802.11b Wireless LAN USB Module

User Manual

Version 1.0

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Statement of Conditions

We may make improvements or changes in the product described in this documentation at any time. The information regarding to the product in this manual are subject to change without notice.

We assumes no responsibility for errors contained herein or for direct, indirect, special, incidental, or consequential damages with the furnishing, performance, or use of this manual or equipment supplied with it, even if the suppliers have been advised of the possibility of such damages.

Electronic Emission Notices

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.

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

FCC INFORMATION

The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:

The 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 instruction, may cause harmful interference to radio communication. However, there is no grantee that interference will not occur in a particular installation. If this equipment dose cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

The equipment is for home or office use.

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. As of April 8, 2000.

IMPORTANT NOTE

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 20cm between the antenna and your body and must not be co-located or operating in conjunction with any other antenna or transmitter.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

STATEMENT FOR MODUAL APPROVAL

This product is sold to OEM integrators only. The manual for the OEM integrators must include some instructions that must be followed by the end users in the user manual. For example:

- The OEM integrators must be instructed to ensure that the end user has no manual instructions to remove or install the device.
- The OEM integrators must be instructed about the end product labeling ("Contains TX FCC ID: QDWWM168B") etc.

Please add the following statements to the manuals for the OEM integrators:

This device is intended only for OEM integrators under the following conditions:
1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling
This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example, access points, routers, wireless ADSL modems, and similar equipment). The final end product must be labeled in a visible area with the following: "Contains TX FCC ID: QDWWM168B".

Manual Information for End Users
The end user must not have manual instructions to remove or install the device.
The user manual for end users must include the following information in a prominent location.
"IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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1. INTRODUCTION

The 802.11b Wireless LAN USB Module aims to let your laptop computer quickly and seamlessly communicate with 802.11b (at up to 11 Mbps) networks. Wireless LAN is local area networking without wires, which uses radio frequencies to transmit and receive data between PC's or other network devices. With this wireless LAN USB Module, surfing on the Internet couldn't be any easier. Simply insert the USB Module into the mini PCI slot of your laptop computer, launch the attached friendly-interfaced program – **PRISM Configuration Utility** to configure the Module, and you will have been ready to experience how the LAN (local area network) can be carried in your palm or pocket. You can operate the network in either an independent mode or an infrastructure mode. The former, which is also known as peer-to-peer or ad-hoc network, lets you directly make connection with other wireless-equipped computers, and the later, the so-called infrastructure network, allows you to communicate with wired LAN via an access point.

To obtain most benefits your 802.11b Wireless LAN USB Module provides, please read this manual carefully before using it.

1.1 Features

With 802.11b Wireless LAN USB Module, you can

* exchange data over the air, which minimizes the need for wired connections

* possess the portability and mobility of wireless networking connectivity wherever you are

* operate Ad-Hoc or Infrastructure mode

* utilize up to 128-bit WEP encryption

* enjoy high-speed data transfer rate up to 11 Mbps

* employ automatic data rate switching which offers maximum reliability, throughput and connectivity

* monitor and configure the network via the supplied friendly-interfaced application – PRISM Configuration Utility

1.2 Package Contents

Before starting installation, please make sure the package you purchased includes the following items:

* One 802.11b Wireless LAN USB Module

* One Quick Installation Guide

* One Setup Wizard CD-ROM with User Manual

If any of the items above is missing or damaged, please contact your distributor.

1.3 System Requirements

To properly operate your 802.11b Wireless LAN USB Module, your computer must meet the following minimum requirements:

* ∗ 32 MB RAM or above

* ∗ A CD-ROM drive

* ∗ 300 MHz processor or higher

* ∗ Microsoft Windows 98/98 Second Edition/Me/2000 or Windows XP

1.4 The 802.11b Wireless LAN USB Module

Your 802.11b Wireless LAN USB Module should be located in the USB port on the back panel of your laptop computer, and it is looked like the following picture:
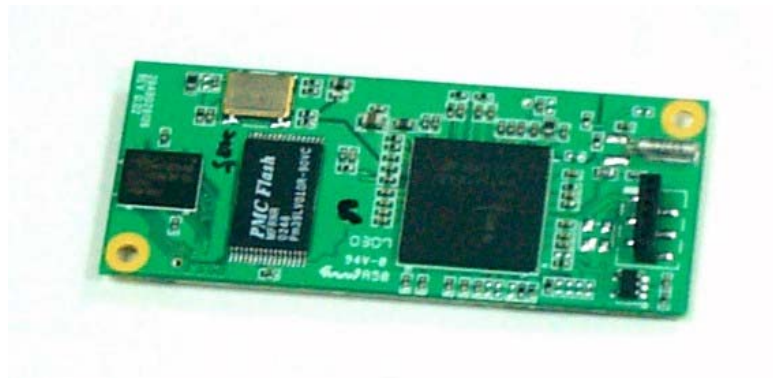
Figure 1-1: 802.11b Wireless LAN USB Module

2. INSTALLATION OF THE 802.11b WIRELESS LAN USB MODULE

Please refer to the proper section corresponding with operating system you are using to fully install your 802.11b Wireless LAN USB Module and the attached software - **PRISM Configuration Utility**.

2.1 Installation Procedures for Windows 98 Users

a) Insert the supplied Setup CD into your CD-ROM drive, the Setup Wizard will run automatically. If it does not, please manually execute **setup.exe**.

b) The **PRISM Driver for Windows –Welcome** dialog box will be prompted. Click **Finish** to continue.

Figure 2.1-1: The **PRISM Driver for Windows –Welcome** Dialog Box

c) Click **Next** in the **Welcome** dialog box to proceed.

Figure 2.1-2: The **Welcome** Dialog Box

d) In the **Software License Agreement** dialog box, choose **Yes** to accept the agreement.

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Click **No** will stop the installation. To go back to the previous dialog box, choose **Back**.
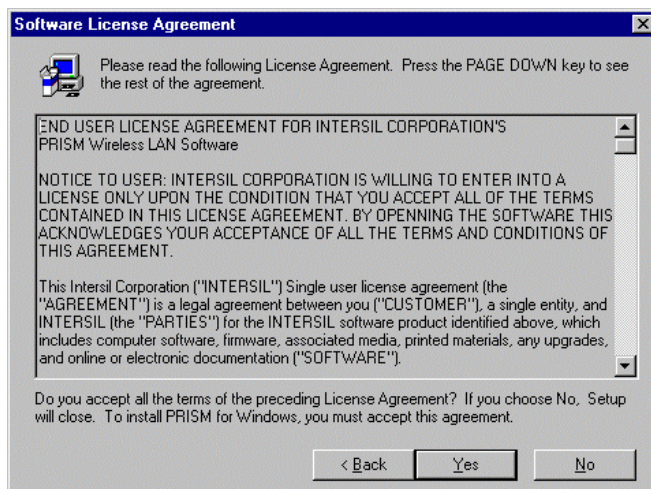
Figure 2.1-3: The **Software License Agreement** Dialog Box

e) Click **Finish** in the prompted **Setup Complete** dialog box.

Figure 2.1-4: The **Setup Complete** Dialog Box

f) Restart your computer then.

g) After rebooting, Windows will automatically detect the 802.11b Wireless LAN USB Module and display the **New Hardware Found** message box. At the same time, you will be asked to insert the Windows 98 CD-ROM, please do so and click **OK** to proceed.
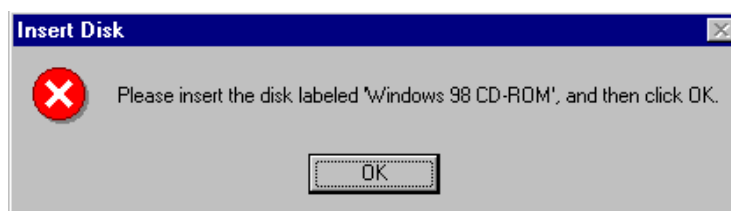
Figure 2.1-5: The **Insert Disk** Message Box

h) In the **Copying Files** dialog box, click **Browse** to indicate Windows to install the appropriate file from the folder named **WIN98** on the CD-ROM, and then click **OK**. In a few seconds, the installation is entirely complete.

To set configurations for the network connection, double-click the **PRISM Configuration Utility** icon, which is already displayed in the system tray. For more details about the application, please refer to **PRISM Configuration Utility Basics** in this manual.

3.2 Installation Procedures for Windows 98SE / Me Users

The installation under Windows Me is very similar to that under Windows 98SE. Please go through the instructions below if you are using Windows Me or Window 98 SE.

a) Insert the supplied Setup CD into your CD-ROM drive, the Setup Wizard will run automatically. If it does not, please manually execute **setup.exe**.

b) The **PRISM Driver for Windows –Welcome** dialog box will be prompted. Click **Finish** to continue.

Figure 2.2-1: The **PRISM Driver for Windows –Welcome** Dialog Box

c) In the **Welcome** dialog box, click **Next** to proceed.

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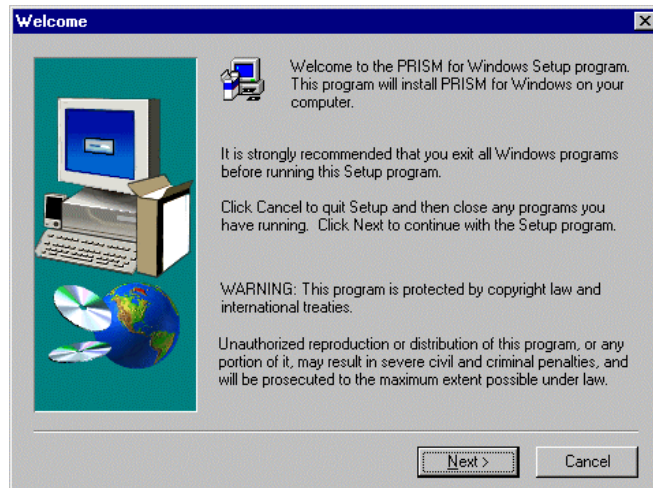
Figure 2.2-2: The **Welcome** Dialog Box

d) In the **Software License Agreement** dialog box, choose **Yes** to accept the agreement. Click **No** will stop the installation.
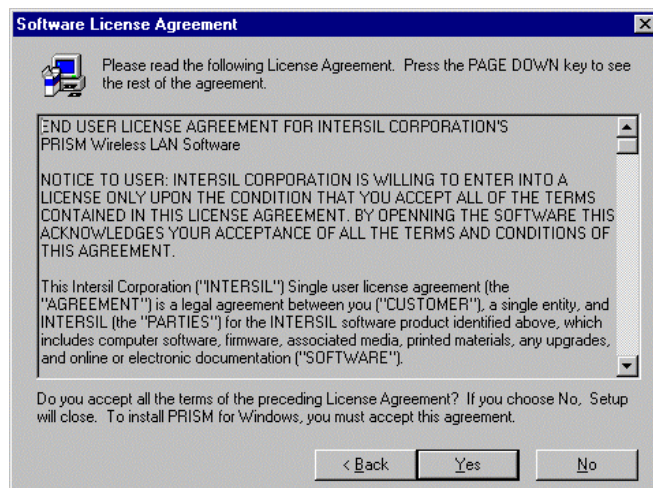
Figure 2.2-3: The **Software License Agreement** Dialog Box

e) When the **Setup Complete** dialog box is prompted, click **Finish**.

