WL11000

Wireless LAN PCMCIA Adapter

USER MANUAL

Version 0.9.2, February 16, 2000

Federal Communications Commission Statement

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

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the manufacturer's instructions, it 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 during 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 to 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.

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Manufacturer's Disclaimer Statement

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This device requires a radio license, unless it (including antenna) is installed totally inside a building. (User must obtain this license from Industry Canada).

Printed in Taiwan

Contents

Chapter 1 About the WL11000 PCMCIA Card 4
1-1 Features 4
1-2 Applications 4
1-3 Product Kit 5

Chapter 2 Network Configuration and Planning 6
2-1 Network Topology 6
2-2 Roaming 8

Chapter 3 Adapter Installation and Configuration – Windows® 98 9
3-1 System Requirements 9
3-2 Inserting the Adapter 9
3-3 WL11000 Driver Installation -Windows® 98 10
3-4 Adapter Configuration – Windows® 98 13
3-5 Protocol Installation – Windows® 98 19
3-6 WL11000 Setup for Windows NT 4.0 24

Chapter 4 Installing and Navigating the PRISM Configuration Utility 28
4-1 PRISM Configuration Utility - Installation 28
4-2 PRISM Configuration Utility- Navigation 31

Appendix A Troubleshooting 36

Appendix B Glossary 38

Chapter 1 About the WL11000 PCMCIA Card

The WL11000 IEEE 802.11 PCMCIA PC Card is compatible with any standard, notebook computer Type II or Type III PCMCIA slot. As a Plug-and-Play device, Windows 95/98 will automatically recognize the WL11000 PCMCIA card and initiate the installation process. Upon successful installation, the WL11000 PCMCIA card will communicate seamlessly with other WL11000 wireless home and office networking products.

1-1 FEATURES

1. Supports up to 11 Mbps data rate: T-1 line alternative/replacement that dramatically cuts costs.
2. Working range up to 800 ft. in an open environment enhances mobility.
3. Supports point-to-point and point-to-multipoint access provides increased flexibility.
4. Seamless connectivity to wired Ethernet and PC network LAN's offers quick, trouble-free integration with existing networks.
5. Robust Direct Sequence Spread Spectrum (DSSS) technology provides secure, interference-resistant wireless connection.
6. Wireless connections eliminate the hassle and cost of cabling.
7. Supports a wide range of LAN (Local Area Network) Network Operating Systems (NOS) including Windows ® 98 and Windows NT™
8. Easy Plug and Play installation
9. Omni - directional antenna included
10. Greater flexibility to locate or move networked PC's

1-2 APPLICATIONS

WL11000 products offer a fast, reliable, cost-effective solution for wireless client access to the network the following applications and environments:

- Remote access to corporate network information
- E-mail, file transfer and terminal emulation
- Difficult-to-wire environments
- Historic or older buildings
- Buildings with asbestos insulation
- Open areas where wiring is difficult to employ
- Frequently changing environments
- Retailers, manufacturers or other organizations that frequently rearrange the workplace or relocate
- Temporary LANs for special projects or peak time usage

- Trade shows, exhibitions and construction sites that employ temporary networks. Retailers, airline and shipping companies that need additional workstations for a peak period and Auditors that require workgroups at customer sites.
- Access to database for mobile workers
- Medical, Technical and Retail specialists that require roaming access to a database or other network resources.
- SOHO (Small Office and Home Office) users
- Perfect for users that need a small, easy-to-install network that deploys rapidly.
- Inter-building connection
- Wireless building-to-building networks are quickly and easily installed, require no monthly lease fees, and provide the flexibility to reconfigure easily.

1-3 PRODUCT KIT

The WL11000 product kit includes the following items. Ensure that the items in the following list have been included. If any of the listed items are missing, please contact your local dealer.

- 1 X WL11000 PCMCIA Type II Adapter
- 1 X Driver
- 1 X User Manual & Utility CD pack

Chapter 2 Network Configuration and Planning

The WL11000 supports legacy Ethernet LAN network configuration options as defined by the IEEE 802 standards committee.

The WL11000 can be configured as:

- Ad-Hoc for departmental or SOHO LANs
- Infrastructure for enterprise LANs
- LAN-Interconnection for point-to-point link as a campus backbone

2-1 NETWORK TOPOLOGY

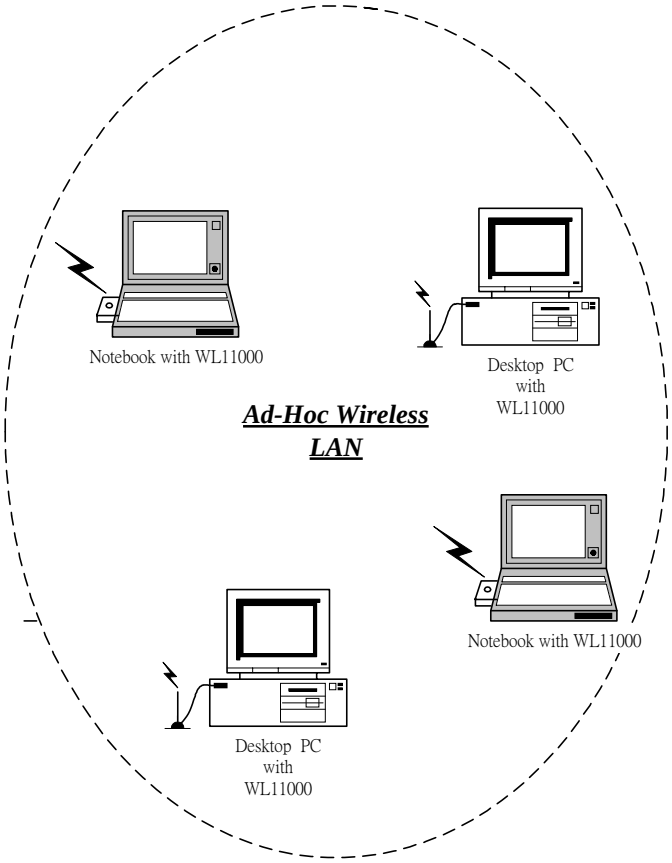


Fig. 1 - Ad-Hoc Wireless LAN

An Ad-Hoc wireless LAN is a group of computers, each equipped with one WL11000 adapter, connected as an independent wireless LAN. Computers in a specific Ad-Hoc wireless LAN must be configured to share the same radio channel.

Ad-Hoc wireless LAN configurations are appropriate for branch level departments or SOHO operations.

