802.11b Wireless LAN

CardBus PC Card

User Manual

Doc. No.: 022103-02

REGULATORY STATEMENTS

FCC Certification

The United States Federal Communication Commission (FCC) and the Canadian Department of Communications have established certain rules governing the use of electronic equipment.

Part15, Class B

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interface, and

2) This device must accept any interface received, including interface 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 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 distance between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

CAUTION:

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

Regulatory statement (R&TTE / WLAN IEEE 802.11b)

European standards dictate maximum radiated transmit power of 100mW EIRP and frequency range 2.400-2.4835GHz; In France, the equipment must be restricted to the 2.4465-2.4835GHz frequency range and must be restricted to indoor use.

CE Declaration of Conformity

For the following equipment: 802.11b Wireless LAN CardBus PC Card

CE 0984 ⓘ

Is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (89/336/EEC), Low-voltage Directive (73/23/EEC) and the Amendment Directive (93/68/EEC), the procedures given in European Council Directive 99/5/EC and 89/3360EEC.
The equipment was passed. The test was performed according to the following European standards:

- EN 300 328-2 V1.2.1 (2001)
- EN 301 489-1 V.1.3.1 (2001-09) / EN 301 489-17 V.1.1.1 (2000-09)
- EN 50371: 2002
- EN 60950: 2000

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INTRODUCTION

The **802.11b Wireless 32bit CardBus PC Card** is a high-speed 11 Megabits per second (Mbps) Ethernet wireless network adapter that plugs into any CardBus enabled PC. Once connected with other networked PC's, it allows you to share hard disk drives, DVD drives, CD drives, printers, and the likes. It also provides shared access to a modem for Internet access. Based on radio frequency (RF) technology, a wireless LAN transmits and receives data over the air, along with the guarantee to provide privacy and noninterference by the use of separate radio frequency.

The **802.11b Wireless 32bit CardBus PC Card** allows you to take full advantage of your PC's mobility with access to real-time information and online services anytime and anywhere. Plus, with the network installation simplicity and flexibility, you can eliminate the need to pull cable through walls and ceilings and allow the network to go where wires cannot go. Exploring WWW and augmenting networks can never be done more easily.

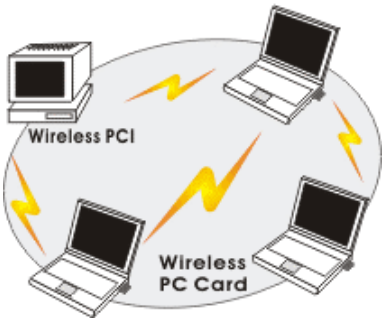
Features

- Complies with IEEE 802.11b standard for 2.4GHz Wireless LAN
- Complies with PC Card standard
- Supports PC Card hot swap and true Plug & Play
- Works with all existing network infrastructure
- Complies with specific wireless products and services
- Capable of up to 128-Bit WEP Encryption
- Freedom to roam while staying connected
- 11 Mbps high-speed transfer rate
- Rich diagnostic LED indicators with Integrated Antenna
- Supports Window 98/2000/ME/XP
- Lower power consumption
- Easy to install and configure

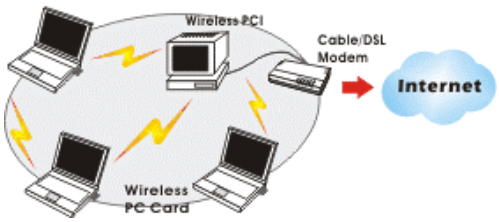
Wireless Network Options

The Peer-to-Peer Network

This network installation lets you set a small wireless workgroup easily and quickly. Equipped with wireless PC Cards or wireless PCI, you can share files and printers between each PC and laptop.

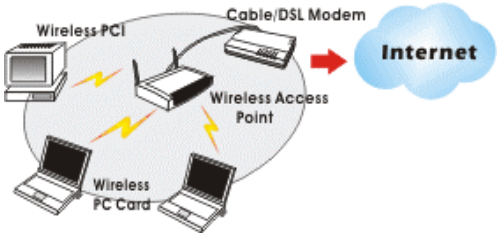


Or you can use one computer as an Internet Server to connect to a wired global network and share files and information with other PCs via a wireless LAN.



The Access Point Network

The network installation allows you to share files, printers, and Internet access much more conveniently. With wireless PC Cards, you can connect wireless LAN to a wired global network via an **Access Point**.



LED Indicators

Link: Green (On/Off)

Glow – linking to an Access Point or Peer-to-Peer mode.

Act: Orange (Blink)

Blink – Transmitting/receiving wireless data.

INSTALLATION

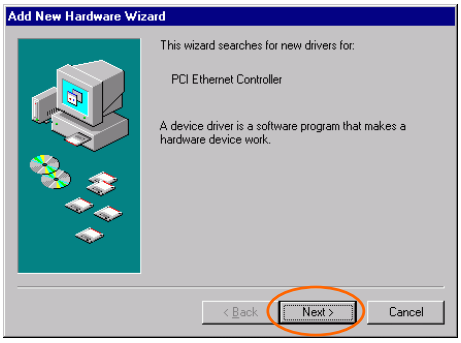
Install the Device

1. Locate the CardBus slot of your system.
2. Align the Wireless PC Card in the CardBus slot. Push evenly and slowly until it is seated.
3. Once the device has been connected to your computer, Windows will detect the new hardware and then automatically copy all of the files needed for networking.

