Instant Wireless™ Series

Network PC Card and PCI Adapter

Use this User Guide to install the following Linksys product(s):

WPC11 Network PC Card
WDT11 PCI Adapter

User Guide

LINKSYS®

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LIMITED WARRANTY

Linksys guarantees that every Instant Wireless Network PC Card and PCI Adapter is free from physical defects in material and workmanship under normal use for one year from the date of purchase. If these products prove defective during this warranty period, call Linksys Customer Support in order to obtain a Return Authorization Number. BE SURE TO HAVE YOUR PROOF OF PURCHASE AND A BARCODE FROM THE PRODUCT'S PACKAGING ON HAND WHEN CALLING. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE. When returning a product, mark the Return Authorization Number clearly on the outside of the package and include your original proof of purchase.All customers located outside of the United States of America and Canada shall be held responsible for shipping and handling charges.

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FCC STATEMENT

These products have been tested and comply with the specifications 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 according to 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 is found 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 or device
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

Table of Contents

Introduction

The Instant Wireless™ Network PC Card and PCI Adapter

Put the "mobile" back into mobile computing with the Linksys Instant Wireless Network PC Card and PCI Adapter! Whether you're at your desk or in the boardroom, the Linksys Instant Wireless Network PC Card and PCI Adapter allow you to share printers, files, and more anywhere within your wireless LAN infrastructure, increasing your productivity and keeping you "in touch."

The Instant Wireless Network PC Card and PCI Adapter give you the freedom to work your way, from where you want, letting you take full advantage of your notebook PC's portability, while providing you with access to all your network resources. A high-powered built-in diversity antenna means that you're covered — at a distance of up to 500 meters. Compatible with Windows 95, 98, 2000, NT v.4 and Millennium, the Instant Wireless Network PC Card and PCI Adapter from Linksys are true necessities for all your wireless PC applications.

Features

- 11 Mbps High-Speed Transfer Rate
- Interoperable with IEEE 802.11b (DSSS) 2.4GHz-compliant Equipment
- Plug-and-Play Operation Provides Easy Setup
- Utilizes Intersil HFA3841/HFA3842 chip sets
- Advanced Power Management Features Conserve Valuable Notebook PC Battery Life
- Direct Sequence Spread Spectrum Compatible to Prevent Lost Connections
- Rugged Metal Design with Integrated Antenna
- Compatible with Windows 95, 98, Millennium, NT v.4 and 2000
- Works with All Standard Internet Applications
- 40-Bit WEP Encryption Protocol
- Free Technical Support - 24 Hours a Day, 7 Days a Week
- Full 1-Year Warranty

Package Contents for the Network PC Card

- One Instant Wireless™ Network PC Card
- Two Driver Disks
- User Guide and Registration Card

System Requirements for the Network PC Card

- A 16-bit PCMCIA Type II or Type III slot
- PCMCIA revisions 2.10 compliant card and socket services
- Windows 95, 98, Millennium, NT v.4 or 2000
- 500 Kbytes of free disk space for utility and driver installation

Package Contents for the PCI Adapter

- One Instant Wireless™ PCI Adapter
- User Guide and Registration Card

System Requirements for the PCI Adapter

- Pentium 90 or Faster
- Minimum 16MB of RAM
- PCI Local Bus 2.1 compliant

Planning Your Wireless Network

Network Topology

A wireless LAN is a group of computers, each equipped with one Instant Wireless Network PC Card, connected as an independent wireless LAN. Computers in a wireless LAN must be configured to share the same radio channel.

Wireless LAN configurations are appropriate for branch level departments or SOHO operations.

The Instant Wireless Network PC Card provides access to a wired LAN for wireless workstations. An integrated wireless and wired LAN is called an Infrastructure configuration. A group of Instant Wireless Network PC Card users and an Access Point compose a Basic Service Set (BSS). Each Instant Wireless Network PC Card PC in a BSS can talk to any computer in a wired LAN infrastructure via the Access Point.

An infrastructure configuration extends the accessibility of an Instant Wireless Network PC Card PC to a wired LAN, and doubles the effective wireless transmission range for two Instant Wireless Network PC Card PCs. Since the Access Point is able to forward data within its BSS, the effective transmission range in an infrastructure LAN is doubled.

The use of a unique ID in a BSS is essential. All Instant Wireless Network PC Card PCs configured without roaming options in an independent BSS must be configured with a BSS ID used in the BSS.

The Wireless LAN Infrastructure configuration is appropriate for enterprise-scale wireless access to a central database, or as a wireless application for mobile users.

Roaming

Infrastructure mode also supports roaming capabilities for mobile users. More than one BSS can be configured as an Extended Service Set (ESS). This continuous network allows users to roam freely within an ESS. All Instant Wireless Network PC Card PCs within one ESS must be configured with the same ESS ID and use the same radio channel.

Before enabling an ESS with roaming capability, selecting a feasible radio channel and optimum Access Point position is recommended. Proper Access Point positioning combined with a clear radio signal will greatly enhance performance.

Connecting the PCI Adapter to Your Desktop PC

Installing the PCI Adapter

1. **Shut down your desktop PC.**

2. **With the PC Card's 68-pin connector facing the PCI Adapter's slot** and the "Network PC Card" label facing up, slide the PC Card completely into the PCI Adapter.

3. **Open your PC case** and locate an available PCI slot in the motherboard.

4. **Slide the PCI Adapter into the PCI slot**. Make sure that all of its pins are touching the slot's contacts. You may have to apply a bit of pressure to slide the card all the way in. After the card is firmly in place, secure its fastening tab to your PC's chassis with a mounting screw. Then, close your PC.

5. **Power on your desktop PC**

The Hardware Installation is complete.

WARNING:

For the PCI Adapter to be installed correctly, you **must** complete the installation with the Network PC Card in place.

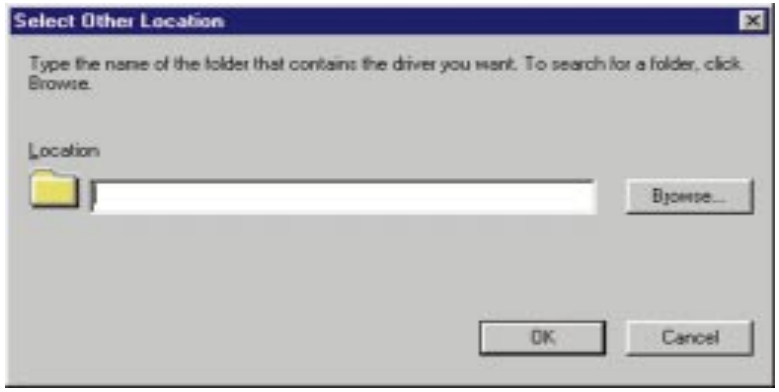
This card is **not** hot-swappable. Whenever you are ready to use the Network PC Card in the PCI Adapter, you **must** boot up your PC with the Network PC Card in place.

Installing the PCI Drivers for Windows 95

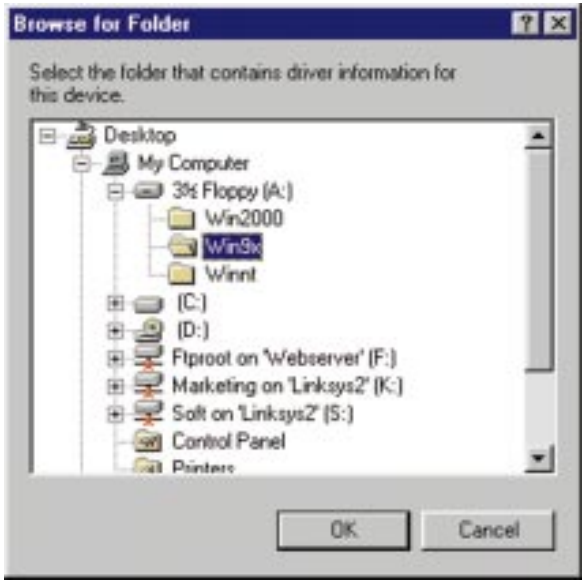
1. Windows 95 will automatically identify the PCI Adapter, once you have booted up your PC, and prompt you to install the necessary driver. Insert **Driver Disk 1** into your floppy drive and click the **Next** button to proceed.

2. Windows will notify you that it is unable to locate the driver and will ask you to specify where the driver is located. Click the **Other Locations** button to select the driver's location.

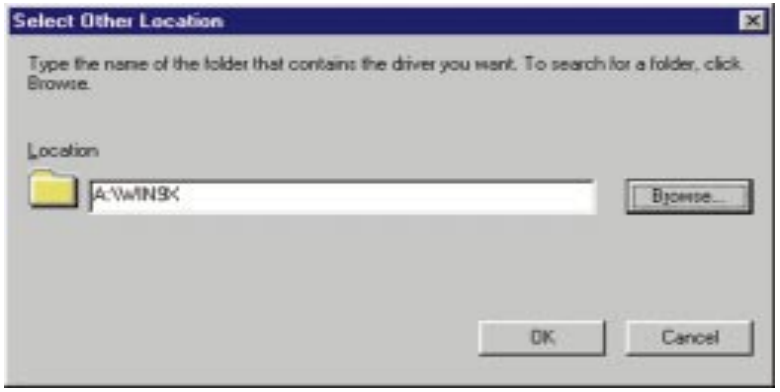
3. This will bring you to the **Select Other Location** screen. Click the **Browse** button to select the driver's location.



4. At this point, Windows will ask you to browse for the driver's folder. Simply select the folder in which the driver is located (as shown below) and click the **OK** button.



5. You will return to the **Select Other Location** screen. The folder that you selected for the driver will now be shown under **Location**. Verify that this is correct and then click the **OK** button.



6. Windows will now bring you to the Configuration screen as shown below. Turn to the **Configuring the Network PC Card for Windows 95** section of this User Guide to continue with the installation process.

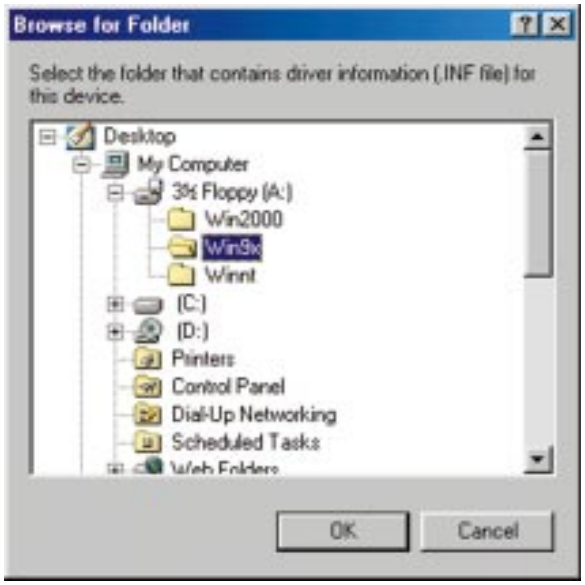
Installing the PCI Drivers for Windows 98

1. Windows 98 will automatically identify the PCI Adapter, once you boot up your PC, and prompt you to install the necessary driver. Insert **Driver Disk 1** into your floppy drive and click the **Next** button to proceed.

2. Make sure **Search for the best driver for your device** is selected and click the **Next** button.

3. Make sure that **Specify a location** is selected and click the **Browse** button.

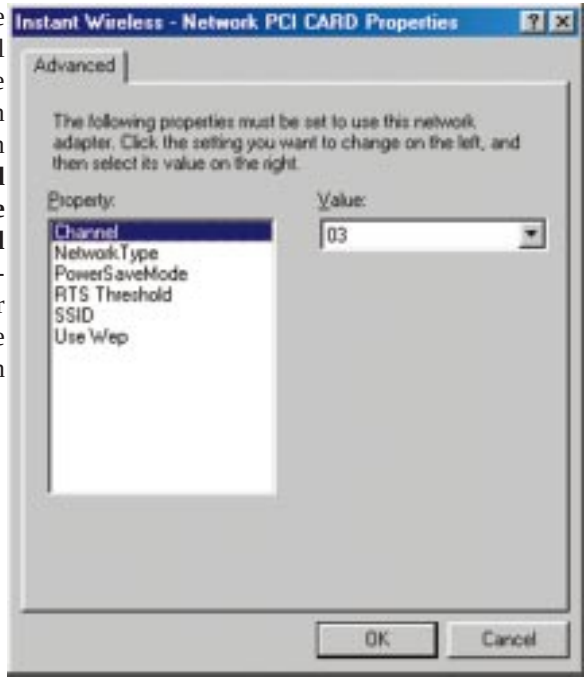
4. At this point, Windows will ask you to browse for the folder. Simply select the folder in which the driver is located (as shown below) and click the **OK** button.



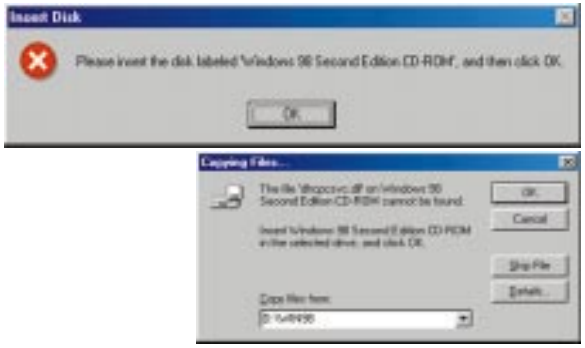
5. At this point, you will be returned to the **Add New Hardware Wizard** screen. Verify that the correct folder is selected to install the driver and click the **Next** button.

6. Windows is now ready to install the driver. Click the **Next** button to continue.

7. After copying the files, Windows will bring you to the Configuration screen as shown below. Turn to the **Installing and Configuring the Network PC Card for Windows 98** section of this User Guide to continue with the installation process.

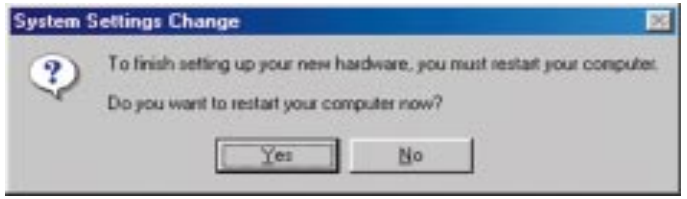


8. After clicking **OK**, the driver files will be copied. Once this is completed, Windows will request that you insert the **Windows 98 CD**. Click the OK button, insert your Windows CD and select **D:\win98** from the drop down list (where "D" represents your CD-Rom drive. Then, click the **OK** button to continue.



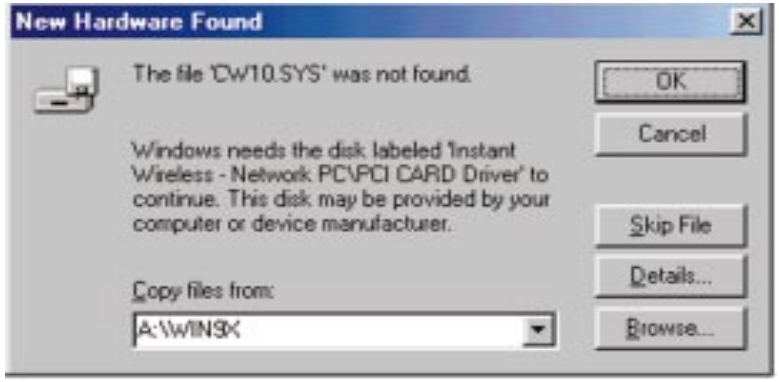
9. After Windows 98 copies files from your CD, you will be notified that installation has been completed. Click the **Finish** button to continue.

10. Windows will now ask you to restart your computer. Click the **Yes** button to restart. Once your computer has restarted, you can continue on to Protocol Installation, as described in the **Installing Network Protocols for Windows 98** section of this User Guide to continue with the installation process.