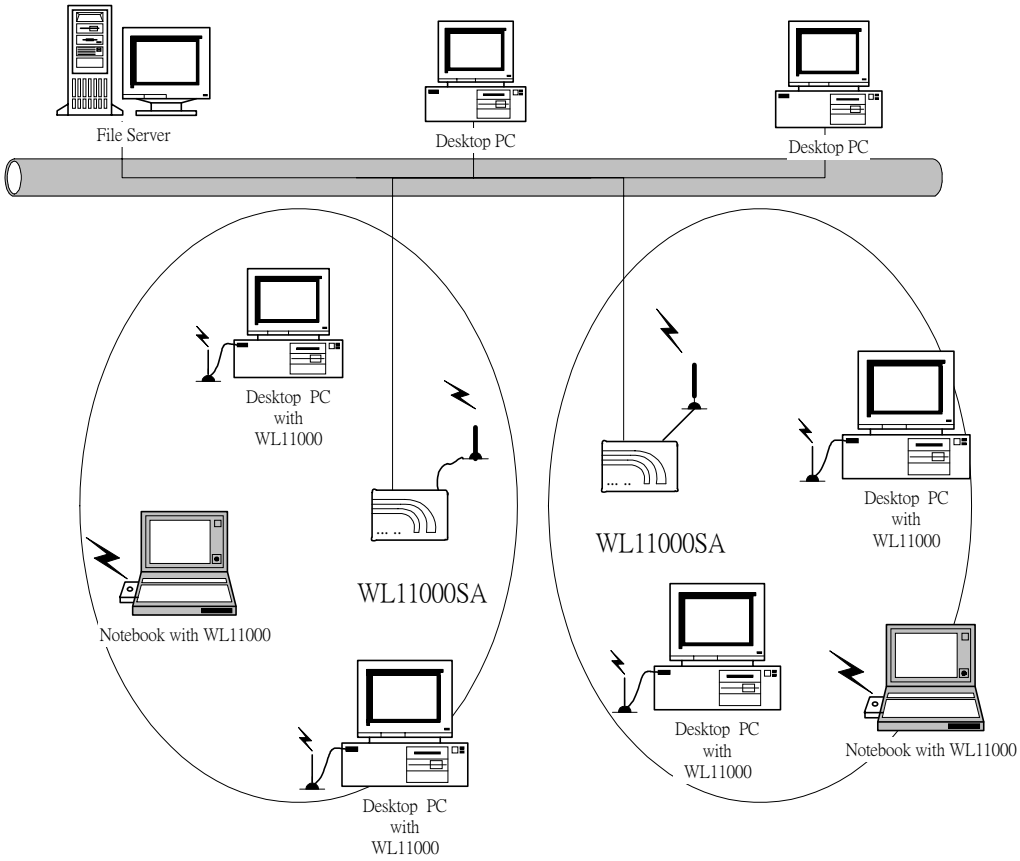


Fig. 2 - Infrastructure Wireless LAN Configuration

The WL11000 provides access to a wired LAN for wireless workstations. An integrated wireless and wired LAN is called an Infrastructure configuration. A group of WL11000 PC users and an Access Point compose a Basic Service Set (BSS). Each WL11000 PC in a BSS can talk to any computer in the wired LAN infrastructure via the Access Point.

An Infrastructure configuration extends the accessibility of a WL11000 equipped PC to a wired LAN, and doubles the effective wireless transmission range for 2 WL11000 PCs. Since the Access Point is able to forward data within its BSS, the effective transmission range in an infrastructure LAN is **doubled**.

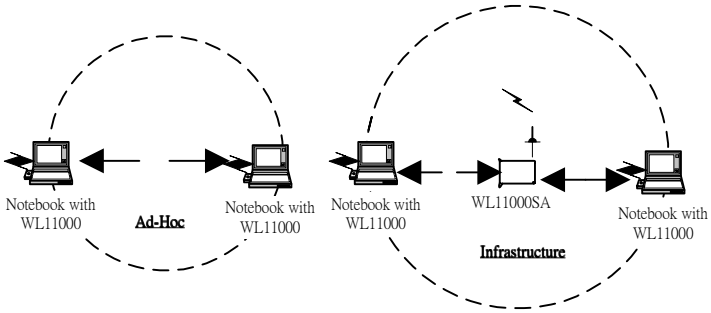


Fig. 3 - The effective Transmission Range

The use of a unique ID in a BSS is essential. All WL11000 equipped PCs configured without roaming options in an independent BSS must be configured with a BSS ID corresponding to the WL11000SA used in the BSS. Check your WL11000SA for its BSS ID or use the Access Point Browser Utility program to determine the BSS ID.

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

A point-to-point LAN configuration is possible when two access points are linked with an optional directional antenna (the directional antenna is an optional accessory, please contact your dealer for information). The optional directional antenna makes LAN-Interconnection to a wireless backbone between buildings possible.

2-2 ROAMING

Infrastructure mode also supports roaming capabilities for mobile users. More than one BSS can be configured as an Extended Service Set (ESS). The continuous network allows users to roam freely within an ESS. All WL11000 PCs and WL11000SAs within one ESS must be configured with the same ESS ID and use the same radio channel.

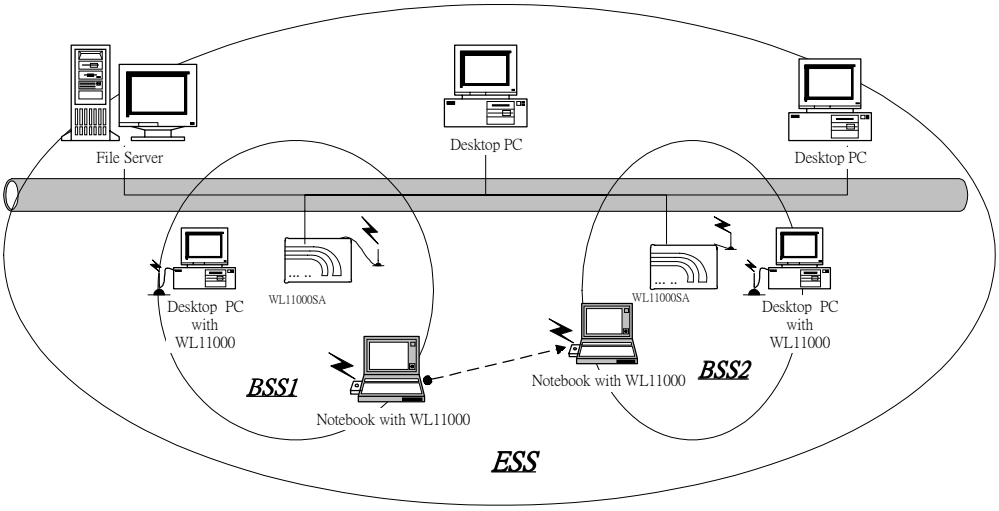


Fig. 4 - Roaming in an Extended Service Set (ESS)

Before enabling an ESS with roaming capability, choosing 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.

Chapter 3 Adapter Installation and Configuration – Windows® 98

3-1 SYSTEM REQUIREMENTS

In order to install and use the WL11000 PCMCIA card your PC system must meet the following requirements:

- A PCMCIA Type II or Type III slot
- PCMCIA revision 2.10 compliant card and socket services
- Windows® 98 (with the Windows® CD, for use during installation)
- 500 Kbytes free disk space for utility and driver installation

3-2 INSERTING THE ADAPTER

To insert the WL11000 Network Adapter into a notebook computer, do the following:

1. Locate an available Type II or Type III PCMCIA slot.
2. With the PCMCIA adapter's 68-pin connector facing the PCMCIA slot and the "WL11000PCMCIA" label facing up slide the PCMCIA adapter completely into the PCMCIA slot.

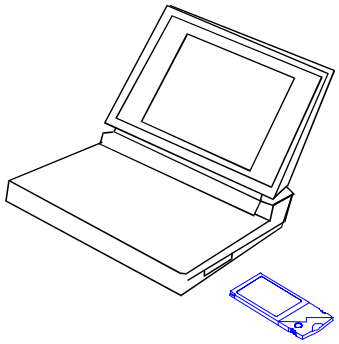


Fig. 5 Insert the WL11000 into Notebook

After properly inserting the Network Adapter into your notebook, continue with the WL11000 driver and PRISM Configuration Utility installation.

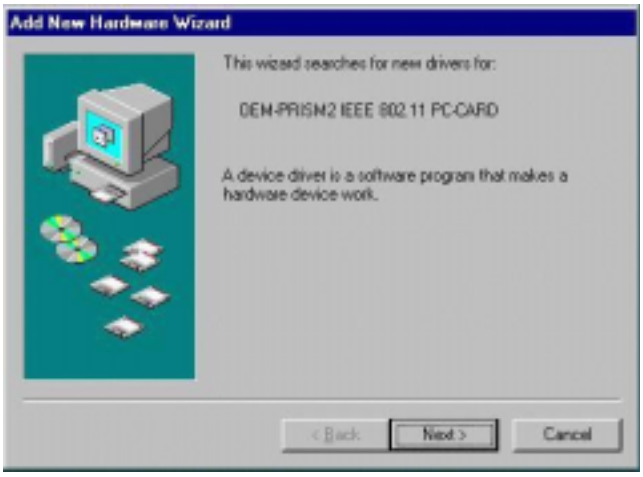
NOTE: *The PCMCIA slot allows "hot swap" of PCMCIA adapter. You may insert or remove the WL11000 / PCMCIA adapter from the slot anytime, even when the power of your computer is on.*

NOTE*: Windows® 98 requires that the Network card and socket services must be compliant with the PCMCIA revision 2.10 specification. Please check the documentation of the PCMCIA driver before installing the WL11000 PCMCIA adapter.*