Figure 2.2-4: The **Setup Complete** Dialog Box

f) Restart your computer then.

g) After rebooting, Windows will automatically detect the 802.11b Wireless LAN USB Module and display the **New Hardware Found** message box as below. Meanwhile, you will find the **PRISM Configuration Utility** icon appeared in the system tray.
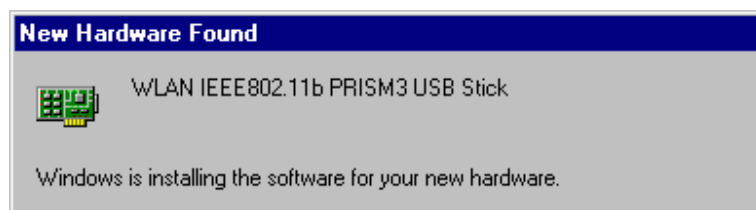
Figure 2.2-5: The **New Hardware Found** Message Box

Within a few seconds, windows will automatically finish installing the hardware drivers.

To configure the **PRISM Configuration Utility**, simply double-click the tray icon. The **PRISM Configuration Utility Basics** chapter below offers you information on the application in detail.

2.3 Installation Procedures for Windows 2000 Users

a) Insert the supplied Setup CD into your CD-ROM drive, the Setup Wizard will run automatically. If it does not, please manually execute **setup.exe**.

b) The **PRISM Driver for Windows –Welcome** dialog box will pop up. Click **Finish** to continue.

Figure 2.3-1: The **PRISM Driver for Windows –Welcome** Dialog Box

c) In the opened **Welcome** dialog box, click **Next**. Choose **Cancel** will stop off the installation.

Figure 2.3-2: The **Welcome** Dialog Box

d) Choose **Yes** in the **Software License Agreement** dialog box to accept the agreement. If you click **No**, the setup will be interrupted. To go back to the previous dialog box, choose **Back**.

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Figure 2.3-3: The **Software License Agreement** Dialog Box

e) Click **Finish** when the **Setup Complete** dialog box appears to complete installing the attached utility.
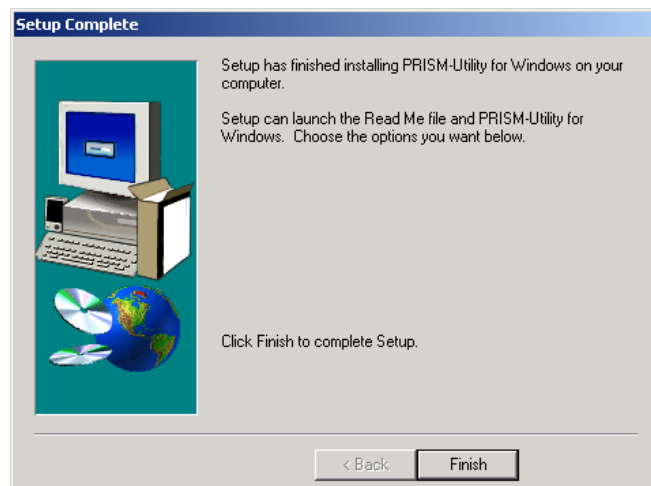
Figure 2.3-4: The **Setup Complete** Dialog Box

f) Windows 2000 will automatically detect your 802.11b WLAN USB Module and start up the installation with the appearance of the **Found New Hardware** message box.

g) Then you will be notified that the driver has not passed Windows Logo testing. Because USB Module has been tested to work with Windows 2000, click the **Yes** button in the **Digital Signature Not Found** dialog box.
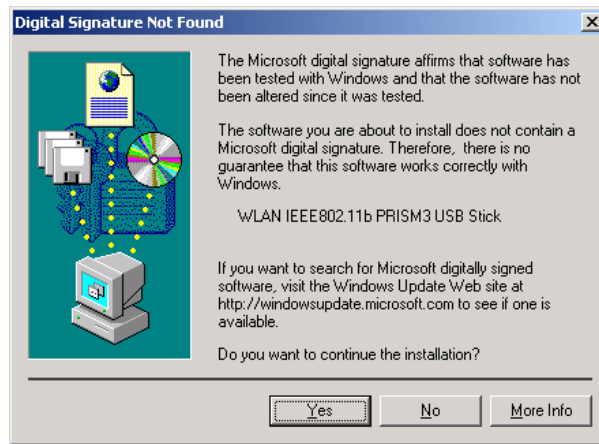
Figure 2.3-5: The **Digital Signature Not Found** Dialog Box

The installation is entirely finished afterwards. Double-click the **PRSIM Configuration Utility** tray icon on the right bottom of the screen to arrange more settings for the network connection. To learn more about the application, please refer to **PRISM Configuration Utility Basics** in this manual

2.4 Installation Procedures for Windows XP Users

a) Insert the supplied Setup CD into your CD-ROM drive, the Setup Wizard will run automatically. If it does not, please manually execute **setup.exe**.

b) The **PRISM Driver for Windows –Welcome** dialog box will be shown. Click **Finish** to continue.

Figure 2.4-1: The **PRISM Driver for Windows –Welcome** Dialog Box

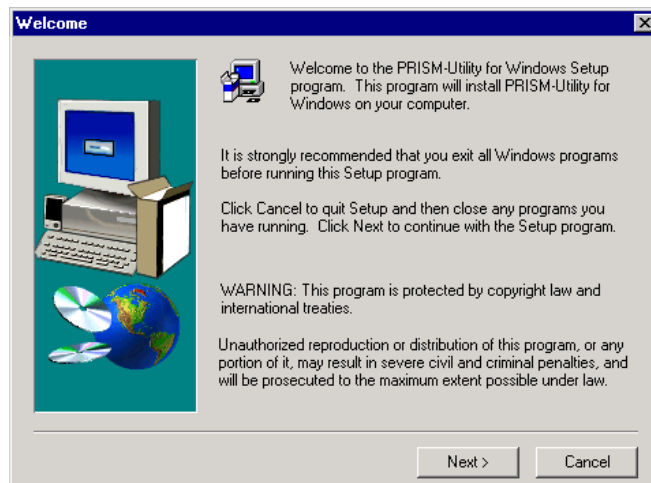c) Click **Next** in the **Welcome** dialog box. Choose **Cancel** will stop off the installation.

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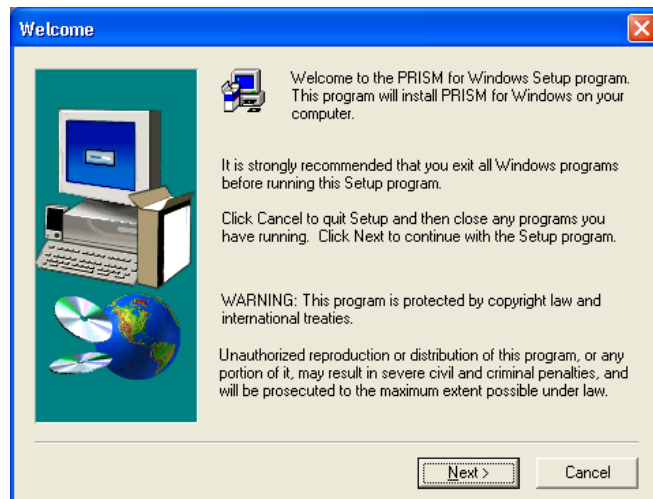
Figure 2.4-2: The **Welcome** Dialog Box

d) Choose **Yes** in the **Software License Agreement** dialog box to agree to it. If you click **No**, the setup will be interrupted. To go back to the previous dialog box, choose **Back**.
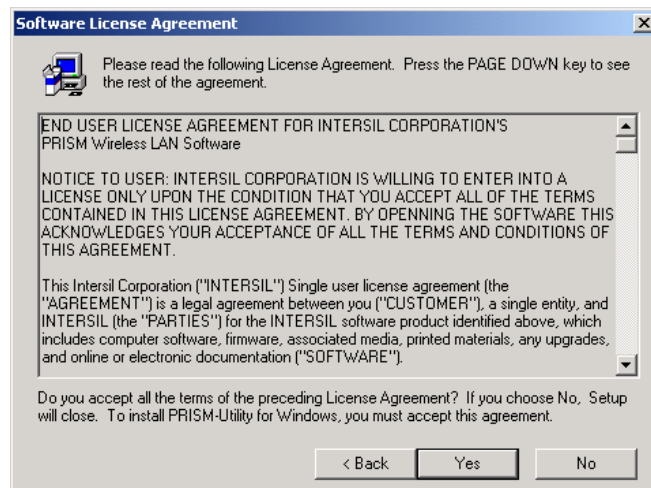
e) In the **Setup Complete** dialog box, click **Finish**.
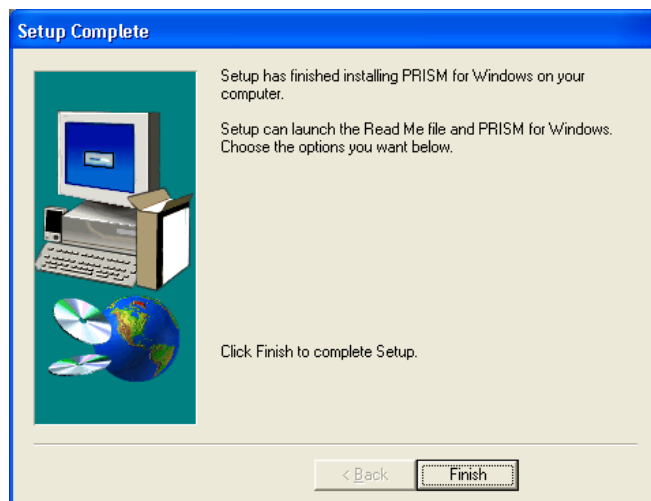
Figure 2.4-3: The **Setup Complete** Dialog Box

f) The **Found New Hardware Wizard** dialog box will appear and detect your 802.11b WLAN USB Module.

g) Choose **Install the software automatically [Recommended]**, and then click **Next**.

