Gemtek
Wireless Broadband Anywhere

Gemtek Technology Co., Ltd.

Wireless SOHO Router

WX-2211A

User's Manual

Version 1.0 - Jan. 2002

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Introduction

Thank you for purchasing your Wireless SOHO Router.

This manual will assist you with the installation procedure.

The package you have received should contain the following items:

- Wireless SOHO Router
- User’s Manual
- Power Adapter

Note: if anything is missing, please contact your vendor

Safety Notification

Your Wireless SOHO 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.

- Please read the installation guide thoroughly before you install the WIRELESS SOHO ROUTER.
- The WIRELESS SOHO ROUTER should only be repaired by authorized and qualified personnel.
- Please do not try to open or repair the WIRELESS SOHO ROUTER yourself.
- Do not place the WIRELESS SOHO ROUTER in a damp or humid location, i.e. a bathroom.
- The WIRELESS SOHO ROUTER should be placed in a sheltered and non-slip location within a temperature range of +5 to +40 Celsius degree.
- Please do not expose the WIRELESS SOHO ROUTER to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.

Hardware Installation

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 WIRELESS SOHO Router. A steady LED indicates the power is on. No LED lights indicate lack of power.
Status	Router status indicates. When router boot or Flash memory writing, then Status LED should be blinking.
WAN	Wide Area Network status. When connected to the Cable/DSL modem, the WAN LED should be steady on.
Async	Indicates console port Carrier Detect status. When modem connection is established then LED should be steady on.
WLS	Indicates wireless initial ready status. When wireless AP initial ready, WLS should be steady on.
LAN 1,2,3,4	Link/ACT = Displays Link Activity. When each of LAN port connects to PC or Port#1 connects to HUB, Link/ACT should be steady on, when data transfer then Link/ACT should be blinking.

Rear Panel

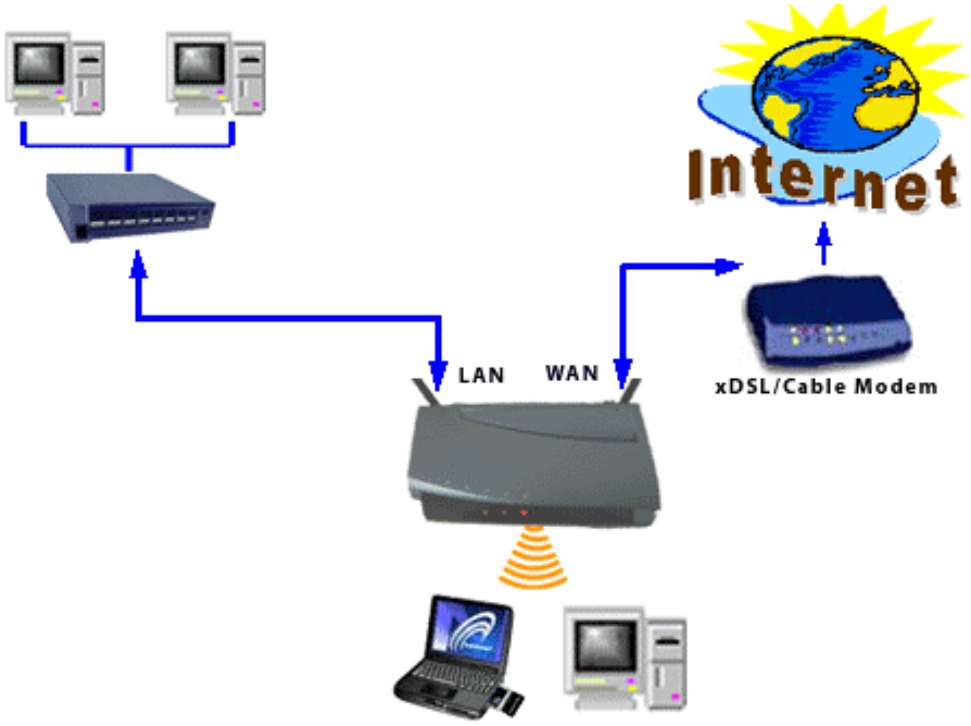
The rear panel features a LAN port, WAN port, Serial port and Factory Reset button. Refer to the following table for the meaning of each feature.

Power	Used to connect to the power outlet. Only use the power adapter provided with the WIRELESS SOHO Router. Use of an unauthorized power adapter may cause damage to your device and violate your

	warranty.
Modem	Port used to connect an external analog backup modem/ISDN TA.
WAN	The RJ-45 Ethernet port labeled WAN is used to connect your WIRELESS SOHO Router to your DSL or Cable modem.
Reset	Resets the configuration to default settings.
LAN(2,3,4)	The RJ-45 Ethernet port used to connect your PC using normal Ethernet cables to your WIRELESS SOHO Router.
LAN (1)	Using crossover cable (RJ-45) to connect to your PC or normal Ethernet cables to uplink port of hub or switch.