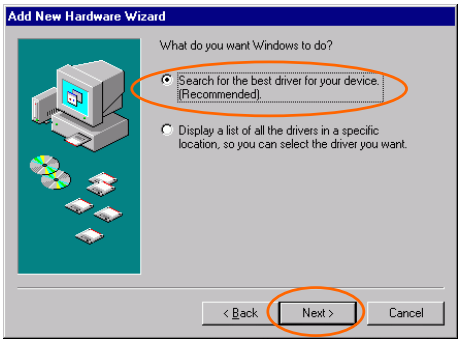
Install the Driver

In Windows 98

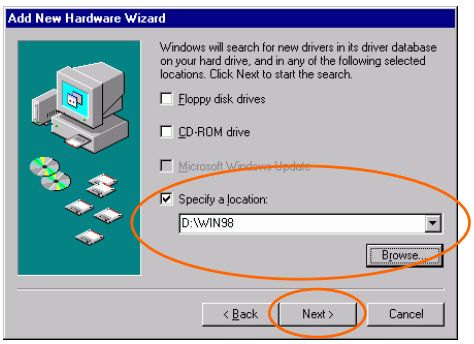
1. In **Add New Hardware Wizard**, click **Next**.



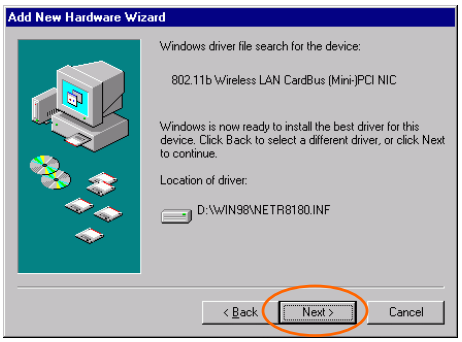
2. Select **Search for the best driver for your device (Recommended)**. Click **Next**.



3. Insert the supplied CD-ROM into the CD-ROM drive. Select **Specify a location:** and click **Browse** to provide the appropriate path (e.g. **D:\WIN98**). Click **Next**.

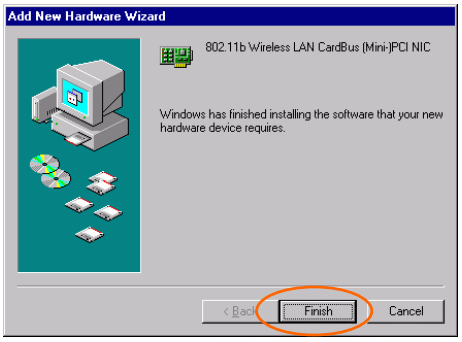


4. Click **Next**, Windows will copy all the necessary files to your system.



5. If you are asked to insert **Windows 98** CD-ROM, please do so. Click **OK**.

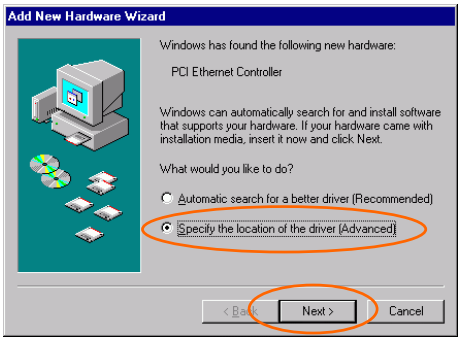
6. Click **Finish** to complete the installation.



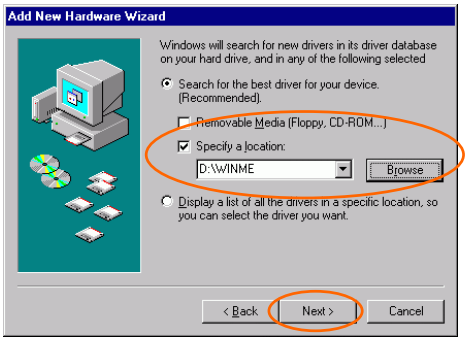
7. When Windows prompts you to restart your computer, click **Yes**.

In Windows ME

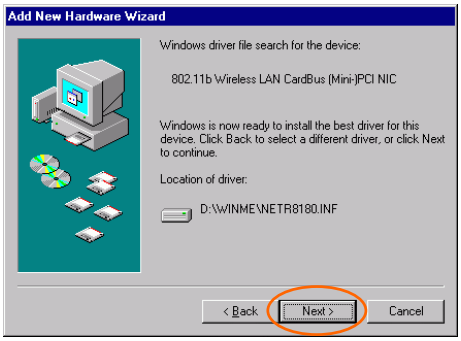
1. Select **Specify the location of the driver (Advanced)**, click **Next**.



2. Insert the supplied CD-ROM into the CD-ROM drive. Select **Search for the best driver for your device (Recommended)** and click **Browse** to provide the appropriate path (e.g. **D:\WINME**.) Click **Next**.

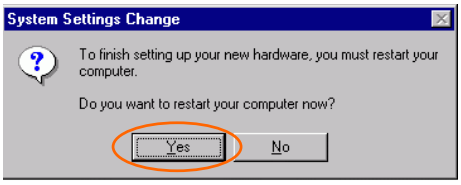


3. Click **Next**, Windows will copy all the necessary files to your system.



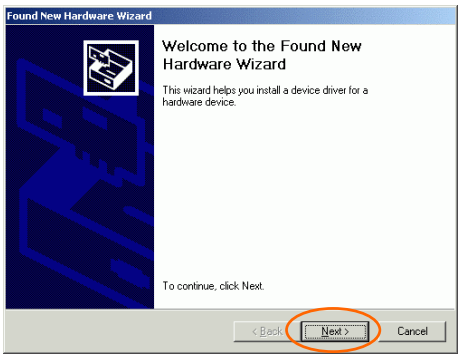
4. Click **Finish** to complete the installation.

