Chapter 6: Driver Installation and Configuration for Windows XP

After connecting the Adapter to your computer, you will install the driver and configure the Adapter.

IMPORTANT: Do NOT run the Wireless-B USB Network Adapter Setup Wizard. If the Setup Wizard runs automatically after the Setup CD-ROM has been inserted, click the **Exit** button.

1. Windows XP will automatically detect the Adapter. Insert the Setup CD-ROM into your CD-ROM drive. Click the radio button next to **Install the software automatically (Recommended)**. Then click the **Next** button.

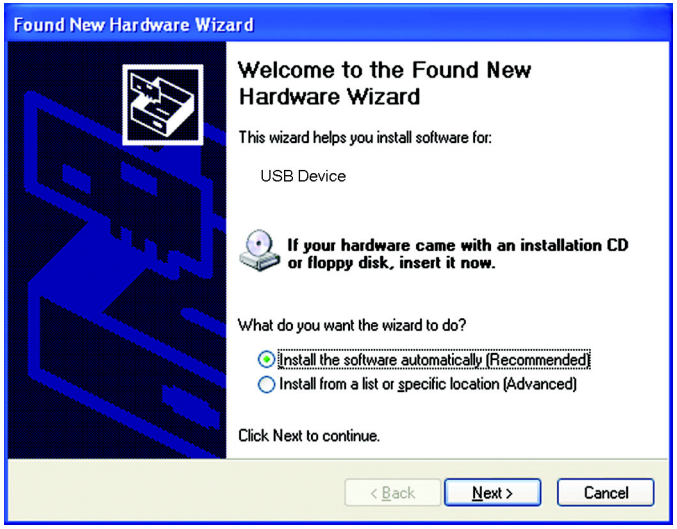

Figure 6-1: Install Software Automatically

2. When Windows has finished installing the driver, click the Finish button.

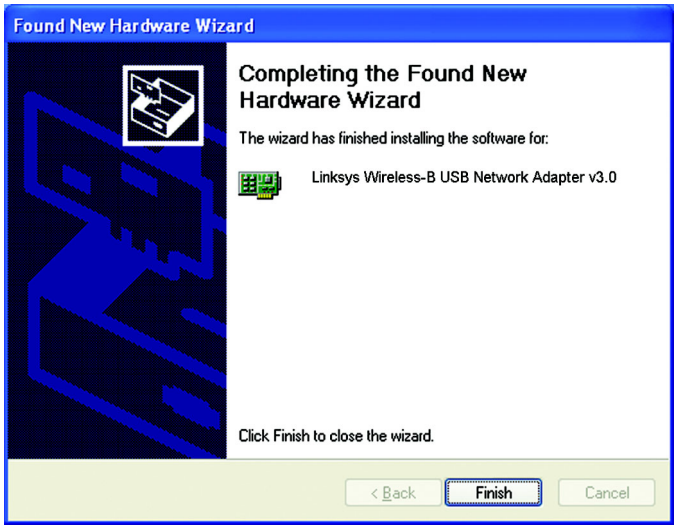

Figure 6-2: wizard Finished

You have now completed the driver installation for the Wireless-B USB Network Adapter. To configure the Adapter, proceed to the next section, "Windows XP Wireless Zero Configuration."

Windows XP Wireless Zero Configuration

NOTE: Windows XP has a built-in configuration tool. Use Windows XP Wireless Zero Configuration (in the system tray at the bottom of your screen) to configure the Adapter.

1. After installing the Adapter, the Windows XP Wireless Zero Configuration icon will appear in your computer's system tray. Double-click the icon.

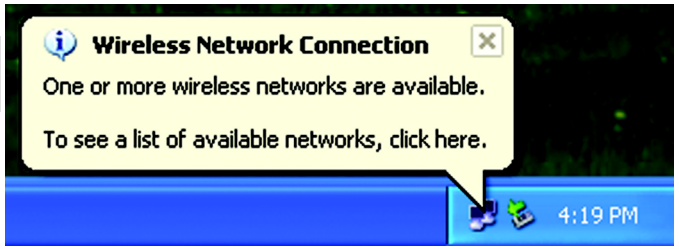

Figure 6-3: The Zero Configuration Icon

NOTE: Steps 2 and 3 are the instructions and screenshots for Windows XP with Service Pack 1 installed.
If you have not installed Service Pack 1, select the network you want, and click the Connect button. If the network has WEP encryption enabled, enter the WEP key in the Network key field, and then click the Connect button.

2. The screen that appears will show any available wireless network. Select the network you want.

   If this network has WEP encryption enabled, go to step 3.

   If this network does not have WEP encryption enabled, make sure the box next to **Allow me to connect to the selected wireless network, even though it is not secure** is checked. Then click the **Connect** button, and go to step 4.

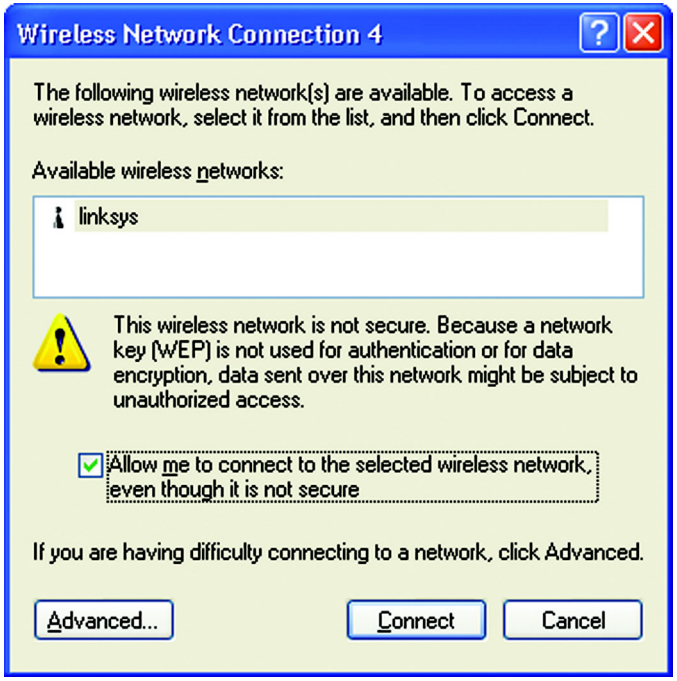

Figure 6-4: Zero Configuration Connection without WEP

encryption: *encoding data transmitted in a network.*

3. If WEP is enabled, enter the WEP key of your wireless network in the *Network key* field, and re-enter it in the *Confirm network key* field. Then, click the Connect button, and go to step 4.

NOTE: Windows XP Wireless Zero Configuration does not support the use of a passphrase. Enter the exact WEP key used by your access point.

