

The Factory Defaults Tab

If you want to restore the Gateway's factory default settings, then use this screen.

Factory Defaults

Restore Factory Defaults. If you wish to restore the Gateway to its factory default settings and lose all your settings, click **Restore Factory Defaults**. Then follow the on-screen instructions. Click **Help** for more information.

The Firmware Upgrade Tab

Use this screen to upgrade the Gateway's firmware.

Firmware Upgrade

To upgrade the Gateway's firmware:

1. Download the Gateway's firmware upgrade file from www.linksys.com/international.
2. Extract the file on your computer.
3. On the *Firmware Upgrade* screen, click the **Browse** button to find the firmware upgrade file.
4. Double-click the firmware file that you have downloaded and extracted.
5. Click the **Start to Upgrade** button, and follow the on-screen instructions.

Click **Help** for more information.

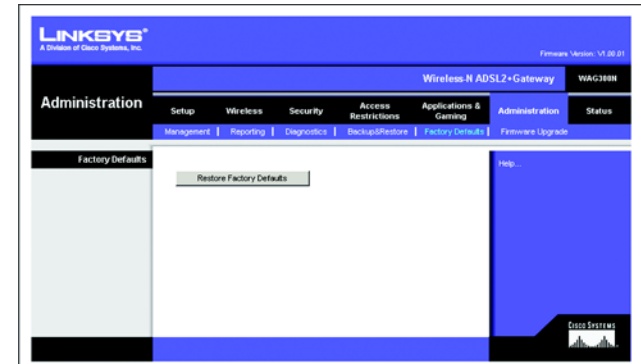


Figure 5-46: Factory Defaults

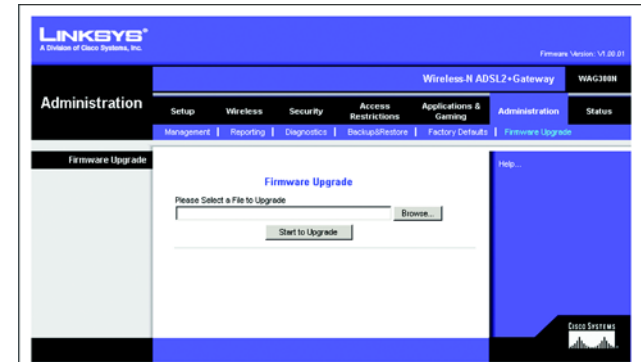


Figure 5-47: Firmware Upgrade

The Status Tab

The Gateway Tab

This screen displays information about the Gateway and its Internet connection.

Gateway Information

This section displays the Gateway's Firmware Version, MAC Address, and Current Time.

Internet Connection

This section shows the following information: Login Type, Interface, IP Address, Subnet Mask, Default Gateway, and DNS 1, 2, and 3 server IP addresses.

DHCP Renew. If available, click the **DHCP Renew** button to replace the Gateway's current IP address with a new IP address.

DHCP Release. If available, click the **DHCP Release** button to delete the Gateway's current IP address.

Click the **Refresh** button if you want to refresh the displayed information. Click **Help** for more information.



Figure 5-48: Gateway

The Local Network Tab

This screen displays information about the Gateway's local network.

Local Network

This screen displays the following: the local Mac Address, IP Address, Subnet Mask, DHCP Server, Start IP Address, and End IP Address.

To view the DHCP Client Table, click the **DHCP Client Table** button. To view the ARP/RARP Table, click the **ARP/RARP Table** button.

DHCP Clients Table. The DHCP Active IP Table shows the current DHCP Client data. You will see the computer name, IP address, MAC address, and expiration time of the dynamic IP address for the clients using the DHCP server. (This data is stored in temporary memory and changes periodically.) Click the **Refresh** button if you want to refresh the displayed information. To delete a client from the DHCP server, select the client, and then click the **Delete** button. Click the **Close** button to return to the *Local Network* screen.

ARP/RARP Table. An ARP request is a request sent by the Gateway asking clients with IP addresses for their MAC addresses, so the Gateway can map IP addresses to MAC addresses. RARP is the reverse of ARP. The ARP/RARP Table shows the current data for the local network clients of the Gateway. You will see their IP addresses and MAC addresses. (This data is stored in temporary memory and changes periodically.) Click the **Refresh** button if you want to refresh the displayed information. Click the **Close** button to return to the *Local Network* screen.

Click the **Refresh** button if you want to refresh the displayed information. Click **Help** for more information.



Figure 5-49: Local Network

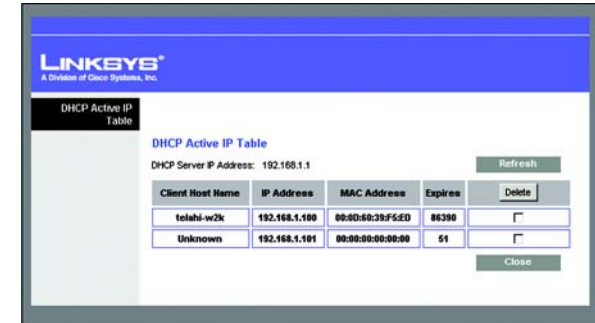


Figure 5-50: DHCP Active IP Table

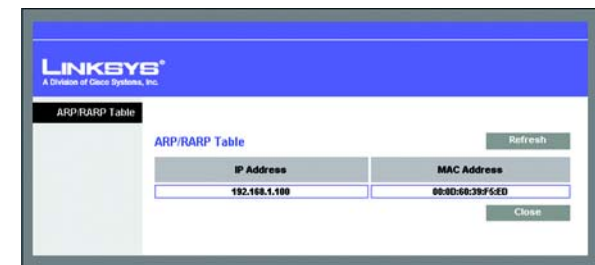


Figure 5-51: ARP/RARP Table

The Wireless Tab

This screen displays information about the Gateway's wireless network.

Wireless Network

This screen displays the following: MAC Address, Mode, Network Name (SSID), Radio Band, Wide Channel, Standard Channel, Security method, and SSID Broadcast status.

Click the **Refresh** button if you want to refresh the displayed information. Click **Help** for more information.



Figure 5-52: Wireless

The DSL Connection Tab

This screen shows information about the DSL connection.

DSL Status

This section shows the following: Status, Downstream Rate, and Upstream Rate.

PVC Connection

This section displays the following information: Encapsulation, Multiplexing, QoS, Pcr Rate, Scr Rate, Autodetect, VPI, VCI, Enable status, and PVC Status.

Click the **Refresh** button if you want to refresh the displayed information. Click **Help** for more information.



Figure 5-53: DSL Connection

Appendix A: Troubleshooting

This appendix consists of two parts: “Common Problems and Solutions” and “Frequently Asked Questions.” Provided are possible solutions to problems that may occur during the installation and operation of the Gateway. Read the descriptions below to help you solve your problems. If you can’t find an answer here, check the Linksys international website at www.linksys.com.

Common Problems and Solutions

1. *I need to set a static IP address on a computer.*

You can assign a static IP address to a computer by performing the following steps:

- For Windows 98 and Me:
 1. Click **Start**, **Settings**, and **Control Panel**. Double-click **Network**.
 2. In The following network components are installed box, select the TCP/IP-> associated with your Ethernet adapter. If you only have one Ethernet adapter installed, you will only see one TCP/IP line with no association to an Ethernet adapter. Highlight it and click the Properties button.
 3. In the TCP/IP properties window, select the IP address tab, and select Specify an IP address. Enter a unique IP address that is not used by any other computer on the network connected to the Gateway. Make sure that each IP address is unique for each computer or network device.
 4. Click the **Gateway** tab, and in the New Gateway prompt, enter 192.168.1.1, which is the default IP address of the Gateway. Click the Add button to accept the entry.
 5. Click the **DNS** tab, and make sure the DNS Enabled option is selected. Enter the Host and Domain names (e.g., John for Host and home for Domain). Enter the DNS entry provided by your ISP. If your ISP has not provided the DNS IP address, contact your ISP to get that information or go to its website for the information.
 6. Click the **OK** button in the TCP/IP properties window, and click **Close** or the **OK** button for the Network window.
 7. Restart the computer when asked.
- For Windows 2000:
 1. Click **Start**, **Settings**, and **Control Panel**. Double-click **Network and Dial-Up Connections**.
 2. Right-click the Local Area Connection that is associated with the Ethernet adapter you are using, and select the Properties option.
 3. In the Components checked are used by this connection box, highlight Internet Protocol (TCP/IP), and click the **Properties** button. Select **Use the following IP address** option.
 4. Enter a unique IP address that is not used by any other computer on the network connected to the Gateway.
 5. Enter the Subnet Mask, 255.255.255.0.
 6. Enter the Default Gateway, 192.168.1.1 (Gateway’s default IP address).

7. Toward the bottom of the window, select Use the following DNS server addresses, and enter the Preferred DNS server and Alternative DNS server (provided by your ISP). Contact your ISP or go on its website to find the information.
 8. Click the **OK** button in the Internet Protocol (TCP/IP) Properties window, and click the **OK** button in the Local Area Connection Properties window.
 9. Restart the computer if asked.
- For Windows XP:

The following instructions assume you are running Windows XP with the default interface. If you are using the Classic interface (where the icons and menus look like previous Windows versions), please follow the instructions for Windows 2000.

 1. Click **Start** and **Control Panel**.
 2. Click the **Network and Internet Connections** icon and then the **Network Connections** icon.
 3. Right-click the **Local Area Connection** that is associated with the Ethernet adapter you are using, and select the Properties option.
 4. In the **This connection uses the following items** box, highlight **Internet Protocol (TCP/IP)**. Click the **Properties** button.
 5. Enter a unique IP address that is not used by any other computer on the network connected to the Gateway.
 6. Enter the Subnet Mask, 255.255.255.0.
 7. Enter the Default Gateway, 192.168.1.1 (Gateway's default IP address).
 8. Toward the bottom of the window, select Use the following DNS server addresses, and enter the Preferred DNS server and Alternative DNS server (provided by your ISP). Contact your ISP or go on its website to find the information.
 9. Click the **OK** button in the Internet Protocol (TCP/IP) Properties window. Click the **OK** button in the Local Area Connection Properties window.

2. I want to test my Internet connection.

A. Check your TCP/IP settings.

For Windows 98, Me, 2000, and XP:

- Refer to Windows Help for details. Make sure Obtain IP address automatically is selected in the settings.