5. When Windows prompts you to restart your computer, click **Yes**.

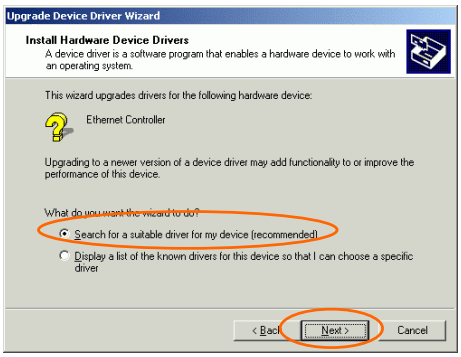


In Windows 2000

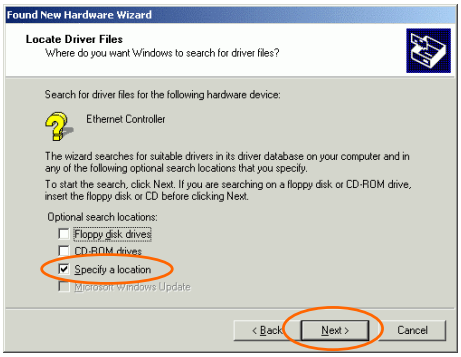
1. In **Found New Hardware Wizard**, click **Next**.



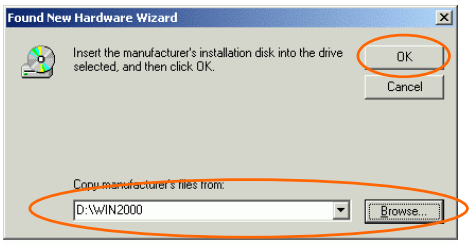
2. In **Install Hardware Device Drivers**, select **Search for a suitable driver for my device (recommended)**, click **Next**.



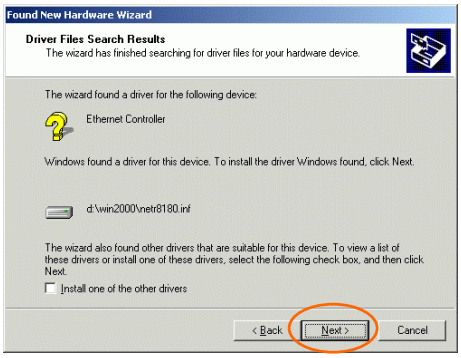
3. Insert the supplied CD-ROM into the CD-ROM drive. Select **Specify a location**, click **Next**.



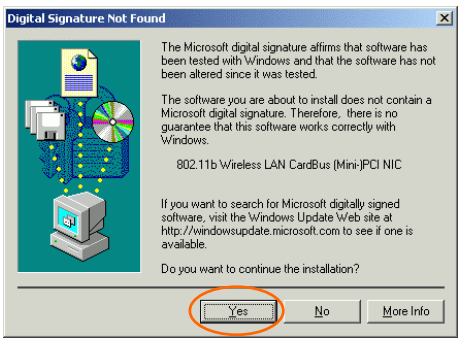
4. Click **Browse** to provide the appropriate path (e.g. **D:\WIN2000**). Click **OK**.



5. Click **Next**, Windows will copy all the necessary files to your system.



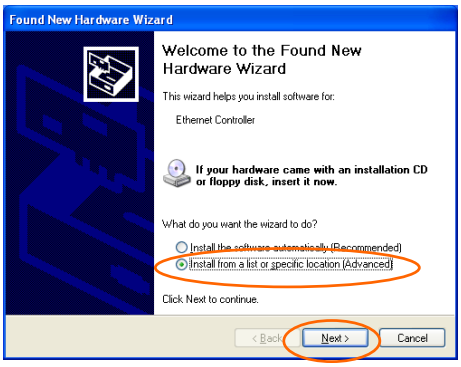
6. In **Digital Signature Not Found** window, click **Yes** to continue.



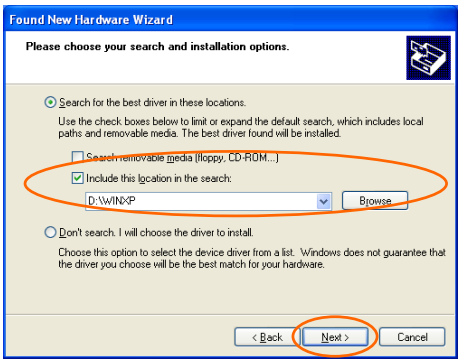
7. Click **Finish** to complete the installation.

In Windows XP

1. Select **Install from a list or specific location (Advanced)** and click **Next.**

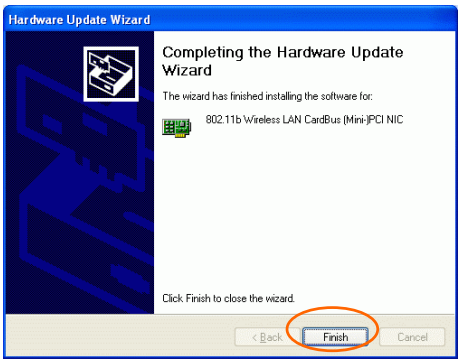


2. Insert the supplied **CD-ROM** into the CD-ROM drive. Select **Include this location in the search:** and click **Browse** to provide the appropriate path (e.g. **D:\WINXP**). Click **Next**.



