Per User Key – Defines the unique encryption key for network configuration security. The Per User key is used with many authentication mechanism and encryption.

Shared Keys – Determines a set of shared encryption keys (First, Second, Third, Fourth) used for wireless encryption and security. At least one Shared Key field must be populated to enable security using a shared key. If more then one key is defined then click the appropriate radio button to select a key as the default encryption key.

Key Length – The options for Key Length are

- 64 bit encryption (10 digits in HEX mode)
- 128 bit encryption (26 digits in HEX mode)
- 152 bit encryption (32 digits in HEX mode)

The number of characters that may be entered in the encryption key field will be automatically determined by the Key length setting.

Setting WPA PassPhrase Encryption

WPA is a new standard-based wireless security solution developed by the Wi-Fi Alliance. WPA also supports the WEP (Wired Equivalent Privacy) security standard. Microsoft provides a security patch called "Windows XP Support Patch for Wireless Protected Access" on its website for free download and it works only with Windows XP. The WPA encryption is supported on Windows® XP Professional and Windows XP Home Edition.

There are two types of WPA security:

- WPA-PSK (with no server) – it uses the so-called "pre-shared key" as the security key. A pre-shared key is basically a password that is between eight and 63 characters long. It can be any combination of letters, numbers, and other characters. This is the typical mode that is used in a home environment.
- WPA (with server) – it is a system where a RADIUS server distributes the keys to the clients automatically. It is typically used in a business environment.

To enable WPA with a passphrase (WPA-PSK), select Pre-Shared Keys from the Security Options list and place a check mark in the WPA box.

Figure 4-12 Defined Pre-Shared Keys Icon with WPA Selected

The Define WPA PSK window appears as shown in Figure 4-13. Enter your passphrase text strings to complete the configuration process.

Figure 4-13 Defined WPA PassPhrase

Setting Dynamic Security Authentication

The Dynamic Security setting prevents unauthorized network access; a network RADIUS server must authenticate each user before he/she gains access to the network.

To configure the Dynamic Security settings for a particular profile, select **Dynamic Security** and select **TLS** mode (Figure 4-14), **PEAP** mode (Figure 4-16), or **LEAP** mode (Figure 4-19) on the

drop-down menu. The LEAP mode on the drop-down menu can only be seen when the **WPA** checkbox is not selected, because the WPA does not apply to the LEAP function. When selected, click the **Configure** button to configure the settings described below.

Figure 4-14 Dynamic Security with TLS Authentication

Define Certificate

The Define Certificate dialog appears after you click the **Configure** button. The field name "**Select a Certificate**" that can only be seen under the TLS mode is designed to authenticate the user to the RADIUS (Remote Authentication Dial-In Service) server from the drop-down menu.

Figure 4-15 Define Certificate for TLS Mode

- **Use Any Certificate Authority** – Click this radio button to use any Certificate Authority for authentication.
- **Choose a Certificate Authority** – Click this radio button and choose the desired Certificate Authority for authentication from the drop-down menu.
- **Server/Domain Name** – Enter either the RADIUS server name or domain name for your RADIUS server.
- **Login Name** – Enter the RADIUS server login name.

Select "**PEAP**" from the drop-down menu under the Dynamic Security mode to configure the WPA authentication for PEAP as shown in Figure 4-16 and Figure 4-17.

Figure 4-16 Dynamic Security with PEAP Authentication

Figure 4-17 Define Certificate for PEAP Mode

The "**Define User Information**" is for PEAP and LEAP mode only. Click the Define User Information button and fill in the Define User Information dialog as shown in Figure 4-18.

Figure 4-18 Define User Information for PEAP Mode

Select "**LEAP**" from the drop-down menu to set the Dynamic Security method to LEAP as shown in Figure 4-19 and Figure 4-20.

Figure 4-19 Dynamic Security with LEAP Authentication

Figure 4-20 Define User Information for LEAP Mode

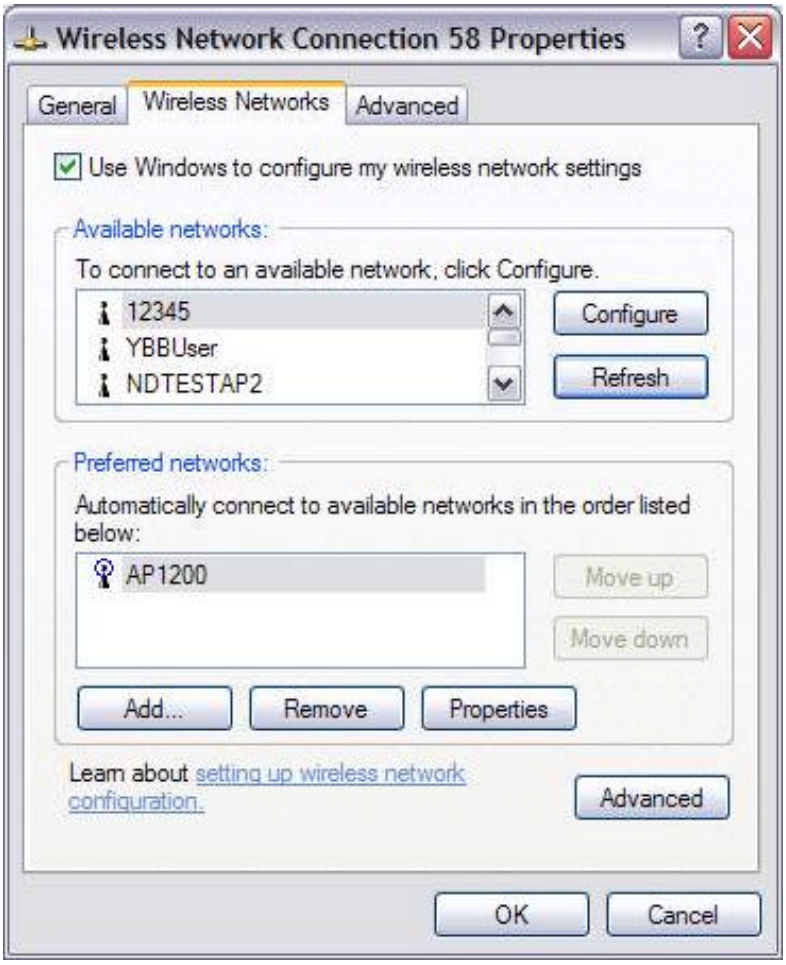
4-3-2-1 Setting up WPA in Windows XP

Follow the instructions below to set up WPA in " Windows wireless network utility".

1. Under Windows XP, click "Start > Control Panel > Network Connections".

2. Right-click on "*Wireless Network Connection*", and select "*Properties*".

3. Clicking on the "*Wireless Networks*" tab will display the following screen. Make sure the "*Use Windows to configure my wireless network settings*" box is checked.

