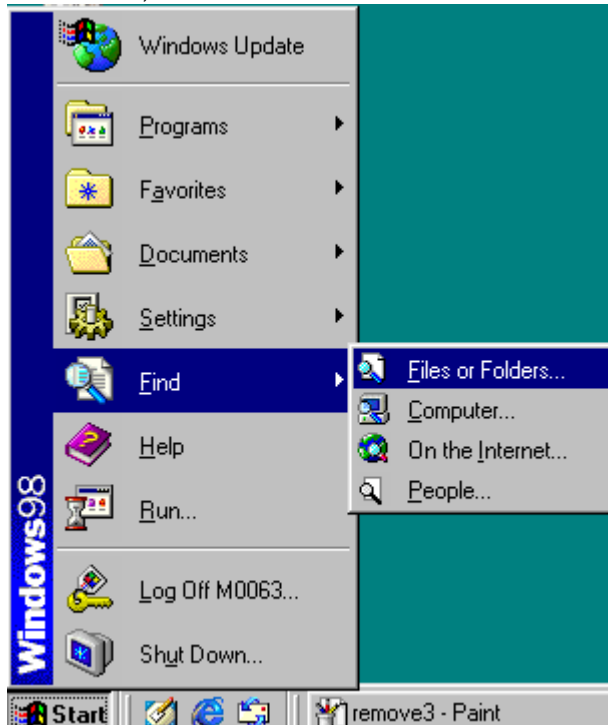
3. The Confirm Device Removal screen will be displayed. Click OK. The driver files are permanently removed from the Windows 98 hardware profile.



4. You will be asked to reboot your desktop or laptop, please click **No**. The driver uninstallation procedure is not complete.

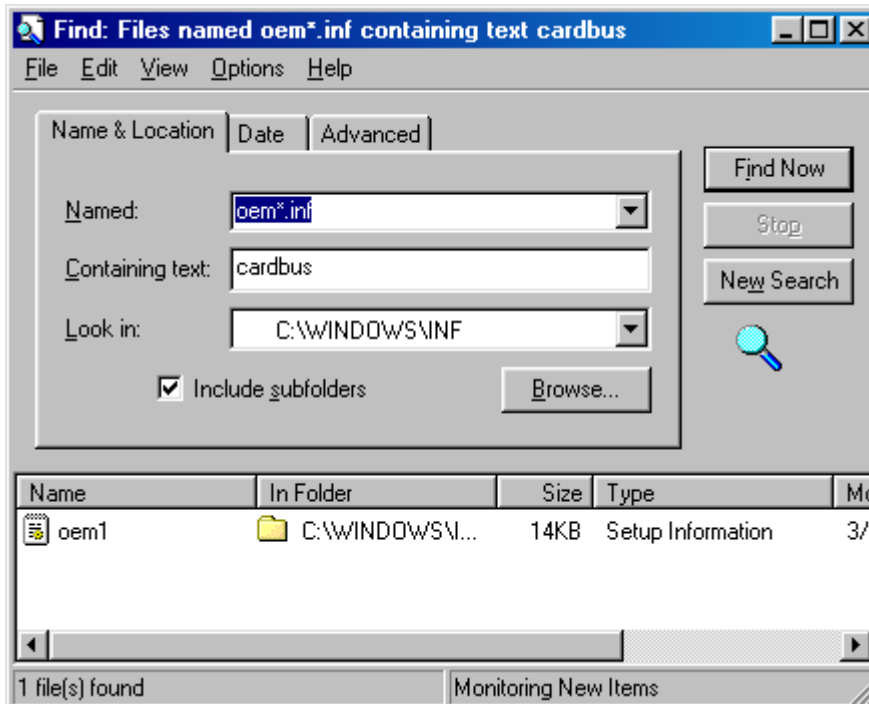


5. When the device is uninstalled from **Device Manager**, search for and delete the driver files that still reside in the system to completely uninstall the related drivers. To do so, go to the **Start** menu, scroll to **Search** and select **For Files or Folders...**,



6. Under **Name & Location** tab, enter “cardbus” in the “**Containing text:**” field, enter “**oem\*.inf**” in the **Named** field and enter “**C:WINDOWS98\INF**” in the “**Look in:**” field, where C is the drive letter of Windows98 is installed. Click **Find Now**. A few files matching these criteria are possible, if previous drivers have not been removed properly. In the example, you can double-click on the oem1.inf file to make sure that it is the file

you want to delete. Right-click mouse button on the oem1.inf and select **Delete** to delete the file. Till now, the un-installation is totally finished.



## 2.3 Installation Procedures In Windows2000

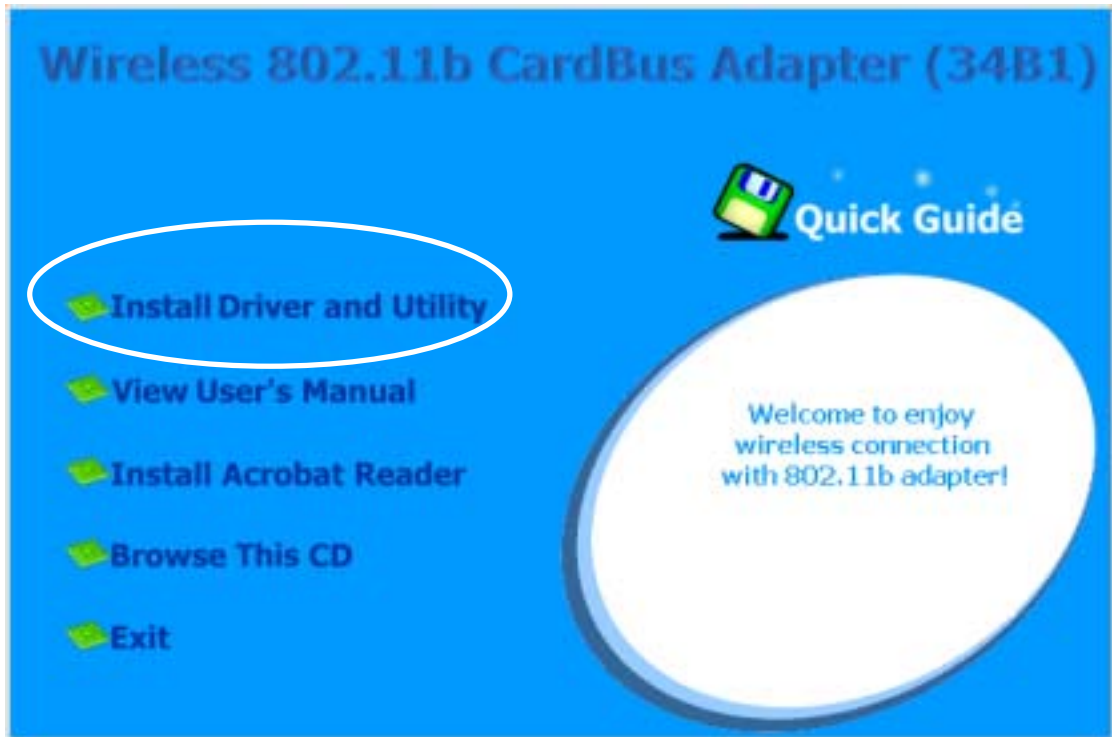
The Wireless LAN CardBus Adapter Windows driver ships with the Wireless CardBus Configuration Utility. If you have connected the Wireless CardBus Adapter to your computer, please remove it, cancel any hardware wizard that may show up, and start here.

### Before you start:

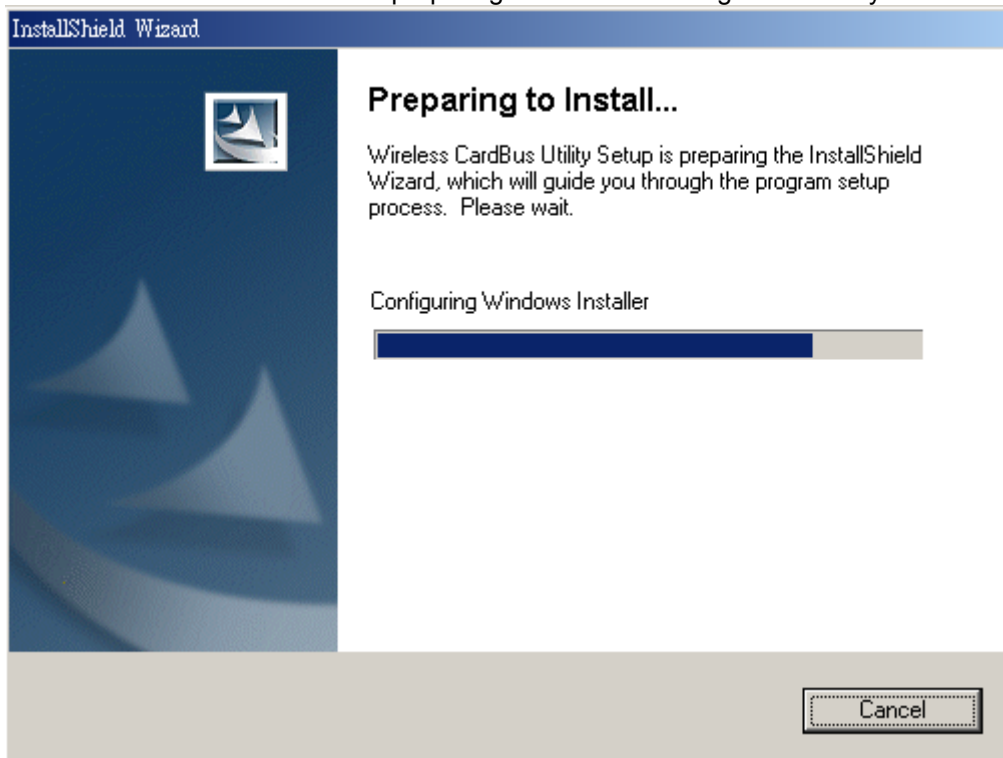
- ✓ Obtain this Utility CD.
- ✓ Don't insert this wireless LAN CardBus adapter into PCMCIA slot before you complete the whole installation process.

### 2.3.1 Installing the Wireless LAN Card Driver and Configuration Utility

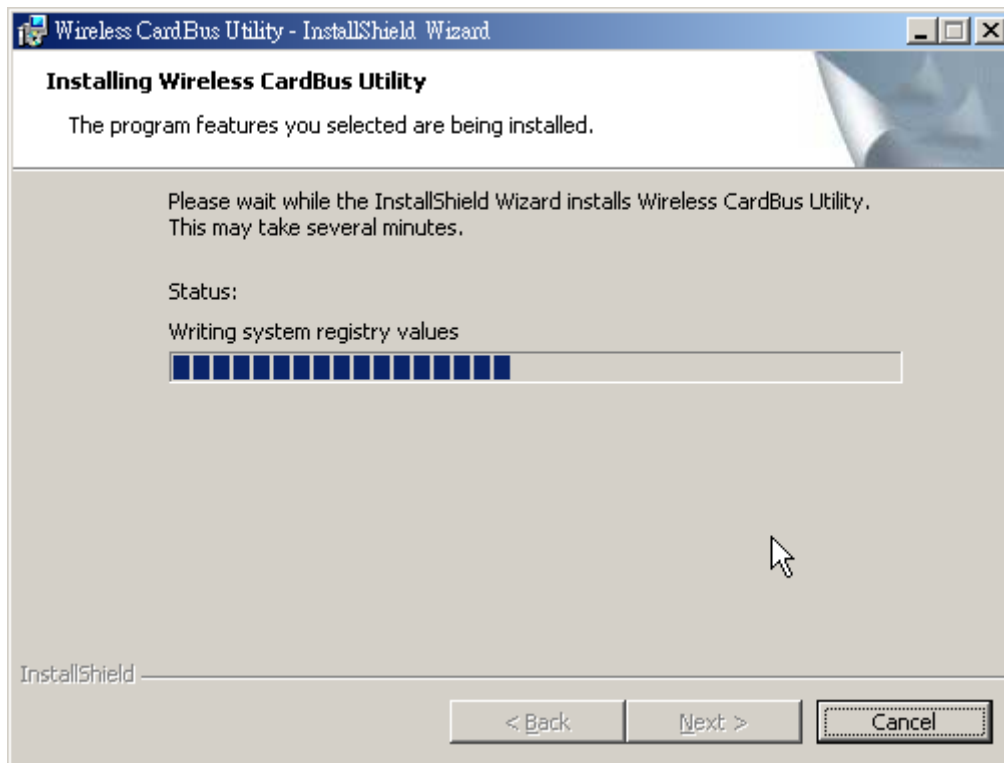
Close any open programs and insert the utility CD into your CD-ROM Drive. The Autorun function will automatically start and the following main screen will be pop-up. Double-click on the **Install Driver and Utility** item to start the software installation. (If the Autorun function does not automatically 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.



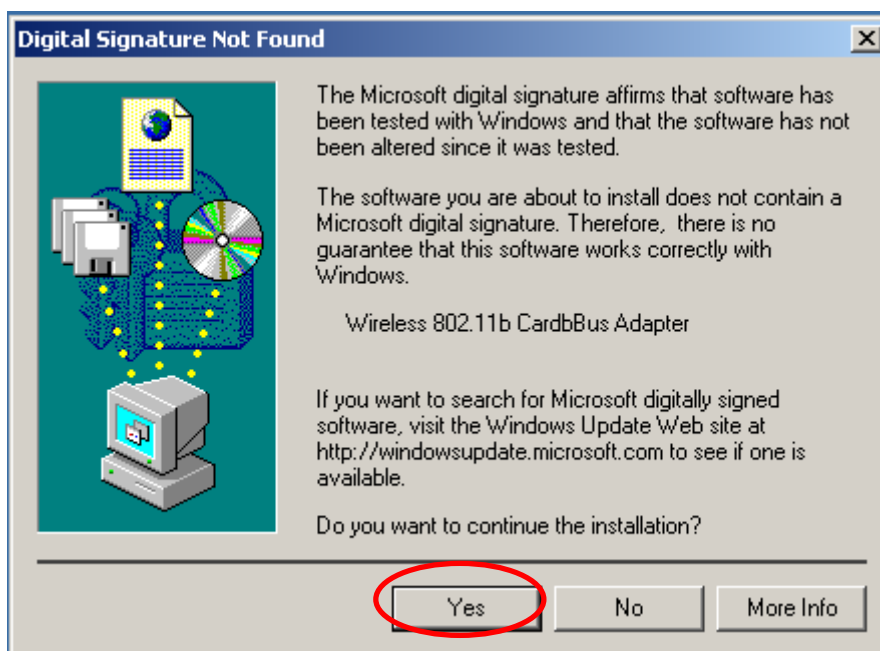
- The InstallShield Wizard is preparing to install the configuration utility and drivers.



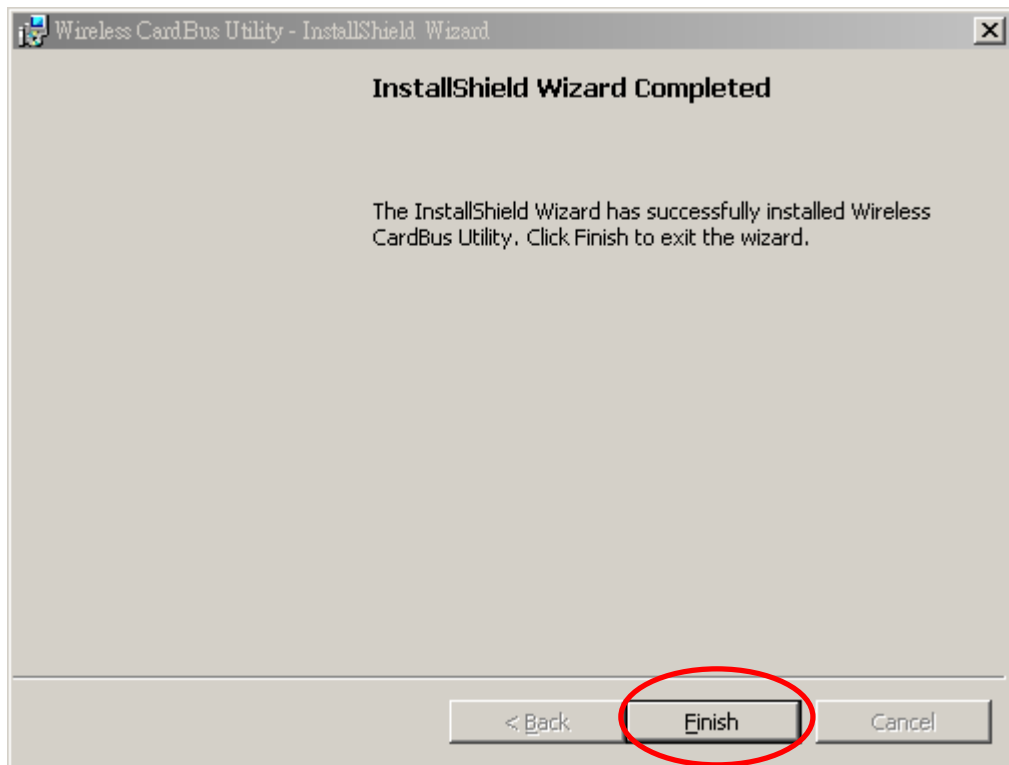
- The InstallShield Wizard is installing the drivers and utility.



