

# **Wireless LAN IEEE802.11g PCI Card**

**User Manual**

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## **FCC Information**

This device, IEEE 802.11g PCI Wireless LAN Card, 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.

### **Federal Communications Commission (FCC) Statement**

This Equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one 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.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

Tested to comply with FCC standard. FOR HOME OR OFFICE USE.

### **FCC RF Radiation Exposure Statement:**

1. This 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.

The IEEE 802.11g PCI Wireless LAN Card has been tested to the FCC exposure requirements (Specific Absorbtion Rate).

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.

## **Chapter 1 About Wireless LAN PCI Card**

The IEEE 802.11g PCI Wireless LAN Card is a standard PCI Card that fits into any standard PCI slot in a desktop. The IEEE 802.11g PCI Wireless LAN Card is an enhanced high-performance, that supports high-speed wireless networking at home, or at office. The IEEE 802.11g PCI Wireless LAN Card is able to communicate with any 802.11b and 802.11g compliant products.

### **1-1 Features and Benefits**

1. Supports 1, 2, 5.5, 11 Mbps and up to 54Mbps data rate.
2. Working range up to 800 ft. in an open environment.
3. Seamless connectivity to wired Ethernet and PC network LAN's augments existing networks quickly and easily.
4. Greater flexibility to locate or move networked PCs.
5. Wireless connection without the cost of cabling.
6. Easy to install and user friendly, just Plug and Play.
7. Low power consumption.
8. Supports a variety of operating systems (Win98SE/ME/2000/XP)
9. 64-bit and 128-bits WEP encryption capable.
10. Provides Window-based Diagnostic Tools, most notably, Site Survey, Link Quality Test and Access Point Browser.

### **1-2 Applications**

IEEE 802.11g PCI Wireless LAN Card offers a fast, reliable, cost-effective solution for wireless client access to the network in applications like these:

1. Remote access to corporate network information  
E-mail, file transfer and terminal emulation.
2. Difficult-to-wire environments  
Historical or old buildings, asbestos installations, and open area where wiring is difficult to deploy.
3. Frequently changing environments  
Retailers, manufacturers and those who frequently rearrange the workplace and change
4. Temporary LANs for special projects or peak time
  - Trade shows, exhibitions and construction sites where a temporary network will be practical.
  - Retailers, airline and shipping companies need additional

workstations during peak period.

- Auditors requiring workgroups at customer sites.
5. Access to database for mobile workers  
Doctors, nurses, retailers, accessing their database while being mobile in the hospital, retail store or office campus.
  6. SOHO (Small Office and Home Office) users  
SOHO users need easy and quick installation of a small computer network.
  7. High security connection  
The secure wireless network can be installed quickly and provide flexibility.

### **1-3 Product Kit**

IEEE 802.11g PCI Wireless LAN Card comes with the following items. Please go through each item below. If any of listed items appears to be damaged or missing, please contact your local dealer.

IEEE 802.11g PCI Wireless LAN Card x1

802.11g PC Card Software and Documentation CD x1

## Chapter 2 Getting Started

This chapter describes the instructions that guide you through the proper installation of your IEEE 802.11g PCI Wireless LAN Card for the Windows XP/2000/ME/98SE operating systems. The complete installation of the IEEE 802.11g PCI Wireless LAN Card consists of the following steps:

**Step 1:** Insert your IEEE802.11g PCI Wireless LAN Card into your PC.

**Step 2:** Install the corresponding driver and utility.

**Step 3:** Set basic settings.

**Step 4:** Finish Installation.

### 2-1 Before Installation

In addition to the items shipped with the client Card, you will also need the following in order to install the Card:

1. A computer equipped with a PCI 2.2 slot.
2. Windows XP/2000/98SE/ME (with a Windows installation CD-ROM, diskettes for use during installation).
3. Minimum 5 Mbytes free disk space for installing driver and utility program.

