

Wireless LAN 11Mbps Series

User Manual

Version 1.2.1 – Aug. 2002

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STATEMENTS REGARDING THE WIRELESS LAN CARD

RADIATION EXPOSURE STATEMENT

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power Wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research. The **WD05740** has been tested and found to comply with the Federal Communications Commission (FCC) guidelines on radio frequency energy (RF) exposures. The maximum SAR levels tested for the **WD05740** has been shown to be **0.563W/kg at body**. This device should not be co-located or operated with any other antenna or transmitter. In addition, use of the equipment other than PDA may not ensure compliance with FCC RF exposure guidelines.

FCC AND INDUSTRY CANADA INFORMATION (U.S.A , CANADA)

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 WARNING: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Properly shielded an grounded cables and connectors must be used for connection to host computer and / or peripherals in order to meet FCC emission limits.

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website www.hc-sc.gc.ca/rpb

« L'installateur du présent matériel radio doit s'assurer que l'antenne est située ou pointée de manière à ce que cette dernière n'émette pas de champs radioélectriques supérieurs aux limites spécifiées par Santé Canada pour le grand public; consulter le Code de sécurité 6, disponible sur le site Web de Santé Canada, à l'adresse suivante : www.hc-sc.gc.ca/rpb. »

FCC INFORMATION (U.S.A)

1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. **IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product **MUST** be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use to use this product in the USA.

3. **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This requirement generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

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1. Introduction

Thank you for purchasing your Wireless LAN, Wireless LAN 11 Mbps Adapter. This manual will assist you with the installation procedure.

The package you have received should contain the following items:

- Wireless LAN 11 Mbps Adapter
- User manual
- CD containing Wireless LAN Management utility and drivers

Note: if anything is missing, please contact your vendor

The CD contains drivers and Configuration Utility program that is used for managing the Wireless LAN Card and establishing the wireless connection with your Local Area Network.

Note: This manual is valid for all Wireless LAN 11 Mbps Series products, such as PC Card, USB, mini-USB, PCI adapter, mini-PCI, CF card... etc.

2. 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 to full infrastructure networks, also allow roaming over a broad area.

3. Installation for Windows platform

The following section will assist you to in installing wireless LAN Adapter successfully. You will first install software (Utility) and then insert / attach the Wireless LAN Adapter to your system, 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 card can easily be installed and used, without bothering to connect cables for keeping your computer to use network resources.

3.1. Installation Overview

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

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

3.2. Install Procedure for Windows 98/ME/2000/XP

Note: Do not insert the **WLAN Adapter** until you are asked to do so, failure of which may result in unsuccessful installation of your **WLAN device**.

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

Note: Install WLAN CF card on your laptop PC must add additional PCMCIA adapter.

1. Power on your computer and allow Windows 98/ME/2000/XP to load fully.
2. Be sure that there is no Wireless LAN 11Mbps Adapter inserted yet.
3. Insert the given Installation CD in the CD-ROM .You will see below. If you did not see it. Please go to CD folder. Click autorun.exe file.



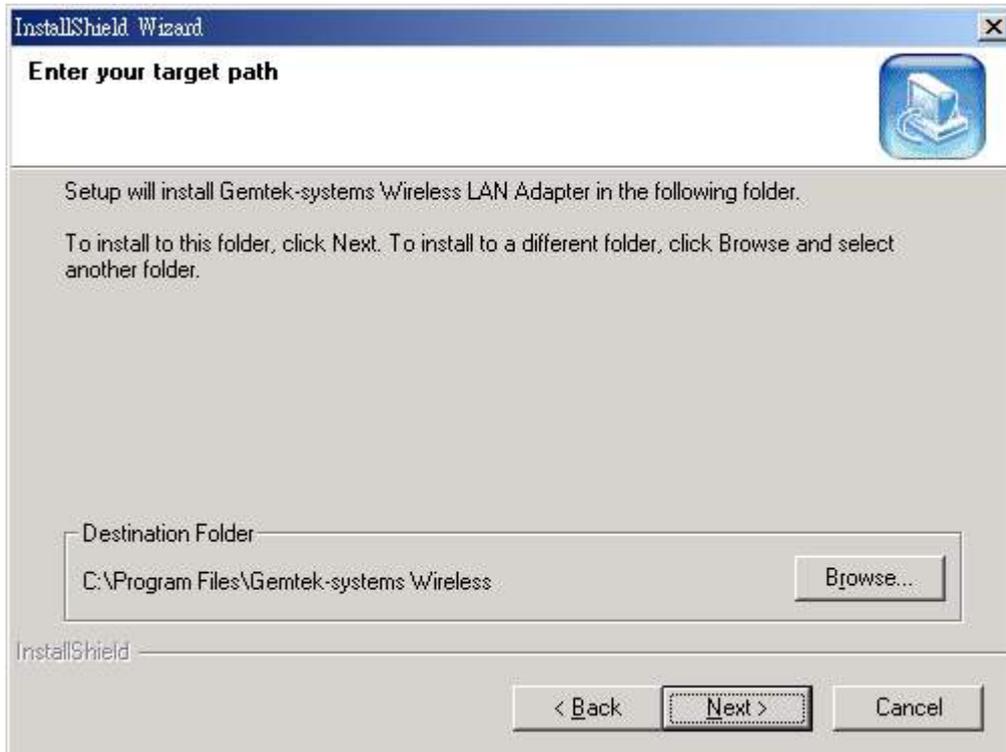
4. Select your model.