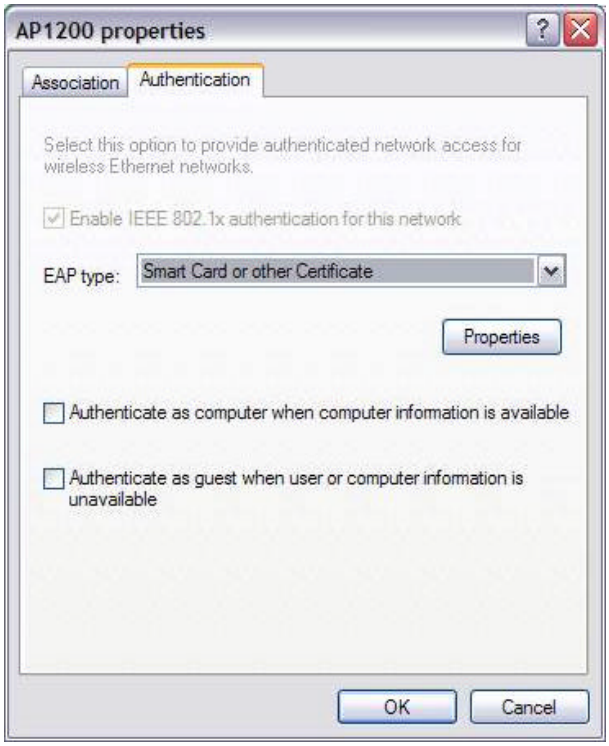


4. Under the "*Wireless Networks*" tab, click the "Configure" button and you will see the following screen.

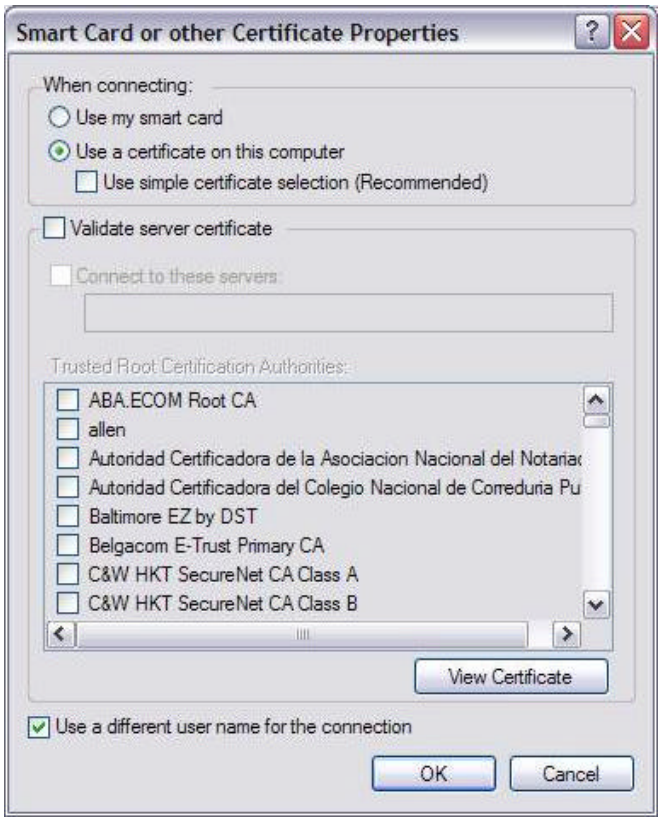
5. Select “WPA” under “Network Authentication”.
6. Select “*TKIP*” or “*AES*” under “*Data Encryption*”. This setting has to be identical to the Access Point that you set up.
7. For Home or Small Business User, enter your encryption key in the “*Network Key*” box. It can be from eight to 63 characters and can be letters, numbers, or symbols. You must use the very same key on all the clients that you set up. If you are using this computer to connect to a corporate network that includes a RADIUS server, consult your network administrator for further information.
8. Click “*OK*” to apply settings.

The following is an example of setting WPA under the TLS mode of Dynamic Security for business users.

1. Select the “Authentication” tab. Select “*Smart Card or other Certificate*” under “*EAP type*” and you will see the following screen.



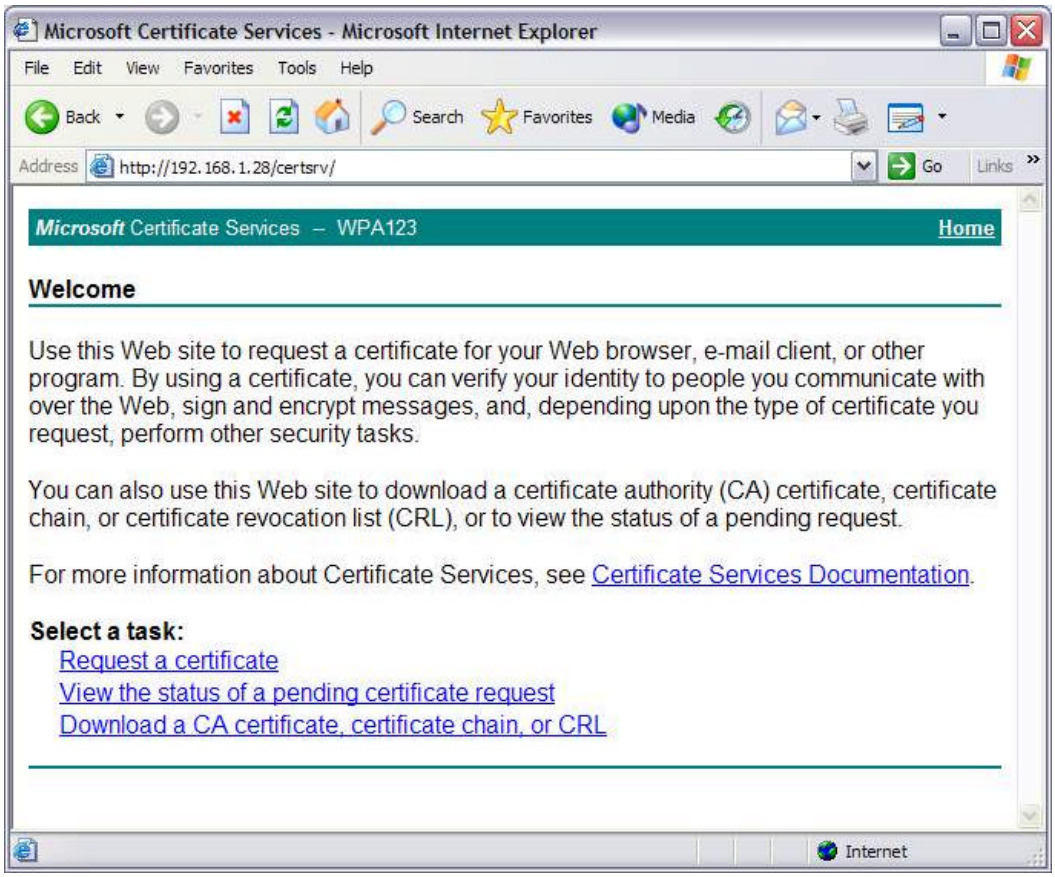
2 Click "*Properties*" and "*OK*" to go to the following screen. You can check the proper boxes that match your specific environment.



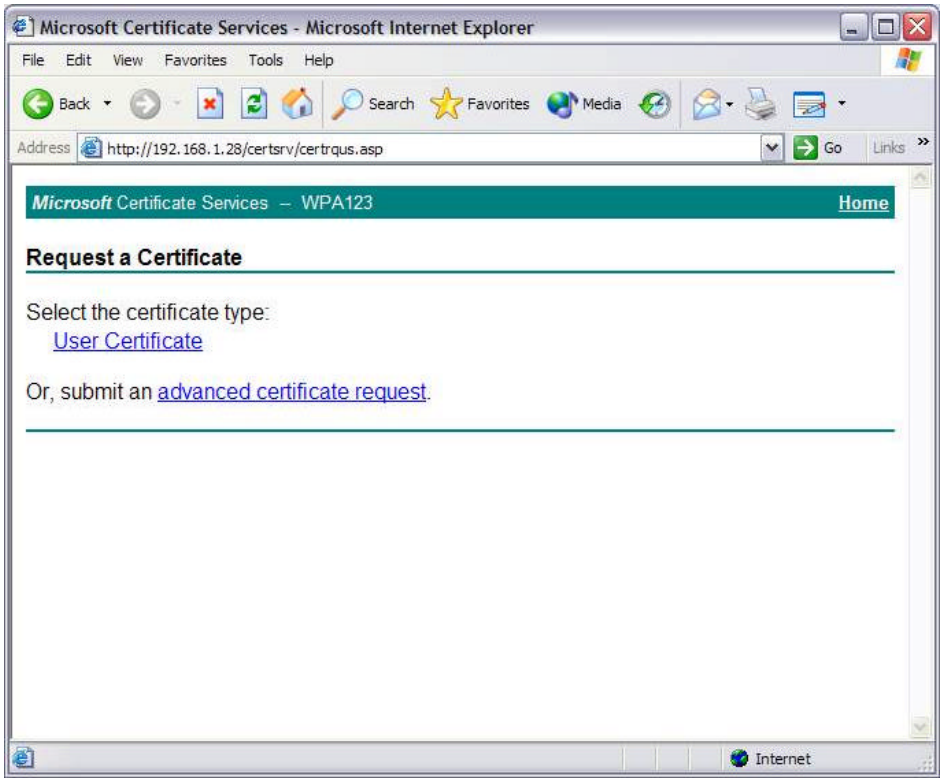
4-3-2-2 Load a Certification to Your Computer

Contact your network administrator for assistance if you do not have a certificate installed on your computer or do not know which one to use. Here is an example of loading a certification to your computer under the **Windows Server 2003 and Microsoft Certificate Service**.