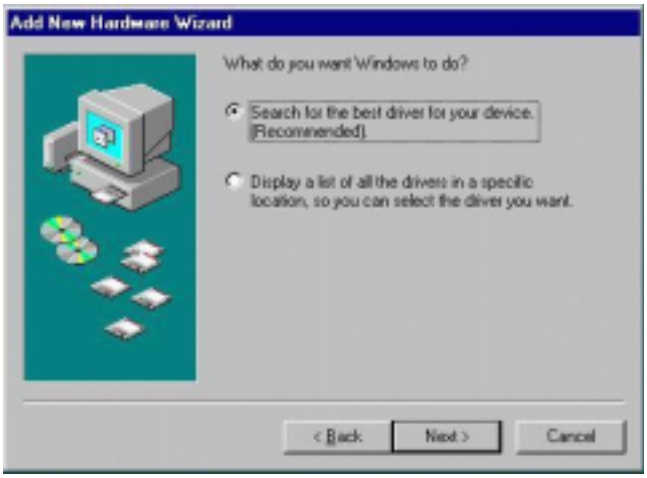
3-3 WL11000 DRIVER INSTALLATION -WINDOWS® 98

Note: Before proceeding, have the Windows® 98 CD ready, as it will be required during the software installation process.

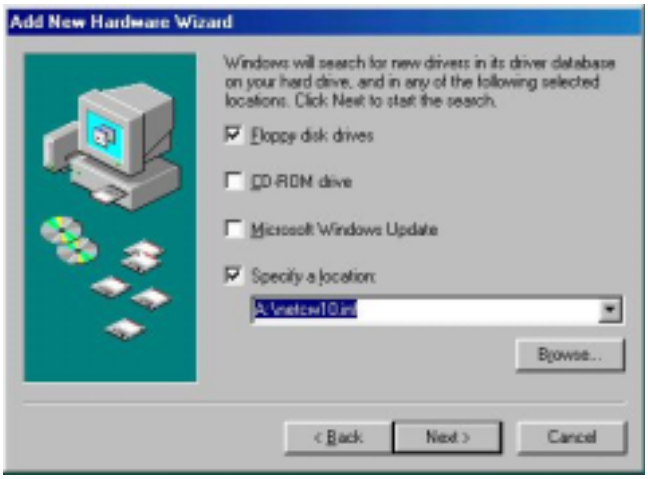
1. Insert the WL11000 A adapter into a standard Type II or Type III PCMCIA card slot, as described in the preceding section.
2. Windows® 98 will automatically detect the WL11000 and prompt you to install the necessary driver. Click “Next” to begin the installation.



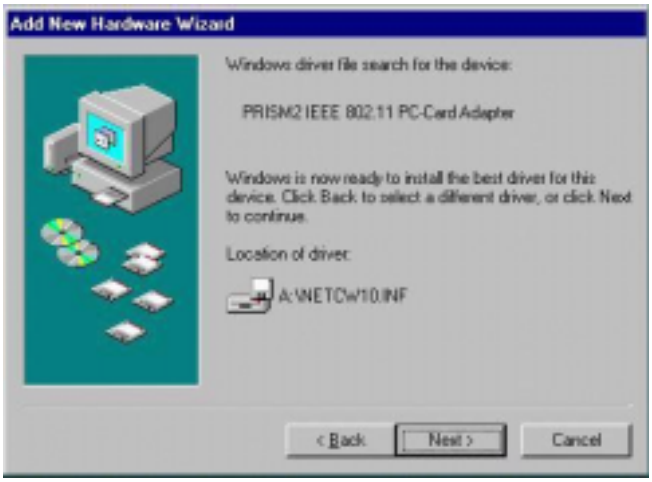
3. Check “Search for the best driver…” click “Next”.



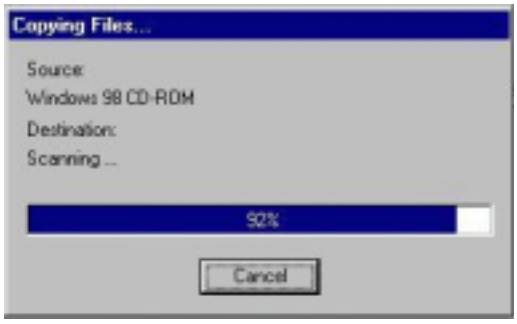
4. Check “Floppy-disk drives” click “Browse”. Double-click the “Setup” folder icon from the list, double-click the setup.exe icon. Windows® will automatically enter the path click “Next”.



5. Windows® will then acknowledge that it has found the appropriate driver, click "Next"



Windows® will now install the driver

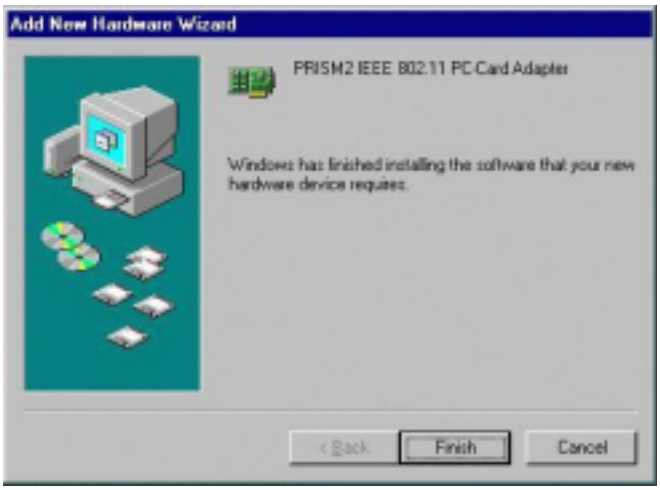


As the driver files are being copied to the appropriate location, you will be prompted to insert the Windows® 98 CD.

6. Insert the Windows® 98 CD. Select “D:\win98” from the drop down list (where “D” represents the CD-ROM drive), click “OK”

NOTE: *You must insert the Windows 98®CD as the driver installation requires special files that will not be available even if you have stored a copy of Windows® 98 on your hard drive.*

7. After Windows® has finished installing the appropriate files click “Finish”



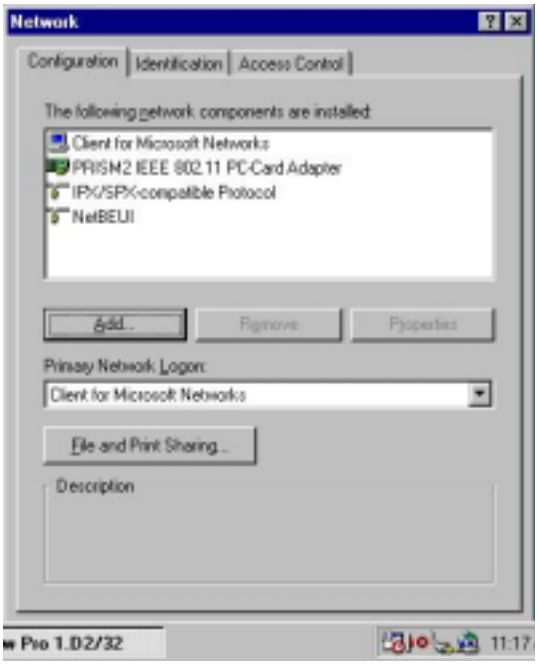
8. You will be prompted to restart your computer, click "YES" to complete the installation.