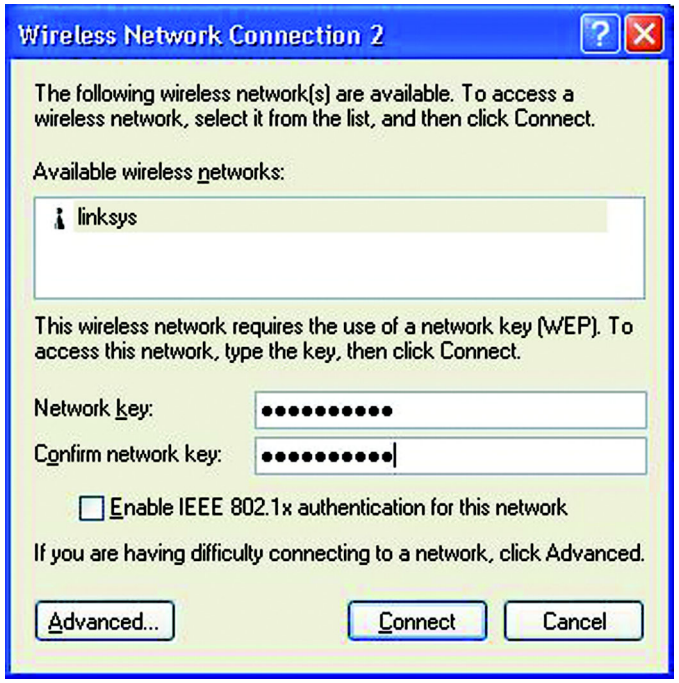

Figure 6-5: Zero Configuration Connection with WEP

4. The Zero Configuration icon will show a wireless connection when your connection is active.

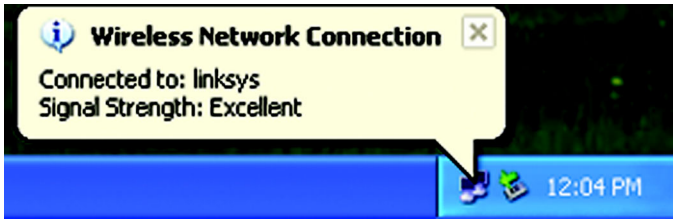

Figure 6-6: Zero Configuration Active Wireless Connection

For more information about wireless networking on a Windows XP computer, click **Start** and then **Help and Support**. Enter the keyword **wireless** in the field provided, and press the **Enter** key.

Congratulations! The installation of the Wireless-B USB Network Adapter is complete.

Chapter 7: Using the WLAN Monitor for Windows 98SE, Me, and 2000

Use the WLAN Monitor to check the link information, search for available wireless networks, or create profiles that hold different configuration settings.

IMPORTANT: Windows XP users. Windows XP has a built-in configuration tool. Use the Windows XP Wireless Zero Configuration (in the system tray at the bottom of your screen) to configure the Adapter. See "Chapter 6: Driver Installation and Configuration for Windows XP."

Accessing the WLAN Monitor

After installing the Adapter, the Wireless-B USB Network Adapter WLAN Monitor icon will appear in your system tray. Double-click the icon.

Figure 7-1: The WLAN Monitor icon

The *Link Information* screen will appear. From this screen, you can find out how strong the current wireless signal is and how good the connection's quality is. You can also click the **More Information** button to view additional status information about the current wireless connection. To search for available wireless networks, click the **Site Survey** tab. To perform configuration changes, click the **Profiles** tab.

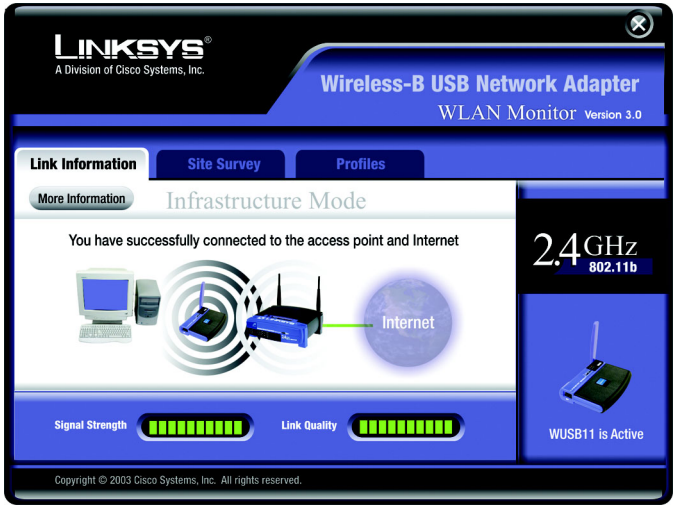

Figure 7-2: The Link Information screen

Link Information

The Link Information screen displays network mode, signal strength, and link quality information about the current connection. It also provides a button to click for additional status information.

Ad-Hoc Mode or **Infrastructure Mode** - The screen indicates whether the Adapter is currently working in ad-hoc or infrastructure mode.

Signal Strength - The Signal Strength bar indicates signal strength, from 0 to 100%.

Link Quality - The Link Quality bar indicates the quality of the wireless network connection, from 0 to 100%.

Click the **More Information** button to view additional information about the wireless network connection.

Click the **X** (Close) button in the upper right corner to exit the WLAN Monitor.

Wireless Network Status

Status - The status of the wireless network connection.

SSID - The SSID of the wireless network.

Network Mode - The wireless mode currently in use.

Transfer Rate - The data transfer rate of the current connection.

Channel - The channel to which the wireless network devices are set.

WEP - The status of the WEP encryption security feature.

MAC - The MAC address of the wireless network's access point.

TCP/IP Setting

IP Address - The IP Address of the Adapter.

Subnet Mask - The Subnet Mask of the Adapter.

Default Gateway - The Default Gateway address of the Adapter.

DNS - The DNS address of the Adapter.

DHCP - The status of the DHCP client.

Save to Profile - Click the Save to Profile button to save the current settings in a configuration profile. Then the Create connection profile screen will appear. Enter a name for the new profile, and click the OK button.

Click the **Back** button to return to the initial *Link Information* screen.

Click the **X** (Close) button in the upper right corner to exit the WLAN Monitor.