3. Click **Continue Anyway** to proceed. Windows will copy all the necessary files to your system.

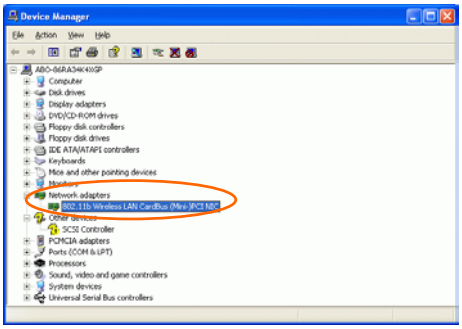
4. Click **Finish** to complete the installation.



Verify

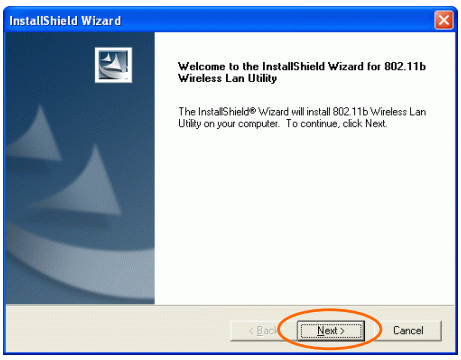
To verify if the device exists in your computer and is enabled, go to **Start → Settings → Control Panel → System (→ Hardware) → Device Manager**. Expand the **Network adapters** category. If the **802.11b**

Wireless LAN CardBus (Mini-) PCI NIC is listed here, it means that your device is properly installed and enabled.

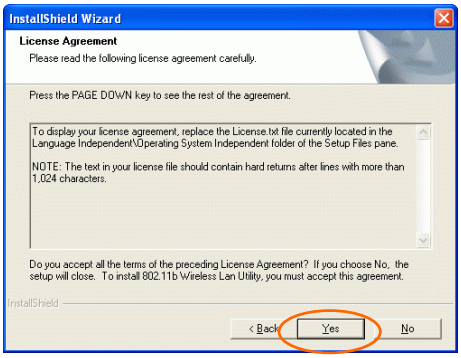


Install the Utility

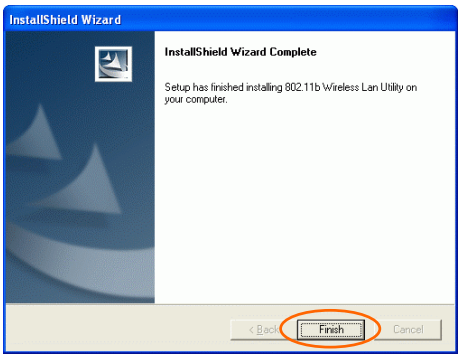
1. Insert the supplied **CD-ROM** into the CD-ROM drive. Double click on **Setup.exe** to install the **Wireless LAN Utility**.
2. When the **Welcome** screen appears, click **Next** to continue.



3. In **License Agreement**, click **Yes** to accept the terms.



4. Click **Finish** to complete the installation.

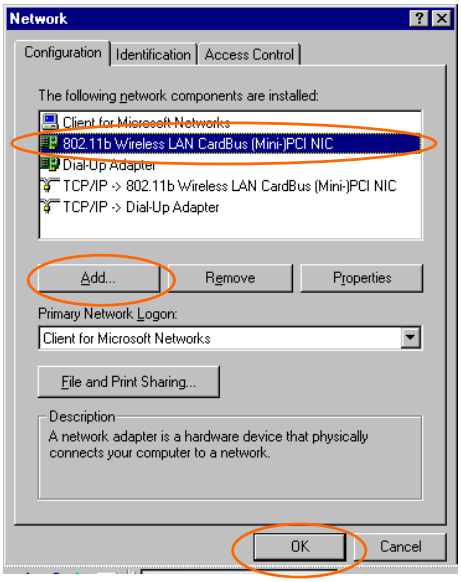


NETWORK CONNECTION

Once the driver has been installed, you must make some changes to your network settings.

In Windows 98/ME

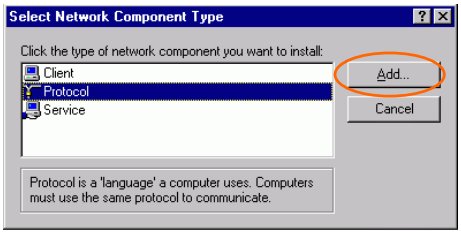
1. Go to **Start → Settings → Control Panel → Network**.
2. Make sure that the following components are installed.



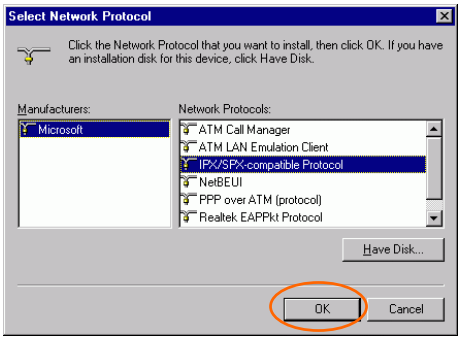
- **802.11b Wireless LAN CardBus(Mini-) PCI NIC**
- **IPX/SPX-compatible Protocol**
- **NetBEUI**
- **TCP/IP**

If any components are missing, click on the **Add** button to add them in. All the protocols and clients required and listed above are provided by Microsoft.