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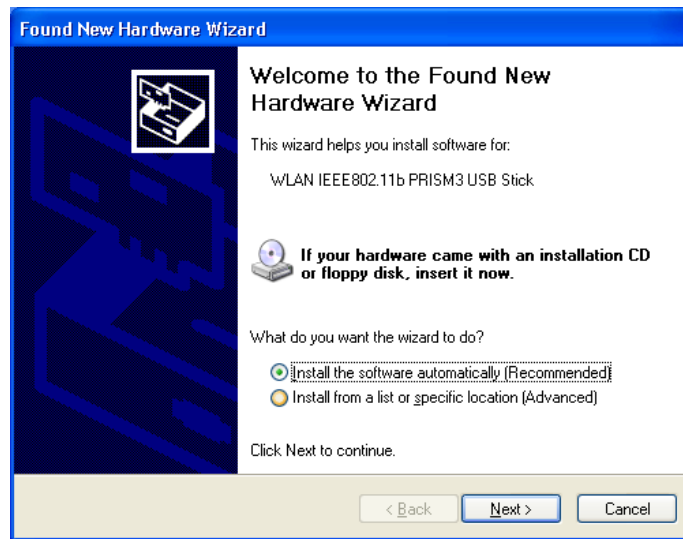
Figure 2.4-4: The **Found New Hardware Wizard** Dialog Box

h) When you see the following dialog box shown, your system is looking for the appropriate driver files. Then Windows XP will start copying the drivers found.
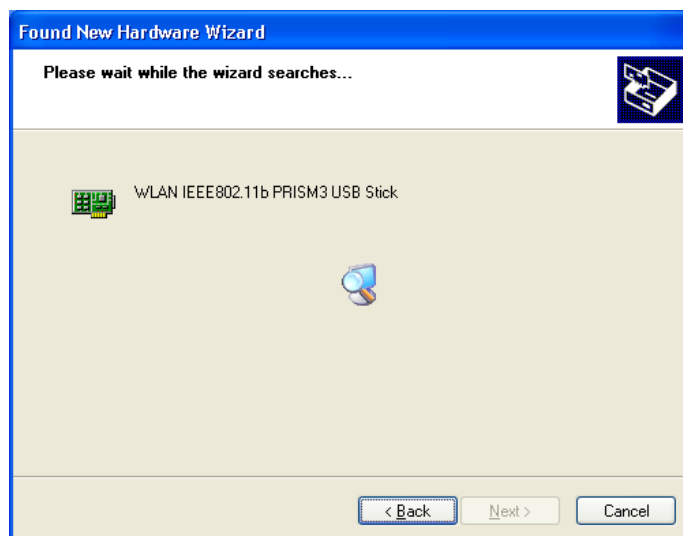
Figure 2.4-5: Looking for drivers

i) Windows will notify you that the driver has not passed Windows Logo testing. Because USB Module has been tested to work with Windows XP, please choose **Continue Anyway**.
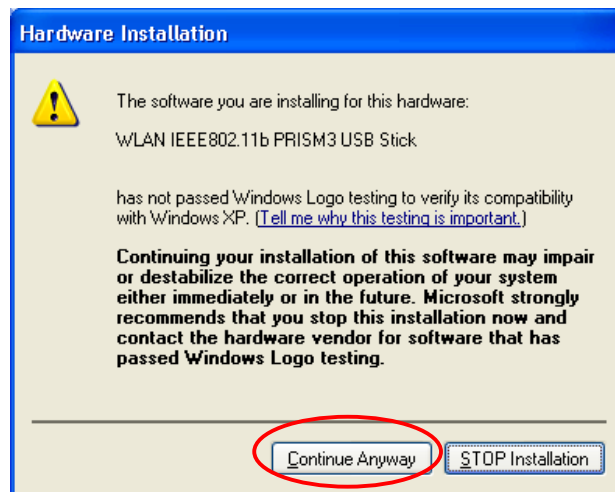
Figure 2.4-6: The **Hardware Installation** Dialog Box

j) Click the **Finish** button after seeing the **Completing the Found New Hardware Wizard** screen.
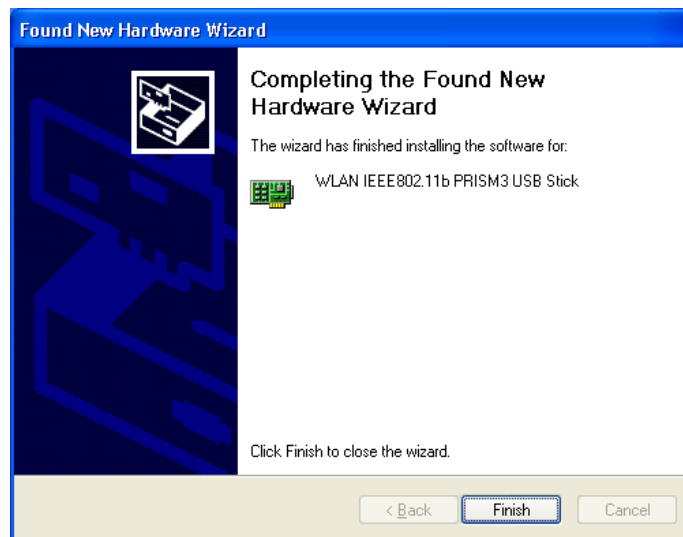
Figure 2.4-7: The **Complete** Screen

k) You will find the **PRISM Configuration Utility** icon appeared in the system tray. Double-click the icon to launch the application and open the **PRISM Wireless Settings** dialog box, in which two tabs are contained. However, normally, the dialog box should be consisted of four tabs. This is because Windows XP has its built-in configuration tools – **Windows XP Zero Configuration** to assist you in networking activities. It is recommended to utilize the attached **PRISM Configuration Utility** to enjoy more benefits it will bring. Thus, to employ your **PRISM Configuration Utility** under Windows XP, please proceed to the next step to change the default settings of **Windows Zero Configuration** to **PRISM**

Configuration Utility.
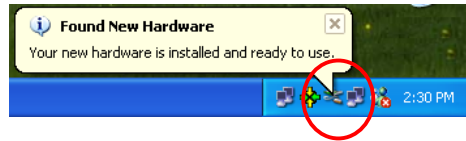
Figure 2.4-8: The **PRISM Configuration Utility** Tray Icon

Figure 2.4-9: The **PRISM Wireless Settings** Dialog Box

l) Right-click the **Network Connections** icon at the task bar to open the **Wireless Network Connection Status** dialog box, and then select **Properties**.
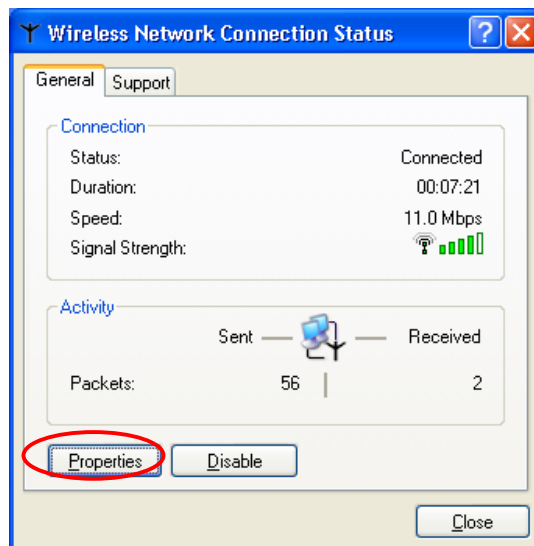
Figure 2.4-10: The **Wireless Network Connection Status** Dialog Box

m) Choose the **Wireless Networks** tab in the **Wireless Network Connection Properties**

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dialog box, and remove the tick in the **Use Windows to configure my wireless network settings** checkbox.
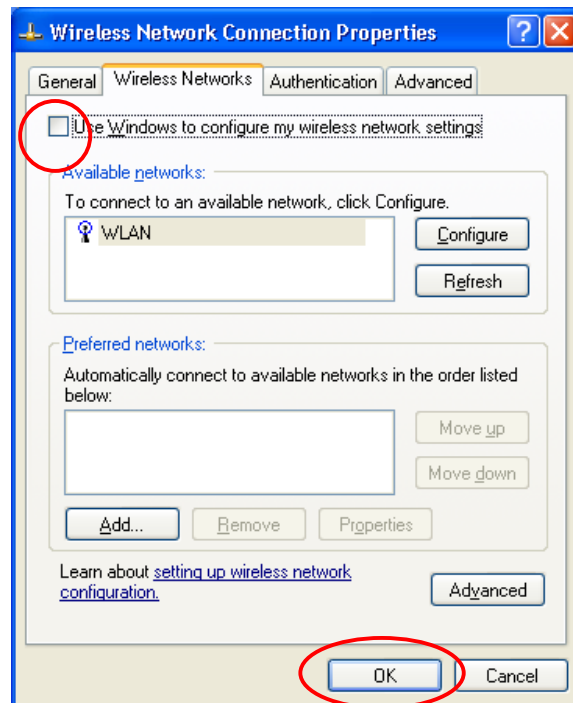
Figure 2.4-11: The **Wireless Network Connection Properties** Dialog Box

n) Click **OK**. Now, you have successfully removed the **Windows Zero Configuration**.

To monitor and configure the network via **PRISM Configuration Utility**, double-click its tray icon, and you should find four tabs contained in the popped up **PRISM Wireless Settings** dialog box at this time. For more details about the utility, please refer to **PRISM Configuration Utility Basics** below.

*Note: If you wish to use Windows XP's built-in configuration tools – **Windows XP Zero Configuration**, please refer to the next chapter: **Configuration for Windows XP** to configure the WLAN USB Module.*

2.5 Verifying a Successful Installation

To confirm that your 802.11b Wireless LAN USB Module is properly installed, please go along with the procedures below.

1. Right-click the **My Computer** desktop icon, and choose **Properties** from the opened menu.

2. In the **System Properties** dialog box, choose **Device Manager** if you are under Windows 98 or Me. If you are operating Windows 2000 or XP, click the **Hardware** tab, and then choose the **Device Manager** button.

3. In the opened window, expanding **Network adapters** to find the USB Module - **WLAN IEEE802.11b PRISM USB Adapter**. Right-click over the item and choose **Properties**.