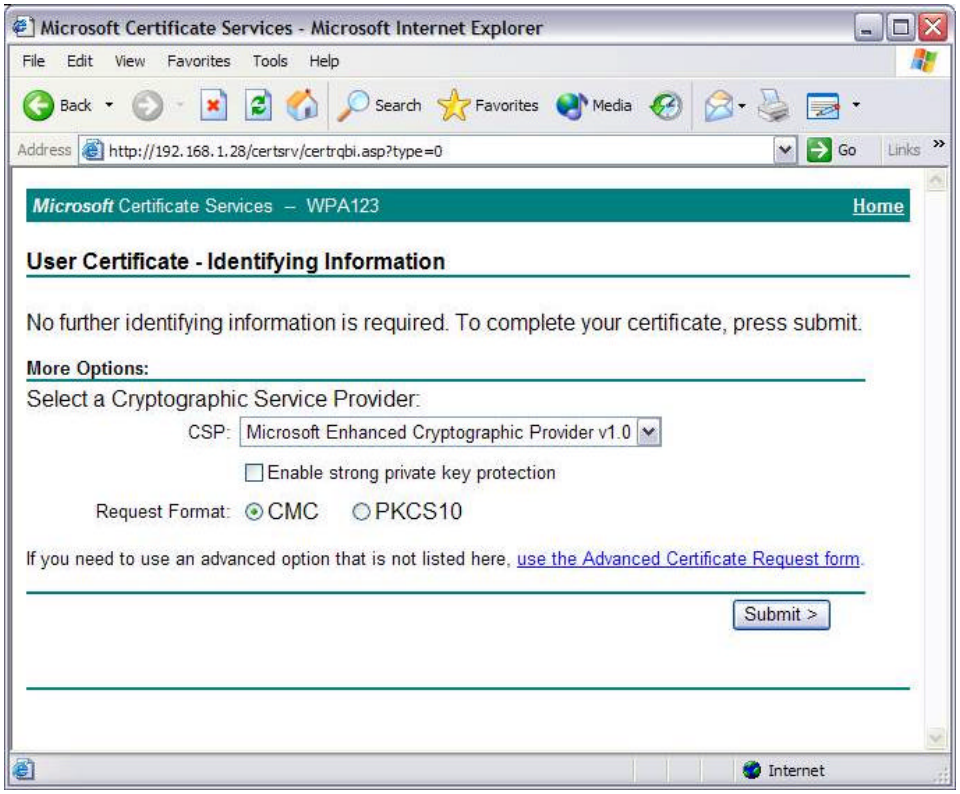
1. Go to the "Welcome" page and select "Request a certificate".



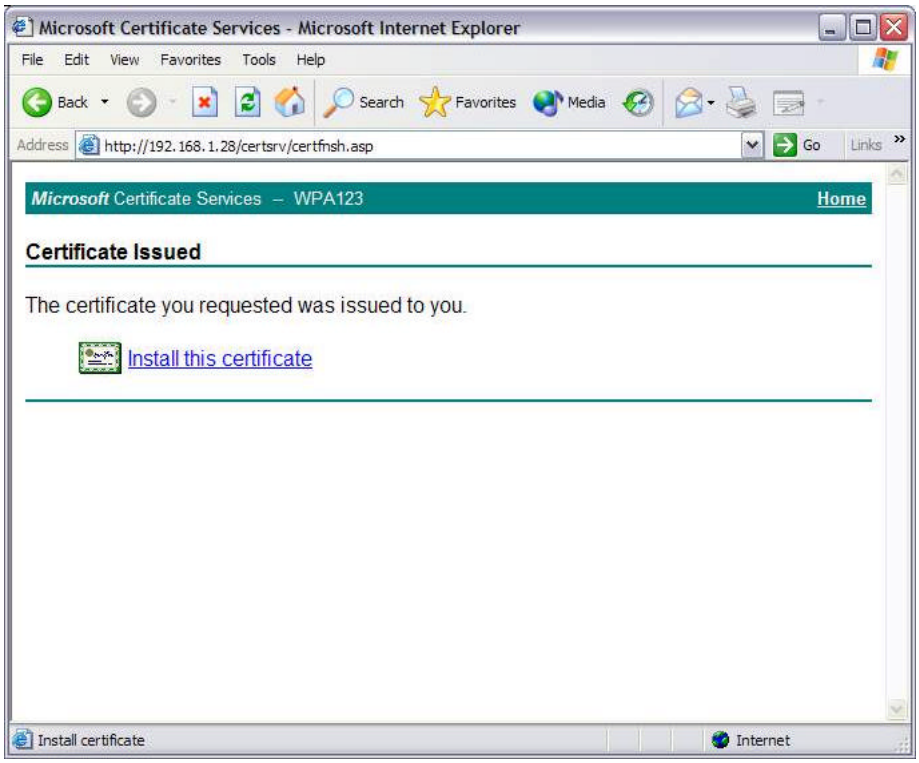
2. When the "Request a Certificate" screen appears, click on the "User Certificate" to continue.



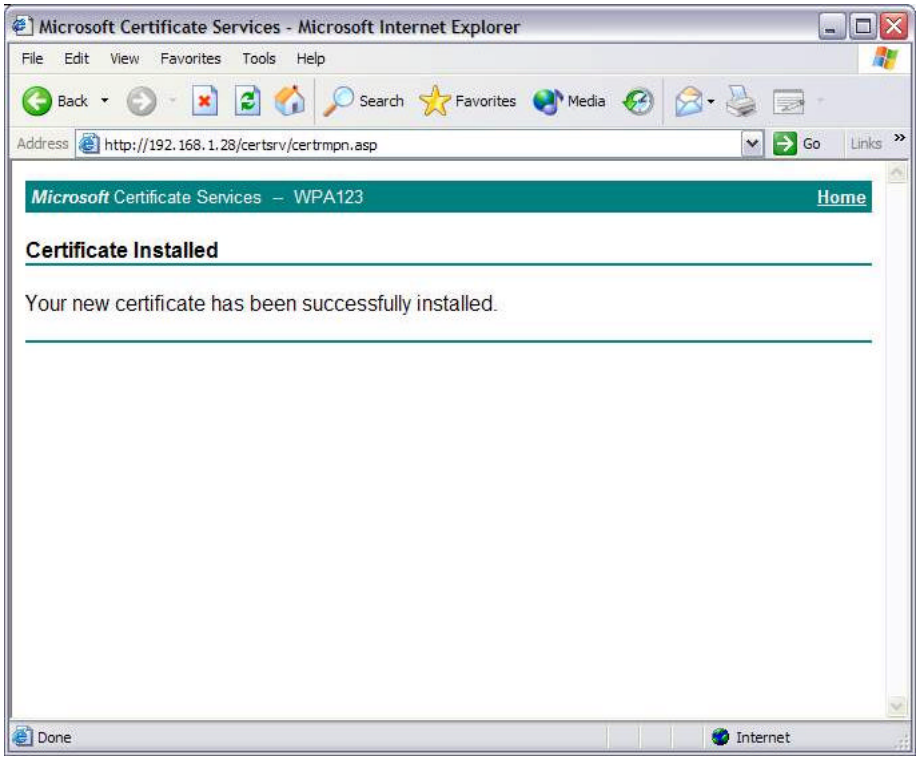
3. Select a Cryptographic Service Provider that matches the settings in your computer.



4. Wait for the Microsoft Certificate Services to issue the certificate to you.



5. Certificate installed successfully.



4-3-3 Advanced Settings in Profile Management

The **Advanced** tab provide more complex wireless settings and these settings should only be modified if there is a specific requirement on your wireless network.

1. **Power Save Mode** - allows the user to minimize power utilized by the ORiNOCO Wireless Client. Note: Setting Power Save Mode to enabled (Normal or Maximum) may cause the user to experience an extended connection delay of up to one minute.
2. **Network Type** - allows the user to configure the ORiNOCO Wireless Client as either a Peer-to-Peer Group (Ad-hoc) or Access Point type network
3. **802.11b Preamble** - configures the preamble for 802.11b radio packets so that they match up with the specified wireless network.
4. **Transmit Power Level** - allows the user to modify the power output of the radio.
   User may set the transmit power to the following levels. Maximum power setting will vary according to individual country regulations.
   - 100%
   - 50%
   - 25%
   - 12.5%
   - Lowest

Setting this to any other value except 100% will decrease the range of your ORiNOCO Wireless Client. However, operation at the higher power levels increases power consumption and the likelihood of interference between wireless LANs.