For Windows NT 4.0:

- Click **Start**, **Settings**, and **Control Panel**. Double-click the **Network** icon.
- Click the Protocol tab, and double-click on TCP/IP Protocol.
- When the window appears, make sure you have selected the correct Adapter for your Ethernet adapter and set it for **Obtain an IP address** from a DHCP server.
- Click the **OK** button in the TCP/IP Protocol Properties window, and click the **Close** button in the Network window.
- Restart the computer if asked.

B. Open a command prompt.

For Windows 98 and Me:

- Click **Start** and **Run**. In the Open field, type in command. Press the **Enter** key or click the **OK** button.

For Windows NT, 2000, and XP:

- Click **Start** and **Run**. In the Open field, type cmd. Press the **Enter** key or click the **OK** button. In the command prompt, type ping 192.168.1.1 and press the Enter key.
 - If you get a reply, the computer is communicating with the Gateway.
 - If you do NOT get a reply, please check the cable, and make sure Obtain an IP address automatically is selected in the TCP/IP settings for your Ethernet adapter.
- C. In the command prompt, type ping followed by your Internet or WAN IP address and press the **Enter** key. The Internet or WAN IP Address can be found on the Status screen of the Gateway's Web-based Utility. For example, if your Internet or WAN IP address is 1.2.3.4, you would enter ping 1.2.3.4 and press the Enter key.
- If you get a reply, the computer is connected to the Gateway.
 - If you do NOT get a reply, try the ping command from a different computer to verify that your original computer is not the cause of the problem.
- D. In the command prompt, type ping www.yahoo.com and press the **Enter** key.
- If you get a reply, the computer is connected to the Internet. If you cannot open a webpage, try the ping command from a different computer to verify that your original computer is not the cause of the problem.
 - If you do NOT get a reply, there may be a problem with the connection. Try the ping command from a different computer to verify that your original computer is not the cause of the problem.

3. I am not getting an IP address on the Internet with my Internet connection.

- Refer to "Problem #2, I want to test my Internet connection" to verify that you have connectivity.
 1. Make sure you are using the right Internet connection settings. Contact your ISP to see if your Internet connection type is RFC 1483 Bridged, RFC 1483 Routed, RFC 2516 PPPoE, RFC 2364 PPPoA, Bridged Mode Only, or IPoA. Please refer to the Setup section of "Chapter 5: Configuring the Wireless-N ADSL2+ Gateway" for details on Internet connection settings.
 2. Make sure you have the right cable. Check to see if the Gateway column has a solidly lit ADSL LED.
 3. Make sure the cable connecting from your Gateway's DSL port is connected to the wall jack of the ADSL service line. Verify that the Status page of the Gateway's Web-based Utility shows a valid IP address from your ISP.
 4. Turn off the computer and Gateway. Wait 30 seconds, and then turn on the Gateway, and computer. Check the Status tab of the Gateway's Web-based Utility to see if you get an IP address.

4. I am not able to access the Setup page of the Gateway's Web-based Utility.

- Refer to "Problem #2, I want to test my Internet connection" to verify that your computer is properly connected to the Gateway.
 1. Refer to "Appendix C: Finding the MAC Address and IP address for Your Ethernet Adapter" to verify that your computer has an IP Address, Subnet Mask, Gateway, and DNS.
 2. Set a static IP address on your system; refer to "Problem #1: I need to set a static IP address."

3. Refer to “Problem #10: I am a PPPoE user, and I need to remove the proxy settings or the dial-up pop-up window.”

5. I can't get my Virtual Private Network (VPN) working through the Gateway.

Access the Gateway's web interface by going to <http://192.168.1.1> or the IP address of the Gateway, and go to the Security tab. Make sure you have IPsec passthrough and/or PPTP pass-through enabled.

- VPNs that use IPsec with the ESP (Encapsulation Security Payload known as protocol 50) authentication will work fine. At least one IPsec session will work through the Gateway; however, simultaneous IPsec sessions may be possible, depending on the specifics of your VPNs.
- VPNs that use IPsec and AH (Authentication Header known as protocol 51) are incompatible with the Gateway. AH has limitations due to occasional incompatibility with the NAT standard.
- Change the IP address for the Gateway to another subnet to avoid a conflict between the VPN IP address and your local IP address. For example, if your VPN server assigns an IP address 192.168.1.X (X is a number from 1 to 254) and your local LAN IP address is 192.168.1.X (X is the same number used in the VPN IP address), the Gateway will have difficulties routing information to the right location. If you change the Gateway's IP address to 192.168.2.1, that should solve the problem. Change the Gateway's IP address through the Setup tab of the web interface.
- If you assigned a static IP address to any computer or network device on the network, you need to change its IP address accordingly to 192.168.2.Y (Y being any number from 1 to 254). Note that each IP address must be unique within the network.
- Your VPN may require port 500/UDP packets to be passed to the computer that is connecting to the IPsec server. Refer to “Problem #7, I need to set up online game hosting or use other Internet applications” for details.
- Check the Linksys international website for more information at www.linksys.com.

6. I need to set up a server behind my Gateway and make it available to the public.

To use a server like a web, ftp, or mail server, you need to know the respective port numbers they are using. For example, port 80 (HTTP) is used for web; port 21 (FTP) is used for FTP, and port 25 (SMTP outgoing) and port 110 (POP3 incoming) are used for the mail server. You can get more information by viewing the documentation provided with the server you installed.

- Follow these steps to set up port forwarding through the Gateway's Web-based Utility. We will be setting up web, ftp, and mail servers.
 1. Access the Gateway's Web-based Utility by going to <http://192.168.1.1> or the IP address of the Gateway. Go to the Applications and Gaming => Port Range Forwarding tab.
 2. Enter any name you want to use for the Application.
 3. Enter the port range of the service you are using. For example, if you have a web server, you would enter the range 80 to 80.
 4. Select the protocol you will be using, TCP and/or UDP.
 5. Enter the IP address of the computer or network device that you want the port server to go to. For example, if the web server's Ethernet adapter IP address is 192.168.1.100, you would enter 100 in the

field provided. Check “Appendix C: Finding the MAC Address and IP Address for Your Ethernet Adapter” for details on getting an IP address.

6. Check the **Enable** option for the port services you want to use. Consider the example below:

| Application | Start and End | Protocol | IP Address | Enable |
|-----------------|---------------|----------|---------------|--------|
| Web server | 80 to 80 | Both | 192.168.1.100 | X |
| FTP server | 21 to 21 | TCP | 192.168.1.101 | X |
| SMTP (outgoing) | 25 to 25 | Both | 192.168.1.102 | X |
| POP3 (incoming) | 110 to 110 | Both | 192.168.1.102 | X |

When you have completed the configuration, click the **Save Settings** button.

7. *I need to set up online game hosting or use other Internet applications.*

If you want to play online games or use Internet applications, most will work without doing any port forwarding or DMZ hosting. There may be cases when you want to host an online game or Internet application. This would require you to set up the Gateway to deliver incoming packets or data to a specific computer. This also applies to the Internet applications you are using. The best way to get the information on what port services to use is to go to the website of the online game or application you want to use. Follow these steps to set up online game hosting or use a certain Internet application:

1. Access the Gateway’s web interface by going to <http://192.168.1.1> or the IP address of the Gateway. Go to the Applications and Gaming => Port Range Forwarding tab.
2. Enter any name you want to use for the Application.
3. Enter the port range of the service you are using. For example, if you want to host Unreal Tournament (UT), you would enter the range 7777 to 27900.
4. Select the protocol you will be using, TCP and/or UDP.
5. Enter the IP address of the computer or network device that you want the port server to go to. For example, if the web server’s Ethernet adapter IP address is 192.168.1.100, you would enter 100 in the field provided. Check “Appendix C: Finding the MAC Address and IP Address for Your Ethernet Adapter” for details on getting an IP address.
6. Check the **Enable** option for the port services you want to use. Consider the example below:

| Application | Start and End | Protocol | IP Address | Enable |
|-------------|----------------|----------|---------------|--------|
| UT | 7777 to 27900 | Both | 192.168.1.100 | X |
| Half-life | 27015 to 27015 | Both | 192.168.1.105 | X |

| Application | Start and End | Protocol | IP Address | Enable |
|-------------|---------------|----------|---------------|--------|
| PC Anywhere | 5631 to 5631 | UDP | 192.168.1.102 | X |
| VPN IPSEC | 500 to 500 | UDP | 192.168.1.100 | X |

When you have completed the configuration, click the **Save Settings** button.

8. I can't get the Internet game, server, or application to work.

If you are having difficulties getting any Internet game, server, or application to function properly, consider exposing one computer to the Internet using DeMilitarized Zone (DMZ) hosting. This option is available when an application requires too many ports or when you are not sure which port services to use. Make sure you disable all the forwarding entries if you want to successfully use DMZ hosting, since forwarding has priority over DMZ hosting. (In other words, data that enters the Gateway will be checked first by the forwarding settings. If the port number that the data enters from does not have port forwarding, then the Gateway will send the data to whichever computer or network device you set for DMZ hosting.)

- Follow these steps to set DMZ hosting:
 1. Access the Gateway's Web-based Utility by going to <http://192.168.1.1> or the IP address of the Gateway. Go to the Applications and Gaming => DMZ tab. Click **Enable** and enter the IP address of the computer.
 2. Check the Port Forwarding pages and disable or remove the entries you have entered for forwarding. Keep this information in case you want to use it at a later time.
- Once completed with the configuration, click the **Save Settings** button.

9. I forgot my password, or the password prompt always appears when I am saving settings to the Gateway.

- Reset the Gateway to factory default by pressing the Reset button for 10 seconds and then releasing it. If you are still getting prompted for a password when saving settings, then perform the following steps:
 1. Access the Gateway's Web-based Utility by going to <http://192.168.1.1> or the IP address of the Gateway. Enter the default username and password **admin**, and click the **Administrations => Management** tab.
 2. Enter a different password in the *Gateway Password* field, and enter the same password in the second field to confirm the password.
 3. Click the **Save Settings** button.

10. I am a PPPoE user, and I need to remove the proxy settings or the dial-up pop-up window.

If you have proxy settings, you need to disable these on your computer. Because the Gateway is the gateway for the Internet connection, the computer does not need any proxy settings to gain access. Please follow these directions to verify that you do not have any proxy settings and that the browser you use is set to connect directly to the LAN.