4. From the opened dialog box, on the **General** tab, find the descriptions under the **Device Status** pane to learn if the module is working properly. However, if there's an error message shown, please choose **Uninstall** from the opened menu while right-clicking over the USB Adapter item, which is attached a red or yellow icon beside, in the **Device Manager** dialog box. Then restart your system and go through the installation procedures again.

The following picture indicates a successful installation of the 802.11b Wireless LAN USB Module.
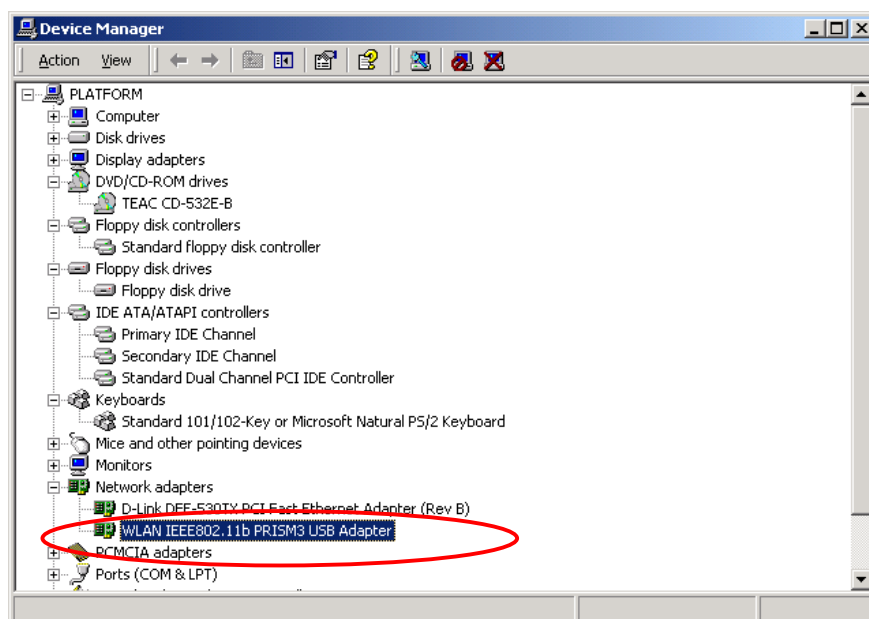
Figure 2.5-1: The **Device Manager** Dialog Box

3. CONFIGURATION FOR WINDOWS XP

As you have already known, Windows XP has its built-in configuration tools – **Windows XP Zero Configuration**, to assist you in some basic configurations of wireless network connection. The service starts right after the completion of the installation of 802.11b WLAN USB Module, and you will find the icon automatically appears in your system tray like the following picture shows.

Figure 3-1: The **Wireless Network Connection** Icon

Please refer to the desired topics below to look for more details about utilizing your 802.11b WLAN USB Module via **Wireless Zero Configuration**.

To Connect an Available Network via Wireless Zero Configuration

1. Double-click the **Wireless Network Connection** icon.
2. In the opened **Connect to Wireless Network** dialog box, the currently available networks are listed in the **Available networks** field. From the list, click an item which you intend to make an association.
3. If the chosen entry requires a WEP encryption key and also automatically provides it, leave the **Network Key** field blank, and then choose the **Connect** button to build the connection. Otherwise, you will need to manually enter the identical key in the **Network Key** field before clicking **Connect**.
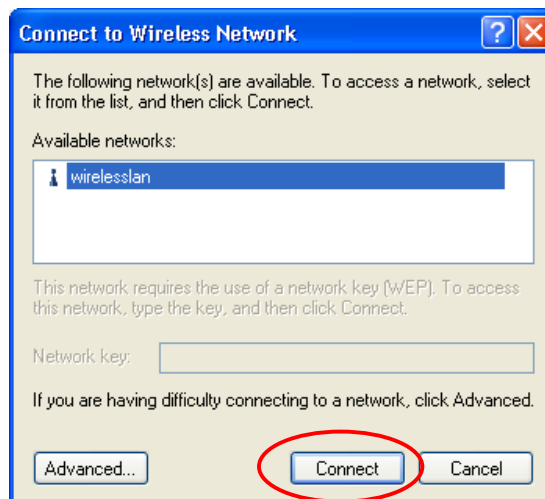
Figure 3-2: The **Connect to Wireless Network** Dialog Box

4. If the connection is established, there will be a pop-up message shown beside the **Wireless Network Connection** icon on the system tray. You could obtain the information on the status of connection from the message.

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To Configure the Wireless Networks Properties

If you cannot establish a connection with the chosen entry or you wish to configure further wireless network connection settings, choose the **Advanced** button in the **Connect to Wireless Network** dialogue box.
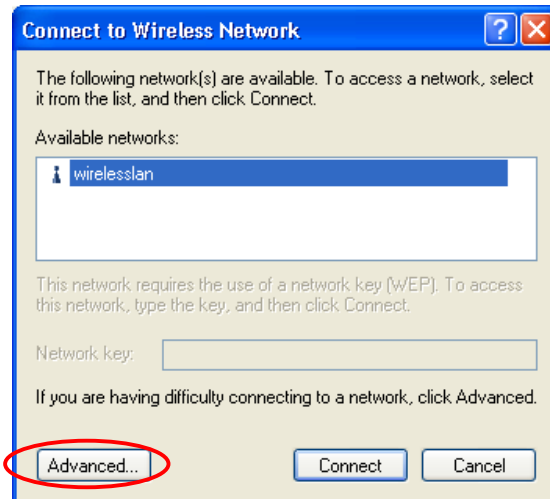
Figure 3-3: The **Connect to Wireless Network** Dialog Box

After clicking **Advanced**, you will enter into the **Wireless Networks** tab of the **Wireless Network Connection Properties** dialog box, in which there are three other tabs, including **General**, **Authentication**, and **Advanced**. The **Wireless Networks** tab includes almost the main settings for the networking connection. Thus, please check the descriptions below to learn more about the tab.
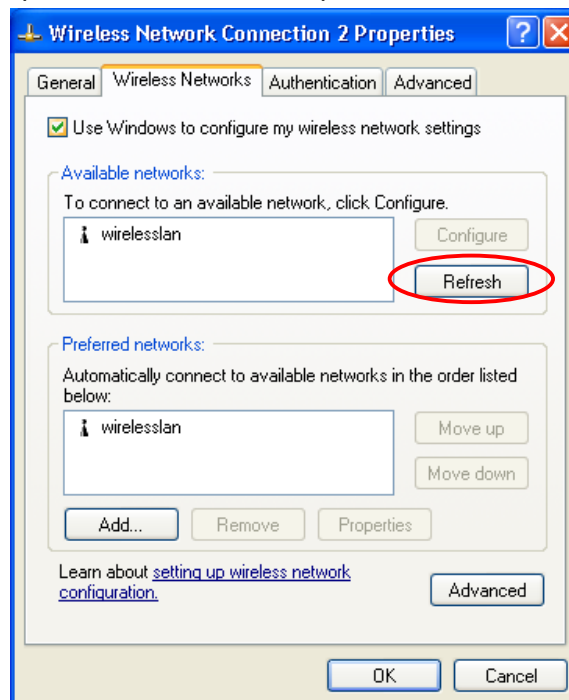
Figure 3-4: The **Wireless Network Connection Properties** Dialog Box

Note: For more detailed information about each tab, please refer to the Windows XP Online-Help.

The **Wireless Networks** tab is mainly consisted of two sections: **Available networks** and **Preferred networks**.

☐ Under the **Available networks** area, all the available access points or Wireless LAN PC Card equipped computers are displayed. You may wish to click **Refresh** to update the list. If you choose any listed item in the field and then click **Configure**, the **Wireless Network Properties** dialog box will appear, as Figure 3-5 shows. Check the description below the figure to obtain more information about the dialog box.

☐ In the **Preferred networks** area, you could add any displayed networks to the list by clicking over the intended item from **Available networks**, and then select the **Add** button. After clicking **Add**, the **Wireless Network Properties** dialog box will appear as Figure 3-5 displays. Note that to delete any item under the **Preferred networks** area, simply click on it and then select the **Remove** button. Additionally, you may adjust the items in the list by clicking the desired item and then choosing the **Move up** or **Move down** button. It is, however, important to realize that Windows XP will always choose the first one in the list to establish the networking connection.
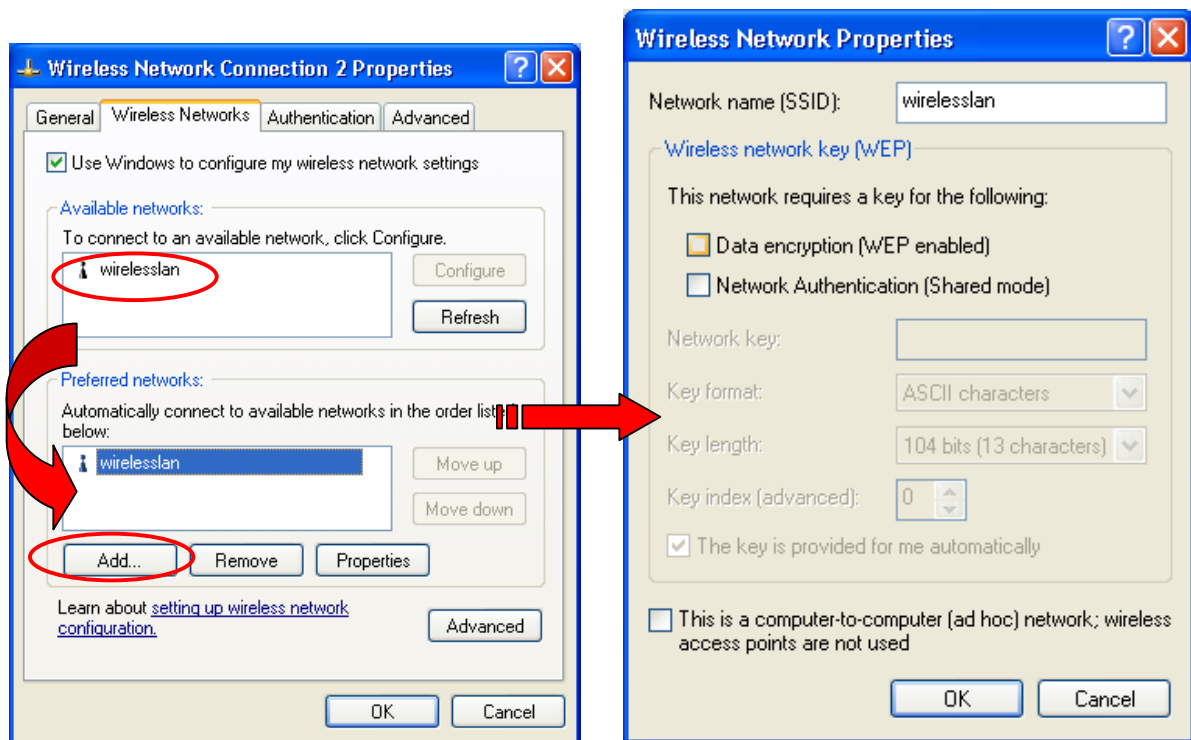
Figure 3-5: The **Wireless Network Properties** Dialog Box

*Note: Once you click over an item from the **Preferred networks** list and then choose **Properties**, the **Wireless Network Properties** will also be provoked.*

☐ In the opened **Wireless Network Properties** dialog box, edit texts in the **Network Name (SSID)** field to identify the chosen network entry in the wireless LAN.