General WIRELESS SOHO ROUTER System Connection

1. The general function of WIRELESS SOHO ROUTER is defined as an “AP + Router”, and the connection is as follow diagram. In this mode, user may connect the WAN port to Cable / DSL modem. The WAN LED will indicate connection. Connect the LAN port to a hub or switch.



WIRELESS SOHO ROUTER Default Settings

By default settings, the WIRELESS SOHO ROUTER is regarded as an “AP Router”. The default settings are shown following.

Note:

In WEB mode setup system, only one user allows to access setup program at one time i.e. setup system will decline when other users to connect setup system.

User Name	admin	
Password		
AP Router Name	Wireless AP	SOHO Wireless LAN
AP Router IP Address	192.168.2.1	
AP Router Subnet Mask	255.255.255.0	
10/100 Ethernet LAN IP	192.168.2.1	
LAN MAC Address		
10 Mbps Ethernet WAN IP	Obtain from ISP via DHCP	Can be manually configure
WAN MAC Address		
WAN DHCP Client	Enabled	After 20 sec. Go to blank
RF ESSID	Wireless	
RF Channel	6	
RF Roaming	Disabled	
Encryption	Disabled	
DHCP Server	Enabled	
NAT Routing	Enabled	

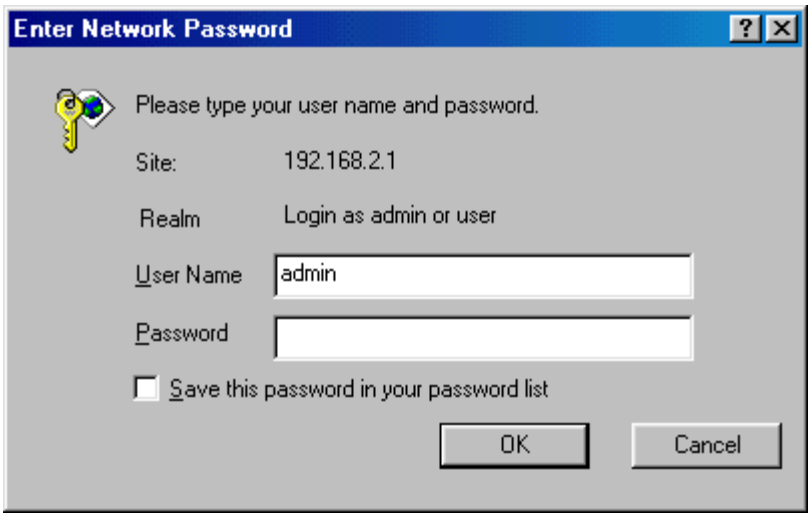
Web Management Settings

TURN ON POWER SUPPLY

Quick power cycle can caused system corruption. When power on, be careful not to shut down in about 5 seconds, because data is writing to the flash.

START -UP & LOG IN

In order to configure the Wireless SOHO Router, you must use your web browser and manually input 192.168.2.1 into the Address box and press Enter. The Main Page will appear.



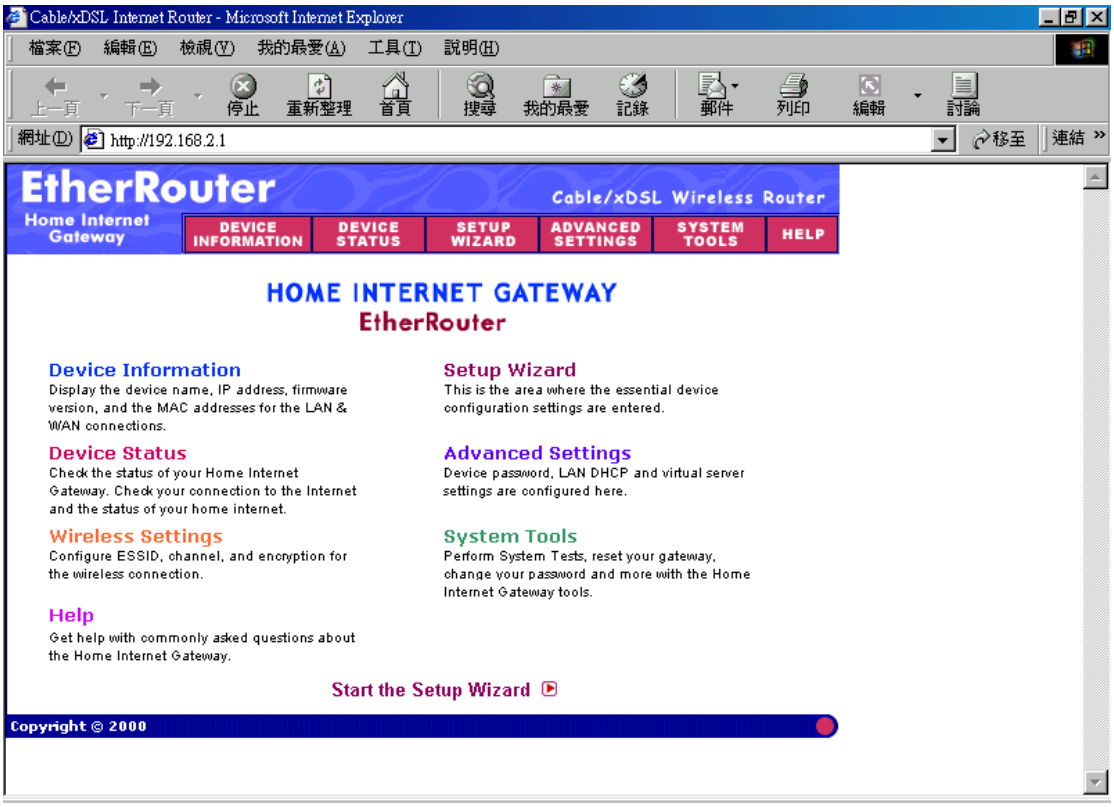
In order to configure the Wireless SOHO Router, you must input the user-name into the **User Name** box. Enter the password into the **Password** box and press the **OK** button. The default User Name is “admin”. There is no default password, leave the Password field blank.