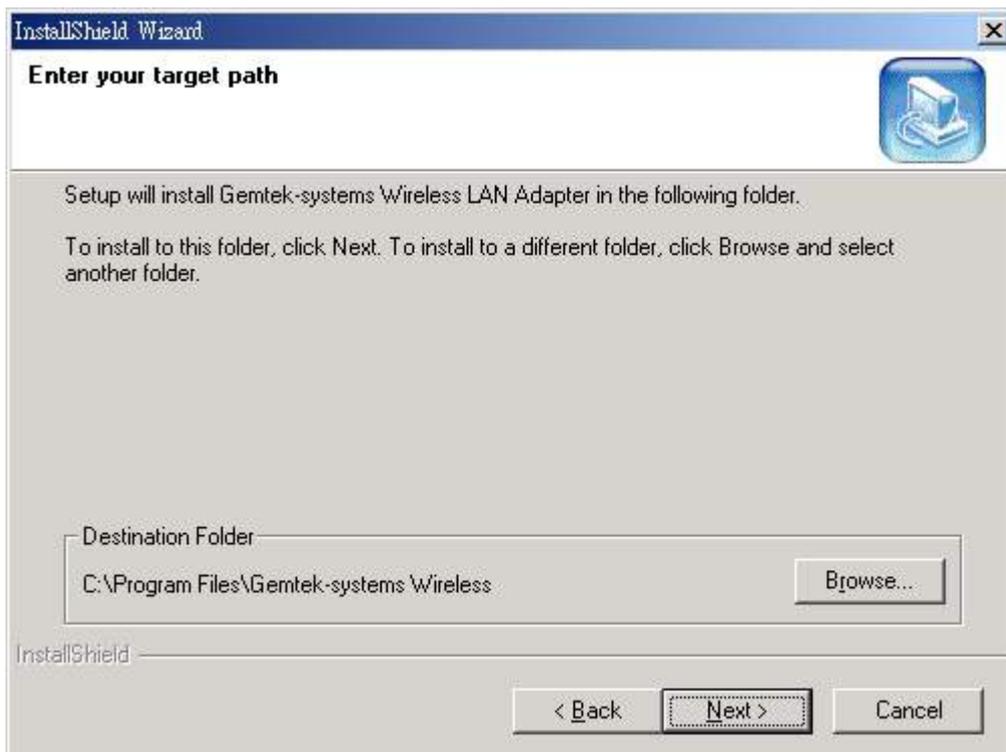
5. Choose Your Operation System.



6. When you click win98/ME/2000/XP you will see below



At the “ Enter your target path ” window, click **Next**.



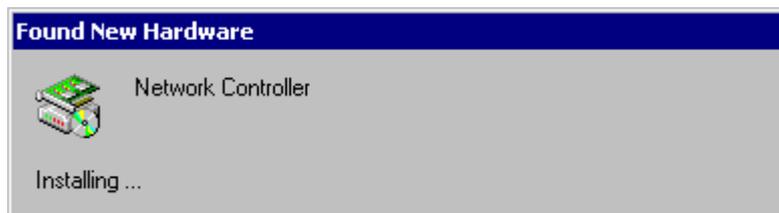


Click **Yes**



4. Insert / attach **Wireless LAN 11 Mbps Adapter** to your system

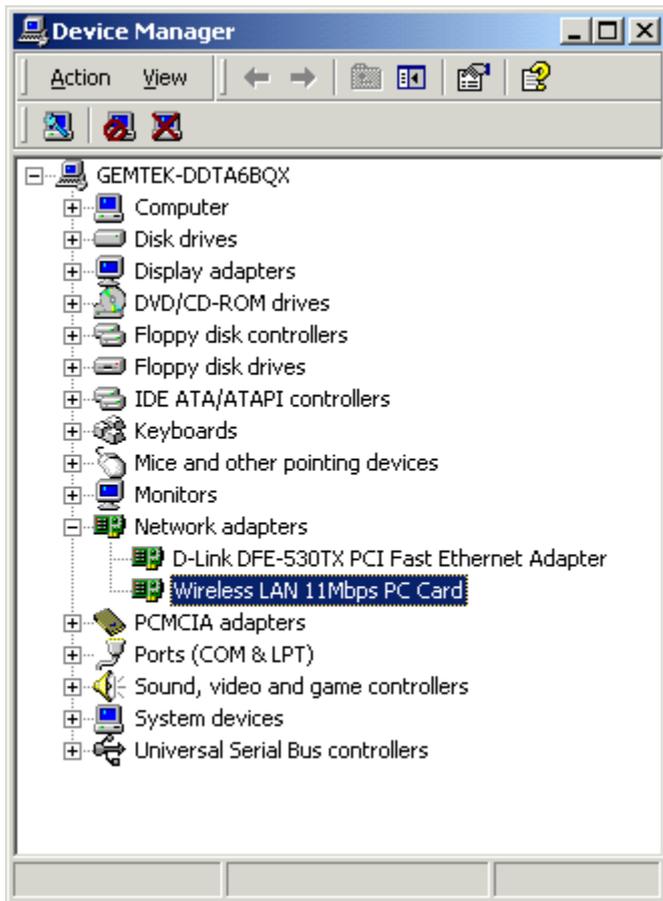
Windows will recognize the WLAN adapter and auto detect the driver, if the system did not find the driver automatically, please install the driver manually.