☐ If there's a need, go to the **Wireless network key (WEP)** area below to set the keys as the associated access point or Wireless LAN PC Card equipped computer requests. To set WEP, select **Data encryption (WEP enabled)** and **Network Authentication**. Then enter the encryption

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keys for the network you intend to connect in the **Network Key** field. Meanwhile, the **Key format** and **Key length** options change the settings according to **Network Key** string you typed. Click **OK** when you are finished, and you will be back to the **Wireless Network Connection Properties** dialog box.
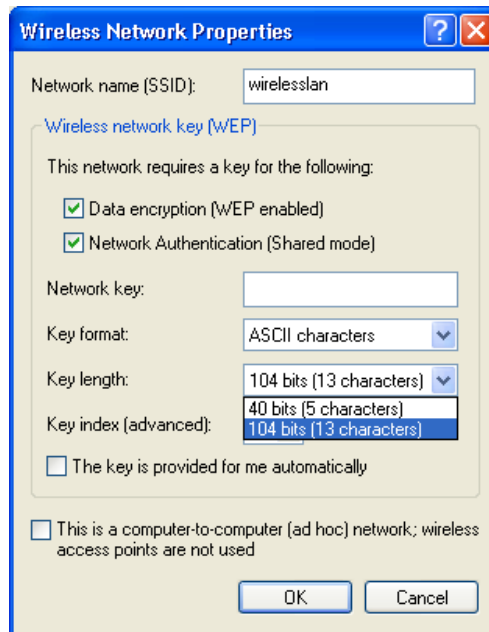
Figure 3-6: Enter WEP

Figure 3-7: Setting up wireless network configuration

To Access to Certain Wireless Network Type

The default network type of **Windows XP Zero Configuration** is any available access points (Access Point mode) or WLAN Card equipped computer (Ad-Hoc mode) within the range at the given time. However, you may wish to connect to a certain network type sometimes. To change the default settings, click the **Advanced** button in the **Wireless Network Connection Properties** dialog box.

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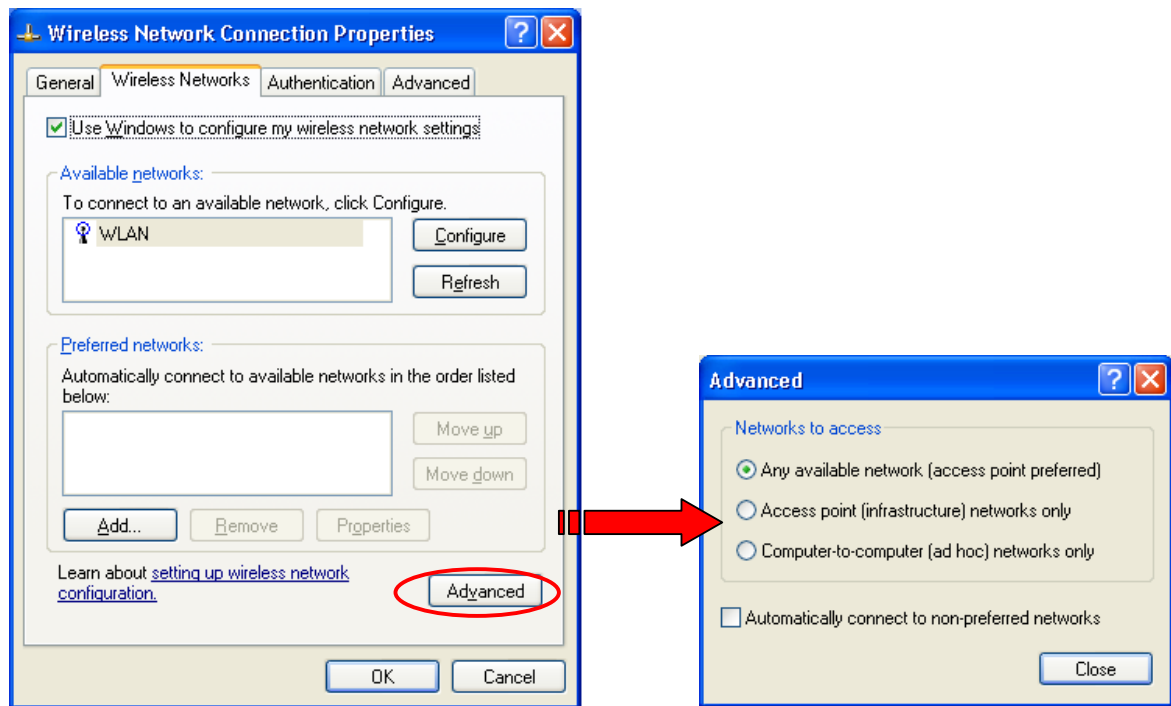
Figure 3-8 The **Advanced** Dialog Box:

The open **Advanced** dialog box provides three options, **Any available network**, **Access point networks only**, and **Computer-to-computer networks only**. Choose either one of them according to your need, and then click **Close** to finish. Then you will find under the **Available networks** area in the **Wireless Network Connection Properties** dialog box, only the specified networks are displayed.

Note: If you wish to use the attached application –PRISM Configuration Utility of the 802.11b WLAN USB Module instead of Windows XP's Wireless Zero Configuration, please check "step k" under 2.4 Installation Procedures for Windows XP Users in this manual to change the settings.

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4. PRISM CONFIGURATION UTILITY BASICS

After successfully installing the driver for your 802.11b Wireless LAN USB Module on your computer, you may see the **PRISM Configuration Utility** icon, ⊕, displayed in the system tray. To set configurations for your USB Module, simply double-click on the icon to open the **PRISM Wireless Settings** dialog box, in which four tabs are contained, including **Status**, **Configuration**, **Encryption**, and **About**. Each of them proffers different functions to assist you in configuring the connection to the networks.

In this chapter, three topics are offered: <u>Tray Icon</u>, <u>Right-click Menu of the Tray Icon</u>, and <u>The Utility Function</u>. Please refer to the preferred topic to obtain more information and enjoy vast advantages **PRISM Configuration Utility** brings.

4.1 Tray Icon

As long as you finish installing **PRISM Configuration Utility** on your computer system, you will see the **PRISM Configuration Utility** icon, ⊕, shown at the right bottom corner of your screen. When you move the mouse cursor over it, the current link quality is provided in the tips.

Furthermore, the color of the icon varies with the current state of your network connection. Check the list below to learn the definition of each color.

Icon	Quality
⊕	Excellent Link Quality 100%
⊕	Data Frame Errors – Check WEP Settings
⊕	Not Linked
⊕	Radio Off

*Note: The blue icon indicated that you might have entered incorrect WEP keys. To solve the problems, choose the **Configuration** tab in the **PRISM Wireless Settings** dialog box to correct the keys for encryption.*

4.2 Right-click Menu of the Tray Icon

Right-click the **PRISM Configuration Utility** icon, ⊕, in the system tray will open a menu as the following picture:
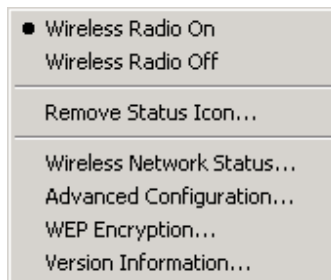
Figure 4.2-1: Right-click Menu of the Tray Icon

Check the descriptions below to obtain detailed information about each command in the menu.

Wireless Radio On

Choose the **Wireless Radio On** command to receive the radio frequency signal.

Wireless Radio Off

Choose **Wireless Radio Off** command will stop receiving the radio frequency signal.

Remove Status Icon

If you don't wish to have the **PRISM Configuration Utility** icon displayed in the system tray, choose this command to open the **Remove Wireless Status Icon** dialog box, and then choose **Yes** to have the icon disappeared. The icon will reappear next time when you restart the computer. If you intend to remove it permanently, put a tick in the checkbox next to the **Remove Status Icon Permanently** option. To launch the utility hereafter, click **Start** on the taskbar, choose **Program** from the menu, and then point to **PRISM Configuration Utility** from the submenu of **WLAN PRISM Utility**. Clicking **No** will undo the removal.

Figure 4.2-2: The **Remove Wireless Status Icon** Dialog Box

Wireless Network Status

Choose this command to launch the **Status** tab of the **PRISM Wireless Settings** dialog box. For more details about the tab, please refer to **The Status Tab** in **The Utility Function** section below.

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Advanced Configuration

Choose this command to launch the **Configuration** tab of the **PRISM Wireless Settings** dialog box. Please refer to **The Configuration Tab** in **The Utility Function** section below to gain more information about the tab.

WEP Encryption

Choose this command to launch the **Encryption** tab of the **PRISM Wireless Settings** dialog box. This tab offers you various options to maintain the secure management in a wireless LAN environment. See the explanations in **The Encryption Tab** of **The Utility Function** section below for more details.

Version Information

Choose this command will launch the **About** tab of the **PRISM Wireless Settings** dialog box. The **About** tab reveals general information on your USB Module, including the release version of driver and the **PRISM Configuration Utility**, and the module's MAC Address.