3-4 ADAPTER CONFIGURATION – WINDOWS® 98

After successful installation of the WL11000 and its driver, continue the installation process by configuring the WL11000 adapter properties. To configure the WL11000 Adapter complete the following steps :

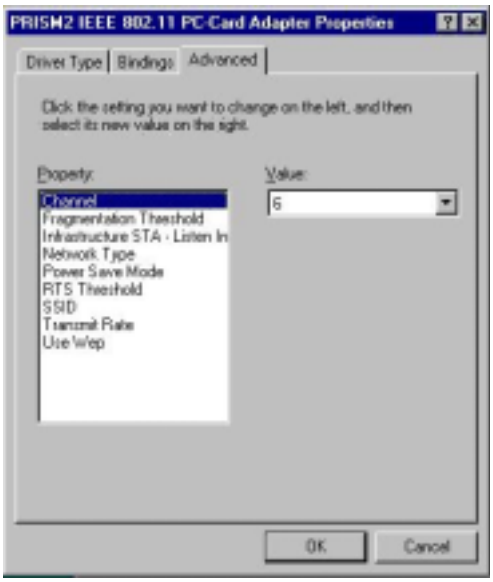
1. From the Control Panel, double-click the “Network” icon

2. Select "PRISM2IEEE 802.11 PC Card Adapter" from the list and press the “Properties” button.

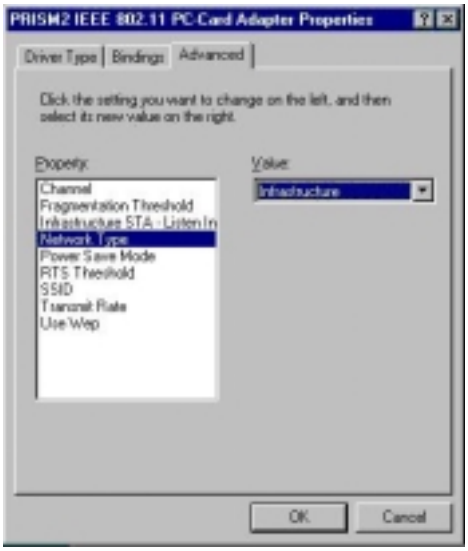


3. From the “Properties” menu select the “Advanced” tab.

4. Select “Channel” from the list, and choose a “Value” from the drop down list. FCC regulations require a “Value” between 1 and 11.



5. Select “Network Type”, and choose “Infrastructure” or “Ad-Hoc” as the “Value”.

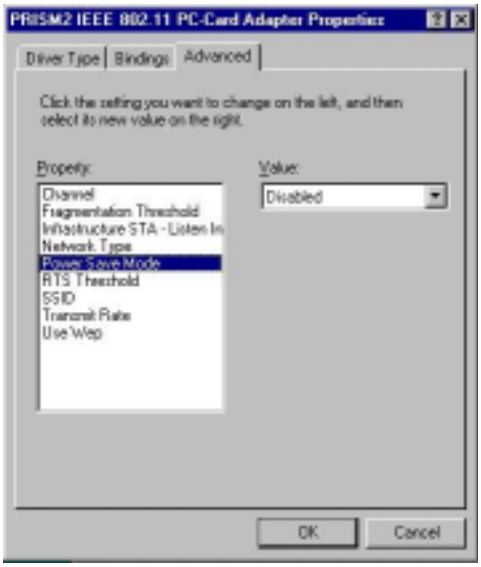


***Note**: “Infrastructure” mode allows a wireless adapter to communicate with a wired network, while “Ad-Hoc” mode allows wireless-to-wireless communication. Consult your System Administrator for information about your network communication type. For more information about Infrastructure and Ad-Hoc networks, see Chapter 2 of this manual*

6. Select “Power Save Mode” and choose a “Value”.

***NOTE:** To allow uninterrupted data communication, choose “Disabled” as the “Value”. Choosing “Enabled” allows your notebook to enter “sleep” mode, however, this will interrupt data communication. Consult your System Administrator to find out the best setting for your network type. For more information about Power Save Mode, see the chapter entitled “PRISM Configuration Utility” in this manual.*

7. Select “Power Save Mode” and choose a “Value”.

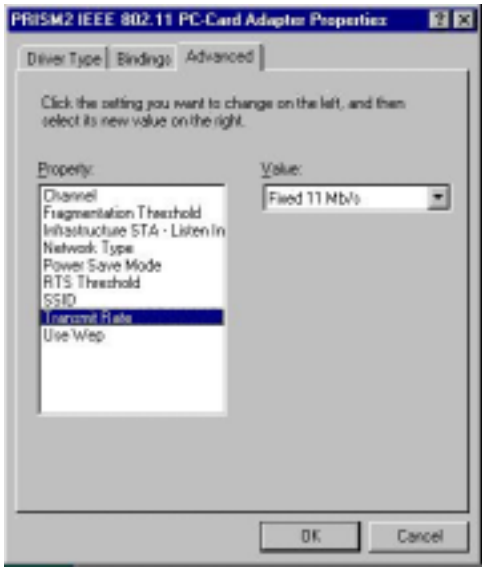


NOTE: *To allow uninterrupted data communication, choose “Disabled” as the “Value”. Choosing “Enabled” allows your notebook to enter “sleep” mode, however, this will interrupt data communication. Consult your System Administrator to find out the best setting for your network type. For more information about Power Save Mode, see the chapter entitled “PRISM Configuration Utility” in this manual.*

8. Select “SSID”; enter a “Value” of “PRISM2”.

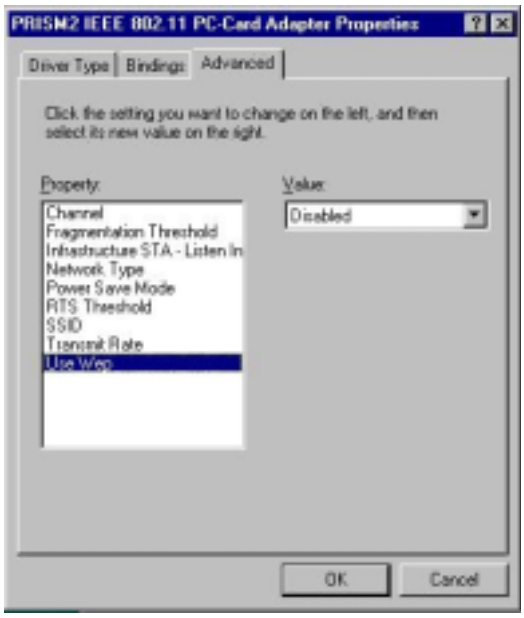
NOTE*: The SSID can have any value, but should have the same value as the Access Point (AP). In Ad-Hoc mode, all clients should share the same SSID.*

9. Select “Transmit Rate”, and choose a “Value”.



***NOTE**: Fixed 11 Mb/s is the preferred “Value” for environments where the client has line of sight access and is a short distance away from the AP. Fully Auto is the recommended setting for clients that are farther away from the AP and where there may be interference between the client and the AP.*

10. Select “Use Wep”, and choose a “Value”.



***NOTE:** Wired Equivalent Privacy (Wep) is an encryption scheme used to protect wireless data communication. Selecting “Disabled” will prevent you from sharing data with other computers if your network uses Wep. If your network is Wep enabled, you must choose “Mandatory”. Consult your System Administrator for more information about your network type. For more information about Wep, see the chapter entitled “PRISM Configuration Utility” in this manual.*

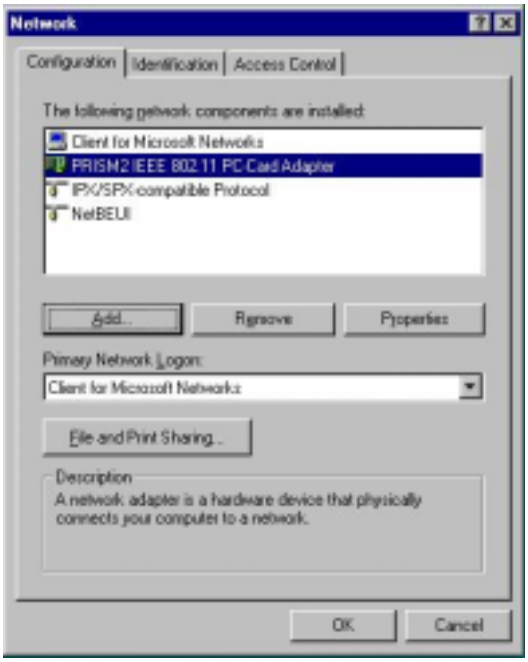
11. After the configuring the “Properties”, click “OK” and continue with the Protocol Installation, described in the following section.

3-5 PROTOCOL INSTALLATION – WINDOWS® 98

Before continuing with the Protocol installation consult your System Administrator for details about your specific network. To install network protocols complete the following steps.