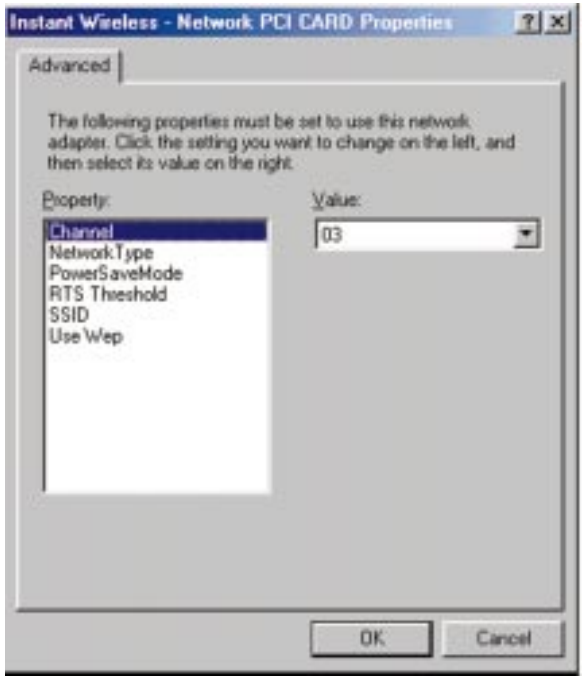
Installing the PCI Drivers for Windows Millennium

1. Windows Millennium will automatically identify the Network PC Card, once it is connected to the PC, and you will be prompted at the New Hardware Found screen to install the necessary driver. Make sure **Driver Disk 1** is in your floppy-disk drive, type "A:\WIN9X" into the field under **Copy files from**, and click the **OK** button to proceed

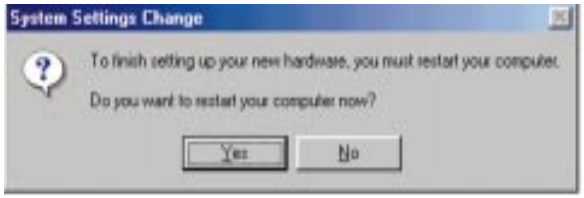


2. On the Network screen, select **Instant Wireless - Network PCI Card** from the Configuration screen. Then, click the **Add** button to continue.

3. At this point, Windows will install the appropriate drivers and bring you to the Configuration screen as shown below. Turn to the **Installing and Configuring the Driver Software for Windows Millennium** section of this User Guide to continue with the installation process.



4. After configuring the drivers, the **System Setting Change** screen will show you that installation is complete. Click the **OK** button to finish.



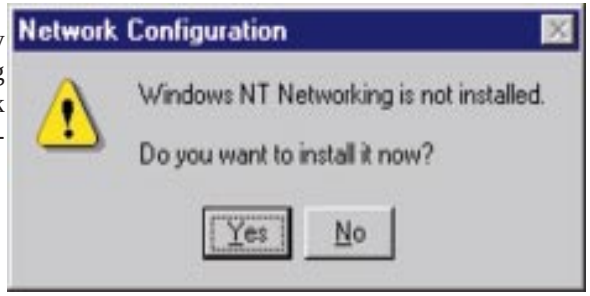
Installing the PCI Drivers for Windows NT

Windows NT will setup the Network PC Card differently depending upon whether you've previously installed network hardware or not. Please follow the instructions appropriate for you.

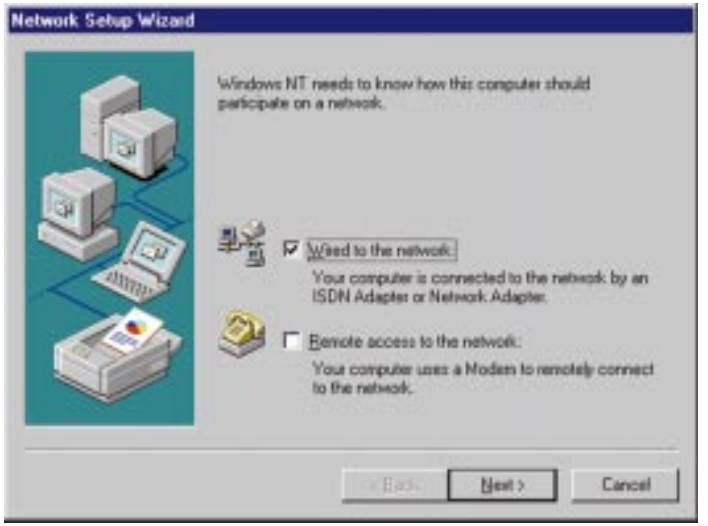
If You Have Never Installed Network Hardware:

1. Windows NT is not a Plug-and-Play Operating System and will not automatically identify the PCI Adapter. To begin setup, insert **Driver Disk 1** into your floppy drive and then select **Settings** from the **Start** Menu and bring up the **Control Panel**. Then, double-click on the **Network** icon.

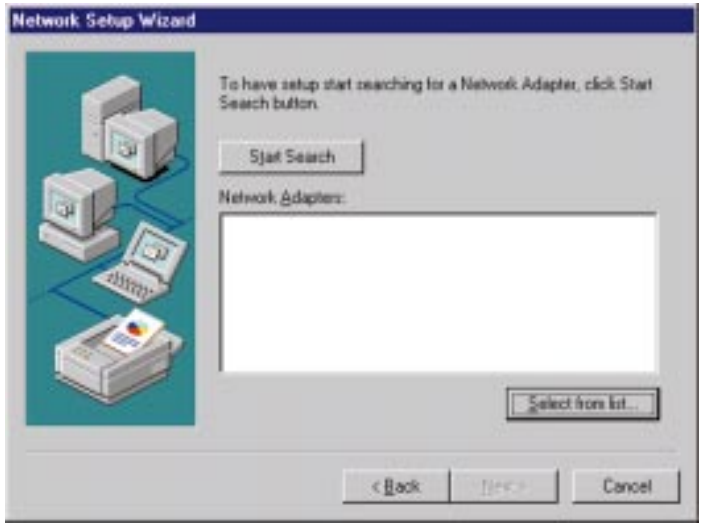
2. Windows will notify you that Networking is not installed. Click the **Yes** button to continue.



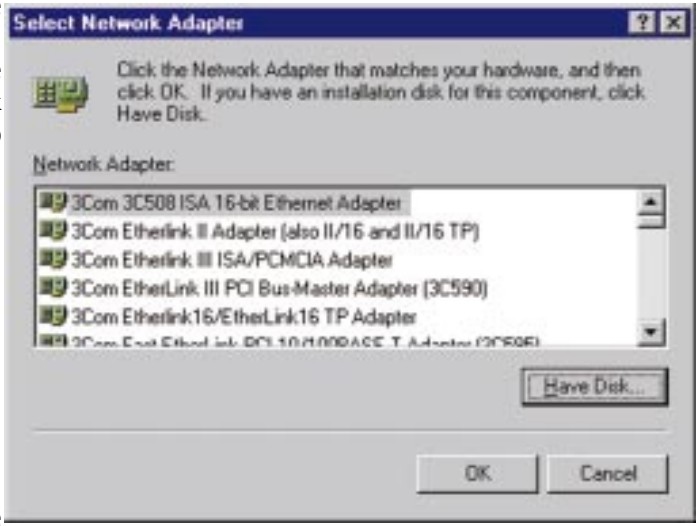
3. Installation will begin and you will reach the screen shown below. You will want to select the box that reads **Wired to the network** since you are adding network hardware. Then, click the **Next** button to continue.



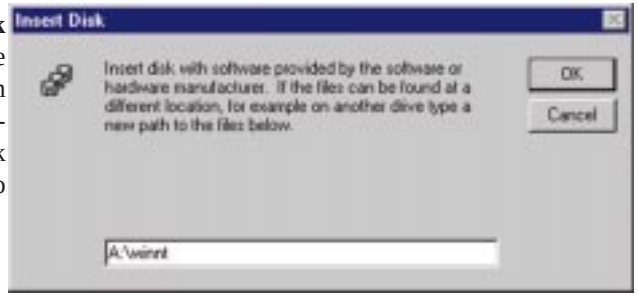
4. The next screen will not show any Network Adapters installed on your system, which signifies that no network hardware has been previously installed. You will want to click the **Select from list** button to continue.



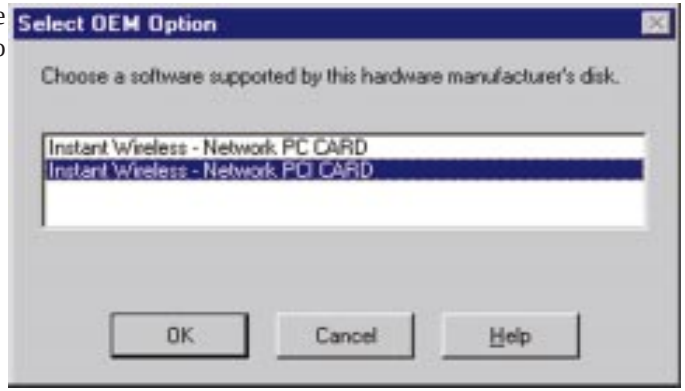
5. A list of adapters will appear on the next screen. You will not want to select one of these, however, as your installation disk (**Driver Disk 1**) has all of the appropriate drivers. Click the **Have Disk** button to continue.



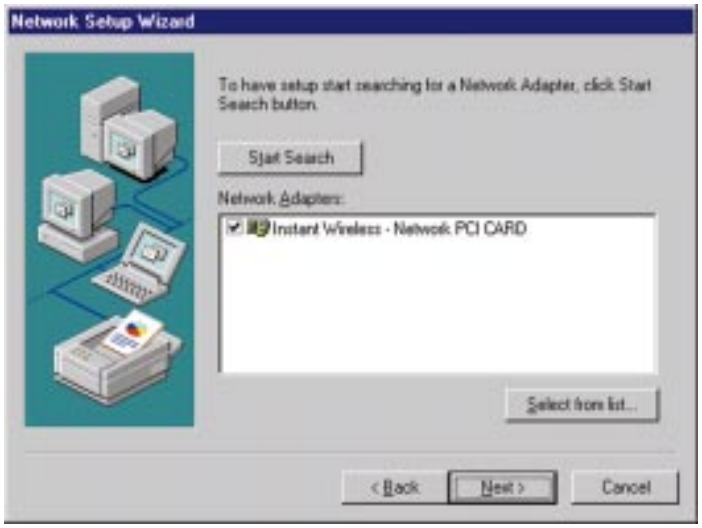
6. On the **Insert Disk** screen, type "**A:\WINNT**" in the field provided. Then, click the **OK** button to continue.



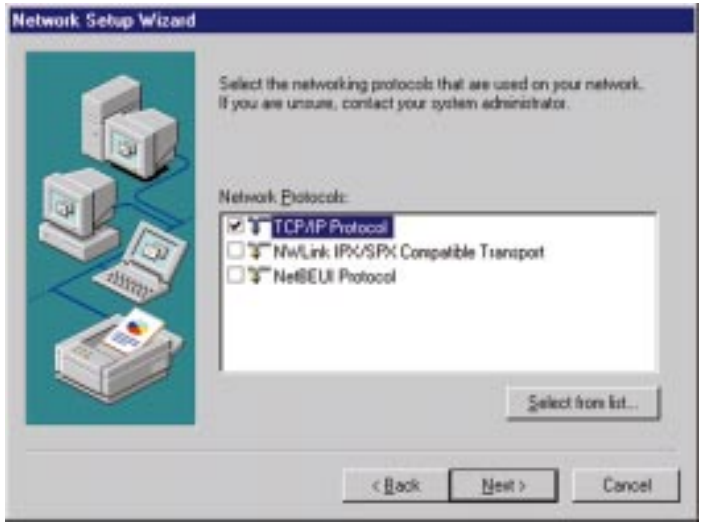
7. The **Select OEM Option** screen will show two options from which to choose. You will want to highlight **Instant Wireless - Network PCI Card** and click the **OK** button to continue.



8. On the next screen, make sure there is a check mark in the box beside **Instant Wireless - Network PCI Card**, then click the **Next** button to continue.

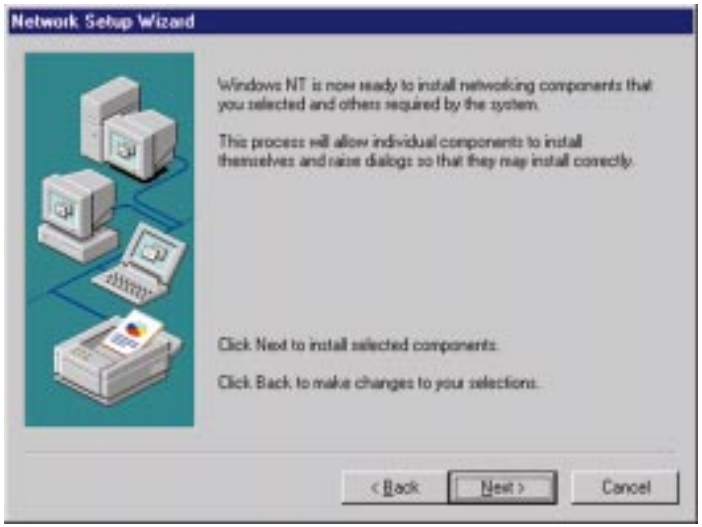


9. The next screen will show a list of network protocols. While the **TCP/IP Protocol** is already selected by default, you should check with your network administrator before installing any network protocols. Click the **Next** button to continue.



10. On the screen showing **Network Services**, the selections are automatically made. Simply, click the **Next** button to continue.

11. At this point, Windows NT will be ready to start installing Networking Components. Click the **Back** button if you believe you have erred in your selections or click the **Next** button to continue.

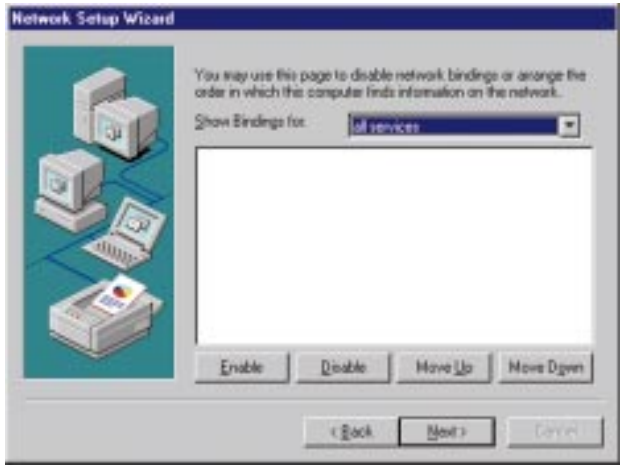


12. Windows NT may request further files at this point. Type "**A:\WINNT**" in the field provided and click the **Continue** button. If files are still requested, insert your **Windows NT CD** into your CD-Rom drive and type "**D:\i386**" (where "D" represents your CD-Rom drive). Then, click the **Continue** button.

13. You will now reach the screen shown below. This is called the **Resources & Properties** screen. To configure these settings, turn to the **Setting Resource & Properties Fields** section of this User Guide.