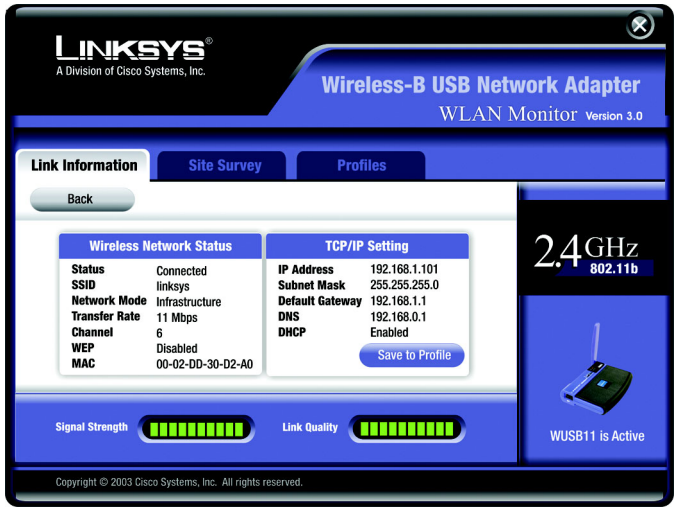

Figure 7-3: More Link Information

ip address: *the address used to identify a computer or device on a network.*

subnet mask: *an address code that determines the size of the network.*

default gateway: *a device that forwards Internet traffic from your local area network.*

dns: *the IP address of your ISP's server, which translates the names of websites into IP addresses.*

dhcp: *a networking protocol that allows administrators to assign temporary IP addresses to network computers by "leasing" an IP address to a user for a limited amount of time, instead of assigning permanent IP addresses.*

Site Survey

The *Site Survey* screen displays a list of infrastructure and ad-hoc networks available for connection in the table on the right. This table shows the network's SSID and the quality of the wireless signal the Adapter is receiving.

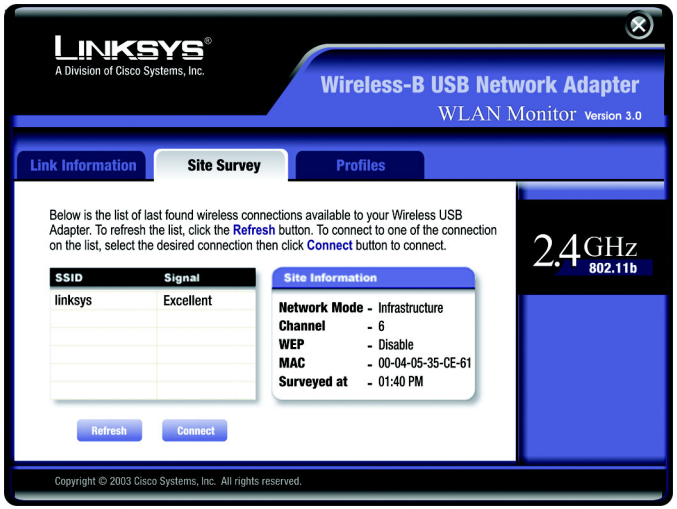

Figure 7-4: Site Survey

Site Information

For each network selected, the following settings are listed:

Network Mode - The wireless mode currently in use.

Channel - The channel to which the wireless network devices are set.

WEP - The status of the WEP encryption security feature.

MAC - The MAC address of the wireless network's access point.

Surveyed at - The time at which the wireless network was scanned.

Refresh - Click the Refresh button to perform a new search for wireless devices.

Connect - To connect to one of the networks on the list, select the wireless network, and click the Connect button. If the wireless network has WEP encryption enabled, you will see the screen shown in Figure 7-6.

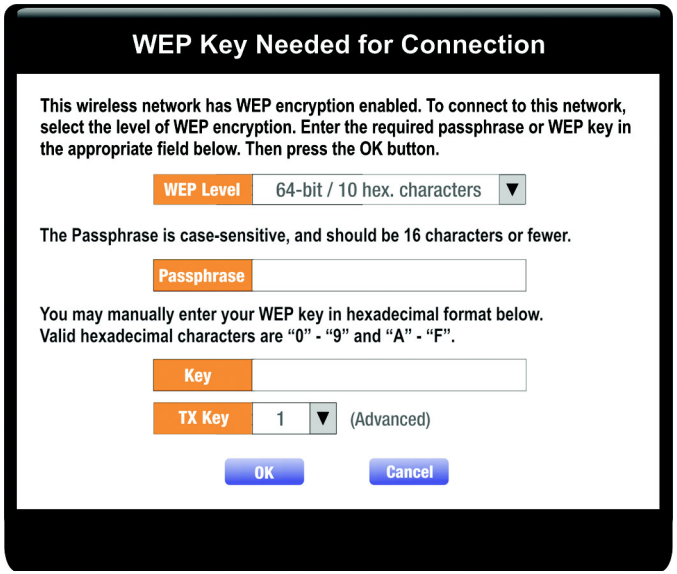

Figure 7-5: WEP Encryption

In the WEP drop-down box, select the type of WEP encryption used by the wireless network: **64-bit / 10 hex. characters** or **128-bit / 26 hex. characters**.

If the wireless network uses a passphrase, enter the passphrase in the *Passphrase* field. If the wireless network uses a WEP key, enter the WEP key in the *Key 1* field. When using multiple WEP keys, when accessing different networks, for instance, you can store up to four TX Keys. Select the **TX Key** from the drop-down box below the WEP keys.

Click the **OK** button to complete the network connection and return to the *Site Survey* screen, or click the **Cancel** button to cancel the network connection and return to the *Site Survey* screen.

On the *Site Survey* screen, click the **X** (Close) button in the upper right corner to exit the WLAN Monitor.

Profiles

The *Profiles* screen lets you save different configuration profiles for different network setups. The table on the right displays a list of infrastructure and ad-hoc networks available for connection This table shows the network's profile name and the wireless network's SSID, as set in the connection profile.

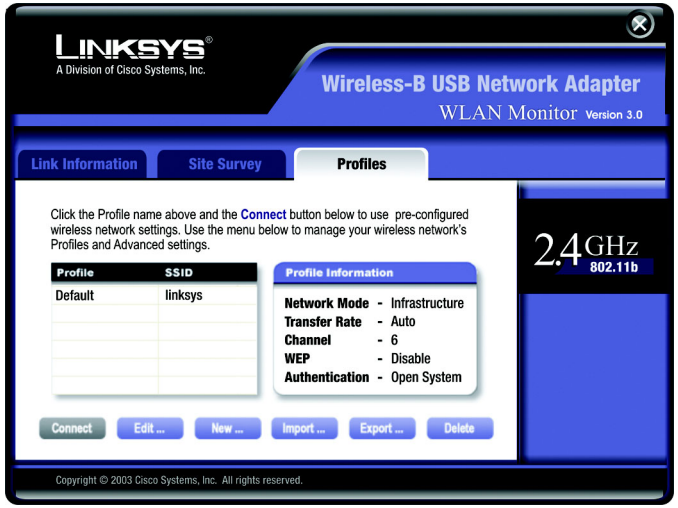

Figure 7-6: Profiles

Profile Information

For each profile selected, the following are listed:

Network Mode - The mode of the wireless network currently in use.

Transfer Rate - The Adapter is set to Auto mode, so it will dynamically shift to the fastest data transfer rate possible at any given time.

Channel - The channel to which the wireless network devices are set.

WEP - The status of the WEP encryption security feature.