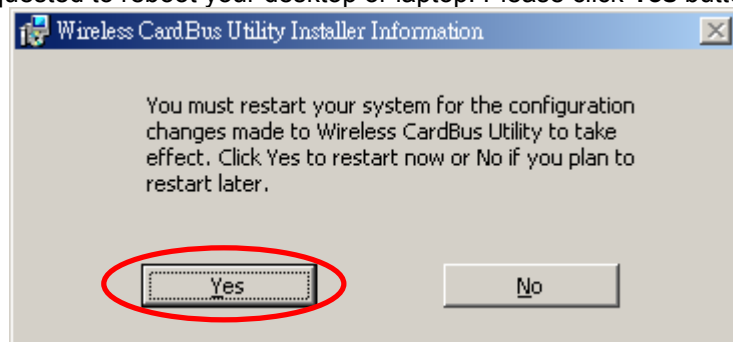
- The **Microsoft Digital Signature Not Found** dialog box could appear at this point in the installation. A Microsoft digital signature is not required for the driver installation. Click **“Yes”** to continue.



- After the driver and utility have been installed, you will be presented with a screen informing of its completion. Click on the **“Finish”** button to complete the installation.



- You will be requested to reboot your desktop or laptop. Please click **Yes** button.



## 2.3.2 Completing to Install the Wireless LAN CardBus Adapter

---

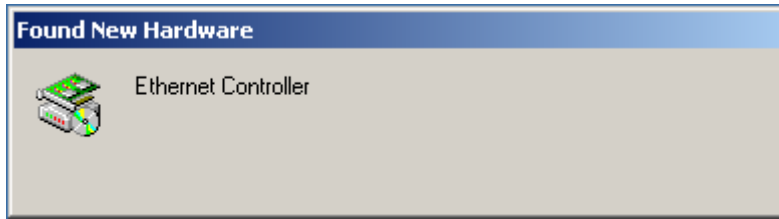
After reboot your system, you can insert the wireless LAN CardBus adapter into the PCMCIA slot. Align the adapter properly before putting it in the slot. Insert the card firmly without forcing until it seats snugly.

### **CAUTION:**

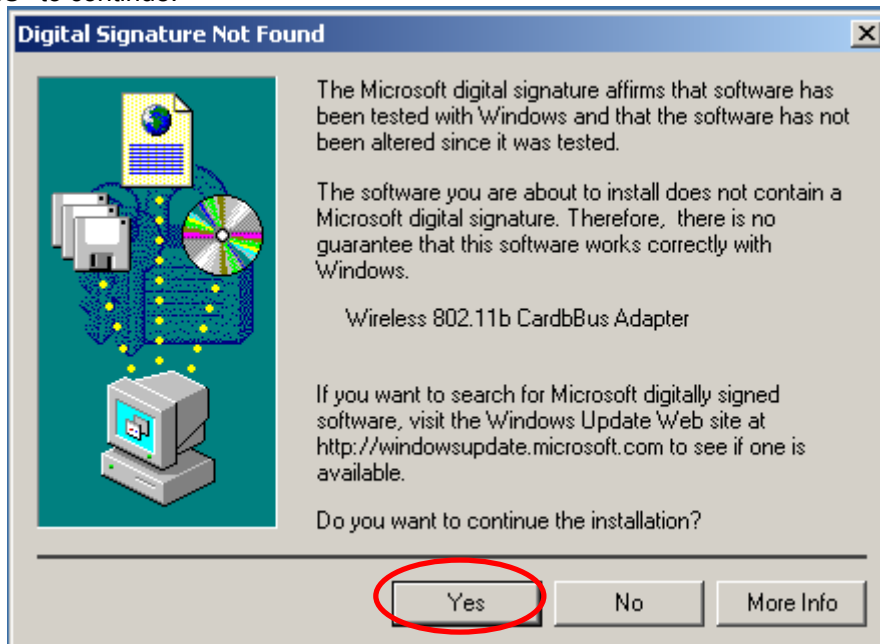
Forcing a misaligned card into the slot can damage the computer or the card

As soon as you insert the adapter, the **Find New Hardware Wizard** will be pop-up on screen. Please follow the on-screen instruction to complete the installation.

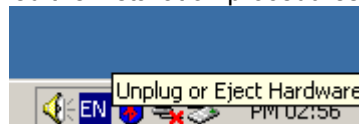
- The system has detected a new Ethernet Controller.



- 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.



- Finally, you can find the **Unplug or Eject Hardware** icon resides on the system tray. Now you have completely finished the installation procedures.



### 2.3.3 Verifying Your Installation In Windows2000

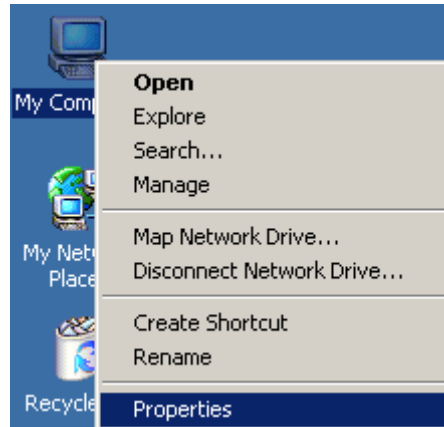
---

#### Verify the driver has installed successful

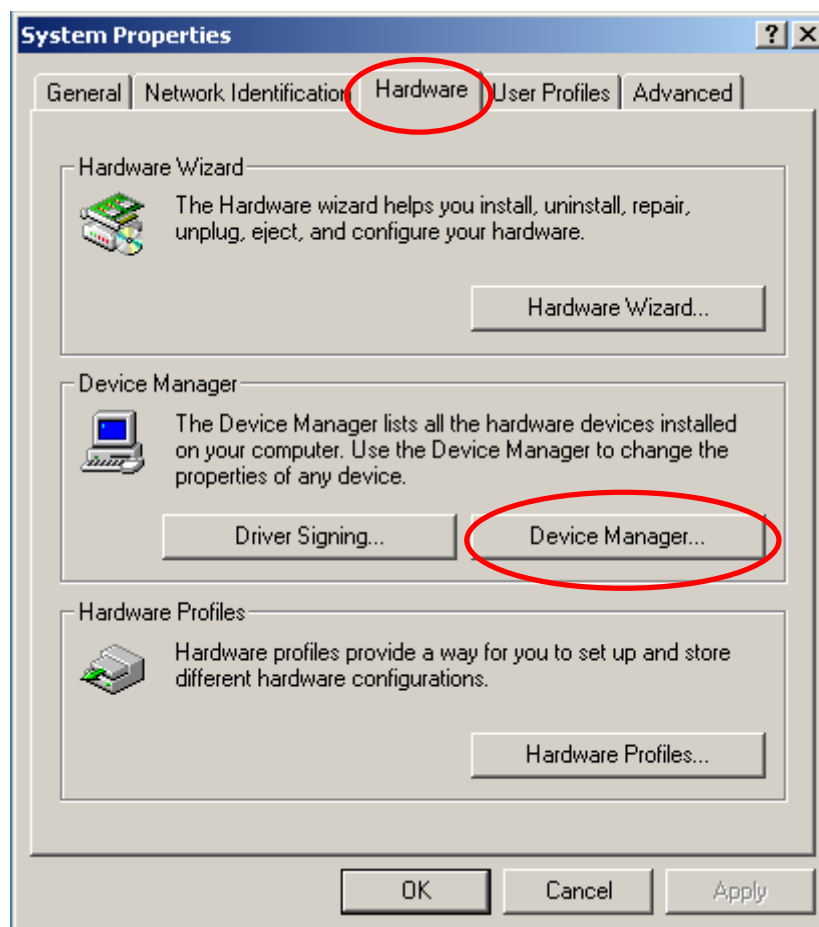
If you want to check if the driver's installation is successful or not, follow the next steps.

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

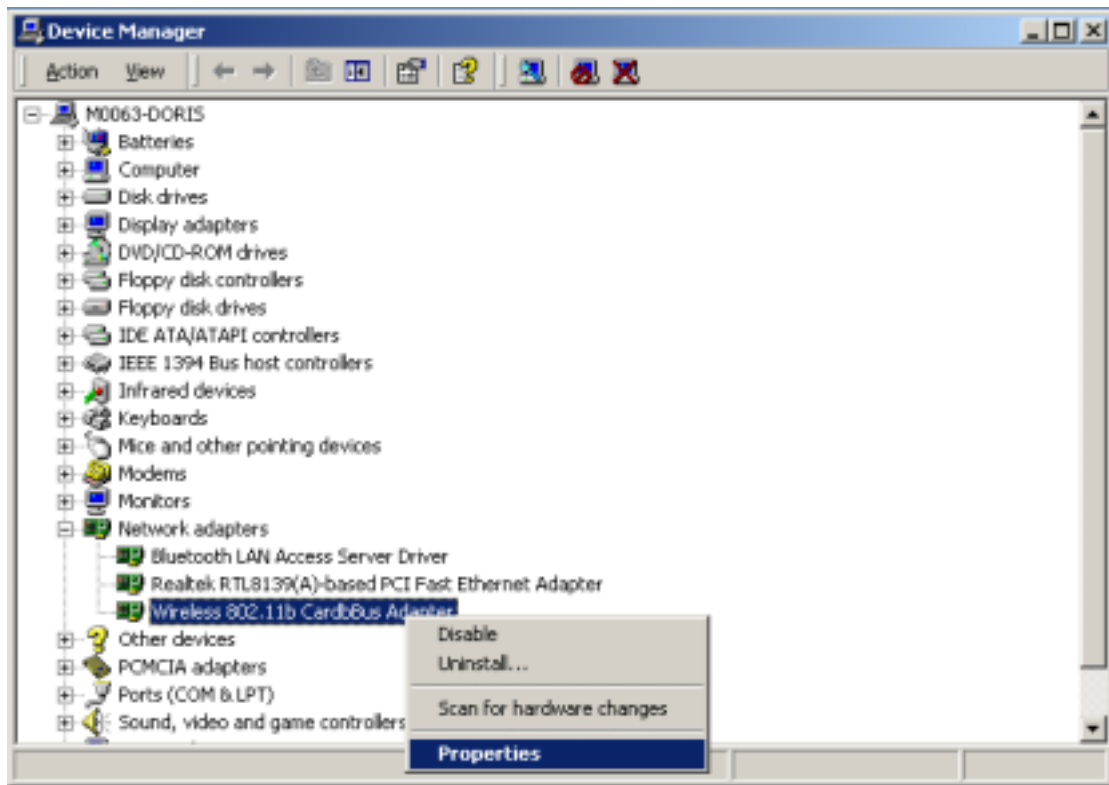




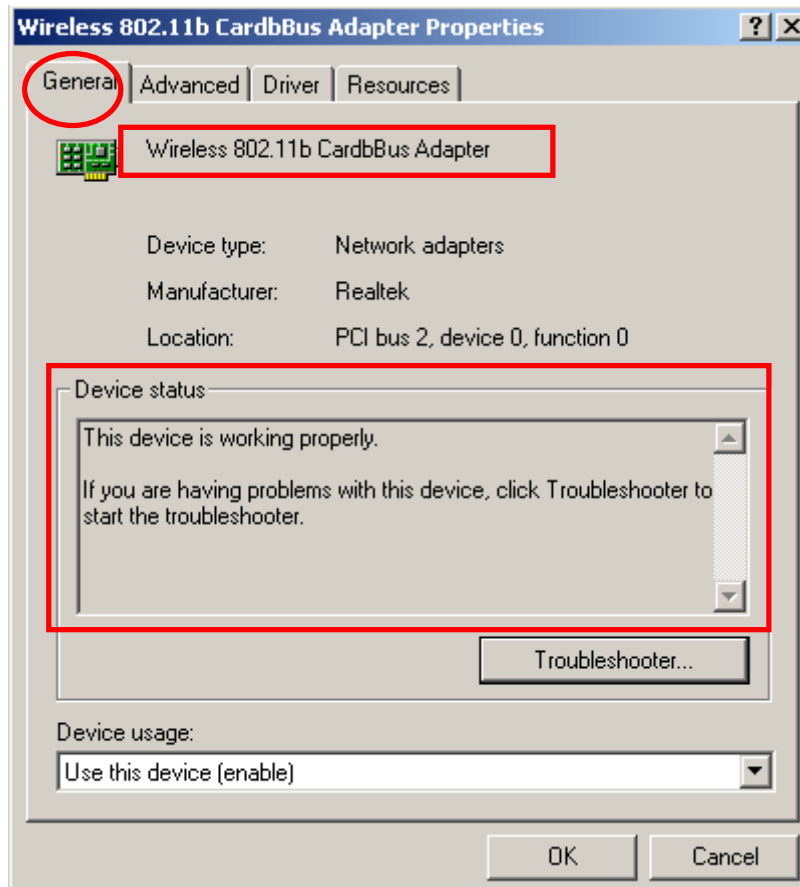
2. The **System Properties** screen will be pop-up. Under **Hardware** tab, click **Device Manager...**



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 802.11b CardBus Adapter** 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 802.11b CardBus Adapter**", 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.



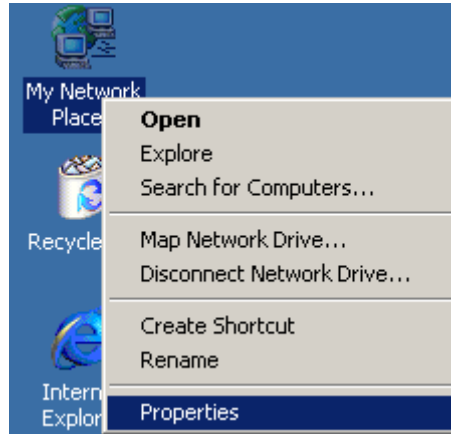
Wireless LAN CardBus Card

## 2.3.4 TCP/IP Setup In Windows 2000

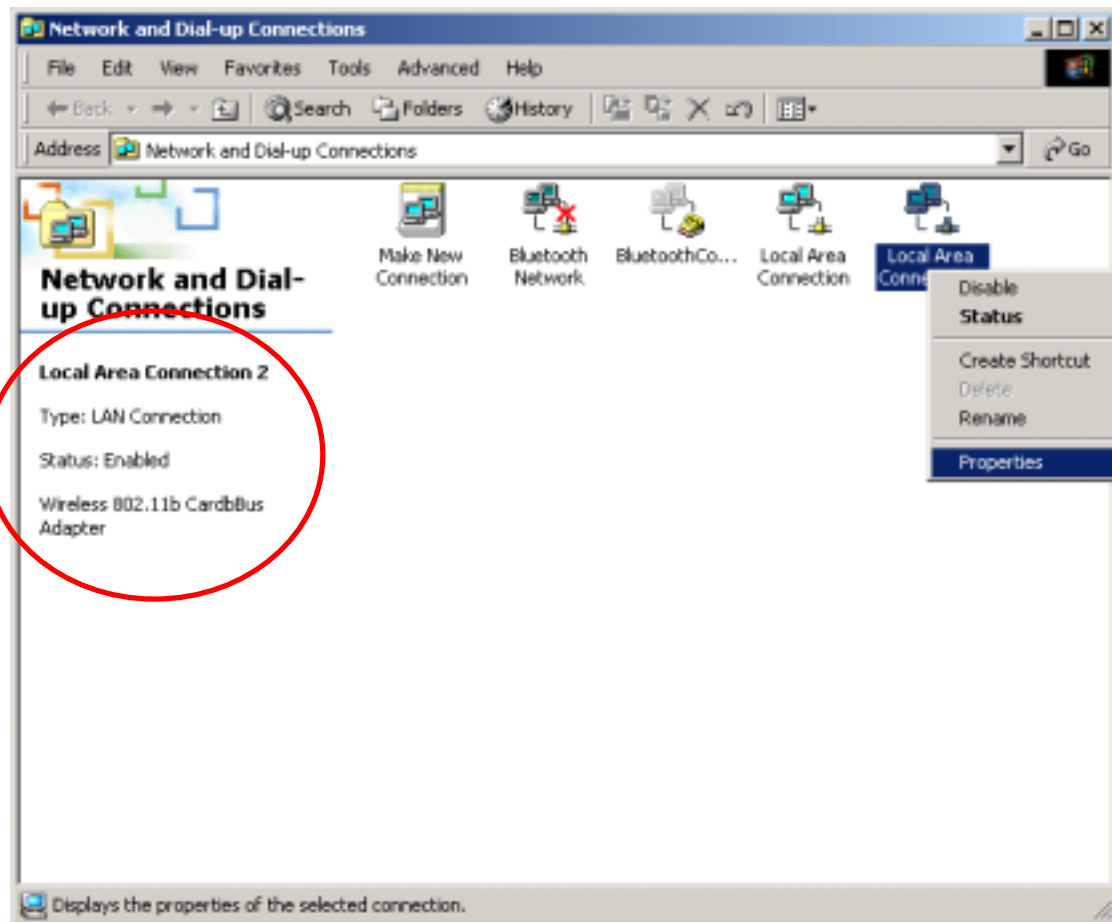
---

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.