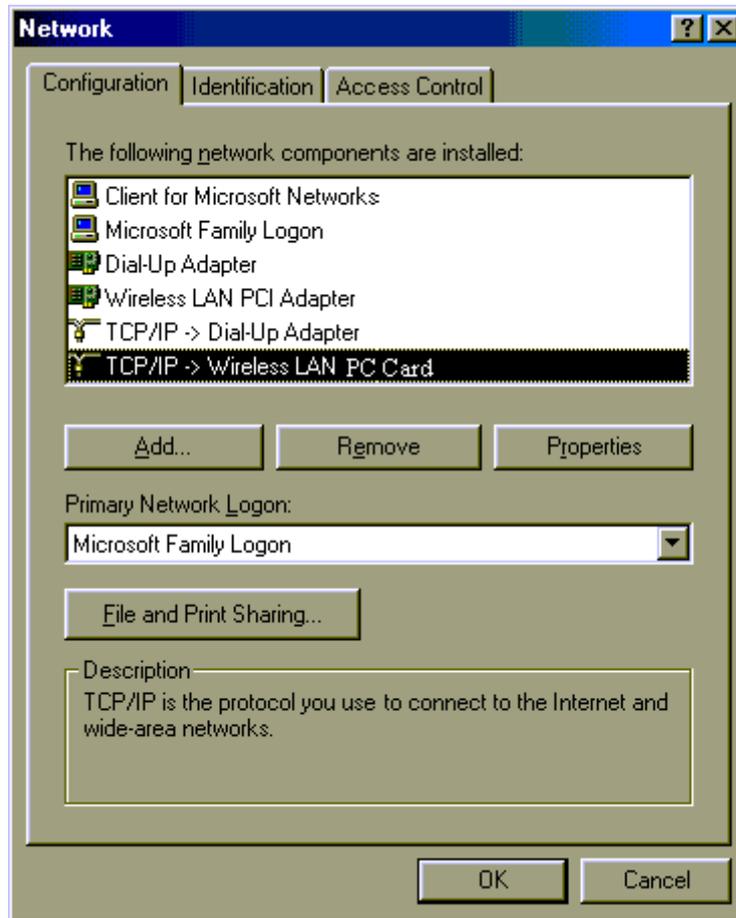
Click **Yes** to finish the installation.

5. Click the right button of mouse on **My Computer** → **Properties** → **Device Manager**.

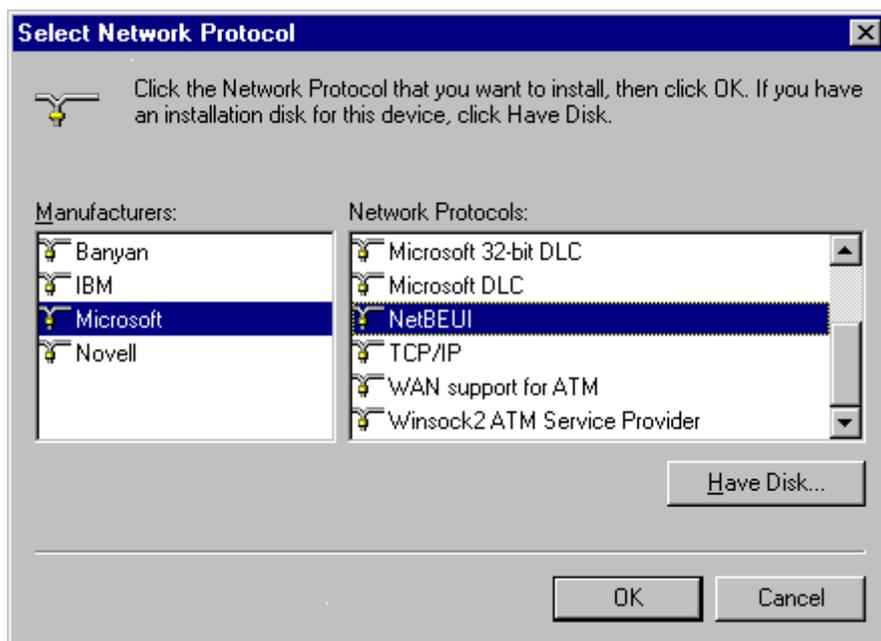
Check whether it has WLAN adapter in one of the sockets or not. If you find **Wireless LAN 11Mbps Adapter** in one of the sockets, it means the card is detected properly.



6. Click right button of mouse on the **Network Neighborhood** .
7. Select **Properties** from the pop up menu. The network box appears and you see three main tables: **Configuration**, **Identification**, and **Access Control**.

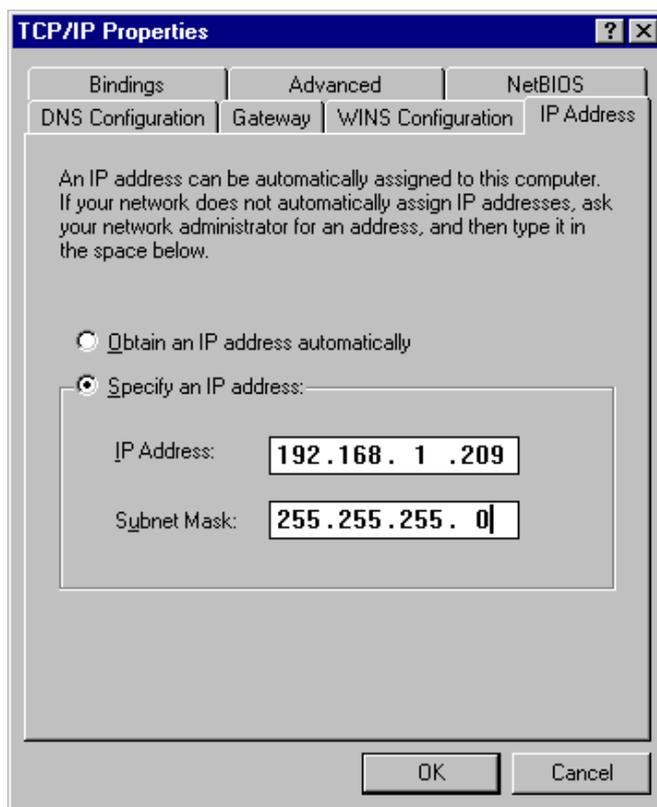


8. Click on the **Configuration** tab and then click on the **Add** button. Select Network Component Type box appears. Click on the **Protocol** the click the **Add** button.
9. Select Network Protocols box appears. From the list of manufactures, click on **Microsoft**. From the list of network protocols list, select **NetBEUI**, then click **OK**.