Authentication Type -This is how WEP keys are handled within the network.

wep: *a method of encrypting network data transmitted on a wireless network for greater security.*

Connect - To connect to a wireless network using a specific profile, select the profile, and click the **Connect** button.

Edit - Select a profile, and click the Edit button to change an existing profile.

New - Click the New button to create a new profile. See the next section, "Creating a New Profile," for detailed instructions.

Import - Click the **Import** button to import a profile that has been saved in another location. Select the appropriate file, and click the **Open** button.

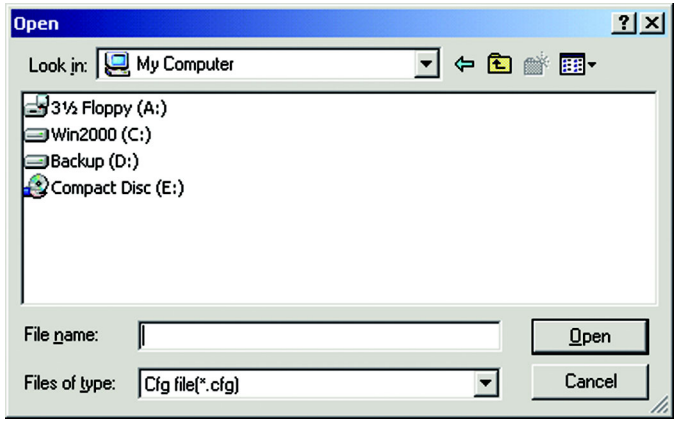

Figure 7-7: Importing a Profile

Export - Select the profile you want to save in a different location, and click the **Export** button. Direct Windows to the appropriate folder, and click the **OK** button.

NOTE: If you want to export more than one profile, you have to export them one at a time.

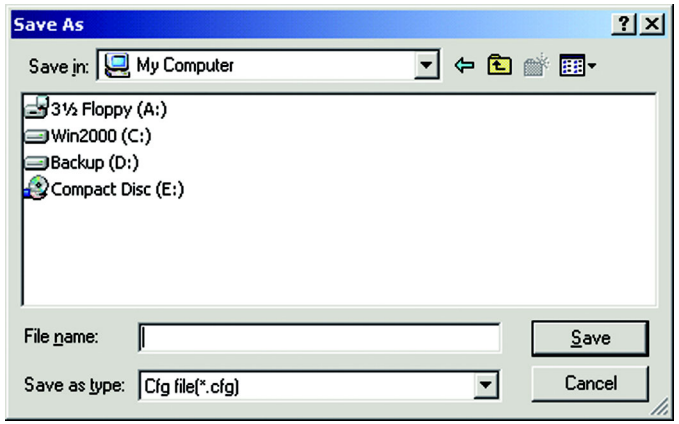

Figure 7-8: Exporting a Profile

Delete - Click the **Delete** button to delete a profile.

Click the **X** (Close) button in the upper right corner to exit the WLAN Monitor.

Creating a New Profile

1. On the *Profiles* screen, click the **New** button to create a new profile.

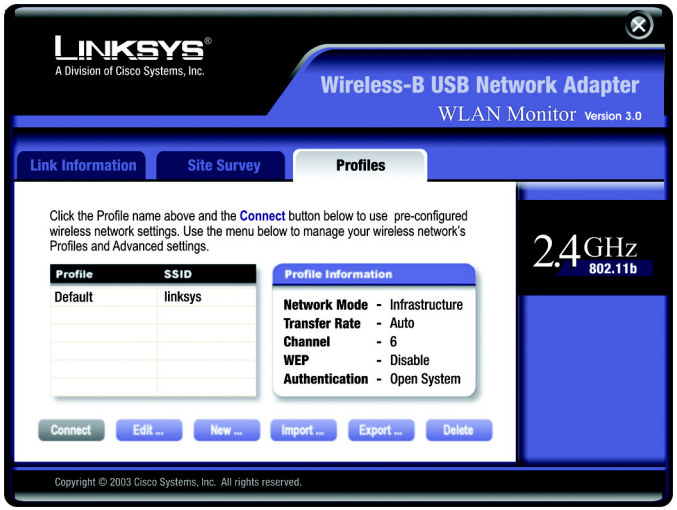

Figure 7-9: Creating a New Profile

2. Enter a name for the new profile, and click the **OK** button. Click the **Cancel** button to return to the Profiles screen.

Figure 7-10: Enter Profile Name

3. The *Network Setting* screen will appear next. If your network has a DHCP server, click the radio button next to *Obtain an IP address automatically (DHCP)*. Click the **Next** button to continue, or click the **Cancel** button to return to the *Profiles* screen.

   If your network does not have a DHCP server, click the radio button next to *Specify the IP Address*. Enter an **IP Address**, **Subnet Mask**, **Default Gateway**, and **DNS** appropriate for your network. You must specify the IP Address and Subnet Mask on this screen. If you are unsure about the Default Gateway and DNS address, leave these fields alone. Click the **Next** button to continue, or click the **Cancel** button to return to the *Profiles* screen.

   IP Address - This IP Address must be unique to your network.

   Subnet Mask - The Adapter's Subnet Mask must be the same as your wired network's Subnet Mask.

   Default Gateway - Enter the IP address of your network's Gateway here.

   DNS 1 and **DNS 2** - Enter the DNS address of your Ethernet (wired) network here

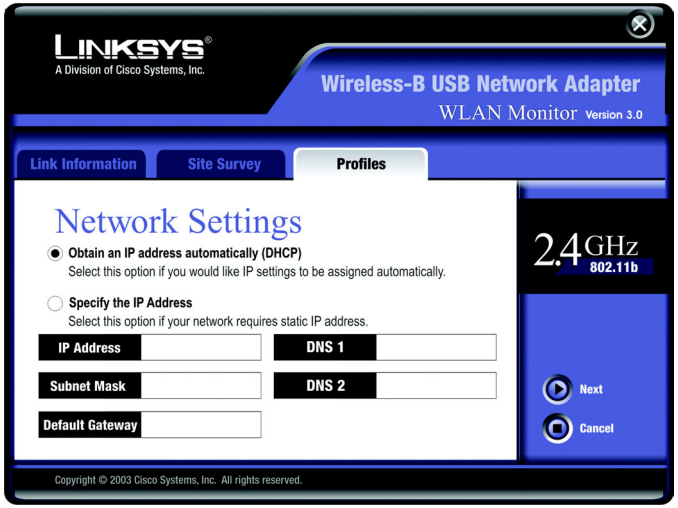

Figure 7-11: Network Settings for New Profile

4. The *Network Mode* screen shows a choice of two network modes. Click the **Infrastructure Mode** radio button if you want your wireless computers to communicate with computers on your wired network via a wireless access point. Click the **Ad-Hoc Mode** radio button if you want multiple wireless computers to communicate directly with each other.

   Then, complete the *SSID* field. Click the **Next** button to continue or the **Back** button to return to the previous screen.