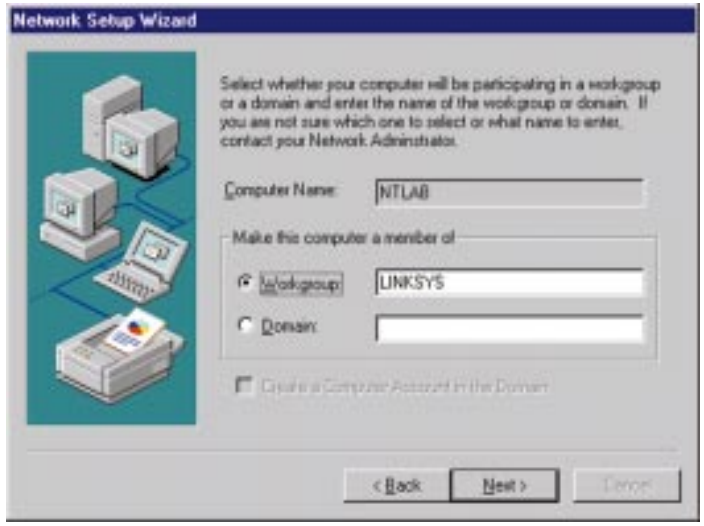
14. After setting the **Resource and Properties** fields, Windows NT will begin installing the network components you previously selected. You may be asked if you would like to configure the protocols with a DHCP server on your network. If this screen comes up, check with your Network Administrator before clicking the **Yes** or **No** button to continue.

15. Now, the network components will finish installing. You may then see a screen similar to that shown here asking you if you'd like to disable any network bindings. Be sure to check with your network administrator before making ANY changes and then click the **Next** button to continue.

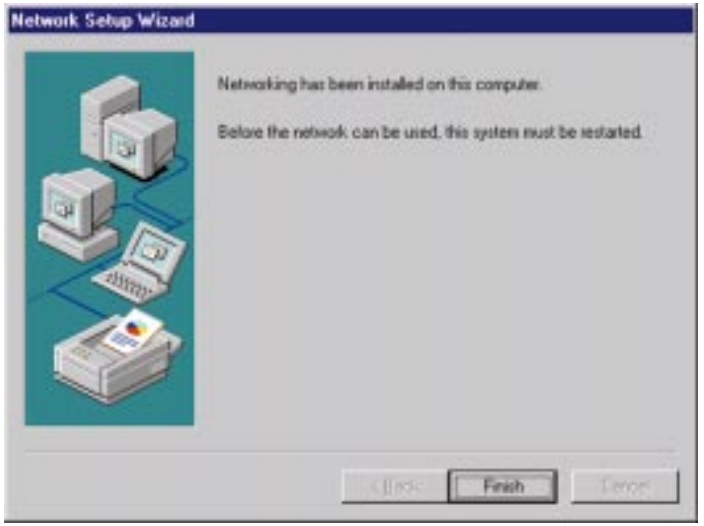


16. At this point, Windows NT will let you know that it is ready to start the network. If you'd like to stop the procedure, click the **Back** button. To continue, click the **Next** button.

17. At this point, Windows NT will let you know that it is ready to start the network. Verify that the correct information is presented on this screen. If you'd like to stop the procedure, click the **Back** button. To continue, click the **Next** button.



18. Windows NT has now completed installing the network. Click the **Finish** button to continue and then restart your computer.

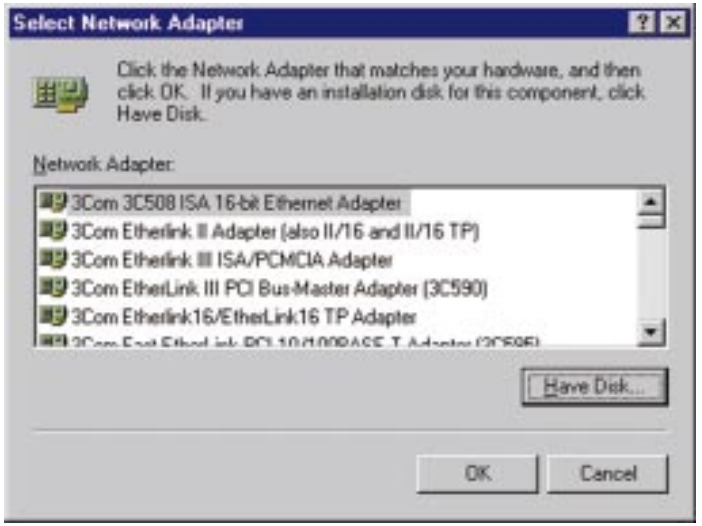


If You Have Installed Network Hardware Before:

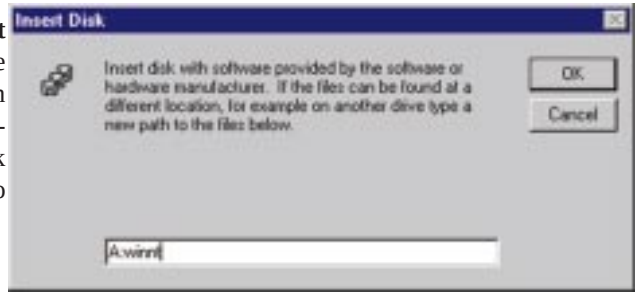
1. Windows NT is not a Plug-and-Play Operating System and will not automatically identify the PCI Adapter. To begin setup, insert **Driver Disk 1** into your floppy drive and then select **Settings** from the **Start** Menu and bring up the **Control Panel**. Then, double-click on the **Network** icon.

2. To add the Network PC Card, you will want to click the **Adapters** tab and then click the **Add** button to continue.

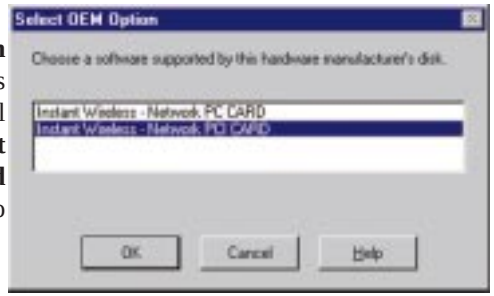
3. A list of adapters will appear on the next screen. You will not want to select one of these, however, as your installation disk (**Driver Disk 1**) has all of the appropriate drivers. Click the **Have Disk** button to continue.



4. On the **Insert Disk** screen, type "**A:\WINNT**" in the field provided. Then, click the **OK** button to continue.



5. The **Select OEM Option** screen will show two options from which to choose. You will want to highlight **Instant Wireless - Network PCI Card** and click the **OK** button to continue.



6. You will now reach the screen shown below. This is called the **Resources & Properties** screen. To configure these settings, turn to the **Setting Resource & Properties Fields** section of this User Guide.

7. The PCI Adapter has now been installed. You will see it added onto this screen. Click the **Close** button to continue and then restart your computer.

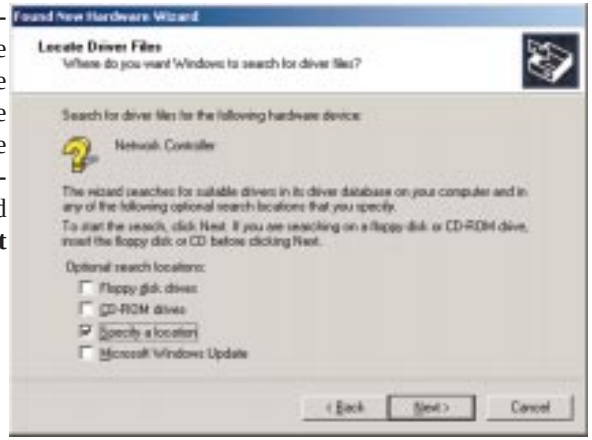
NOTE: After you have installed the PCI Adapter, reapply the Windows NT service pack.

Installing the PCI Drivers for Windows 2000

1. Windows 2000 will automatically identify the Network PC Card, once it is connected to the PC, and prompt you to install the necessary driver. Make sure that **Driver Disk 1** is inserted into your floppy drive and click the **Next** button on the **Found New Hardware Wizard** screen to proceed.

2. Select **Search for a suitable driver...** and click the **Next** button. This will search for the Windows 2000 driver.

3. Select **Specify a location**, and click the Next button. On the following screen, type **a:\win2000**" in the **Copy manufacturer's files** from field and click the **Next** button.



4. Windows will now search for the driver. After Windows acknowledges finding the driver, click the **Next** button.

5. The **Digital Signature Not Found** screen is a notification by Windows 2000. However, this does not mean that there is a problem. Click the **Yes** button to continue.

6. Windows will now install the driver files. Click the **Finish** button when completed.

Connecting the Network PC Card to Your Notebook PC

Installing the Network PC Card Into Your Notebook PC

1. **Locate an available Type II or Type III PCMCIA slot** on your notebook computer.

2. **With the PCMCIA adapter's 68-pin connector facing the PCMCIA slot** and the "Network PC Card" label facing up, slide the PCMCIA adapter completely into the PCMCIA slot.

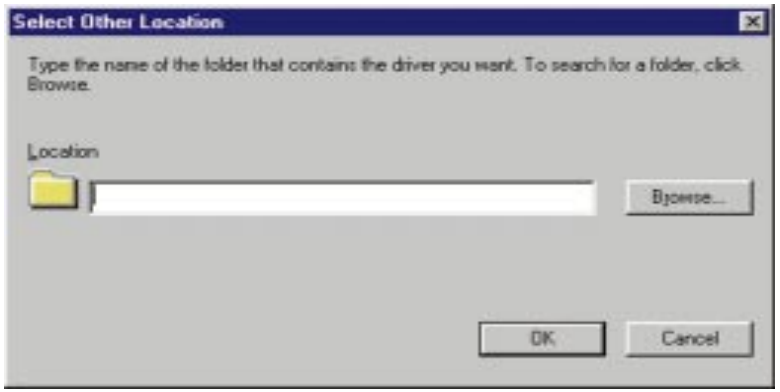
The Hardware Installation is complete.

Installing the Driver Software for Windows 95

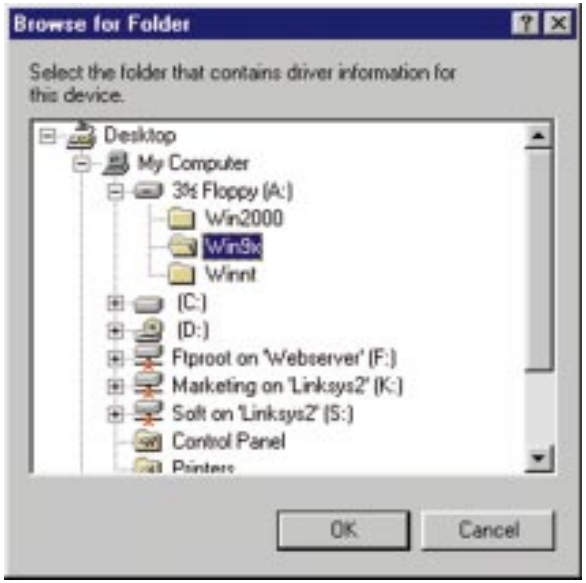
1. Windows 95 will automatically identify the Network PC Card, once it is connected to the PC, and prompt you to install the necessary driver. Insert **Driver Disk 1** into your floppy drive and click the **Next** button to proceed.

2. Windows will notify you that it is unable to locate the driver and will ask you to specify where the driver is located. Click the **Other Locations** button to select the driver's location.

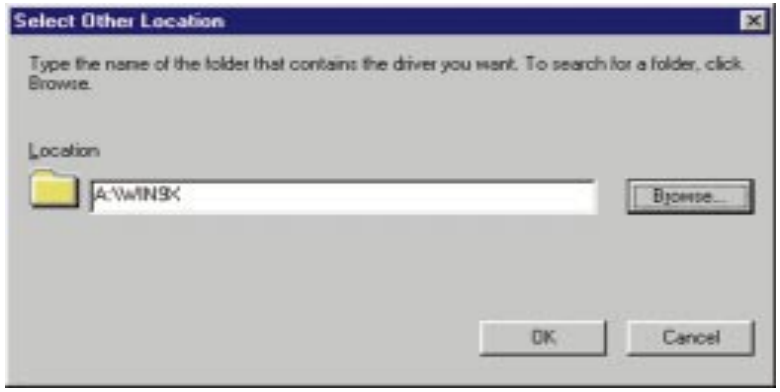
3. This will bring you to the **Select Other Location** screen. Click the **Browse** button to select the driver's location.



4. At this point, Windows will ask you to browse for the driver's folder. Simply select the folder in which the driver is located (as shown below) and click the **OK** button.



5. You will return to the **Select Other Location** screen. The folder that you selected for the driver will now be shown under **Location**. Verify that this is correct and then click the **OK** button.



6. Windows in now ready to begin installing the driver. Click the **Finish** button to install driver and complete installation.

Configuring the Network PC Card for Windows 95

After installing the Network PC Card, Windows 95 will automatically identify the card. Next, you will need to configure the Network PC Card's driver software.

1. After installing the Network PC Card, the **Instant Wireless - Network PC Card Properties** screen will automatically come up. Select **Channel** from the list provided and select a **Value**, from the drop down menu on the right, between 1 and 11. This Channel must be the same for everyone in your network. Click **Network Type** to continue or the **OK** button to finish.

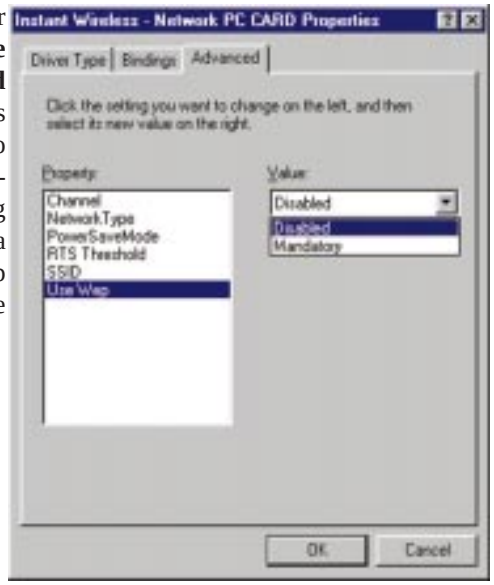
2. Select **Network Type** and select a **Value**, from the drop down menu, of either "Infrastructure" or "Ad-Hoc". The "Infrastructure" mode allows a wireless adapter to communicate with a wired network employing an Access Point, while the "Ad-Hoc" mode allows wireless-to-wireless, point-to-point communication. Click **Power Save Mode** to continue or the **OK** button to finish.

3. Select **Power Save Mode** and select either "**Enabled**" or "**Disabled**" for a **Value**. "Disabled" will allow for uninterrupted data communication. Selecting "Enabled" allows your notebook to enter "sleep" mode and could interrupt data communication. For further information about Power Save Mode, see the chapter entitled **PRISM Configuration Utility**. Click **RTS Threshold** to continue or the **OK** button to finish.

4. The **RTS Threshold Value** should remain at its default setting of **2,432**. Should you encounter inconsistent data flow, only minor modifications are recommended. Click **SSID** to continue or the **OK** button to finish.

5. The **Value** for **SSID** depends on what **Network Type** selected in item 2. If the Network Type is "**Infrastructure**", it should have the same SSID name as the Access Point. If the Network Type is "**Ad-Hoc**", all clients should share the same SSID name. Click **Use Wep** to continue or the **OK** button to finish.

6. Select either "**Disabled**" or "**Mandatory**" as the **Value** under **Use Wep**. **Wired Equivalent Privacy (Wep)** is an encryption scheme used to protect wireless data communication. The "Disabled" setting prevents the sharing of data with other computers on a Wep Network. For data sharing to be enabled, select "Mandatory".



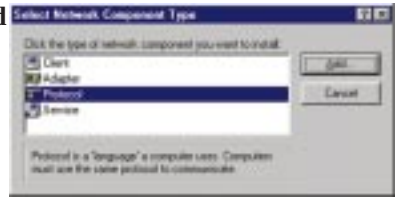
9. Once your card is configured, click **OK** and continue on to the Protocol Installation process, as described in the next section.