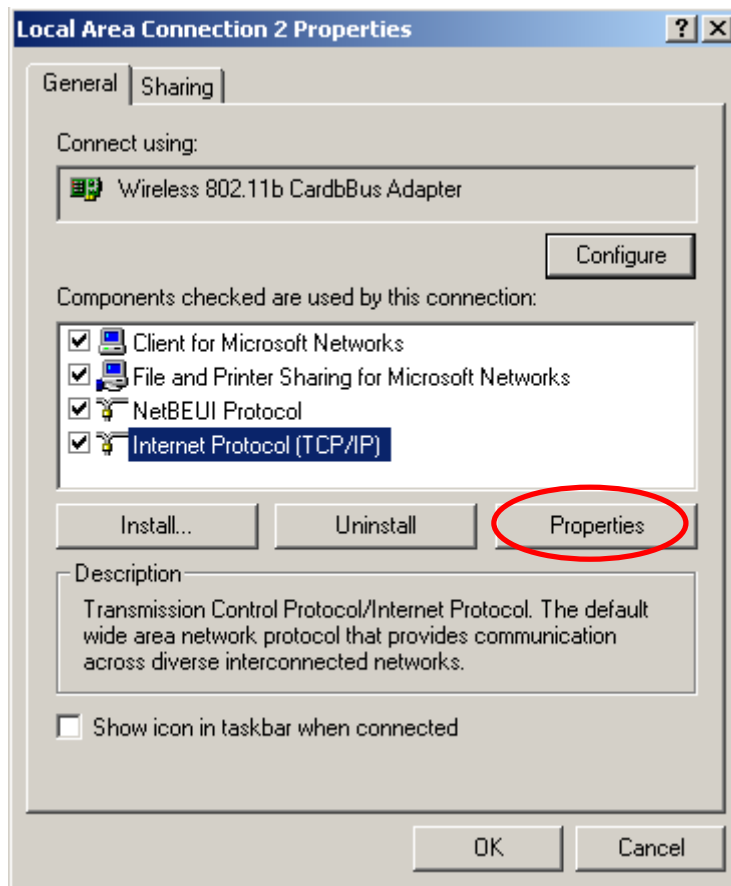
1. Right-click mouse button on the **My Network Places** and highlight **Properties** from the pop-up menu.



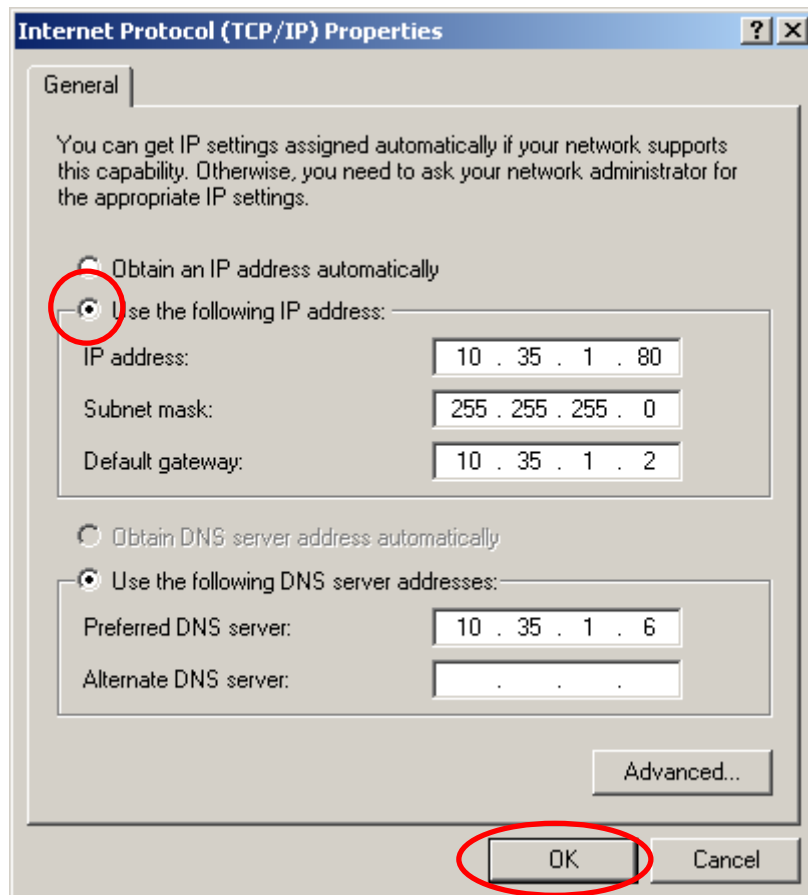
2. Find the “**Local Area Connection**” that is associated with the wireless LAN CardBus adapter. Right-click mouse button on the connection and click **Properties**.



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



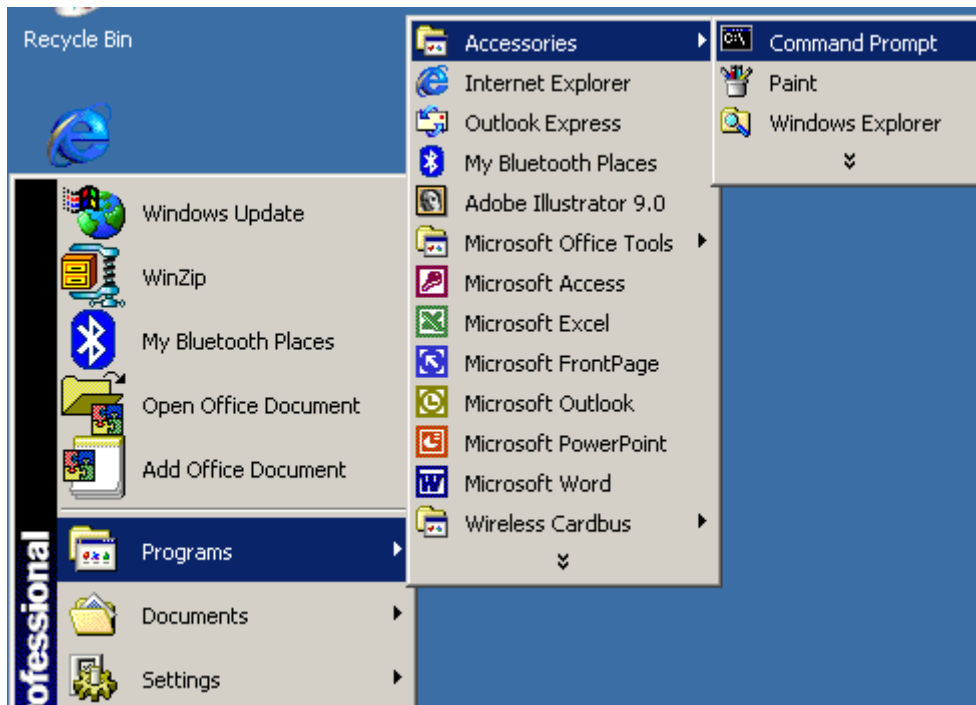
4. Click **“Use the following IP address”** and input an IP address and subnet mask. Assigning an IP address and Subnet mask allows stations to operate in infrastructure mode and to have Internet access. “Default gateway” and “DNS server” information is also required. IP configuration information (DHCP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



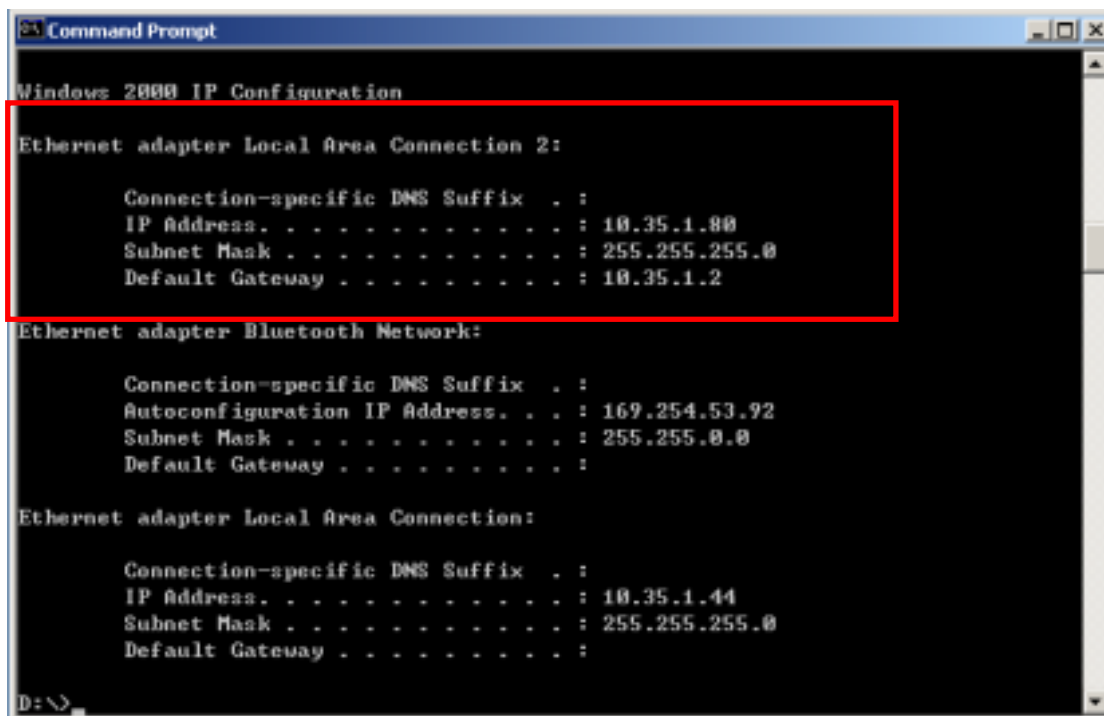
**Note:**

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.



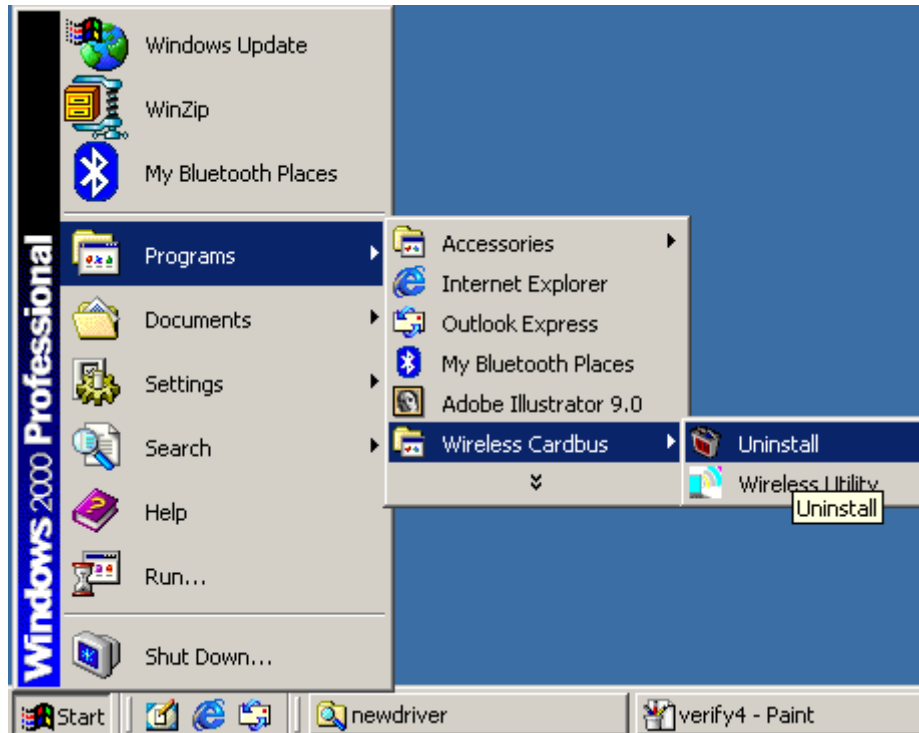
7. Type **ipconfig** at the **F:\>** prompt to determine if the TCP/IP configuration has taken effect. To test IP connectivity in ad hoc or infrastructure mode, use the "ping <ipaddress>" command.



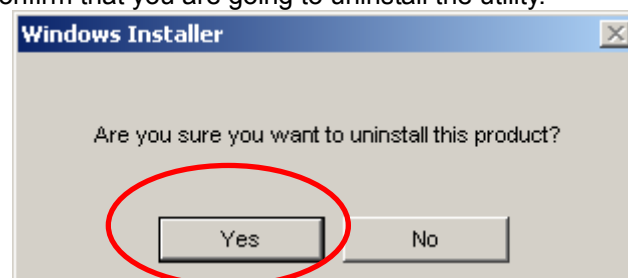
## 2.3.5 Uninstalling the Wireless LAN CardBus Adapter Utility And Driver In Windows 2000

### Uninstall the Utility:

- From **Windows Start menu -> Programs -> Wireless CardBus -> Uninstall** to remove the configuration utility from the OS.



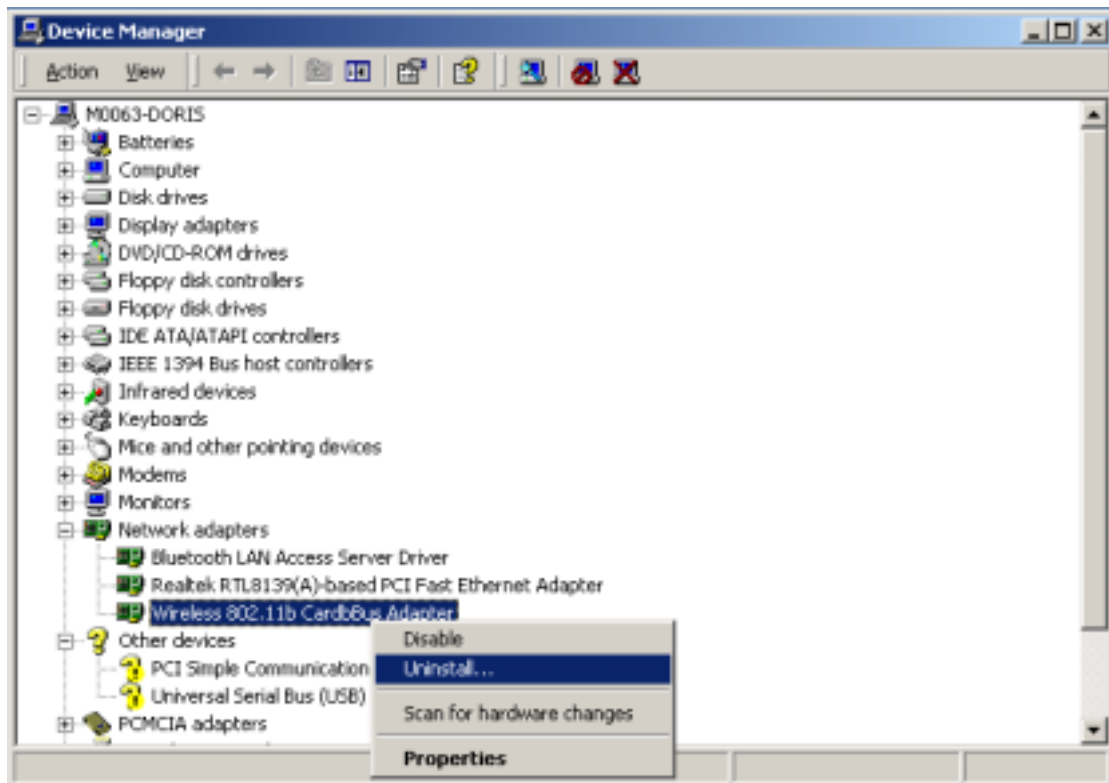
- Click **Yes** to confirm that you are going to uninstall the utility.



### Uninstall the Driver

- Right-click mouse button on the **Wireless 802.11b CardBus Adapter** item and highlight **Uninstall** to remove the drivers.

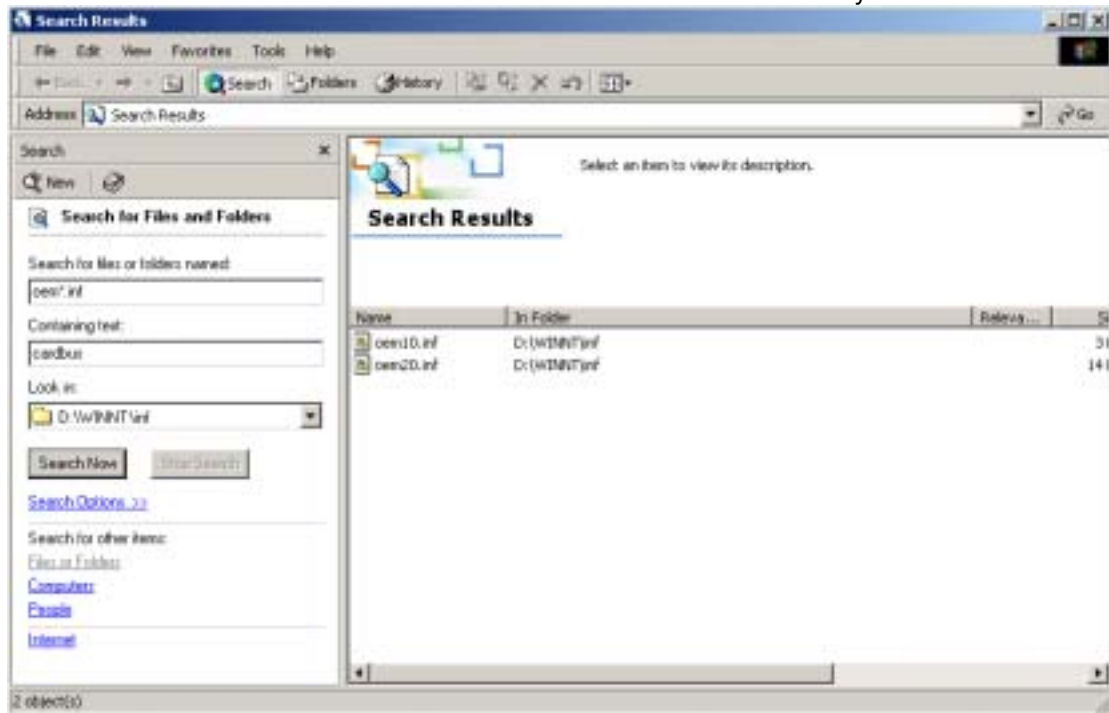




- Click **OK** to confirm the un-installation.
- When the device is uninstalled from **Device Manager**, search for and delete the driver files that still reside in the system to complete un-install the related drivers. To do so, go to the **Start** menu, scroll to **Search** and select **For Files or Folders...**,



- Enter “oem\*.inf” in the “Search for files or folders named:” field, and enter “cardbus” in the “Containing text:” field and enter “D:\Windows200P” in the “Look in:” field, where **D** is the drive letter of where Windows 2000 is installed. Click **Search Now**. A few files matching these criteria are possible, if previous drivers have not been removed properly. Double-click on the file to check if it is what you want to delete. If yes, right-click mouse button the file and select Delete to delete the file from the system.