   Infrastructure Mode - This mode allows wireless and wired networks to communicate through an access point.

   Ad-Hoc Mode - This mode allows wireless-equipped computers to communicate directly with each other. No access point is used.

   SSID - The SSID is the unique name shared by all devices in a wireless network. The SSID must be identical for all devices in the wireless network. It is case-sensitive and must not exceed 32 characters (use any of the characters on the keyboard). Make sure this setting is the same for all devices in your wireless network.

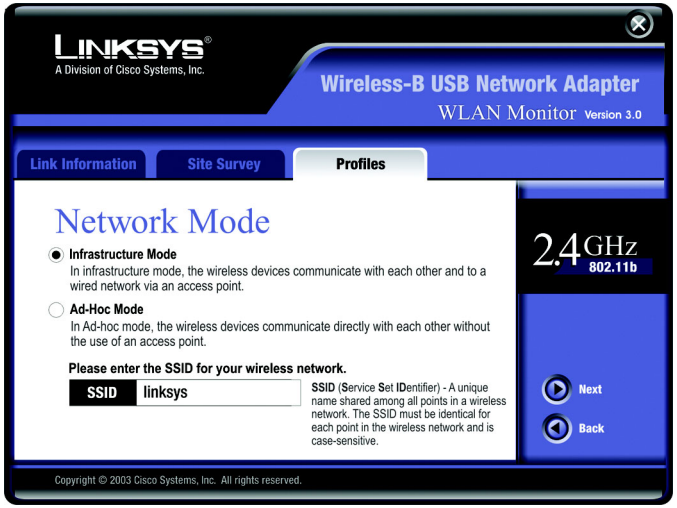

Figure 7-12: Network Mode for New Profile

5. If you chose Infrastructure Mode, then proceed to step 6. If you chose Ad-Hoc Mode, then the *Wireless Channels* screen will now appear. Select the channel at which the network broadcasts its wireless signal. Then, click the **Next** button to continue or the **Back** button to return to the previous screen.

   Channel - From the drop-down box, select the appropriate channel that corresponds with your network settings. All devices in your wireless network must use the same channel in order to communicate.

Figure 7-13: Wireless Channels for New Profile

6. The *Security Settings* screen will appear. Choose the Wired Equivalent Privacy (WEP) encryption settings for your wireless network. If you enable WEP, enter a passphrase or WEP key. Then, click the **Next** button to continue or the **Back** button to return to the previous screen.

   WEP - If you do not want to use WEP encryption, keep the default setting, **Disable**. To use WEP encryption (recommended to increase wireless network security), select 64-bit / 10 hex. characters or 128-bit / 26 hex. characters from the drop-down menu, and enter a passphrase or WEP key.

   Passphrase - Instead of manually entering a WEP key, you can enter a passphrase in the Passphrase field, so a WEP key is automatically generated. It is case-sensitive and should not be longer than 16 alphanumeric characters. This passphrase must match the passphrase of your other wireless network devices and is compatible with Linksys wireless products only. (If you have any non-Linksys wireless products, enter the WEP key manually on those products.)

   WEP Key - The WEP key you enter must match the WEP key of your wireless network. If you are using 64-bit WEP encryption, then the key must consist of exactly 10 hexadecimal characters. If you are using 128-bit WEP encryption, then the key must consist of exactly 26 hexadecimal characters. Valid hexadecimal characters are “0” to “9” and “A” to “F”.

   Tx Key - The default transmit key number is **1**. If your network’s access point or wireless router uses transmit key number 2, 3, or 4, select the appropriate number in the *Tx Key* drop-down box.

   Authentication Type -The default is set to **Auto**, where it auto-detects for **Shared Key** or **Open System**. Shared Key is when both the sender and the recipient share a WEP key for authentication. Open Key is when the sender and the recipient do not share a WEP key for authentication. All points on your network must use the same authentication type.

Figure 7-14: Security Settings for New Profile

7. The *Confirm New Settings* screen will appear next shown the new settings. To save the new settings, click the **Yes** button. To edit the new settings, click the **Back** button.

Figure 7-15: Confirm New Settings for New Profile

8. The *Congratulations* screen will appear next. Click **Activate** new settings now to implement the new settings immediately and return to the *Link Information* screen. Click **Activate** new settings later to keep the current settings active and return to the *Profiles* screen.

You have successfully created a connection profile.

Click the X (Close) button in the upper right corner to exit the WLAN Monitor.

Figure 7-16: Congratulations for New Profile

Appendix A: Troubleshooting

This appendix consists of two parts: "Common Problems and Solutions" and "Frequently Asked Questions." This appendix provides solutions to problems that may occur during the installation and operation of the Wireless-B USB Network Adapter. Read the description below to solve your problems. If you can't find an answer here, check the Linksys website at *www.linksys.com*.

Common Problems and Solutions

1. ***My computer does not recognize the Wireless-B USB Network Adapter.***
   Make sure that the Wireless-B USB Network Adapter is properly inserted into the USB port.
   Also, make sure that the USB Controller is enabled in the BIOS. Check with your motherboard's user guide for more information.

2. ***The Wireless-B USB Network Adapter does not work properly.***
   Reinsert the Wireless-B USB Network Adapter into the notebook or desktop's USB port.
   For Windows 98SE or Me, right-click on **My Computer**, and select **Properties**. Select the **Device Manager** tab, and click on the **Network Adapter**. You will find the Wireless-B USB Network Adapter if it is installed successfully. If you see a yellow exclamation mark, the resources may be conflicting and you must follow the steps below:
   - Uninstall the driver software from your PC.
   - Restart your PC and repeat the hardware and software installation as specified in this User Guide.

3. ***I cannot communicate with the other computers linked via Ethernet in the Infrastructure configuration.***
   Make sure that the notebook or desktop is powered on.
   Make sure that the Wireless-B USB Network Adapter is configured with the same SSID and WEP settings as the other computers in the Infrastructure configuration.

Frequently Asked Questions

Can I run an application from a remote computer over the wireless network?
This will depend on whether or not the application is designed to be used over a network. Consult the application's user guide to determine if it supports operation over a network.

Can I play computer games with other members of the wireless network?
Yes, as long as the game supports multiple players over a LAN (local area network). Refer to the game's user guide for more information.

What is the IEEE 802.11b standard?
It is one of the IEEE standards for wireless networks. The 802.11b standard allows wireless networking hardware from different manufacturers to communicate, provided that the hardware complies with the 802.11b standard. The 802.11b standard states a maximum data transfer rate of 11Mbps and an operating frequency of 2.4GHz.

mbps: *one million bits per second; a unit of measurement for data transmission.*

What IEEE 802.11b features are supported?
The product supports the following IEEE 802.11b functions:

- CSMA/CA plus Acknowledge protocol
- Multi-Channel Roaming
- Automatic Rate Selection
- RTS/CTS feature
- Fragmentation
- Power Management

fragmentation: *breaking a packet into smaller units when transmitting over a network medium that cannot support the original size of the packet.*

What is ad-hoc mode?
When a wireless network is set to ad-hoc mode, the wireless-equipped computers are configured to communicate directly with each other. The ad-hoc wireless network will not communicate with any wired network.