Installing the Network Protocols for Windows 95

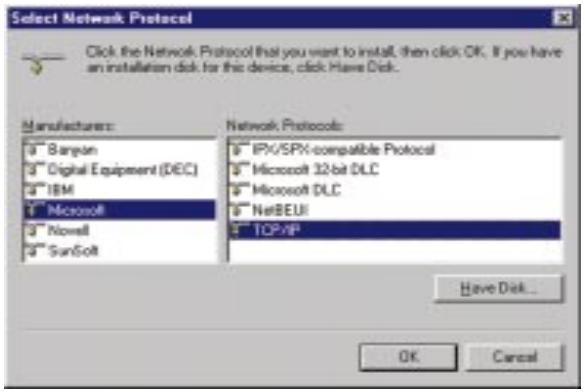
1. From the **Start** Menu, select **Settings** and bring up the **Control Panel**. From the Control Panel, double-click on the **Network** icon.

2. Select **Network PC Card** from the list and click the **Add** button.

3. Highlight **Protocol** and click the **Add** button.



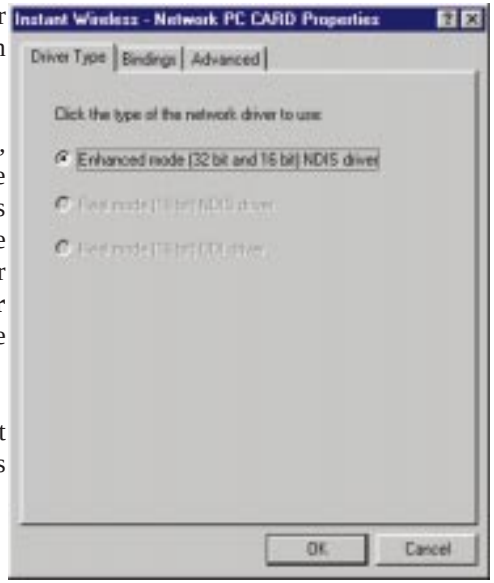
4. Select **Microsoft** from the list of "Manufacturers" and **TCP-IP** from the list of "Network Protocols" and click the **OK** button.



5. Repeat steps two through four to install other protocols such as NetBeui or IPX/SPX.

   From the screen in step two, you can also press the **Properties** button. From this screen, you can verify that the drivers are working under Enhanced Mode on the **Driver Type** tab or reconfigure the card on the **Advanced** tab.

   At this point, you must restart your computer. Installation is complete.



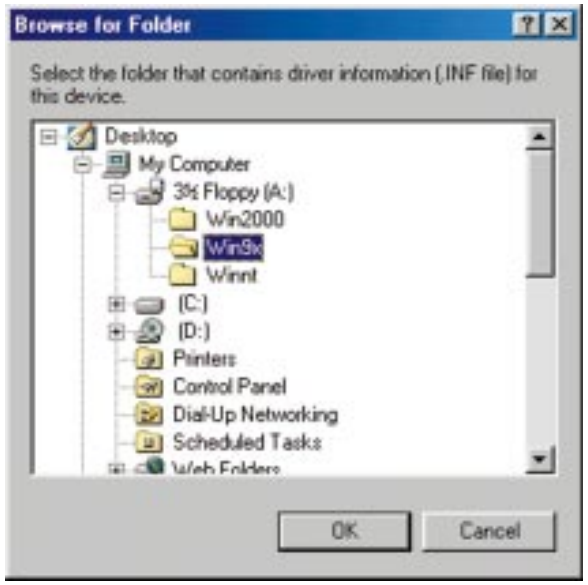
Installing and Configuring the Driver Software for Windows 98

1. Windows 98 will automatically identify the Network PC Card, once it is connected to the PC, and prompt you to install the necessary driver. Insert **Driver Disk 1** into your floppy drive and click the **Next** button to proceed.

2. Make sure **Search for the best driver for your device** is selected and click the **Next** button.

3. Make sure that **Specify a location** is selected and click the **Browse** button.

4. At this point, Windows will ask you to browse for the folder. Simply select the folder in which the driver is located (as shown below) and click the **OK** button.

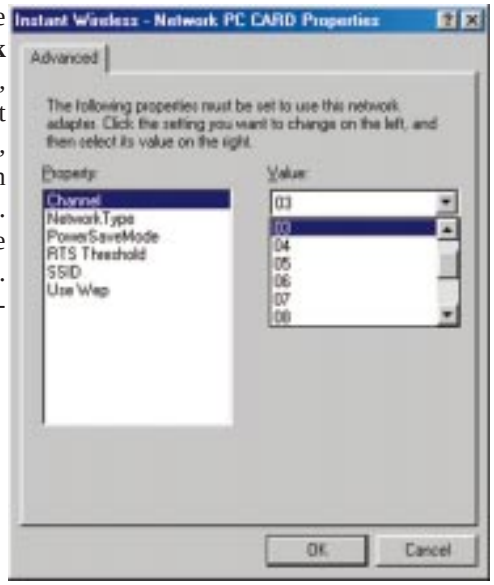


5. At this point, you will be returned to the **Add New Hardware Wizard** screen. Verify that the correct folder is selected to install the driver and click the **Next** button.

6. Windows is now ready to install the driver. Click the **Next** button to continue.

Before completing driver installation, the driver software will walk you through the configuration of your card. You will be walked through this stage at this time but remember that you can always return to reconfigure the card as shown in the **Installing the Network Protocol for Windows 98** section.

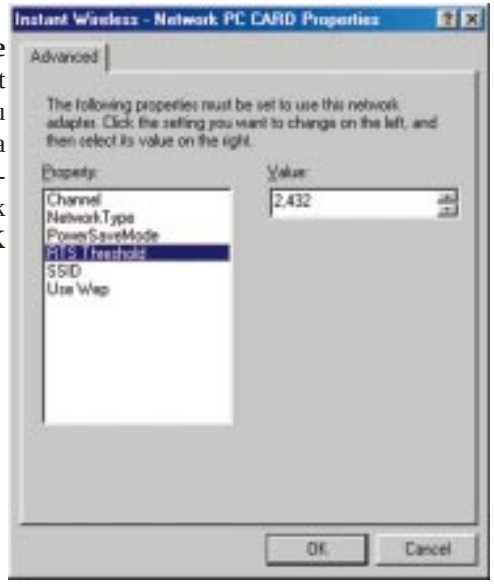
7. On the **Advanced** Tab of the **Instant Wireless - Network PC Card Properties** screen, chose **Channel** from the list provided and select a **Value**, from the drop down menu on the right, between 1 and 11. This Channel must be the same for everyone in your network. Click **Network Type** to continue or the **OK** button to finish.



8. Select **Network Type** and chose a **Value**, from the drop down menu, of either "**Infrastructure**" or "**Ad-Hoc**". The "Infrastructure" mode allows a wireless adapter to communicate with a wired network employing an Access Point, while the "Ad-Hoc" mode allows wireless-to-wireless, point-to-point communication. Click **Power Save Mode** to continue or the **OK** button to finish.

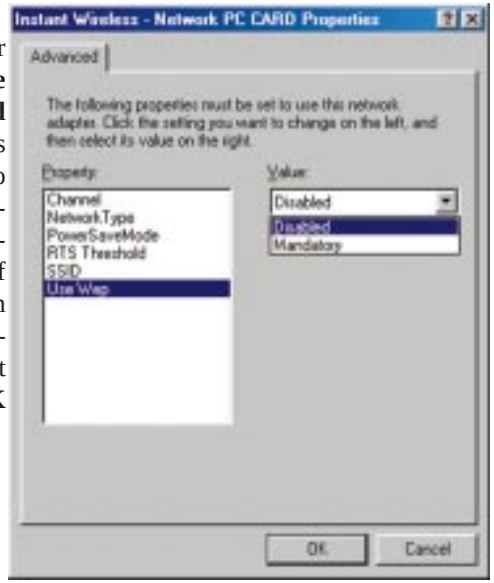
9. Select **Power Save Mode** and chose either "**Enabled**" or "**Disabled**" for a **Value**. "Disabled" will allow for uninterrupted data communication. Choosing "Enabled" allows your notebook to enter "sleep" mode and could interrupt data communication. For further information about Power Save Mode, see the chapter entitled **PRISM Configuration Utility**. Click **RTS Threshold** to continue or the **OK** button to finish.

10. The **RTS Threshold Value** should remain at its default setting of **2,432**. Should you encounter inconsistent data flow, only minor modifications are recommended. Click **SSID** to continue or the **OK** button to finish.



11. The **Value** for **SSID** depends on what **Network Type** selected in item 8. If the "Network Type" is "**Infrastructure**", it should have the same SSID name as the Access Point. If the "Network Type" is "**Ad-Hoc**", all clients should share the same SSID name. Click **Use Wep** to continue or the **OK** button to finish.

12. Select either "**Disabled**" or "**Mandatory**" as the **Value** under **Use Wep**. **Wired Equivalent Privacy (Wep)** is an encryption scheme used to protect wireless data communication. The "Disabled" setting prevents the sharing of data with other computers on a Wep Network. For data sharing to be enabled, select "Mandatory". Click the **OK** button to continue.



13. After clicking **OK**, the driver files will be copied. Once this is completed, Windows will request that you insert the **Windows 98 CD**. Insert your Windows CD and select **D:\win98** from the drop down list (where "D" represents your CD-Rom drive. Then, click the **OK** button.

14. After Windows 98 copies files from your CD, you will be notified that installation has been completed. Click the **Finish** button to continue.

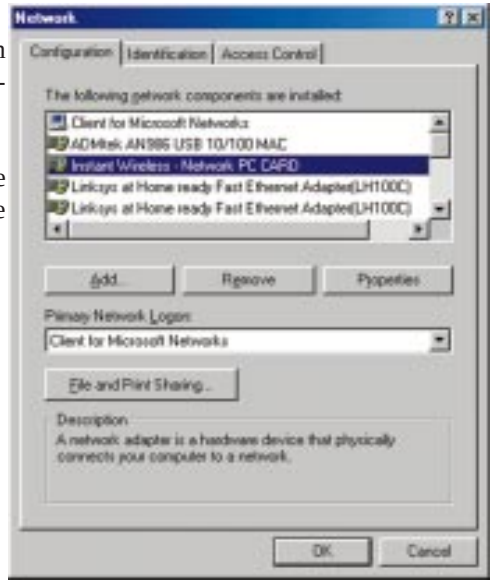
15. Windows will now ask you to restart your computer. Click the **Yes** button to restart. Once your computer has restarted, you can continue on to the Protocol Installation process, as described in the next section.

Installing the Network Protocols for Windows 98

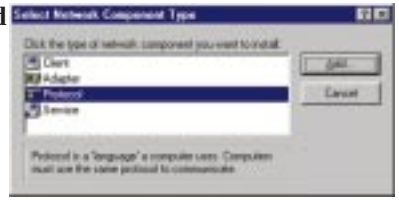
1. From the **Start** Menu, select **Settings** and bring up the **Control Panel**. From the Control Panel, double-click on the **Network** icon.

2. Select **Network PC Card** from the list and click the **Add** button.

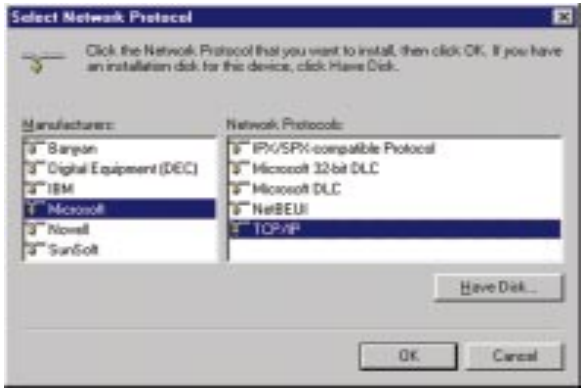
   You can also click the **Properties** button at this time to reconfigure your card.



3. Highlight **Protocol** and click the **Add** button.



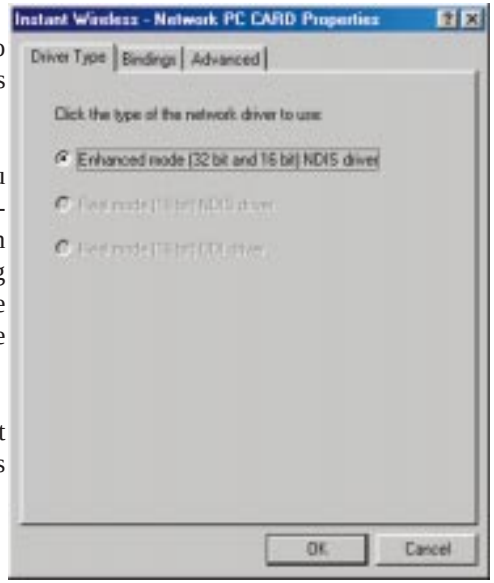
4. Select **Microsoft** from the list of "Manufacturers" and **TCP-IP** from the list of "Network Protocols" and click the **OK** button.



Repeat steps two through four to install other protocols such as NetBeui or IPX/SPX.

From the screen in step two, you can also press the **Properties** button. From this screen, you can verify that the drivers are working under Enhanced Mode on the **Driver Type** tab or reconfigure the card on the **Advanced** tab.

At this point, you must restart your computer. Installation is complete.



Installing and Configuring the Driver Software for Windows Millennium

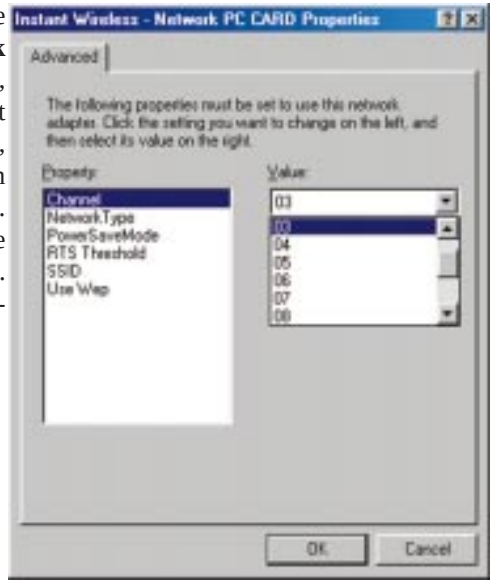
1. Windows Millennium will automatically identify the Network PC Card, once it is connected to the PC, and prompt you to install the necessary driver. Make sure **Driver Disk 1** is in your floppy-disk drive, select "Automatic search for better driver", and click the **Next** button to proceed

2. Make sure **Search for the best driver for your device** is selected, type "**A:\WIN9X**" in the field under **Specify a location** and click the **Next** button.

3. Windows is now ready to install the driver. Click the **Next** button to continue.

Before completing driver installation, the driver software will walk you through the configuration of your card. You will be walked through this stage at this time but remember that you can always return to reconfigure the card as shown in the **Installing the Network Protocol for Windows Millennium** section.

4. On the **Advanced** Tab of the **Instant Wireless - Network PC Card Properties** screen, select **Channel** from the list provided and select a **Value**, from the drop down menu on the right, between 1 and 11. This Channel must be the same for everyone in your network. Click **Network Type** to continue or the **OK** button to finish.