- For Microsoft Internet Explorer 5.0 or higher:
 1. Click **Start, Settings, and Control Panel**. Double-click Internet Options.
 2. Click the **Connections** tab.
 3. Click the **LAN settings** button and remove anything that is checked.
 4. Click the **OK** button to go back to the previous screen.
 5. Click the option **Never dial a connection**. This will remove any dial-up pop-ups for PPPoE users.
- For Netscape 6 or higher:
 1. Start **Netscape Navigator**, and click **Edit, Preferences, Advanced, and Proxies**.
 2. Make sure you have Direct connection to the Internet selected on this screen.
 3. Close all the windows to finish.

11. To start over, I need to set the Gateway to factory default.

Hold the **Reset** button for 10 seconds and then release it. This will return the Internet settings, password, forwarding, and other settings on the Gateway to the factory default settings. In other words, the Gateway will revert to its original factory configuration.

12. I need to upgrade the firmware.

In order to upgrade the firmware with the latest features, you need to go to the Linksys international website and download the latest firmware at www.linksys.com/international.

- Follow these steps:
 1. Go to the Linksys international website at <http://www.linksys.com> and select your region or country.
 2. Click the **Products** tab and select the Gateway.
 3. On the Gateway's webpage, click **Firmware**, and then download the latest firmware for the Gateway.
 4. To upgrade the firmware, follow the steps in the Administration section found in "Chapter 5: Configuring the Wireless-N ADSL2+ Gateway."

13. The firmware upgrade failed, and/or the Power LED is flashing.

The upgrade could have failed for a number of reasons. Follow these steps to upgrade the firmware and/or make the Power LED stop flashing:

- If the firmware upgrade failed, use the TFTP program (it was downloaded along with the firmware). Open the pdf that was downloaded along with the firmware and TFTP program, and follow the pdf's instructions.
- Set a static IP address on the computer; refer to "Problem #1, I need to set a static IP address." Use the following IP address settings for the computer you are using:
IP Address: 192.168.1.50
Subnet Mask: 255.255.255.0
Gateway: 192.168.1.1

- Perform the upgrade using the TFTP program or the Gateway's Web-based Utility through its Administration tab.

14. My DSL service's PPPoE is always disconnecting.

PPPoE is not actually a dedicated or always-on connection. The DSL ISP can disconnect the service after a period of inactivity, just like a normal phone dial-up connection to the Internet.

- There is a setup option to "keep alive" the connection. This may not always work, so you may need to re-establish connection periodically.
 1. To connect to the Gateway, go to the web browser, and enter `http://192.168.1.1` or the IP address of the Gateway.
 2. Enter the username and password, if asked. (The default username and password is admin.)
 3. On the *Setup* screen, select the option **Keep Alive**, and set the Redial Period option to **30** (seconds) (this will keep the connection to the ISP and will not disconnect).
 4. Click the **Save Settings** button. Click the **Status** tab, and click the **Connect** button.
 5. You may see the login status display as Connecting. Press the F5 key to refresh the screen, until you see the login status display as Connected.
 6. Click the **Save Settings** button to continue.
- If the connection is lost again, follow steps 1- 6 to re-establish connection.

15. I can't access my e-mail, web, or VPN, or I am getting corrupted data from the Internet.

The Maximum Transmission Unit (MTU) setting may need to be adjusted. By default, the MTU is set automatically.

- If you are having some difficulties, perform the following steps:
 1. To connect to the Gateway, go to the web browser, and enter `http://192.168.1.1` or the IP address of the Gateway.
 2. Enter the username and password, if asked. (The default username and password is admin.)
 3. Look for the MTU option, and select **Manual**. In the *Size* field, enter **1492**.
 4. Click the **Save Settings** button to continue.
- If your difficulties continue, change the Size to different values. Try this list of values, one value at a time, in this order, until your problem is solved:
 - 1462
 - 1400
 - 1362
 - 1300

16. The Power LED flashes continuously.

The Power LED lights up when the device is first powered up. In the meantime, the system will boot up itself and check for proper operation. After finishing the checking procedure, the LED remains steady to show that the system is working fine. If the LED continues to flash after this time, the device is not working properly. Try

to flash the firmware by assigning a static IP address to the computer, and then upgrade the firmware. Try using the following settings, IP Address: 192.168.1.50 and Subnet Mask: 255.255.255.0.

17. When I enter a URL or IP address, I get a time-out error or am prompted to retry.

- Check if other computers work. If they do, ensure that your computer's IP settings are correct (IP Address, Subnet Mask, Default Gateway, and DNS). Restart the computer that is having a problem.
- If the computers are configured correctly, but still not working, check the Gateway. Ensure that it is connected and powered on. Connect to it and check its settings. (If you cannot connect to it, check the LAN and power connections.)
- If the Gateway is configured correctly, check your Internet connection (DSL/cable modem, etc.) to see if it is working correctly. You can remove the Gateway to verify a direct connection.
- Manually configure the TCP/IP settings with a DNS address provided by your ISP.
- Make sure that your browser is set to connect directly and that any dial-up is disabled. For Internet Explorer, click **Tools, Internet Options**, and then the **Connection** tab. Make sure that Internet Explorer is set to **Never dial a connection**. For Netscape Navigator, click **Edit, Preferences, Advanced**, and **Proxy**. Make sure that Netscape Navigator is set to **Direct connection to the Internet**.

18. I'm trying to access the Gateway's Web-based Utility, but I do not see the login screen. Instead, I see a screen saying, "404 Forbidden."

If you are using Windows Explorer, perform the following steps until you see the Web-based Utility's login screen (Netscape Navigator will require similar steps):

1. Click **File**. Make sure *Work Offline* is NOT checked.
 2. Press **CTRL + F5**. This is a hard refresh, which will force Windows Explorer to load new webpages, not cached ones.
- Click **Tools**. Click **Internet Options**. Click the **Security** tab. Click the **Default level** button. Make sure the security level is Medium or lower. Then click the **OK** button.

Frequently Asked Questions

What is the maximum number of IP addresses that the Gateway will support?

The Gateway will support up to 253 IP addresses.

Is IPSec Passthrough supported by the Gateway?

Yes, it is a built-in feature that is enabled by default.

Where is the Gateway installed on the network?

In a typical environment, the Gateway is installed between the ADSL wall jack and the LAN.

Does the Gateway support IPX or AppleTalk?

No. TCP/IP is the only protocol standard for the Internet and has become the global standard for communications. IPX, a NetWare communications protocol used only to route messages from one node to another, and AppleTalk, a communications protocol used on Apple and Macintosh networks, can be used for LAN to LAN connections, but those protocols cannot connect from the Internet to a LAN.

Does the LAN connection of the Gateway support 100Mbps Ethernet?

The Gateway supports 100Mbps over the auto-sensing Fast Ethernet 10/100 switch on the LAN side of the Gateway.

What is Network Address Translation and what is it used for?

Network Address Translation (NAT) translates multiple IP addresses on the private LAN to one public address that is sent out to the Internet. This adds a level of security since the address of a computer connected to the private LAN is never transmitted on the Internet. Furthermore, NAT allows the Gateway to be used with low cost Internet accounts when only one TCP/IP address is provided by the ISP. The user may have many private addresses behind this single address provided by the ISP.

Does the Gateway support any operating system other than Windows 98SE, Windows Millennium, Windows 2000, or Windows XP?

Yes, but Linksys does not, at this time, provide technical support for setup, configuration or troubleshooting of any non-Windows operating systems.

Does the Gateway support ICQ send file?

Yes, with the following fix: click ICQ menu -> preference -> connections tab->, and check I am behind a firewall or proxy. Then set the firewall time-out to 80 seconds in the firewall setting. The Internet user can then send a file to a user behind the Gateway.

I set up an Unreal Tournament Server, but others on the LAN cannot join. What do I need to do?

If you have a dedicated Unreal Tournament server running, you need to create a static IP for each of the LAN computers and forward ports 7777, 7778, 7779, 7780, 7781, and 27900 to the IP address of the server. You can also use a port forwarding range of 7777 ~ 27900. If you want to use the UT Server Admin, forward another port. (Port 8080 usually works well but is used for remote admin. You may have to disable this.) Then in the [UWeb.WebServer] section of the server.ini file, set the ListenPort to 8080 (to match the mapped port above) and ServerName to the IP assigned to the Gateway from your ISP.

Can multiple gamers on the LAN get on one game server and play simultaneously with just one public IP address?

It depends on which network game or what kind of game server you are using. For example, Unreal Tournament supports multi-login with one public IP.

How do I get Half-Life: Team Fortress to work with the Gateway?

The default client port for Half-Life is 27005. The computers on your LAN need to have "+clientport 2700x" added to the HL shortcut command line; the x would be 6, 7, 8, and on up. This lets multiple computers connect to the same server. One problem: Version 1.0.1.6 won't let multiple computers with the same CD key connect at the same time, even if on the same LAN (not a problem with 1.0.1.3). As far as hosting games, the HL server does not need to be in the DMZ. Just forward port 27015 to the local IP address of the server computer.

The web page hangs; downloads are corrupt, or nothing but junk characters are being displayed on the screen. What do I need to do?

Force your Ethernet adapter to 10Mbps or half duplex mode, and turn off the "Auto-negotiate" feature of your Ethernet adapter as a temporary measure. (Please look at the Network Control Panel in your Ethernet adapter's Advanced Properties tab.) Make sure that your proxy setting is disabled in the browser. Check our website at www.linksys.com for more information.

If all else fails in the installation, what can I do?

Reset the Gateway by holding down the reset button until the Power LED fully turns on and off. Reset your DSL modem by powering the unit off and then on. Obtain and flash the latest firmware release that is readily available on the Linksys international website, www.linksys.com.

How will I be notified of new Gateway firmware upgrades?

All Linksys firmware upgrades are posted on the Linksys international website at www.linksys.com, where they can be downloaded for free. To upgrade the Gateway's firmware, use the Administration tab of the Gateway's Web-based Utility. If the Gateway's Internet connection is working well, there is no need to download a newer firmware version, unless that version contains new features that you would like to use.

Will the Gateway function in a Macintosh environment?

Yes, but the Gateway's setup pages are accessible only through Internet Explorer 4.0 or Netscape Navigator 4.0 or higher for Macintosh.

I am not able to get the web configuration screen for the Gateway. What can I do?

You may have to remove the proxy settings on your Internet browser, e.g., Netscape Navigator or Internet Explorer. Check with your browser documentation, and make sure that your browser is set to connect directly and that any dial-up is disabled. For Internet Explorer, click Tools, Internet Options, and then the Connection tab. Make sure that Internet Explorer is set to Never dial a connection. For Netscape Navigator, click Edit, Preferences, Advanced, and Proxy. Make sure that Netscape Navigator is set to Direct connection to the Internet.

