WL-380F

11Mbps Wireless LAN USB Adapter

User's Manual

2001/10/09

Copyright statement

Printed in Taiwan, 2001/10/11

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC RF Radiation Exposure Statement:
This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

R&TTE Compliance Statement

This equipment complies with all the requirements of the DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE).

The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000 .

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this manual and of the computer manufacturer must therefore be allowed at all times to ensure the safe use of the equipment.

EU Countries intended for use

The ETSI version of this device is intended for home and office use in Austria, Belgium, Denmark, Finland, France (with Frequency channel restrictions), Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden and United Kingdom.

The ETSI version of this device is also authorized for use in EFTA member states Iceland, Liechtenstein, Norway and Switzerland.

EU Countries Not intended for use

None.

Potential restrictive use

France: Only channels 10,11,12, and13

Contents

2. Introduction

Thank you for purchasing our **11Mbps Wireless LAN USB Adapter**. This manual will assist you with the installation procedure.

The package you have received should contain the following items:

- 11Mbps Wireless LAN USB Adapter.
- User manual
- Diskette containing Wireless LAN Management utility and drivers
  Note: if anything is missing, please contact your vendor

The diskette contains the drivers and the program **Configuration Utility** that is used for managing the **11Mbps Wireless LAN USB Adapter** and establishing the wireless connection with your Local Area Network.

3. Wireless LAN Basics

Wireless LAN (Local Area Networks) systems offer a great number of advantages over a traditional, wired system. Wireless LANs (WLANs) are more flexible, easier to setup and manage and often more cost effective than their wired equivalence.

Using radio frequency (RF) technology, WLANs transmit and receive data over the air, minimizing the need for wired connections. Thus, WLANs combine data connectivity with user mobility, and, through simplified configuration, enable movable LANs.

With wireless LANs, users can access shared information without looking for a place to plug in and network managers can set up or augment networks without installing or moving wires. Wireless LANs offer the following productivity, convenience and cost advantages over traditional wired networks:

- Mobility - Wireless LAN systems can provide LAN users with access to real-time information anywhere in their organization. This mobility supports productivity and service opportunities not possible with wired networks.

- Installation Speed and Simplicity - Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

- Installation Flexibility - Wireless technology allows the network to go where wires cannot go.

- Reduced Cost-of-Ownership - While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long-term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

- Scalability - Wireless LAN systems can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users that allows roaming over a broad area.

4. Installation for Windows platform

The following section will assist you to in installing wireless LAN Adapter successfully. You will first install software (driver) and then insert the **11Mbps Wireless LAN USB Adapter**, and finally set the network properties to accommodate resource sharing and select the type of wireless network that you wish to install. The Wireless LAN can easily be installed and used, without bothering to connect cables for keeping your computer to use network resources, as in case of wired LAN.

4.1. Installation Overview

Here are some steps you will perform in establishing your wireless network connection:

- Install the Access Point (AP) at first. AP is needed in case of Infrastructure network mode.
- Install the software using the Installation Diskette or CD.
- Install the 11Mbps Wireless LAN USB Adapter.
- Install the network protocol(s) required to communicate on your network. Most likely you will need the TCP/IP protocol.

4.2. Installation Procedure

> Note: Do not insert the **WLAN** USB adapter until you are asked to do so, failure of which may result in unsuccessful installation of your **11Mbps Wireless LAN USB Adapter**

Please follow the following steps one by one in order to install successfully.

The PRISM WLAN Configuration Utility is installed simultaneously with the driver by executing the PRISM for Windows.exe file. Installation procedures differ depending on whether this is an initial installation or an upgrade. The following sections discuss these scenarios.
Note also that some versions of Microsoft Windows operating systems require administrator privileges to install software. If this is the case for your operating system, be sure that you have such privileges before executing the PRISM for Windows.exe file.

To upgrade an existing driver, it is not necessary to remove your PRISM card from your computer. Simply run the PRISM for Windows.exe file to replace the existing driver with the latest version. After the new driver is installed, you must restart the operating system (if the system was not restarted during the installation procedure).
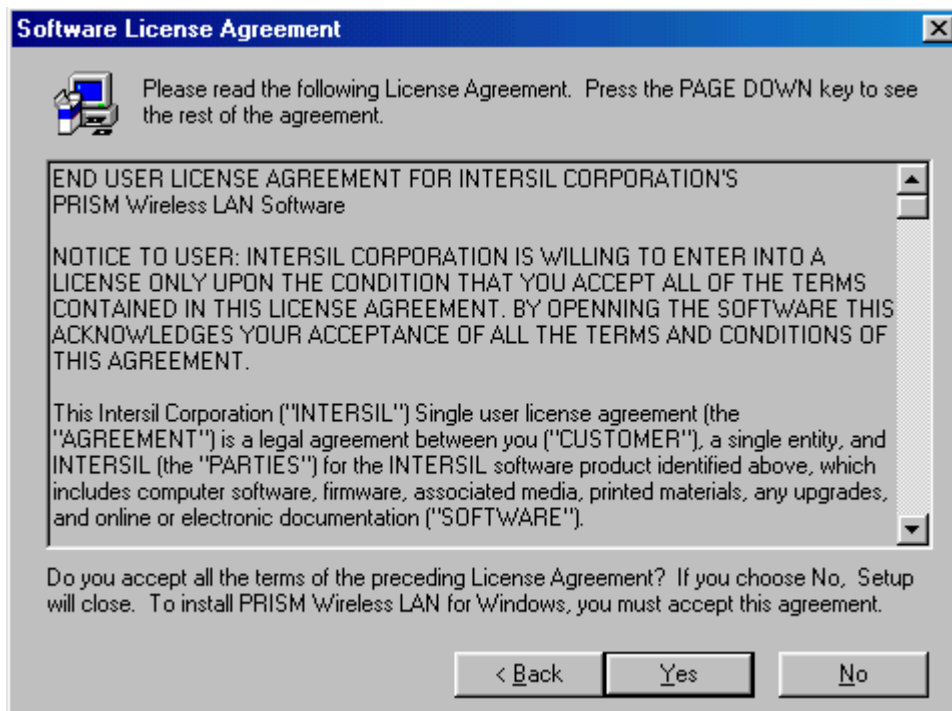
1. Insert the given **Installation CD** in the **CD-ROM.**

2. Select CD-ROM drives to locate driver files.

3. Find **the software** in the **CD-ROM** and run the **program " PRISM for Windows.exe file "** in order to set up configuration utility & driver.