### 2-2 Insert the 802.11g Wireless LAN PCI Card

To install the IEEE 802.11g PCI Wireless LAN Card, please do the following:

1. Find an available PCI slot on your computer.
2. Insert the PCI Card into the PCI slot.

## Chapter 3 Install Driver for Windows

This section describes the installation of the IEEE 802.11g PCI Wireless LAN Card driver for the Windows 98SE/ME/2000 and Windows XP operating systems. The installation procedures for Windows XP refer to 3-1 Set up IEEE802.11g PCI Wireless LAN Card for Windows XP; for Windows 2000 please see 3-2 Set up IEEE802.11g PCI Wireless LAN Card for Windows 2000; for Windows ME refer to 3-3 Set up IEEE802.11g PCI Wireless LAN Card for Windows ME; for Windows 98SE refer to 3-3 Set up IEEE802.11g PCI Wireless LAN Card for Windows 98SE.

**Note:** Before you start the installation, you are advised to keep the Windows CD-ROM in case you might need certain system files.

### 3-1 Set up IEEE802.11g PCI Wireless LAN Card for Windows XP

**Step 1:** After inserting the IEEE 802.11g PCI Wireless LAN Card into the PCI slot on your PC and turn PC on, the Windows will auto-detect the PCI Wireless LAN Card and a “**Found New Hardware Wizard**” window will show up.

Insert the Product CD-ROM into the appropriate drive and select “**Install the software automatically (Recommended)**”.

Then press **Next** button to install the driver.





**Step 2:** The windows will appear the message about the IEEE802.11g PCI Wireless LAN Card has not passed Windows Logo testing to verify its compatibility with Windows XP.  
Click on **Continue Anyway** button to continue installing.



The windows will find “IEEE 802.11g PCI Wireless LAN Card” and starting copy corresponding files into the system. Click on Next to continue.

**Step 3:** Click Finish to complete the installation.



**Step 4:** Right click “My Computer” from Start, select Properties, go to the Hardware tab and click the Device Manager button to see if any exclamation mark appears next to the Network Adapters/IEEE 802.11g PCI Wireless LAN Card. If no, your IEEE 802.11g PCI Wireless LAN Card is working well.

### 3-2 Set up IEEE802.11g PCI Wireless LAN Card for Windows 2000

**Step 1:** After inserting the IEEE 802.11g PCI Wireless LAN Card into the PCI slot on your PC, Windows will auto-detect the IEEE 802.11g PCI Wireless LAN Card.

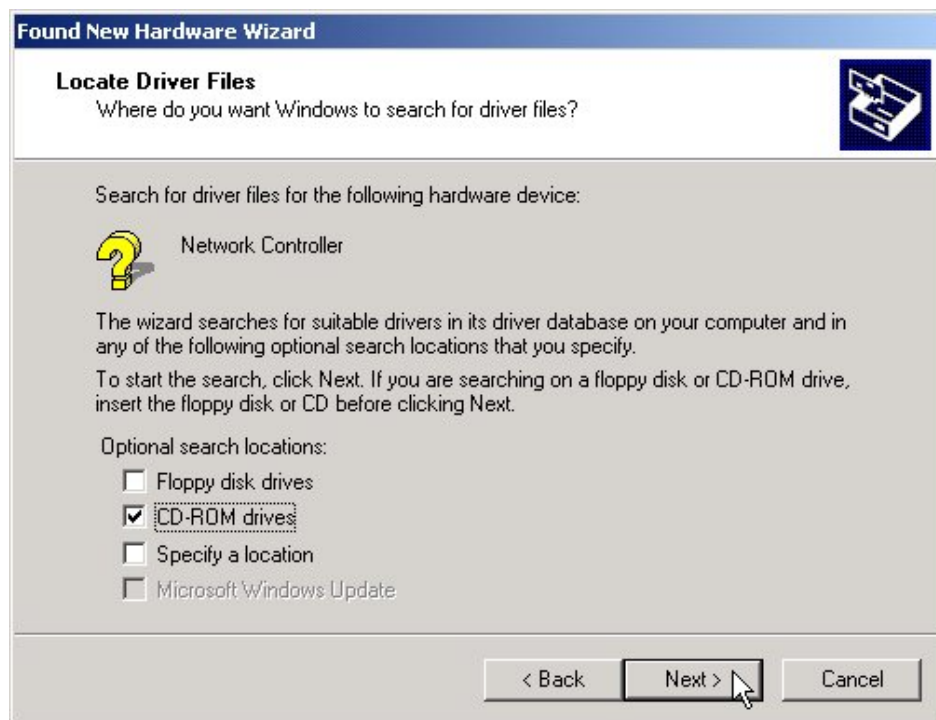
A “Found New Hardware Wizard” window shows up. Click on Next to proceed.