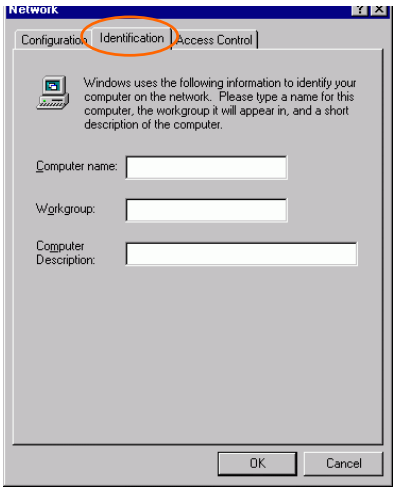
3. After clicking **Add**, highlight the component you need, click **Add**.



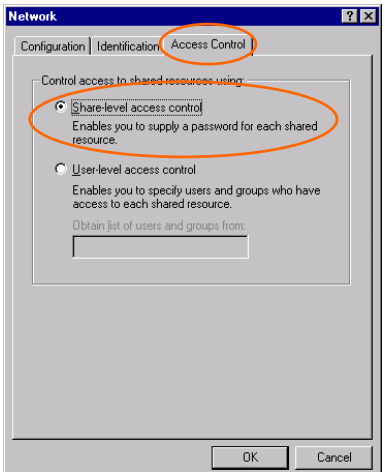
4. Highlight **Microsoft**, and then double click on the item you want to add. Click **OK**.



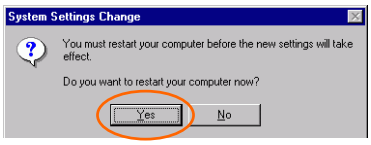
5. For making your computer visible on the network, enable the **File and Print Sharing**.
6. Click the **Identification** tab. Make up a name that is unique from the other computers' names on the network. Type the name of your workgroup, which should be the same used by all of the other PCs on the network.



7. Click the **Access Control** tab. Make sure that "**Share-level access control**" is selected. If connecting to a Netware server, share level can be set to "**User-level access control**."



8. When finished, restart your computer to activate the new device.



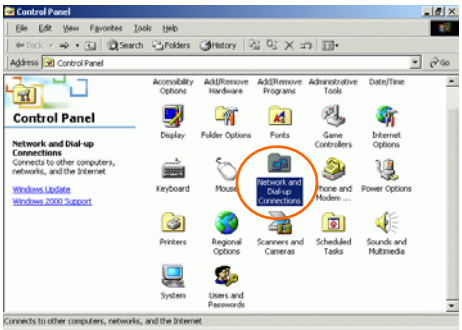
9. Once the computer has restarted and Windows has booted up, a **Logon** window will appear and require you to enter a username and password. Make up a username and password and click **OK**. Do not click the **Cancel** button, or you won't be able to log onto the network.
10. Double-click the **Network Neighborhood** icon on the windows desktop, and you should see the names of the other PCs on the network.

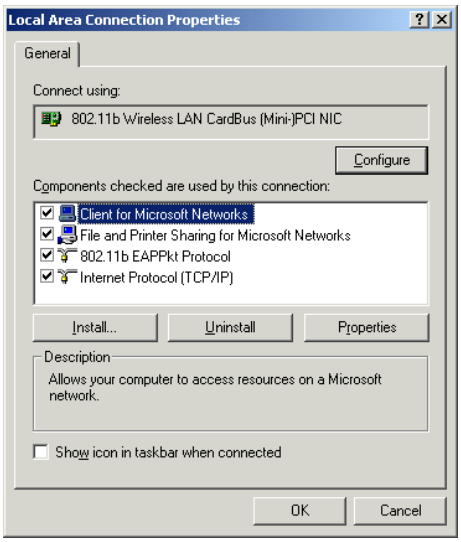
In Windows 2000/XP

1. (In **Windows 2000**)

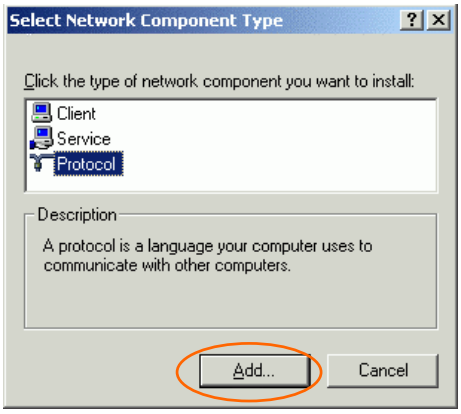
   Go to **Start→ Settings → Control Panel → Network and Dial-up Connections → Local Area Connection → Properties**.

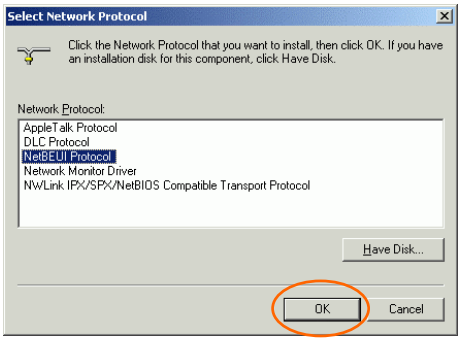
   (In **Windows XP**)
   Go to **Start → Control Panel → Network Connections → Wireless Network Connection Enabled 802.11b Wireless LAN CardBus (Mini-) PCI NIC → Properties**.