10. The **NetBEUI** protocol is now installed. After clicking on **OK** return back to Network Component Type box.

11. Repeat the step 15 and 16 to add IPX/SPX protocol.
12. Repeat the step 15 and 16 to add TCP/IP protocol.
13. 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 parameters 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**.



14. Screen message **do want to restart your Computer** will pop up. Select **Yes**. It will shut down your computer and restart.

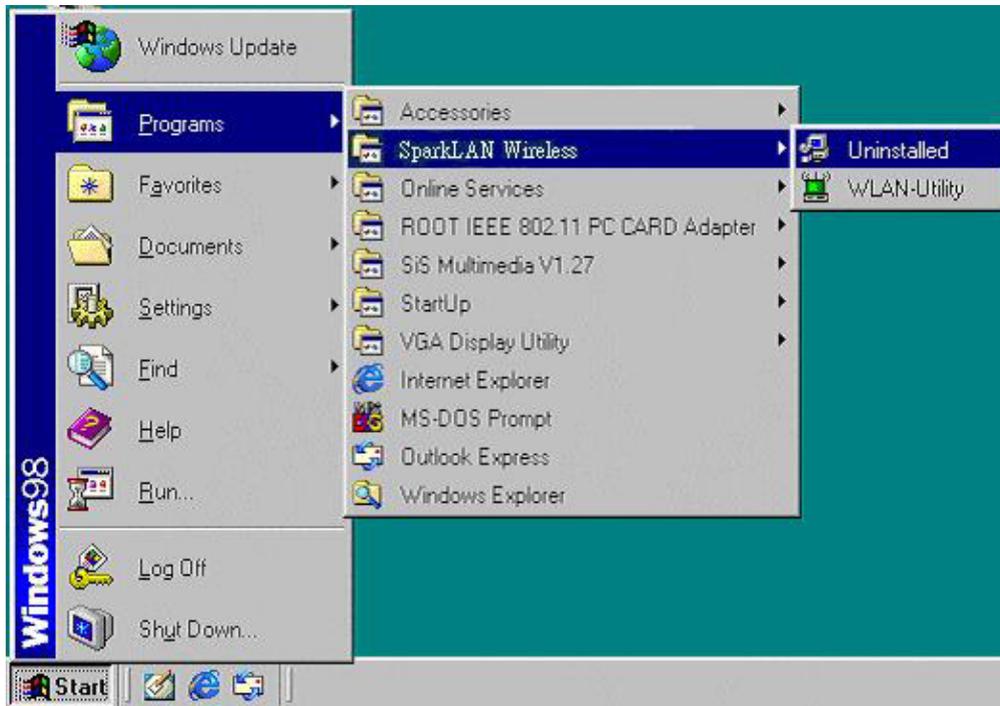
Important: Restart your computer to make the changes effective before you reinstall the driver.

Uninstall Procedure

Step 1:

If you want to uninstall the WLAN adapter, just simply click

Start Menu → Program File → SparkLAN Wireless → Uninstalled, it shall uninstall all related programs.



Step 2:

Restart your Computer.

3.3. Win CE 3.0 Install Procedure

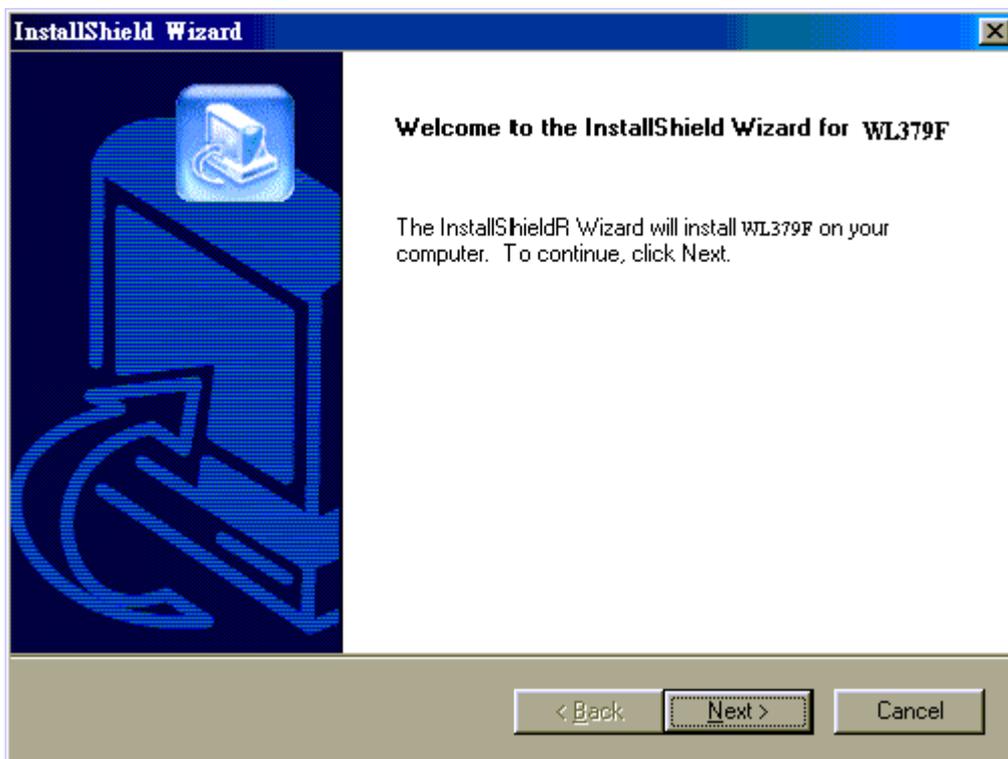
Please be note that the current version of driver only supports Strong ARM processor.

Note: Be sure that your PC or Notebook has installed software such as **Active Sync** for transmit data to your PDA / handheld PC.

