GemTek Technology Co., Ltd.

WX-2211

Wireless Broadband Router
User's Manual

Rev. 1.0

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Introduction

Congratulations on your purchases of the GemTek Wireless Broadband Router. Your Wireless Broadband Router enables you to share your DSL or Cable Internet connection with computers on your network. This guide will explain the features and functions of the Wireless Broadband Router to help you get the most out of your Internet experience.

GemTek's Wireless Broadband Router allows LAN users to share a single Internet Connection while providing the safety and security of port blocking, packet filtering, and a natural firewall. Static address support, integrated DHCP, PPPoE, and device name support will allow it to connect to nearly any broadband provider whether Cable or DSL based, and at the same time simplify local area network settings.

The Wireless Broadband Router provides two levels of security support. First, it masks local users' IP addresses from others on the Internet making it much more difficult for a hacker to target a machine on your network. Secondly, it can block and redirect certain ports to limit the services that outside users can access. Specific ports can be opened to ensure that games and other Internet applications will run properly.

The Broadband Router provides special pass through support for common VPN implementations. The Virtual Server feature allows you to expose HTTP, FTP, Game Servers and other local services to be accessible to Internet users located outside of the LAN. The User-Definable Application Sensing Tunnel feature allows you to define the attributes to support special applications requiring multiple connections, such as Internet gaming, video conferencing, and Internet telephony. A DMZ setting can be applied to a single client behind the Broadband Router to expose it to the

Internet and ensure complete Internet application compatibility even if specific ports are not known.

Unlike proxy server or NAT software that requires the software server to remain visible on the Internet, no local computers are directly externally visible when using the Broadband Router. Also the Broadband Router, like broadband, is always on, removing the need to constantly boot a software server when access is desired from a client.

Integrated DHCP services allow up to 252 users to get their IP address automatically on boot up from the Broadband Router. Client machines require no software, simply set them to accept a dynamically assigned IP address and reboot. Each time they are powered up the Broadband Router will recognize them and set their IP address to instantly connect them to the LAN.

Package Contents

The GemTek WX-2211 package should include the following items.

- WX-2211 Broadband router
- User’s Manual
- Quick Install Guide
- Power Adapter
- CAT-5 UTP Cable

Introduction to Broadband Router Technology

A router is a device that forwards data packets from a source to a destination. Routers work on OSI layer 3, which forwards data packets using an IP addresses and not a MAC address. A router will forward data from the Internet to a particular computer on your LAN.

The information that makes up the Internet gets moved around using routers. When you click on a link on a web page, you send a request to a server to show you the next page. The information that is sent and received from your computer is moved from your computer to the server using routers. A router also determines the best route that your information should follow to ensure that the information is delivered properly.

A router controls the amount of data that is sent through your network by eliminating information that should not be there. This provides security for the computers behind your router because computers from the outside cannot access or send information directly to any computer on your network. The router determines which computer the information should be forwarded to and sends it. If the information is not intended for any computer on your network, the data is discarded. This keeps any unwanted or harmful information from accessing or damaging your network.

Introduction to Firewalls

A firewall is a device that sits between your computer and the Internet that prevents unauthorized access to or from your network. A firewall can be a computer using firewall software or a special piece of hardware built specifically to act as a firewall. In most circumstances, a firewall is used to prevent unauthorized Internet users from accessing private networks such as corporate LAN’s and Intranets.

A firewall watches all of the information moving to and from your network and analyzes each piece of data. Each piece of data is checked against a set of criteria that the administrator configures. If any data does not meet the criteria, that data is blocked and discarded. If the data meets the criteria, the data is passed through. This method is called packet filtering.

A firewall can also run specific security functions based on the type of application or type of port that is being used. For example, a firewall can be configured to work with an FTP or Telnet server. Or a firewall can be configured to work with specific UDP or TCP ports to allow certain applications or games to work properly over the Internet.

Introduction to Local Area Networking

Local Area Networking (LAN) is the term used when connecting several computers together over a small area such as a building or group of buildings. LAN's can be connected over large areas. A collection of LAN's connected over a large area is called a Wide Area Network (WAN).

A LAN consists of multiple computers connected to each other. There are many types of media that can connect computers together. The most common media is CAT5 cable; UTP or STP twisted pair wire. On the other hand, wireless networks do not use wires; instead they communicate over radio waves. Each computer must have a Network Interface Card (NIC), which communicates the data between computers. A NIC is usually a 10Mbps network card, 10/100Mbps network card, or a wireless network card.

Most networks use hardware devices such as hubs or switches that each cable can be connected to in order to continue the connection between computers. A hub simply takes any data arriving through each port and

forwards the data to all other ports. A switch is more sophisticated, in that a switch can determine the port that each piece of data is supposed to be delivered to. A switch minimizes network traffic and speeds up the communication over a network.

Networks take some time in order to plan and implement correctly. There are many types of scenarios to consider which could affect the operability of a network.

Introduction to Virtual Private Networking

Virtual Private Networking (VPN) uses a publicly wired network (the Internet) to securely connect two different networks as if they were the same network. For example, an employee can access the corporate network from home using VPN, allowing the employee to access files and printers. Here are several different implementations of VPN that can be used.

Point-to-Point Tunneling Protocol (PPTP)

PPTP uses proprietary means of connecting two private networks over the Internet. PPTP is a way of securing the information that is communicated between networks. PPTP secures information by encrypting the data inside of a packet.

IP Security (IPSec)

IPSec provides a more secure network-to-network connection across the Internet or a Wide Area Network (WAN). IPSec encrypts all communication between the client and server whereas PPTP only encrypts the data packets.

Both of these VPN implementations are used because there is not a

standard for VPN server software. Because of this, each ISP or business can implement their own VPN network making interoperability a challenge.

Introduction to Wireless Networking

GemTek wireless products are based on industry standards to provide easy to use and compatible high-speed wireless connectivity within your home or business. Strictly adhering to IEEE 802.11b the GemTek wireless family of products will allow you to access the data you want, when and where you want it. No longer will you be tethered to a workstation or forced to run new wiring. You will be able to enjoy the freedom that wireless networking delivers.

Standards Based Technology

Based on IEEE 802.11b, GemTek Air products can operate at the maximum data rate of 11 Megabits per second. This means you will be able to transfer large files quickly or even watch a Movie in MPEG format over your network without noticeable delays. This technology works by using multiple frequencies in the 2.4GHz range utilizing Direct Sequence Spread Spectrum (DSSS) technology. GemTek Air products will automatically sense the best possible connection speed to ensure the greatest speed and range possible with the technology.