Follow the instruction and click **Continue**.

4. Accept the license agreement.

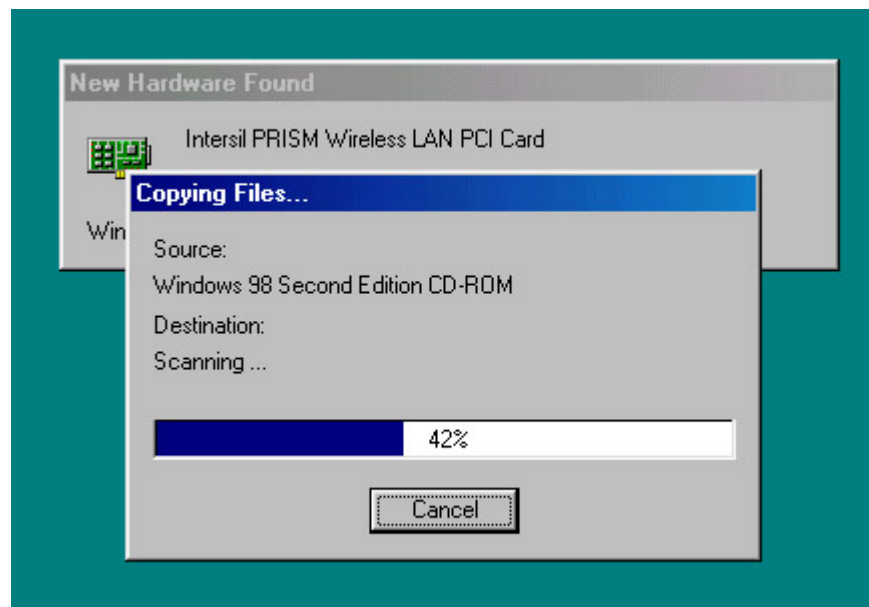5. It takes a few seconds for copying the utility files and driver.
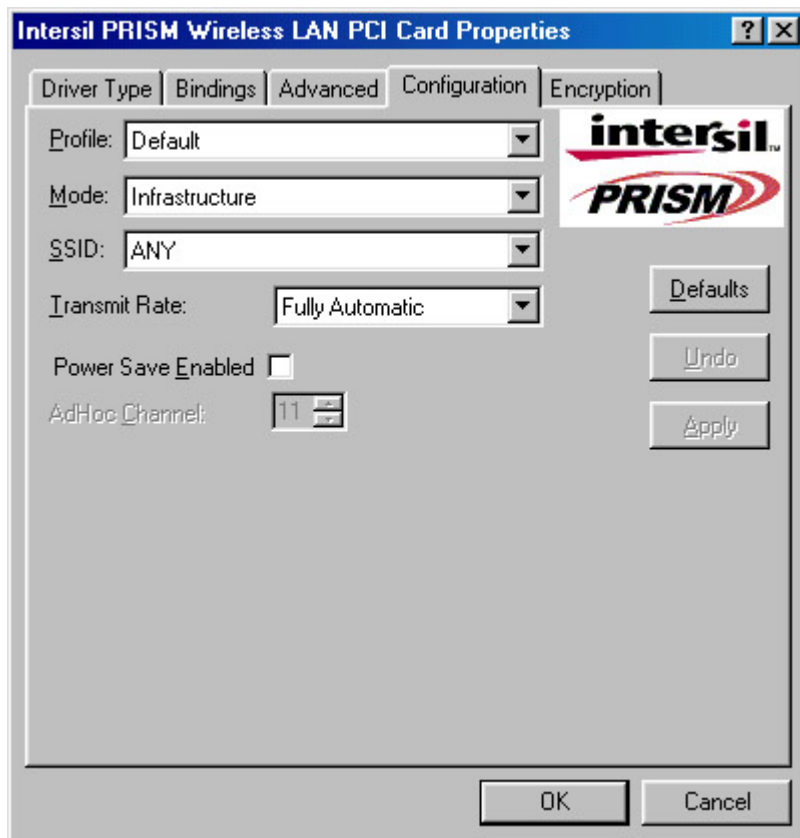