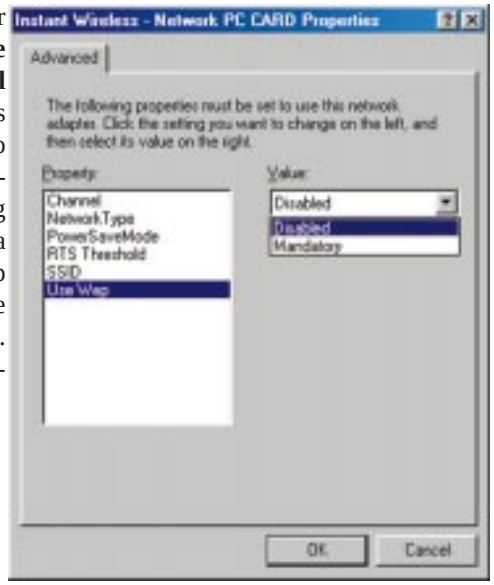
5. Select **Network Type** and select a **Value**, from the drop down menu, of either "**Infrastructure**" or "**Ad-Hoc**". The "Infrastructure" mode allows a wireless adapter to communicate with a wired network employing an Access Point, while the "Ad-Hoc" mode allows wireless-to-wireless, point-to-point communication. Click **Power Save Mode** to continue or the **OK** button to finish.

6. Select **Power Save Mode** and select either "**Enabled**" or "**Disabled**" for a **Value**. "Disabled" will allow for uninterrupted data communication. Selecting "Enabled" allows your notebook to enter "sleep" mode and could interrupt data communication. For further information about Power Save Mode, see the chapter entitled **PRISM Configuration Utility**. Click **RTS Threshold** to continue or the **OK** button to finish.

7. The **RTS Threshold** setting should remain at its default setting of **2,432**. Should you encounter inconsistent data flow, only minor modifications are recommended. Click **SSID** to continue or the **OK** button to finish.

8. The **Value** for **SSID** depends on what **Network Type** selected in item 5. If the Network Type is "**Infrastructure**", it should have the same SSID name as the Access Point. If the Network Type is "**Ad-Hoc**", all clients should share the same SSID name. Click **Use Wep** to continue or the **OK** button to finish.

9. Select either "**Disabled**" or "**Mandatory**" as the **Value** under **Use Wep**. **Wired Equivalent Privacy (Wep)** is an encryption scheme used to protect wireless data communication. The "Disabled" setting prevents the sharing of data with other computers on a Wep Network. For data sharing to be enabled, select "Mandatory". Click the **OK** button to continue.



10. After clicking **OK**, the driver files will be copied. Once this is completed, Windows will request that you insert the **Windows Millennium CD**. Insert your Windows CD and select "**D:\winMe**" from the drop down list (where "D" represents your CD-Rom drive). Then, click the **OK** button.

11. After Windows Millennium copies files from your CD, you will be notified that installation has been completed. Click the **Finish** button to continue.

12. Windows will now ask you to restart your computer. Click the **Yes** button to restart. Once your computer has restarted, you can continue on to the Protocol Installation process, as described in the next section.

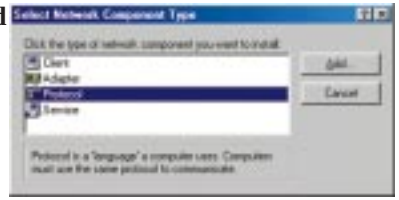
Installing the Network Protocols for Windows Millennium

1. Network Protocols are automatically set by Windows Millennium. However, to manually set these Protocols, select **Settings** from the **Start** Menu and bring up the **Control Panel**. Then, double-click on the **Network** icon.

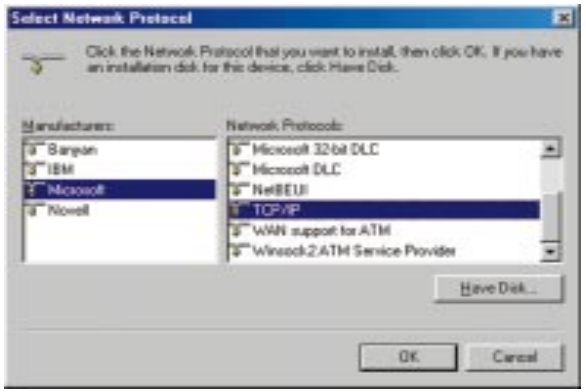
2. Select **Network PC Card** from the list and click the **Add** button.

   You can also click the **Properties** button at this time to reconfigure your card.

3. Highlight **Protocol** and click the **Add** button.



4. Select **Microsoft** from the list of "Manufacturers" and **TCP/IP** from the list of "Network Protocols" and click the **OK** button.



Repeat steps two through four to install other protocols such as NetBeui or IPX/SPX.

Setting up the Network PC Card for Windows NT

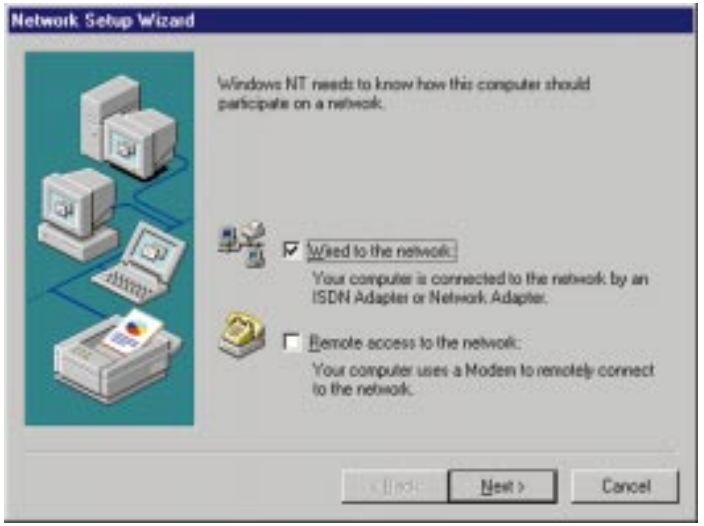
Windows NT will setup the Network PC Card differently depending upon whether you've previously installed network hardware or not. Please follow the instructions appropriate for you.

If You Have Never Installed Network Hardware:

1. Windows NT is not a Plug-and-Play Operating System and will not automatically identify the Network PC Card. To begin setup, insert **Driver Disk 1** into your floppy drive and then select **Settings** from the **Start** Menu and bring up the **Control Panel**. Then, double-click on the **Network** icon.

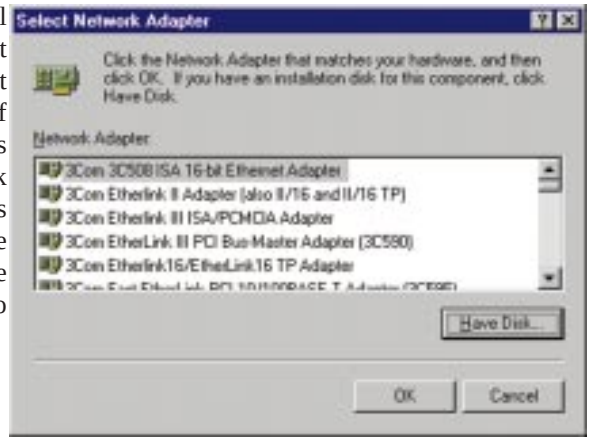
2. Windows will notify you that Networking is not installed. Click the **Yes** button to continue.

3. Installation will begin and you will reach the screen shown below. You will want to select the box that reads **Wired to the network** since you are adding network hardware. Then, click the **Next** button to continue.

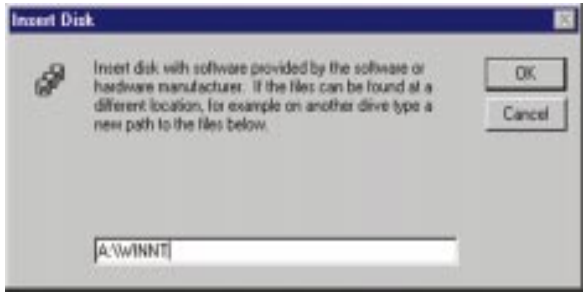


4. The next screen will not show any Network Adapters installed on your system, which signifies that no network hardware has been previously installed. You will want to click the **Select from list** button to continue.

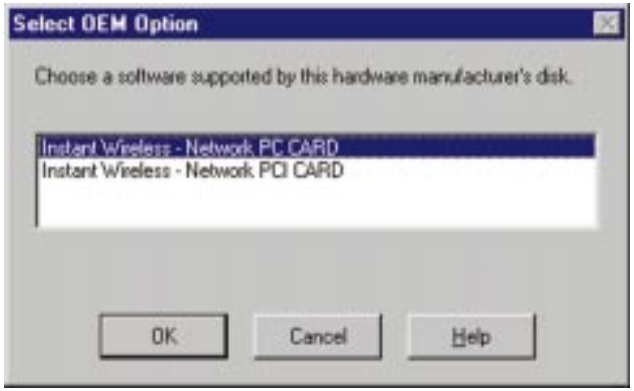
5. A list of adapters will appear on the next screen. You will not want to select one of these, however, as your installation disk (**Driver Disk 1**) has all of the appropriate drivers. Click the **Have Disk** button to continue.



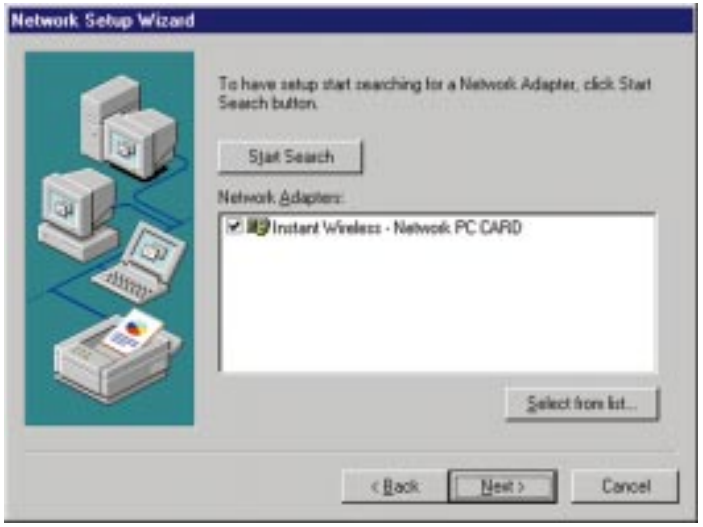
6. On the **Insert Disk** screen, type "**A:\WINNT**" in the field provided. Then, click the **OK** button to continue.



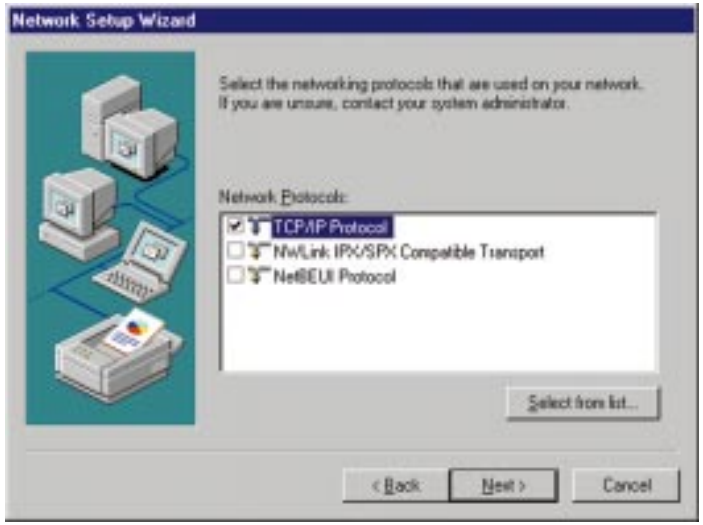
7. The **Select OEM Option** screen will show two options from which to choose. You will want to highlight **Instant Wireless - Network PC Card** and click the **OK** button to continue.



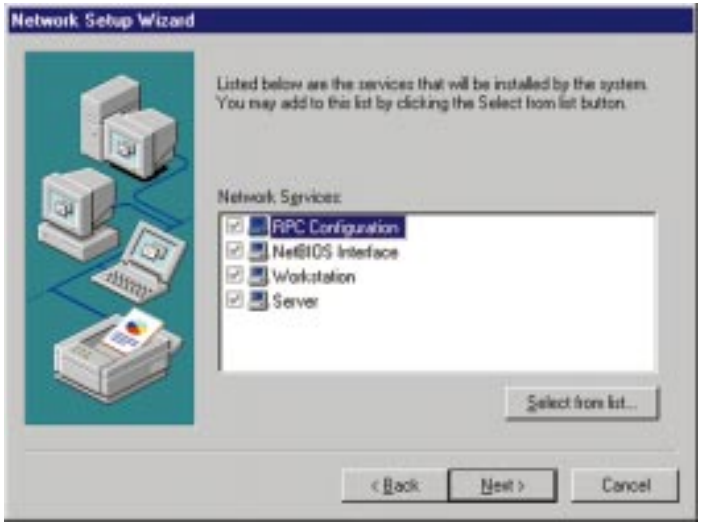
8. On the next screen, make sure there is a check mark in the box beside **Instant Wireless - Network PC Card**, then click the **Next** button to continue.



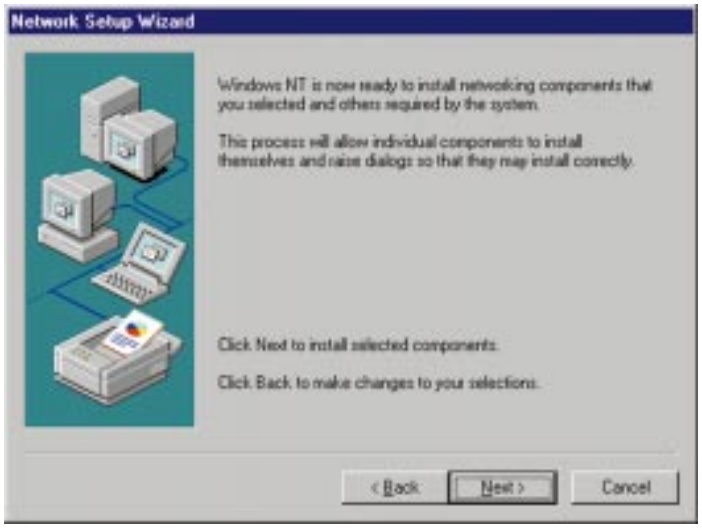
9. The next screen will show a list of network protocols. While the **TCP/IP Protocol** is already selected by default, you should check with your network administrator before installing any network protocols. Click the **Next** button to continue.



10. On the screen showing **Network Services**, the selections are automatically made. Simply, click the **Next** button to continue.



11. At this point, Windows NT will be ready to start installing Networking Components. Click the **Back** button if you believe you have erred in your selections or click the **Next** button to continue.



12. Windows NT may request further files at this point. Type "**A:\WINNT**" in the field provided and click the **Continue** button. If files are still requested, insert your **Windows NT CD** into your CD-Rom drive and type "**D:\i386**" (where "D" represents your CD-Rom drive). Then, click the **Continue** button.

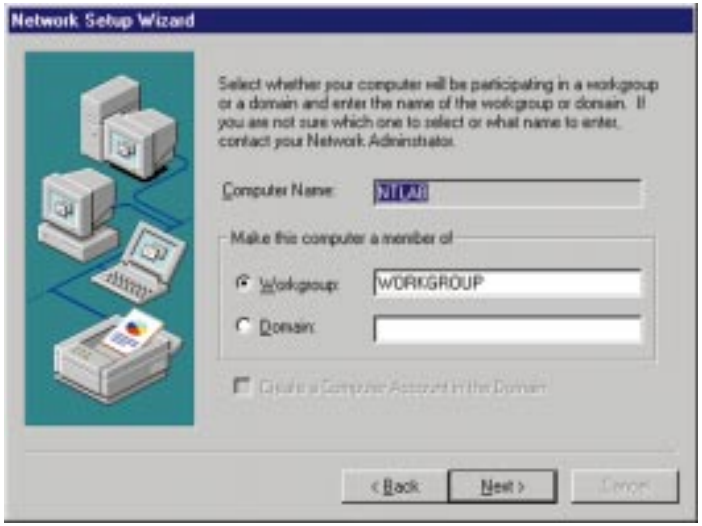
13. You will now reach the screen shown below. This is called the **Resources & Properties** screen. Setting the fields on this screen is covered at the end of this section under the heading **Setting Resource & Properties Fields**. Adjust the settings as appropriate and click the **Continue** button to continue.