Installation Considerations

Designed to go up to 100 meters indoors and up to 300 meters outdoors, GemTek Air lets you access your network from anywhere you want. Keep in mind, however, that the number of walls, ceilings or other objects that the wireless signals must pass thru will limit range. Typical ranges vary

depending on the types of materials and background RF noise in your home or business. The key to maximizing range is to follow these basic principles:

1. Keep the number of walls and ceilings to a minimum - Each wall or ceiling can reduce your GemTek Air Wireless products range from 1-30 meters. Position your Access Points, Residential Gateways, and Computers so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between Access Points, Residential Gateways, and Computers - A wall that is .5 meter thick, at a 45 degree angle appears to be almost 1 meter thick. At a 2 degree angle it looks over 14 meters thick! Try to make sure that the AP and Adapters are positioned so that the signal will travel straight through a wall or ceiling for better reception.
3. Building Materials make a difference - A solid metal door or aluminum studs may have a negative effect on range. Again, try to position Access Points, Residential Gateways, and Computers so that the signal passes through drywall or open doorways and not other materials.
4. Make sure that the antenna is positioned for best reception by using the software signal strength tools included with your product.
5. Keep your product away (at least 1-2 meters) from electrical devices that generate RF noise, like microwaves, Monitors, electric motors, etc.

   For the average American 4-bedroom home, range should not be a problem. If you experience low or no signal strength in areas of your home that you wish to access, consider positioning the Access Point in a location directly between the Residential Gateways and/or Computers that will be connected. Additional Access Points can be connected to provide better coverage in rooms where the signal does not appear as strong as desired.

Hardware Installation

Placement

Your Wireless Broadband Router should be placed in a safe and secure location. To ensure proper operation, please keep the unit away from water and other damaging elements.

Safety Precautions

- Please read the installation guide thoroughly before you install the WX-2211.
- The WX-2211 should only be repaired by authorized and qualified personnel.
- Please do not try to open or repair the WX-2211 yourself.
- Do not place the WX-2211 in a damp or humid location, i.e. a bathroom.
- The WX-2211 should be placed in a sheltered and non-slip location within a temperature range of +5 to +40 Celsius degree.
- Please keep the wrap bag of the WX-2211 and the clip binding the cable out of reach of children and babies to avoid choking.
- Please do not expose the WX-2211 to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.

Side Panel

The power port is located on the right-hand side of the WX-2211. Connect the AC adapter to this port to supply power.

Front Panel

The front panel provides LED’s for device status. Refer to the following table for the meaning of each feature.

Power	Power status of the WX-2211. A steady LED indicates that the power is on. No LED light indicates lack of power.
WLAN	Wireless Connection status. The WLAN LED will be ON indicating any wireless connection on the Local Network.
WAN	Wide Area Network status. When connected to the Internet, the WAN LED should be on.
LAN	Local Area Network status. A steady LED indicates a connection to the wired local network. A flickering LED indicates data transmission.
STAT	System status indicator. A flickering light indicates proper operation.

Rear Panel

The rear panel features a LAN port, WAN port, Serial port and Factory Reset button. Refer to the following table for the meaning of each feature.

Serial	Port used to connect an external analog backup modem.
LAN	The RJ-45 Ethernet port used to connect your hub/switch using Ethernet cables to your WX-2211.
WAN	The RJ-45 Ethernet port labeled WAN is used to connect your WX-2211 to your DSL or Cable modem.
Reset	Resets the configuration to default settings.

Basic WX-2211 Configuration & Main Page

The WX-2211 provides a Web Configuration interface that can be accessed using standard web browsers such as Netscape Communicator or Microsoft Internet Explorer. Since the interface is web based (HTTP), the WX-2211 can be configured with any java and HTML compliant Internet browser in any operating system. This section will discuss the Web Configuration interface and how to use different options and settings.

Although you can change the IP address of the WX-2211 to meet your needs, this manual will assume that the defaults are left in place. This means that the IP address of your WX-2211 will be 192.168.0.1. If you have changed the IP address scheme, please substitute 192.168.0.1 with the IP address scheme that you have chosen.

Start-up and Log in

In order to configure the WX-2211, you must use your web browser and manually input 192.168.0.1 into the Address box and press Enter. The Main Page will appear. The Device Information and Device Status screens can be seen without logging into the WX-2211. However, when the Setup Wizard, Basic Setup, Advanced Settings and System Tools buttons are pressed, the log in screen will be shown.

In order to configure the WX-2211 you must input the user-name into the **User Name** box. Enter the password into the **Password** box and press the **OK** button. The default User Name is “admin”. There is no default password, leave the Password field blank.

Once you have logged-in as administrator, it is a good idea to change the administrator password to ensure a secure connection to the WX-2211. The Advanced Settings section described later in this manual describes how to change the password.

Once you have input the correct password and logged-in, the screen will change to the Main Page screen.

If you are having problems logging in and you are sure that the password you are using is correct, check the top right-hand corner of your keyboard to make sure that the Caps Lock light is not on.

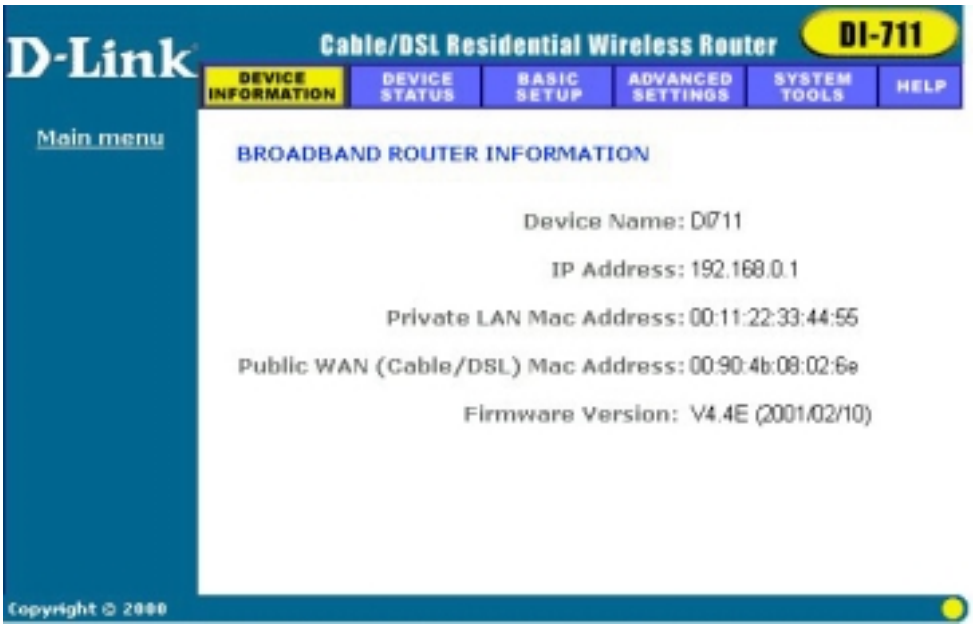
Main Page

The Main Page screen provides links to the main sections of the web configuration interface.

Setup Wizard

The Setup Wizard is a step-by-step guide to configuring the WX-2211 to work with your ISP provider. Please refer to the quick install guide for additional instructions.

Device Information



The Device Information screen displays the basic information of your WX-2211.

The **Device Name** is the same as the Computer Name that was set in the Setup Wizard.

The **IP Address** is the IP Address assigned to LAN side of your WX-2211.

The **Private LAN Mac Address** the Mac Address assigned to the LAN side of your WX-2211.

The **Public WAN (Cable/DSL) Mac Address** is the Mac Address assigned to the WAN port of the WX-2211. This Mac Address may be used by some cable modem connections.

The **Firmware Version** is the current firmware version used by the WX-2211.