4.3 The Utility Function

When you double-click the **PRISM Configuration Utility** tray icon, the **PRISM Wireless Settings** dialog box will be prompted as the picture shows below. The application is a window-based program, which is consisted of four tabs, including **Status**, **Configuration**, **Encryption**, and **About**.
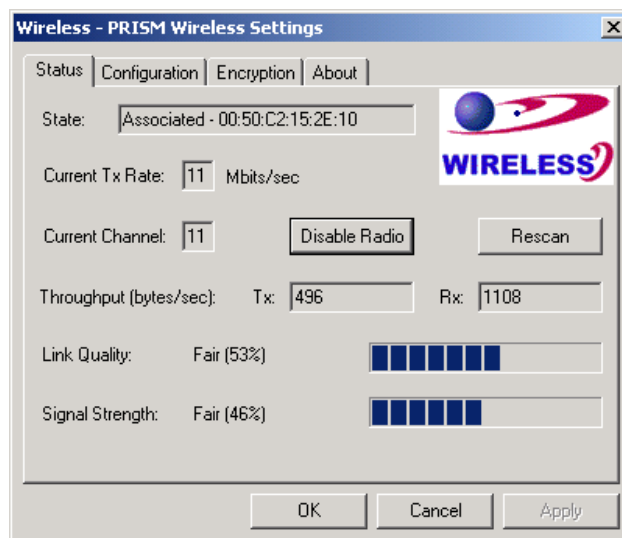
Figure 4.3-1: The **PRISM Wireless Settings** Dialog Box

Check the desired items below to obtain more details about them.

The Status Tab

In the **PRISM Wireless Settings** dialog box, click the **Status** tab, and you will see the following display. Here presents the status of your current connection. To close the window, click **OK**.

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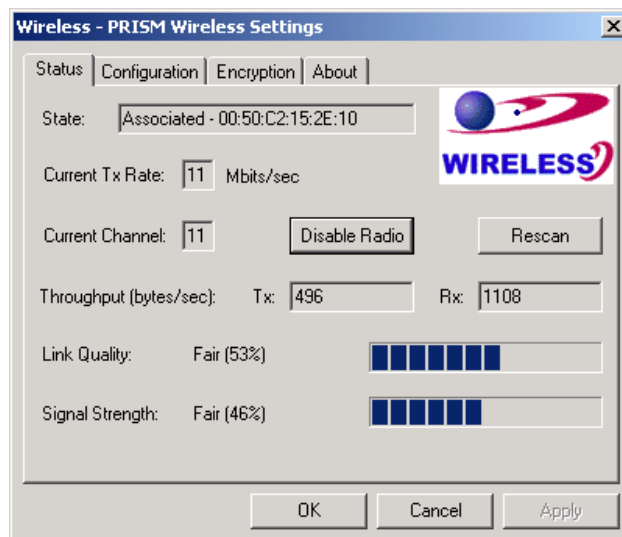
Figure 4.3-2: The **Status** Tab

From the window, the general information on the status of currently connected entry is presented. You may want to click the **Rescan** button to reinitiate the scanning process and update the status. Later the result of scanning will be renewed and displayed in the window afterwards. If you wish to stop the networking connection, click the **Disable Radio** button to stop scanning. However, if you are already in the disabled radio mode, you will find the **Enable Radio** button here instead. Click **Enable Radio** to regain the link then.

State

Here displays the MAC Address of the current associated entry, which could be a connected access point in the Infrastructure mode or computers joining in the Ad-Hoc network.

Current Tx Rate

This feature indicates the transmission rate of the current connection.

Current Channel

Here reveals the current channel operated in the wireless network. Note that the channel number differs as the radio scans any available channels in the Infrastructure mode.

Throughout (bytes/sec)

This feature indicates the rates of transmitting (**Tx**) and receiving (**Rx**) data package of your USB module within a short period of time; thus, the values vary on a time basis.

Link Quality

Link Quality is based on the percentage of successfully transmitted or received signal of the associated access point beacon within a limited period. The higher the percentage, the better the link quality. The bar graph beside also provides a visual interpretation of the current link quality. It is note that the **Link Quality** and **Signal Strength** features only apply to the infrastructure mode. They are inapplicable in the Ad-Hoc mode since data will be transferred from many different computers.

Signal Strength

You may learn the received signal strength of the baseband processor of the Beacon signal from the **Signal Strength** bar beside, and it's also presented in terms of percentage. As the signal gets stronger, you will see the signal percentage rate gets higher. It is noted that the **Signal Strength** and **Link Quality** features only apply to the Infrastructure mode. They are inapplicable in the Ad-Hoc mode since data will be transferred from many different computers.

The Configuration Tab

Click this tab to save different profiles for different network configurations. When finish changing the settings, please click **Apply** to perform the new configuration at last.

*Note: Choose the **Advanced Configuration** command from the right-click menu of **PRISM Configuration Utility** tray icon will launch this tab too.*


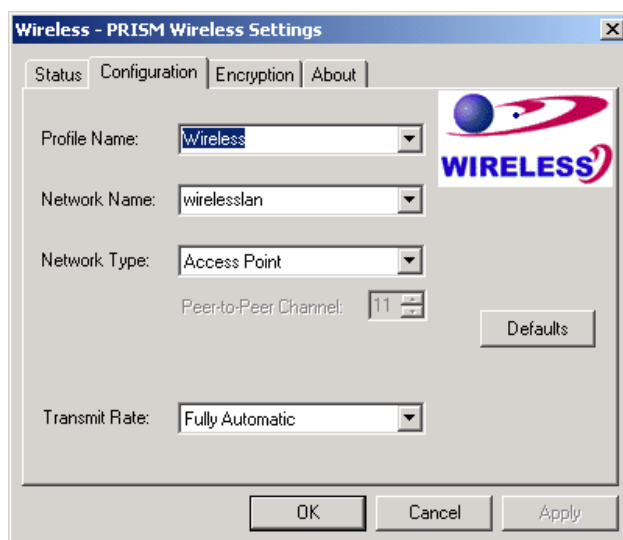Figure 4.3-3: The **Configuration** Tab

Profile Name

Enter texts in the **Profile Name** field to identify a new profile. After defining the configurations below, click the **Apply** button to establish the profile. To switch between any existing profiles, simply click the arrow button at the right of the **Profile Name** field to open the pull-down menu and then select the intended one from it.

Network Name

Network Name is also known as SSID, standing for Service Set Identifier, must be unique to distinguish itself as a particular wireless network, and all wireless points in this network area share the same SSID. Type the identical SSID in the **Network Name** field to associate with access points or stations within the specified wireless LAN. To change the **Network Name**, highlight the name in the box, edit a new SSID, and then click **Apply** to save the changes.

Network Type

Two network types are offered here: **Access Point** and **Peer-to-Peer**. Choose the intended type from the two options. The **Access Point** mode, which is also known as the Infrastructure mode, allows you to communicate with a wired network via an access point. If you attempt to operate this mode, you must indicate the identical **Network Name** to make a communication with the intended access point. On the other hand, the **Peer-to-Peer** mode provides you with the so-called Ad-Hoc communication, which means each wireless-equipped computers within a group is able to connect others as an independent wireless LAN without the use of an access point. Each station within this Ad-Hoc network has to define the same **Network Name** and **Peer-to-Peer Channel**.

Peer-to-Peer Channel

This command is only available while you are operating the **Peer-to-Peer** mode, the so-called Ad-Hoc mode. Specify the operating radio frequency channel from the pull-down menu. Note that the available channels differ from country to country, and the channel number must be the same between the entries/stations within the range, so that each can communicate with the others. While in the **Access Point** mode, the channel number would be the same as the associated access point. Thus, there's no need to manually set up the value.

Transmit Rate

This command allows you to indicate the rate of transferring the data packet from the associated access point or any nodes within the range. There are four options for you: **Auto 1 or 2 Mb**, **5.5 Mb**, **11 Mb**, and **Fully Automatic**. Specify the rate according to the speed of your wireless network from the provided options, or you may simply choose **Fully Automatic** to set the best available rate according to the received signal quality and the capabilities of the associated access point or station.

The Encryption Tab

Click the **Encryption** tab to define the encryption settings for a specific profile. It offers you various options concerning the so-called WEP (Wired Equivalent Privacy) to maintain the secure management in a wireless LAN environment. See the explanations below for more details, and before making an activation of any new settings, click **Apply**. To leave the window, click **OK**. To undo the new settings,

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select the **Cancel** button.
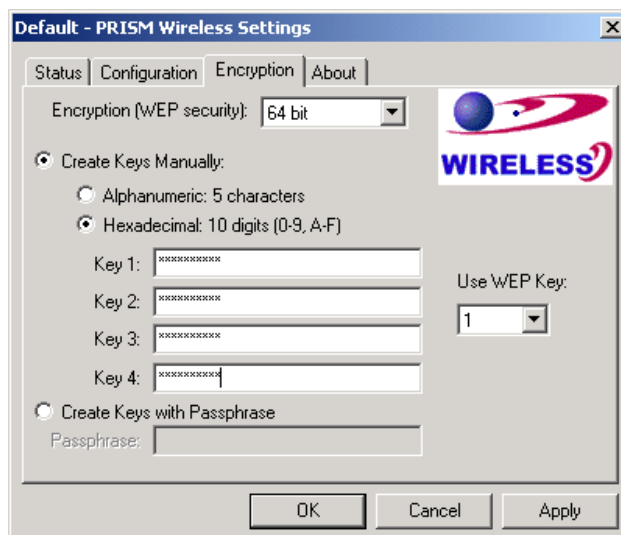
Figure 4.3-4: The **Encryption** Tab

Encryption (WEP security)

If you choose **Disabled** from the pull-down list, you will have the wireless module communicated with all stations within the same networking community without any data encryption. Otherwise, two key lengths are offered: **64 bit** and **128 bit**. Specify a preferred one from the two, so that you may use the identical WEP key to make a communication with the chosen access point.

Create Key Manual

Once you set the **Encryption** type as **64 bit** or **128 bit**, you may choose to edit WEP keys manually or create them via the passphrase of your wireless network. If you choose the **Create Key Manual** option, you may directly enter up to 4 WEP keys for use in WEP encryption. To generate the WEP keys, please define the key entry method as **Alphanumeric** or **Hexadecimal** (for hexadecimal characters, only digits 0-9 and letters A-F are valid). Then edit the texts in the blank fields below, from **Key 1** to **Key 4**, as the encryption codes. Note that these codes/keys shall be identical between the wireless nodes within the range and the access point only. Check the table below to see valid key length for each encryption type:

	64 bit	**128 bit**
Alphanumeric	5 characters	13 characters
Hexadecimal	10 digits	26 digits

Use WEP Key

Indicate which WEP key you intend to apply to activate the WEP encryption from the pull-down

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menu. Make sure that the intended access point on the wireless network shares the same keys. By default, **Key 1** will be used.