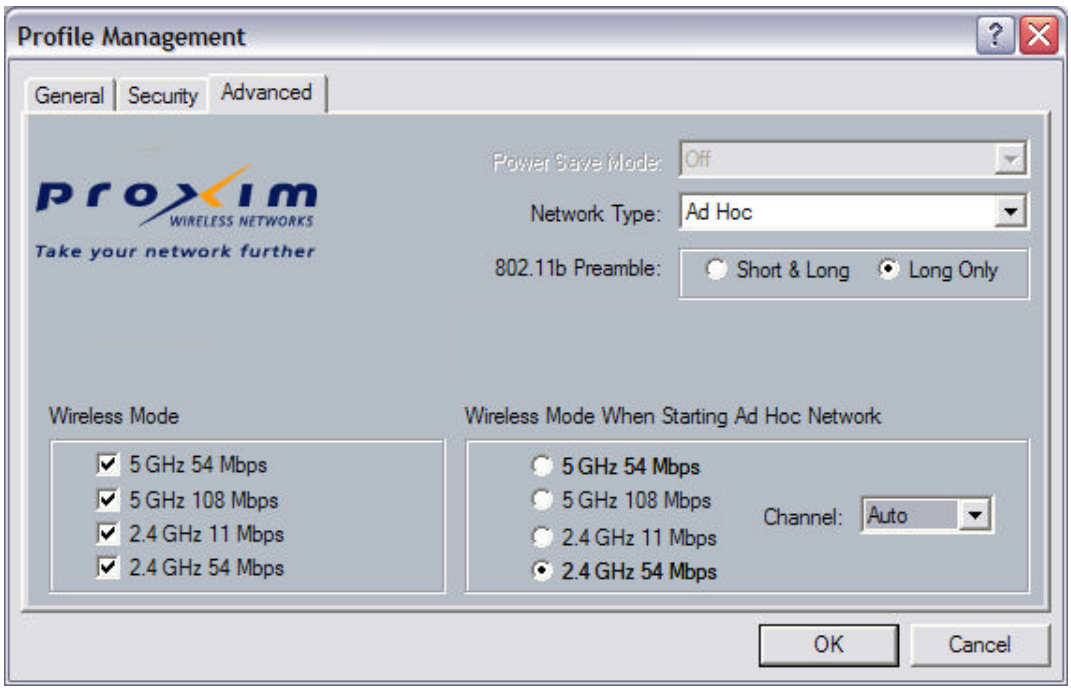


Figure 4-21 Advanced Setting Provides Complex Wireless Setting

Wireless Mode Setting

The **Wireless Mode** settings allow the user to specify which wireless frequency and data rate the wireless network is operating at. If all selections are chosen, the ORiNOCO Wireless Client will automatically search for all frequencies and data rates for wireless networks that match up to the profile settings.

Wireless Mode when starting Ad-Hoc setting

The **Wireless Mode When Starting Ad-Hoc Network** setting allows the user to determine the type of ad-hoc network to be started. Note that this setting will only take effect if there are no other ad-hoc networks with the same SSID currently operating within range. If an existing ad-hoc networks with the same SSID is within range, then the ORiNOCO Wireless Client will connect using the frequency and data rate provided by the existing ad-hoc network. Wireless Clients sold in Europe do not support Ad-hoc mode in 802.11a (5 GHz 54 Mbps) or 2X Turbo (5 GHz 108 Mbps) mode.

4-4 Diagnostic Tab

The Diagnostics tab displays the current data statistics for transmit and receive packets. Additional statistics and driver information can be displayed by clicking the appropriate labeled buttons.

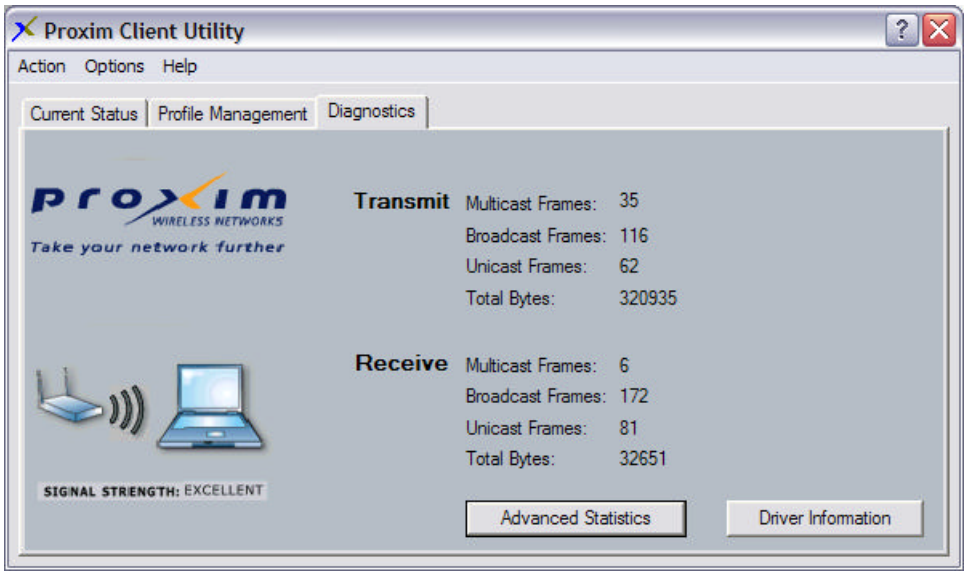


Figure 4-22 Transmit and Receive Statistics

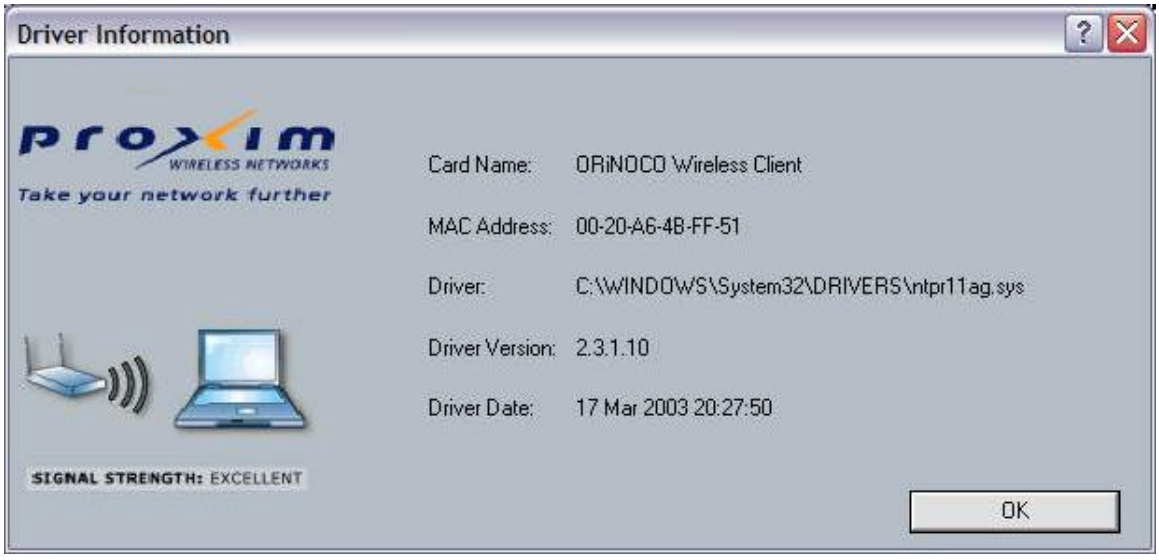


Figure 4-23 Driver Information

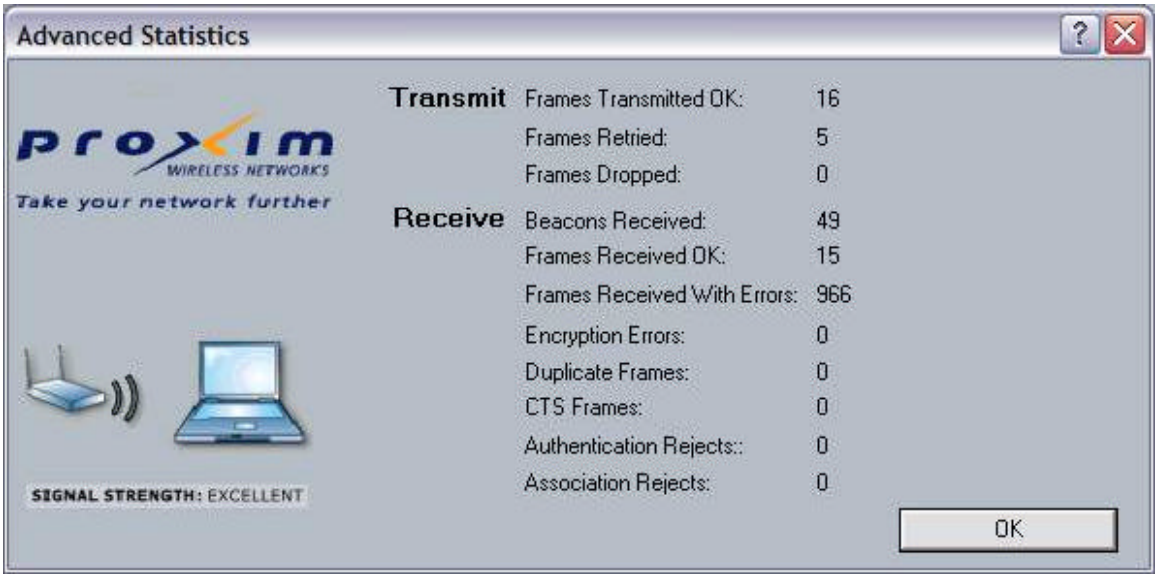


Figure 4-24 Wireless Advanced Statistics Shows Detailed Data

4-5 Action Menu

The **Action** menu enables and disables both the wireless radio and/or system tray icon.