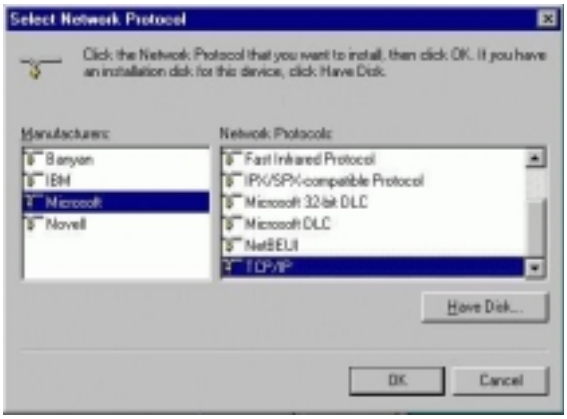
1. From the “Control Panel” double-click the “Network” icon.

2. Select “PRISM2 IEEE 902.11 PC Card Adapter” and click “Add”.

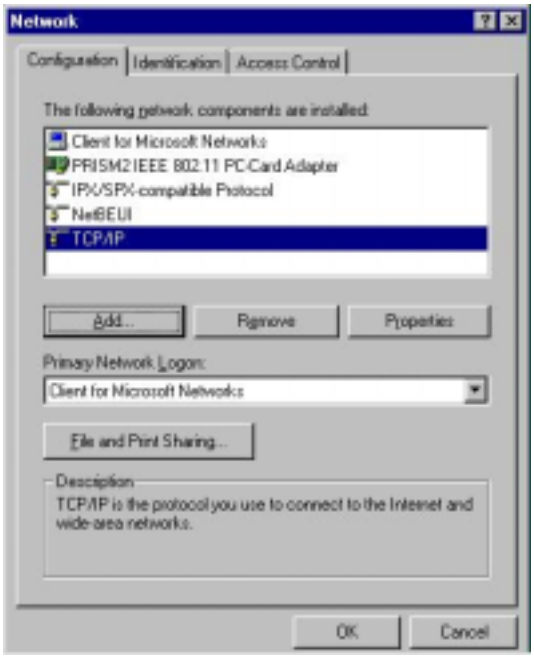


3. Highlight “Protocol” and click “Add”

4. Select “Microsoft” from the list of “Manufacturers” and “TCP-IP” from the list of “Network Protocols”, click “OK”



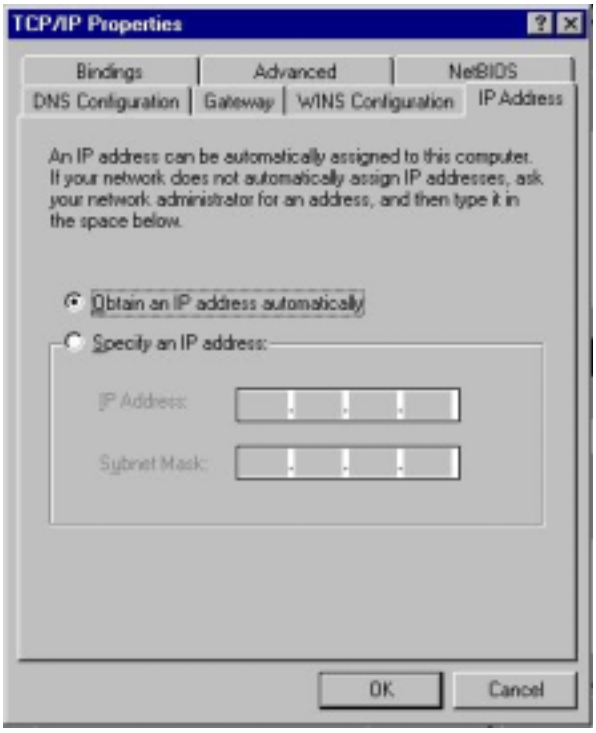
5. Select “TCP/IP “ and click “Properties”.



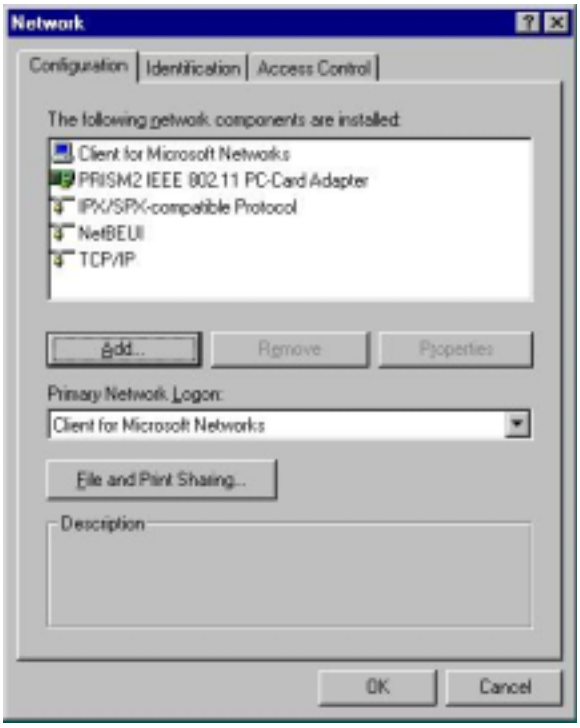
Repeat step 2 – 5 to install other protocols such as NetBeui or IPX/SPX.

NOTE*: The following steps apply to DHCP servers. Consult your system administrator for specific information regarding your server type, and for help in specifying an IP address if you do not use a DHCP server and must manually enter the IP address and DNS number.*

6. Check “Obtain an IP address…” and click “OK”. If you are using a DHCP server the IP address will be entered automatically.

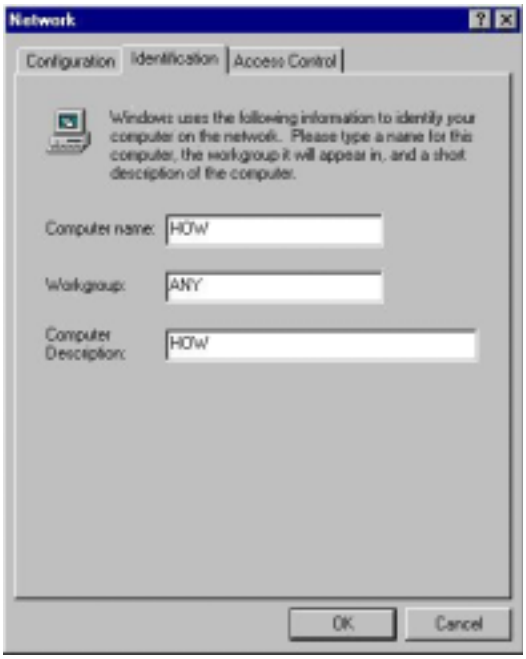


7. From the Network menu highlight “Client from Microsoft Networks”, and click" File and Print Sharing”.

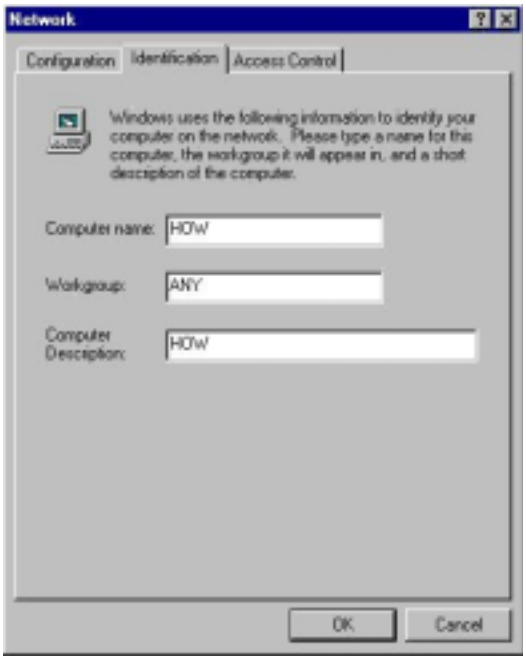


8. Check both boxes and click “OK”.

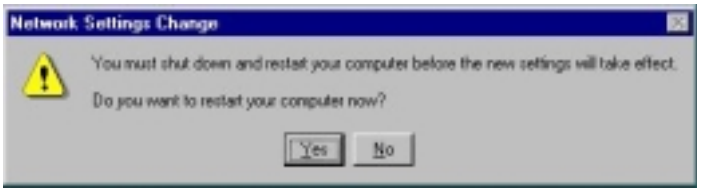
9. Enter a “Computer name”, “Workgroup” and “Computer Description”, click “OK”