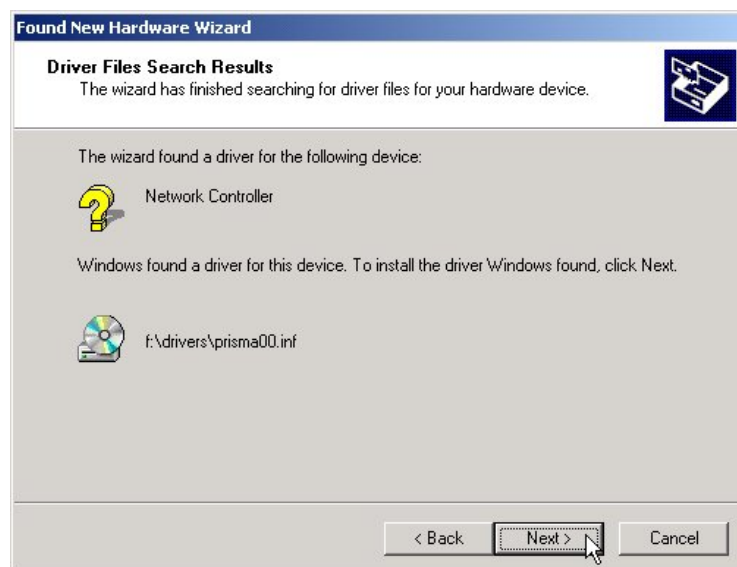
**Step 2:** Select “Search for a suitable driver for my device (recommended)”.



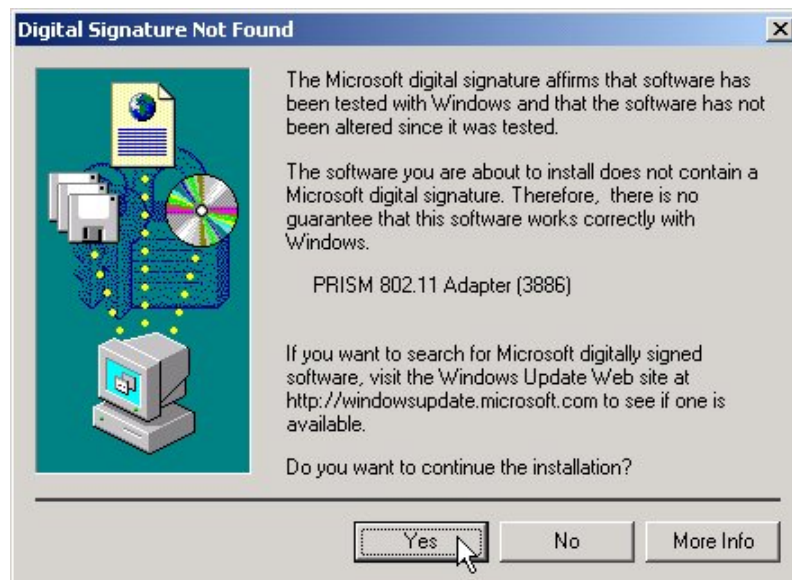
**Step 3:** Insert the Product CD-ROM into the appropriate drive. Click on Next to install the driver.