2. Make sure that you have all the following components installed.
   - **Client for Microsoft Networks**
   - **NWLink NetBIOS**
   - **802.11b EAPPkt Protocol**
   - **Internet Protocol (TCP/IP)**
3. If any components are missing, click on the **Install…** button to select the **Client/Service/Protocol** required. After selecting the component you need, click **Add…** to add it in.





4. For making your computer visible on the network, make sure you have installed **File and Printer Sharing for Microsoft Networks**.
5. When finished, you must restart your computer to complete the installation.

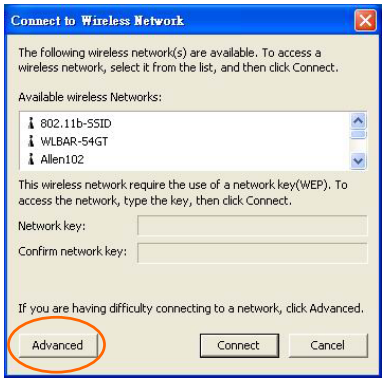
CONFIGURATION

After successful installation of the Wireless PC Card's Driver and Utility, a **Network Status** icon will display in the system tray. Meanwhile, a **Utility Shortcut** icon will appear on the desktop.

Accessing the Configuration Utility

Double-click on to open the Configuration Utility.

Click **Advanced** to enter the Configuration Window.



All settings are categorized into 6 Tabs:

Config Tab

Advanced Config Tab

Status Tab

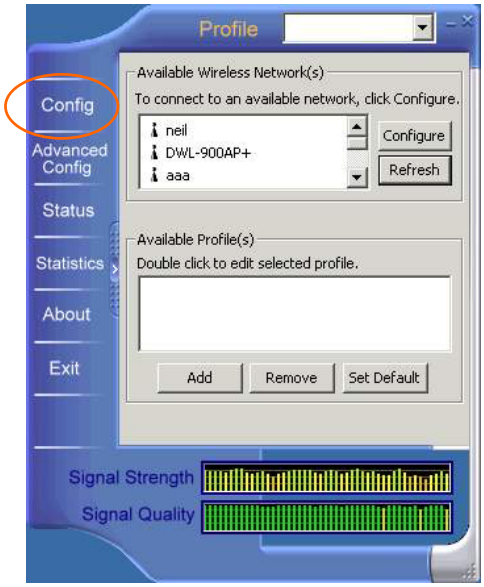
Statistics Tab

About Tab

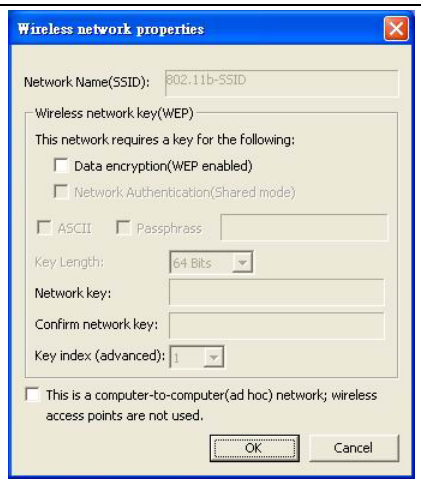
Exit Tab

Config Tab

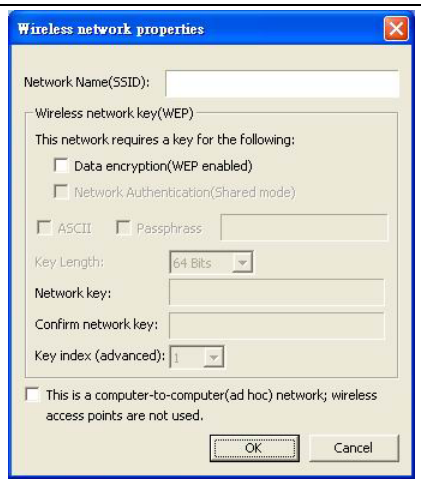
The **Config** tab allows you to configure WEP encryption and add/remove Profile(s).



Item	Description
Available Wireless Network(s)	Displays all available networks.
Configure	Highlight an available network, click **Configure** to set up WEP encryption (see diagram below).

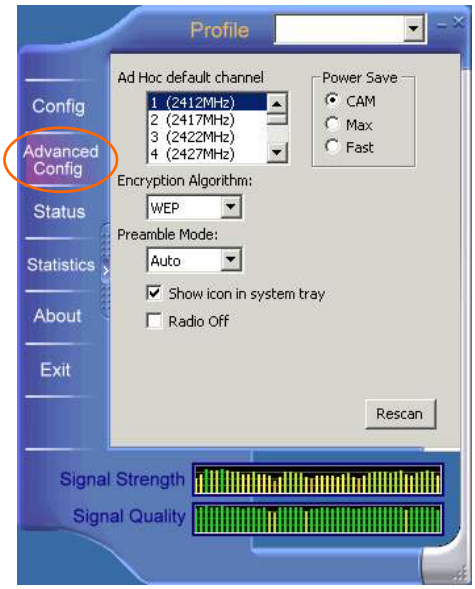
Item	Description
	
Refresh	Click the button to refresh and search for all available networks.

Item	Description
Available Profile(s)	Displays all available profiles.
Add	Click the button and the **Wireless Network Properties** window will appear. In the **Network Name (SSID)** field, enter your desired network name listed in the above **Available Wireless Network(s)** box, and click **OK**.