10. Enter a “Computer name”, “Workgroup” and “Computer Description”, click “OK”



11. You will be prompted to restart your computer, click “Yes” to complete the installation.



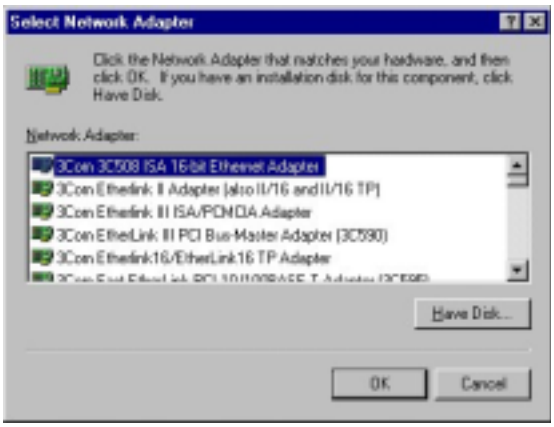
Note: *Please see the trouble shooting if you encounter some problem while installing the PC-Card card or your PC-Card is non-functional.*

3-6 WL11000 SETUP FOR WINDOWS NT 4.0

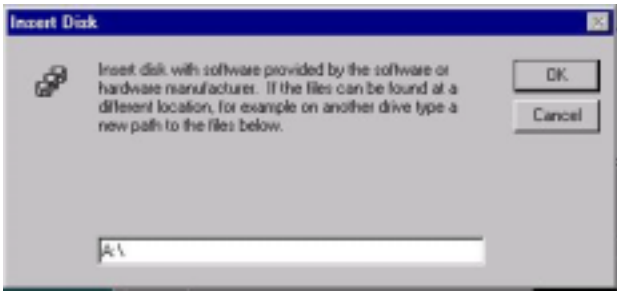
Login as Administrator

1. From the desktop, select “Control Panel”, double-click “Network”, click “Adapters”, click “Add”

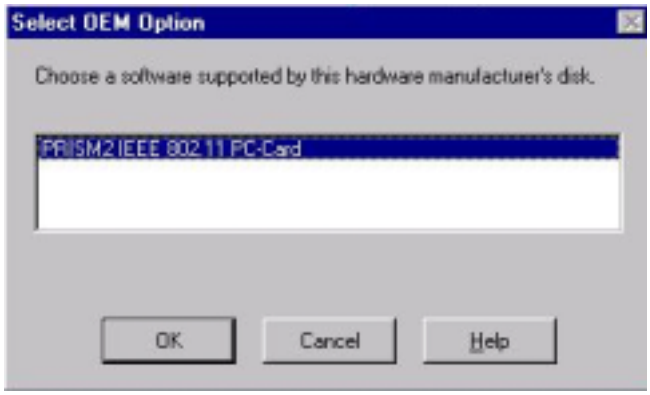
2. Click “Have Disk”



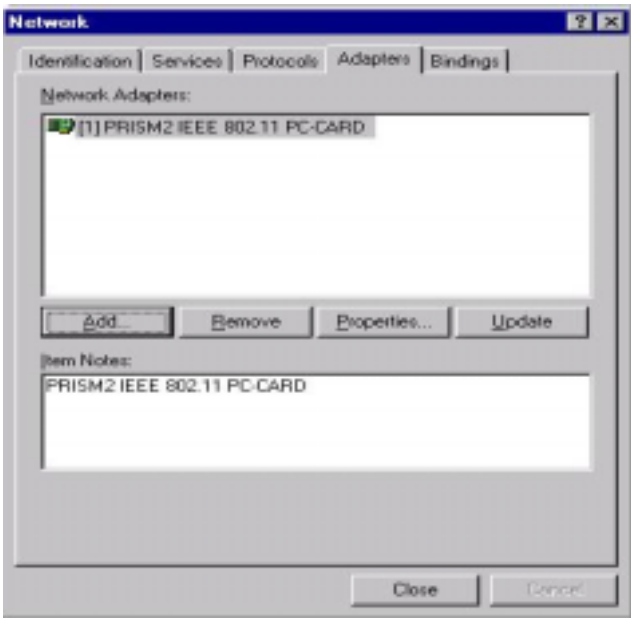
3. Insert the WL11000 disk; Windows NT will manually enter the path to the driver click “OK”.



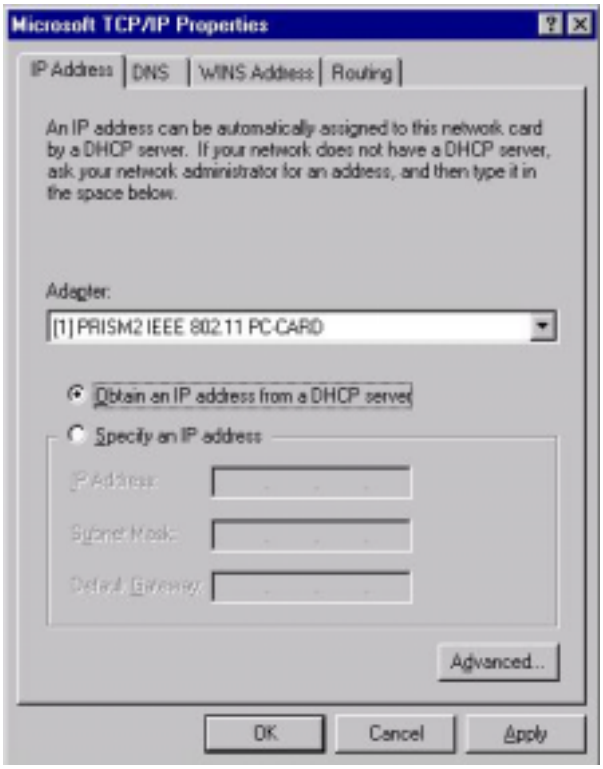
4. Select your adapter from the list click “OK”.



5. Click “Close” from the “Network” dialog, Windows NT will auto-bind the new adapter with any network protocols already installed on the system.



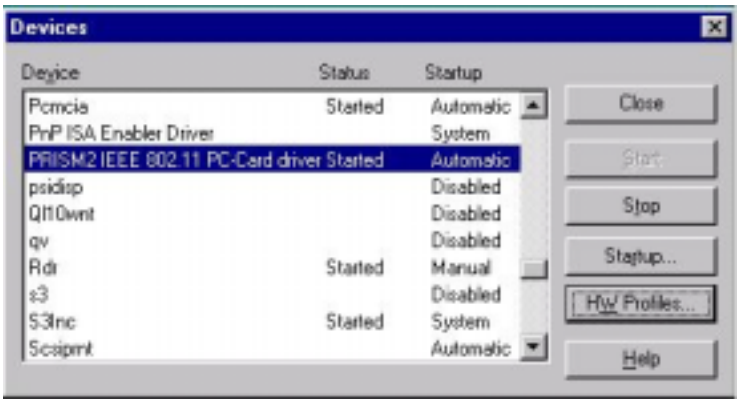
6. After the auto-binding procedure is complete, select “Properties” from the “Network” dialog. At this point you may choose to manually specify an IP address, or automatically obtain an IP address if you are using a DHCP server. Consult your Systems Administrator for information about your server type, IP address settings and DNS number.



7. After the settings configuration is complete, confirm that the “Computer Name” and “Workgroup” designations are correct, and click “OK”.

8. You will be prompted to restart your computer, click yes to complete the installation

9. Upon restart, open the “Devices” menu from the “Control Panel”, to confirm that the driver installation was successful. Your adapters driver should now be listed in the “Devices” menu.