Device Status

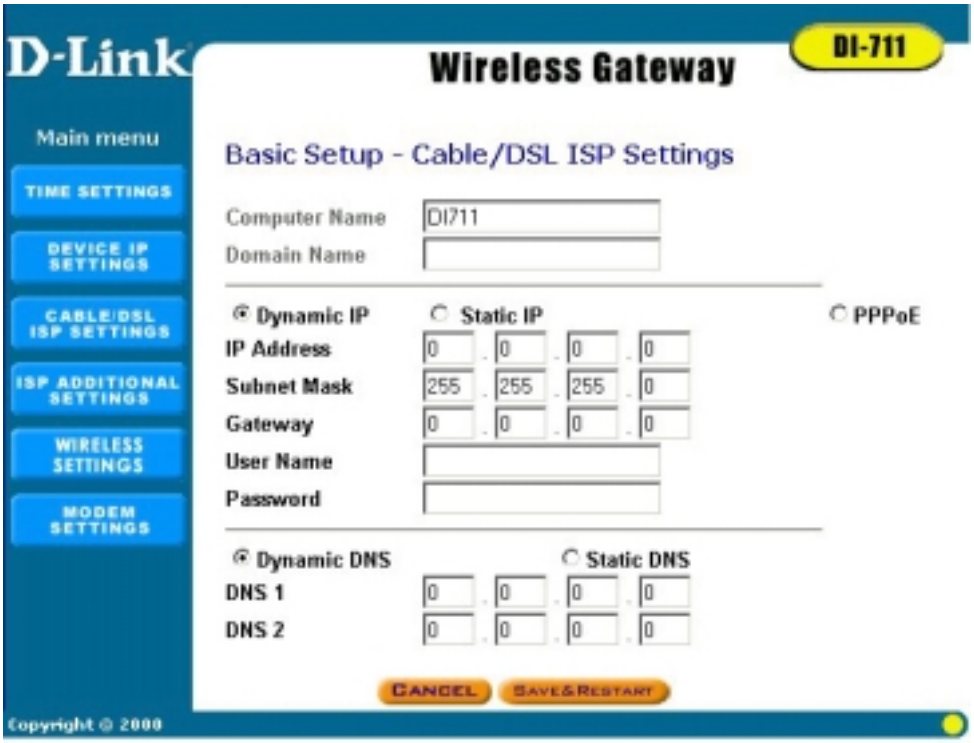
The Device Status screen displays a graphical representation of your current configuration. The left side of the screen shows your connection information in regards to WAN and LAN IP Address information. The right side displays the connection status of each device.

This means that there is a connection.

This means that there is not a connection.

The DHCP Log displays information about each IP Address assigned to a computer using the DHCP server built-in to the WX-2211.

Basic Setup



The Basic Setup screen enables you to change basic settings related to accessing the Internet. All of the settings covered in the Basic Setup section are covered in the Setup Wizard.

The **Computer Name** is used to give a name to your connection if you are using a Cable modem.

The **Domain Name** (host name) is the name given to you by your ISP provider if you using the @Home cable Internet service.

Choose the Type of Connection you use by selecting Dynamic IP, Static IP, or PPPoE.

Select **Dynamic IP** if your ISP has not given you a unique IP address and you receive an automatic IP address each time you connect to your ISP. The rest of the settings related to your connection are retrieved automatically each time you connect to the Internet.

Select **Static IP** if your ISP assigns you an IP address. This means that your ISP has given you an IP address that you will use to connect to the Internet through their service. If you select Static IP, you will need to enter the correct values for the IP Address, Subnet Mask and Gateway in the fields provided.

Select **PPPoE** if your ISP uses the Point-to-Point over Ethernet protocol to authenticate a username and password and then automatically assign you an IP Address. PPP over Ethernet (PPPoE) is a non-standard method of connecting to your ISP to obtain an IP address. It relies upon a software client that is provided by the ISP. If you have a broadband connection and login to your ISP like you would do with a dial-in modem, then you are probably using PPPoE. If you are simply connected to the Internet when you turn on your computer, you probably are not. The safest way to check is to call your ISP or read the documentation provided when you signed up for your Internet service. If you select PPPoE, you will need to enter the correct values for your User Name and Password in the fields provided.

The DNS section needs to be set to the correct option in order for the WX-2211 to resolve domain name information in URL’s.

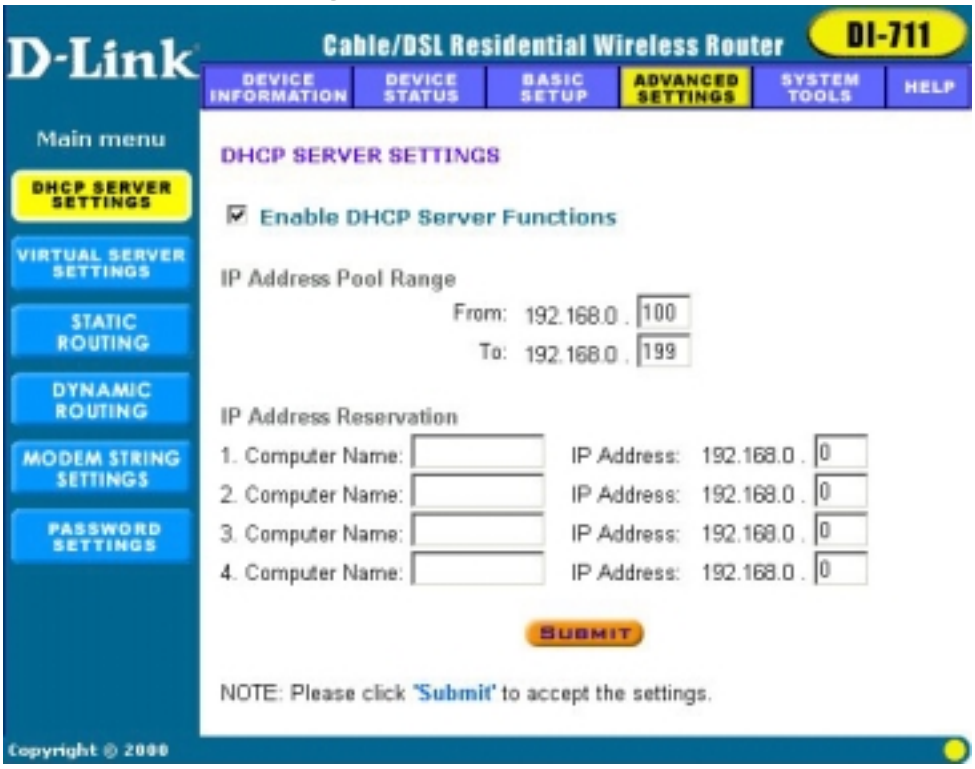
Select **Dynamic DNS** if your ISP provides the DNS information much in the same way as you receive an IP Address.

Select **Static DNS** if you were given the DNS server information when you signed with your ISP.

Click on the **Save & Restart** button to save your settings.