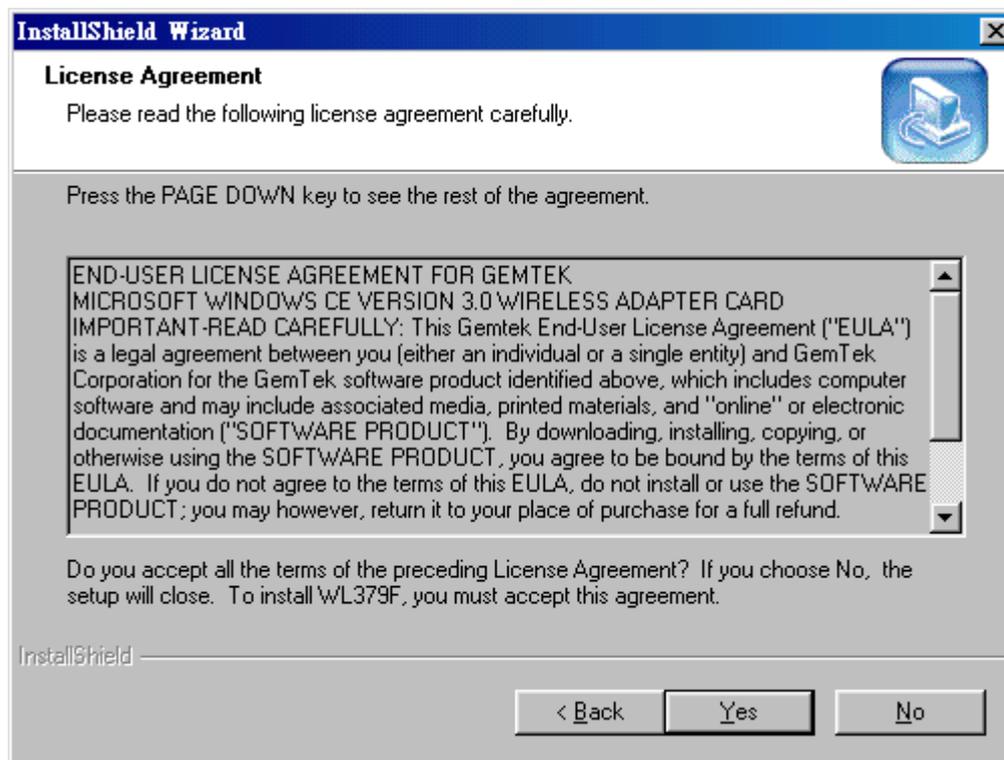
We assume that you have installed Windows CE Services on your desktop PC and that you have connected the PC to PDA or handheld PC with a serial connection.

Note: The CF/PC card shall not be plugged into PDA/handheld PC if not stated.

1) Run the GTK30Setup.exe from the CD. This will bring up installation screen:



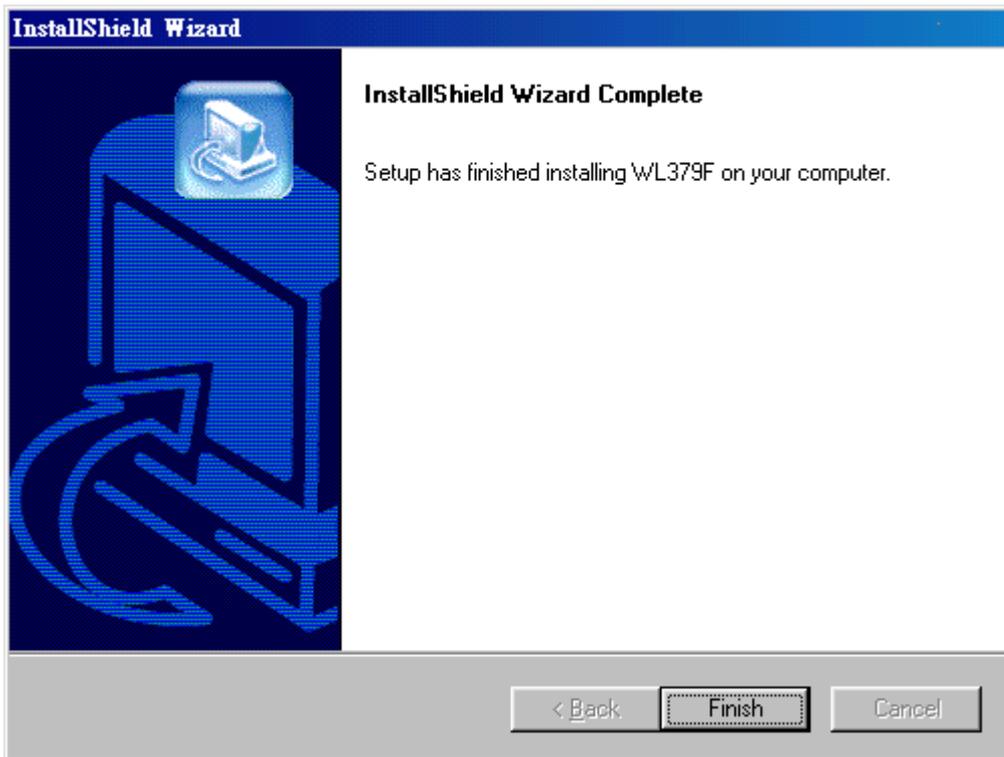
If you would continue go through the process by pressing "Next" button, otherwise select "Cancel" if you wish to stop the installation process.



Accept license agreement by click “Yes” button. If you disagree with terms of stated, then press “No” & exit the installation.