Item	Description
	
Remove	Highlight the unwanted profile listed in the **Available profile(s)** box, and click the button to remove it.
Set Default	Highlight a profile, click the button to set it as a default profile.

Advanced Config Tab

The **Advanced Config** Tab allows you to change advanced configuration settings, such as the **Ad Hoc default channel, Power Save** and **Radio Off**.



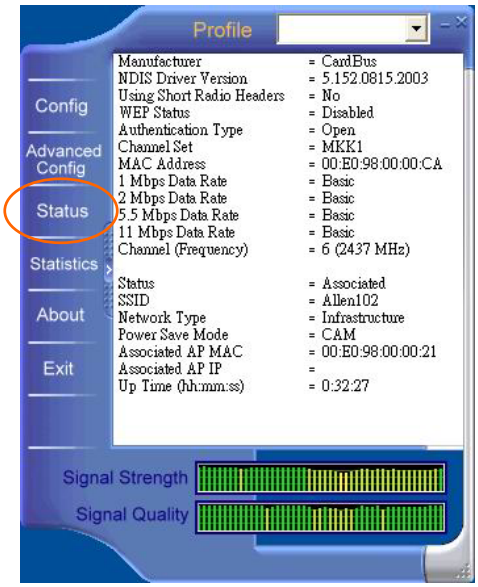
Item	Description
Ad Hoc default channel	Select the appropriate channel from the list provided to correspond with your network settings. All devices in the wireless LAN must be configured to share the same radio channel in order to function properly.
Power Save **⦿ CAM** **(Constantly Awake Mode)**	 Keeps the PC card powered up continuously so there is little lag in message response time. Consumes the most power but offers the highest throughput.

Item	Description
	Is recommended for desktop computers and devices that use AC power.
⦿ **Max** **(Power Save Mode)**	Causes the access point to buffer incoming messages for the client adapter, which wakes up periodically and polls the access point to see if any buffered messages are waiting for it. The PC card can request each message and then go back to sleep. Conserves the most power but offers the lowest throughput. Is recommended for devices which power consumption is the ultimate concern (such as small battery-powered devices).
⦿ **Fast (Power Save Mode)**	Switched between PSP mode and CAM mode, depending on network traffic. This mode switched to CAM when retrieving a large number of packets and switches back to PSP after the packets have been retrieved. Is recommended when power consumption is a concern but you need greater throughput than that allowed by Max PSP.
Encryption Algorithm	**WEP (Wired Equivalent Privacy)** **AES (Advanced Encryption Standard)** **TKIP (Temporal Key Integrity Protocol)** Select one from the list to ensure the security of your wireless network.
Preamble Mode	A preamble is a signal used in wireless environment to synchronize the transmitting timing including Synchronization and Start frame delimiter. (Note: Please check the setting of AP first.)
⦿ **Auto**	Select **Auto** for the USB adapter to select the Preamble type automatically depending on the Access Point Preamble type.
⦿ **Long**	In a "noisy" network environment, the Preamble Type should be set to **Long Preamble**.
⦿ **Short**	The **Short Preamble** is intended for applications where minimum overhead and maximum performance is desired. In a "noisy" network environment, the performance would be decreased.

Item	Description
☐ Show icon in System Tray	Check this box to show icon in system tray.
☐ Radio Off	Check/Uncheck this box to disable/enable the radio module function of the Wireless PC Card.
Rescan	Searches for all available networks. Click this button to rescan and issue an updated list of all available sites.

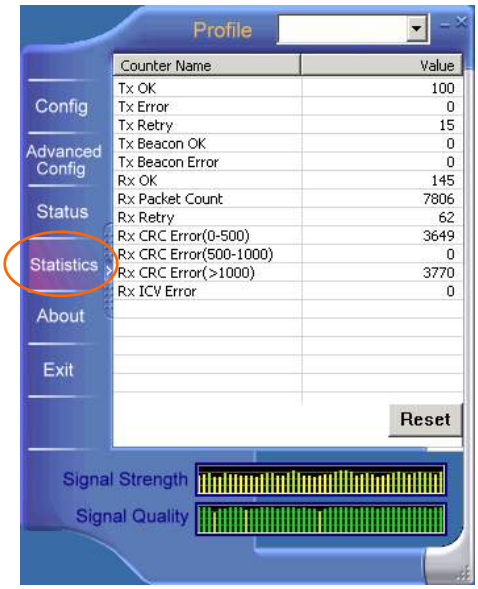
Status Tab

The **Status** Tab displays basic link information, including **Channel Set**, **MAC Address**, **Network Type** and **Power Save Mode**.



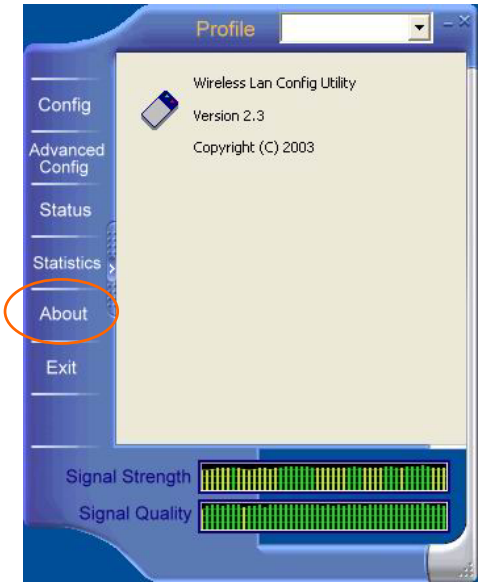
Statistics Tab

The **Statistics** tab shows the available statistic information. Press **Reset** button to renew this list of statistics.