Create Keys with Passphrase

Choose this command when the associated wireless network uses a passphrase to create WEP keys. Enter the passphrase stings in the **Passphrase** filed to generate four encryption keys in the **Key** fields above. Note that only letters A-F are valid for the **Passphrase** feature.

After finish configuring the **Encryption** features, remember to click the **Apply** button to initiate the new settings.

The About Tab

This tab reveals general information on your wireless LAN USB module, including the following items:
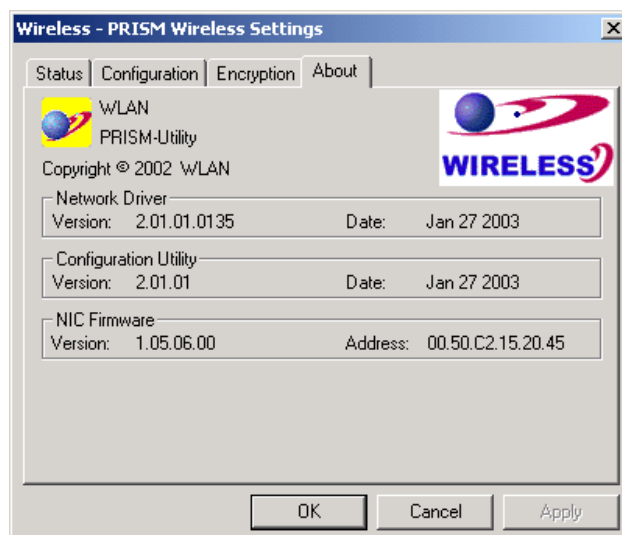
Figure 4.2-14: The **About** Tab

Network Driver

Displays the current version and released date of the 802.11b Wireless LAN USB Module's driver.

Configuration Utility

Displays the current version and released date of the **PRISM Configuration Utility** application.

NIC Firmware

Displays the current NIC card firmware version and the MAC (Media Access Control) address of your wireless card. It is consisted of 12-digit hexadecimal numbers (48 bits in length) to identify your computer's physical address on the local area network.

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APPENDIX A: TROUBLESHOOTING

This section provides solutions to problems that you might encounter during the installation and operation of your 802.11b WLAN USB Module. Please refer to the desired topics below and read the description to solve your problems.

Uninstall RRISM Configuration Utility and the Module's Driver

Prior to starting the uninstalling, please make sure that the utility is closed, and then go along with the procedures below to entirely uninstall **RRISM Configuration Utility** and the module driver.

1. Click on **Start** on the taskbar to select **Programs**.
2. From the **Programs** menu, find **RRISM Configuration Utility**, and then choose **Uninstall RRISM Configuration Utility** from the submenu.
3. Click **OK** to begin removing the driver files from your PC.
4. Follow the on-screen instructions to finish the removal of program.

The 802.11b WLAN USB Module Does Not Work Properly

If this happens, follow the guidelines below.

1. Right-click the **My Computer** desktop icon, and choose **Properties** to open the **System Properties** dialog box.
2. If you are under Windows 98 or Me, choose the **Device Manager** tab, or if your system is Windows 2000 or XP, click the **Hardware** tab, and then choose the **Device Manager** button.
3. In the opened window, find your USB module to see if the installation is successful. If you see a yellow exclamation mark beside the item, please go along with the steps below to reinstall the drivers:
4. Uninstall the software and hardware drivers from your PC. (Please refer to the previous topic for details)
5. Restart your computer and repeat the installation procedures as this manual indicated in Chapter 3: Installation of the 802.11b Wireless LAN USB Module.
6. When finished, open the **Device Manager** window again to verify if the installation is approved. The yellow exclamation mark shall be removed for this time.

Upgrade RRISM Configuration Utility and the Module's Driver

To upgrade the drivers for **RRISM Configuration Utility** and the 802.11b Wireless LAN USB Module, follow the procedures below. Please note that the details might be slightly different according to the Windows system you are using. Here we are taking the example of Windows 2000.

1. Click **Start** on the taskbar and choose **Control Panel** from the **Settings** menu.

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2. Select **System** to open the **System Properties** dialog box, and then under the **Hardware** tab, click the **Device Manager** button to open the **Device Manager** dialog box.

3. Double-click the **Other devices** item in the list to show the **USB 802.11b WLAN DEVICE** icon, which is displayed with a yellow icon beside. Right-click the icon and choose **Properties** from the opened menu.
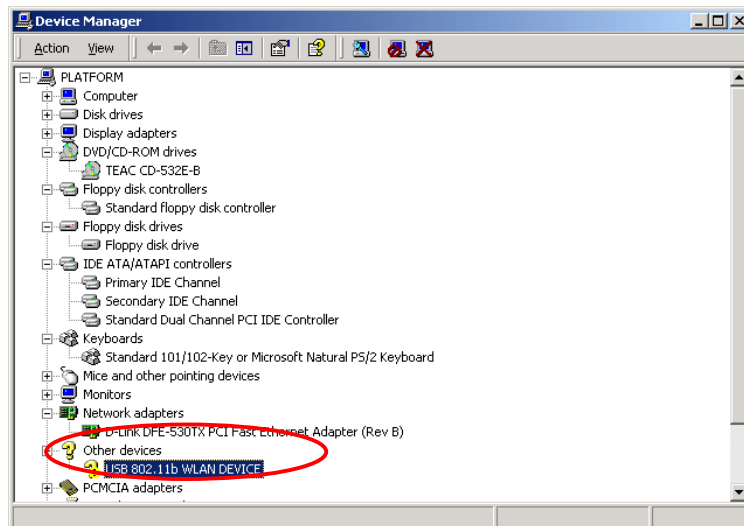
Figure 5-1: The **Device Manager** Dialog Box

4. In the opened dialog box, click the **Update Driver** button under the **Driver** tab.
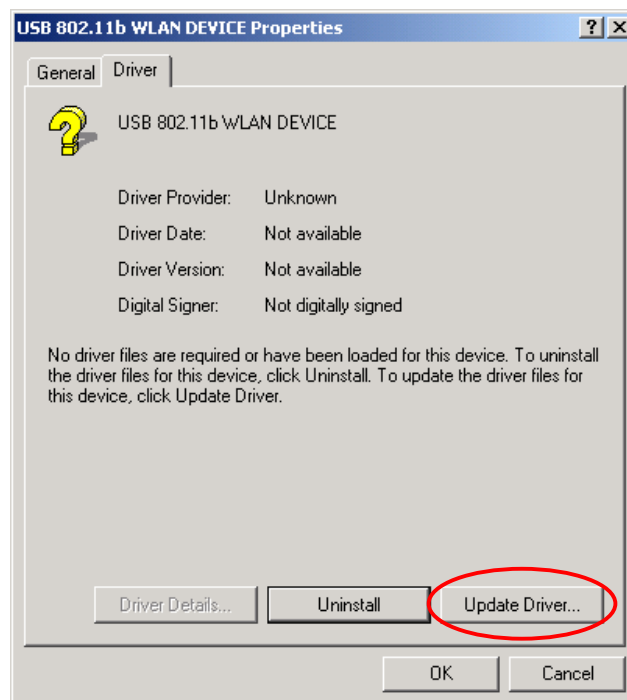
Figure 5-2: The **Driver** Tab

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5. Click **Next** in the **Upgrade Device Driver Wizard** dialog box to continue.

Figure 5-3: The **Upgrade Device Driver Wizard** Dialog Box

6. On the **Install Hardware Device Drivers** screen, choose **Display a list of unknown drivers for this device so that I can choose a specific driver**. Click **Next** then.

Figure 5-4: The **Install Hardware Device Drivers** Screen

7. Choose **Network adapters** on the **Hardware Type** screen, and then click **Next**.
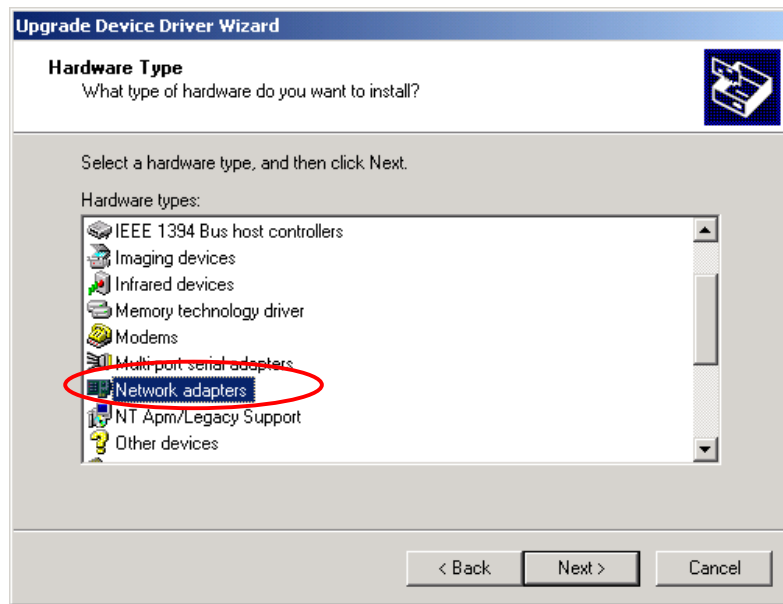
Figure 5-5: The **Hardware Type** Screen

8. On the **Select Network Adapter** screen, choose **WLAN** under **Manufacturers** and **WLAN IEEE802.11b PRISM3 USB Adapter** under **Network Adapter**, and click **Next** to proceed.
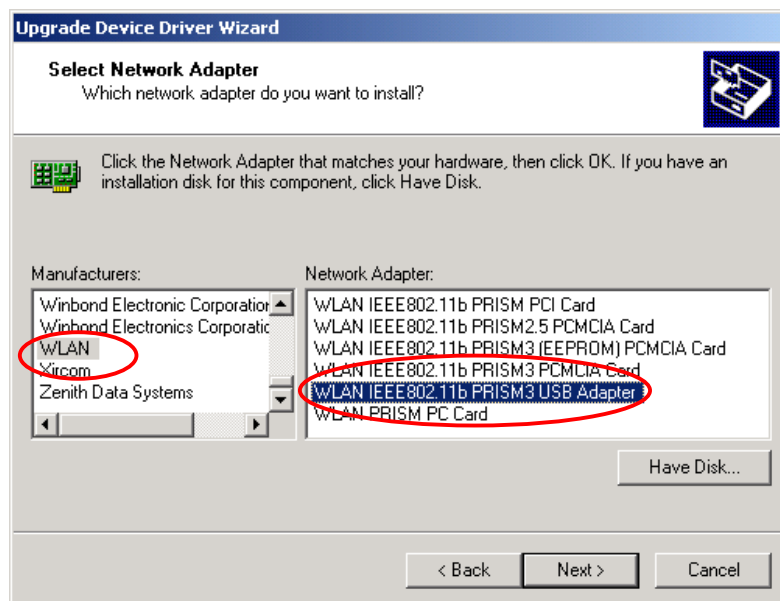
Figure 5-6: The **Select Network Adapter** Screen