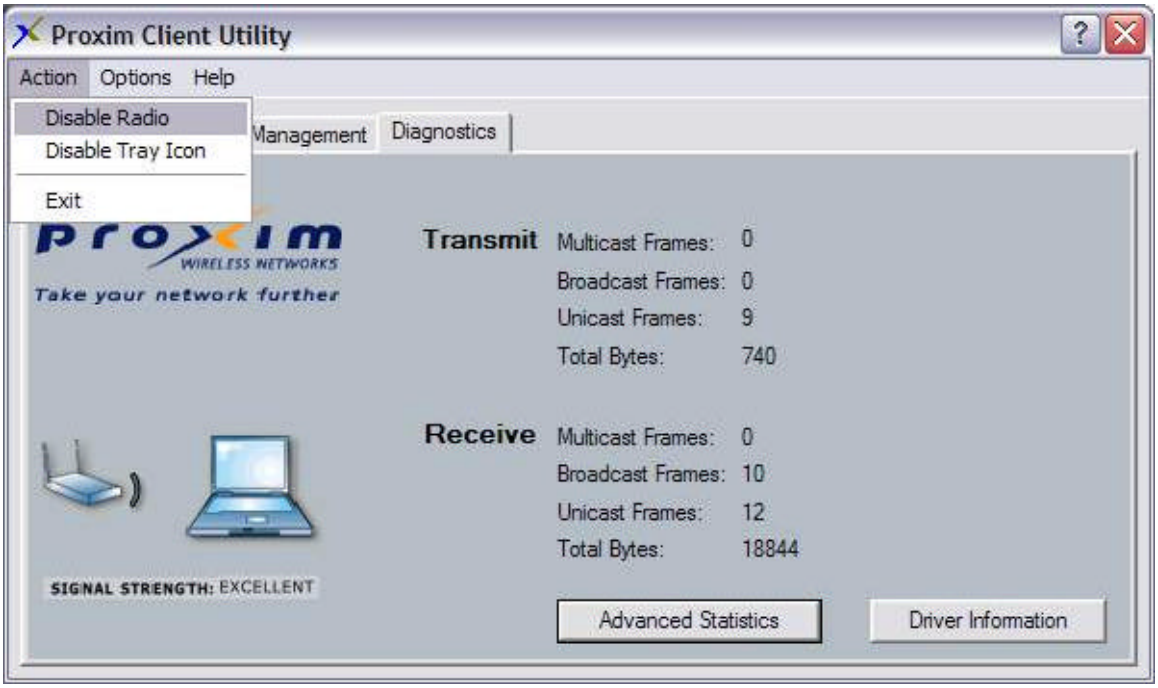


Figure 4-25 Action Menu Used to Enable and Disable Wireless Radio/System Tray

4-5-1 Enable/Disable Radio

There may be situations when the user wants to disable the ORiNOCO Wireless Client's radio so that the wireless device cannot send or receive any wireless traffic. If a user is in an environment where there are no wireless networks, the user may turn off the radio in order to minimize power consumption of the ORiNOCO Wireless Client.

In the PCU's **Action** menu, there is an **Enable Radio**/**Disable Radio** selection. The choice provided in the menu will toggle the current state of the radio.

- **Enable Radio:** The Radio is currently OFF (Disabled), and the **Enable Radio** selection will turn ON the Radio of the wireless device.
- **Disable Radio:** The Radio is currently ON (Enabled), and the **Disable Radio** selection will turn OFF the Radio of the wireless device

4-5-2 Enable/Disable Tray Icon

In the **Action** menu of the PCU, there is an **Enable Tray Icon**/**Disable Tray Icon** selection. The choice provided in the menu will toggle the current state of the System Tray Icon.

- **Disable Tray Icon:** This will remove the tray icon from your System Tray (also known as the Windows Taskbar). Take the ORiNOCO 11a/b/g ComboCard as an example, the icon appears in the System Tray again after the system is restarted or if the Proxim Client Utility is opened again from **Start** > **Programs** > **ORiNOCO 11abg ComboCard** >**ORiNOCO 11abg Client Utility**.
- **Enable Tray Icon:** This option will return the icon to the System Tray.

4-6 Configuring Your Wireless Networking Settings with Windows XP

The Windows XP operating system has a built-in feature known as "Wireless Zero Configuration" which has the capability to configure and control this Wireless LAN device. Configure your device with the steps below.

1. From the Start menu, select **Control Panel.**
2. Click **Network and Internet Connections.**
3. Click **Network Connections.**
4. Right-click the network connection associated with your ORiNOCO Wireless Client and

select **Properties.**

5. Click the **Wireless Networks** tab.
6. Click the link **Setting Up Wireless Network Configuration**.

When the Help and Support Center window appears, you can access information regarding Wireless Network configuration. Follow the on-screen instructions to access configuration information for your adapter.

4-6-1 Advanced Wireless Settings

The ORiNOCO Wireless Client has several advanced settings which may need to be configured depending on your wireless network. It is recommended that these settings remain unchanged unless there is a specific need that requires modifying these settings.

1. From the **Start** menu, select **Control Panel**.
2. Click **Network and Internet Connections**.
3. Click **Network Connections**.
4. Right-click the connection for your ORiNOCO Wireless Client, and select **Properties**.
5. From the **General** tab, click the **Configure** button.
6. Click the **Advanced** tab.
7. Modify the wireless settings as required.

4-6-2 Help and Support Information

Configuration information and troubleshooting in Windows XP is available in Microsoft' s Help and Support Center on Windows XP systems. Links to the appropriate Microsoft Web sites are also available here.

To access this information:

1. From the **Start** menu, select **Control Panel**.
2. Click **Network and Internet Connections**.
3. Click **Network Connections**.
4. Right-click the connection for your ORiNOCO Wireless Client, and select **Properties**.
5. From the **General** tab, click the **Configure** button.
6. From the **General** tab, click the **Troubleshoot** button.

When the Help and Support Center window appears, you can access information regarding the Network adapter. To access configuration information for your adapter, follow the on-screen Instructions. For the network adapter to function in a wireless LAN, you may need change the settings per the requirement of network environment.

5

Chapter 5 Troubleshooting

The ORiNOCO Wireless Client is designed to be very easy to install and operate. However, if you experience any difficulties, use the information in this chapter to help diagnose and solve the problem.

5-1 How to Obtain Help with Your LAN Installation

If you require assistance to install your Local Area Network (LAN), Proxim can put you in touch with a reseller in your area. The reseller is an expert in the design, installation, and maintenance of LANs and will be able to examine your needs and recommend the most cost-effective solution for your LAN whether you are installing a new LAN or adding on to an existing one. For the location of the ORiNOCO reseller nearest you, contact Proxim at 1-800-229-1630 or 1-408-731-2700 and ask for the Sales Department.

5-2 Common Installation Problems

Chapter 2 Installation describes how to install an ORiNOCO Wireless Client in a computer running Windows 98 Second Edition (SE), Windows Millennium Edition (ME), Windows 2000, or Windows XP. This section provides suggestions to resolve some of the common installation problems with an ORiNOCO Wireless Client.

5-2-1 Card Not Installed Properly

If Windows Networking reports that the ORiNOCO Wireless Client has not been properly installed or configured after you have completed the ORiNOCO Installation program, open the Device Manager (found within the Control Panel' s System icon) and locate the card' s entry in the Network adapters category.

If a yellow exclamation point (“!”) appears next to the card’s Device Manager entry, then the card is not working properly. Follow these steps:

- Uninstall the card as described in 5-4 Uninstalling an ORiNOCO Wireless Client.
- Reinstall the card following the instructions in Chapter 2 Installation.

5-3 Configuring Networking Clients and Protocols

An ORiNOCO Wireless Client will bind to any existing networking components, such as Client for Microsoft Networks and the Internet Protocol (TCP/IP). Refer to the steps below that correspond to your computer’s operating system to configure the card’s networking components.

5-3-1 Windows XP/2000

Follow these steps to configure the card’s networking clients and protocols in a Windows XP or 2000 computer:

1. Open the Control Panel’s **Network and Dial-up Connections** (Windows 2000) or **Network Connections** (Windows XP) icon.
2. Scroll through the list of network connections and right-click the Local Area Connection that corresponds to the ORiNOCO Wireless Client.
3. Select **Properties** from the drop-down menu to view the connection’s properties screen.
4. Select a client or protocol from the list of components and click **Properties** to configure its settings. For example, if you want to assign the card a static IP address, highlight **Internet Protocol (TCP/IP)** and click **Properties**.

To add a new client or protocol, click **Install...** and follow the on-screen instructions.

5-3-2 Windows ME/98 SE

Follow these steps to configure a card’s networking clients and protocols in a Windows 98/ME computer:

1. Open the Control Panel’s **Network** icon.

2. Select a client or protocol from the list of installed components and click **Properties** to configure its settings. For example, if you want to assign the ORiNOCO 11a/b/g ComboCard a static IP address, highlight **TCP/IP** or **TCP/IP -> ORiNOCO 11a/b/g ComboCard** and click **Properties**.