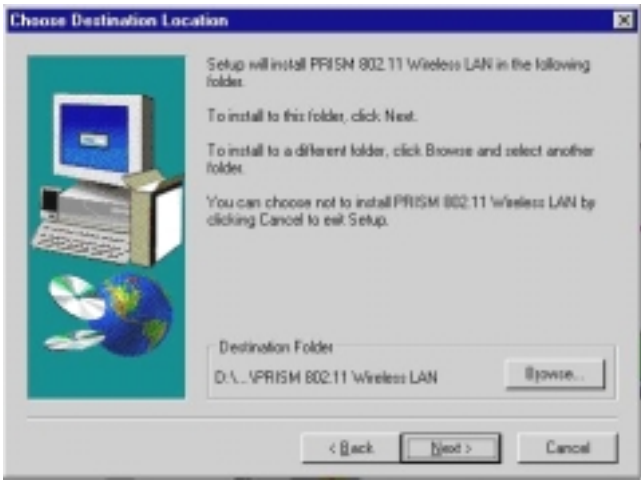
Chapter 4 Installing & Navigating the PRISM Configuration Utility

4-1 PRISM CONFIGURATION UTILITY - INSTALLATION

1. Insert the PRISM Network Configuration Utility disk into an available floppy disk drive. From the "Run" window type "A:\WL1100\WLU\setup.exe" (where "A" represents a floppy disk drive).

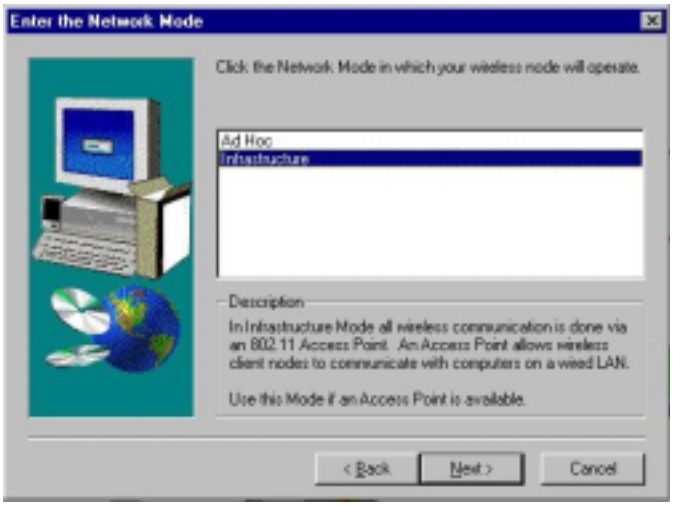
2. Click “Yes” to accept the License Agreement and continue with the installation.

3. Click “Next”.



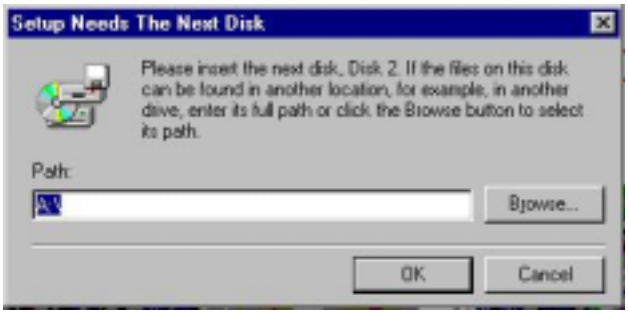
4. Enter the System ID click “Next”.

5. Choose the Network Mode, click “Next”

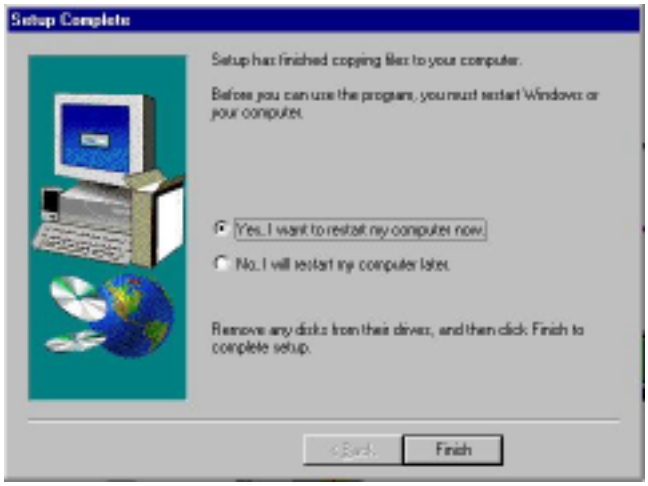


6. Browse to install the utility in another folder, or confirm the installation and click “Next”.

7. You will be prompted to insert Disk 2. Insert the disk and click “Browse”. Double-click the “Setup” folder; double-click again on the “setup” icon. When the path has been automatically entered in the “Setup Needs The Next Disk” dialog, click “OK”.



8. After installation is complete, you will be prompted to restart your computer. Check “Yes” and click “Finish” to complete the installation and begin navigating the PRISM Configuration Utility.

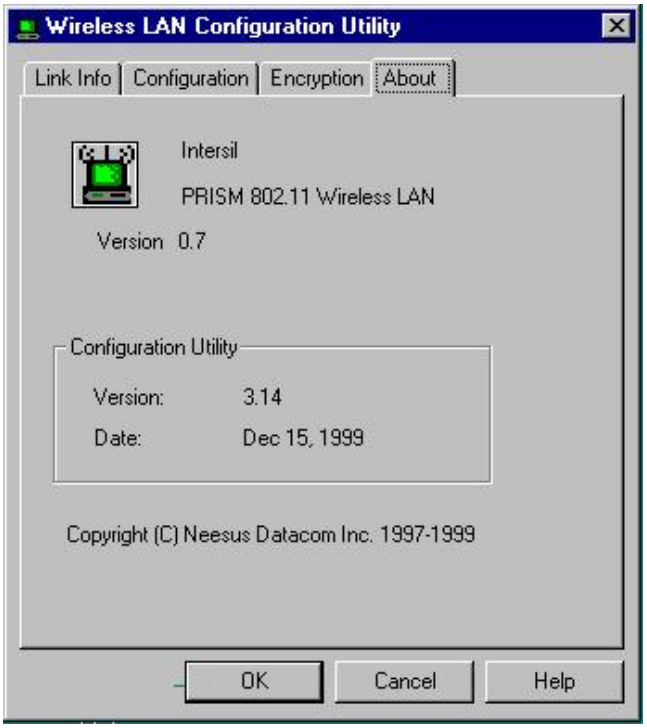


4-2 PRISM CONFIGURATION UTILITY- NAVIGATION

The following section describes and defines the various functions of the PRISM Network Configuration Utility. This utility provides quick access to all adapter settings.

PRISM Quick-Launch Icon: After installation is complete, a PRISM utility icon will appear in the "Quick-Launch" menu in the lower right hand corner of the screen, near the clock.

The PRISM Configuration Utility: Double clicking the PRISM icon in the Quick Launch bar will open the PRISM Configuration Utility main menu, providing quick access to all adapter settings. The following image shows the PRISM Configuration Utility with the "About" tab selected, here you will find Version, Copyright and Manufacturer information.



Link Info: The Link Info menu provides information about the current link between the adapter and the base station.

Configuration: Selecting this tab opens the "Configuration" menu. Here you will find options for configuring your adapter.

Description of Settings

Following is an explanation of each adapter setting presented by the "Configuration" menu.

Mode: The Mode setting determines the architecture of your wireless LAN. Choose Ad-Hoc or Infrastructure Mode depending on your network type. A brief explanation of each mode follows:

- **Ad-Hoc:** This mode is used for a simple peer-to-peer network. This type of network allows the sharing of local resources only between wireless clients without a wireless Access Point (AP).

- **Infrastructure**: This mode allows a wireless LAN to be integrated into an existing wired network through an AP. Infrastructure type networks also permit roaming between Access Points while maintaining connection to all network resources. Infrastructure mode provides additional features, such as WEP security, power saving and extended range.

SSID: An acronym for Service Set Identifier, SSID is the unique name shared among all clients and Access Points in a wireless network. The SSID must be identical for all clients or Access Points participating in the same network. The SSID is case sensitive and must not exceed 30 characters.