**Step 4:** The windows will find "IEEE 802.11g PCI Wireless LAN Card". Click on Next to continue.



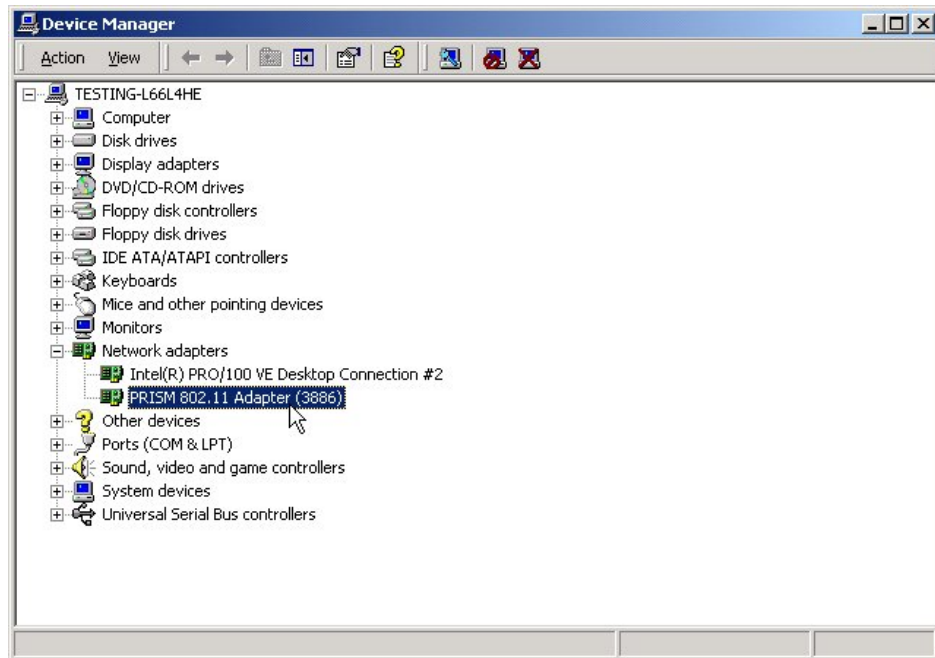
**Step 5:** The windows will appear the message about the Microsoft digital signature affirms that software has not been tested with Windows and that the software has not been altered since it was tested. Click on Yes button to continue installing.



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



**Step 7:** Open Control Panel/System/Device Manager, and check Network Adapters to see if any exclamation mark appears. If no, your IEEE 802.11g PCI Wireless LAN Card is working well.



### 3-3 Set up IEEE802.11g PCI Wireless LAN Card for Windows ME

**Step 1:** After inserting the IEEE 802.11g PCI Wireless LAN Card into the PCI slot on your PC, Windows will auto-detect new hardware and will display an “Add New Hardware Wizard” window. Insert the Product CD-ROM into the appropriate drive. Select “Automatic search for a better driver (Recommended)” and click on **Next** to continue.

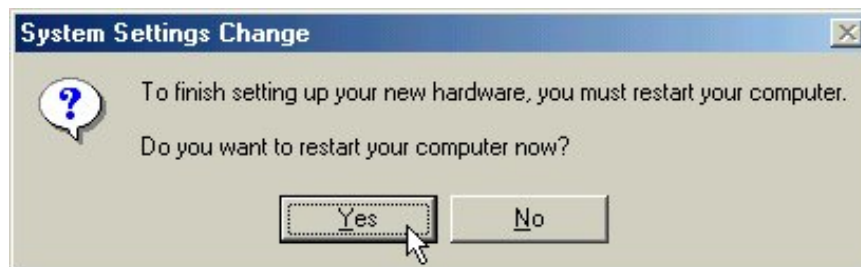


**Step 2:** Once the [Please insert the disk labeled ‘Windows ME CD-ROM’, and then click OK] window appears, insert and enter the path corresponding to the appropriate drives and click OK. Usually these files can be found at C:\Windows or C:\Windows\system.