6. After setup complete, restart the computer.

7. Connect the **11Mbps Wireless LAN USB Adapter** to the computer, the system will detect new hardware and auto install the driver.
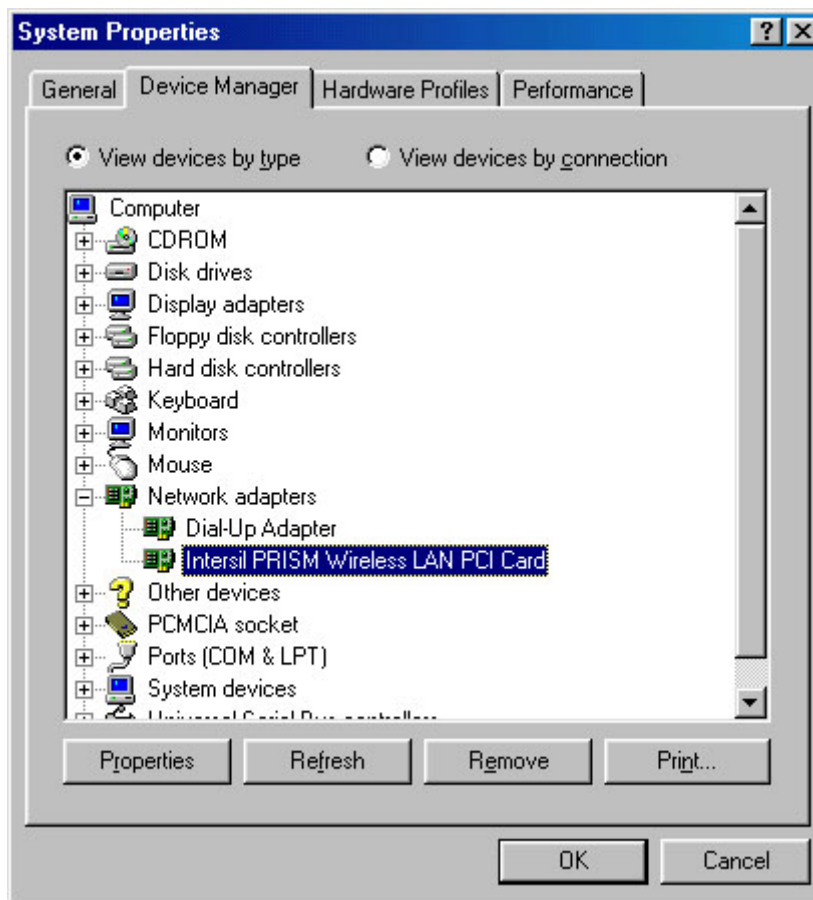
8. Once installation is complete, the utility will be pops up.
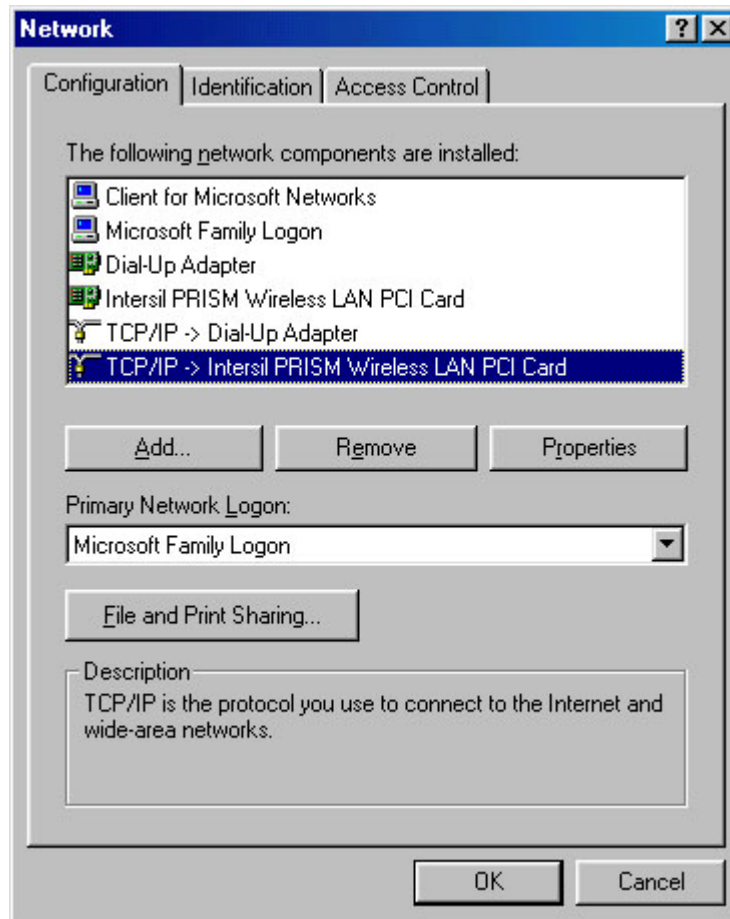
9. Click the right button of mouse on My Computer → Properties → Device Manager.

10. Right click on the **Network Neighborhood** using the mouse.

11. Select **Properties** from the pop up menu. The network box appears and you see three main tables:
   Configuration, **Identification**, and **Access Control**.

12. Click on the **Configuration** tab and then click on the **Add** button. Select Network Component Type box appears. Click on the **Protocol** the click the **Add** button.

13. Select Network Protocols box appears. From the list of manufactures, click on **Microsoft**. From the list of network protocols list, select **NetBEUI**, then click **OK**.
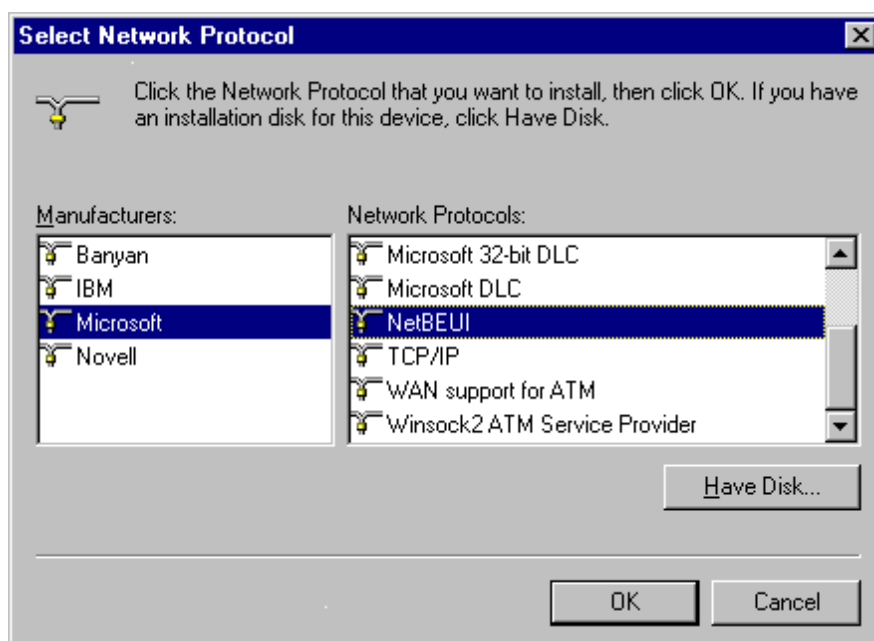
14. The **NetBEUI** protocol is now installed. After clicking on **OK** return back to Network Component Type box.