About Tab

Click on the **About** tab to view basic version information about the **Configuration Utility**.



Exit Tab

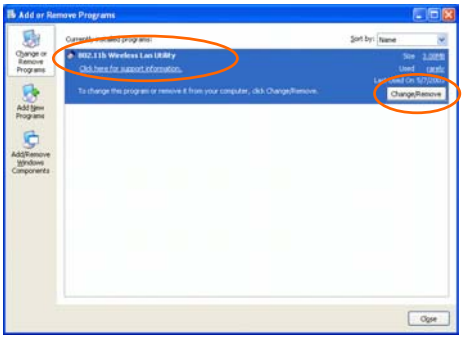
Click on the **Exit** tab to exit the application.

UNINSTALLATION

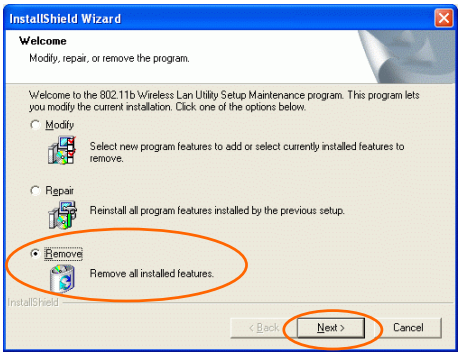
In case you need to uninstall the Utility or Driver, please refer to below sections.

Uninstall the Utility

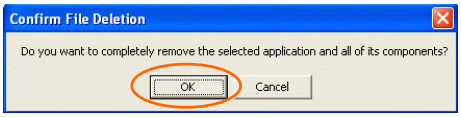
1. Go to **Start → (Settings →) Control Panel → Add or Remove Programs**.
2. Highlight **802.11b Wireless LAN Utility**, Click **Change/Remove**.



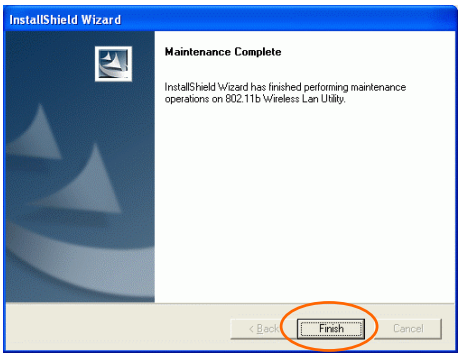
3. Select **Remove** and the click **Next** to continue.



4. Click **OK** to continue.

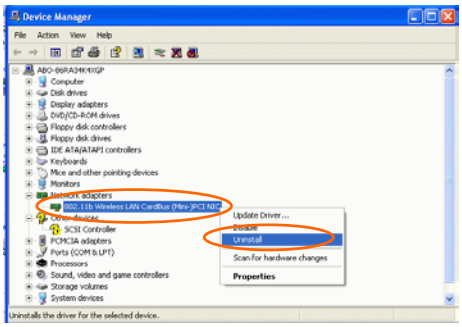


5. Click **Finish** to complete the uninstalled procedure.

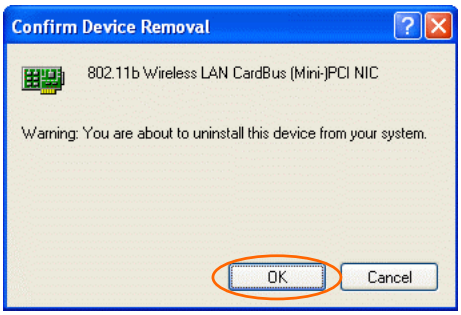


Uninstall the Driver

1. Right-click **My Computer → Properties → Hardware → Device Manager**.
2. Right-click **802.11b Wireless LAN CardBus (Mini-) PCI NIC** then click **Uninstall** (or **Remove**).



3. Click **OK**.



4. The system may prompt you to restart your computer. Click **Yes**

SPECIFICATIONS

Standards	IEEE 802.11b
Host Interface	32-bit CardBus
LED Indicators	Link (Green) /ACT (Orange)
Operating Frequency Range	2.412GHz-2.4835GHz
Number of Channels	USA, Canada: 11 channels Europe: 13 channels Japan: 14 channels
Modulation Technique	Direct Sequence Spread Spectrum (CCK, DQPSK, DBPSK)
Security	0/64/128 bit WEP
Spreading	11 chip Barker sequence
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Output Power (Typical)	15dBm
Power Requirement	Operating Voltage: 3.3 DC ▪ TX consumption: 315 mA (Max) ▪ RX consumption: 165 mA (Max)
Physical Specifications	▪ Weight: 40g ▪ Dimension: 119(L) x 53.94 (W) x 6.88(H) mm
Environment Specifications	▪ Operating Temperature: 0~65℃ ambient temperature ▪ Storage Temperature: -20~75℃ ambient temperature ▪ Operating humidity: 95% maximum (non-condensing) ▪ Storage humidity: 95% maximum (non-condensing)
Supported OS	Windows 98/ME/2000/XP
EMC Certification	▪ FCC Part 15 in US ▪ EN300328 and EN300826 (EN301489-17) in Europe