To add a new client or protocol, click **Add...** and follow the on-screen instructions.

5-4 Uninstalling an ORiNOCO Wireless Client

Follow these steps if you need to uninstall the card:

1. Access the **Control Panel** from the **Start** menu
2. Click the **Add/Remove Programs** icon.
3. Select **ORiNOCO 802.11 Wireless Client** and click **Change/Remove** button, as shown below.

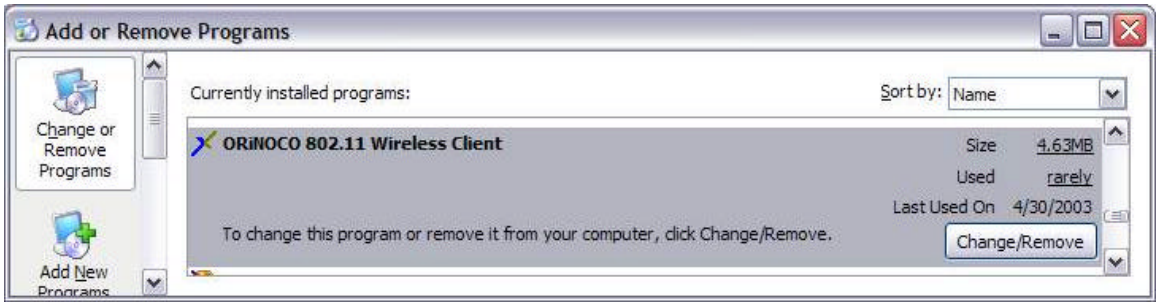


Figure 5-1 Select "Add/Remove Program" in Control Panel

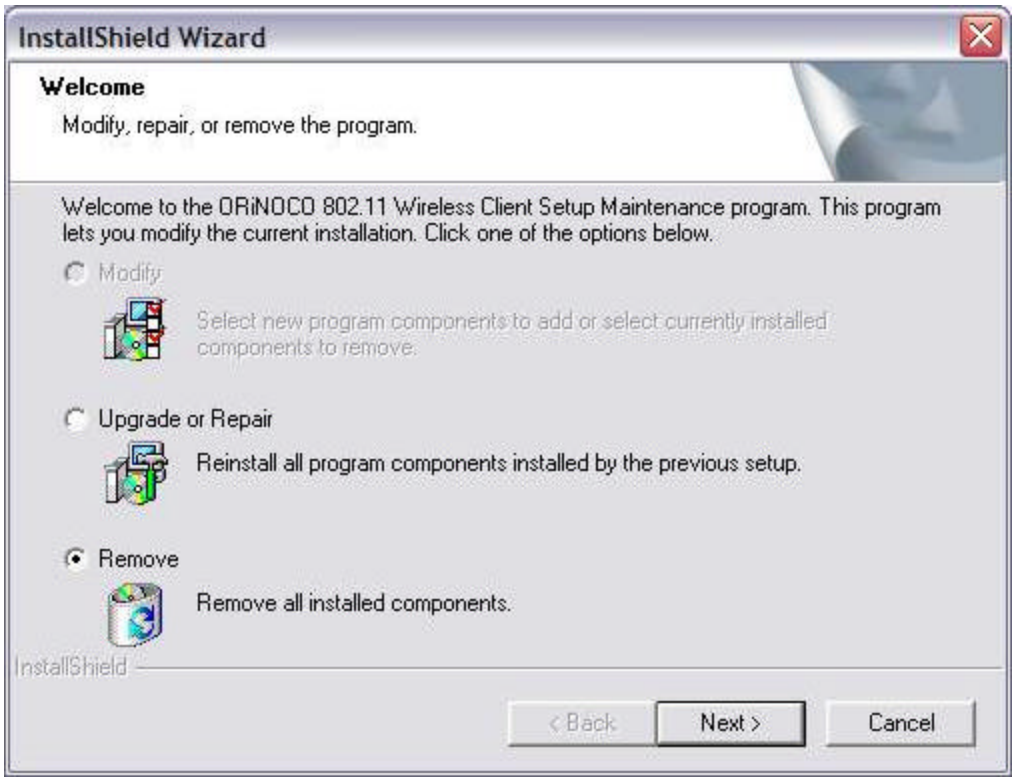


Figure 5-2 Uninstall ORiNOCO Wireless Client

4. Select **Remove** and then click the **Next** button to perform the un-installation. When prompted, click **OK** to remove the Proxim Client Utility.