15. Repeat the step 16 and 17 to add IPX/SPX protocol.

16. Repeat the step 16 and 17 to add TCP/IP protocol.

17. Click on the **TCP/IP** option for setting the **IP** address for your computer. You can select either **Static** or **DHCP** setting. If you use the static IP setup then enter the **IP** value, **Subnet** masking , **DNS**, **Domain**/ **Workgroup** name, and **Gateway** Address values. After setting these parameter appropriately, click OK to return to Network Component Type and you can select the **File and Printer Sharing** options as well as the **Access** to your computer like other users connected to that network by setting the computer sharing options. Click on **OK**.
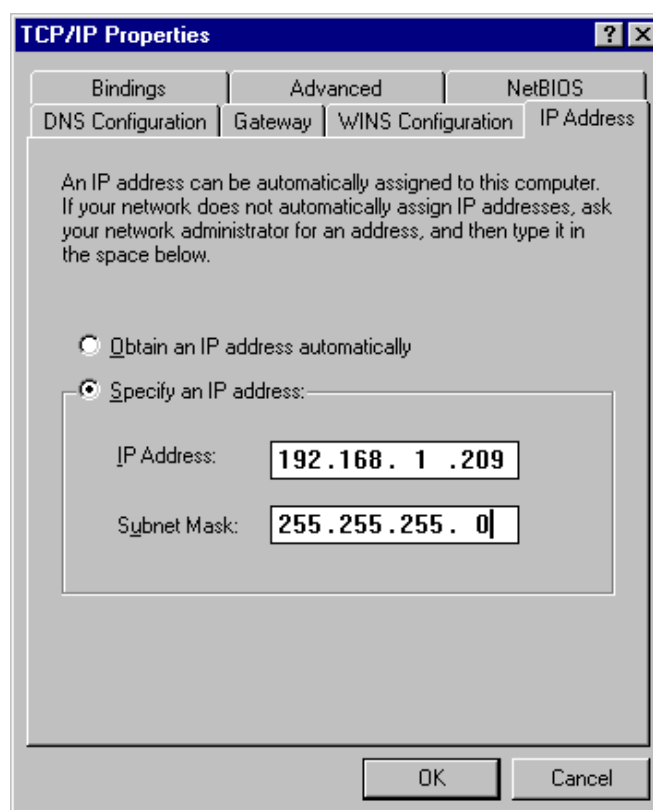

18. Screen message **do want to restart your Computer** will pop up. Select **Yes**. It will shut down your laptop and will restart the system.

> **Important:** **Restart your computer to make the changes effective before you reinstall the driver.**

4.3. Uninstallation Procedure

If you want to uninstall the WLAN card under Win 98, please follow the steps as below:

1. Start →Setting → Control Panel → Add / remove → remove **Intersil PRISM Wireless LAN for Windows,** click ' **Add/Remove' button.**
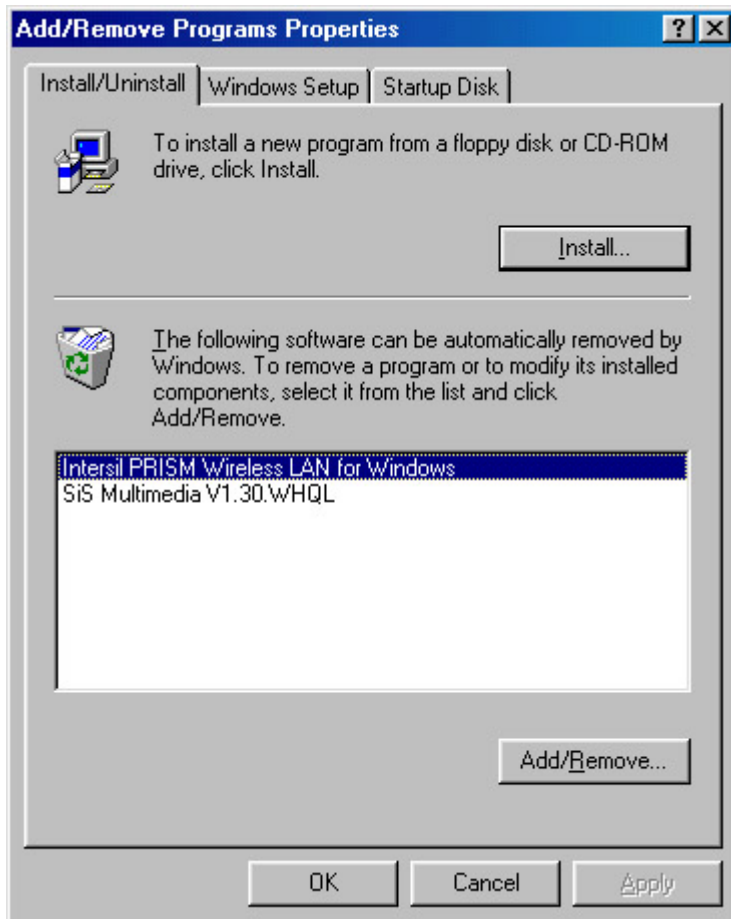
2. Remove Inf. File : Click Start → Program → Windows Explorer → Disk C→ Windows → INF → other → remove **Intersil PRISM NIC**

3. Romove sys.File: Click Start → Program → Windows Explorer → Disk C→ Windows → System → remove **PRISMNDS.sys**

Important: Restart your computer to make the changes effective before you reinstall the driver.

5.   Configuration Utility

After the installation of the PRISM WLAN Configuration Utility, its icon appears in the System Tray in the bottom right corner of your desktop.

The color behind the Intersil logo indicates the link status.

Red indicates no or very poor link quality.

Yellow indicates a usable but weak link.

Green indicates a good or excellent link.

You can also view the status of the link by placing the cursor over the Configuration Utility icon, as shown in the following illustration. This illustration indicates that the PRISM WLAN Card is able to communicate, but that the signal to the radio is weak.
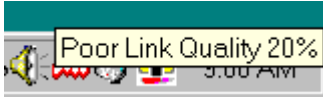
The Configuration menu lets you specify the operating parameters for your PRISM WLAN Interface card. When you first start the Configuration Utility, this menu is displayed. If another menu is displayed, you can display the Configuration options by clicking on its tab in the Configuration Utility panel.