Ethernet Conversion: The RFC1042 mode is the 802.11 standard conversion method and is selected by default. If compatibility with older wireless LAN systems is necessary select another conversion implementation from the **Ethernet Conversion drop** down list.

Tx Rate: The transmit rate or Tx Rate selects the allowable transfer rates of the wireless client. 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.

Note: *The Tx rate setting must be supported by the AP. If the AP does not support the Tx rate, undesired results may occur.*

WEP: An acronym for Wired Equivalent Privacy, 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 wireless client on the network must use an identical 40-bit key.

NOTE: 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.

PS Mode: Power Saving Mode enables or disables the power saving features of your wireless adapter. When enabled on a laptop, the power saving mode can reduce power consumption by the wireless card and extend the battery life of your laptop. This setting is only implemented in a network operating in Infrastructure mode.

- **Changing the PS mode:** The PS Mode on your adapter is set to “Disabled” by default. To change the setting, select “Enabled” from the drop-down list, click “OK” and wait a few seconds. The screen will then is updated and show the current Connection Status, Link Quality and Signal Strength.

Channel: This setting specifies the default 802.11 channel used by the Wireless LAN communication. In an Infrastructure type network without an Access Point active on the default channel, clients will scan through all available channels searching for a network with matching SSID.

- **Changing the Channel:** Changing the channel is only effective in Ad-Hoc networks. Networks operating in Infrastructure mode automatically scan for a channel. The following table presents contains the operational channel frequency for several countries.

Regulatory Channel Frequency

Channel	Frequency (MHZ)	FCC	Canada	ETSI	France	Spain	Japan
1	2412	V	V	V			
2	**2417**	V	V	V			
3	**2422**	V	V	V			
4	**2427**	V	V	V			
5	**2432**	V	V	V			
6	**2437**	V	V	V			
7	**2442**	V	V	V			
8	**2447**	V	V	V			
9	**2452**	V	V	V			
10	**2457**	V	V	V	V	V	
11	**2462**	V	V	V	V	V	
12	**2467**			V		V	
13	**2472**			V		V	
14	**2484**						V

Encryption: Selecting the Encryption tab allows you to create new WEP keys.

The 40-bit WEP keys can be generated from a user-defined passphrase (any text string with a maximum of 32 characters). To generate encryption keys for each client communicating in the wireless network, complete the following steps:

1. Type the exact same case sensitive text in the Passphrase entry field for each client.
2. Click, “Generate” to create the encryption keys. The Passphrase generates four (4) unique keys.
3. Select the same Default Key in the drop-down box for each client. This is the key the clients will use to encrypt data.
4. You must click “Write” to store the information in the registry.
5. Select the “Configuration” tab and enable WEP by choosing “Mandatory”.
6. Click “Apply Changes”.
7. Click “OK” to close the dialog.

Appendix A Troubleshooting

Problem Solving

My computer does not recognize the WL11000.

Probable Solution:

- The WL11000 is not properly inserted into the PCMCIA slot.
- Ensure that the WL11000 has been inserted into an available PCMCIA slot.

The WL11000 does not work properly.

Probable Solution:

- Insert the PCMCIA adapter into Notebook's slot again. A beep should be heard if the adapter is properly inserted.
- Check the I/O cable that connects the RF module and the PCMCIA adapter. The power LED indicator will be active if the cable is properly connected.
- For non-Windows 95/98 environments, ensure that a PCMCIA card service driver is installed in your computer.
- 1) Click on the Control Panel and then on PC-Card. Check whether it has PCMCIA card in one of the sockets or not. If you find PRISM2 IEEE 802.11 PC-Card Adapter in one of the sockets, it means the card is detected properly. If you see the yellow sign of
- question-mark(?), the resources are conflicting.

- 2)Right click on "My Computer" and the select Properties. Select the device Manager and click on the Network Adapter. You will find PRISM2 IEEE 802.11 PC-Card Adapter if it is installed successfully. If you see the Yellow sign the resources are conflicting. Click on

PCMCIA card and then on PCMCIA Card service, you can see the status of PCMCIA card. If there are yellow sign either on adapter or PCMCIA card, please check followings.

- 2-1) Check if your Notebook supports 3.3V card.
- 2-2)Check if your Notebook has a free IRQ
- 2-3) Check that you have inserted the right card and have installed the proper driver.

If the WL11000 does not function after attempting the above steps, remove the PCMCIA adapter, and do the following:

- From the run window enter, c:\windows\system, locate and delete the cw10.sys file
- Open the “Control Panel” double-click “System” and delete PRISM2 IEEE 802.11 PC-card Adapter.
- Restart the PC and repeat the hardware and software installation steps outlined in Chapters 3 and 4.

The WL11000 station cannot communicate with other computers linked via Ethernet in the Infrastructure configuration.

Probable Solution:

- Ensure that the WL11000 with which the station is associated is powered on.
- Confirm the station is configured with the same operating radio channel as the WL11000. If the IDs are different, change the WL11000 and all the stations within the BSS to another radio channel.
- Ensure that the station is configured with the same security options as the WL11000, and can be turned off and on with the same security key.
- Confirm that the BSS ID is the same as the WL11000 for a roaming disabled station. Alternately confirm that the ESS ID is the same as the WL11000 for a roaming enabled station.

Appendix B Glossary

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 wireless adapters, connected as an independent wireless LAN.

Backbone - The core infrastructure of a network, the portion of the network that transports information from one central location to another central location. The information is then off-loaded onto a local system.

Base Station - In mobile telecommunication, a base station is the central radio transmitter/ receiver that maintains communication with the mobile radio telephone sets within range. In cellular and personal communications applications, each cell or microcell has its own base station; each base station in turn is interconnected with other cells' base.

BSS - Stands for "Basic Service Set." An Access Point associated with several wireless stations.

ESS - Stands for "Extended Service Set." More than one BSS can be configured as an Extended Service Set. An ESS is basically a roaming domain.

Ethernet - A popular local area data communications network, originally developed by Xerox Corp., which accepts transmission from computers and terminals. Ethernet operates on 10 Mbps baseband transmission over shielded coaxial cable or over shielded twisted pair telephone wire.

Infrastructure - An integrated wireless and wired LAN is called an Infrastructure configuration.

PCMCIA - Personal Computer Memory Card International Association, which develops standards for PC cards, formerly known as PCMCIA cards, are available in three "types" which are about the same length and width as credit cards, but range in thickness from 3.3 mm (Type I) to 5.0 mm (Type II) to 10.5 mm (Type III). These cards can be used for many functions, including memory storage, as landline modems and as wireless LAN.

Roaming - A function that allows one to travel with a mobile end system (wireless LAN mobile station, for example) through the territory of a domain (an ESS, for example) while continuously connecting to the infrastructure.

RTS Threshold – Transmitters contending for the medium may not hear each other. RTS/CTS mechanism can solve this " Hidden Node Problem".

Product Specifications for WL 11000 :

Radio:	**Complies with IEEE 802.11**
Frequency Band:	**2400 ~ 2483.5MHz (for US, Canada, and ETSI** **2400 ~ 2497MHz (for Japan)**
Modulation TYPE:	**CCK,BPSK,QPSK**
Operating Channels:	**IEEE 802.11 compliant** **11 channels (US, Canada)** **13 channels (ETSI)** **14 channels (Japan)**
Radio Technology:	**Direct Sequence Spread Spectrum**
Data Rate:	**1 / 2 / 5.5 / 11 Mbps**
Output Power:	**> +13dBm**
Receive sensitivity:	**Min. -76dBm for 11Mbps; Min. -80dBm for 5.5/2/1 Mbps ;(@BER 10E-5)**
Antenna Type:	**De-attached PCB patch diversity antenna or MMCX connector for external antenna**
Current Consumption :	**3.3 V , Tx mode 350 m A (Max.) ; Rx mode 230 m A (Max.);**
Package :	**PCMCIA Type II**
Certification:	**FCC Part 15** **ETSI 300.328** **ARIB STD33 & T66**
Driver :	**Windows 95/98/NT/2000** **WinCE** **Linux Red Hat**