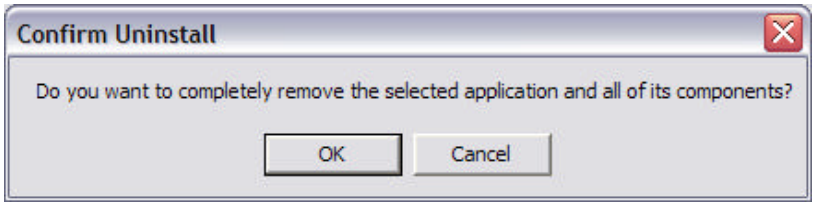


Figure 5-3 Un-installation Confirmation

5. Be patient while the card is uninstalled from your computer.

Figure 5-4 Install Un-installing Proxim Client Utility

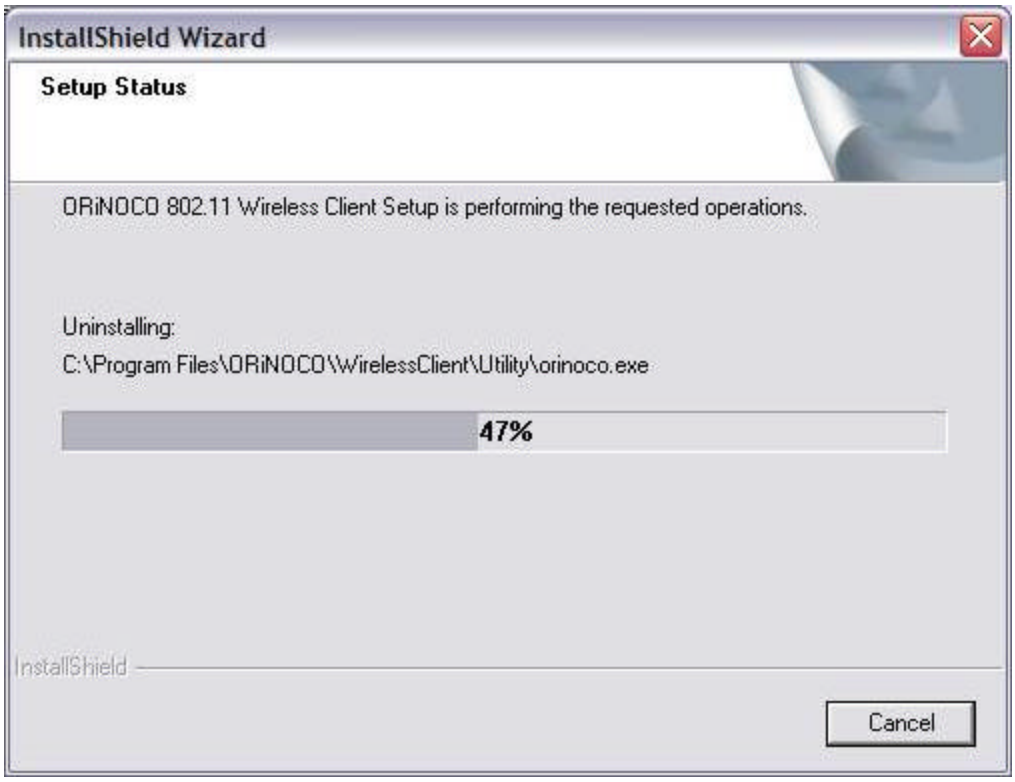


Figure 5-5 Un-installation in process

6. When prompted, click **Finish** to complete the un-Installation procedure.

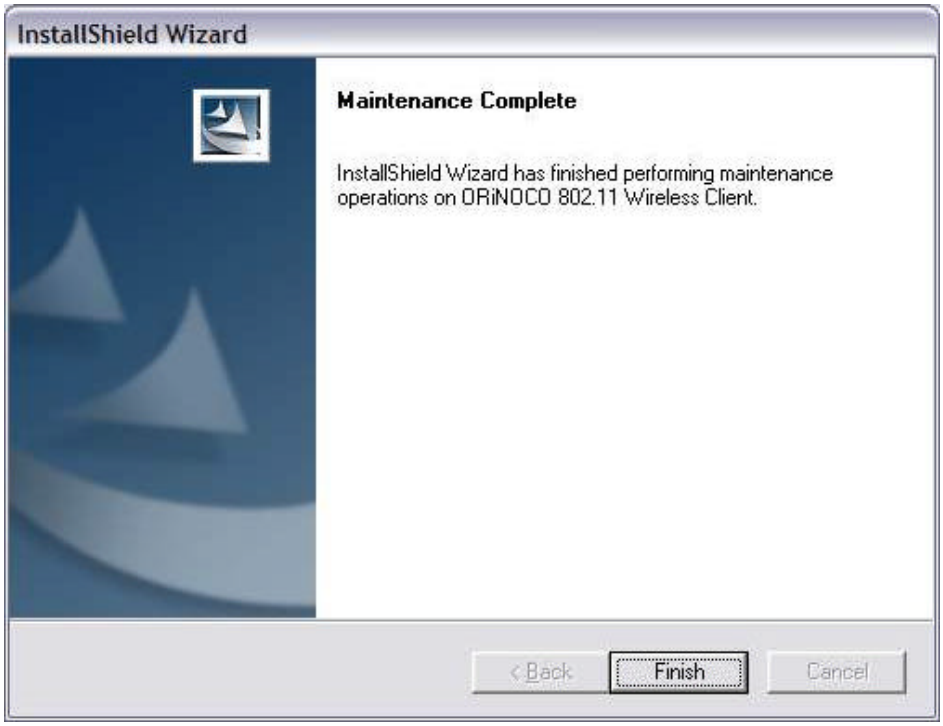


Figure 5-6 Un-installation and Maintenance Completed

5-5 Range

Every environment is unique with different obstacles, barriers, materials, etc., and, therefore, it is difficult to determine the exact range that will be achieved without testing. Radio signals may reflect off of some obstacles or be absorbed by others depending on their construction.

The IEEE 802.11 standards and the 2X Turbo mode specification support multiple data rates that correspond to different transmission techniques. For wireless devices, there is a trade-off between range and data rate. Transmission techniques that provide high data rates operate over short distances; techniques that provide slower data rates operate over greater distances. By default, the ORiNOCO Wireless Client automatically switches between these data rates to maintain a usable radio connection and achieve the best data rate based on the card' s distance from the Access Point. Therefore, a client that is close to an Access Point will operate at a higher data rate than a client that is farther away from the Access Point.

The ORiNOCO Wireless Client includes two integral omnidirectional antennas. Note that the coverage footprint of the card' s antennas will vary depending on the laptop' s design and the location of the CardBus slot in the computer. Two antennas are provided to support antenna diversity, a technique which can improve system reliability. Due to the characteristics of radio waves, it is possible that one antenna may provide better performance than a second antenna installed a short distance away.

Proper antenna placement can help improve range. Here are some guidelines:

- Try to keep the card' s antennas free of obstructions (particularly metal objects) and do not place a sheet of metal (like a filing cabinet) between the antennas of two 802.11 devices.
- Use the Proxim Client Utility to evaluate the signal strength and link quality between 802.11 devices.
- Refer to the documentation that came with your Access Points for suggestions on how to locate the AP and its antennas to maximize range and performance.

5-6 LED Indicators

The ORiNOCO Wireless Client includes two round, green LED indicators on the end of the card. One is for power on/off status, and the other is for activity status.

These LEDs display the following behavior:

- Both LEDs are off when the card is not receiving power or when the ORiNOCO driver is not installed.
- The LEDs blink in an alternating pattern to indicate that the card is searching for an Access Point or Peer-to-Peer Group to communicate with.
- The LEDs blink in unison when the card has associated with an Access Point or joined a Peer-to-Peer Group.
- When there is network activity, the LEDs blink at a faster rate; the LEDs will blink in unison more often as the card' s Transmit or Receive Rate increases.
- The activity LED turns off when the radio is disabled.
- After installing the ORiNOCO 11a/b/g PCI Card in a computer, you can check the behavior of the LED indicators when the computer cover is open. The PWR LED is on when the computer is turned on. The RF LED (radio) is on when roaming, connecting to an AP, and transmitting and receiving packets.

5-7 Common Technical Support Questions

This section discusses some of the most common problems using an ORiNOCO Wireless Client and offers possible solutions.

Table 5-1 Frequent Questions and Answers

Symptom/Question	Possible Solution/Answer
My office has an existing 802.11b network. Is the ORiNOCO Wireless Client compatible?	Yes, the ORiNOCO Wireless Client complies with the 802.11a and the 802.11g wireless standards, and 802.11g devices are backwards compatible with 802.11b devices.
I want to install an 802.11g network in my office that has an 802.11a network. Will the 802.11g network interfere with the 802.11a network?	No. 802.11a and 802.11g devices will not interfere with each other since they operate at different frequencies. 802.11a devices operate in the 5 GHz band, and 802.11g devices operate in the 2.4 GHz band.

Symptom/Question	Possible Solution/Answer
Is an ORiNOCO Wireless Client compatible with 802.11a and 802.11g products from other vendors?	Yes, the card can interoperable with 802.11a-compliant or 802.11g-compliant products from other vendors.
In throughput tests, the card does not seem to transfer data as quickly as I' d expect.	Data rate is the raw signaling rate of a networking device; it does not equal data throughput. Actual data throughput is always less than the data rate since some of the available bandwidth is used to send control messages and regulate activity over the wireless medium. Also, throughput will depend on several factors such as network overhead, the file transfer program in use, the computer' s operating system, and the computer' s processor speed.
Does the card support IEEE 802.1x Authentication?	Yes, but you also need a configuration utility supplied by your RADIUS server vendor. Note that Windows XP includes built-in support for the IEEE 802.1x standard.
How long will my battery last when using the ORiNOCO Wireless Client?	Battery life will vary from unit to unit and depends on many factors including battery type, length of battery life without the card inserted, and how frequently the card transmits and receives data. Frequent network activity will drain the battery faster than if the card were left idle in doze mode. Configuring the card to use one of the Power Management modes will prolong battery life. However, you should perform some tests under normal operating conditions to accurately determine a device' s battery life with the card installed.

Appendix A - Specifications

A-1 Technical Specifications

The following technical specification is for reference purposes only. Actual product' s performance and compliance with local telecommunications regulations may vary from country to country. Proxim Corporation will only ship products that are type approved in the destination country.

A-1-1 General

Compatibility	Fully interoperable with IEEE 802.11a compliant products in 802.11a mode Fully interoperable with IEEE 802.11b compliant products in 802.11b mode Fully interoperable with IEEE 802.11g compliant products in 802.11g mode
Warranty	3-years parts and labor (return to factory)
LED Indicators	Two (2) LEDs indicate Power On, Sleep Mode, Transmit Activity, Association, and Power Off

A-1-2 Network Information

Security	64, 128 & 152-bit Wired Equivalent Privacy (WEP) data encryption; 802.1x authentication; LEAP; AES.
Network Architecture	Supports Ad Hoc Peer-to-Peer Groups and communication to wired infrastructure networks via Access Points
Installation & Diagnostics	Complete configuration utility application included; Utility' s site survey tool, surveys other wireless units and reports packet throughput; Desktop icon continuously reports status
Operating System Support	Windows 98SE, 2000, ME, XP
Roaming	Seamless among 802.11a compliant access points (in 802.11a or 802.11a 2X mode), 802.11b compliant access points (in 802.11b/g modes) and 802.11g compliant access points (in 802.11g mode)

A-1-3 Radio (802.11a Mode)

Media Access Protocol	IEEE 802.11a
Radio Data Rate	54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps in 802.11a mode; 108 Mbps, 96 Mbps, 72 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps in 2X Turbo mode
Frequency Band (802.11a)	5.15-5.25 GHz (lower band) for US/Canada, Japan 5.25-5.35 GHz (middle band) and 5.725-5.850 for US/Canada 5.15-5.35 GHz, 5.470-5.725 GHz for Europe Actual frequencies in use vary by country
Radio Type	Orthogonal Frequency Division Multiplexing
Modulation	64 QAM, 16 QAM, QPSK, BPSK
Nominal Output Power	15 dBm for 6Mbps (minimum), 13 dBm for 54Mbps (minimum)
Channels	13 non-overlapping channels (US) 4 non-overlapping channels (Japan)

A-1-4 Radio (802.11b Mode)

Media Access Protocol	IEEE 802.11b DSSS (Direct Sequence Spread Spectrum)
Radio Data Rate	11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps
Frequency Band	2.4 GHz frequency band; actual frequencies in use vary by country
Radio Type	Direct Sequence Spread Spectrum
Modulation	CCK, QPSK, BPSK
Nominal Output Power	18 dBm
Channels	Varies by country.