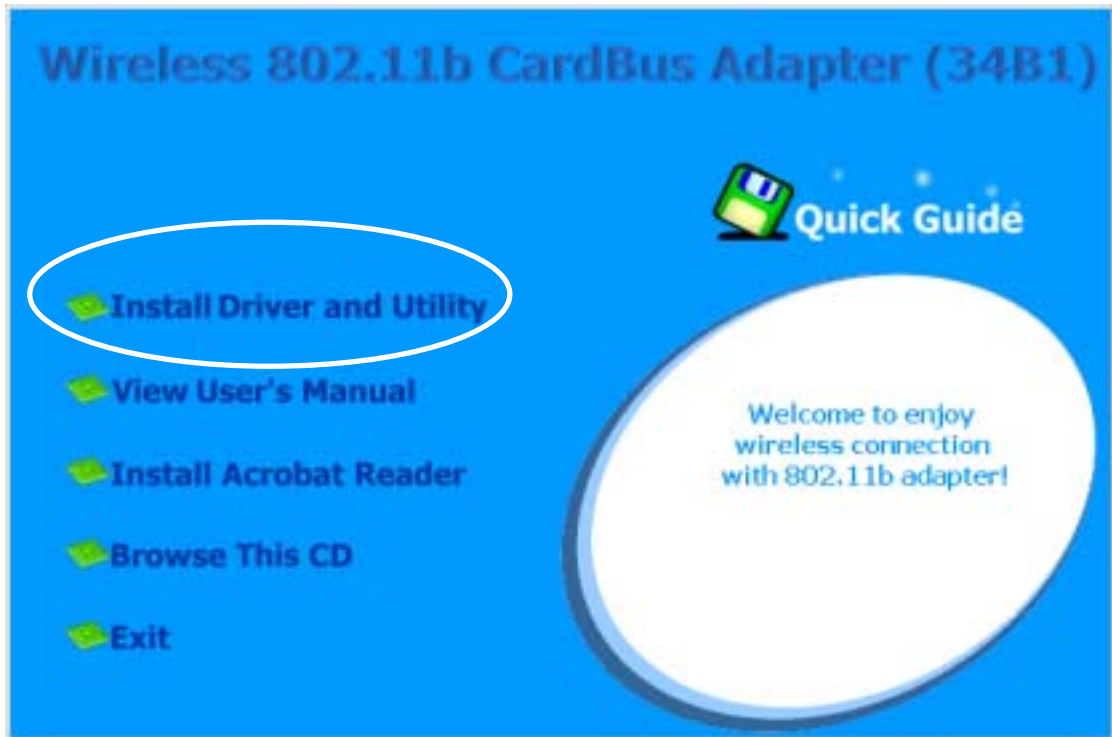
- Till now, the **un-installation** procedure is totally completed.

## 2.4 Installation Procedures In Windows XP

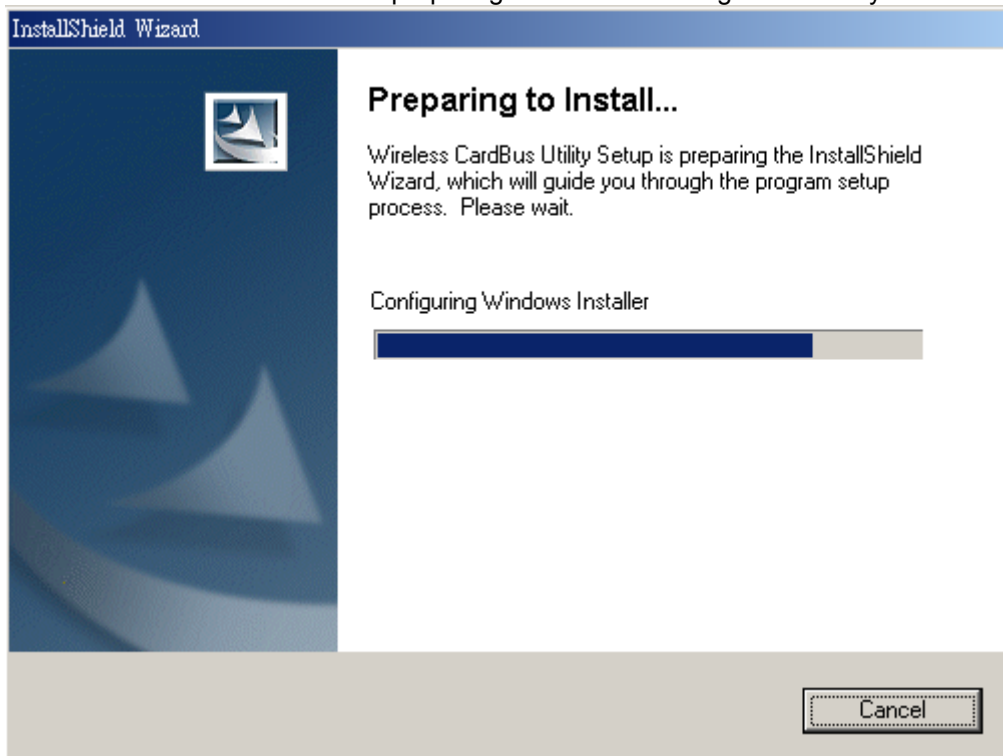
The Windows XP has a built-in wireless LAN configuration application. You can choose whether you want to install the utility we provide or use the built-in application Windows XP provides.

### 2.4.1 Installing the Wireless LAN Adapter Driver and Utility

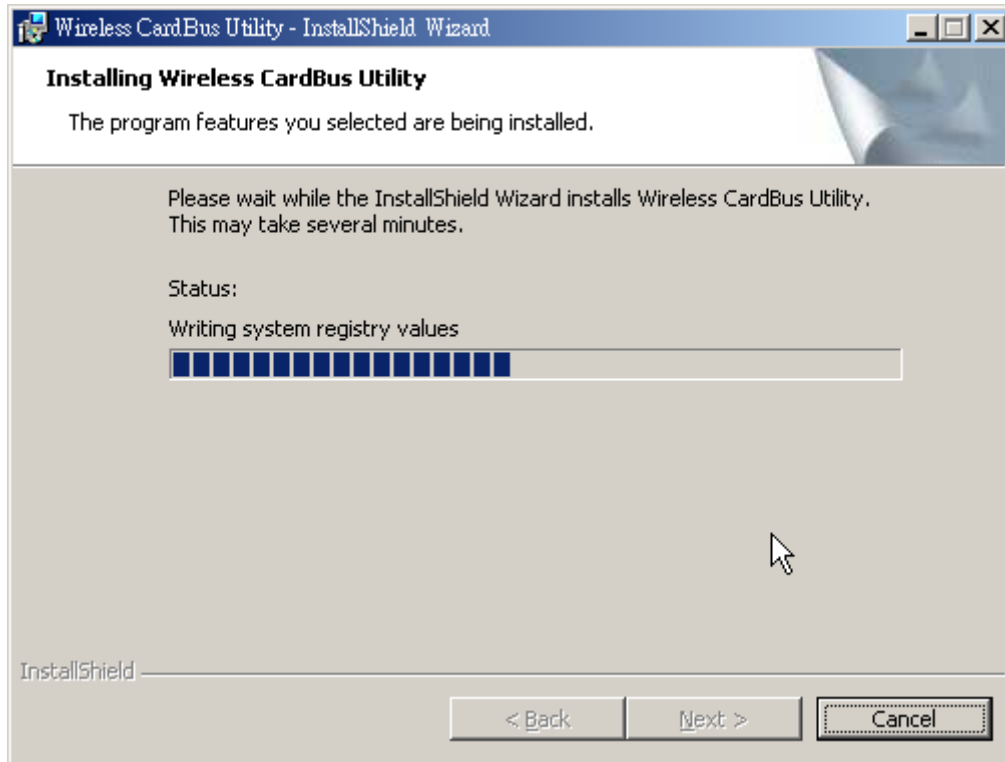
Close any open programs and insert the utility CD into your CD-ROM Drive. The Autorun function will automatically start and the following main screen will be pop-up. Double-click on the **Install Driver and Utility** item to start the software installation. (If the Autorun function does not automatically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



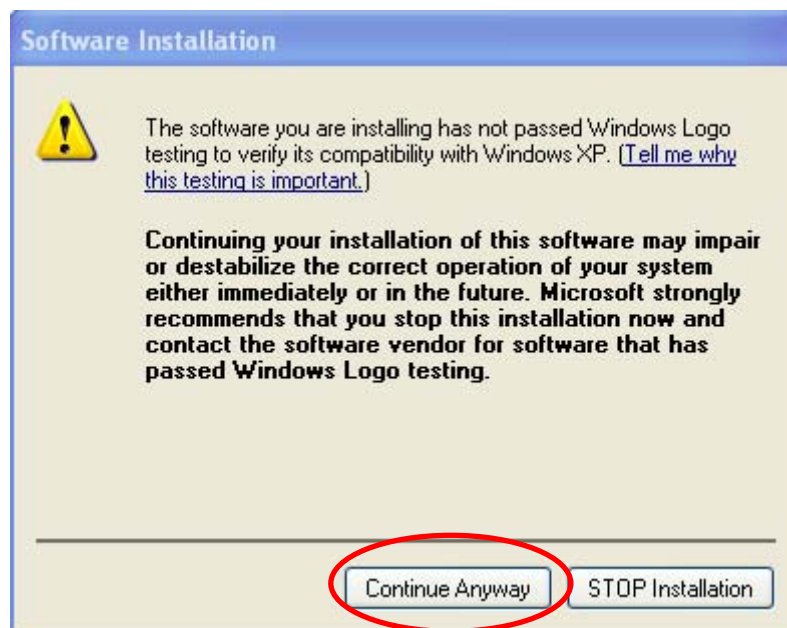
- The InstallShield Wizard is preparing to install the configuration utility and driver.



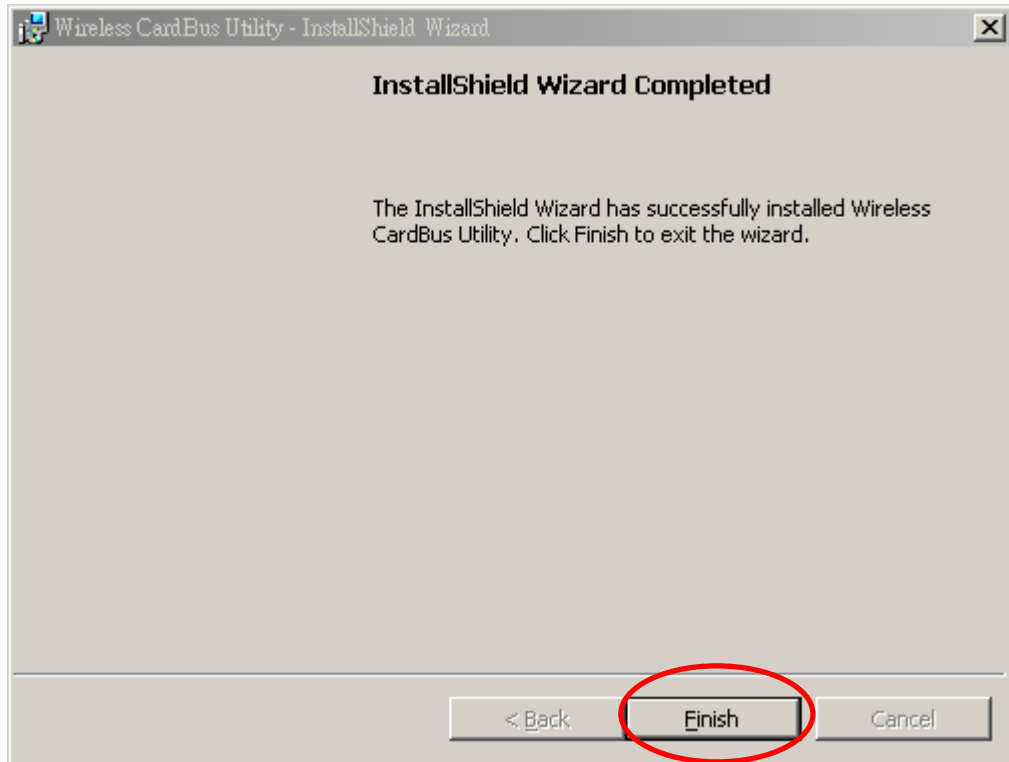
- The InstallShield Wizard is installing the drivers and utility.



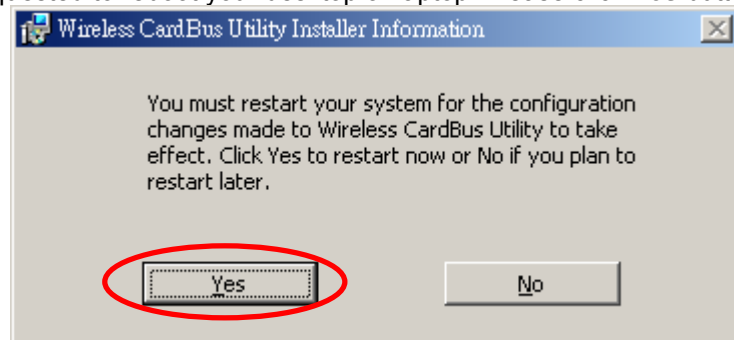
- The **Microsoft Digital Signature Not Found** dialog box could appear at this point in the installation. A Microsoft digital signature is not required for the driver installation. Click **“Continue Anyway”** to continue.



- After the driver and utility have been installed, you will be presented with a screen informing of its completion. Click on the **“Finish”** button to complete the installation.



- You will be requested to reboot your desktop or laptop. Please click **Yes** button.



## 2.4.2 Completing to Install the Wireless LAN CardBus Adapter

After reboot your system, you can insert the wireless LAN CardBus adapter into the PCMCIA slot. Align the adapter properly before putting it in the slot. Insert the card firmly without forcing until it seats snugly.

### **CAUTION:**

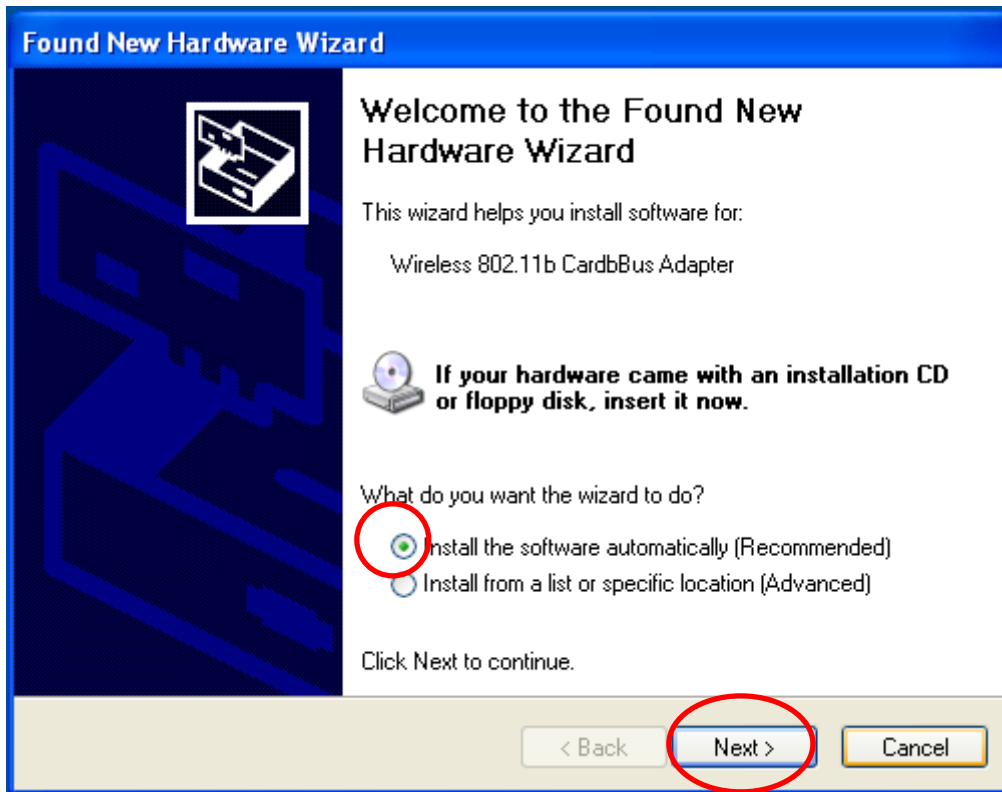
Forcing a misaligned card into the slot can damage the computer or the card.