14. After setting the **Resource and Properties** fields, Windows NT will begin installing the network components you previously selected. You may be asked if you would like to configure the protocols with a DHCP server on your network. If this screen comes up, check with your Network Administrator before clicking the **Yes** or **No** button to continue.

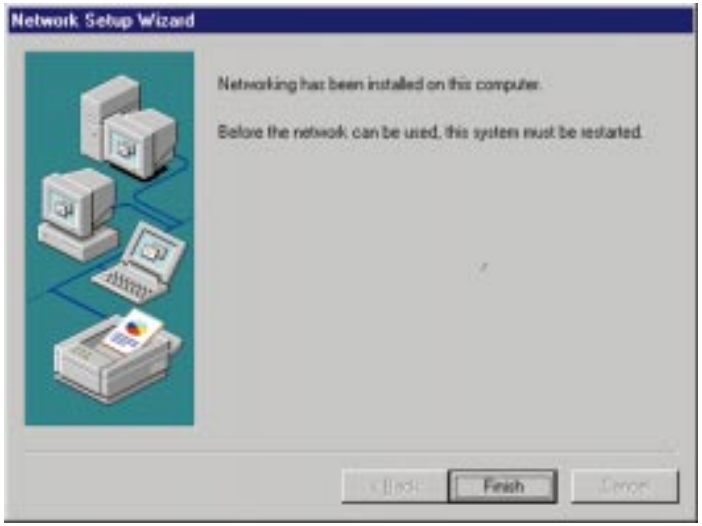
15. Now, the network components will finish installing. You may then see a screen similar to that shown here asking you if you'd like to disable any network bindings. Be sure to check with your network administrator before making ANY changes and then click the **Next** button to continue.

16. At this point, Windows NT will let you know that it is ready to start the network. If you'd like to stop the procedure, click the **Back** button. To continue, click the **Next** button.

17. At this point, Windows NT will let you know that it is ready to start the network. If you'd like to stop the procedure, click the **Back** button. To continue, click the **Next** button.



18. Windows NT has now completed installing the network. Click the **Finish** button to continue and then restart your computer.

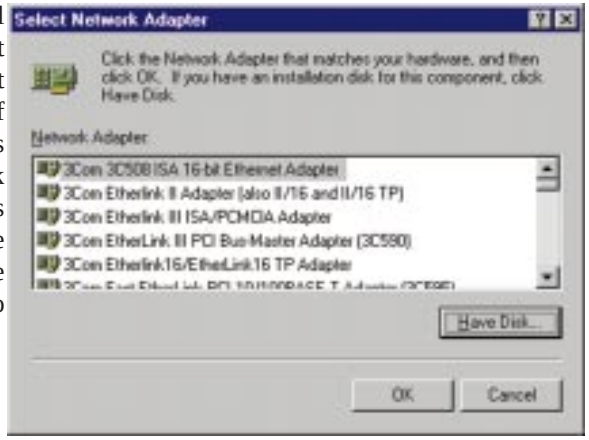


If You Have Installed Network Hardware Before:

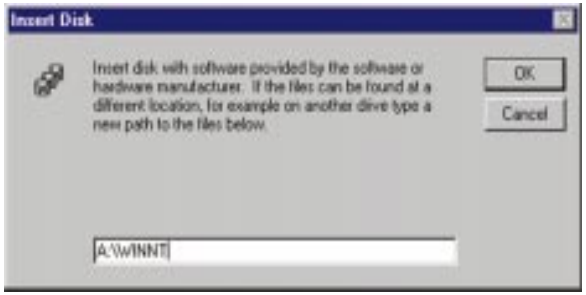
1. Windows NT is not a Plug-and-Play Operating System and will not automatically identify the Network PC Card. To begin setup, insert **Driver Disk 1** into your floppy drive and then select **Settings** from the **Start** Menu and bring up the **Control Panel**. Then, double-click on the **Network** icon.

2. To add the Network PC Card, you will want to click the **Adapters** tab and then click the **Add** button to continue.

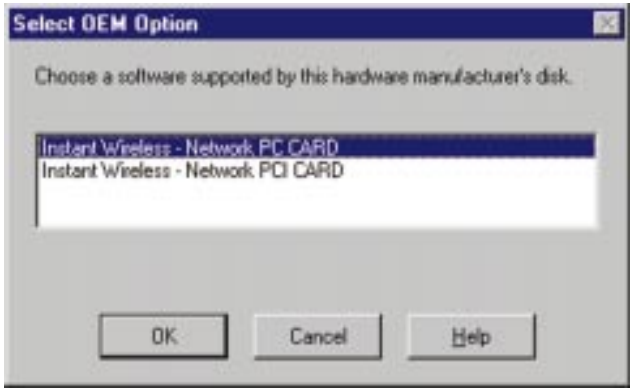
3. A list of adapters will appear on the next screen. You will not want to select one of these, however, as your installation disk (**Driver Disk 1**) has all of the appropriate drivers. Click the **Have Disk** button to continue.



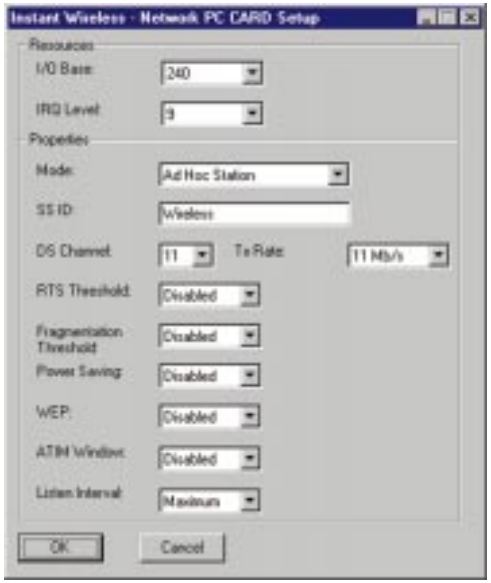
4. On the **Insert Disk** screen, type "**A:\WINNT**" in the field provided. Then, click the **OK** button to continue.



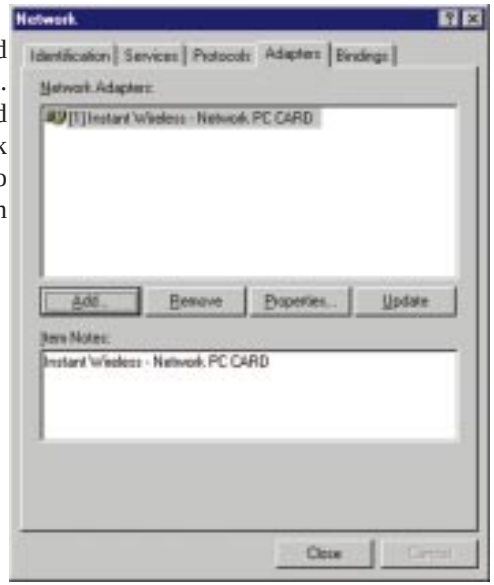
5. The **Select OEM Option** screen will show two options from which to choose. You will want to highlight **Instant Wireless - Network PC Card** and click the **OK** button to continue.



6. You will now reach the screen shown below. This is called the **Resources & Properties** screen. Setting the fields on this screen is covered at the end of this section under the heading **Setting Resource & Properties Fields**. Adjust the settings as appropriate and click the **Continue** button.

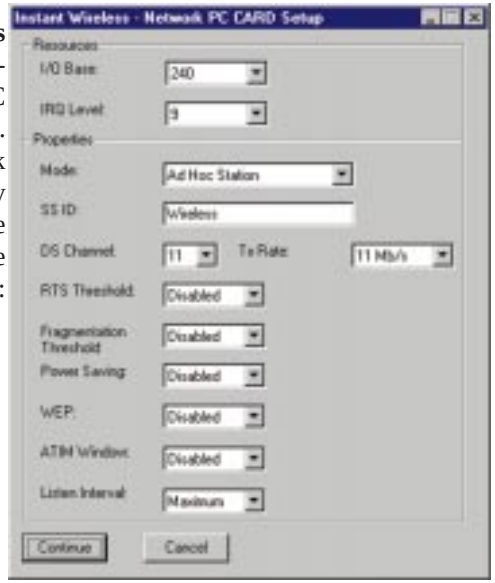


7. The Network PC Card has now been installed. You will see it added onto this screen. Click the **Close** button to continue and then restart your computer.

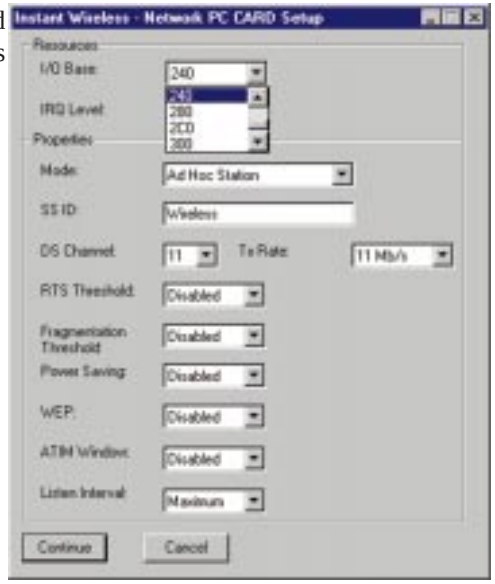


Setting Resource and Properties Fields:

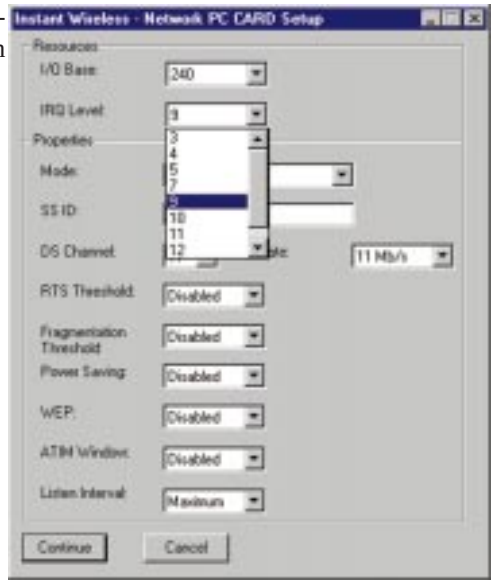
The **Resource and Properties** screen allows you to make modifications to your Network PC Card, optimizing performance. Check with your Network Administrator before making any changes and then follow these steps when configuring the **Resource and Properties Fields**:



1. The **I/O Base** setting should correspond with your network's settings.



2. The **IRQ Base** should correspond with the interrupts in your network's settings.

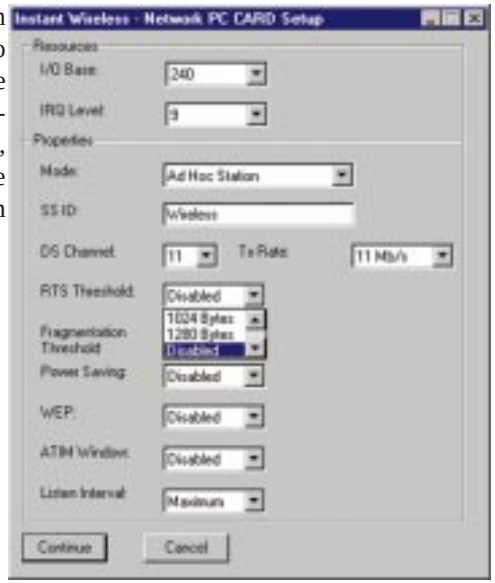


3. The **Mode** setting should be either "**Infrastructure**" or "**Ad-Hoc**", depending upon your network's settings. The "Infrastructure" mode allows a wireless adapter to communicate with a wired network employing an Access Point, while the "Ad-Hoc" mode allows wireless-to-wireless, point-to-point communication.

4. The **SSID** depends on what **Mode** is selected. If the Mode is "**Infrastructure**", it should have the same SSID name as the Access Point. If the Mode is "**Ad-Hoc**", all clients should share the same SSID name.

5. The **DS Channel** setting must be the same for all wireless points in the network. Use the settings, **1-13**, to find the best channel for your connection.

6. **RTS Threshold** should remain **Disabled** as set by default. Do not change the setting of the RTS Threshold unless connection quality is poor. Then, increase this setting by the smallest value first to establish a better connection.

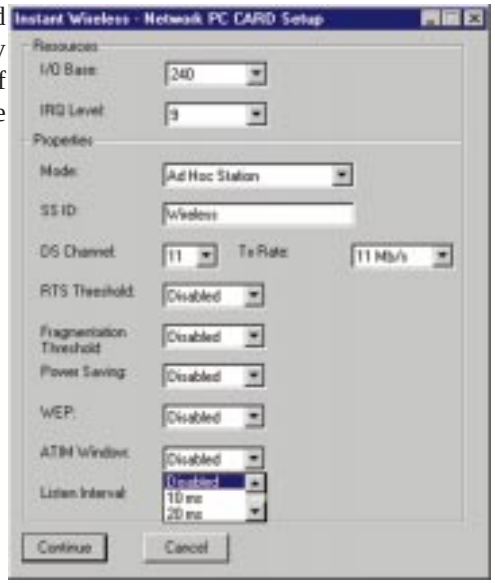


7. **Fragmentation Threshold** should remain **Disabled** as set by default. Do not change the setting of the Fragmentation Threshold unless connection quality is poor. Then, increase this setting by the smallest value first to establish a better connection.

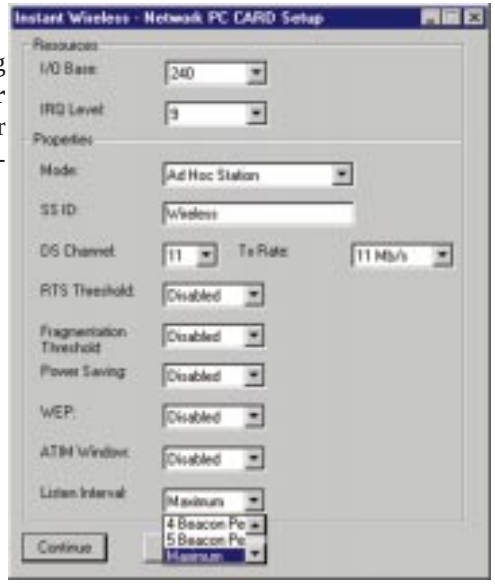
8. Select **Power Save Mode** and select either "**Enabled**" or "**Disabled**". "Disabled" will allow for uninterrupted data communication. Selecting "Enabled" allows your notebook to enter "sleep" mode and could interrupt data communication. For further information about Power Save Mode, see the chapter entitled **PRISM Configuration Utility**.

9. The setting for **Use Wep** should be either "**Disabled**" or "**Mandatory**". **Wired Equivalent Privacy (Wep)** is an encryption scheme used to protect wireless data communication. The "Disabled" setting prevents the sharing of data with other computers on a Wep Network. For data sharing to be enabled, select "Mandatory".

10. The **ATIM Window** should remain **Disabled** as set by default. Changing the setting of the ATIM Window may reduce performance.



11. The **Listen Interval** setting should remain at **1 Beacon per Second**. Setting this higher could result in slower connection speeds.