What is infrastructure mode?
When a wireless network is set to infrastructure mode, the wireless network is configured to communicate with a wired network through a wireless access point.

What is roaming?
Roaming is the ability of a portable computer user to communicate continuously while moving freely throughout an area greater than that covered by a single access point. Before using the roaming function, the workstation must make sure that it is the same channel number with the access point of dedicated coverage area.

To achieve true seamless connectivity, the wireless LAN must incorporate a number of different functions. Each node and access point, for example, must always acknowledge receipt of each message. Each node must

maintain contact with the wireless network even when not actually transmitting data. Achieving these functions simultaneously requires a dynamic RF networking technology that links access points and nodes. In such a system, the user's end node undertakes a search for the best possible access to the system. First, it evaluates such factors as signal strength and quality, as well as the message load currently being carried by each access point and the distance of each access point to the wired backbone. Based on that information, the node next selects the right access point and registers its address. Communications between end node and host computer can then be transmitted up and down the backbone.

As the user moves on, the end node's RF transmitter regularly checks the system to determine whether it is in touch with the original access point or whether it should seek a new one. When a node no longer receives acknowledgment from its original access point, it undertakes a new search. Upon finding a new access point, it then re-registers, and the communication process continues.

What is ISM band?

The FCC and their counterparts outside of the U.S. have set aside bandwidth for unlicensed use in the ISM (Industrial, Scientific and Medical) band. Spectrum in the vicinity of 2.4 GHz, in particular, is being made available worldwide. This presents a truly revolutionary opportunity to place convenient high-speed wireless capabilities in the hands of users around the globe.

ism band: *radio bandwidth utilized in wireless transmissions.*

What is Spread Spectrum?

Spread Spectrum technology is a wideband radio frequency technique developed by the military for use in reliable, secure, mission-critical communications systems. It is designed to trade off bandwidth efficiency for reliability, integrity, and security. In other words, more bandwidth is consumed than in the case of narrowband transmission, but the trade-off produces a signal that is, in effect, louder and thus easier to detect, provided that the receiver knows the parameters of the spread-spectrum signal being broadcast. If a receiver is not tuned to the right frequency, a spread-spectrum signal looks like background noise. There are two main alternatives, Direct Sequence Spread Spectrum (DSSS) and Frequency Hopping Spread Spectrum (FHSS).

spread spectrum: *wideband radio frequency technique used for more reliable and secure data transmission.*

What is DSSS? What is FHSS? And what are their differences?

Frequency-Hopping Spread-Spectrum (FHSS) uses a narrowband carrier that changes frequency in a pattern that is known to both transmitter and receiver. Properly synchronized, the net effect is to maintain a single logical channel. To an unintended receiver, FHSS appears to be short-duration impulse noise. Direct-Sequence Spread-Spectrum (DSSS) generates a redundant bit pattern for each bit to be transmitted. This bit pattern is called a chip (or chipping code). The longer the chip, the greater the probability that the original data can be recovered. Even if one or more bits in the chip are damaged during transmission, statistical techniques embedded in the radio can recover the original data without the need for retransmission. To an unintended receiver, DSSS appears as low power wideband noise and is rejected (ignored) by most narrowband receivers.

dsss: *Frequency transmission with a redundant bit pattern resulting in a lower probability of information being lost in transit.*

Would the information be intercepted while transmitting on air?

WLAN features two-fold protection in security. On the hardware side, as with Direct Sequence Spread Spectrum technology, it has the inherent security feature of scrambling. On the software side, WLAN offers the encryption function (WEP) to enhance security and access control.

What is WEP?

WEP is Wired Equivalent Privacy, a data privacy mechanism based on a shared key algorithm, as described in the IEEE 802.11 standard.

Appendix B: Wireless Security

Linksys wants to make wireless networking as safe and easy for you as possible. The current generation of Linksys products provide several network security features, but they require specific action on your part for implementation. So, keep the following in mind whenever you are setting up or using your wireless network.

Security Precautions

The following is a complete list of security precautions to take (at least steps 1 through 5 should be followed):

1. Change the default SSID.
2. Disable SSID Broadcast.
3. Change the default password for the Administrator account.
4. Enable MAC Address Filtering.
5. Change the SSID periodically.
6. Use the highest encryption algorithm possible. Use WPA if it is available. Please note that this may reduce your network performance.
7. Change the WEP encryption keys periodically.

Note: Some of these security features are available only through the network router or access point. Refer to the router or access point's documentation for more information.

Security Threats Facing Wireless Networks

Wireless networks are easy to find. Hackers know that in order to join a wireless network, wireless networking products first listen for "beacon messages". These messages can be easily decrypted and contain much of the network's information, such as the network's SSID (Service Set Identifier). Here are the steps you can take:

Change the administrator's password regularly. With every wireless networking device you use, keep in mind that network settings (SSID, WEP keys, etc.) are stored in its firmware. Your network administrator is the only person who can change network settings. If a hacker gets a hold of the administrator's password, he, too, can change those settings. So, make it harder for a hacker to get that information. Change the administrator's password regularly.

SSID. There are several things to keep in mind about the SSID:

1. Disable Broadcast

2. Make it unique

3. Change it often

Most wireless networking devices will give you the option of broadcasting the SSID. While this option may be more convenient, it allows anyone to log into your wireless network. This includes hackers. So, don't broadcast the SSID.

Wireless networking products come with a default SSID set by the factory. (The Linksys default SSID is "linksys".) Hackers know these defaults and can check these against your network. Change your SSID to something unique and not something related to your company or the networking products you use.

Change your SSID regularly so that any hackers who have gained access to your wireless network will have to start from the beginning in trying to break in.

MAC Addresses. Enable MAC Address filtering. MAC Address filtering will allow you to provide access to only those wireless nodes with certain MAC Addresses. This makes it harder for a hacker to access your network with a random MAC Address.

WEP Encryption. Wired Equivalent Privacy (WEP) is often looked upon as a cure-all for wireless security concerns. This is overstating WEP's ability. Again, this can only provide enough security to make a hacker's job more difficult.