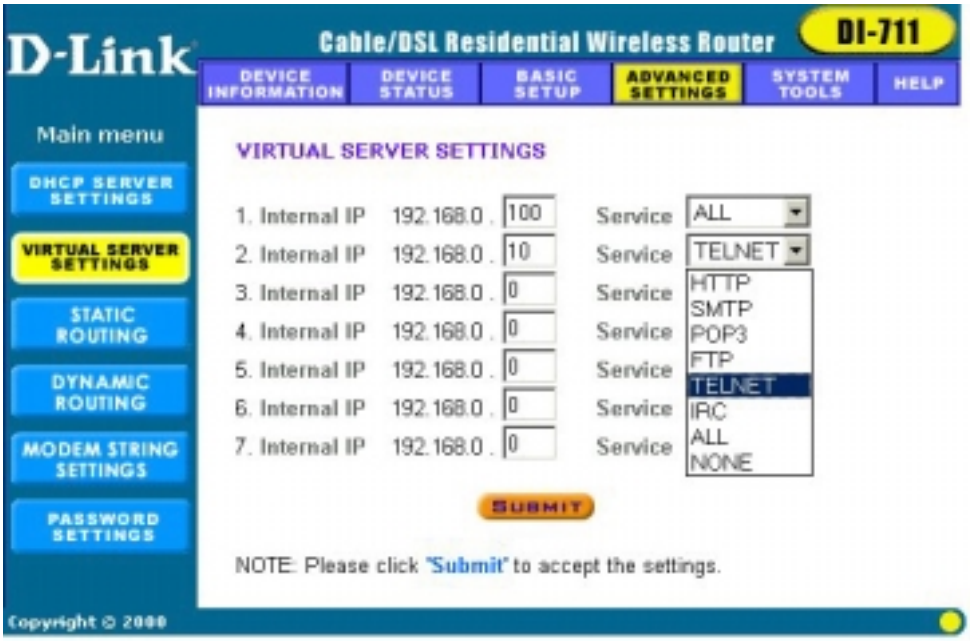
Advanced Settings

DHCP Server Settings



By default, the Wireless Broadband Router has DHCP server enabled to assign an IP address ranging from 192.168.0.100 to 192.168.0.199. In addition, the router is capable of reserving up to four IP addresses within the local network for mail, web, or ftp server.

Virtual Server Settings



Specific application support is enabled in Virtual Server Settings under Advanced Settings. Click on the arrow to select the common applications such as FTP, Web server, and mail server. The WX-2211 Wireless Broadband Router will detect and automatically open outgoing ports required by most applications and games. However, some games and applications such as Netmeeting will require that the computer be exposed in the DMZ zone to allow incoming ports required by the application. Click on the “Submit” button to save your settings.

DMZ

The Virtual Server Settings under Advanced Settings also enables one computer to have full access to the Internet without the protection of the

firewall. This allows a computer to be exposed to unrestricted two-way communication outside of your network.

To enable DMZ, click the checkbox to the left and select “All”. Then type the IP address of the selected computer in the box provided. Click the “Submit” button to save your changes.

Only one computer can use DMZ at a time. Please note that enabling DMZ removes the protection of the firewall, which exposes the computer to intrusion.

Use DMZ only when needed and not for extended periods of time.

In some circumstances with gaming, enabling DMZ may help the game contact the maximum number of servers, which can improve ping times. Once the game connects to the game server, disable DMZ to ensure proper firewall protection.

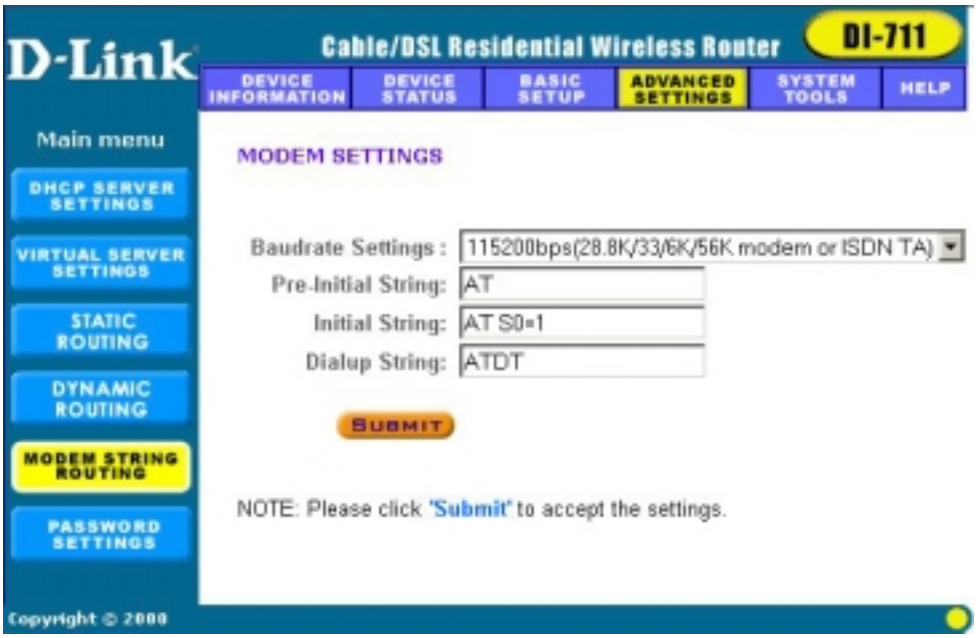
Static Routing

In Static Routing, the user has the ability to add a static route to the routing table by simple entering the destination IP, subnet mask, and gateway. Clicking on “Add” and then “Submit” which requires a restart for the IP address to be incorporated into the routing table.

Dynamic Settings

By default, the Wireless Broadband Router will not send or receive any routing Internet protocols (RIP) to update the routing table. However, the user can enable the Wireless Broadband Router to automatically send and receive RIP packets to establish routes for commonly used paths.

Modem String Settings



Most dial-up modems are compatible with the standard modem strings. However for modems that require special modem strings, the user can enter the information in this screen.

System Tools

The System Tools section enables you to manage your WX-2211 and view information related to unit functions. The following functions are described in this chapter.

Intruder Detection Log: View detection logs.

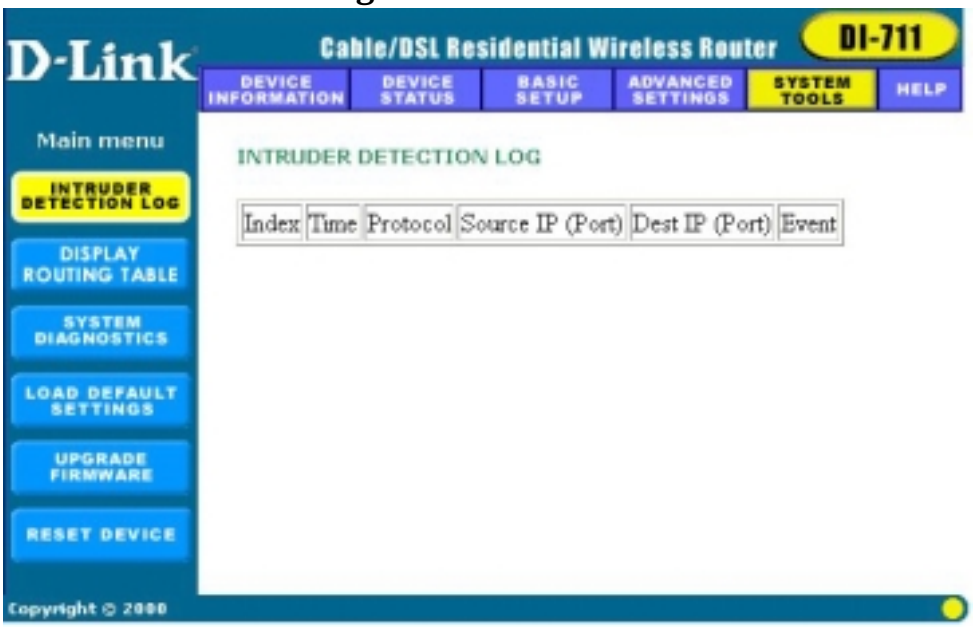
System Diagnostics: Change remote configuration settings.