**Step 3:** Click Finish to complete the software installation.



**Step 4:** Click **Yes** button to restart the computer.



**Step 5:** Open Control Panel/System/Device Manager, and check Network Adapters to see if any exclamation mark appears next to the IEEE 802.11g PCI Wireless LAN Card. If no, your IEEE 802.11g PCI Wireless LAN Card is working well.

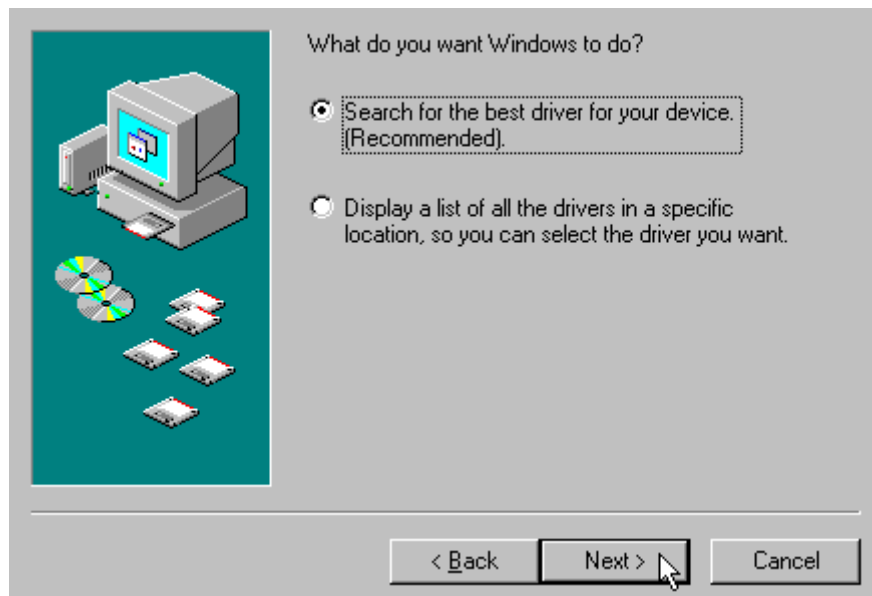


### 3-4 Set up IEEE802.11g PCI Wireless LAN Card for Windows 98SE

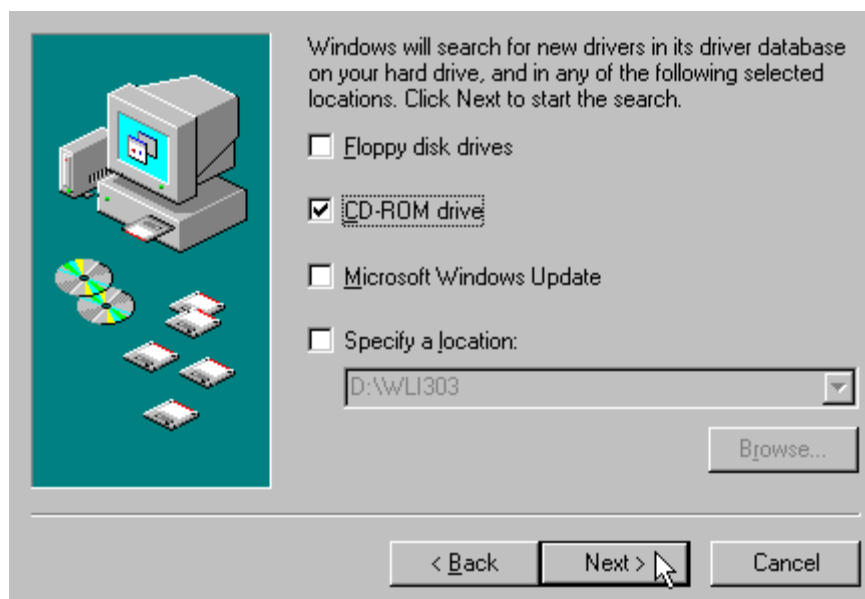
**Step 1:** After inserting the IEEE 802.11g PCI Wireless LAN Card into the PCI slot on your PC, Windows will auto-detect new hardware and will display an “Add New Hardware Wizard” window. Click on **Next** to continue.