As soon as you insert the adapter, the Windows XP can automatically detect it. Please follow the on-screen instruction to complete the whole installation.

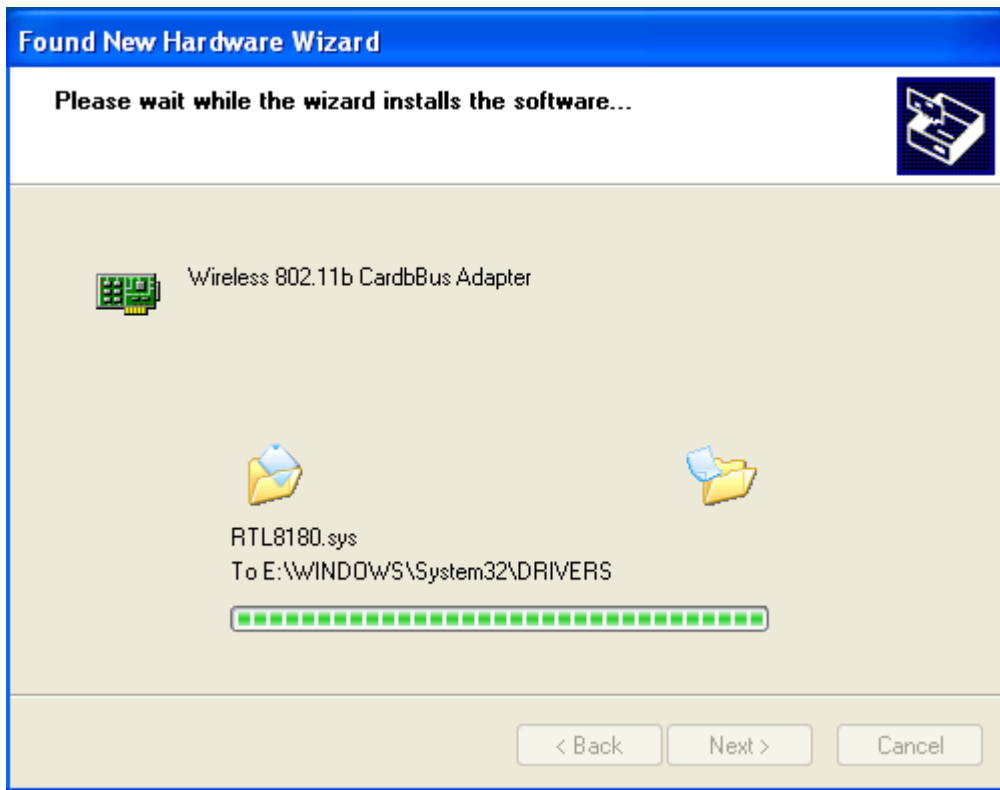
- The bubble message on the system tray indicates that the system has detected a new Ethernet Controller.



- When the “**New Hardware Wizard**” is opened, click the radio button of “**Install the software automatically (Recommended)**” option and press “**Next**”.



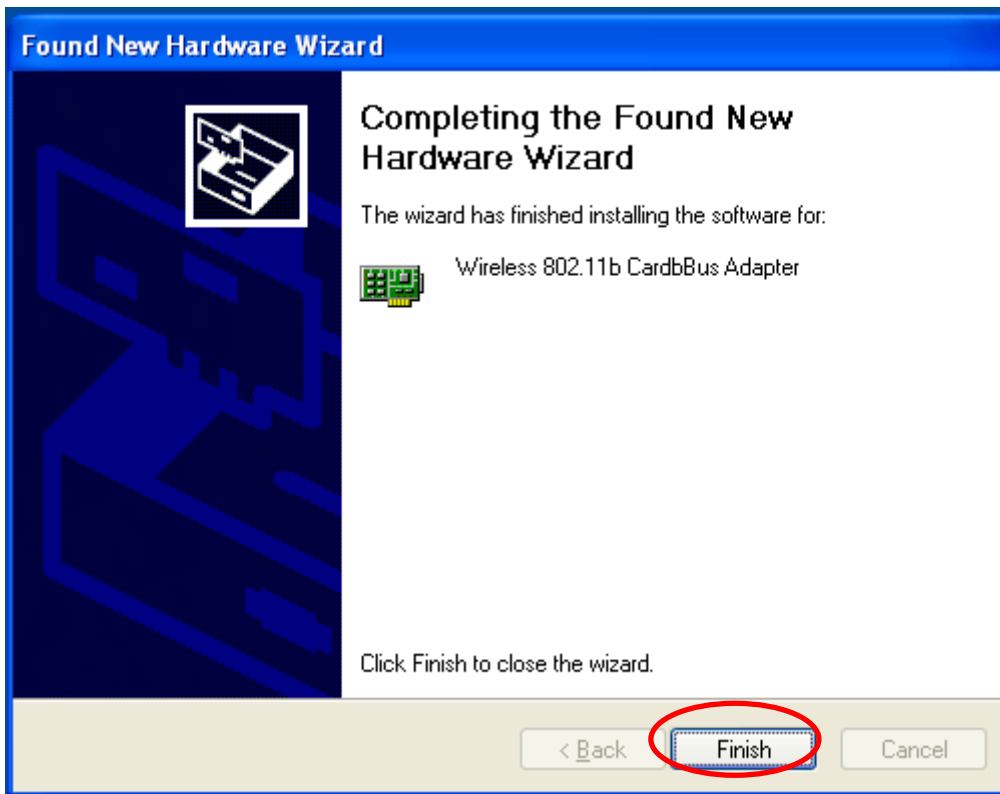
- The hardware wizard is installing drivers.



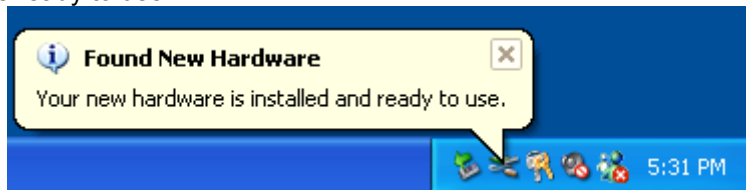
- Press the “Continue Anyway” button.



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



- The bubble message on the system tray indicates that the wireless LAN CardBus adapter is ready to use.



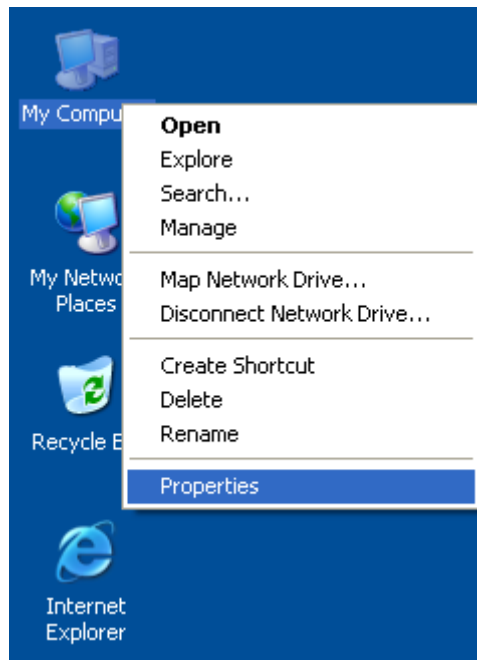
### 2.4.3 Verifying Your Installation In Windows XP

---

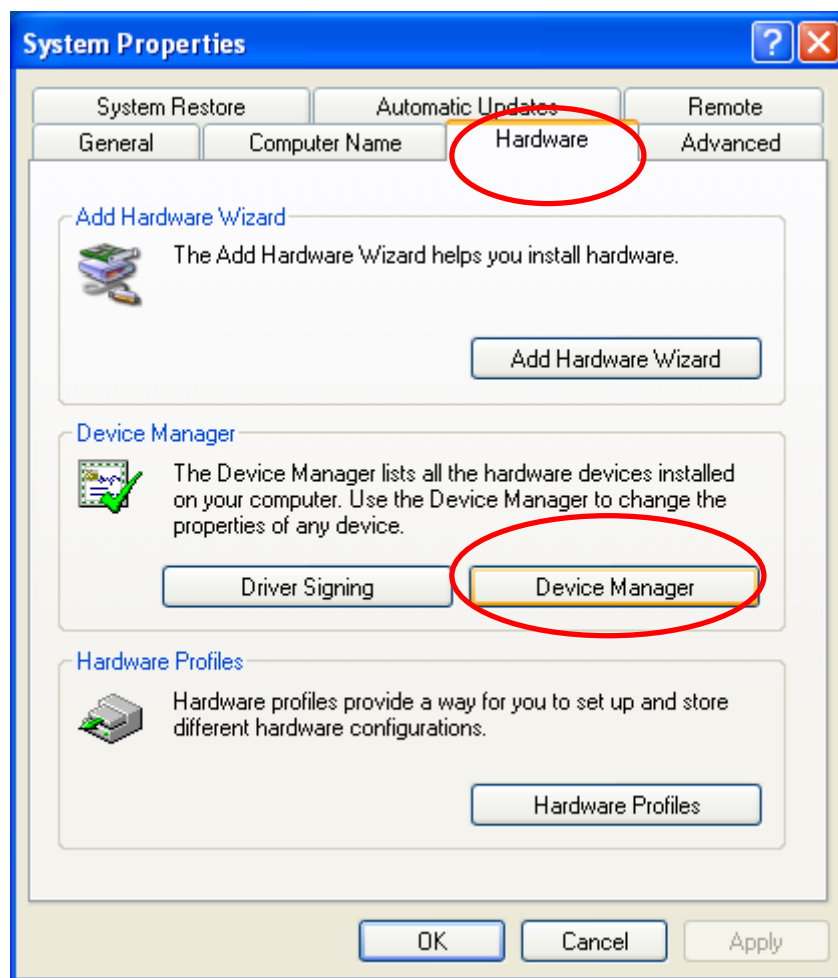
To check if you have installed the driver successfully, please follow the following steps.

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

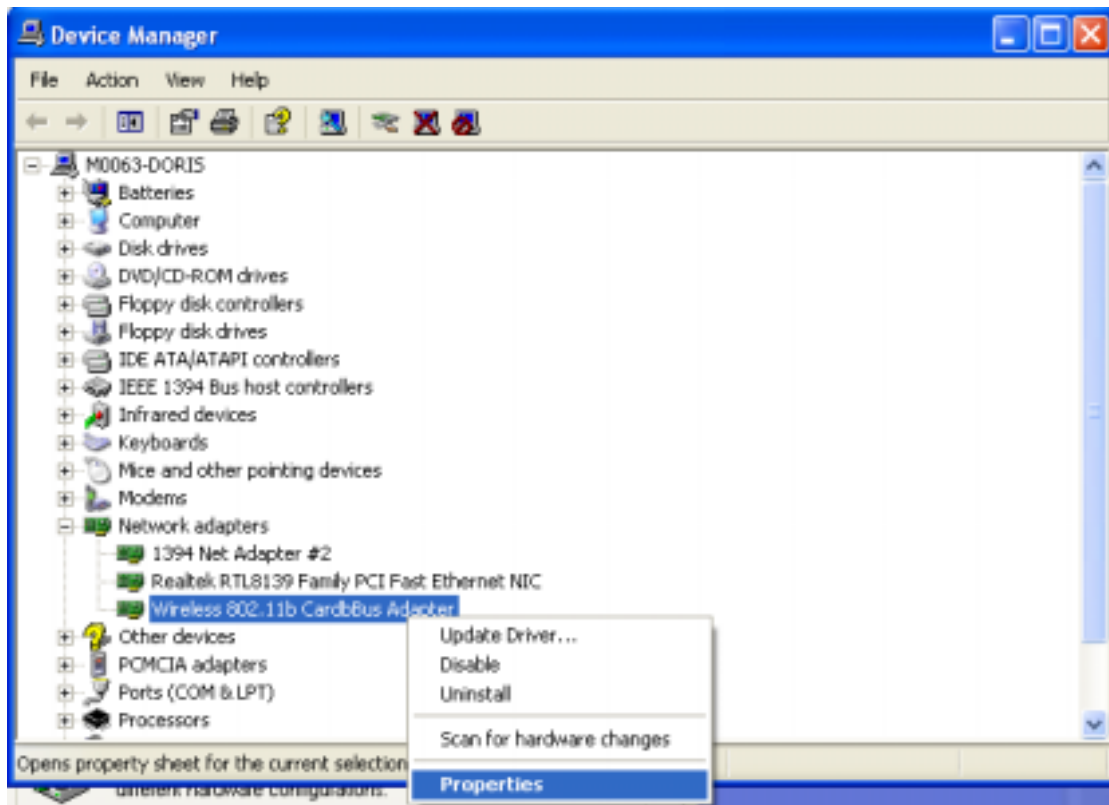




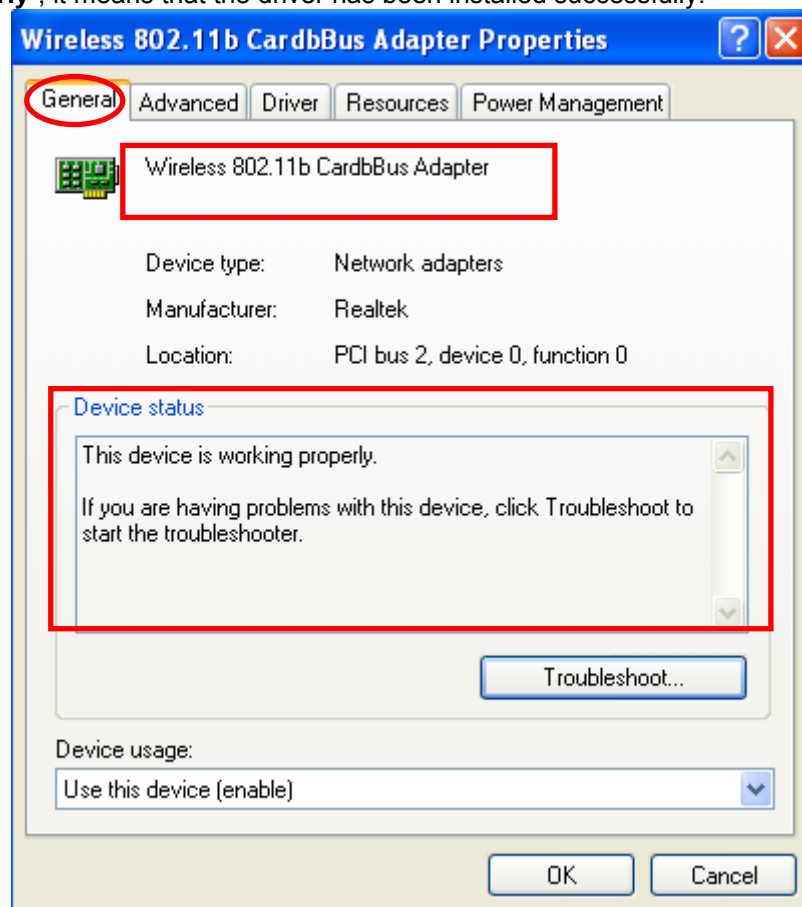
- Under **Hardware** tab, click **Device Manager**.



- Double-click **Network adapters**. Right-click mouse button on “**Wireless 802.11b CardBus Adapter**” 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:

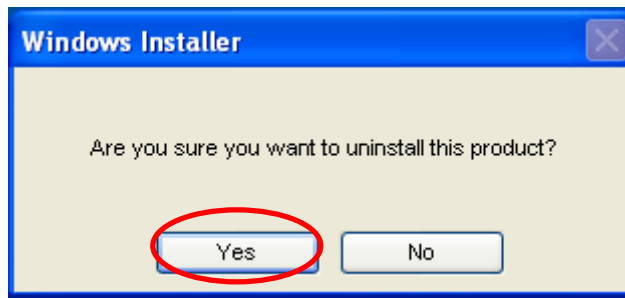
As for how to do TCP/IP setup in Windows XP, please refer to the TCP/IP setup procedure in Windows 2000 section.

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

- **Uninstalling the Wireless LAN CardBus Adapter Utility**
  - From the **Windows Start** menu -> **All Programs** -> **Wireless CardBus** -> **Uninstall** to remove the configuration utility.