What is DMZ Hosting?

Demilitarized Zone (DMZ) allows one IP address (computer) to be exposed to the Internet. Some applications require multiple TCP/IP ports to be open. It is recommended that you set your computer with a static IP if you

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want to use DMZ Hosting. To get the LAN IP address, see “Appendix C: Finding the MAC Address and IP Address for Your Ethernet Adapter.”

If DMZ Hosting is used, does the exposed user share the public IP with the Gateway?

No.

Does the Gateway pass PPTP packets or actively route PPTP sessions?

The Gateway allows PPTP packets to pass through.

Is the Gateway cross-platform compatible?

Any platform that supports Ethernet and TCP/IP is compatible with the Gateway.

How many ports can be simultaneously forwarded?

Theoretically, the Gateway can establish 520 sessions at the same time, but you can only forward 10 ranges of ports.

What are the advanced features of the Gateway?

The Gateway’s advanced features include Advanced Wireless settings, Filters, Port Forwarding, Routing, and DDNS.

How can I check whether I have static or DHCP IP Addresses?

Consult your ISP to obtain this information.

How do I get mIRC to work with the Gateway?

Under the Port Forwarding tab, set port forwarding to 113 for the computer on which you are using mIRC.

Can the Gateway act as my DHCP server?

Yes. The Gateway has DHCP server software built-in.

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 documentation to determine if it supports operation over a network.

What is the IEEE 802.11g standard?

It is one of the IEEE standards for wireless networks. The 802.11g standard allows wireless networking hardware from different manufacturers to communicate, provided that the hardware complies with the 802.11g standard. The 802.11g standard states a maximum data transfer rate of 54Mbps and an operating frequency of 2.4GHz.

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.

What IEEE 802.11b and 802.11g features are supported?

The product supports the following IEEE 802.11b and IEEE 802.11g functions:

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

It also supports OFDM technology for 802.11g networking.

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, peer-to-peer without the use of an access point.

What is infrastructure mode?

When a wireless network is set to infrastructure mode, the wireless network is configured to communicate with a 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 computer 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 the 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.

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).

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.

Will the information be intercepted while it is being transmitted through the 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 64-bit or 128-bit shared key algorithm, as described in the IEEE 802.11 standard.

What is a MAC Address?

The Media Access Control (MAC) address is a unique number assigned by the manufacturer to any Ethernet networking device, such as a network adapter, that allows the network to identify it at the hardware level. For all

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practical purposes, this number is usually permanent. Unlike IP addresses, which can change every time a computer logs onto the network, the MAC address of a device stays the same, making it a valuable identifier for the network.

How do I reset the Gateway?

Press the Reset button on the back panel for about ten seconds. This will reset the Gateway to its default settings.

How do I resolve issues with signal loss?

There is no way to know the exact range of your wireless network without testing. Every obstacle placed between the Gateway and a wireless computer will create signal loss. Lead glass, metal, concrete floors, water and walls will inhibit the signal and reduce range. Start with the Gateway and your wireless computer in the same room and move it away in small increments to determine the maximum range in your environment.

You may also try using different channels, as this may eliminate interference affecting only one channel.

I have excellent signal strength, but I cannot see my network.

Wireless security is probably enabled on the Gateway, but not on your wireless adapter (or vice versa). Verify that the same wireless security settings are being used on all devices of your wireless network.

How many channels/frequencies are available with the Gateway?

There are eleven available channels, ranging from 1 to 11, in most of North, Central, and South America. There are thirteen available channels, ranging from 1 to 13, in most of Europe. There may be additional channels available in other regions, subject to the regulations of your region and/or country.

If your questions are not addressed here, refer to the Linksys website, www.linksys.com.

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.

For information on implementing these security features, refer to “Chapter 5: Configuring the Wireless-N ADSL2+ Gateway.”

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.



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

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. Pre-Shared Key (WPA) is the newest and best available standard in Wi-Fi security. **WPA2** is the newer version of Pre-Shared Key with stronger encryption than WPA. WPA 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. WPA-Enterprise and WPA2-Enterprise use a RADIUS (Remote Authentication Dial-In User Service) server for authentication. RADIUS uses a RADIUS server and WEP encryption.



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.

WPA-Personal. Select the type of algorithm, TKIP or AES, enter a password in the Passphrase field of 8-63 characters, and enter a Group Key Renewal period time between 0 and 99,999 seconds, which instructs the Gateway or other device how often it should change the encryption keys.

WPA2-Personal. WPA2 gives you one encryption method, AES, with dynamic encryption keys. Enter a Passphrase of 8-63 characters. Then enter a Group Key Renewal period, which instructs the Gateway how often it should change the encryption keys.

WPA-Enterprise. This method is WPA used in coordination with a RADIUS server. Enter the IP address and port number of the RADIUS server. Then enter the key shared between the Gateway and its RADIUS server. Then enter a Key Renewal Timeout period, which instructs the Gateway how often it should change the encryption keys.

WPA2-Enterprise. This method is WPA2 used in coordination with a RADIUS server. Enter the IP address and port number of the RADIUS server. Then enter the key shared between the Gateway and its RADIUS server. Then enter a Key Renewal Timeout period, which instructs the Gateway how often it should change the encryption keys.

RADIUS. This method is WEP used in coordination with a RADIUS server. Enter the IP address and port number of the RADIUS server. Then enter the key shared between the Gateway and its RADIUS server. Enter the WEP settings.

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: Finding the MAC Address and IP Address for Your Ethernet Adapter

This section describes how to find the MAC address for your computer's Ethernet adapter so you can use the MAC filtering feature of the Gateway. You can also find the IP address of your computer's Ethernet adapter. This IP address is used for the Gateway's filtering, forwarding, and/or DMZ features. Follow the steps in this appendix to find the adapter's MAC or IP address in Windows 98, Me, 2000, or XP.

Windows 98 or Me Instructions

1. Click **Start** and **Run**. In the *Open* field, enter **winipcfg**. Then press the **Enter** key or the **OK** button.
2. When the *IP Configuration* screen appears, select the Ethernet adapter you have connected to the Gateway via a CAT 5 Ethernet network cable. See Figure C-1.
3. Write down the Adapter Address as shown on your computer screen (see Figure C-2). This is the MAC address for your Ethernet adapter and is shown in hexadecimal as a series of numbers and letters.

The MAC address/Adapter Address is what you will use for MAC filtering. The example in Figure D-2 shows the Ethernet adapters's MAC address as 00-00-00-00-00-00. Your computer will show something different.

The example in Figure C-2 shows the Ethernet adapter's IP address as 192.168.1.100. Your computer may show something different.



NOTE: The MAC address is also called the Adapter Address.

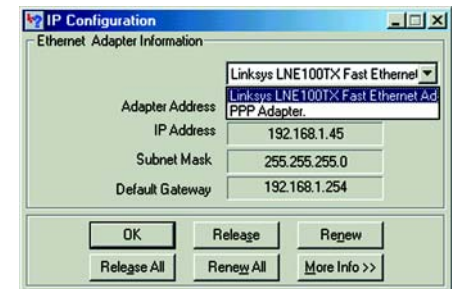


Figure C-1: IP Configuration Screen

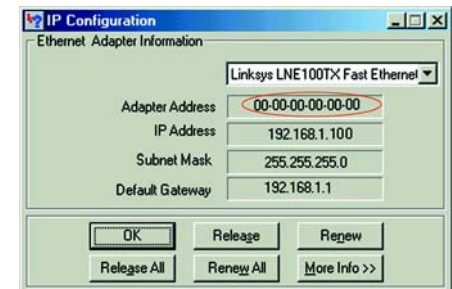


Figure C-2: MAC Address/Adapter Address

Windows 2000 or XP Instructions

1. Click **Start** and **Run**. In the *Open* field, enter **cmd**. Press the **Enter** key or click the **OK** button.



NOTE: The MAC address is also called the Physical Address.

2. At the command prompt, enter **ipconfig /all**. Then press the **Enter** key.
3. Write down the Physical Address as shown on your computer screen (Figure C-3); it is the MAC address for your Ethernet adapter. This appears as a series of numbers and letters.

The MAC address/Physical Address is what you will use for MAC filtering. The example in Figure C-3 shows the Ethernet adapters's MAC address as 00-00-00-00-00-00. Your computer will show something different.

The example in Figure C-3 shows the Ethernet adapter's IP address as 192.168.1.100. Your computer may show something different.

```
C:\>ipconfig /all

Windows 2000 IP Configuration

Host Name . . . . . : 
Primary DNS Suffix . . . . . : 
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  : 
   Description . . . . . : Linksys LNE100TX(v5) Fast Ethernet A
dapter
   Physical Address. . . . . : 00-00-00-00-00-00
   DHCP Enabled. . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   IP Address. . . . . : 192.168.1.100
   Subnet Mask . . . . . : 255.255.255.0
   Default Gateway . . . . . : 192.168.1.1
   DHCP Server . . . . . : 192.168.1.1
   DNS Servers . . . . . : 192.168.1.1

   Primary WINS Server . . . . . : 192.168.1.1
   Secondary WINS Server . . . . . : 
   Lease Obtained. . . . . : Monday, February 11, 2002 2:31:47 P
M
   Lease Expires . . . . . : Tuesday, February 12, 2002 2:31:47 P
M

C:\>
```

Figure C-3: MAC Address/Physical Address

Appendix D: Upgrading Firmware

To upgrade the Gateway's firmware:

1. Download the Gateway's firmware upgrade file from *www.linksys.com/international*.
2. Extract the file on your computer.
3. Open the Gateway's Web-based Utility and click the **Administration** tab.
4. Click the **Firmware Upgrade** tab.
5. Click the **Browse** button to find the extracted file, and then double-click it.
6. Click the **Upgrade** button, and follow the on-screen instructions.

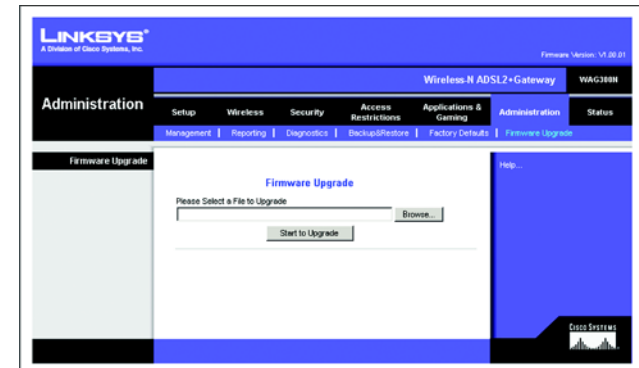


Figure D-1: Firmware Upgrade

Appendix E: Glossary

This glossary contains some basic networking terms you may come across when using this product. For more advanced terms, see the complete Linksys glossary at <http://www.linksys.com/glossary>.