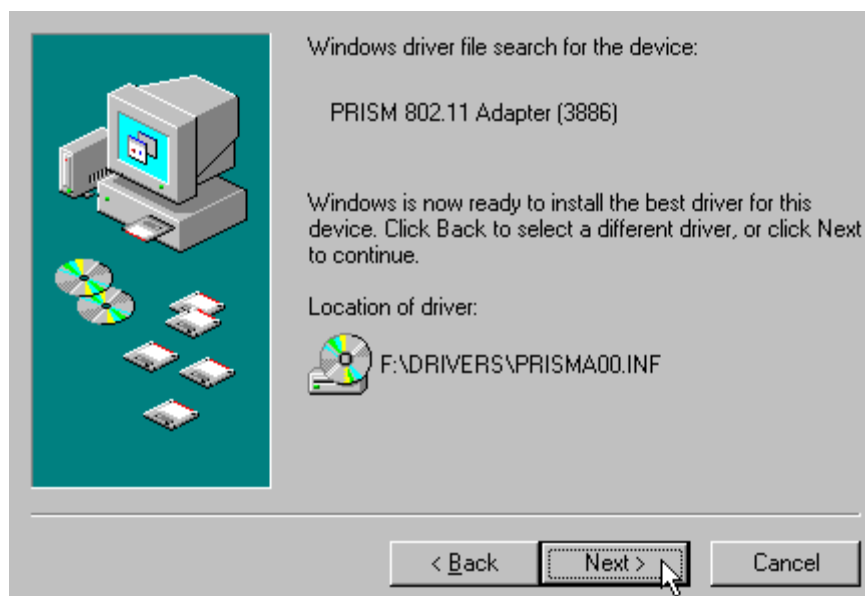
**Step 2:** Select “Search for the best driver for your device (Recommended)” and click on Next.



**Step 3:** Insert the Product CD-ROM into the appropriate drive. Select **CD-ROM drive**, and click on **Next** to install the driver.



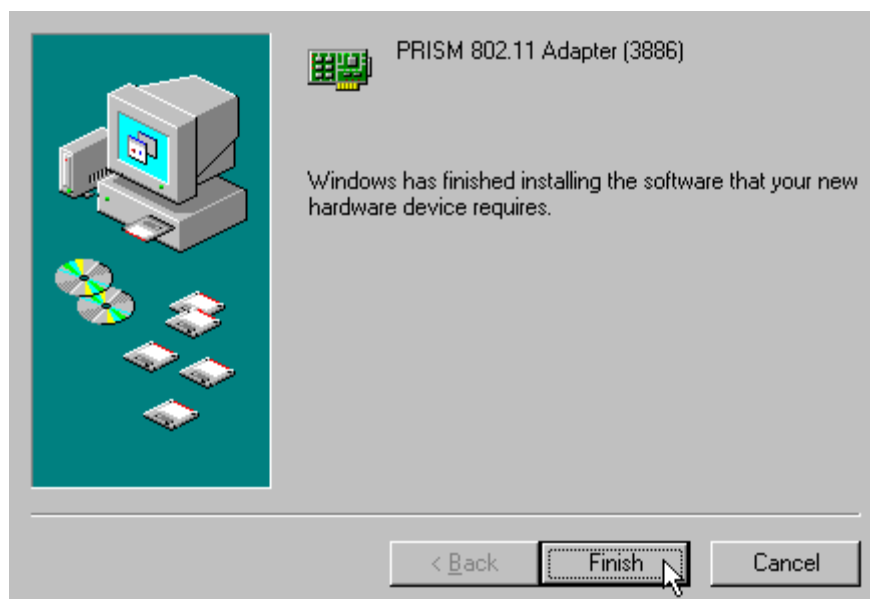
**Step 4:** The Windows will find “**PRISM 802.11 Adaptor (3886)**”. Click on **Next** to continue.