9. When the **Update Driver Waning** message box appears, click **Yes**.
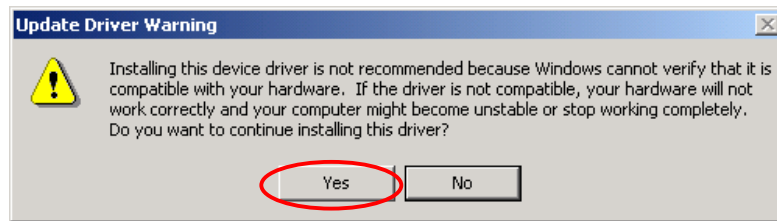
Figure 5-7: The **Update Driver Waning** Message Box

10. The **Start Device Driver Installation** screen will be displayed to notify that the wizard is ready to upgrade the driver for the hardware device. Choose the **Next** button.
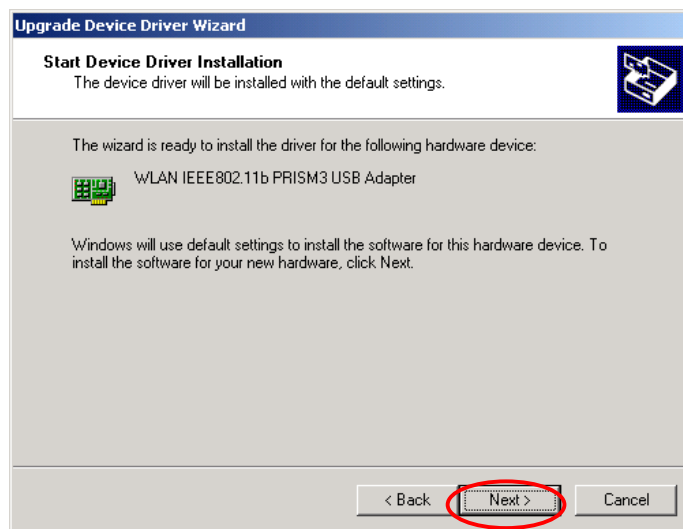
Figure 5-8: The **Start Device Driver Installation** Dialog Box

11. In the prompted **Digital Signature Not Found** dialog box, click **Yes** to let 802.11b Wireless LAN USB Module be verified to run on Windows 2000
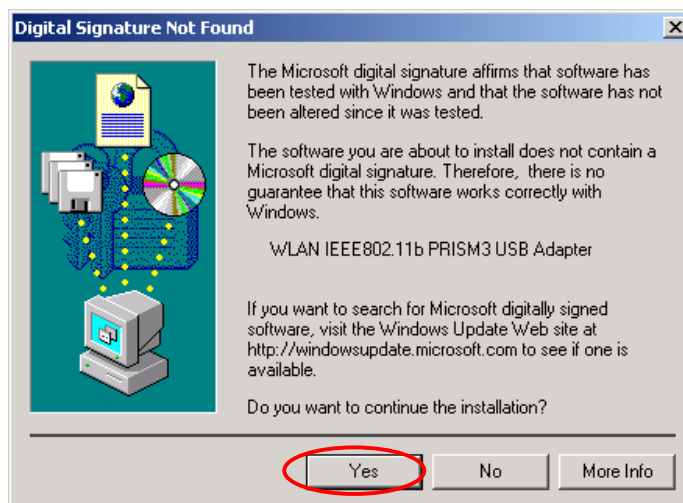
Figure 5-9: The **Digital Signature Not Found** Dialog Box

12. Click **Finish** when you see the following window. The driver and software installations are entirely complete at the time.

Figure 5-10: The **Complete** Screen

For Windows 98: Close the Close Program Dialog Box During the Installation

If you are using Windows 98, during the installation process, you might be notified with the **Close Program** dialog box after indicating the Windows to install the required files on the Windows 98 CD-ROM.

Figure 5-11: The **Close Program** Dialog Box

This is however normal. The dialog box displays a list of all presently active programs. Choose **New Hardware found [Not responding]**, and then click the **End Task** button. Then you can monitor and configure the network via **PRISM Client Utility** according to your needs.

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APPENDIX B: SPECIFICATIONS

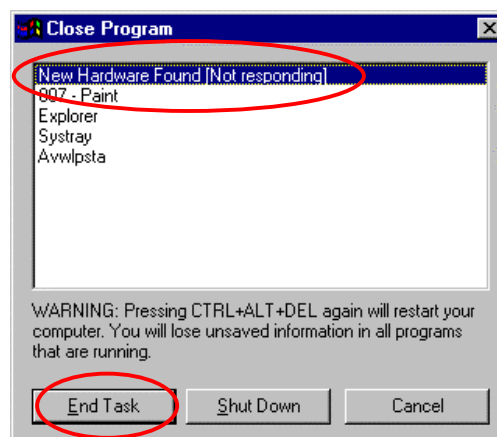| Product Name	802.11b 11 Mbps WLAN USB Module
Model Name	WM168b
Host Interface	Std. USB 1. 1 I/F
Dimensions	25 (W) x 60 (L) x 4.3 (H) mm
Weight	7.5g
Frequency Band	2.400 ~ 2.4835GHz (subject to local regulations)
Number of Channel	11 channels (US, Canada); 13 channels (ETSI); 14 channels (Japan)
Operating Voltage	3.3V ± 5%
Current Consumption	Tx: 300mA / Rx: 285mA / Standby: 38mA / Sleep: < 1mA
Spreading	DSSS (Direct Sequence Spread Spectrum)
Data Rate	11Mbps, 5.5Mbps, 2Mbps, 1Mbps
Transmit Power	Typ. 15 dBm @ Nominal Temperature Range
Receive Sensitivity	11 Mbps @ -82 dBm, Typical
Modulation	11Mbps and 5.5Mbps CCK; 2Mbps: DQPSK; 1Mbps: DBPSK;
Security	64/128 bit WEP Encryption
Antenna	Two GSC Type RF Connector
LED Indicator	Defined By I/F Pin No. 5
Supplied Driver	Windows 98SE/2K/Me/XP
Standards	IEEE 802.11b Wi-Fi compliant
Media Access Protocol	CSMA/CA with ACK
Warranty	1 year
Temperature Range	0 ~ 65°C (Operating), -20~70°C (Storage)
Humidity	Max. 95% Non-condensing
Operating Range	Open Space: 100 – 300m; Indoor: 40m – 100m The transmission speed varies in the surrounding environment.
Roaming	Full mobility and seamless roaming from cell to cell and across access points
Network Protocol	TCP/IP, IPX, NetBEUI
Management Utility	Link Configuration for network join and diagnostics
Software Certification	WHQL
EMC certification	FCC, CE
Packaging	Customer Define
CIS	Customer Define

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APPENDIX C: GLOSSARY

802.11b – 802.11b is one of the IEEE standards for wireless LANs and specifies a data transfer rate of 5.5 and up to 11 megabit per second in the 2.4 gigahertz radio band. 802.11b is recently given other widespread names as Wi-Fi or Wireless Fidelity.

Ad-hoc Network - Ad-hoc network, also known as peer-to-peer network, means a wireless network which is composed only of stations. This type of network is created with a group of wireless-equipped computers. With the wireless devices, each computer, functioning as a server and a client at the same time, can establish a LAN to directly communicate with other computers without any access points involved. It is easy to set up a peer-to-peer network; however, because all stations must be within a specific distance in order to be capable of communicating with each other, it is also limited. Thus, such a type of network is widely used at small networking requirements, like between a few computers or devices at departmental scales.

IEEE – IEEE, the Institute of Electrical and Electronics Engineers, is the world's largest technical professional society and is consisted of more than 366,000 members in approximately 150 countries. As a leading authority on areas ranging from for computer engineering, biomedical technology and telecommunications, IEEE endeavours to set more than 800 active consensus standards till now and publish 30 percent of the world's literature in electrical engineering, computers and control technology.

Infrastructure Network – Infrastructure network allows you to communicate with wired LAN via an access point. Unlike Ad-hoc network that all wireless-equipped stations within the range may directly communicate with each other, clients of Infrastructure network can only transmit and receive data through the use of a central access point. The associated access point also provides communication with the wired network.

MAC Address – The MAC (Media Access Control) address is the serial number of your Network Interface card. It has been burnt into the chip and could not be changed. MAC address is thus unique. While a computer on the network is transferring data, its MAC address is also conveyed and attached to be part of the header of the data packets.

Roaming – Roaming is an ability to allow users from one cell (or BSS) to another without losing connection via a wireless device.

SSID – SSID is short for Service Set Identifier, a 32-character unique identifier for a workgroup of the wireless network. An SSID of one WLAN should be different from that of others, so all access points

and other devices intending to communicate with a specific WLAN cannot achieve successful network connectivity unless presenting the identical SSID. From some perspective, an SSID performs as a kind of password to supply a measure of security on the WLAN. However, if an access point is set to "broadcast" its SSID, this essential security is no longer remained. An SSID is also known as a Network Name.

WEP - Wired Equivalent Privacy (WEP) is a security mechanism for wireless local area networks. It is designed for 802.11 standard to offer an equal level of security as that of a wired LAN. Through the configurations of encryption, WEP aims to provide security while the nodes with wireless devices are transferring or receiving data packets over radio waves.

WLAN – Wireless local area network (WLAN) receive and transmit data over the air by using radio frequency (RF) technology. The vital significance of WLAN is it minimizes the requirements for wired connections and provides not only data connectivity but also user mobility. Without the constraint of physical location, wireless LAN allows clients to transmit and receive data via high-frequency radio waves rather than wires.

USB – USB, standing for Universal Serial Bus, was designed to make a connection between the computer and its peripherals, such as keyboards, scanners, webcams, printers, etc., via an easy operation of plug-and-play. USB has proved to be a good solution that allows users to quickly and easily connect and add peripherals to computers. Through the USB interface, there's even no need to turn the computer off while adding a new peripherals mentioned above to a desktop or laptop computer. Due to its convenience and simplicity, USB has won world-wide popularity, and most peripherals for computers these days are designed for the USB standard.