Access Point - A device that allows wireless-equipped computers and other devices to communicate with a wired network. Also used to expand the range of a wireless network.

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

AES (Advanced Encryption Standard) - A security method that uses symmetric 128-bit block data encryption.

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.

Broadband - An always-on, fast Internet connection.

Browser - An application program that provides a way to look at and interact with all the information on the World Wide Web.

Byte - A unit of data that is usually eight bits long.

Cable Modem - A device that connects a computer to the cable television network, which in turn connects to the Internet.

Daisy Chain - A method used to connect devices in a series, one after the other.

DDNS (Dynamic Domain Name System) - Allows the hosting of a website, FTP server, or e-mail server with a fixed domain name (e.g., www.xyz.com) and a dynamic IP address.

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

DHCP (Dynamic Host Configuration Protocol) - 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.

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DMZ (Demilitarized Zone) - Removes the Router's firewall protection from one PC, allowing it to be "seen" from the Internet.

DNS (Domain Name Server) - The IP address of your ISP's server, which translates the names of websites into IP addresses.

Domain - A specific name for a network of computers.

Download - To receive a file transmitted over a network.

DSL (Digital Subscriber Line) - An always-on broadband connection over traditional phone lines.

Dynamic IP Address - A temporary IP address assigned by a DHCP server.

EAP (Extensible Authentication Protocol) - A general authentication protocol used to control network access. Many specific authentication methods work within this framework.

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.

Firewall - A set of related programs located at a network gateway server that protects the resources of a network from users from other networks.

Firmware - The programming code that runs a networking device.

FTP (File Transfer Protocol) - A protocol used to transfer files over a TCP/IP network.

Full Duplex - The ability of a networking device to receive and transmit data simultaneously.

Gateway - A device that interconnects networks with different, incompatible communications protocols.

Half Duplex - Data transmission that can occur in two directions over a single line, but only one direction at a time.

HTTP (HyperText Transport Protocol) - The communications protocol used to connect to servers on the World Wide Web.

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

IP (Internet Protocol) - A protocol used to send data over a network.

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

IPCONFIG - A Windows 2000 and XP utility that displays the IP address for a particular networking device.

IPSec (Internet Protocol Security) - A VPN protocol used to implement secure exchange of packets at the IP layer.

ISP (Internet Service Provider) - A company that provides access to the Internet.

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

MAC (Media Access Control) Address - The unique address that a manufacturer assigns to each networking device.

Mbps (MegaBits Per Second) - One million bits per second; a unit of measurement for data transmission.

NAT (Network Address Translation) - NAT technology translates IP addresses of a local area network to a different IP address for the Internet.

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

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.

Ping (Packet Internet Groper) - An Internet utility used to determine whether a particular IP address is online.

POP3 (Post Office Protocol 3) - A standard mail server commonly used on the Internet.

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

Power over Ethernet (PoE) - A technology enabling an Ethernet network cable to deliver both data and power.

PPPoE (Point to Point Protocol over Ethernet) - A type of broadband connection that provides authentication (username and password) in addition to data transport.

PPTP (Point-to-Point Tunneling Protocol) - A VPN protocol that allows the Point to Point Protocol (PPP) to be tunneled through an IP network. This protocol is also used as a type of broadband connection in Europe.

RADIUS (Remote Authentication Dial-In User Service) - A protocol that uses an authentication server to control network access.

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RJ-45 (Registered Jack-45) - An Ethernet connector that holds up to eight wires.

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.

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

SMTP (Simple Mail Transfer Protocol) - The standard e-mail protocol on the Internet.

SNMP (Simple Network Management Protocol) - A widely used network monitoring and control protocol.

SPI (Stateful Packet Inspection) Firewall - A technology that inspects incoming packets of information before allowing them to enter the network.

SSID (Service Set Identifier) - Your wireless network's name.

Static IP Address - A fixed address assigned to a computer or device that is connected to a network.

Static Routing - Forwarding data in a network via a fixed path.

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 (Transmission Control Protocol) - A network protocol for transmitting data that requires acknowledgement from the recipient of data sent.

TCP/IP (Transmission Control Protocol/Internet Protocol) - A set of instructions PCs use to communicate over a network.

Telnet - A user command and TCP/IP protocol used for accessing remote PCs.

TFTP (Trivial File Transfer Protocol) - A version of the TCP/IP FTP protocol that has no directory or password capability.

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

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TKIP (Temporal Key Integrity Protocol) - a wireless encryption protocol that provides dynamic encryption keys for each packet transmitted.

Topology - The physical layout of a network.

TX Rate - Transmission Rate.

Upgrade - To replace existing software or firmware with a newer version.

Upload - To transmit a file over a network.

URL (Uniform Resource Locator) - The address of a file located on the Internet.

VPN (Virtual Private Network) - A security measure to protect data as it leaves one network and goes to another over the Internet.

WAN (Wide Area Network)- The Internet.

WEP (Wired Equivalent Privacy) - A method of encrypting network data transmitted on a wireless network for greater security.

WLAN (Wireless Local Area Network) - A group of computers and associated devices that communicate with each other wirelessly.

WPA (Wi-Fi Protected Access) - A wireless security protocol using TKIP (Temporal Key Integrity Protocol) encryption, which can be used in conjunction with a RADIUS server.

Appendix F: Specifications

Model Number WAG325N-Annex A, WAG325N-Annex B

Standards Draft802.11n,802.11g,802.11b

Ports Power, DSL, Ethernet (1-4)

Button Reset, Power

Cabling Type CAT 5 UTP

LEDs Power, Wireless, Ethernet (1-4), DSL, Internet

Number of Antennas 3

Connector Type Fixed

Detachable (yes/no) no

UPnP able/cert Able

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| | |
|---------------------------|--|
| Security Features | Password protected configuration for web access PAP and CHAP authentication Denial of Service (DoS) Prevention URL filtering, and keyword, Java, ActiveX, Proxy, Cookie blocking ToD filter (Blocks Access by Time VPN Passthrough for IPSec, PPTP, and L2TP Protocols 128, 64 bits WEP with Passphrase WEP key generation SSID Broadcast Disable Access restriction by MAC and IP addresses |
| WEP Key Bits | 64, 128 |
| Dimensions | 140 mm x 140 mm x 27 mm |
| Unit Weight | 0.27 kg |
| Power | 12VDC, 1A |
| Certifications | CE |
| Operating Temp. | 0° to 40°C |
| Storage Temp. | -20° to 70°C |
| Operating Humidity | 10 to 85% Non-Condensing |
| Storage Humidity | 5 to 90% Non-Condensing |

Note: Actual broadband speeds are dependent on the ISP, wireless security, and other factors.

Appendix G: Warranty Information

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.

This Warranty is valid and may be processed only in the country of purchase.

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

Appendix I: Regulatory Information

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 Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

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.

Industry Canada (Canada)

This device complies with Industry Canada ICES-003 and RSS210 rules.

Cet appareil est conforme aux normes NMB003 et RSS210 d'Industrie Canada.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Wireless-N ADSL2+ Gateway

IC Statement

Operation is subject to the following two conditions:

1. This device may not cause interference and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Règlement d'Industry Canada

Le fonctionnement est soumis aux conditions suivantes :

1. Ce périphérique ne doit pas causer d'interférences;
2. Ce périphérique doit accepter toutes les interférences reçues, y compris celles qui risquent d'entraîner un fonctionnement indésirable.

Wireless-N ADSL2+ Gateway

Compliance Information for 2,4-GHz and 5-GHz Wireless Products Relevant to the EU and Other Countries Following the EU Directive 1999/5/EC (R&TTE Directive)

Declaration of Conformity with Regard to the EU Directive 1999/5/EC (R&TTE Directive)

| | |
|----------------------------|--|
| Česky [Czech]: | Toto zařízení je v souladu se základními požadavky a ostatními odpovídajícími ustanoveními Směrnice 1999/5/EC. |
| Dansk [Danish]: | Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Direktiv 1999/5/EF. |
| Deutsch [German]: | Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU. |
| Eesti [Estonian]: | See seade vastab direktiivi 1999/5/EÜ olulistele nõuetele ja teistele asjakohastele sätetele. |
| English: | This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. |
| Español [Spanish]: | Este equipo cumple con los requisitos esenciales así como con otras disposiciones de la Directiva 1999/5/CE. |
| Ελληνική [Greek]: | Αυτός ο εξοπλισμός είναι σε συμμόρφωση με τις ουσιαστικές απαιτήσεις και άλλες σχετικές διατάξεις της Οδηγίας 1999/5/EC. |
| Français [French]: | Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la Directive 1999/5/EC. |
| Íslenska [Icelandic]: | Þetta tæki er samkvæmt grunnkröfum og öðrum viðeigandi ákvæðum Tilskipunar 1999/5/EC. |
| Italiano [Italian]: | Questo apparato é conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 1999/5/CE. |
| Latviski [Latvian]: | Šī iekārta atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem. |
| Lietuvių [Lithuanian]: | Šis įrenginys tenkina 1999/5/EB Direktyvos esminius reikalavimus ir kitas šios direktyvos nuostatas. |
| Nederlands [Dutch]: | Dit apparaat voldoet aan de essentiële eisen en andere van toepassing zijnde bepalingen van de Richtlijn 1999/5/EC. |
| Malti [Maltese]: | Dan l-apparat huwa konformi mal-htigiet essenzjali u l-provedimenti l-oħra rilevanti tad-Direttiva 1999/5/EC. |
| Magyar [Hungarian]: | Ez a készülék teljesíti az alapvető követelményeket és más 1999/5/EK irányelvben meghatározott vonatkozó rendelkezéseket. |
| Norsk [Norwegian]: | Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-direktiv 1999/5/EF. |
| Polski [Polish]: | Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami określonymi Dyrektywą UE: 1999/5/EC. |
| Português [Portuguese]: | Este equipamento está em conformidade com os requisitos essenciais e outras provisões relevantes da Directiva 1999/5/EC. |
| Română [Romanian]: | Acest echipament este în conformitate cu cerințele esențiale și cu alte prevederi relevante ale Directivei 1999/5/EC. |
| Slovensko [Slovenian]: | Ta naprava je skladna z bistvenimi zahtevami in ostalimi relevantnimi pogoji Direktive 1999/5/EC. |
| Slovensky [Slovak]: | Toto zariadenie je v zhode so základnými požiadavkami a inými príslušnými nariadeniami direktív: 1999/5/EC. |
| Suomi [Finnish]: | Tämä laite täyttää direktiivin 1999/5/EY olennaiset vaatimukset ja on siinä asetettujen muiden laitetta koskevien määräysten mukainen. |
| Svenska [Swedish]: | Denna utrustning är i överensstämmelse med de väsentliga kraven och andra relevanta bestämmelser i Direktiv 1999/5/EC. |

NOTE: For all products, the Declaration of Conformity (DofC) is available through one or more of these options:

- A pdf file is included on the product's CD.
- A print copy is included with the product.
- A pdf file is available on the product's webpage. Visit www.linksys.com/international and select your country or region. Then select your product.