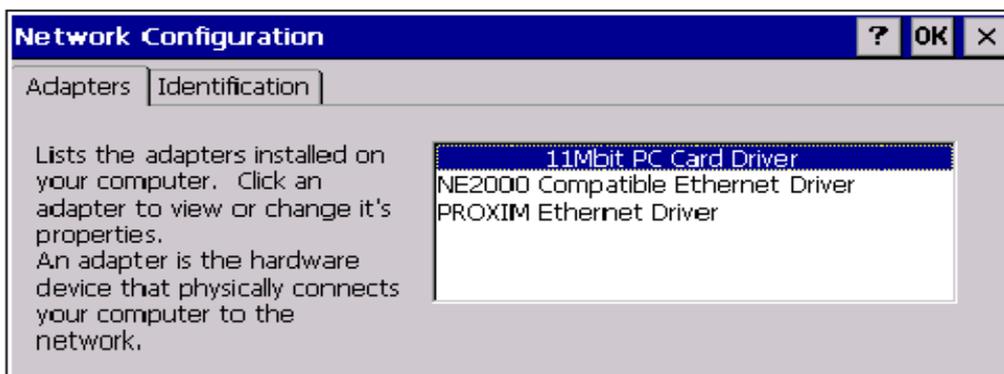
When software license agreement is accepted, system will bring you user info dialog.





Click Finish to complete the installation.

- 2) Plug-in the Wireless LAN CF/PC card into the card slot of your PDA/handhold PC
- 3) Go to the **Start** menu, select **Settings** subfolder. Then select **Connections** tab from the bottom of the page.
- 4) In the Setting page, tap on **Network** icon. This step will open **Network Connections** dialog



On the Network Configuration dialog select **11Mbit PC Card Driver** and double tap on it, this will bring you to **IP Settings** dialog.

The screenshot shows the '11Mbit PC Card Driver' Settings dialog with the 'IP Address' tab selected. The dialog has a blue title bar with '11Mbit PC Card Driver' Settings and 'OK' and 'X' buttons. Below the title bar are two tabs: 'IP Address' and 'Name Servers'. The main content area contains a text box on the left explaining that an IP address can be automatically assigned via DHCP or specified manually. To the right, there are two radio buttons: 'Obtain an IP address via DHCP' (unselected) and 'Specify an IP address' (selected). Below these are three input fields: 'IP Address' with the value '195.14.162.116', 'Subnet Mask' with '255.255.255.128', and 'Default Gateway' with '195.14.162.126'.

5) If your network supports **DHCP** server, select the first button. Otherwise enter static IP in the field. If you are not sure about the values of these fields, ask your Internet Service Provider for detail.

6) Select “**Name Servers**” page for DNS settings.

The screenshot shows the '11Mbit PC Card Driver' Settings dialog with the 'Name Servers' tab selected. The dialog has a blue title bar with '11Mbit PC Card Driver' Settings and 'OK' and 'X' buttons. Below the title bar are two tabs: 'IP Address' and 'Name Servers'. The main content area contains a text box on the left explaining that name server addresses may be automatically assigned if DHCP is enabled, and that additional WINS or DNS resolvers can be specified. To the right, there are four input fields: 'Primary DNS' with '195.14.162.14', 'Secondary DNS' with three dots, 'Primary WINS' with three dots, and 'Secondary WINS' with three dots.

Enter **Domain Name Server** (DNS) address & WINS (sometimes it is assigned through **DHCP** services automatically) in appropriate tab.

NOTE: If Domain Name Server address does not input in the field, networking using Explorer will not work EVEN if enter IP addresses. This is due to internal Windows CE architecture.

Win CE uninstall procedure

Tap on the **Start Menu**, select **Settings** tab. Tap on **System** tab from the bottom of the page, Tap on the on the **Remove Programs**. Select **WL-379F** and tap on the **Remove** button will uninstall the program.

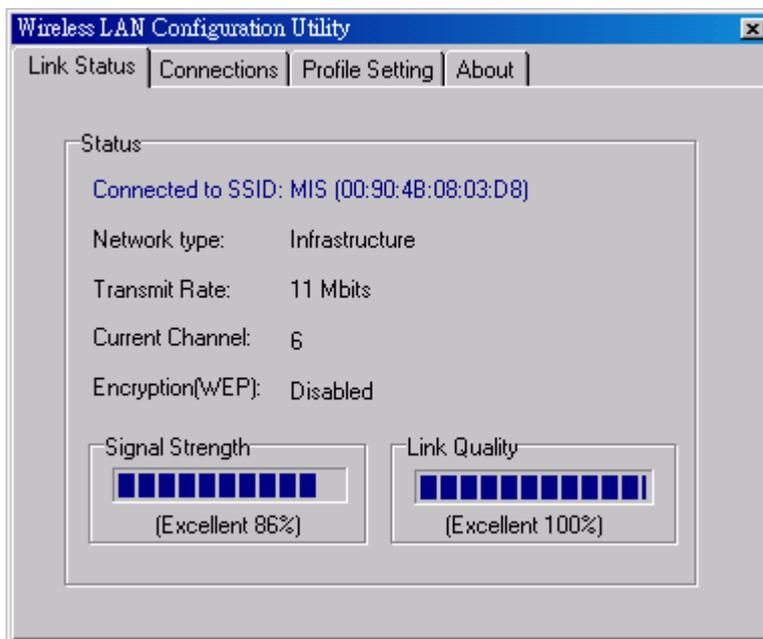
4. Configuration Utility

Wireless LAN 11 Mbps Wireless LAN adapter uses its own management software. All functions controlled by user are provided by this application. Usually this application starts automatically,

or click  icon from Start Menu to start the Utility application.

A new icon -  should appear in your Icon tray. If the icon is in red, it means that Wireless LAN 11 Mbps NIC configuration is invalid or incomplete. Sometimes icon can be colored in red. This may happen when communication is defined poor connection or incorrectly.

Figure 1 Icon tray with a new icon



User can navigate through “sheets”, by clicking tabs. “X” button will minimize window.