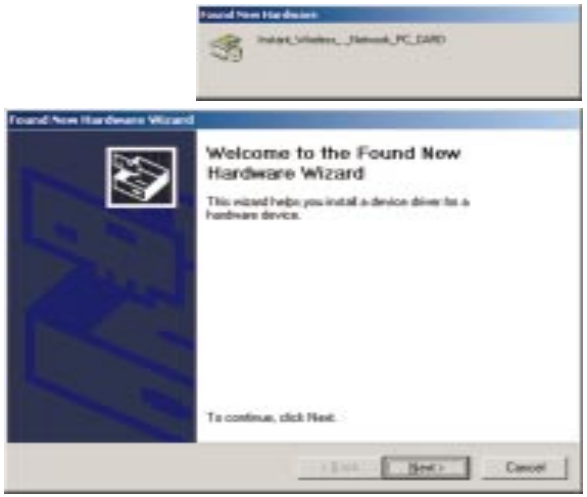


12. The **TX Rate** setting should remain **Fully Auto** as set by default. Changing this to a different transfer rate will lock in that rate and may result in dropped connections. Click the **OK** button to continue.

NOTE: After you have installed the Network PC Card, reapply the Windows NT service pack.

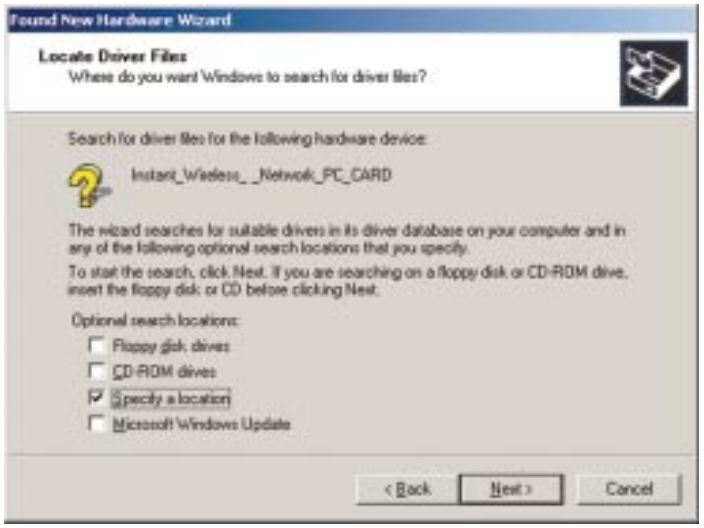
Installing the Driver Software for Windows 2000

1. Windows 2000 will automatically identify the Network PC Card, once it is connected to the PC, and prompt you to install the necessary driver. Make sure that **Driver Disk 1** is inserted into your floppy drive and click the **Next** button on the **Found New Hardware Wizard** screen to proceed.

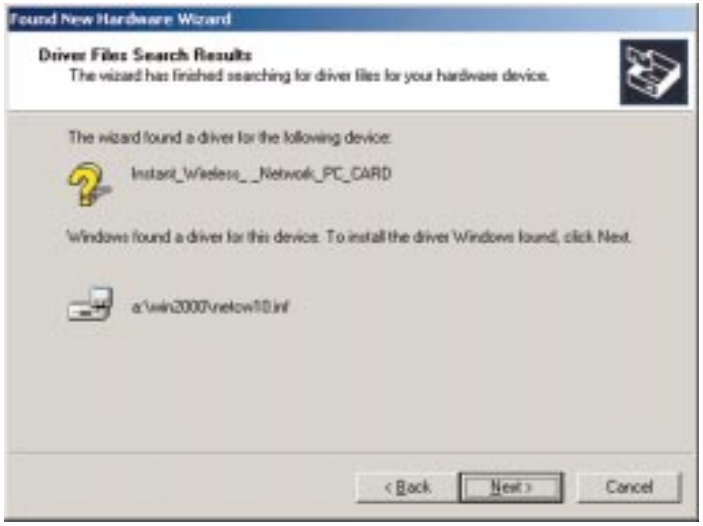


2. Select **Search for a suitable driver...** and click the **Next** button. This will search for the Windows 2000 driver.

3. Select **Specify a location**, type in "**a:\win2000**" and click the **Next** button.



4. Windows will now search for the driver. After Windows acknowledges finding the driver, click the **Next** button.



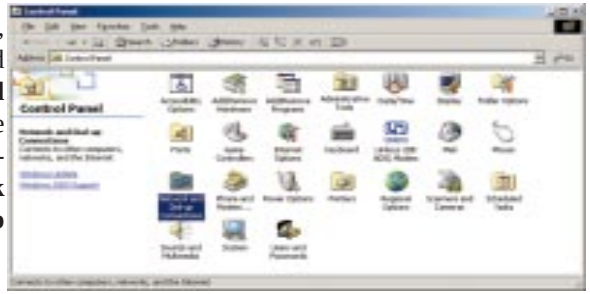
5. The **Digital Signature Not Found** screen is a notification by Windows 2000. However, this does not mean that there is a problem. Click the **Yes** button to continue.

6. Windows will now install the driver files. Click the **Finish** button when completed.

Configuring the Network PC Card for Windows 2000

After installing the Network PC Card, Windows 2000 will automatically identify the card. Next, you will need to configure the Network PC Card's driver software.

1. From the **Start** Menu, select **Settings** and bring up the **Control Panel**. From the Control Panel, double-click the **Network and Dial-Up Connections** icon.

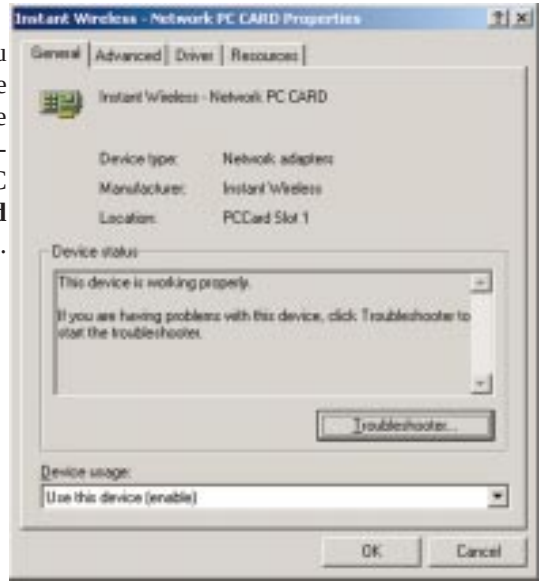


2. From the **Network and Dial-Up Connections** screen, double-click the **Local Area Connection ##** icon. (The number on this icon will vary with your computer.)

3. The **General Local Area Connection 17 Status** screen will show the status of the Network PC Card's connection. Click the **Properties** button to continue.

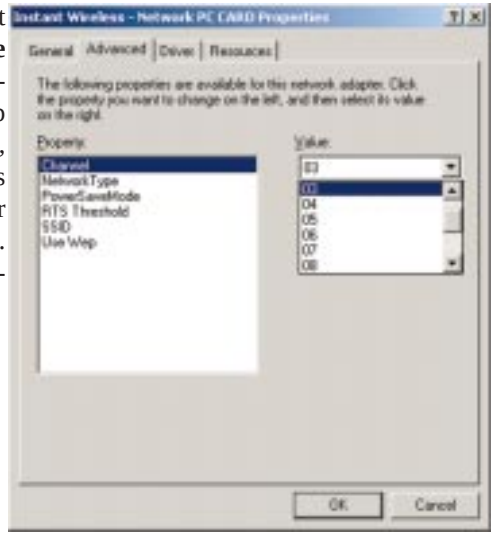
4. On the **Properties** screen, click the **Configure** button to configure your card.

5. The next screen that you will see will be the **General** tab. This will give you information on the status of the Network PC Card. Click the **Advanced** tab to configure your card.

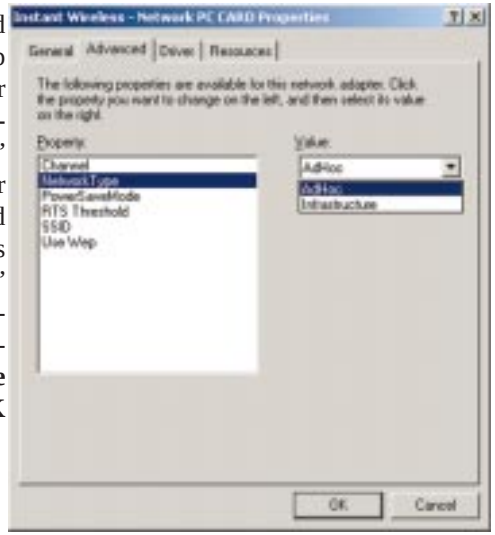


Clicking the **Troubleshooter** button will bring up the Windows 2000 help screen.

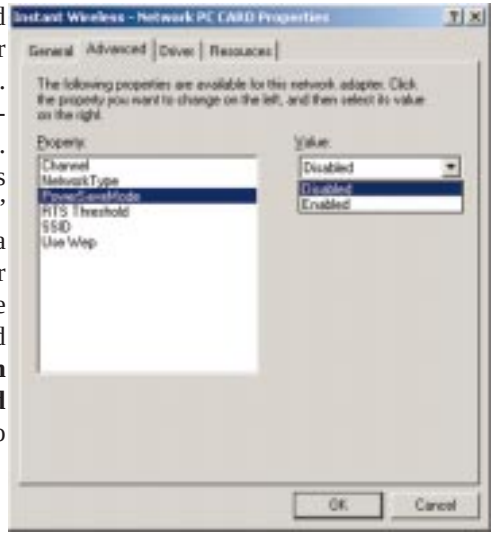
6. Select **Channel** from the list provided and select a **Value** corresponding with your network settings, from the drop down menu on the right, between 1 and 11. This Channel must be the same for everyone in your network. Click **Network Type** to continue or the **OK** button to finish.



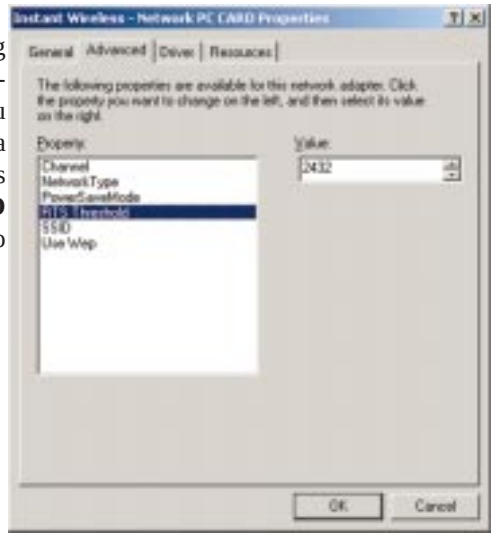
7. Select **Network Type** and select a **Value**, from the drop down menu, of either "**Infrastructure**" or "**Ad-Hoc**". The "Infrastructure" mode allows a wireless adapter to communicate with a wired network employing an Access Point, while the "Ad-Hoc" mode allows wireless-to-wireless, point-to-point communication. Click **Power Save Mode** to continue or the **OK** button to finish.



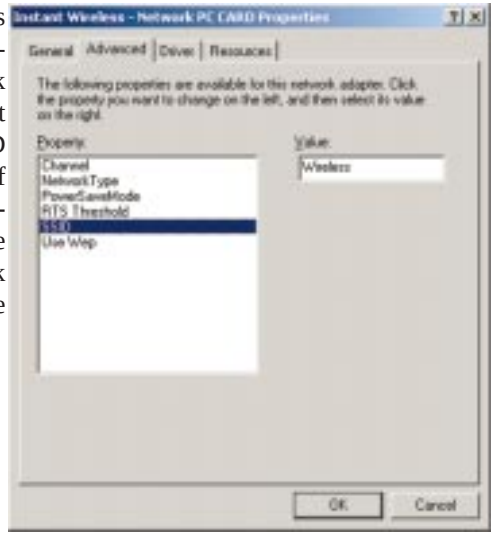
8. Select **Power Save Mode** and select either "**Enabled**" or "**Disabled**" for a **Value**. "Disabled" will allow for uninterrupted data communication. Selecting "Enabled" allows your notebook to enter "sleep" mode and could interrupt data communication. For further information about Power Save Mode, see the chapter entitled **PRISM Configuration Utility**. Click **RTS Threshold** to continue or the **OK** button to finish.



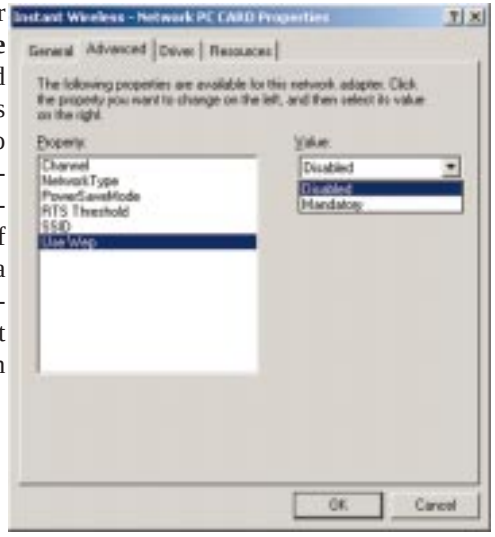
9. The **RTS Threshold** setting should remain at its default setting of **2,432**. Should you encounter inconsistent data flow, only minor modifications are recommended. Click **SSID** to continue or the **OK** button to finish.



10. The **Value** for **SSID** depends on what **Network Type** selected in item 7. If the Network Type is "**Infrastructure**", it should have the same SSID name as the Access Point. If the Network Type is "**Ad-Hoc**", all clients should share the same SSID name. Click **Use Wep** to continue or the **OK** button to finish.



11. Select either "**Disabled**" or "**Mandatory**" as the **Value** under **Use Wep**. Wired Equivalent Privacy (Wep) is an encryption scheme used to protect wireless data communication. The "Disabled" setting prevents the sharing of data with other computers on a Wep Network. For data sharing to be enabled, select "Mandatory". Configuration is completed, click **OK**.



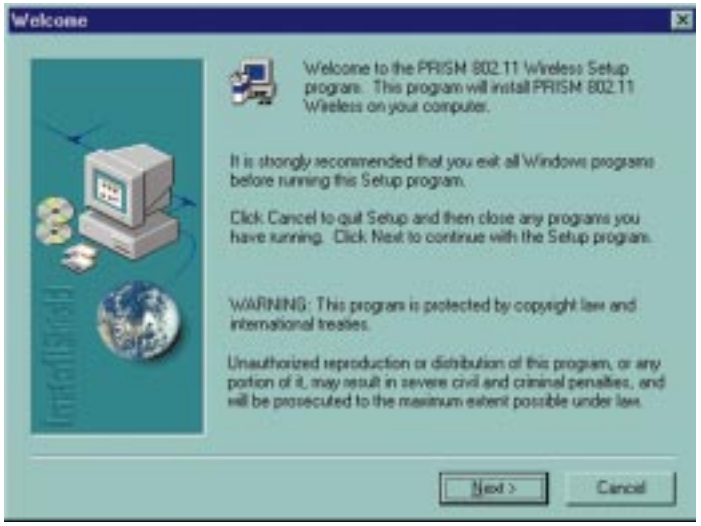
PRISM Configuration Utility

The **PRISM Configuration Utility** is provided to allow you further customization of the Network PC Card and your wireless network.