If you need any other technical documentation, see the “Technical Documents on www.linksys.com/international” section, as shown later in this appendix.

The following standards were applied during the assessment of the product against the requirements of the Directive 1999/5/EC:

- Radio: EN 300 328 and/or EN 301 893 as applicable
- EMC: EN 301 489-1, EN 301 489-17
- Safety: EN 60950 and either EN 50385 or EN 50371

Dynamic Frequency Selection (DFS) and Transmit Power Control (TPC) are required for operation in the 5 GHz band.

DFS: The equipment meets the DFS requirements as defined in ETSI EN 301 893. This feature is required by the regulations to avoid interference with Radio Location Services (radars).

TPC: For operation in the 5 GHz band, the maximum power level is 3 dB or more below the applicable limit. As such, TPC is not required. Nevertheless, you can further reduce the power output if you wish to do so. For more information about changing the power output settings, refer to your product's documentation on its CD or www.linksys.com/international.

CE Marking

For the Linksys Wireless-N, -G, -B, and/or -A products, the following CE mark, notified body number (where applicable), and class 2 identifier are added to the equipment.

CE 0560 ! or CE 0678 ! or CE 0336 ! or CE !

Check the CE label on the product to find out which notified body was involved during the assessment.

National Restrictions

This product may be used in all EU countries (and other countries following the EU directive 1999/5/EC) without any limitation except for the countries mentioned below:

Ce produit peut être utilisé dans tous les pays de l'UE (et dans tous les pays ayant transposés la directive 1999/5/CE) sans aucune limitation, excepté pour les pays mentionnés ci-dessous:

Questo prodotto è utilizzabile in tutte i paesi EU (ed in tutti gli altri paesi che seguono le direttive EU 1999/5/EC) senza nessuna limitazione, eccetto per i paesi menzionati di seguito:

Das Produkt kann in allen EU Staaten ohne Einschränkungen eingesetzt werden (sowie in anderen Staaten die der EU Direktive 1999/5/CE folgen) mit Ausnahme der folgenden aufgeführten Staaten:

In the majority of the EU and other European countries, the 2,4- and 5-GHz bands have been made available for the use of wireless local area networks (LANs). Table 1 provides an overview of the regulatory requirements applicable for the 2,4- and 5-GHz bands.

Later in this document you will find an overview of countries in which additional restrictions or requirements or both are applicable.

The requirements for any country may evolve. Linksys recommends that you check with the local authorities for the latest status of their national regulations for both the 2,4- and 5-GHz wireless LANs.

Table 1: Overview of Regulatory Requirements for Wireless LANs

| Frequency Band (MHz) | Max Power Level (EIRP) (mW) | Indoor ONLY | Indoor & Outdoor |
|------------------------|-----------------------------|-------------|------------------|
| 2400-2483.5 | 100 | | X |
| 5150-5350 [†] | 200 | X | |
| 5470-5725 [†] | 1000 | | X |

[†] Dynamic Frequency Selection and Transmit Power Control are required in the frequency ranges of 5250-5350 MHz and 5470-5725 MHz.

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The following countries have restrictions and/or requirements in addition to those given in Table 1:

Denmark

In Denmark, the band 5150 - 5350 MHz is also allowed for outdoor usage.

I Danmark må frekvensbåndet 5150 - 5350 også anvendes udendørs.

France

For 2,4 GHz, the output power is restricted to 10 mW eirp when the product is used outdoors in the band 2454 - 2483,5 MHz. There are no restrictions when used in other parts of the 2,4 GHz band. Check <http://www.arcep.fr/> for more details.

Pour la bande 2,4 GHz, la puissance est limitée à 10 mW en p.i.r.e. pour les équipements utilisés en extérieur dans la bande 2454 - 2483,5 MHz. Il n'y a pas de restrictions pour des utilisations dans d'autres parties de la bande 2,4 GHz. Consultez <http://www.arcep.fr/> pour de plus amples détails.

Table 2: Applicable Power Levels in France

| Location | Frequency Range (MHz) | Power (EIRP) |
|--------------------------|--------------------------|-----------------------------------|
| Indoor (No restrictions) | 2400-2483.5 | 100 mW (20 dBm) |
| Outdoor | 2400-2454 2454-2483.5 | 100 mW (20 dBm) 10 mW (10 dBm) |

Italy

This product meets the National Radio Interface and the requirements specified in the National Frequency Allocation Table for Italy. Unless this 2,4-GHz wireless LAN product is operating within the boundaries of the owner's property, its use requires a "general authorization". Please check <http://www.comunicazioni.it/it/> for more details.

Questo prodotto è conforme alla specifiche di Interfaccia Radio Nazionali e rispetta il Piano Nazionale di ripartizione delle frequenze in Italia. Se non viene installato all'interno del proprio fondo, l'utilizzo di prodotti Wireless LAN a 2,4 GHz richiede una "Autorizzazione Generale". Consultare <http://www.comunicazioni.it/it/> per maggiori dettagli.

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Latvia

The outdoor usage of the 2,4 GHz band requires an authorization from the Electronic Communications Office. Please check <http://www.esd.lv> for more details.

*2,4 GHz frekvenču joslas izmantošanai ārpus telpām nepieciešama atļauja no Elektronisko sakaru direkcijas.
Vairāk informācijas: <http://www.esd.lv>.*

Notes: (1) Although Norway, Switzerland and Liechtenstein are not EU member states, the EU Directive 1999/5/EC has also been implemented in those countries.

(2) The regulatory limits for maximum output power are specified in eirp. The eirp level of a device can be calculated by adding the gain of the antenna used (specified in dBi) to the output power available at the connector (specified in dBm).

Product Usage Restrictions

This product is designed for indoor usage only. Outdoor usage is not recommended, unless otherwise noted.

2,4 GHz Restrictions

This product is designed for use with the standard, integral or dedicated (external) antenna(s) that is/are shipped together with the equipment. However, some applications may require the antenna(s), if removable, to be separated from the product and installed remotely from the device by using extension cables. For these applications, Linksys offers an R-SMA extension cable (AC9SMA) and an R-TNC extension cable (AC9TNC). Both of these cables are 9 meters long and have a cable loss (attenuation) of 5 dB. To compensate for the attenuation, Linksys also offers higher gain antennas, the HGA7S (with R-SMA connector) and HGA7T (with R-TNC connector). These antennas have a gain of 7 dBi and may only be used with either the R-SMA or R-TNC extension cable.

Combinations of extension cables and antennas resulting in a radiated power level exceeding 100 mW EIRP are illegal.

Power Output of Your Device

To comply with your country's regulations, you may have to change the power output of your wireless device. Proceed to the appropriate section for your device.

NOTE: The power output setting may not be available on all wireless products. For more information, refer to the documentation on your product's CD or at <http://www.linksys.com/international>.

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Wireless Adapters

For wireless adapters operating in the 2,4-GHz band, the typical radiated output power is 18 dBm EIRP, while the maximum radiated output power will not exceed 20 dBm

(100 mW) EIRP. For wireless adapters operating in the 5-GHz band, the typical radiated output power is 20 dBm EIRP, while the maximum radiated output power will not exceed 23 dBm (200 mW) EIRP. If you need to alter your wireless adapter's power output, follow the appropriate instructions for your computer's operating system:

Windows XP

1. Double-click the **Wireless** icon in your desktop's system tray.
2. Open the *Wireless Network Connection* window.
3. Click the **Properties** button.
4. Select the **General** tab, and click the **Configure** button.
5. In the *Properties* window, click the **Advanced** tab.
6. Select **Power Output**.
7. From the pull-down menu on the right, select the adapter's power output percentage.

Windows 2000

1. Open the **Control Panel**.
2. Double-click **Network and Dial-Up Connections**.
3. Select your current wireless connection, and select **Properties**.
4. From the Properties screen, click the **Configure** button.
5. Click the **Advanced** tab, and select **Power Output**.
6. From the pull-down menu on the right, select the adapter's power setting.

If your computer is running Windows Millennium or 98, then refer to Windows Help for instructions on how to access the advanced settings of a network adapter.

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Wireless Access Points, Routers, or Other Wireless Products

If you have a different wireless product, use its Web-based Utility to configure its power output setting (refer to the product's documentation for more information).

Technical Documents on www.linksys.com/international

Follow these steps to access technical documents:

1. Enter <http://www.linksys.com/international> in your web browser.
2. Select the country or region in which you live.
3. Click the **Products** tab.
4. Select the appropriate product category.
5. Select the product sub-category, if necessary.
6. Select the product.
7. Select the type of documentation you want from the More Information section. The document will open in PDF format if you have Adobe Acrobat installed on your computer.

NOTE: If you have questions regarding the compliance of this product or you cannot find the information you need, please contact your local sales office or visit <http://www.linksys.com/international> for more details.

User Information for Consumer Products Covered by EU Directive 2002/96/EC on Waste Electric and Electronic Equipment (WEEE)

This document contains important information for users with regards to the proper disposal and recycling of Linksys products. Consumers are required to comply with this notice for all electronic products bearing the following symbol:



English

Environmental Information for Customers in the European Union

European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

Ceština/Czech

Informace o ochraně životního prostředí pro zákazníky v zemích Evropské unie

Evropská směrnice 2002/96/ES zakazuje, aby zařízení označené tímto symbolem na produktu anebo na obalu bylo likvidováno s netříděným komunálním odpadem. Tento symbol udává, že daný produkt musí být likvidován odděleně od běžného komunálního odpadu. Odpovídáte za likvidaci tohoto produktu a dalších elektrických a elektronických zařízení prostřednictvím určených sběrných míst stanovených vládou nebo místními úřady. Správná likvidace a recyklace pomáhá předcházet potenciálním negativním dopadům na životní prostředí a lidské zdraví. Podrobnější informace o likvidaci starého vybavení si laskavě vyžádejte od místních úřadů, podniku zabývajícího se likvidací komunálních odpadů nebo obchodu, kde jste produkt zakoupili.