Below description explains the use and meanings of the various screen messages.

4.1 Link Status

- Status

This field is used to display the current status of connection. When the state shows “Connected to SSID” means normal flow of operation in Infrastructure mode. The PC is connected to access point. Networking is available.

A state of “Scanning” means that the node is searching for available access point and unable detects the SSID for an available access point within range.

This field will also display an error message for some reason if the driver failed to initialize.

Network Type

Infrastructure Mode - The driver will scan all available channels continuously until it finds one or more Access Points that matches its SSID. At that point it will try and authenticate and associate with the Access Point.

Ad Hoc Mode - The driver will scan for 5 seconds looking for an existing Ad Hoc network using the same SSID.

- Current Channel and Transmit Rate

Shows the channel of the radio and transmit rate are being currently used for an active connection. This value has no meaning when the radio is “Scanning”

- Link Quality

The Link Quality bar graph is only active when the node is in Infrastructure Mode. The bar graph displays the quality of the link between the node and Access Point. It summarizes the quality of the link over the bar graph, which can take on one of the following values:

“Poor”

“Fair”

“Good”

“Very Good”

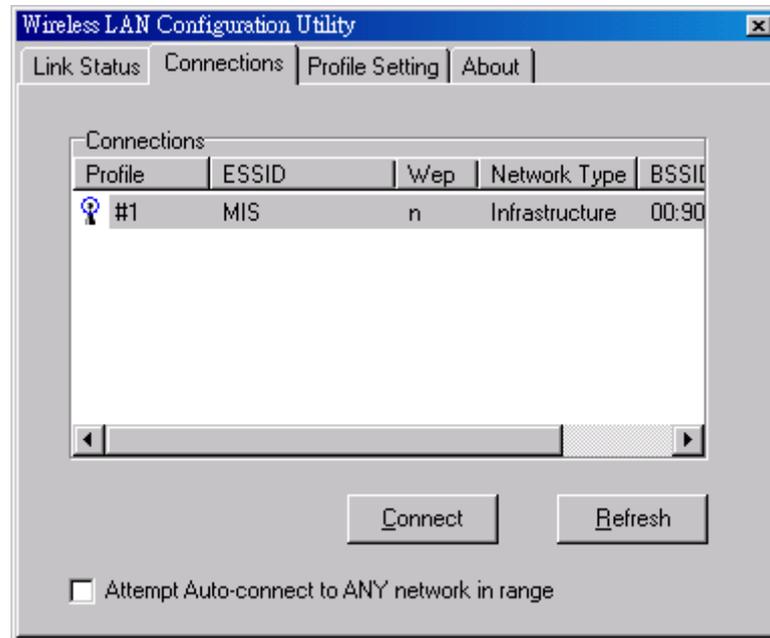
“Excellent”

- Signal Strength

The Signal Strength bar graph is only active when the node is in Infrastructure Mode. The bar graph displays normalized signal strength as reported by the radio, averaged over all frames over 100 bytes long that are received from the Access Point.

4.2 Connections

The Connections Tab shows current status of available APs within the network.



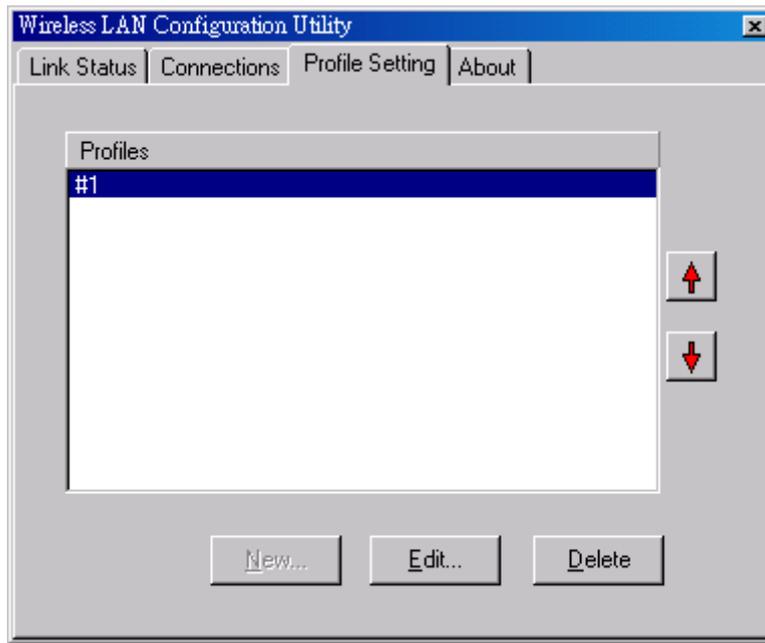
User may select profile or ESSID from above list, click “**Connect**” to connect with the AP.

Click “**Refresh**” to rescan the network, this utility with site survey function, it will detect and list all available APs within network.

Place a check mark in the field if you wish attempt Auto-connect to ANY network in the range.