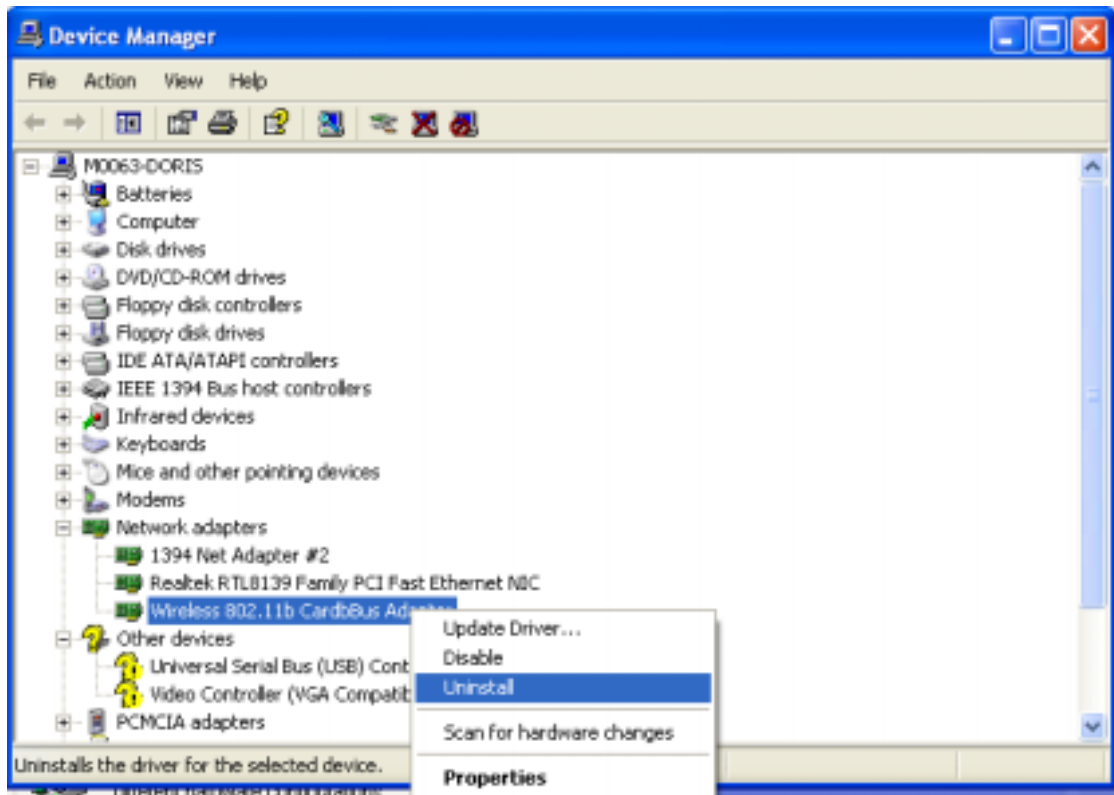


- Click **Yes** to confirm that you are going to uninstall the utility.

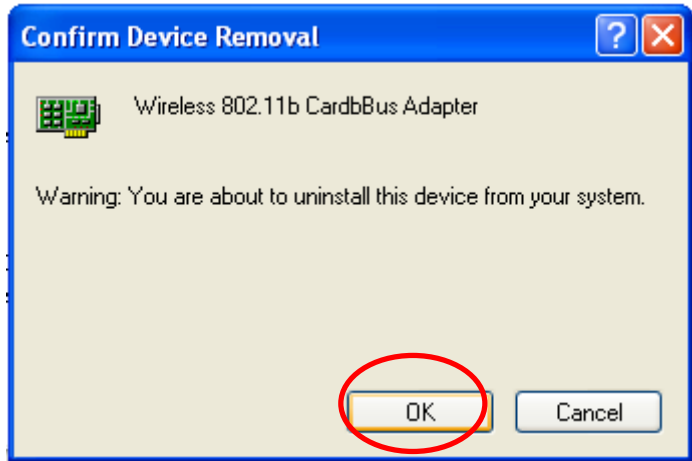


- **Uninstalling the Wireless LAN CardBus Adapter Driver**

- Right-click mouse button on the **My computer** icon on your windows desktop and select **Properties** form the pop-up menu.
- Under **Hardware** tab, click **Device Manager...** Double-click **Network adapters** to extend all network adapters. Right-click mouse button on "**Wireless 802.11b CardBus Adapter**", and choose **Uninstall**.



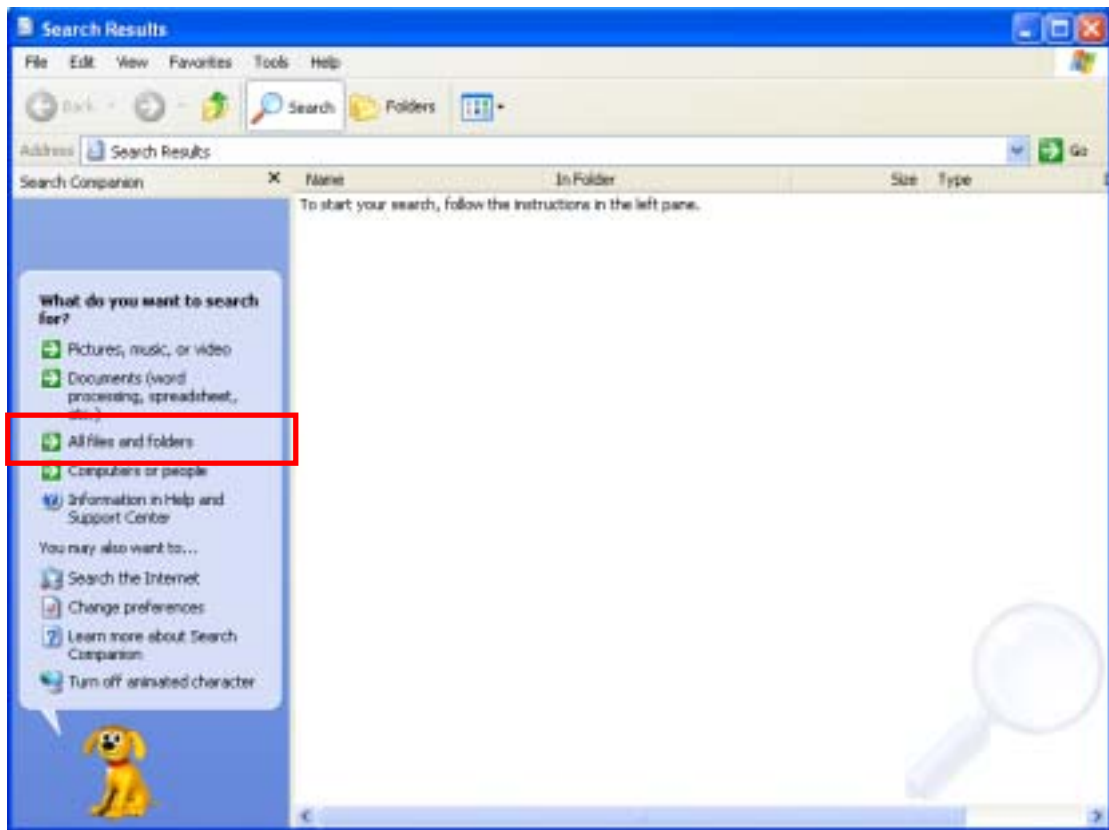
- Click **OK** to remove the drivers.



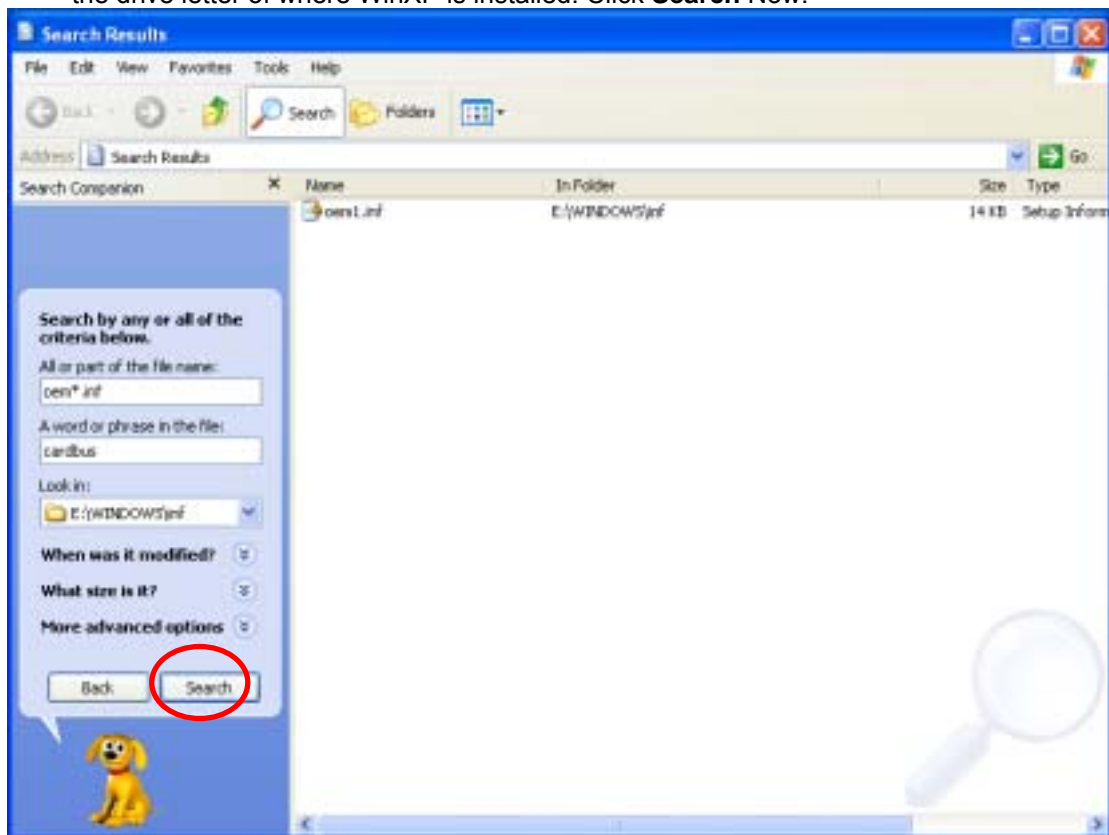
- In order to remove driver files that still reside in the system, please follow the following description to complete the whole un-installation procedure. To do so, go to the **Start** and click **Search**.



- In **Search Results** screen, click **ALL files and folders**.

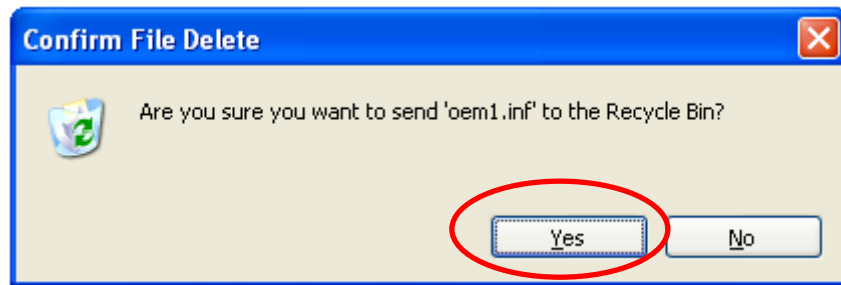


- Enter "CardBus" in the "A word or phrase in the field:" field, enter "oem\*.inf" in the "All or part of the file name", and enter "F:\WINDOWS\INF" in the "Look in:" field. "F:\\" is the drive letter of where WinXP is installed. Click **Search Now**.



A few files matching these criteria are possible, if previous drivers have not been removed properly. You can double-click the oem\*.inf file to make sure that is it what you want to delete.

- Right-click mouse button on the file and select **Delete**. Click **Yes** from the Confirm File Delete dialog box. Till now, the whole un-installation is totally completed.



# Chapter 3


## Wireless LAN CardBus Adapter Utility

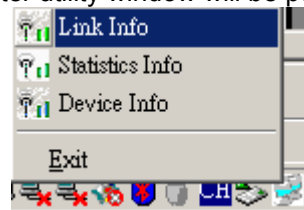
---

### 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 **Start -> Programs ->**

**Wireless CardBus -> Wireless Utility** and there will be a WLAN icon  resides on the system tray. This WLAN utility icon will appear on the system tray every time while this utility is running. Click on this icon and the wireless LAN adapter utility window will be pop-up on




screen. You can select option from the pop-up menu.

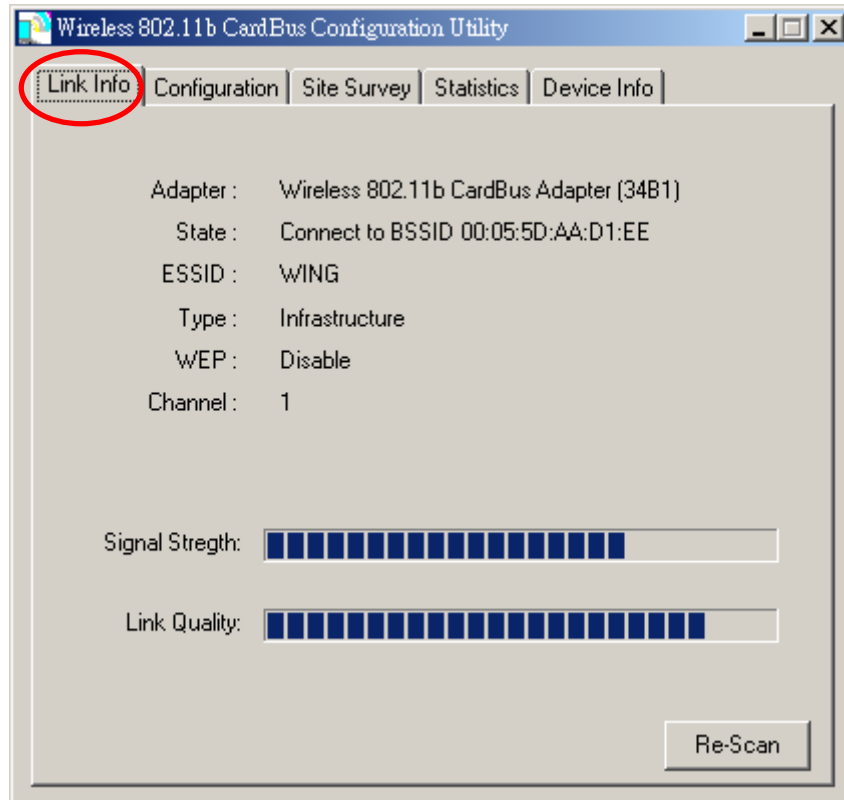
- **Link Info** – Open the Link Info page and you can get the adapter related information.
- **Statistics Info** – If you want to view the adapter Rx and Tx statistics, you can select the Statistics Info.
- **Device Info** – Take you go to the Device Info page.
- **Exit** – Close the Wireless CardBus 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

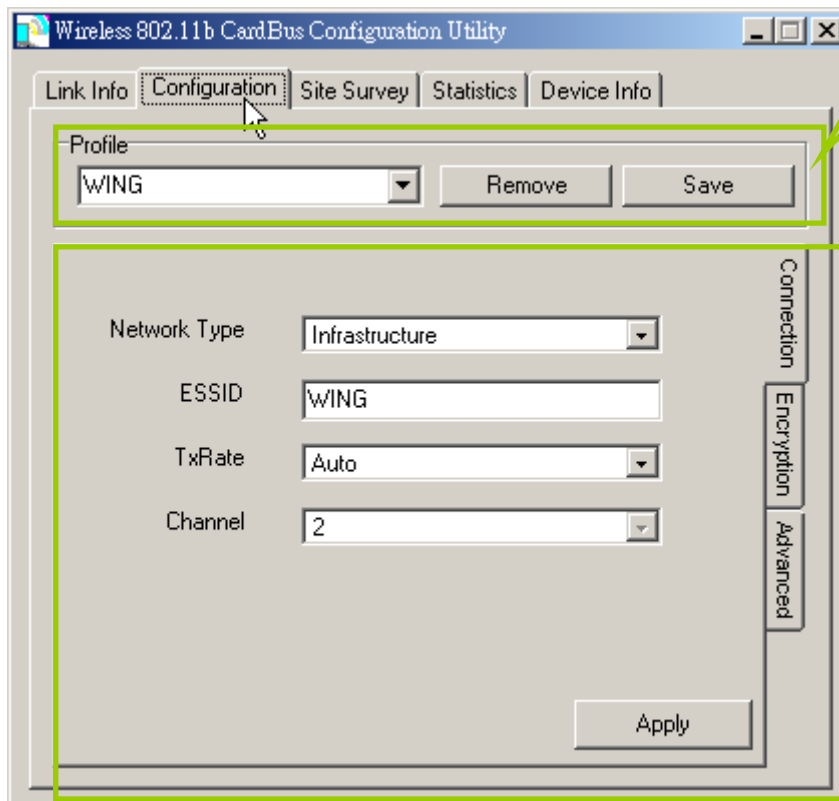
Item	Description	Figure
<b>Adapter</b>	Displaying the name of the adapter.	Adapter : Wireless 802.11b CardBus Adapter (34B1)
<b>State</b>	Displaying the working status of the adapter. <b>Scanning:</b> Indicating the adapter is searching other wireless devices in service range. <b>Not Associated:</b> Indicating that the adapter is not connected with any wireless device yet. <b>Connect to BSSID:</b> <b>xx:xx:xx:xx:xx:xx</b> 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
<b>ESSID</b>	Indicating the ESSID of the connected wireless device.	ESSID : WING
<b>Type</b>	Indicating the current network type the adapter uses. It could be <b>Ad hoc</b> or <b>Infrastructure</b> .	Type : Infrastructure
<b>WEP</b>	Indicating whether the connected device enable WEP function or not. <b>Disable:</b> It means that the connected device doesn't enable	WEP : Disable

	WEP function. <b>Enable:</b> It means that the connected device uses WEP function.	
<b>Channel</b>	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.	Channel : 1
<b>Signal Strength</b>	The blue bar indicates the signal is weak or strong. The longer the blue bar is, the stronger the signal is.	Signal Strength: 
<b>Link Quality</b>	The blue bar indicates the link quality is good or bad. The longer the blue bar is, the better link quality is.	Signal Strength: 
<b>Re-Scan</b>	Click this button and then the card will start to re-scan other wireless devices in service range.	<input type="button" value="Re-Scan"/>

### 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.

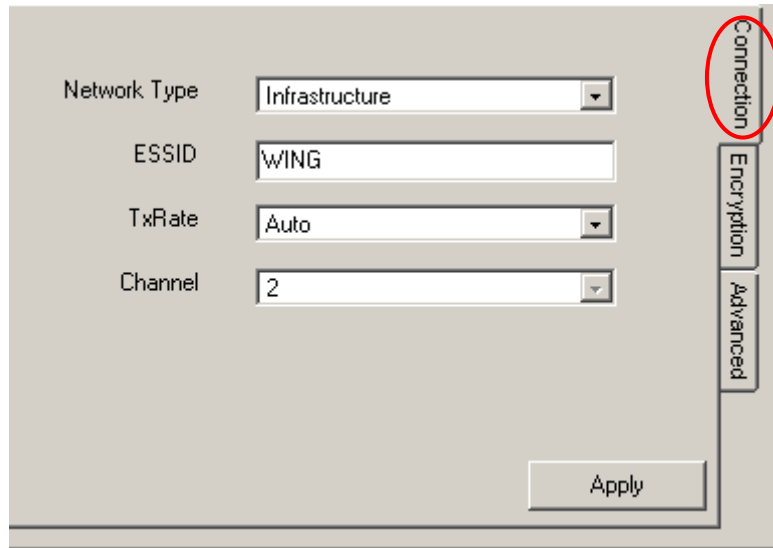
**Remove** – Click the **Remove** button, and then the selected profile will be deleted.