Dansk/Danish

Miljøinformation for kunder i EU

EU-direktiv 2002/96/EF kræver, at udstyr der bærer dette symbol på produktet og/eller emballagen ikke må bortskaffes som usorteret kommunalt affald. Symbolet betyder, at dette produkt skal bortskaffes adskilt fra det almindelige husholdningsaffald. Det er dit ansvar at bortskaffe dette og andet elektrisk og elektronisk udstyr via bestemte indsamlingssteder udpeget af staten eller de lokale myndigheder. Korrekt bortskaffelse og genvinding vil hjælpe med til at undgå mulige skader for miljøet og menneskers sundhed. Kontakt venligst de lokale myndigheder, renovationstjenesten eller den butik, hvor du har købt produktet, angående mere detaljeret information om bortskaffelse af dit gamle udstyr.

Deutsch/German

Umweltinformation für Kunden innerhalb der Europäischen Union

Die Europäische Richtlinie 2002/96/EC verlangt, dass technische Ausrüstung, die direkt am Gerät und/oder an der Verpackung mit diesem Symbol versehen ist nicht zusammen mit unsortiertem Gemeindeabfall entsorgt werden darf. Das Symbol weist darauf hin, dass das Produkt von regulärem Haushaltsmüll getrennt entsorgt werden sollte. Es liegt in Ihrer Verantwortung, dieses Gerät und andere elektrische und elektronische Geräte über die dafür zuständigen und von der Regierung oder örtlichen Behörden dazu bestimmten Sammelstellen zu entsorgen. Ordnungsgemäßes Entsorgen und Recyceln trägt dazu bei, potentielle negative Folgen für Umwelt und die menschliche Gesundheit zu vermeiden. Wenn Sie weitere Informationen zur Entsorgung Ihrer Altgeräte benötigen, wenden Sie sich bitte an die örtlichen Behörden oder städtischen Entsorgungsdienste oder an den Händler, bei dem Sie das Produkt erworben haben.

Eesti/Estonian

Keskkonnaalane informatsioon Euroopa Liidus asuvatele klientidele

Euroopa Liidu direktiivi 2002/96/EÜ nõuete kohaselt on seadmeid, millel on tootel või pakendil käesolev sümbol, keelatud kõrvaldada koos sorteerimata olmejäätmetega. See sümbol näitab, et toode tuleks kõrvaldada eraldi tavalistest olmejäätmevoogudest. Olete kohustatud kõrvaldama käesoleva ja ka muud elektri- ja elektroonikaseadmed riigi või kohalike ametiasutuste poolt ette nähtud kogumispunktide kaudu. Seadmete korrektne kõrvaldamine ja ringlussevõtt aitab vältida võimalikke negatiivseid tagajärgi keskkonnale ning inimeste tervisele. Vanade seadmete kõrvaldamise kohta täpsema informatsiooni saamiseks võtke palun ühendust kohalike ametiasutustega, jäätmekäitlusfirmaga või kauplusega, kust te toote ostsite.

Español/Spanish

Información medioambiental para clientes de la Unión Europea

La Directiva 2002/96/CE de la UE exige que los equipos que lleven este símbolo en el propio aparato y/o en su embalaje no deben eliminarse junto con otros residuos urbanos no seleccionados. El símbolo indica que el producto en cuestión debe separarse de los residuos domésticos convencionales con vistas a su eliminación. Es responsabilidad suya desechar este y cualesquiera otros aparatos eléctricos y electrónicos a través de los puntos de recogida que ponen a su disposición el gobierno y las autoridades locales. Al desechar y reciclar correctamente estos aparatos estará contribuyendo a evitar posibles consecuencias negativas para el medio ambiente y la salud de las personas. Si desea obtener información más detallada sobre la eliminación segura de su aparato usado, consulte a las autoridades locales, al servicio de recogida y eliminación de residuos de su zona o pregunte en la tienda donde adquirió el producto.

Ελληνικά/Greek

Στοιχεία περιβαλλοντικής προστασίας για πελάτες εντός της Ευρωπαϊκής Ένωσης

Η Κοινοτική Οδηγία 2002/96/EC απαιτεί ότι ο εξοπλισμός ο οποίος φέρει αυτό το σύμβολο στο προϊόν και/ή στη συσκευασία του δεν πρέπει να απορρίπτεται μαζί με τα μικτά κοινотικά απορρίμματα. Το σύμβολο υποδεικνύει ότι αυτό το προϊόν θα πρέπει να απορρίπτεται ξεχωριστά από τα συνήθη οικιακά απορρίμματα. Είστε υπεύθυνος για την απόρριψη του παρόντος και άλλου ηλεκτρικού και ηλεκτρονικού εξοπλισμού μέσω των καθορισμένων εγκαταστάσεων συγκέντρωσης απορριμμάτων οι οποίες παρέχονται από το κράτος ή τις αρμόδιες τοπικές αρχές. Η σωστή απόρριψη και ανακύκλωση συμβάλλει στην πρόληψη πιθανών αρνητικών συνεπειών για το περιβάλλον και την υγεία. Για περισσότερες πληροφορίες σχετικά με την απόρριψη του παλιού σας εξοπλισμού, παρακαλώ επικοινωνήστε με τις τοπικές αρχές, τις υπηρεσίες απόρριψης ή το κατάστημα από το οποίο αγοράσατε το προϊόν.

Français/French

Informations environnementales pour les clients de l'Union européenne

La directive européenne 2002/96/CE exige que l'équipement sur lequel est apposé ce symbole sur le produit et/ou son emballage ne soit pas jeté avec les autres ordures ménagères. Ce symbole indique que le produit doit être éliminé dans un circuit distinct de celui pour les déchets des ménages. Il est de votre responsabilité de jeter ce matériel ainsi que tout autre matériel électrique ou électronique par les moyens de collecte indiqués par le gouvernement et les pouvoirs publics des collectivités territoriales. L'élimination et le recyclage en bonne et due forme ont pour but de lutter contre l'impact néfaste potentiel de ce type de produits sur l'environnement et la santé publique. Pour plus d'informations sur le mode d'élimination de votre ancien équipement, veuillez prendre contact avec les pouvoirs publics locaux, le service de traitement des déchets, ou l'endroit où vous avez acheté le produit.

Italiano/Italian

Informazioni relative all'ambiente per i clienti residenti nell'Unione Europea

La direttiva europea 2002/96/EC richiede che le apparecchiature contrassegnate con questo simbolo sul prodotto e/o sull'imballaggio non siano smaltite insieme ai rifiuti urbani non differenziati. Il simbolo indica che questo prodotto non deve essere smaltito insieme ai normali rifiuti domestici. È responsabilità del proprietario smaltire sia questi prodotti sia le altre apparecchiature elettriche ed elettroniche mediante le specifiche strutture di raccolta indicate dal governo o dagli enti pubblici locali. Il corretto smaltimento ed il riciclaggio aiuteranno a prevenire conseguenze potenzialmente negative per l'ambiente e per la salute dell'essere umano. Per ricevere informazioni più dettagliate circa lo smaltimento delle vecchie apparecchiature in Vostro possesso, Vi invitiamo a contattare gli enti pubblici di competenza, il servizio di smaltimento rifiuti o il negozio nel quale avete acquistato il prodotto.

Latviešu valoda/Latvian

Ekoloģiska informācija klientiem Eiropas Savienības jurisdikcijā

Direktīvā 2002/96/EK ir prasība, ka aprīkojumu, kam pievienota zīme uz paša izstrādājuma vai uz tā iesaiņojuma, nedrīkst izmest nešķīrotā veidā kopā ar komunālajiem atkritumiem (tiem, ko rada vietēji iedzīvotāji un uzņēmumi). Šī zīme nozīmē to, ka šī ierīce ir jāizmet atkritumos tā, lai tā nenonāktu kopā ar parastiem mājsaimniecības atkritumiem. Jūsu pienākums ir šo un citas elektriskas un elektroniskas ierīces izmest atkritumos, izmantojot īpašus atkritumu savākšanas veidus un līdzekļus, ko nodrošina valsts un pašvaldību iestādes. Ja izmešana atkritumos un pārstrāde tiek veikta pareizi, tad mazinās iespējamais kaitējums dabai un cilvēku veselībai. Sīkākas ziņas par novecojušu aprīkojuma izmešanu atkritumos jūs varat saņemt vietējā pašvaldībā, atkritumu savākšanas dienestā, kā arī veikalā, kur iegādājāties šo izstrādājumu.

Lietuvškai/Lithuanian

Aplinkosaugos informacija, skirta Europos Sąjungos vartotojams

Europos direktyva 2002/96/EC numato, kad įrangos, kuri ir (arba) kurios pakuotė yra pažymėta šiuo simboliu, negalima šalinti kartu su nerūšiuotomis komunalinėmis atliekomis. Šis simbolis rodo, kad gaminį reikia šalinti atskirai nuo bendro buitinių atliekų srauto. Jūs privalote užtikrinti, kad ši ir kita elektros ar elektroninė įranga būtų šalinama per tam tikras nacionalinės ar vietinės valdžios nustatytas atliekų rinkimo sistemas. Tinkamai šalinant ir perdurbant atliekas, bus išvengta galimos žalos aplinkai ir žmonių sveikatai. Daugiau informacijos apie jūsų senos įrangos šalinimą gali pateikti vietinės valdžios institucijos, atliekų šalinimo tarnybos arba parduotuvės, kuriose įsigijote tą gaminį.