There are several ways that WEP can be maximized:

1. Use the highest level of encryption possible

2. Use "Shared Key" authentication

3. Change your WEP key regularly

WPA. Wi-Fi Protected Access (WPA) is the newest and best available standard in Wi-Fi security. Two modes are available: Pre-Shared Key and RADIUS. Pre-Shared Key gives you a choice of two encryption methods: TKIP (Temporal Key Integrity Protocol), which utilizes a stronger encryption method and incorporates Message Integrity Code (MIC) to provide protection against hackers, and AES (Advanced Encryption System), which utilizes a symmetric 128-Bit block data encryption. RADIUS (Remote Authentication Dial-In User Service) utilizes a RADIUS server for authentication and the use of dynamic TKIP, AES, or WEP.

WPA Pre-Shared Key. If you do not have a RADIUS server, Select the type of algorithm, TKIP or AES, enter a password in the Pre-Shared key field of 8-64 characters, and enter a Group Key Renewal period time

Important: Always remember that each device in your wireless network MUST use the same encryption method and encryption key or your wireless network will not function properly.

between 0 and 99,999 seconds, which instructs the Router or other device how often it should change the encryption keys.

WPA RADIUS. WPA used in coordination with a RADIUS server. (This should only be used when a RADIUS server is connected to the Router or other device.) First, select the type of WPA algorithm, **TKIP** or **AES**. Enter the RADIUS server's IP Address and port number, along with a key shared between the device and the server. Last, enter a Group Key Renewal period, which instructs the device how often it should change the encryption keys.

RADIUS. WEP used in coordination with a RADIUS server. (This should only be used when a RADIUS server is connected to the Router or other device.) First, enter the RADIUS server's IP Address and port number, along with a key shared between the device and the server. Then, select a WEP key and a level of WEP encryption, and either generate a WEP key through the Passphrase or enter the WEP key manually.

Implementing encryption may have a negative impact on your network's performance, but if you are transmitting sensitive data over your network, encryption should be used.

These security recommendations should help keep your mind at ease while you are enjoying the most flexible and convenient technology Linksys has to offer.

Appendix C: Windows Help

All wireless products require Microsoft Windows. Windows is the most used operating system in the world and comes with many features that help make networking easier. These features can be accessed through Windows Help and are described in this appendix.

TCP/IP

Before a computer can communicate with an access point or wireless router, TCP/IP must be enabled. TCP/IP is a set of instructions, or protocol, all PCs follow to communicate over a network. This is true for wireless networks as well. Your PCs will not be able to utilize wireless networking without having TCP/IP enabled. Windows Help provides complete instructions on enabling TCP/IP.

Shared Resources

If you wish to share printers, folder, or files over your network, Windows Help provides complete instructions on utilizing shared resources.

Network Neighborhood/My Network Places

Other PCs on your network will appear under Network Neighborhood or My Network Places (depending upon the version of Windows you're running). Windows Help provides complete instructions on adding PCs to your network.

Appendix D: Glossary

802.11b - An IEEE wireless networking standard that specifies a maximum data transfer rate of 11Mbps and an operating frequency of 2.4GHz.

Adapter - A device that adds network functionality to your PC.

Ad-hoc - A group of wireless devices communicating directly with each other (peer-to-peer) without the use of an access point.

Backbone - The part of a network that connects most of the systems and networks together, and handles the most data.

Bandwidth - The transmission capacity of a given device or network.

Bit - A binary digit.

Boot - To start a device and cause it to start executing instructions.

CSMA/CA (**C**arrier **S**ense **M**ultiple **A**ccess/**C**ollision **A**voidance) - A method of data transfer that is used to prevent data collisions.

Default Gateway - A device that forwards Internet traffic from your local area network.

DHCP (**D**ynamic **H**ost **C**onfiguration **P**rotocol) - A networking protocol that allows administrators to assign temporary IP addresses to network computers by "leasing" an IP address to a user for a limited amount of time, instead of assigning permanent IP addresses.

DNS (**D**omain **N**ame **S**erver) - The IP address of your ISP's server, which translates the names of websites into IP addresses.

DSSS (**D**irect-**S**equence **S**pread-**S**pectrum) - Frequency transmission with a redundant bit pattern resulting in a lower probability of information being lost in transit.

Encryption - Encoding data transmitted in a network.

Ethernet - IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium.

Fragmentation -Breaking a packet into smaller units when transmitting over a network medium that cannot support the original size of the packet.

Hardware - The physical aspect of computers, telecommunications, and other information technology devices.

IEEE (The **I**nstitute of **E**lectrical and **E**lectronics **E**ngineers) - An independent institute that develops networking standards.

Infrastructure - A wireless network that is bridged to a wired network via an access point.

IP (**I**nternet **P**rotocol) - A protocol used to send data over a network.

IP Address - The address used to identify a computer or device on a network.

ISM band - Radio bandwidth utilized in wireless transmissions.

ISP (**I**nternet **S**ervice **P**rovider) - A company that provides access to the Internet.

LAN - The computers and networking products that make up your local network.

MAC (**M**edia **A**ccess **C**ontrol) **Address** - The unique address that a manufacturer assigns to each networking device.

Mbps (**M**ega**B**its **P**er **S**econd) - One million bits per second; a unit of measurement for data transmission.

Network - A series of computers or devices connected for the purpose of data sharing, storage, and/or transmission between users.

Node - A network junction or connection point, typically a computer or work station.

Packet - A unit of data sent over a network.

Passphrase - Used much like a password, a passphrase simplifies the WEP encryption process by automatically generating the WEP encryption keys for Linksys products.

Port - The connection point on a computer or networking device used for plugging in cables or adapters.

Roaming - The ability to take a wireless device from one access point's range to another without losing the connection.

Router - A networking device that connects multiple networks together.

RTS (**R**equest **T**o **S**end) - A networking method of coordinating large packets through the RTS Threshold setting.

Server - Any computer whose function in a network is to provide user access to files, printing, communications, and other services.

Software - Instructions for the computer. A series of instructions that performs a particular task is called a "program".

Spread Spectrum - Wideband radio frequency technique used for more reliable and secure data transmission.

SSID (**S**ervice **S**et **ID**entifier) - Your wireless network's name.

Subnet Mask - An address code that determines the size of the network.

Switch - 1. A data switch that connects computing devices to host computers, allowing a large number of devices to share a limited number of ports. 2. A device for making, breaking, or changing the connections in an electrical circuit.

TCP (**T**ransmission **C**ontrol **P**rotocol) - A network protocol for transmitting data that requires acknowledgement from the recipient of data sent.

TCP/IP (**T**ransmission **C**ontrol **P**rotocol/**I**nternet **P**rotocol) - A set of instructions PCs use to communicate over a network.

Throughput - The amount of data moved successfully from one node to another in a given time period.

Topology - The physical layout of a network.

WEP (**W**ired **E**quivalent **P**rivacy) - A method of encrypting network data transmitted on a wireless network for greater security.

WLAN (**W**ireless **L**ocal **A**rea **N**etwork) - A group of computers and associated devices that communicate with each other wirelessly.