5.1 Configuration Tab

The Configuration menu lets you specify the operating parameters for your PRISM WLAN Interface card. When you first start the Configuration Utility, this menu is displayed. If another menu is displayed, you can display the Configuration options by clicking on its tab in the Configuration Utility panel.
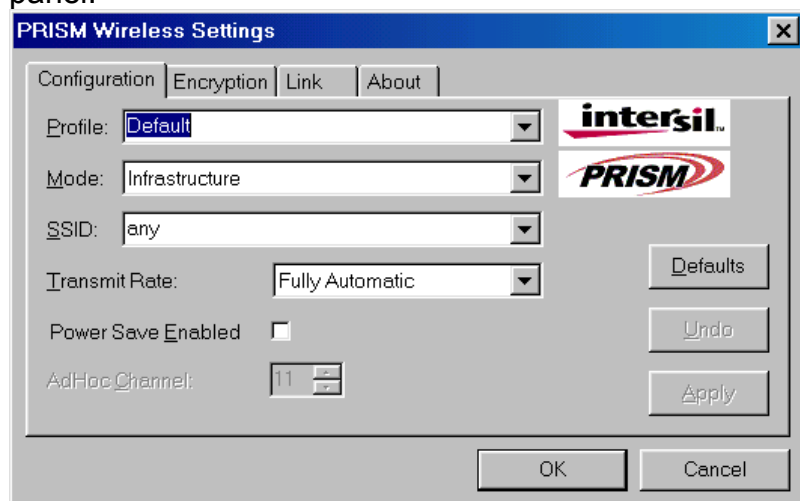
Setting the Profile

A profile is a named set of operating parameters for your PRISM WLAN Interface card. The Profile field lets you set values for all parameters by selecting a previously defined profile. Click the down arrow at the right of the Profile field to display the available profiles for your PRISM WLAN Interface card.

You will always have at least one profile, named Default. Initially, this profile contains the parameters configured at installation. You can modify this profile at any time after the installation. After changing parameters, you can save them in the profile named in this field by clicking the Apply button in the Configuration Utility panel.

You can also create additional profiles by typing a name in the Profile field. When you change the name in the Profile field and then click the Apply button, the Configuration Utility uses the current parameters for your card to create a separate profile. You can then switch between profiles by clicking the down arrow at the right of the Profile field, selecting a profile from the drop-down list, and clicking the Apply button.

The following example describes a situation in which you would want to create multiple profiles. Suppose that you use the wireless LAN at your work, but you also have a network in your home (with a wireless Access Point) for sharing an internet connection and a printer between several computers. Suppose also that you have another office within your business which also has WLAN capability, but which is configured differently than your main office.

In this situation, you can create a different profile for each of these three environments. Each profile specifies the parameters used on a single network. Moving from one location to another, you only need to apply the appropriate profile to be able to participate in the local network.

Setting the Mode

The PRISM WLAN Interface card can operate in one of two modes, which are specified in the Mode field of the Configuration menu. Clicking the down arrow at the right of the Mode field displays the available modes.
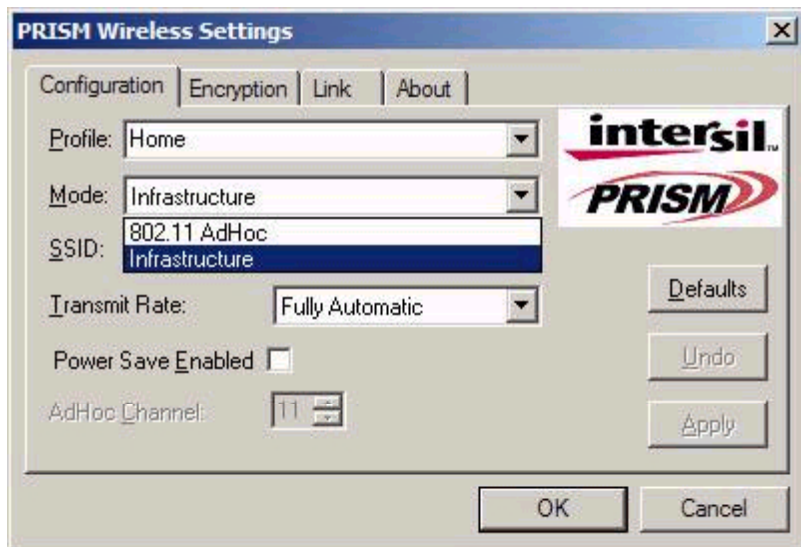
802.11 AdHoc Mode

IEEE 802.11, the standard on which the WLAN protocol is based, defines two modes to handle two separate needs. The first, called AdHoc (or IBSS) mode, is used when two or more wirelessly-enabled PCs wish to exchange data directly, without an Access Point. In this case the PCs can establish an AdHoc network in which they are the only members and over which they can exchange data. To exchange data, each computer participating in the AdHoc network must also specify the same SSID and AdHoc Channel in this menu.

Infrastructure Mode

The second mode defined by the IEEE 802.11 standard is called infrastructure mode, and is the primary application for WLAN operation. In this mode all data on the wireless network is directed to an Access Point, which then routes the data to the appropriate wireless station. The Access Point may also be configured to allow data to be bridged from the wireless network to wired networks.

To participate in a wireless LAN in infrastructure mode, every station and Access Point must specify the same SSID. In infrastructure mode, all available channels are scanned for traffic, so there is no need to specify a channel.

Setting the SSID

The SSID is the Service Set IDentifier used by Access Points and stations to identify a wireless LAN. Your PRISM WLAN Interface card scans the available channels looking for an Access Point (in infrastructure mode) or another station (in AdHoc mode) which has specified this same SSID. It then attempts to associate with these Access Points or stations to form a wireless LAN.

To change the SSID, simply highlight it, type the new SSID, and click the Apply button.

In typical infrastructure applications a company will use a single SSID for all Access Points. If the radio is scanning and cannot find a channel when an Access Point is known to be in range, verify that the SSID is set correctly.