Load Default Settings: Restore settings to factory default.

Upgrade Firmware: Upgrade the firmware with a latest version.

Reset Device: Reboot the WX-2211.

Intruder Detection Log



The Intruder Detection Log displays all information related to intrusion attempts on your network. If any packets are seen as harmful, those packets

are blocked and a log is kept about the information related to that packet.

Index: (1,2,3 etc.) Refers to the row number.

Time: The time that the action was logged.

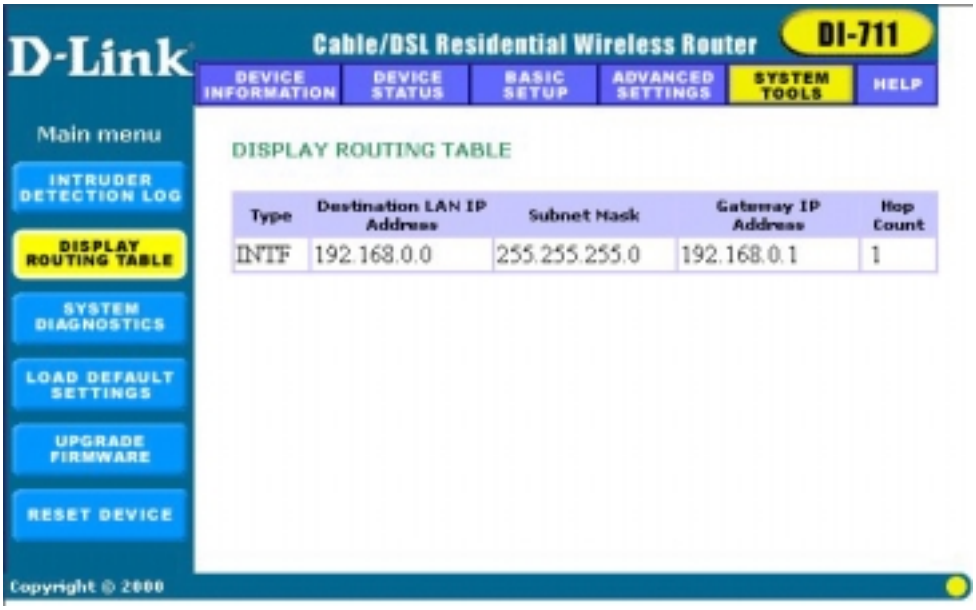
Protocol: (IP, UDP etc.) The type of protocol detected.

Source IP (Port): The source IP address of the intruding packet.

Dest IP (Port): The IP address assigned to the destination of the intruding packet.

Event: The type of intrusion.

Display Routing Table



The Display Routing Table screen displays the routing table that the WX-2211 is using. A router uses a routing table to keep track of what IP addresses there are and where the router should forward packets when it receives them.

Type: The type of routing protocol used.
Destination LAN IP Address: Shows the Destination IP Address on the LAN side.
Subnet Mask: Shows the subnet mask assigned to the Destination LAN IP Address.
Gateway IP Address: The IP Address of the assigned Gateway.
Hop Count: The number of hops between the Destination LAN IP Address and the Gateway IP Address.

System Diagnostics

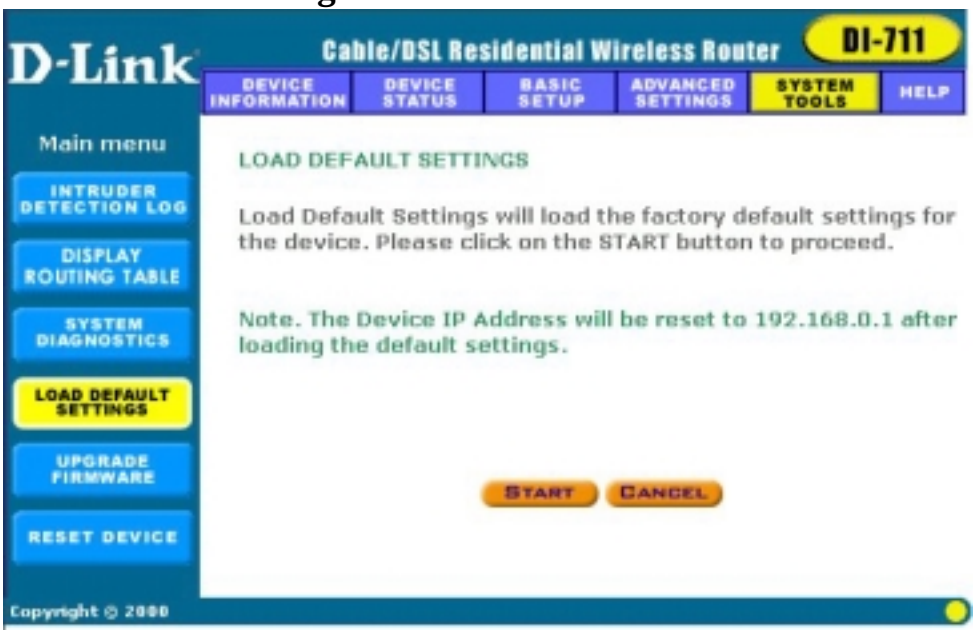
The System Diagnostics screen displays current status and connection information. This screen is similar to the Device Status screen, although both sections can be used to diagnose problems with your Internet connection.

The Configuration section shows important information about your ISP Settings, Modem Settings, and Device Settings as well as the latest firmware version the WX-2211 is using.

The Diagnosis section shows important information about ISP Status, Link Status, and the current WAN connection.

This information is very useful in troubleshooting connection problems.