4.3 Profile Setting

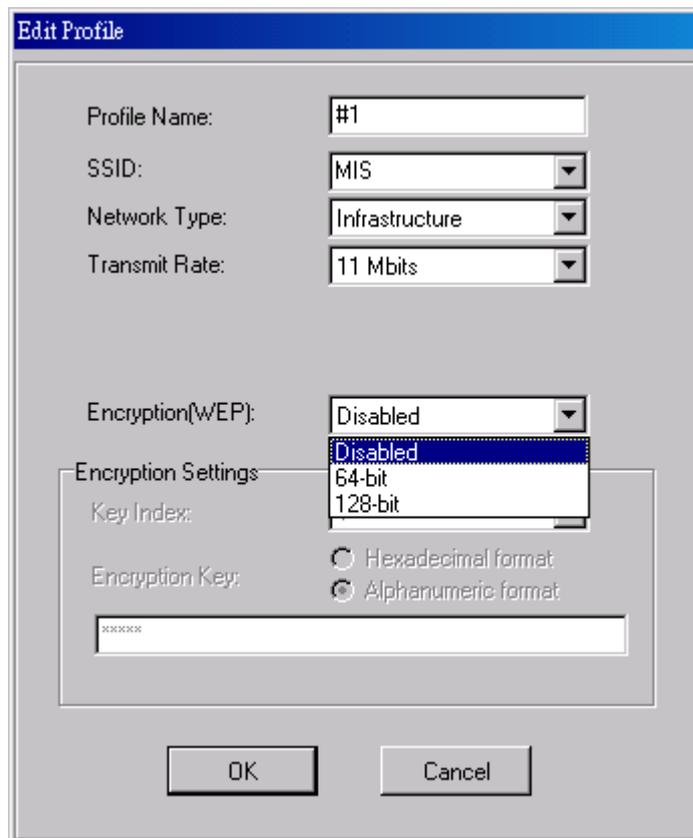
Profile Setting allow user to create profiles for different network environments.



Click “**New**” button to create new profiles.

“**Edit**” for edit current exist profile.

Click “**Delete**” button if you wish to delete profiles.



- **Network Type**

This field allows you to select from a list of supported Network “Modes”. The modes displayed will have two values: “Ad Hoc” and “Infrastructure”.

Ad Hoc - This is the 802.11 peer-to-peer mode of operation. In 802.11Ad Hoc only one wireless “cell” is supported for each different SSID. All communication is done from Client to Client without the use of an Access Point. 802.11 Ad Hoc networking uses the same SSID for establishing the wireless connection.

Infrastructure - This mode of operation requires the presence of an 802.11 Access Point. All communication is done via the Access Point, which relays packets to other wireless Clients in the BSS as well as to nodes on a wired network such as Ethernet.

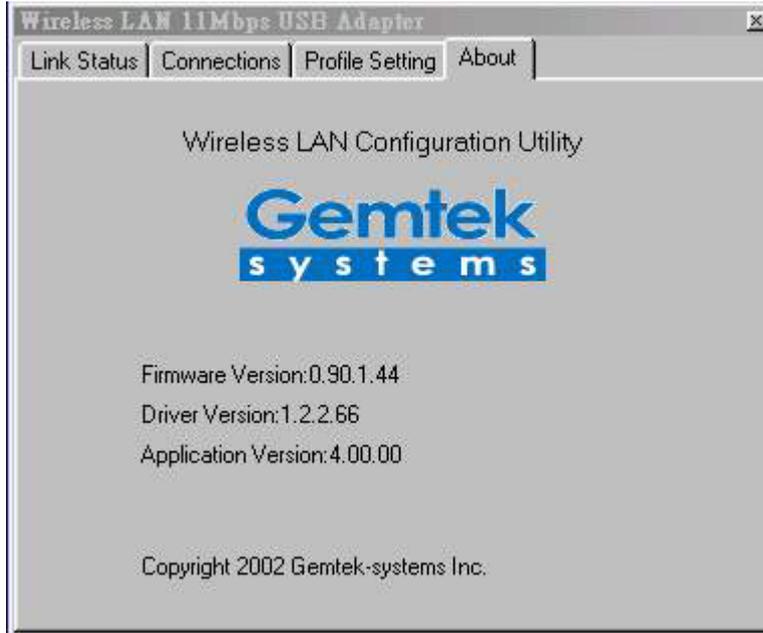
Transmit Rate – The transmission rate at which client of AP transmits the data packets. You may set this to fixed 1Mbps, fixed 2 Mbps, fixed 5.5 Mbps or 11 Mbps.

Encryption (WEP) - You may desire an additional measure of security on your wireless network, which can be achieved by using WEP (Wired Equivalent Privacy) encryption.

When an encrypted frame is received it will only be accepted if it decrypts correctly. This will only happen if the receiver has the WEP Key used by the transmitter.

This panel allows to entry for 64/128-bit encryption according to WEP function select. To be written to the driver and registry, such as Hexadecimal format, each key must consist of hex digits, which means that only digit 0-9 and letters A-F are valid entries. If entered incorrectly program will not write keys to a driver.

4.4 About



About tab shows the product version including the detail of Driver, Application and firmware version. Users must use this version number when reporting their problems to technical support.

5. Troubleshooting

If you encounter any problems during the installation, or to confirm that the WLAN 11Mbps device is installed properly, please read the following troubleshooting section.

In Windows 98:

To check that the **WLAN 11Mbps device** is installed properly, please do the following:

1. Go to **START>SETTINGS>CONTROL PANEL>NETWORK**. Choose the **Configuration Tab**. If you find the **WLAN 11Mbps Adapter**, it means the card is installed properly. If you see the **Yellow Question-mark (?)** means the resources are conflicting. (Please read further in this section for solutions.)

-or-

2. Right click on **My Computer** and select **Properties**. Select the **Device Manager** and click on the **Network Adapter**. You will find the **WLAN 11Mbps Adapter** if it is installed successfully. If you see the **Yellow** sign, the resources are conflicting. Click on the PCMCIA Card and then on the PCMCIA Card Service, you can see the status of the PC card. If there is a yellow sign either on the adapter or the PC card, please check the following.

1. Check to see if your computer supports **3.3V** Card.
2. Check to see if your computer 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 the same IRQ values.
3. Check that you have inserted the right card and have installed the proper driver.

Troubleshooting (Continued)

In Windows 2000:

1. Check the **Windows 2000 Diagnostics**. See if 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. Go to the **Control panel**. Double click on the **PCMCIA Card** and you will see **WLAN Adapter**. 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 "**prismnic.inf**" and "**prismnds.sys**". If you do not find the names listed above, 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 **WLAN Adapter** installation.