Setting the Transmit Rate

The Transmit Rate field specifies the rate at which the radio in your PRISM WLAN Interface card transmits and receives data. You can view the available rates by clicking the down arrow at the right of the Transmit Rate field.
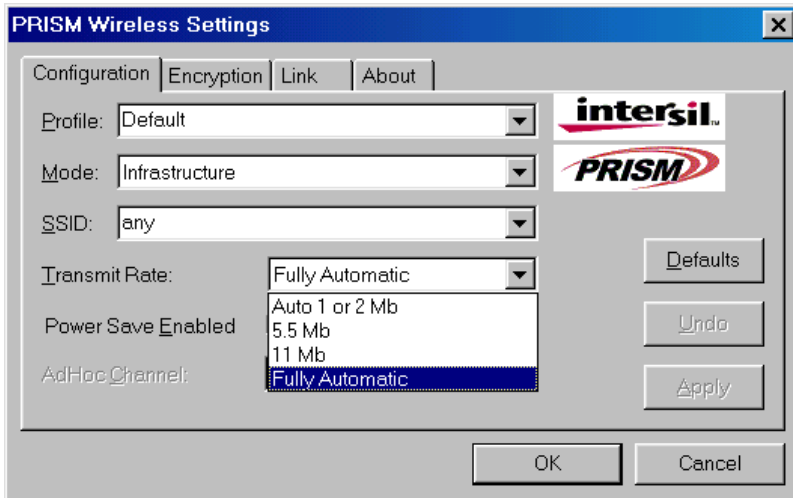
The transmit rate can be set to:

- Fully Automatic – your PRISM card chooses the highest available rate providing reliable communications based on the capabilities of the Access Point or station with which it communicates and on the received signal quality

- Auto 1 or 2 Mb – allows only 1 and 2 Mb/s operation

- 5.5 Mb – allows only 5.5 Mb/s operation

- 11 Mb – allows only 11Mb/s operation

To change the Transmit Rate, click the down arrow at the right of the field, highlight the rate you want to set, and click the Apply button.

Under most conditions, you should choose Fully Automatic as the transmit rate. In general, fixed rates are used only in test environments.

Enabling Power Save Mode

The IEEE 802.11 standard provides a Power Save Mode. In this mode your PRISM card listens for a beacon (a periodic frame which defines the network type and attributes) and determines the beacon interval. Between beacons the card puts itself to sleep, enabling power savings. At the time of the expected beacon the card wakes itself up and receives the beacon. The received beacon contains information about whether the Access Point or station has buffered frames for the card. If frames are available the card requests those frames until no more frames are available. The card then goes back to sleep until the next beacon.

For Access Points that support power save mode and for stations equipped with WLAN cards, enabling this mode can significantly reduce power consumption, which is particularly important if the host computer is operating on battery power. However, be aware that power save mode also results in lowered transmission and reception speed on the wireless LAN.

Selecting the Ad Hoc Channel

When communicating in AdHoc or Pseudo AdHoc mode, you must specify a channel on which communications will take place. To specify a channel, click the up or down arrow at the right of the AdHoc Channel field until the channel you want to set appears, and then click the Apply button.
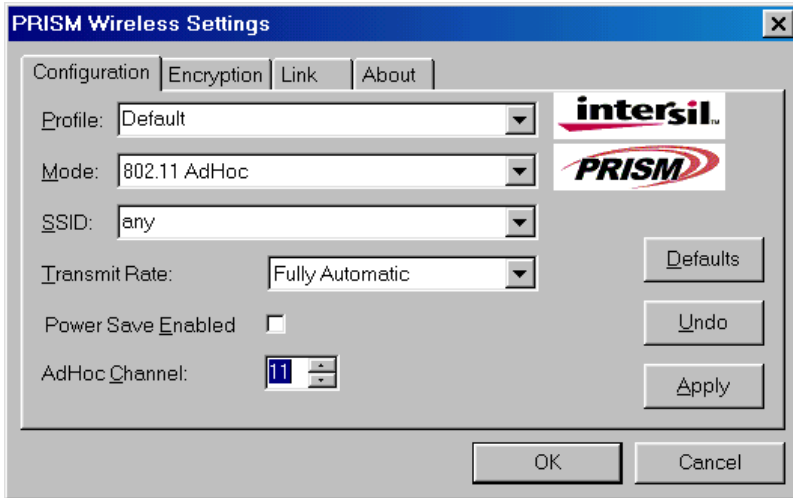
This field is greyed in infrastructure mode because the channel is automatically selected by the Access Point.

Encrption

The Encryption menu lets you enable encryption and set the encryption keys. To see the available encryption methods, click the down arrow at the right of the Encryption {WEP} field.
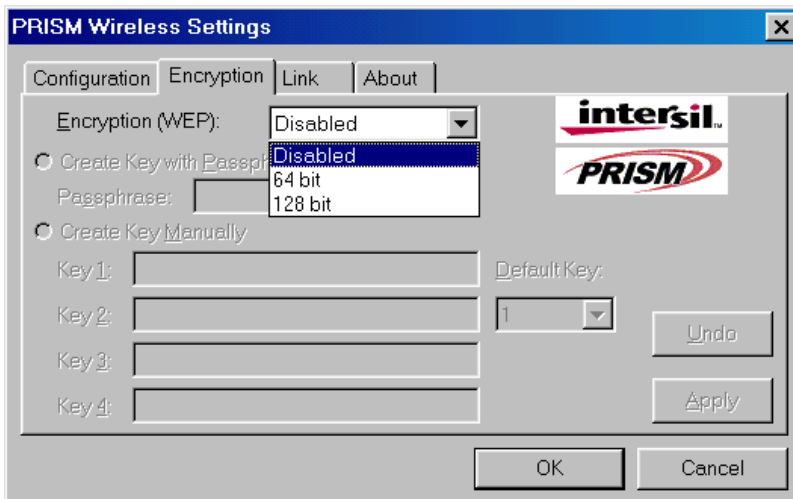
There are two encryption methods available. The IEEE 802.11 specification defines Wired Equivalent Privacy (WEP) using a 64-bit key. This capability was extended by the industry to allow a 128 bit key.