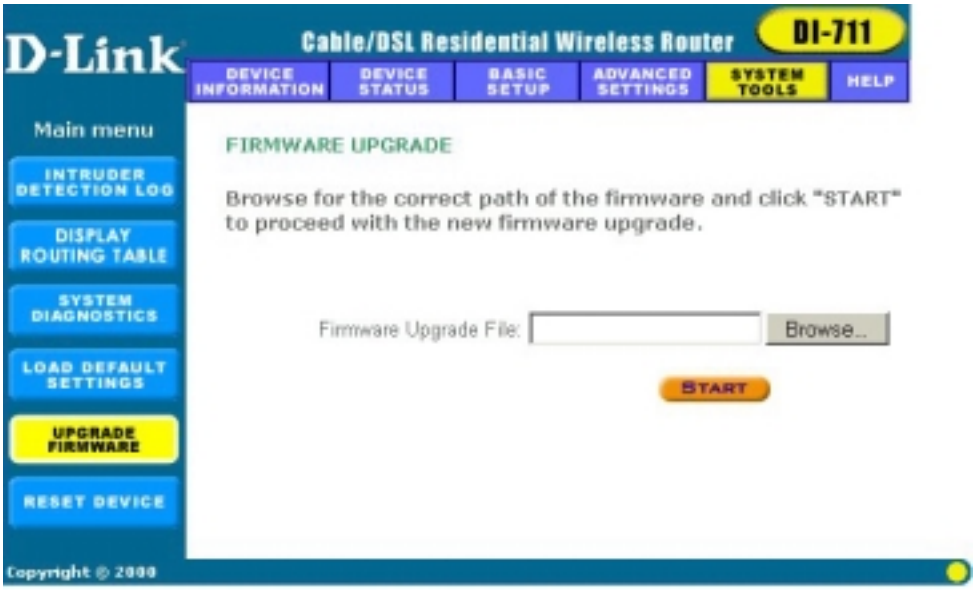
Load Default Settings



The Load Default Settings screen enables you to restore the settings

that came as default when set by GemTek. Click the Start button to begin the process.

Upgrade Firmware

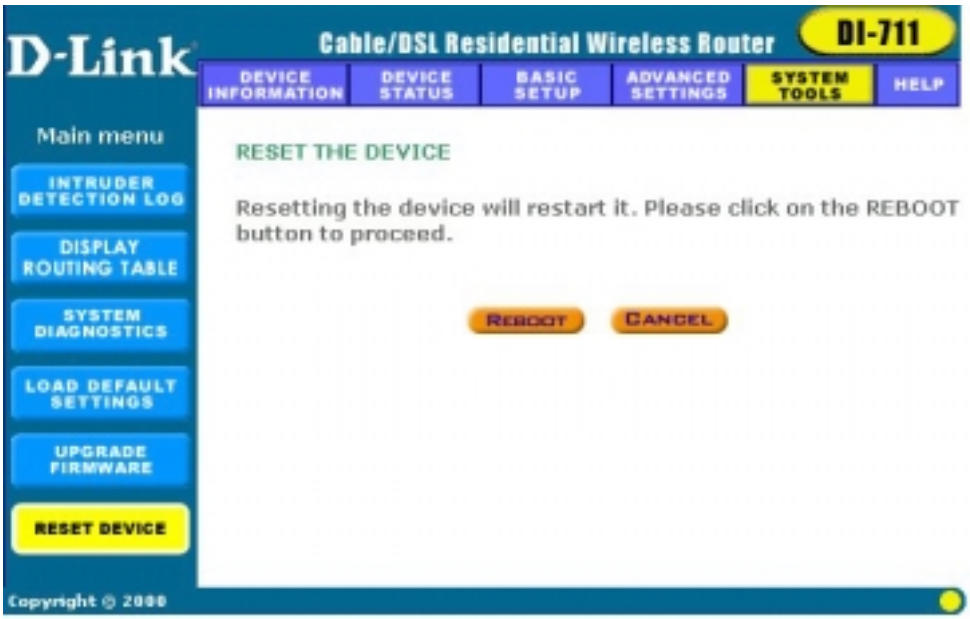


The Upgrade Firmware screen enables you to update the firmware used in the WX-2211. Visit GemTek's product support site to download an updated firmware. Updated firmware usually fix problems encountered by users, but may incorporate new features.

Begin by clicking the "Browse…" button to browse your computer to select the updated firmware file. Once the firmware file is selected, click the "Start" button to upgrade the firmware.

Note: When upgrading the firmware, do not try to access the Internet and do not turn the power off. Doing so may cause the firmware upgrade process to abort, which may result in a corrupt firmware.

Reset Device



The Reset Device screen enables you to reboot the WX-2211. If any changes are made and you want them to take effect, you will need to reset the WX-2211 to do so. Click the “Reboot” button to reset the WX-2211. Click the “Cancel” button to cancel.

When you press the “Reboot” button, the WX-2211 will go through its shutdown and boot-up process. The Internet will not be accessible until the WX-2211 has finished its reboot process.

Troubleshooting

In the event that you are unable to connect to or use your Broadband Router, please refer to the following troubleshooting guide. After each problem description, a possible cause and problem resolution is provided. If this section does not help you fix the problem, go to the GemTek web site (www.dlink.com) for additional troubleshooting tips. If neither of these helps, please contact GemTek Technical Support for additional help. The phone numbers for Technical Support are in the appendix of this manual under **GemTek Office Information**.

Basic Functions

My Broadband Router will not turn on. No LED's light up.

Cause:

- The power is not connected or the power switch is set to "Off".

Resolution:

- Connect the power adapter to your Broadband Router and plug it into the power outlet.
- Make sure that the power switch is set to "On".

Note: Only use the power adapter provided with your Broadband Router. Using any other adapter may damage your Broadband Router.

LED's don't follow the correct boot-up sequence as stated in the Quick Install Guide.

Cause:

- The unit's firmware is corrupt.

- The unit is not receiving the correct voltage from the power supply.

Resolution:

- Download and upgrade the latest firmware.
- Make sure the correct firmware has been used while upgrading. Use only the firmware provided on GemTek's web or FTP sites.
- Use only the power adapter provided.

The Link or Act LED's do not turn on.

Cause:

- The network cable is not connected.
- The network cable is connected but not the right type, whether it is patch or straight-through.

Resolution:

- Make sure that both ends of the cable are connected.
- Try using another cable.
- If you are using a straight-through cable, try a patch cable and vice-versa.

Sometimes my Broadband Router stops working or locks up.

Cause:

- Someone has attempted to hack into someone on your LAN.
- The Broadband Router has detected harmful data trying to access your LAN.
- The NAT table is full.

Resolution:

- Reboot the Broadband Router by turning the power to the unit off and then on again. Some types of hacker tools use very non-standard data

streams. Some of these streams may cause the Broadband Router to lock up. When the Broadband Router locks up, it will not affect the computers attached to it. You may need to restart the client computers to regain Internet access.

Although sometimes inconvenient, a lock-up is an indication of an attack. Part of the design of the Broadband Router is to act as a decoy for such traffic. If your computer locks up, you may have lost changes to open files, data, and/or corrupted your operating system or hard drive. If you are currently experiencing frequent lock-ups, you may wish to upgrade the firmware.

LAN Connection Problems

I can't access my Broadband Router.

Cause:

- The unit is not turned on.
- There is not a network connection.
- The computer you are using does not have a compatible IP Address.

Resolution:

- Make sure your Broadband Router is turned on.
- Make sure that there is a physical connection between your computer and the Broadband Router and that the Link light is on.
- Use the WINIPCFG utility described in the appendix to make sure that your computer has a compatible IP Address. If your IP Address is not set correctly and you are using DHCP, use WINIPCFG to renew your IP Address. Otherwise, make correct changes to your Windows network settings. Make sure that the IP Address used on your computer is set to

the same subnet as the Broadband Router. For example, if the Broadband Router is set to 192.168.0.1, change the IP address of your computer to 192.168.0.15 or another unique IP Address that corresponds to the 192.168.0.X subnet.