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

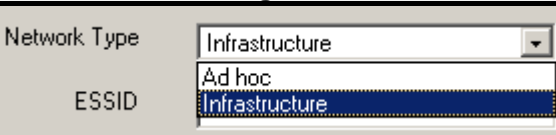
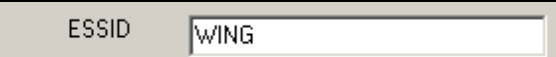
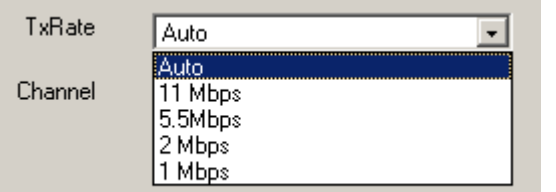
Click the drop-down menu, select one profile you have created and click **Save**, then the profile you select will be applied to the current connection.

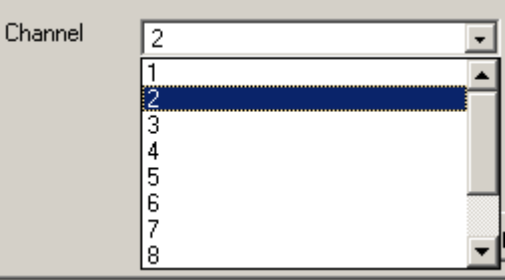
### 3.3.1 Configuration Tab – Connection

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



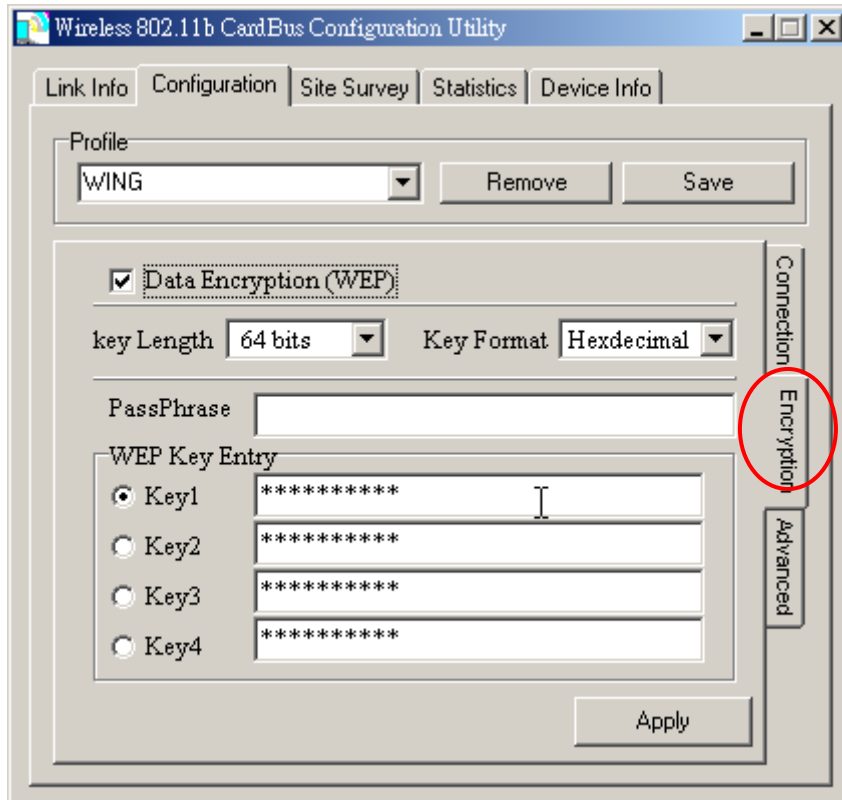
### Connection Tab

Item	Description	Figure
<b>Network Type</b>	This wireless LAN adapter supports two network types – Infrastructure and Ad hoc. You can click the pull-down menu to select one network type. <b>Infrastructure</b> – This type of network connection needs an access point in range. All communication is done through this access point. <b>Ad hoc</b> – A peer-to-peer mode of operation. This type of link is established from client to client without any access point.	
<b>ESSID</b>	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.	
<b>TxRate</b>	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 pull-down menu 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.	
<b>Channel</b>	<p>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.</p> <ul style="list-style-type: none"> <li>● 11 channels for United States</li> <li>● 13 channels for Europe countries</li> <li>● 14 channels for Japan</li> </ul>	
<b>Apply</b>	Click <b>Apply</b> button to make your parameters take effect.	

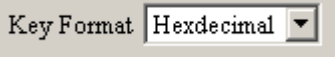


### 3.3.2 Configuration Tab – Encryption

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


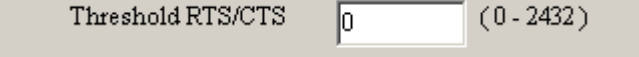
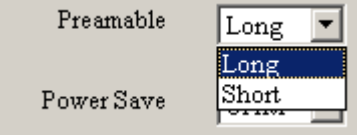
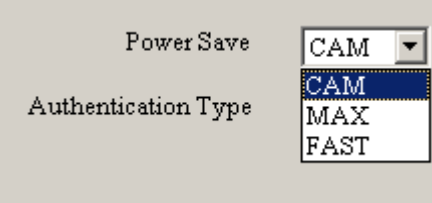
Item	Description	Figure
<b>Data Encryption (WEP)</b>	Click the box in front of Data Encryption (WEP) to enable the WEP function. You can set four different WEP keys in WEP Key Entry and specify one of them to use. If the box is not checked, then you can't change WEP related parameters.	<input checked="" type="checkbox"/> Data Encryption (WEP)
<b>Key Length</b>	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 Length 64 bits

<b>Key Format</b>	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.	
<b>PassPhrase</b>	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.	
<b>WEP Key Entry</b>	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
<b>Threshold Fragmentation</b>	This field is to define the maximum data frame size this wireless LAN adapter will transmit and to improve the efficiency of data transmitting.	
<b>Threshold RTS/CTS</b>	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.	
<b>Preamble</b>	There are two options in this field. The Short Preamble option improves throughput performance. The default setting is Long.	
<b>Power Save</b>	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. <ul style="list-style-type: none"> <li>● <b>CAM</b> – It represents <b>C</b>ontinuous <b>A</b>ccess <b>M</b>ode. Select this option and the wireless LAN adapter is always on.</li> <li>● <b>MAX</b> – It represents the maximum (MAX) power saving mode. Select this option to save the maximum power of the wireless LAN adapter.</li> <li>● <b>FAST</b> – It</li> </ul>	

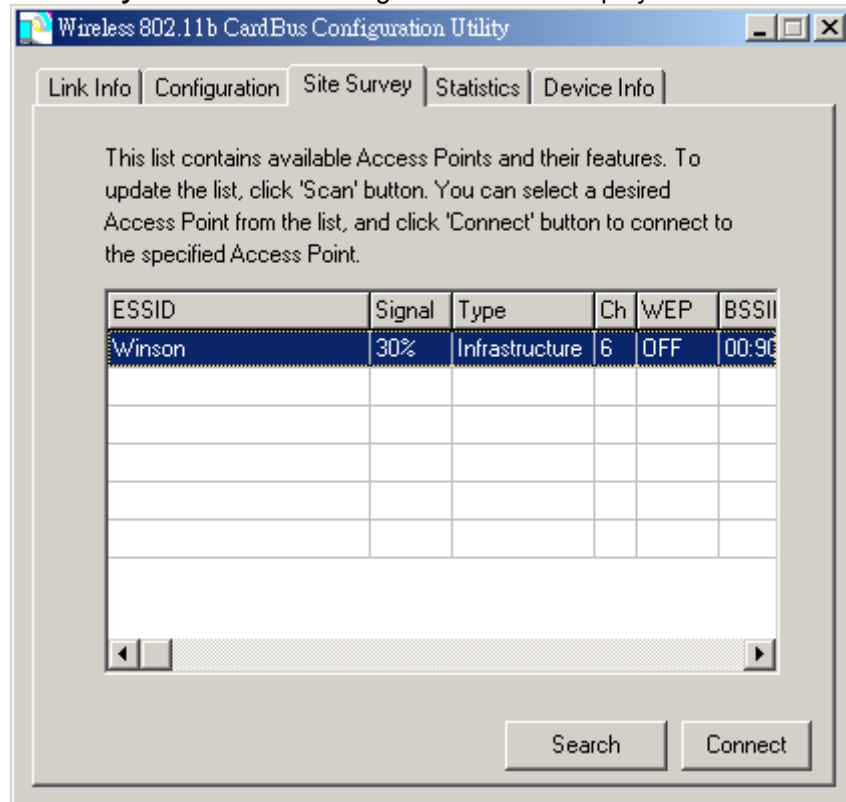


	<p>represents the fast power saving mode. This power mode provides the best combination of network performance and power usage.</p>	
<p><b>Authentication Type</b></p>	<p>Click the pull-down menu to select Auto, Shared or Open type. The authentication function is invoked when associated to access point. 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.</p> <ul style="list-style-type: none"> <li>● <b>Open:</b> With this setting any station in the Wireless LAN devices can associate with an Access Point to receive and to transmit data.</li> <li>● <b>Shared:</b> With this setting only stations using a shared key encryption identified by the Access Point are allowed to associate with it.</li> <li>● <b>Auto:</b> With this setting stations can communicate with or without data encryption.</li> </ul>	<p>Authentication Type</p> 

## 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 WLAN 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.

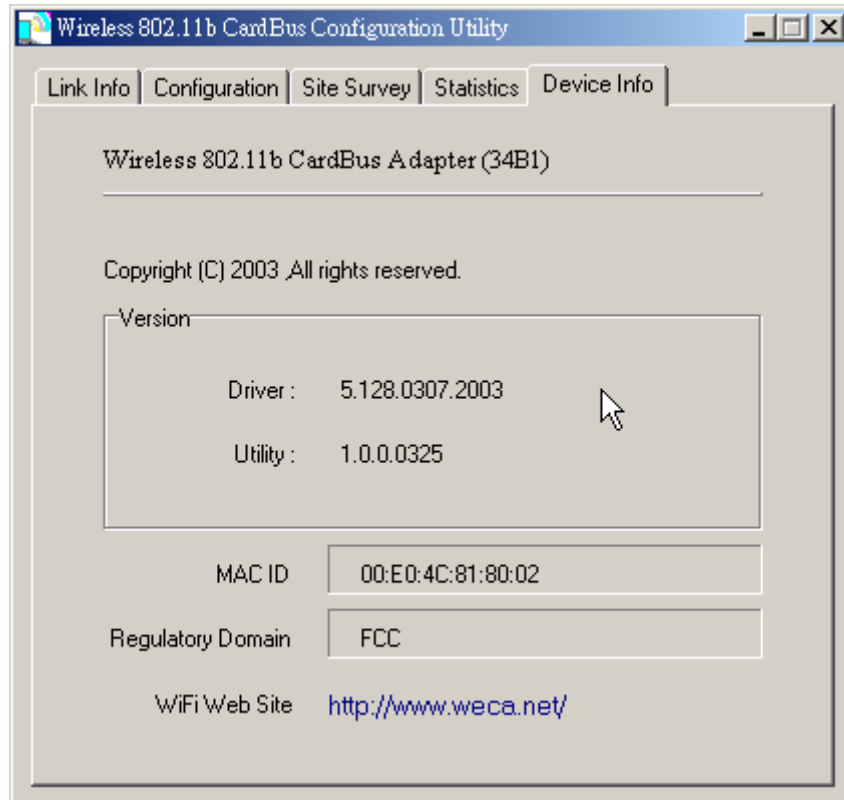
Counter Name	Value
TxOK	114
TxError	0
TxRetry	42
TxBeaconOK	0
TxBeaconError	0
RxOK	50
RxPacketCount	3528
RxRetry	24

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

### 3.6 Wireless LAN Card 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 driver version and utility version. The MAC address of the wireless LAN card and the regulatory domain are also shown on this page.

# Chapter 4

## Using WinXP Built-in Wireless Network Configuration Utility

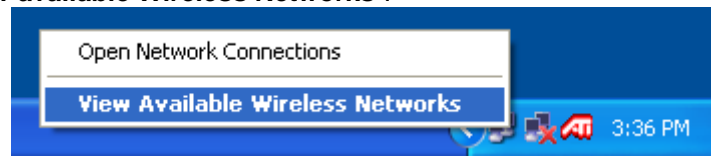
---

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 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.

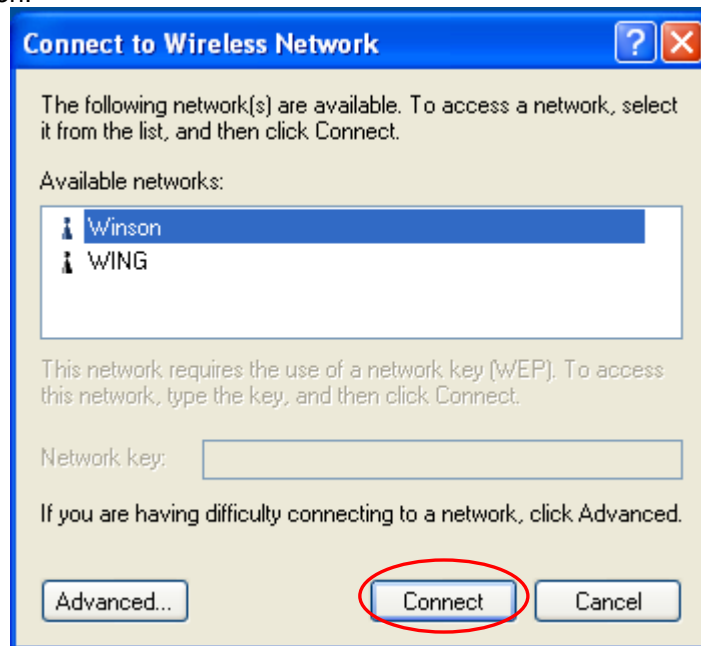
### 4.1 Open the Local Area connection dialog box

---

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

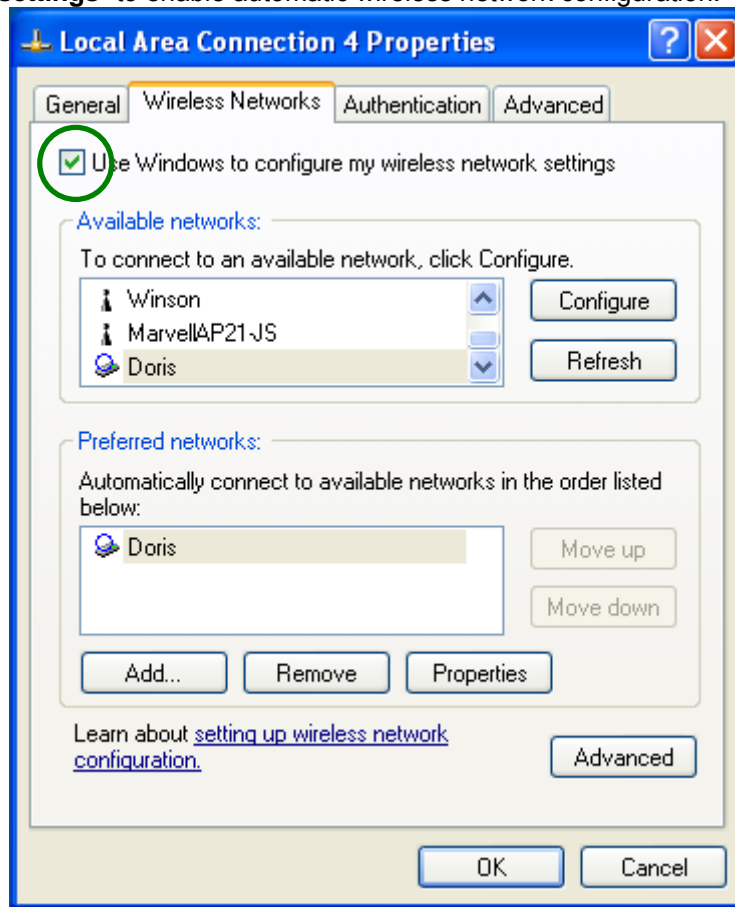


- The following **Connect to Wireless Network** dialog box will be displayed. You can click **Connect** to start the wireless connection or click **Advanced** button to do further configuration.