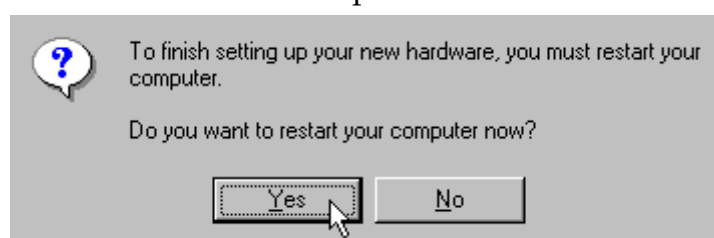
**Step 5:** Once the [Please insert the disk labeled 'Windows 98 Second Edition CD-ROM', and then click OK] window appears, insert and enter the path corresponding to the appropriate drives and click OK. Usually these files can be found at C:\Windows or C:\Windows\system.



**Step 6:** Click Finish to complete the software installation.



**Step 7:** Click on Yes to restart the computer.



**Step 8:** Open Control Panel/System/Device Manager, and check Network Adapters to see if any exclamation mark appears next to the IEEE 802.11g PCI Wireless LAN Card. If no, your IEEE 802.11g PCI Wireless LAN Card is working well.

## **Limited Warranty**

This Warranty constitutes the sole and exclusive remedy of any buyer or reseller's equipment and the sole and exclusive liability of the supplier in connection with the products and is in lieu of all other warranties, express, implied or statutory, including, but not limited to, any implied warranty of merchantability of fitness for a particular use and all other obligations or liabilities of the supplier.

In no even will the supplier or any other party or person be liable to your or anyone else for any damages, including lost profits, lost savings or other incidental or consequential damages, or inability to use the software provided on the software media even if the supplier or the other party person has been advised of the possibility of such damages.

The following are special terms applicable to your hardware warranty as well as services you may use during part of the warranty period. Your formal Warranty Statement, including the warranty applicable to our Wireless LAN products, appears in the Quick Installation Guide that accompanies your products.

Duration of Hardware Warranty: One Year

Replacement, Repair or Refund Procedure for Hardware:

If your unit needs a repair or replacement, return it to your dealer/distributor in its original packaging. When returning a defective product for Warranty, always include the following documents:

The Warranty Repair Card

A copy of the invoice/proof of purchase, and the RMA Report Form (To receive a Return Materials Authorization form (RMA), please contact the party from whom you purchased the product).

# **Glossary**

## **IEEE 802.11 Standard**

The IEEE 802.11 Wireless LAN standards subcommittee, which is formulating a standard for the industry.

## **Access Point**

An internetworking device that seamlessly connects wired and wireless networks together.

## **Ad Hoc**

An Ad Hoc wireless LAN is a group of computers, each with a WLAN adapter, connected as an independent wireless LAN. Ad Hoc wireless LAN is applicable at a departmental scale for a branch or SOHO operation.

## **BSSID**

A specific Ad Hoc LAN is called a Basic Service Set (BSS). Computers in a BSS must be configured with the same BSSID.

## **DHCP**

Dynamic Host Configuration Protocol - a method in which IP addresses are assigned by server dynamically to clients on the network. DHCP is used for Dynamic IP Addressing and requires a dedicated DHCP server on the network.

## **Direct Sequence Spread Spectrum**

This is the method the wireless adapters use to transmit data over the frequency spectrum. The other method is frequency hopping. Direct sequence spreads the data over one frequency range (channel) while frequency hopping jumps from one narrow frequency band to another many times per second.

## **ESSID**

An Infrastructure configuration could also support roaming capability for mobile workers. More than one BSS can be configured as an Extended Service Set (ESS). Users within an ESS could roam freely between BSSs while served as a continuous connection to the network wireless stations and Access Points

within an ESS must be configured with the same ESSID and the same radio channel.

### **Ethernet**

Ethernet is a 10/100Mbps network that runs over dedicated home/office wiring. Users must be wired to the network at all times to gain access.