- Follow the instructions outlined in the Appendix section labeled "Console Mode" to check the basic settings of your Broadband router. You can verify the IP Address of the Broadband Router to make sure that your computers IP Address are set correctly.
- Use the Reset button located on the front of your Broadband Router to revert to the default settings.

I can't connect to other computers on my LAN.

Cause:

- The IP Addresses of the computers are not set correctly.
- Network cables are not connected properly.
- Windows network settings are not set correctly.

Resolution:

- Make sure that each computer has a unique IP Address. If using DHCP through the Broadband Router, make sure that each computer is set to "Obtain an IP Address automatically" and restart the computer. Use the WINIPCFG and PING utilities described in the appendix to make sure that you can connect to each computer.
- Make sure that the Link LED is on. If it is not, try a different network cable.
- Check each computer for correct network settings.

ISP Connection Problems

I can access the Broadband Router, but I can't connect to my ISP.

Cause:

- Your DSL or Cable modem is not functioning correctly.
- The cable is connected from the WAN port of the Broadband Router to your DSL or Cable modem.
- The wrong connection type is used in Setup.
- The username and password is not input correctly.
- If using @Home service, the computer name is not input correctly.
- Your ISP may only allow one MAC address to access the Internet.
- Your ISP may only allow one computer to access their service.

Resolution:

- Make sure that your DSL or Cable modem is running correctly and connected to the WAN port of the Broadband Router.
- Make sure that the right connection type is used in the web configuration.
- Make sure that the username and password used in the connection type is correct.
- If using @Home, make sure that the computer name is input correctly.
- Clone the MAC address using the web configuration interface.
- Some ISP's do not care if you share your broadband connection among multiple users. Other ISP's will explicitly restrict this type of activity in your service contract. It is important that you verify that you are in accordance with your service agreement before sharing Internet access.

Internet Application Problems

My online game does not work.

Cause:

- The NAT table has filled up.
- The correct settings have not been used to open the correct ports for your application.
- The unit has stopped working or crashed.

Resolution:

- If you are trying to connect to game servers and your connection has stopped working, wait a few minutes or turn the unit off and then on again. Games send out many requests to many different servers trying to find the best game server for your connection. When this is done, the NAT table used in the Broadband Router can fill up and stop working temporarily. Try using the DMZ host feature while connecting to game servers and then disabling DMZ while playing the game.
- Turn the Broadband Router off and then on again to reset the NAT table.
- Make sure that the correct ports have been opened in order for your specific game to operate correctly behind a firewall. Consult your game documentation or contact technical support for your game to obtain the correct settings for your game.
- Some games just won't operate correctly behind a firewall. In this case, use the DMZ host feature while using the game, then turning DMZ off while the game is not being played to ensure proper firewall protection.

My E-Mail program doesn't receive my E-Mail

Cause:

- The Domain Suffix is not set correctly.

Resolution:

- Some email applications require you to enter the Domain Suffix when you configure your network and TCP/IP settings. The Domain Suffix is the unique identifier for your email server.
- The Domain Suffix is the Internet Protocol (TCP/IP) address of the email server you are using. Your cable modem or DSL provider usually lists it somewhere on your invoice. The Domain Suffix address should appear similar to this: dlink.occa.home.com. Find the Domain Suffix on your invoice or call your Internet Service Provider (ISP) to obtain it.

I can't connect to AOL

Cause:

- Your AOL software is not set correctly to use the Broadband Router.

Resolution:

- Use your AOL software to change the location information to use TCP/IP in the Network field. Leave the phone number blank. Save your settings and try to sign on again.
  If this does not help, make sure that you can access the Internet in general. If you can access the Internet, contact AOL technical support to help you configure your AOL software to work correctly with your Broadband Router.

Wireless Troubleshooting

Can’t access the Broadband Router from a wireless network card

Cause:

- Settings are not the same among each wireless adapter.
- Out of range.
- IP Address is not set correctly.

Resolution:

- Make sure that the Mode, SSID, Channel and encryption settings are set the same on each wireless adapter. The default SSID and Channel that the Wireless Broadband Router uses is “default” and “6” respectively.
- Make sure that your computer is within range and free from any strong electrical devices that may cause interference. Refer to the section “Introduction to Wireless Networking” for tips to help make a good connection.
- Check your IP Address to make sure that it is compatible with the Wireless Broadband Router. The default IP Address of the Wireless Broadband Router is “192.168.0.1”. A compatible IP Address would be “192.168.0.50”.

Performing a Factory Reset

Follow these steps to perform a Factory Reset using the Reset button on the back of the WX-2211.

1. With the unit off, press and hold the Reset button with a pen or paper clip and turn the unit on.
2. Hold the reset button for about 5 or 6 seconds until the Power/Test LED on the front panel blinks very quickly and then release.
3. Wait a few seconds for the Broadband Router to reboot using default settings.

A Factory Reset can also be performed through the web configuration interface. Follow these steps to perform a factory reset using the web configuration interface.

1. Log-in to the WX-2211 web configuration interface.
2. Click on the System Management link at the bottom of the screen.
3. Click on **Restore Default Settings.**
4. You will be asked if you want to restore to default settings. Click OK to restore settings to default configuration or click Cancel to discard any changes.

Using the PING Utility in Windows 95/98/Me

In Windows, Microsoft has provided a small utility called PING that can be used to troubleshoot your IP address and connection. The PING utility is used mainly to test the connection between your computer and a client computer. Using the PING utility to check a connection can be helpful in determining where the problem is, whether it be your Broadband Router, your DSL or Cable modem, or your ISP.

Use the following steps to use the WINIPCFG utility:

- Click on the **Start** button and click **Run**.
- Type "command" in the Open box.
- Click "OK" to get to a DOS prompt.
- Type "ping 192.168.0.1", which is the IP address of the Gateway in this case, and hit the **Enter** key. The following screen will be shown.

```
C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time=130ms TTL=64
Reply from 192.168.0.1: bytes=32 time=10ms TTL=64
Reply from 192.168.0.1: bytes=32 time=20ms TTL=64
Reply from 192.168.0.1: bytes=32 time=10ms TTL=64

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum =  130ms, Average =  42ms
```

This screen shows a successful connection between you and your Broadband Router. You can use these same steps to ping your DSL or Cable modem and then your ISP provider and Internet website. If any one of these attempts results in an unsuccessful PING, your

connection is not complete.

If a PING is unsuccessful between you and your DSL or Cable modem, then your connection is not setup correctly. If it is unsuccessful when PINGing your ISP or an Internet site, your connection setup maybe correct, but there might be a problem with your ISP or the Internet site you trying to PING is unavailable.

- The screen shown below is an example of an unsuccessful PING.