Installing the PRISM Configuration Utility

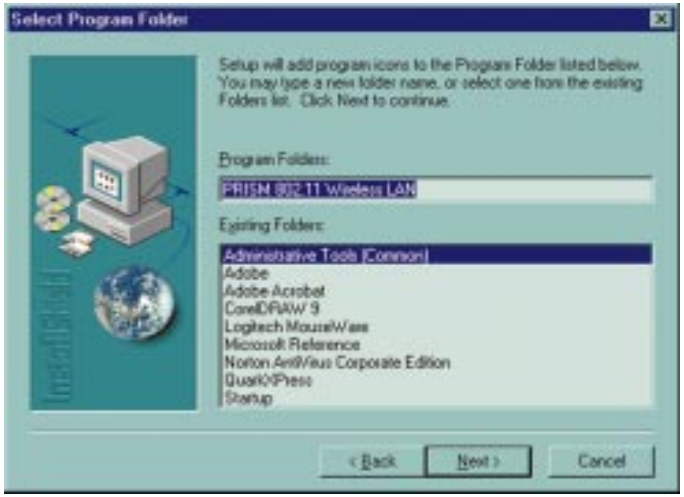
1. To install the **PRISM Configuration Utility**, first put **Driver Disk 2** into your disk drive. Then, select **My Computer** on your desktop and double click the appropriate drive. Within the **Utility** folder, double click the **Setup** icon.

2. This will bring up the **Welcome** screen. After reading this screen, click the **Next** button to continue.



3. The **Destination** screen will show you the default destination selected by the utility. If you should want to install this in another location, click the **Browse** button and select an alternate destination. When you are ready to continue, click the **Next** button.

4. The next screen will show the **Program Folder** that the utility is setting up. If you should want to put the utility in another Program Folder, double-click an Existing Folder or, if you don't want to run this out of a Program Folder, delete the Program Folder name. Then, click the **Next** button to continue.

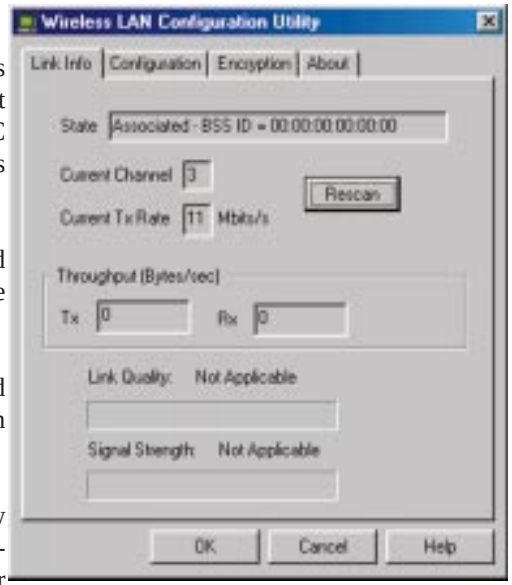


5. After installing the utility's software, installation will be complete. With your Network PC Card installed, you are now ready to use the **PRISM Configuration Utility** to configure your card.

Configuring the Network PC Card with the PRISM Configuration Utility

After you startup the utility from the Program Folder as specified in the previous section, you will see the Wireless LAN Configuration Utility screen. This utility is divided into four parts: **Link Info**, **Configuration**, **Encryption**, and **About**. Each part will be explained here.

LINK INFO



The Link Info screen provides information about the current link between the Network PC Card and the wireless Access Point.

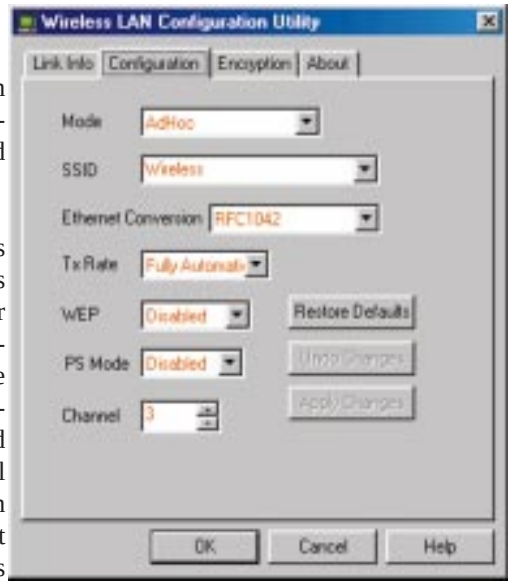
The **Current Channel** field shows to what channel the Network PC Card is set.

The **Current Tx Rate** field shows the transfer rate in megabits per second.

The **Throughput** fields show the rate at which data is transferred and received in Bytes per second.

The **Link Quality** and **Signal Strength** fields will be displayed by color when applicable. Green signifies a good connection or strong signal. Yellow signifies an acceptable connection or signal. Red signifies a bad connection or weak signal.

CONFIGURATION



The Configuration screen allows you to customize the settings for the Network PC Card and your wireless network.

The **Mode** setting determines the architecture of your wireless network. Select **Ad-Hoc** or **Infrastructure** Mode depending on your network type. The **Ad-Hoc** mode is used for a simple peer-to-peer network and allows the sharing of local resources only between Network PC Cards without needing a wireless Access Point. The **Infrastructure** mode allows a wireless network to be integrated into an existed, wired network through an Access Point. Infrastructure networks permit roaming between Access Points while maintaining a connection to all network resources and provide additional features, such as WEP security, power saving and extended range.

An acronym for **S**ervice **S**et **I**dentifier, **SSID** is the unique name shared among all points in a wireless network. The SSID must be identical for all points in the network. It is case sensitive and must not exceed 30 characters.

The **Ethernet Conversion** field is set at RFC1042, which is the 802.11b standard conversion method, by default. If compatibility with older wireless networks is necessary, select another conversion implementation from the pull down menu.

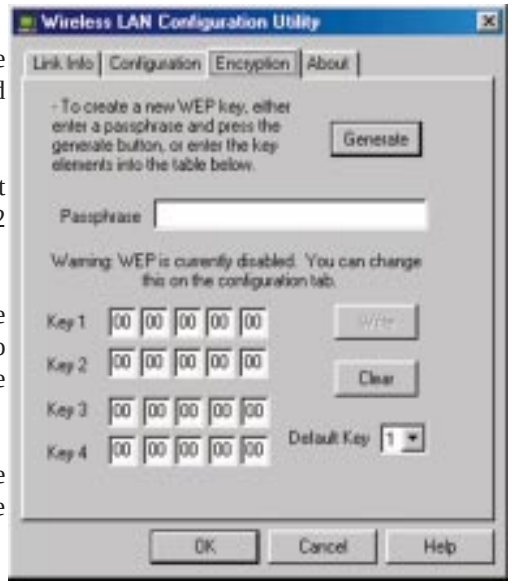
The **Tx Rate** field shows the current transfer rate for the Network PC Card. To optimize performance and range, the TX Rate should be set to Fully Automatic, which will automatically adjust the transfer speed for best performance and longest range.

An acronym for **W**ired **E**quivalent **P**rivacy, **WEP** is an encryption scheme used to protect your wireless data communications. WEP uses a combination of 40-bit keys to provide access control to your network and encryption security for every data transmission. To decode a data transmission, each point in a network must use an identical 40-bit key. This feature is only available in Infrastructure mode and must also be enabled on the Access Point. Select the WEP tab to enable or disable this feature when applicable.

Power Saving Mode, or **PS Mode**, enables or disables the power saving features of your Network PC Card. This setting can only be enabled or disabled in Infrastructure mode.

The **Channel** setting specifies the channel used in wireless communication and should be set to the same channel as the other points in the wireless network.

ENCRYPTION



The 40-bit WEP keys can be generated from a user-defined passphrase.

The **Passphrase** can be any text string with a maximum of 32 characters.

WEP must be enabled from the Configuration screen in order to set the 40-bit key. To generate an encryption key:

1. Type exactly the same case sensitive PassPhrase in the PassPhrase field.
2. Click the **Generate** button to create the encryption keys. The Passphrase generates four unique keys.
3. Make sure that the Default Key is the same for each point on the network.
4. Click the **Write** button to store the information.

5. Select the **Configuration** tab and enable WEP by selecting **Mandatory** from the pull-down menu.
6. Click the **OK** button to enable the encryption and close the screen.

ABOUT

The About screen shows the release information for the PRISM Configuration Utility.

Troubleshooting

Common Problems and Solutions

This chapter provides solutions to problems usually occurring during the installation and operation of the Network PC Card. Read the description below to solve your problems. If you can't find an answer here, check the Linksys website at www.linksys.com.

1. My computer does not recognize the Network PC Card.
- Make sure that the Network PC Card is properly inserted into the PCMCIA slot.

2. The Network PC Card does not work properly.
- Reinsert the Network PC Card into your notebook's PCMCIA slot. A beep should be heard if the adapter is properly inserted.
- For non-Windows environments, make sure that a PCMCIA card service driver is installed in your PC.
- Click on the **Control Panel** and then on PC-Card. Check whether it has a PCMCIA card in one of the sockets or not. If you find Network PC Card in one of the sockets, it means the card is detected properly. If you see a yellow question mark, the resources are conflicting.
  Right click on **My Computer** and select **Properties**. Select the device manager and click on the Network Adapter. You will find the Network PC Card if it is installed successfully. If you see the yellow exclamation mark, the resources are conflicting. Click on PCMCIA card and then on PCMCIA card service. You will see the status of the Network PC Card. If there is a yellow question mark, please check the following:
  - Make sure your notebook supports a 5.0V card.
  - Make sure your notebook has a free IRQ.
  - Make sure you have inserted the right card and installed the proper driver.

  If the Network PC Card does not function after attempting the above steps, remove the card and do the following:
  - Uninstall the driver software from your PC.
  - Restart your PC and repeat the hardware and software installation as specified in this User Guide.

3. I cannot communicate with the other computers linked via Ethernet in the Infrastructure configuration.
- Make sure that the notebook PC to which the Network PC Card is associated is powered on.
- Make sure that your Network PC Card is configured on the same channel and with the same security options as with the other computers in the Infrastructure configuration.

Frequently Asked Questions

Can I run an application from a remote computer over the cordless network?
This will depend on whether or not the application is designed to be used over a network. Consult the application's user guide to determine if it supports operation over a network.

Can I play computer games with other members of the cordless network?
Yes, as long as the game supports multiple players over a LAN (local area network). Refer to the game's user guide for more information.

What is IEEE 802.11 standard?
The IEEE 802.11 Wireless LAN standards subcommittee, which is formulating a standard for the industry. The objective is to enable wireless LAN hardware from different manufacturers to communicate.

What IEEE 802.11 features are supported?
The product supports the following IEEE 802.11 functions:
- CSMA/CA plus Acknowledge protocol
- Multi-Channel Roaming
- Automatic Rate Selection
- RTS/CTS feature
- Fragmentation
- Power Management

What is 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.

What is 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.

What is Roaming?

Roaming is the ability of a portable computer user to communicate continuously while moving freely throughout an area greater than that covered by a single Access Point. Before using the roaming function, the workstation must make sure that it is the same channel number with the Access Point of dedicated coverage area.

To achieve true seamless connectivity, the wireless LAN must incorporate a number of different functions. Each node and Access Point, for example, must always acknowledge receipt of each message. Each node must maintain contact with the wireless network even when not actually transmitting data. Achieving these functions simultaneously requires a dynamic RF networking technology that links Access Points and nodes. In such a system, the user's end node undertakes a search for the best possible access to the system. First, it evaluates such factors as signal strength and quality, as well as the message load currently being carried by each Access Point and the distance of each Access Point to the wired backbone. Based on that information, the node next selects the right Access Point and registers its address. Communications between end node and host computer can then be transmitted up and down the backbone.

As the user moves on, the end nodes RF transmitter regularly checks the system to determine whether it is in touch with the original Access Point or whether it should seek a new one. When a node no longer receives acknowledgment from its original Access Point, it undertakes a new search. Upon finding a new Access Point, it then reregisters, and the communication process continues.

What is BSS ID?

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

What is ESS ID?

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 ESS ID and the same radio channel.

What is ISM band?

The FCC and their counterparts outside of the U.S. have set aside bandwidth for unlicensed use in the 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.

What is Spread Spectrum?

Spread Spectrum technology is a wideband radio frequency technique developed by the military for use in reliable, secure, mission-critical communications systems. It is designed to trade off bandwidth efficiency for reliability, integrity, and security. In other words, more bandwidth is consumed than in the case of narrowband transmission, but the trade off produces a signal that is, in effect, louder and thus easier to detect, provided that the receiver knows the parameters of the spread-spectrum signal being broadcast. If a receiver is not tuned to the right frequency, a spread-spectrum signal looks like background noise. There are two main alternatives, Direct Sequence Spread Spectrum (DSSS) and Frequency Hopping Spread Spectrum (FHSS).

What is DSSS? What is FHSS? And what are their differences?

Frequency-hopping spread-spectrum (FHSS) uses a narrowband carrier that changes frequency in a pattern that is known to both transmitter and receiver. Properly synchronized, the net effect is to maintain a single logical channel. To an unintended receiver, FHSS appears to be short-duration impulse noise. Direct-sequence spread-spectrum (DSSS) generates a redundant bit pattern for each bit to be transmitted. This bit pattern is called a chip (or chipping code). The longer the chip, the greater the probability that the original data can be recovered. Even if one or more bits in the chip are damaged during transmission, statistical techniques embedded in the radio can recover the original data without -the need for retransmission. To an unintended receiver, DSSS appears as low power wideband noise and is rejected (ignored) by most narrowband receivers.

Would the information be intercepted while transmitting on air?

WLAN features two-fold protection in security. On the hardware side, as with Direct Sequence Spread Spectrum technology, it has the inherent security feature of scrambling. On the software side, WLAN series offer the encryption function (WEP) to enhance security and Access Control. Users can set it up depending upon their needs.

Can Instant Wireless™ products support printer sharing?
Instant WirelessTM products perform the same function as LAN products . Therefore, Instant WirelessTM products can work with Netware, Windows NT/2000, or other LAN operating systems to support printer or file sharing.

What is WEP?
WEP is Wired Equivalent Privacy, a data privacy mechanism based on a 40 bit shared key algorithm, as described in the IEEE 802.11 standard.

Appendix

Specifications for the Network PC Card

Standards:	IEEE 802.11b	
Channels:	11 Channels (US, Canada) 13 Channels (Europe) 14 Channels (Japan)	
Operating Range:	Indoor:	50M (164 ft.) @ 11 Mbps 80M (262 ft.) @ 5.5 Mbps 120M (393 ft.) @ 2 Mbps 150M (492 ft.) @ 1 Mpbs
	Outdoor:	250M (820 ft.) @ 11 Mbps 350M (1148 ft.) @ 5.5 Mbps 400M (1312 ft.) @ 2 Mbps 500M (1640 ft.) @ 1 Mbps
Data Rate (Mbps):	up to 11Mbps (with automatic scale back)	
LEDs:	Power, Tx/Rx	

Specifications for the PCI Adapter

Standards:	PC97/98/99 SUPPORT PCI Local Bus 2.1 compliant PC Card-16 bit Standard Specification
Card Type:	32-bit PCI

Environmental Information for the Network PC Card

Dimensions:	4.5” x 2” x .3” (115mm x 54mm x 8mm)
Unit Weight:	1.8 oz. (0.05 kg)
Power:	3.3V or 5V DC, 350mA Tx, 230mA Rx, 20mA Standby
Certifications:	FCC Class B, CE Mark Commercial
Operating Temp.:	32ºF to 131ºF (0ºC to 55ºC)
Storage Temp.:	-4ºF to 158ºF (-20ºC to 70ºC)
Operating Hum.:	0% to 70% Non-Condensing
Storage Hum.:	0% to 95% Non-Condensing

Environmental Information for the PCI Adapter

Dimensions:	6” x 4.75” x .75” (152mm x 121mm x 19mm)
Unit Weight:	3 oz. (0.09 kg)
Power Required:	5V
Certifications:	FCC Class B, CE Mark Commercial
Operating Temp.:	32ºF to 131ºF (0ºC to 55ºC)
Storage Temp.:	-4ºF to 158ºF (-20ºC to 70ºC)
Operating Hum.:	0% to 70% Non-Condensing
Storage Hum.:	0% to 95% Non-Condensing

Linksys Warranty Information

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