If you specify an encryption method, you will only be able to communicate with Access Points and stations that use the same encryption method and keys.
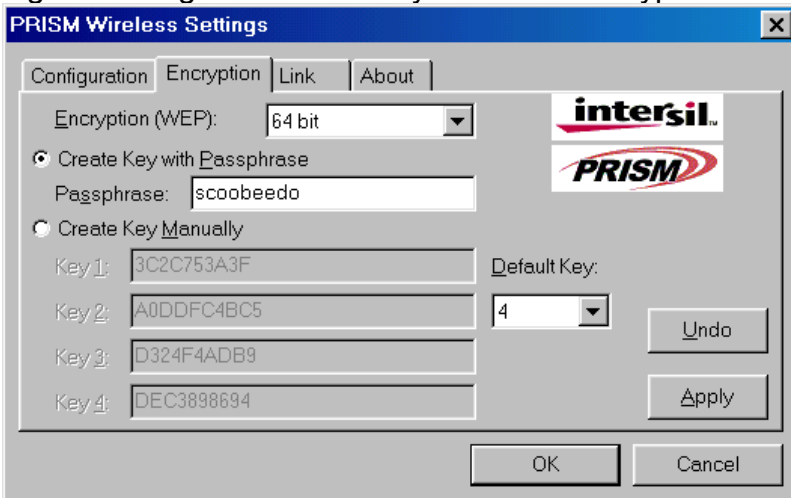
Disabling Encryption

To disable encryption, click the down arrow at the right of the Encryption field, select Disabled, and click the Apply button.

Enabling Encryption

To enable encryption, click the down arrow at the right of the Encryption field, select either 64 bit or 128 bit, and click the Apply button. After enabling an encryption method, you must then specify encryption keys, as described in the following sections.
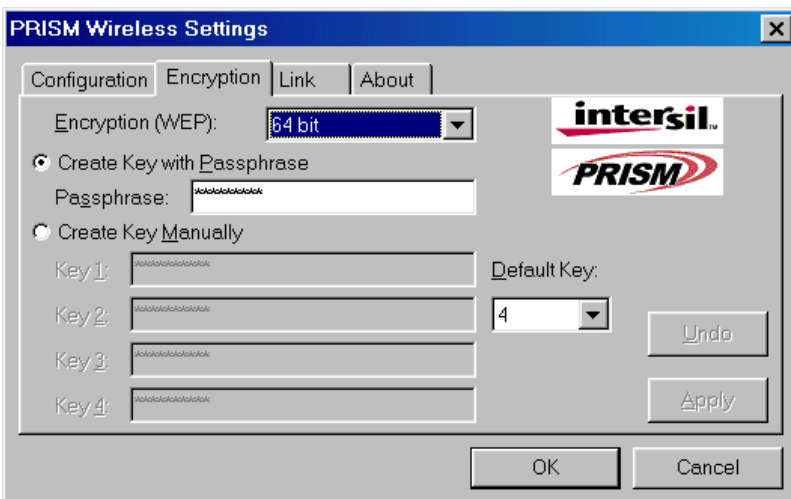
Creating Encryption Keys Using a Passphrase

To create encryption keys using a passphrase, click the radio button next to Create Key with Passphrase and type a character string in the Passphrase field. As you type, the Configuration Utility uses an algorithm to generate four keys used for encryption.

When you finish typing your character string and click the Apply button, the Configuration Utility uses asterisks to mask both your passphrase and the keys it generates.
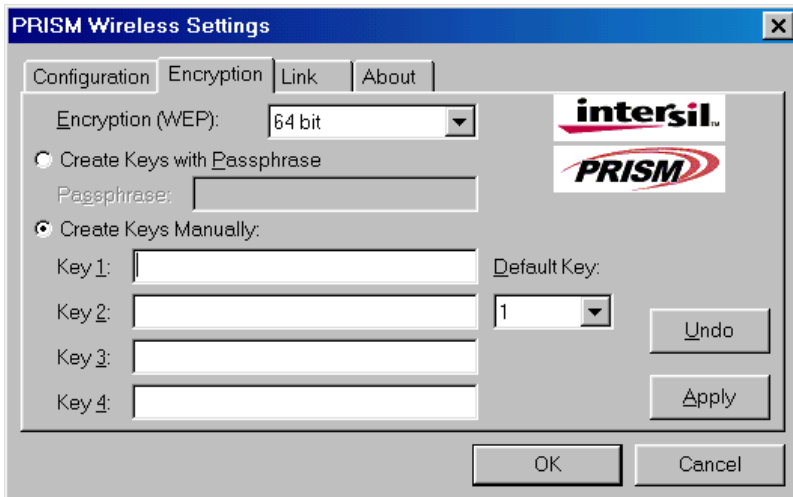

Using a passphrase to generate the four keys makes it easy to set the same keys for all members of your wireless LAN.

Creating Encryption Keys Manually

If you want, you can create encryption keys manually by clicking the radio button next to Create Key Manually, as shown in the following illustration.


When you click this button, the cursor appears in the field for Key 1. For 64-bit encryption, you must type *exactly* 10 hexadecimal digits in each of the four key fields; for 128-bit encryption, you must type *exactly* 26 hexadecimal digits. You then click the Apply button to create your encryption keys. After you click the Apply button, the Configuration Utility uses asterisks to mask your keys.

Default Key

The Default Key field lets you specify which of the four encryption keys you use to transmit data on your wireless LAN. You can change the default key by clicking on the down arrow at the right of this field, selecting the number of the key you want to use, and then clicking the Apply button. As long as the Access Point or station with which you are communicating has the same key in the same position, you can use any of the keys as the default.