### **Gateway**

A gateway is a hardware and software device that connects two dissimilar systems, such as a LAN and a mainframe. In Internet terminology, a gateway is another name for a router. Generally a gateway is used as a funnel for all traffic to the Internet.

### **IEEE**

Institute of Electrical and Electronics Engineers

### **Infrastructure**

An integrated wireless and wired LAN is called an Infrastructure configuration. Infrastructure is applicable to enterprise scale for wireless access to central database, or wireless application for mobile workers.

### **ISM Band**

The FCC and their counterparts outside of the U.S. have set aside bandwidth for unlicensed use in the so-called ISM (Industrial, Scientific and Medical) band. Spectrum in the vicinity of 2.4 GHz, in particular, is being made available worldwide. This presents a truly revolutionary opportunity to place convenient high-speed wireless capabilities in the hands of users around the globe.

### **Local Area Network (LAN)**

A LAN is a group of computers, each equipped with the appropriate network adapter card connected by cable/air that share applications, data, and peripherals. All connections are made via cable or wireless media, but a LAN does not use telephone services. It typically spans a single building or campus.

### **Network**

A network is a system of computers that is connected. Data, files, and

messages can be transmitted over this network. Networks may be local or wide area networks.

### **Protocol**

A protocol is a standardized set of rules that specify how a conversation is to take place, including the format, timing, sequencing and/ or error checking.

### **SSID**

A Network ID unique to a network. Only clients and Access Points that share the same SSID are able to communicate with each other. This string is case-sensitive.

### **Simple Network Management Protocol (SNMP)**

Simple Network Management Protocol is the network management protocol of TCP/IP. In SNMP, agents-which can be hardware as well as software-monitor the activity in the various devices on the network and report to the network console workstation. Control information about each device is maintained in a structure known as a management information block.

### **Static IP Addressing**

A method of assigned IP addresses to clients on the network. In networks with Static IP address, the network administrator manually assigns an IP address to each computer. Once a Static IP address is assigned, a computer uses the same IP address every time it reboots and logs on to the network, unless it is manually changed.

### **Transmission Control Protocol / Internet Protocol (TCP/IP)**

TCP/IP is the protocol suite developed by the Advanced Research Projects Agency (ARPA). It is widely used in corporate Internet works, because of its superior design for WANs. TCP governs how packet is sequenced for transmission the network. The term "TCP/IP" is often used generically to refer to the entire suite of related protocols.

### **Transmit / Receive**

The wireless throughput in Bytes per second averaged over two seconds.

### **Wide Area Network (WAN)**

A WAN consists of multiple LANs that are tied together via telephone services and / or fiber optic cabling. WANs may span a city, a state, a country, or even the world.

### **Wired Equivalent Privacy (WEP)**

Now widely recognized as flawed, WEP was a data encryption method used to protect the transmission between 802.11 wireless clients and APs. However, it used the same key among all communicating devices. WEP's problems are well-known, including an insufficient key length and no automated method for distributing the keys. WEP can be easily cracked in a couple of hours with off-the-shelf tools.

### **Wi-Fi Protected Access (WPA)**

The Wi-Fi Alliance put together WPA as a data encryption method for 802.11 wireless LANs. WPA is an industry-supported, pre-standard version of 802.11i utilizing the Temporal Key Integrity Protocol (TKIP), which fixes the problems of WEP, including using dynamic keys.

### **Temporal Key Integrity Protocol (TKIP)**

The Temporal Key Integrity Protocol, pronounced tee-kip, is part of the IEEE 802.11i encryption standard for wireless LANs. TKIP is the next generation of WEP, the Wired Equivalency Protocol, which is used to secure 802.11 wireless LANs. TKIP provides per-packet key mixing, a message integrity check and a re-keying mechanism, thus fixing the flaws of WEP.

### **Wi-Fi Alliance**

The Wi-Fi Alliance is a nonprofit international association formed in 1999 to certify interoperability of wireless Local Area Network products based on IEEE 802.11 specification. The goal of the Wi-Fi Alliance's members is to enhance the user experience through product interoperability. The organization is formerly known as WECA.