Appendix E: Specifications

Standards	IEEE 802.11b, USB 1.1
Channels	11 Channels (USA, Canada)
	13 Channels (Europe)
	14 Channels (Japan)
Port	USB Type B
Transmit Power	18 dBm (typical)
Receive Sensitivity	-85 dBm (typical)
Modulation	CCK, DQPSK, DBPSK
OS Support	Windows 98SE, Me, 2000, and XP
Network Protocols	TCP/IP, IPX/SPX, NetBEUI
LEDs	Power, Link
Security Features	WEP Encryption
WEP Key Bits	64, 128 Bit

Dimensions	3.98" x 0.91" x 3.07" (101 mm x 23 mm x 78 mm)
Unit Weight	3 oz. (0.09 kg.)
Certifications	FCC Class B
Operating Temp.	32ºF to 131ºF (0ºC to 55ºC)
Storage Temp.	-13ºF to 158ºF (-25ºC to 70ºC)
Operating Humidity	0% to 70%, Non-Condensing

Storage Humidity	10% to 90%, Non-Condensing

Appendix F: Warranty Information

LIMITED WARRANTY

Linksys warrants to You that, for a period of three years (the “Warranty Period”), your Linksys Product will be substantially free of defects in materials and workmanship under normal use. Your exclusive remedy and Linksys' entire liability under this warranty will be for Linksys at its option to repair or replace the Product or refund Your purchase price less any rebates. This limited warranty extends only to the original purchaser.

If the Product proves defective during the Warranty Period call Linksys Technical Support in order to obtain a Return Authorization Number, if applicable. BE SURE TO HAVE YOUR PROOF OF PURCHASE ON HAND WHEN CALLING. If You are requested to return the Product, mark the Return Authorization Number clearly on the outside of the package and include a copy of your original proof of purchase. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE. You are responsible for shipping defective Products to Linksys. Linksys pays for UPS Ground shipping from Linksys back to You only. Customers located outside of the United States of America and Canada are responsible for all shipping and handling charges.

ALL IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THE WARRANTY PERIOD. ALL OTHER EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF NON-INFRINGEMENT, ARE DISCLAIMED. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to You. This warranty gives You specific legal rights, and You may also have other rights which vary by jurisdiction.

This warranty does not apply if the Product (a) has been altered, except by Linksys, (b) has not been installed, operated, repaired, or maintained in accordance with instructions supplied by Linksys, or (c) has been subjected to abnormal physical or electrical stress, misuse, negligence, or accident. In addition, due to the continual development of new techniques for intruding upon and attacking networks, Linksys does not warrant that the Product will be free of vulnerability to intrusion or attack.

TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL LINKSYS BE LIABLE FOR ANY LOST DATA, REVENUE OR PROFIT, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, REGARDLESS OF THE THEORY OF LIABILITY (INCLUDING NEGLIGENCE), ARISING OUT OF OR RELATED TO THE USE OF OR INABILITY TO USE THE PRODUCT (INCLUDING ANY SOFTWARE), EVEN IF LINKSYS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT WILL LINKSYS’ LIABILITY EXCEED THE AMOUNT PAID BY YOU FOR THE PRODUCT. The foregoing limitations will apply even if any warranty or remedy provided under this Agreement fails of its essential purpose. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to You.

Please direct all inquiries to: Linksys, P.O. Box 18558, Irvine, CA 92623.

Appendix G: Regulatory Information

FCC STATEMENT

This product has been tested and complies with the specifications 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 according to 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 is found 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 or devices

Connect the equipment to an outlet other than the receiver's

Consult a dealer or an experienced radio/TV technician for assistance

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

INDUSTRY CANADA (CANADA)

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
The use of this device in a system operating either partially or completely outdoors may require the user to obtain a license for the system according to the Canadian regulations.

EC DECLARATION OF CONFORMITY (EUROPE)

Linksys declares that the Wireless-B USB Network Adapter conforms to the specifications listed below, following the provisions of the European R&TTE directive 1999/5/EC:

EN 301 489-1, 301 489-17 General EMC requirements for Radio equipment.

EN 609 50 Safety

EN 300-328-1, EN 300-328-2 Technical requirements for Radio equipment.

Caution: This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation. Contact local Authority for procedure to follow.

Note: Combinations of power levels and antennas resulting in a radiated power level of above 100 mW equivalent isotropic radiated power (EIRP) are considered as not compliant with the above mentioned directive and are not allowed for use within the European community and countries that have adopted the European R&TTE directive 1999/5/EC.

For more details on legal combinations of power levels and antennas, contact Linksys Corporate Compliance.

Linksys vakuuttaa täten että Wireless-B USB Network Adapter tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien näiden direktiivien muiden ehtojen mukainen.

Linksys Group déclare la Passerelle ADSL sans fil-B est conforme aux conditions essentielles et aux dispositions relatives à la directive 1999/5/EC.

Belgique:

Dans le cas d'une utilisation privée, à l'extérieur d'un bâtiment, au-dessus d'un espace public, aucun enregistrement n'est nécessaire pour une distance de moins de 300m. Pour une distance supérieure à 300m un enregistrement auprès de l'IBPT est requise. Pour une utilisation publique à l'extérieur de bâtiments, une licence de l'IBPT est requise. Pour les enregistrements et licences, veuillez contacter l'IBPT.

France:

2.4 GHz Bande : les canaux 10, 11, 12, 13 (2457, 2462, 2467, et 2472 MHz respectivement) sont complétement libres d'utilisation en France (en utilisation intérieur). Pour ce qui est des autres canaux, ils peuvent être soumis à autorisation selon le départment. L'utilisation en extérieur est soumis à autorisation préalable et très restreint.

Vous pouvez contacter l'Autorité de Régulation des Télécommunications (http://www.art-telecom.fr) pour de plus amples renseignements.

Cisco-Linksys, LLC declares that WUSB11v4 (FCC ID: Q87-WUSB11V4) is limited in CH1~CH11 by specified firmware controlled in U.S.A.

SAFETY NOTICES

Caution: To reduce the risk of fire, use only No.26 AWG or larger telecommunication line cord.

Do not use this product near water, for example, in a wet basement or near a swimming pool.

Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.

Appendix H: Contact Information

Need to contact Linksys? Visit us online for information on the latest products and updates to your existing products at:	http://www.linksys.com or ftp.linksys.com
Can't find information about a product you want to buy on the web? Do you want to know more about networking with Linksys products? Give our advice line a call at:	800-546-5797 (LINKSYS)
Or fax your request in to:	949-261-8868
If you experience problems with any Linksys product, you can call us at:	800-326-7114
Don't wish to call? You can e-mail us at:	support@linksys.com
If any Linksys product proves defective during its warranty period, you can call the Linksys Return Merchandise Authorization department for obtaining a Return Authorization Number at: (Details on Warranty and RMA issues can be found in the Warranty Information section in this Guide.)	949-261-1288