Link Tab

The Link menu provides information on the status of your communications with the wireless LAN.
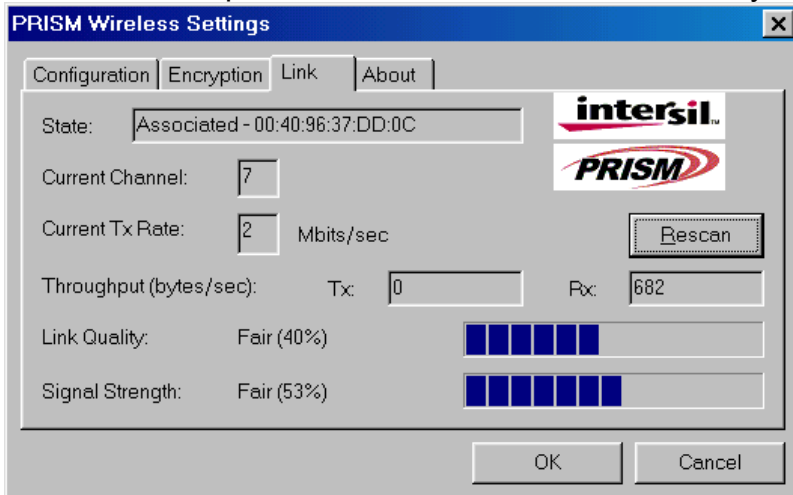
The fields in this menu provide the following information:

- State: shows the association state of your computer with the wireless LAN. When operating in Infrastructure mode, this field shows the MAC address of the Access Point with which you are communicating. When operating in AdHoc mode, this field shows the virtual MAC address used by computers participating in the AdHoc network.

- Current Channel: shows the channel on which the connection is made. In Infrastructure mode, this number changes as the radio scans the available channels.

- Current Tx Rate: shows the highest transmit rate of the current association.

- Throughput: shows the short term transmit and receive throughput in bytes/second, and is continuously updated.

- Link Quality: is based on the quality of the received signal of the Access Point beacon.

- Signal Strength: is based on the received signal strength measurement of the baseband processor of the Beacon signal.

You can click the Rescan button to force the radio to rescan all available channels. If your link quality or signal strength is poor, rescanning can be used to push the radio off a weak Access Point and search for a better link with another Access Point.

About Tab

The About menu provides information on the version of the Network Driver, the Configuration Utility, and the firmware in the PRISM WLAN Interface card. In addition, this menu also provides the MAC address of the PRISM card.
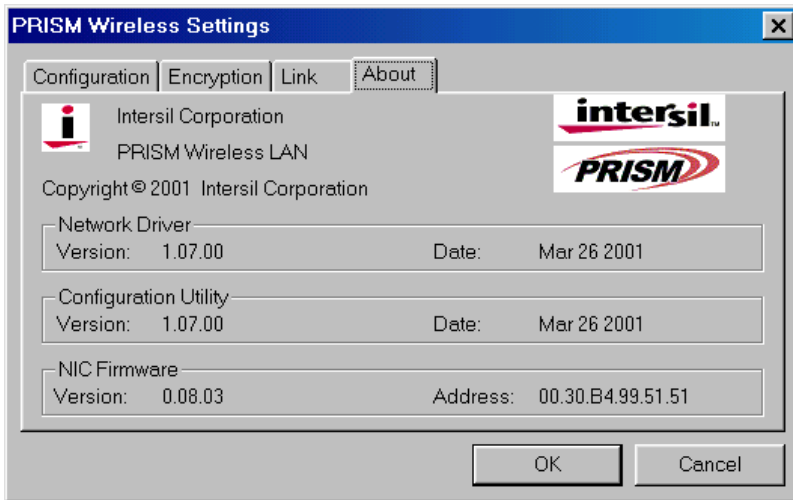
6. Troubleshooting

To make the installation of **Wireless LAN 11Mbps Card** more users friendly, we have suggested following the installation steps one by one as listed in the section 4 and section 5. Still you encounter some problems while installing the **Wireless LAN 11Mbps Card** or you want to confirm whether your card is installed properly or not, we have listed the procedure for checking the various components after you have installed the card. In first part of **Troubleshooting,** we have suggested the users to check the various properties of the card to check the proper installation. In second section, we have listed the various problems that you may encounter during the installation and have also listed the possible solution. Check the first part to guess the probable reason of unsuccessful installation.

Procedure to Check the Various Properties of Card after Installation under Windows 98:
Please check the followings if you encounter some problem while installing the Mini-PCI card or your Mini-PCI card is non-functional.

1.   Click on the **Control Panel** and then on **PC Card.** Check whether it has **PC** card in one of the sockets or not. If you find **Wireless LAN Card** 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 **Wireless LAN 11Mbps Card** if it is installed successfully. If you see the **Yellow** sign the resources are conflicting. Click on Mini-PCI Card and then on Mini-PCI Card Service, you can see the status of Mini-PCI card. If there are yellow sip either on adapter or Mini-PCI card, please check the followings.
     1.   Check if your Notebook supports **3.3V** Card.
     2.   Check if your Notebook has a free **IRQ.** If not, make an IRQ free by assigning the same IRQ to some devices, for example COM 1, COM 2 can be assigned same IRQ values.
     3.   Check that you have inserted the right card and have installed the proper driver.

For the Card under Windows 2000:

Please check the followings if you encounter some problem while installing the Mini-PCI card or your

Mini-PCI card is non-functional.

1. Check the **Windows 2000 Diagnostics.** You should find out whether there is any conflict in the **resource** allocation or the I/O **address, IRQ** allocations. If you find that the **IRQ** or I/O addresses are already assigned to some other devices, you must change that value. I/O address needs 40h byte length.

2. Click on the **Control panel.** Double click on the **Mini-PCI Card,** you will see **Wireless LAN Mini-PCI 11Mbps Card .** Double clicking on that will show you the **Card Information,** driver name and the driver **file.** You must confirm the name of the driver and the driver file as **"cw10"** and **"cw10.sys".** If you do not find the names as we listed before, there are some problems and the driver is not installed properly. Reinstall the driver.

Note: Check the PnP BIOS setup menu and select **no** in case of the **Wireless LAN 11Mbps**

Card installation.