- 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.

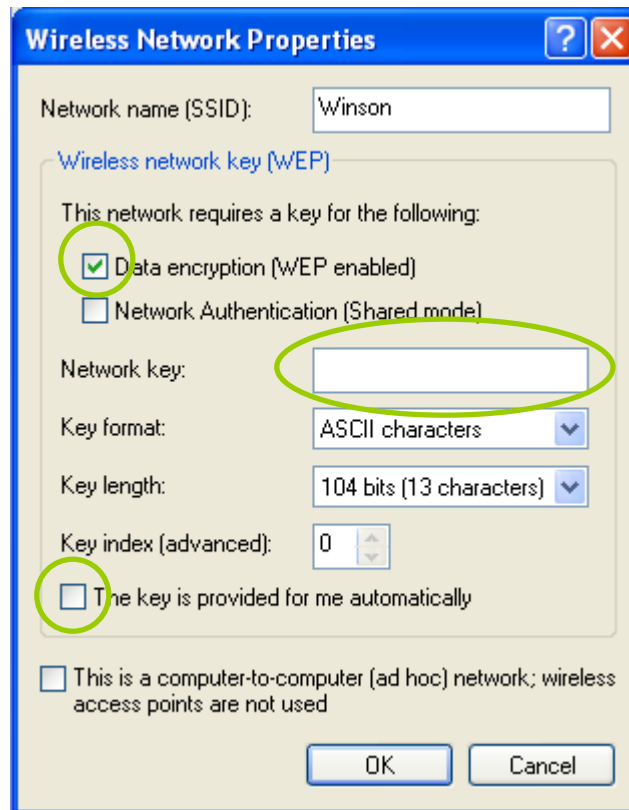


**Note:**

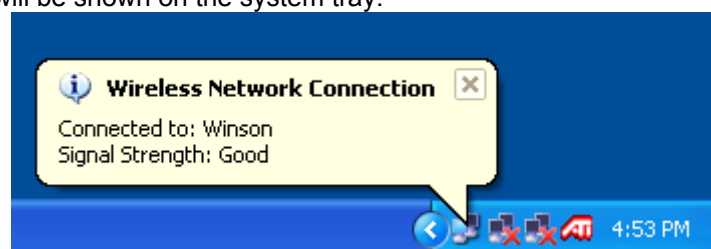
If you want to use the configuration utility we provide, you have to clear the check of “Use Windows to configure my wireless network settings” item.

## 4.2 Infrastructure Mode Setup Procedure

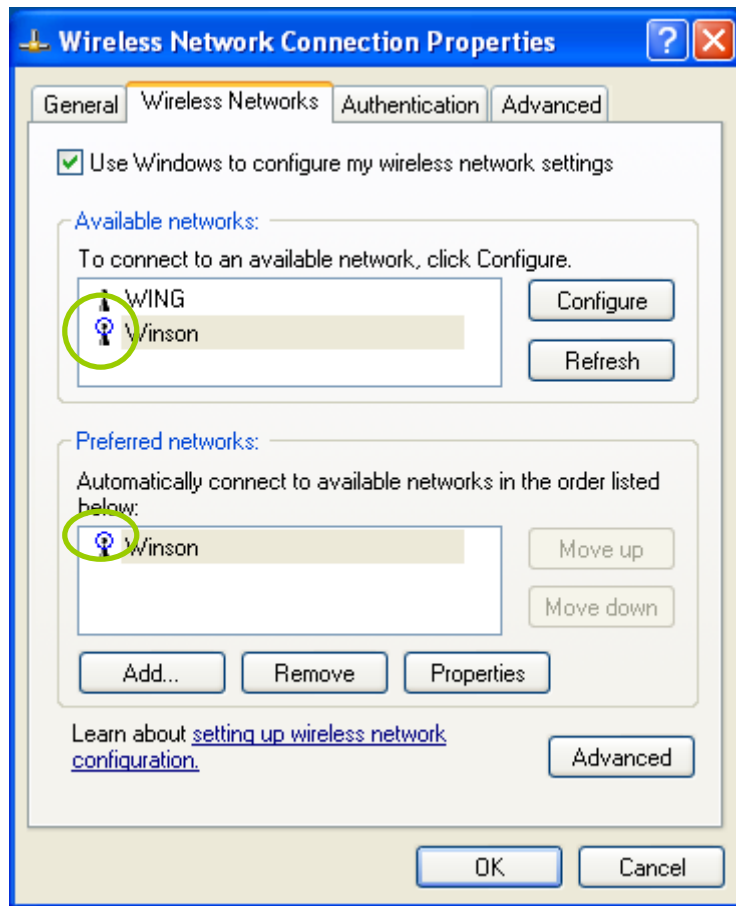
- From the **Wireless Network tab**, click **Refresh** button to update all the available network devices in range.
- Click the network name under the “**Available networks**” and click **Configure**. The Wireless Network Properties dialog box will be displayed.



- 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.

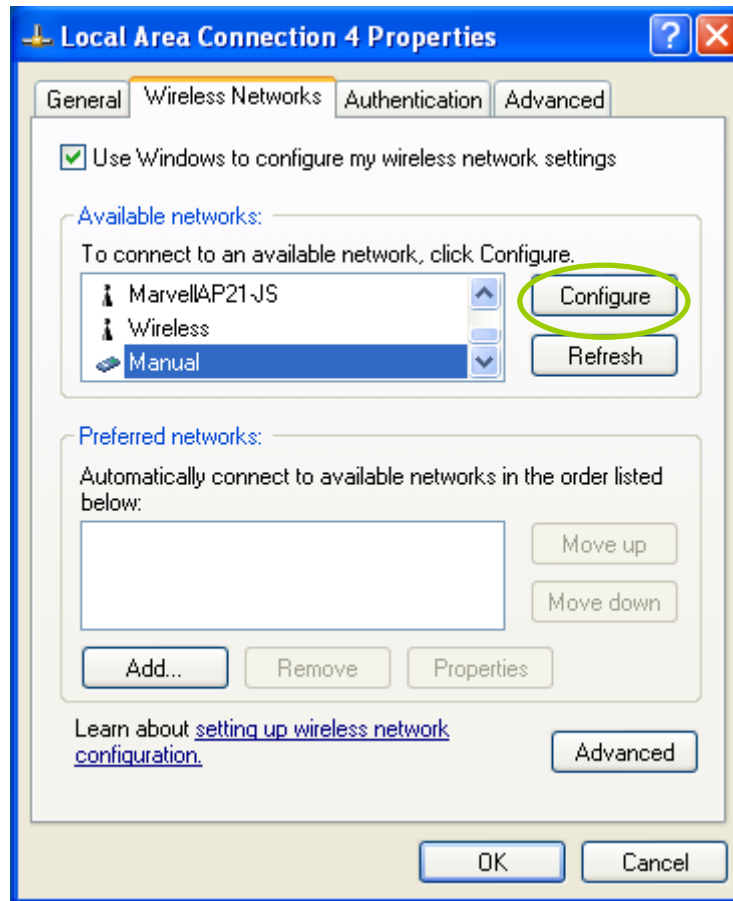


- Furthermore, you can highlight a network connection and click **Move up** or **Move down** to change the order of the wireless networks in the **Preferred networks**. For Windows XP, it will always choose the first one in the **Preferred networks** to connect. To remove a wireless network from the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

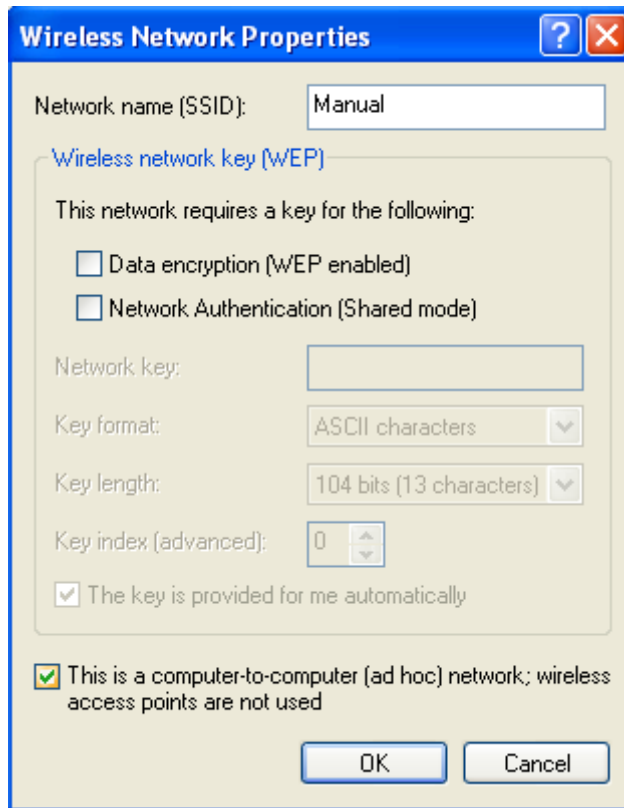


## 4.3 Ad-hoc Mode Setup Procedure

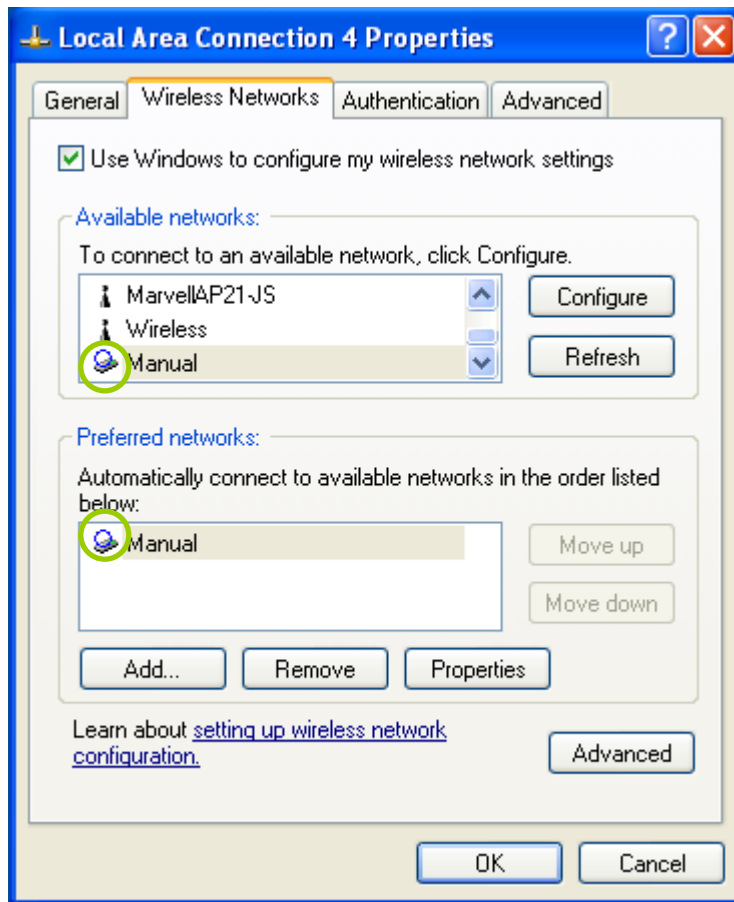
- Click **Refresh** button to update all available devices in range from Wireless Network Connection.
- Select the ad hoc network name under “**Available networks**” in the **Wireless Networks** tab, and click **Configure**.



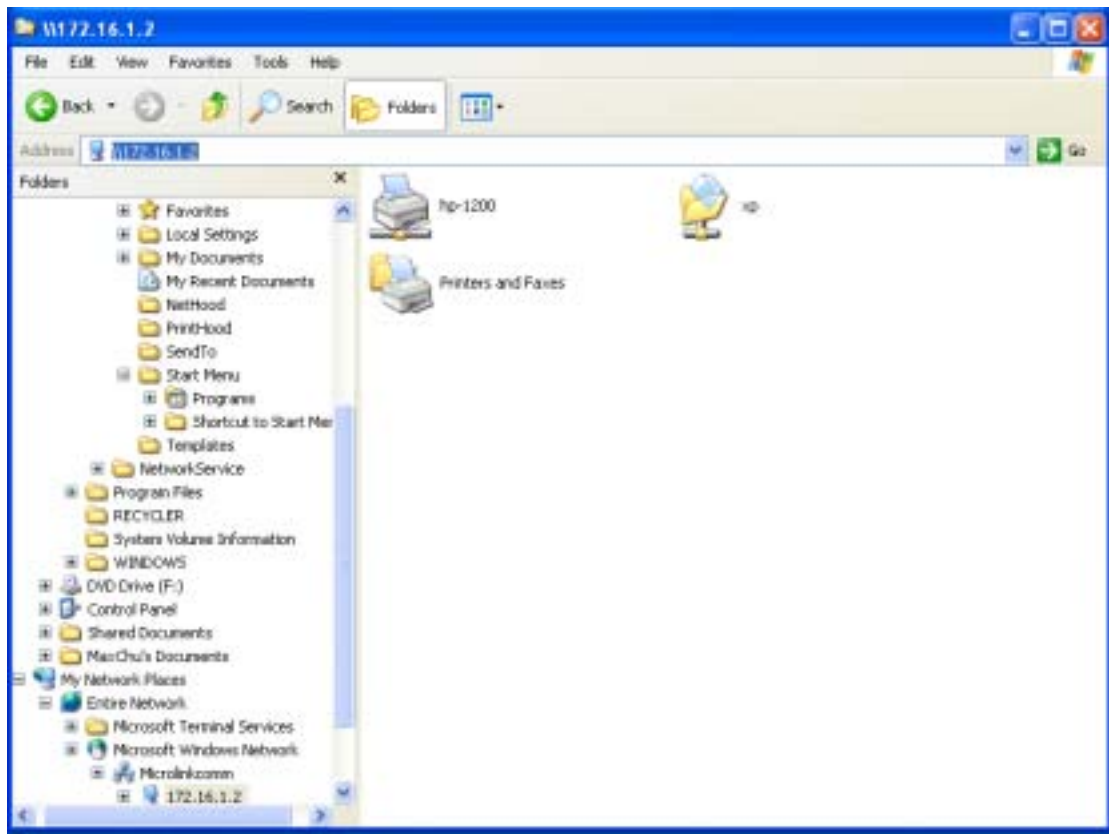
- In the Wireless Network Properties dialog box, the “This is a computer-to-computer (ad hoc) network; wireless access points are not used” check box is selected by default.
- You may choose to enable WEP function by selecting “Data encryption (WEP enabled)” check box and the “Network Authentication (Shared mode)” check box. 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.



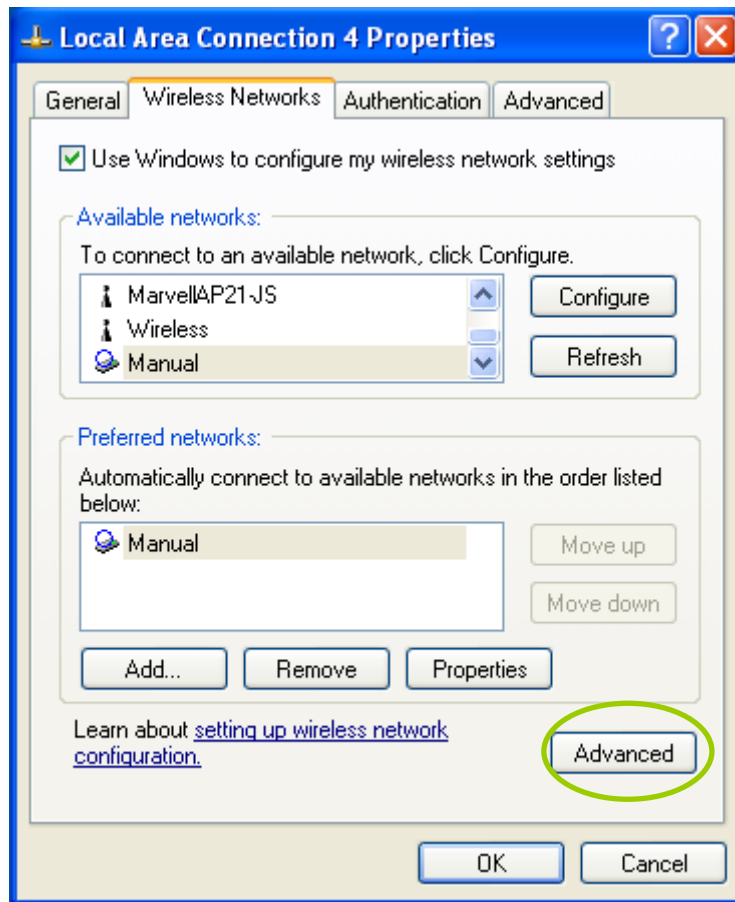
- You may refer to how to do TCP/IP setup in Windows 2000 section to configure you wireless LAN adapter in Windows XP. After the TCP/CP configuration is done, you can share data between these wireless devices.
- Open Windows Explorer and type the connected wireless network adapter IP address in the **Address** 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.