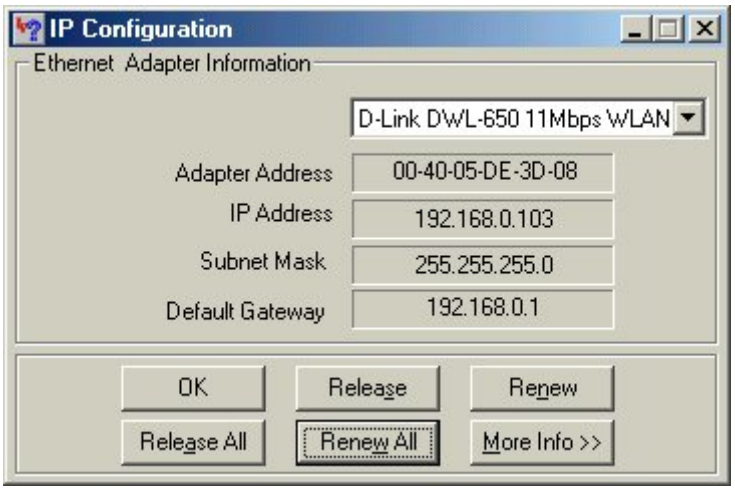
```
C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms
```

Using the WINIPCFG Utility in Windows 95/98/Me

In Microsoft Windows versions 95 through Me, Microsoft has provided a small utility called WINIPCFG that can be used to troubleshoot your IP address and connection. The WINIPCFG utility is used mainly to view, release and renew your IP Address configuration. Windows NT (including Windows 2000) has a similar utility called IPCONFIG that can be used to perform similar tasks.

Use the following steps to use the WINIPCFG utility:

- Click on the **Start** button and click **Run**
- Type "winipcfg" in the Open box.
- Click **OK**. The IP Configuration screen will be displayed.

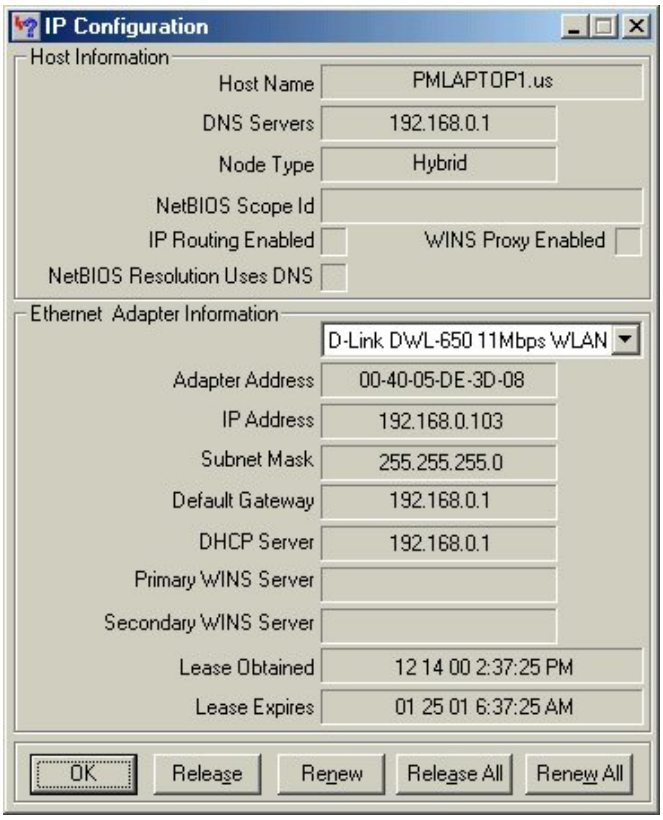


The IP address will be displayed in the IP Address box. If you have more than one network card, make sure that the network card that you are using is displayed in the white dropdown box.

Make sure that the Default Gateway is the IP Address of your Broadband router. If it is not, you will not be able to connect to the Internet. If you are using DHCP, click the **Release** and then the

Renew buttons to receive the correct settings. If you manually set your network settings, make sure that the IP Address of your Broadband Router is set in the Gateway portion of the TCP/IP settings in your network settings.

- Click on "More Info" to display additional IP information.



The important settings to watch for in this screen are in the **Host Information** box. Make sure that the DNS Servers box has the correct DNS information.

Also check the DHCP server box to make sure that you are connected to the right DHCP server.

Technical Specifications

Standards:

- IEEE 802.3 10BASE-T Ethernet
- IEEE 802.3u 100BASE-TX Fast Ethernet
- ANSI/IEEE 802.3 NWay auto-negotiation

Protocols Supported:

- TCP
- IP
- NAT
- UDP
- PPPoE
- DHCP (Client and Server)

Management:

- Web-Based

Ports:

- LAN: NWay 10BASE-T/100BASE-TX Fast Ethernet
- WAN: 10BASE-T
- RS-232 (DB-9) Serial

Wireless Specifications

General Wireless Specifications:

- IEEE 802.11b Wireless LAN, Wi-Fi Compatible

Access Point Frequency Band:

- 2.4 ~ 2.4835 GHz (subject to local regulation)

Access Point Number of Channel:

- USA & Canada: 11

Access Point Frequency Range:

- 5 Mbps

Access Point Data Rate:

- 11 Mbps
- 5.5 Mbps
- 2 Mbps
- 1 Mbps

Limited Warranty

GemTek Technology Co., Ltd. (“GemTek”) provides this limited warranty for its product only to the person or entity who originally purchased the product from GemTek or its authorized reseller or distributor.

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Product Type	**Warranty Period**
Product (excluding power supplies and fans), if purchased and delivered in the fifty (50) United States, or the District of Columbia (“USA”)	One (1) Year
Product purchased or delivered outside the USA	One (1) Year
Power Supplies and Fans	One (1) Year
Spare parts and spare kits	Ninety (90) days

GemTek’s sole obligation shall be to repair or replace the defective Hardware at no charge to the original owner. Such repair or replacement will be rendered by GemTek at an Authorized GemTek Service Office. The replacement Hardware need not be new or of an identical make, model or part; GemTek may in its discretion may replace the defective Hardware (or

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Submitting A Claim. Any claim under this limited warranty must be submitted in writing before the end of the Warranty Period to an Authorized GemTek Service Office. The claim must include a written description of the Hardware defect or Software nonconformance in sufficient detail to allow GemTek to confirm the same. The original product owner must obtain a Return Material Authorization (RMA) number from the Authorized GemTek Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided. After an RMA number is issued, the defective product must be packaged securely in the original or other suitable

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Initial installation, installation and removal of the product for repair, and shipping costs;

Operational adjustments covered in the operating manual for the product, and normal maintenance;

Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; and

Any hardware, software, firmware or other products or services provided by anyone other than GemTek.

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This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures

Warnung!

Dies ist in Produkt der Klasse B. Im Wohnbereich kann dieses Produkt Funkstoerungen verursachen. In diesem Fall kann vom Benutzer verlangt werden, angemessene Massnahmen zu ergreifen.

Advertencia de Marca de la CE

Este es un producto de Clase B. En un entorno doméstico, puede causar interferencias de radio, en cuyo case, puede requerirse al usuario para que adopte las medidas adecuadas.

Attention!

Ceci est un produit de classe B. Dans un environnement domestique, ce produit pourrait causer des interférences radio, auquel cas l`utilisateur devrait prendre les mesures adéquates.

Attenzione!

Il presente prodotto appartiene alla classe B. Se utilizzato in ambiente domestico il prodotto può causare interferenze radio, nel cui caso è possibile che l`utente debba assumere provvedimenti adeguati.

FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are

designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

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

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

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

VCCI Warning

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