A-1-5 Radio (802.11g Mode)

Media Access Protocol	IEEE 802.11b DSSS (Direct Sequence Spread Spectrum), IEEE 802.11g OFDM
Radio Data Rate	802.11g: 54 Mbps with fall back rate of 48, 36, 24, 18, 12, 9, and 6Mbps. 802.11b: 11 Mbps with fall back of 5.5, 2 and 1Mbps

Frequency Band	2.4 GHz frequency band; actual frequencies in use vary by country
Radio Type	Direct Sequence Spread Spectrum
Modulation	802.11g: OFDM; 802.11b: CCK (11Mbps, 5.5Mbps), DQPSK (2Mbps, 1Mbps)
Nominal Output Power	Typical 12dBm at 54Mbps, typical 15dBm at 11 Mbps
Channels	11 channels (US, Canada), 13 channels (Europe Countries), 14 channels (Japan)

A-1-6 Environmental

Operating Temperature	0ºC to +70ºC
Storage Temperature	-10ºC to 75ºC
Non-Operating Humidity	5% to 95% non-condensing

A-1-7 Physical

Bus Interface	32-bit CardBus
PCB	4-layer design
WLAN	Atheros 5001X solution
Antenna	Dual diversity antennas
Voltage	3.3 VDC
Weight	45 grams
Dimension	54mm x 114.5mm x 5mm

A-1-8 Power Consumption

Doze Mode (802.11a, 802.11b & 802.11g)	15 mA
Receive (802.11a)	310 mA
Receive (802.11b)	270mA
Receive (802.11g)	330 mA
Transmit (802.11a)	560 mA
Transmit (802.11b)	450 mA

Transmit (802.11g)	600 mA

A-1-9 Available Transmit Power Settings

User may set the transmit power to the following levels. Maximum power setting will vary according to individual country regulations.

100%

50%

25%

12.5%

Lowest

Appendix B Warranty and Regulatory Information

B-1 Limited Warranty, Disclaimer, Limitation of Liability

For a period of three (3) years from the date of purchase by the retail customer, Proxim warrants the ORiNOCO Wireless Client against defects in materials and workmanship. Proxim will not honor this warranty if there has been any attempt to tamper with or remove the product' s external foil label.

This warranty does not cover and Proxim will not be liable for any damage or failure caused by misuse, abuse, acts of God, accidents, or other causes beyond Proxim' s control, or claim by any entity other than the original purchaser.

If, after inspection, Proxim determines there is a defect, Proxim will repair or replace the ORiNOCO Wireless Client at no cost to you. To return defective merchandise to Proxim, please contact ORiNOCO Technical Support to obtain a Return Merchandise Authorization (RMA) number.

In no event shall Proxim Corporation be responsible or liable for any damages arising:

- From the use of the product
- From the loss of use, revenue or profit of the product
- As a result of any event, circumstance, action, or abuse beyond the control of Proxim Corporation

Whether such damages are direct, indirect, consequential, special, or otherwise and whether such damages are incurred by the person to whom this warranty extends or a third party.

B-1-1 Warranty Return Policy

If you have a problem with an ORiNOCO Wireless Client, please contact ORiNOCO Technical Support for assistance. ORiNOCO Technical Support will assist with resolving any technical difficulties you may have with your ORiNOCO Wireless Client. See C-1 Technical Support Contact Information.

After calling ORiNOCO Technical Support, if your product is found to be defective, you may

return the product to Proxim after obtaining an RMA (Return Merchandise Authorization) number. The product must be returned in its original packaging. The RMA number should be clearly marked on the outside of the box. Proxim cannot be held responsible for any product returned without an RMA number, and no product will be accepted without an RMA number.

B-2 Regulatory Information

B-2-1 USA – Federal Communication Commission (FCC)

FCC Class B Statement

This device complies with Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

(1) This device may not cause harmful interference

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

FCC RF Safety Requirement

The radiated output power is far below the FCC radio frequency exposure limits.

(1) Shielded cables, if any, must be used in order to comply with the emission limits.

(2) Any change or modification not expressly approved by the grantee of the equipment authorized could void the user authority to operate the equipment.

B-2-1 FCC WARNING

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 or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.

- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

!! Caution !! For your health sake, please keep at least 20 cm away from your Notebook LCD Panel while using wireless LAN.

B-2-3 European Regulatory Information

Products labeled with the CE 0336 (!) contain a radio transmitter that complies with the R&TTE Directive 1999/5/EC implying conformity to the following European Norms.

Les produits portant la marque d' alerte CE 0336 (!) contiennent un émetteur radio conforme à la directive R&TTE (1999/5/EC) qui impliquent la conformité aux normes de la Commission de la Communauté Européenne.

I prodotti che recano l' avvertenza CE 0336 (!) contengono un trasmettitore radio conforme alla Direttiva R&TTE (1999/5/EC) emessa dalla Commissione della Comunità Europea.

Funkprodukte mit der CE 0336 (!) Kennzeichnung enthalten einen Funktransmitter, der die von der Kommission der EU verabschiedete Richtlinie R&TTE (1999/5/EC) erfüllt.

Los productos con la marca CE0336 (!) contienen un transmisor de radio que cumple con la Directiva R&TTE (1999/5/EC) emitida por la Comisión Europea.

- IEC60950, Third Edition (1999)/CB Scheme - Product Safety
- EN 300328 - Radio LAN equipment operating in the 2.4 GHz band
- EN 301893 - Radio LAN equipment operating in the 5 GHz band
- EN 301489-17 - General EMC requirements for radio equipment

To determine the type of transmitter, check the product identification label on your Wireless LAN product.

Pour identifier le type d' émetteur, reportez-vous à l' étiquette d' identification de votre. produit.

Per determinare il tipo di trasmettitore, controllare la targhetta di identificazione del prodotto.

Um welchen Transmittertyp es sich handelt, können Sie auf dem Typenschild auf dem Produkt ablesen.

Para determinar el tipo de transmisor, compruebe la etiqueta de identificación del producto.

B-2-4 Product Approvals

Proxim will only ship products that are type approved in the destination country.

For ORiNOCO Wireless Client Users in Europe: In 802.11a mode, you must use the ORiNOCO 11a/b/g Wireless Client with an 802.11a Access Point that supports Dynamic Frequency Selection (DFS). The European Telecommunications Standard Institute (ETSI) requires that 802.11a devices use DFS to prevent interference with radar systems and other devices that already occupy the 5 GHz band. See the user documentation that came with your 802.11a Access Point for details.

Check Proxim' s Web site (http://www.proxim.com/) for the most up-to-date regulatory information or contact Proxim Technical Support if you have questions regarding product certification or cannot find regulatory information for your country.

Appendix C Technical Support and Glossary

C-1 Technical Support Contact Information

If you are having a problem using an ORiNOCO Wireless Client and cannot resolve it with the information in Chapter 5 Troubleshooting), gather the following information and contact ORiNOCO Technical Support:

- What kind of network are you using?
- What were you doing when the error occurred?
- What error message did you see?
- Can you reproduce the problem?
- What version of the ORiNOCO driver are you using?

You can reach ORiNOCO Technical Support by phone or e-mail, as described below.

For the U.S. and Canada:

Phone: 1-866-ORiNOCO (1-866-674-6626), choose prompt 2

E-mail: **USAsupport@orinocowireless.com**

For the Caribbean and Latin America:

Phone: 1-866-ORiNOCO (1-866-674-6626), choose prompt 2

E-mail: **CALAsupport@orinocowireless.com**

For Asia Pacific:

Phone: +1 661-367-2230

E-mail: **APACsupport@orinocowireless.com**

For Europe, the Middle East, and Africa (EMEA):

Your local supplier in the EMEA region is trained to give you the support you require. Local suppliers have direct access to the ORiNOCO Technical Support Center and will help you in every way they can.

Phone: +1 661-367-2230

E-mail: **EMEAsupport@orinocowireless.com**

The latest software and documentation is available for download at http://www.proxim.com/.

C-2 Glossary

PCU - Proxim Client Utility (PCU); the utility that configures the ORiNOCO Wireless Client.

PCI - Peripheral component Interconnect; a standard bus interface found on most desktop computers.

Access Point - An internetworking device that seamlessly connects wired and wireless networks together.

Ad Hoc - A peer- to-peer wireless network without Access Point. A group of wireless clients consistent an independent wireless LAN.

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

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

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

ESSID – Extended Service Set Identifier. The length of the ESSID information is between 0 and 32 octets. A 0 length identifier indicates the broadcast SSID.

Ethernet - A popular local area data communications network, originally developed by Xerox Corp., which accepts transmission from computers and terminals. Ethernet operates on 10/100 Mbps transmission rate over shielded coaxial cable or over shielded twisted pair telephone wire.

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

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

SSID – Service Set Identifier (SSID) is the network name used by the Wireless LAN. The length of the SSID information is between 0 and 32 octets.

WEP – Wired Equivalent Privacy is the optional cryptographic confidentiality algorithm specified by IEEE 802.11 used to provide data confidentiality that is subjectively equivalent to the confidentiality of a wired local area network (LAN) medium that does not employ cryptographic techniques to enhance privacy.