Malti/Maltese

Informazzjoni Ambjentali għal Kliġenti fl-Unjoni Ewropea

Id-Direttiva Ewropea 2002/96/KE titlob li t-tagħmir li jkun fih is-simbolu fuq il-prodott u/jew fuq l-ippakkjar ma jistax jintrema ma' skart municiġpali li ma għiex iſseparat. Is-simbolu jindika li dan il-prodott għandu jintrema separatament minn ma' l-iskart domestiku regolari. Hija responsabbiltà tiegħek li tarmi dan it-tagħmir u kull tagħmir iehor ta' l-elettriku u elettroniku permezz ta' faċilitajiet ta' għbir appuntati apposta mill-gvern jew mill-awtoritajiet lokali. Ir-rimi b'mod korrett u r-riċiklagg jgħin jipprevjeni konsegwenzi negattivi potenzjali għall-ambjent u għas-saħħa tal-bniedem. Għal aktar informazzjoni dettaljata dwar ir-rimi tat-tagħmir antik tiegħek, jekk jogħġbok ikkuntattja lill-awtoritajiet lokali tiegħek, is-servizzi għar-rimi ta' l-iskart, jew il-hanut minn fejn xtrajt il-prodott.

Magyar/Hungarian

Környezetvédelmi információ az európai unió vásárlók számára

A 2002/96/EC számú európai unió irányelv megkívánja, hogy azokat a termékeket, amelyekeken, és/vagy amelyek csomagolásán az alábbi címke megjelenik, tilos a többi szelektálatlan lakossági hulladékkal együtt kidobni. A címke azt jelöli, hogy az adott termék kidobásakor a szokványos háztartási hulladékelszállítási rendszerektől elkülönített eljárást kell alkalmazni. Az Ön felelőssége, hogy ezt, és más elektromos és elektronikus berendezéseit a kormányzati vagy a helyi hatóságok által kijelölt gyűjtőrendszeren keresztül számolja fel. A megfelelő hulladékfeldolgozás segít a környezetre és az emberi egészségre potenciálisan ártalmas negatív hatások megelőzésében. Ha elavult berendezéseinek felszámolásához további részletes információra van szüksége, kérjük, lépjen kapcsolatba a helyi hatóságokkal, a hulladékfeldolgozási szolgálattal, vagy azzal üzlettel, ahol a terméket vásárolta.

Nederlands/Dutch

Milieu-informatie voor klanten in de Europese Unie

De Europese Richtlijn 2002/96/EC schrijft voor dat apparatuur die is voorzien van dit symbool op het product of de verpakking, niet mag worden ingezameld met niet-gescheiden huishoudelijk afval. Dit symbool geeft aan dat het product apart moet worden ingezameld. U bent zelf verantwoordelijk voor de vernietiging van deze en andere elektrische en elektronische apparatuur via de daarvoor door de landelijke of plaatselijke overheid aangewezen inzamelingskanalen. De juiste vernietiging en recycling van deze apparatuur voorkomt mogelijke negatieve gevolgen voor het milieu en de gezondheid. Voor meer informatie over het vernietigen van uw oude apparatuur neemt u contact op met de plaatselijke autoriteiten of afvalverwerkingsdienst, of met de winkel waar u het product hebt aangeschaft.

Norsk/Norwegian

Miljøinformasjon for kunder i EU

EU-direktiv 2002/96/EF krever at utstyr med følgende symbol avbildet på produktet og/eller pakningen, ikke må kastes sammen med usortert avfall. Symbolet indikerer at dette produktet skal håndteres atskilt fra ordinær avfallsinnsamling for husholdningsavfall. Det er ditt ansvar å kvitte deg med dette produktet og annet elektrisk og elektronisk avfall via egne innsamlingsordninger slik myndighetene eller kommunene bestemmer. Korrekt avfallshåndtering og gjenvinning vil være med på å forhindre mulige negative konsekvenser for miljø og helse. For nærmere informasjon om håndtering av det kasserte utstyret ditt, kan du ta kontakt med kommunen, en innsamlingsstasjon for avfall eller butikken der du kjøpte produktet.

Polski/Polish

Informacja dla klientów w Unii Europejskiej o przepisach dotyczących ochrony środowiska

Dyrektywa Europejska 2002/96/EC wymaga, aby sprzęt oznaczony symbolem znajdującym się na produkcie i/lub jego opakowaniu nie był wyrzucany razem z innymi niesortowanymi odpadami komunalnymi. Symbol ten wskazuje, że produkt nie powinien być usuwany razem ze zwykłymi odpadami z gospodarstw domowych. Na Państwu spoczywa obowiązek wyrzucania tego i innych urządzeń elektrycznych oraz elektronicznych w punktach odbioru wyznaczonych przez władze krajowe lub lokalne. Pozbywanie się sprzętu we właściwy sposób i jego recykling pomogą zapobiec potencjalnie negatywnym konsekwencjom dla środowiska i zdrowia ludzkiego. W celu uzyskania szczegółowych informacji o usuwaniu starego sprzętu, prosimy zwrócić się do lokalnych władz, służb oczyszczania miasta lub sklepu, w którym produkt został nabyty.

Português/Portuguese

Informação ambiental para clientes da União Europeia

A Directiva Europeia 2002/96/CE exige que o equipamento que exibe este símbolo no produto e/ou na sua embalagem não seja eliminado junto com os resíduos municipais não separados. O símbolo indica que este produto deve ser eliminado separadamente dos resíduos domésticos regulares. É da sua responsabilidade eliminar este e qualquer outro equipamento eléctrico e electrónico através dos instalações de recolha designadas pelas autoridades governamentais ou locais. A eliminação e reciclagem correctas ajudarão a prevenir as consequências negativas para o ambiente e para a saúde humana. Para obter informações mais detalhadas sobre a forma de eliminar o seu equipamento antigo, contacte as autoridades locais, os serviços de eliminação de resíduos ou o estabelecimento comercial onde adquiriu o produto.

Slovenčina/Slovak

Informácie o ochrane životného prostredia pre zákazníkov v Európskej únii

Podľa európskej smernice 2002/96/ES zariadenie s týmto symbolom na produkte a/alebo jeho balení nesmie byť likvidované spolu s netriedeným komunálnym odpadom. Symbol znamená, že produkt by sa mal likvidovať oddelene od bežného odpadu z domácností. Je vašou povinnosťou likvidovať toto i ostatné elektrické a elektronické zariadenia prostredníctvom špecializovaných zberných zariadení určených vládou alebo miestnymi orgánmi. Správna likvidácia a recyklácia pomôže zabrániť prípadným negatívnym dopadom na životné prostredie a zdravie ľudí. Ak máte záujem o podrobnejšie informácie o likvidácii starého zariadenia, obráťte sa, prosím, na miestne orgány, organizácie zaoberajúce sa likvidáciou odpadov alebo obchod, v ktorom ste si produkt zakúpili.

Slovenčina/Slovene

Okoljske informacije za stranke v Evropski uniji

Evropska direktiva 2002/96/EC prepoveduje odlaganje opreme, označene s tem simbolom – na izdelku in/ali na embalaži – med običajne, nerazvrščene odpadke. Ta simbol opozarja, da je treba izdelek odvreči ločeno od preostalih gospodinjstvih odpadkov. Vaša odgovornost je, da to in preostalo električno in elektronsko opremo odnesete na posebna zbirališča, ki jih določijo državne ustanove ali lokalna uprava. S pravilnim odlaganjem in recikliranjem boste preprečili morebitne škodljive vplive na okolje in zdravje ljudi. Če želite izvedeti več o odlaganju stare opreme, se obrnite na lokalno upravo, odpad ali trgovino, kjer ste izdelek kupili.

Suomi/Finnish

Ympäristöä koskevia tietoja EU-alueen asiakkaille

EU-direktiivi 2002/96/EY edellyttää, että jos laitteistossa on tämä symboli itse tuotteessa ja/tai sen pakkauksessa, laitteistoa ei saa hävittää lajittelemattoman yhdyskuntajätteen mukana. Symboli merkitsee sitä, että tämä tuote on hävitettävä erillään tavallisesta kotitalousjätteestä. Sinun vastuullasi on hävittää tämä elektroniikkatuote ja muut vastaavat elektroniikkatuotteet viemällä tuote tai tuotteet viranomaisten määräämään keräyspisteeseen. Laitteiston oikea hävittäminen estää mahdolliset kielteiset vaikutukset ympäristöön ja ihmisten terveyteen. Lisätietoja vanhan laitteiston oikeasta hävitystavasta saa paikallisilta viranomaisilta, jätteenhävityspalvelusta tai siitä myymälästä, josta ostit tuotteen.

Svenska/Swedish

Miljöinformation för kunder i Europeiska unionen

Det europeiska direktivet 2002/96/EC kräver att utrustning med denna symbol på produkten och/eller förpackningen inte får kastas med osorterat kommunalt avfall. Symbolen visar att denna produkt bör kastas efter att den avskiljts från vanligt hushållsavfall. Det faller på ditt ansvar att kasta denna och annan elektrisk och elektronisk utrustning på fastställda insamlingsplatser utsedda av regeringen eller lokala myndigheter. Korrekt kassering och återvinning skyddar mot eventuella negativa konsekvenser för miljön och personhälsa. För mer detaljerad information om kassering av din gamla utrustning kontaktar du dina lokala myndigheter, avfallshanteringen eller butiken där du köpte produkten.

For more information, visit www.linksys.com.

Appendix J: 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/international>

If you experience problems with any Linksys product, you can e-mail us at:

| In Europe | E-mail Address |
|------------------|---------------------------------------|
| Austria | support.at@linksys.com |
| Belgium | support.be@linksys.com |
| Czech Republic | support.cz@linksys.com |
| Denmark | support.dk@linksys.com |
| Finland | support.fi@linksys.com |
| France | support.fr@linksys.com |
| Germany | support.de@linksys.com |
| Greece | support.gr@linksys.com (English only) |
| Hungary | support.hu@linksys.com |
| Ireland | support.ie@linksys.com |
| Italy | support.it@linksys.com |
| Netherlands | support.nl@linksys.com |
| Norway | support.no@linksys.com |
| Poland | support.pl@linksys.com |
| Portugal | support.pt@linksys.com |
| Russia | support.ru@linksys.com |
| Spain | support.es@linksys.com |
| Sweden | support.se@linksys.com |

Wireless-N ADSL2+ Gateway

| In Europe | E-mail Address |
|------------------|------------------------|
| Switzerland | support.ch@linksys.com |
| United Kingdom | support.uk@linksys.com |

| Outside of Europe | E-mail Address |
|--------------------------|---|
| Asia Pacific | asiасupport@linksys.com (English only) |
| Latin America | support.portuguese@linksys.com or support.spanish@linksys.com |
| Middle East & Africa | support.mea@linksys.com (English only) |
| South Africa | support.ze@linksys.com (English only) |
| UAE | support.ae@linksys.com (English only) |
| U.S. and Canada | support@linksys.com |

Note: For some countries, support may be available only in English.