Once you have logged-in as administrator, it is a good idea to change the administrator password to ensure a secure connection to the Wireless SOHO Router. 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.

MAKE CORRECT NETWORK SETTINGS OF YOUR COMPUTER

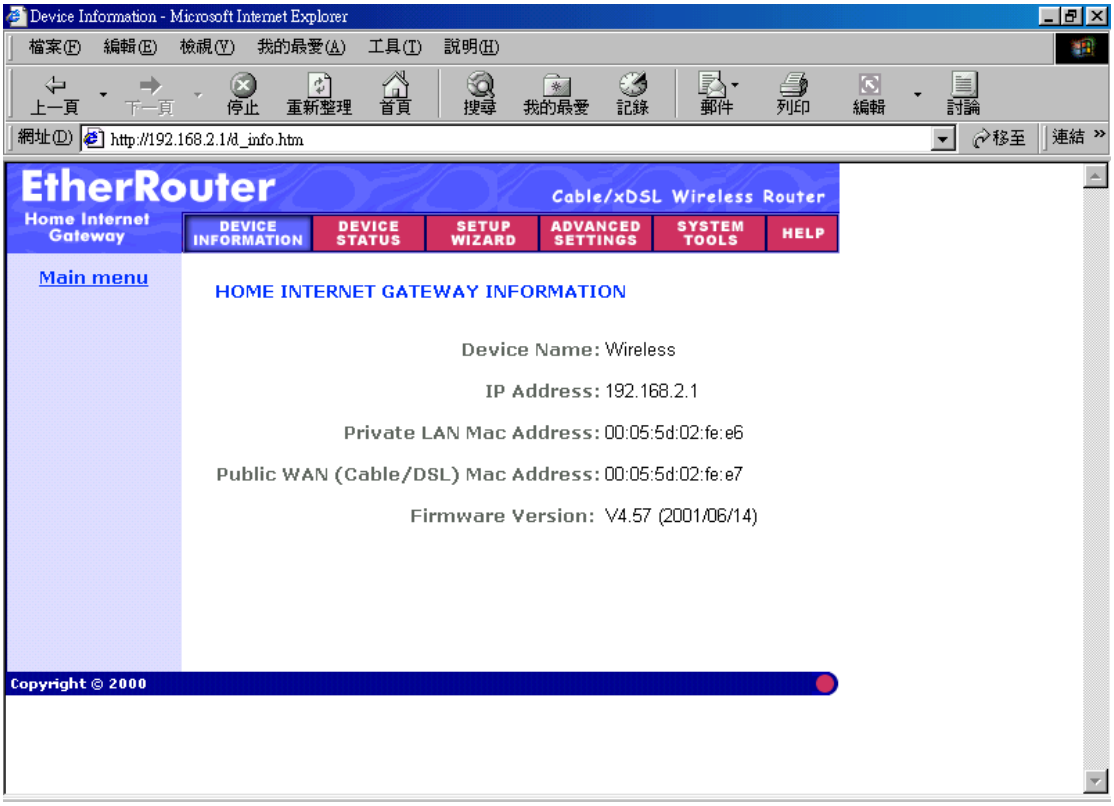
To change the configuration, use Internet Explorer (IE) or Netscape Communicator to connect the WEB management 192.168.2.1.



SETUP WIZARD

Click SETUP WIZARD. Here allow user to configure basic network settings with your ISP provider.

DEVICE INFORMATION



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

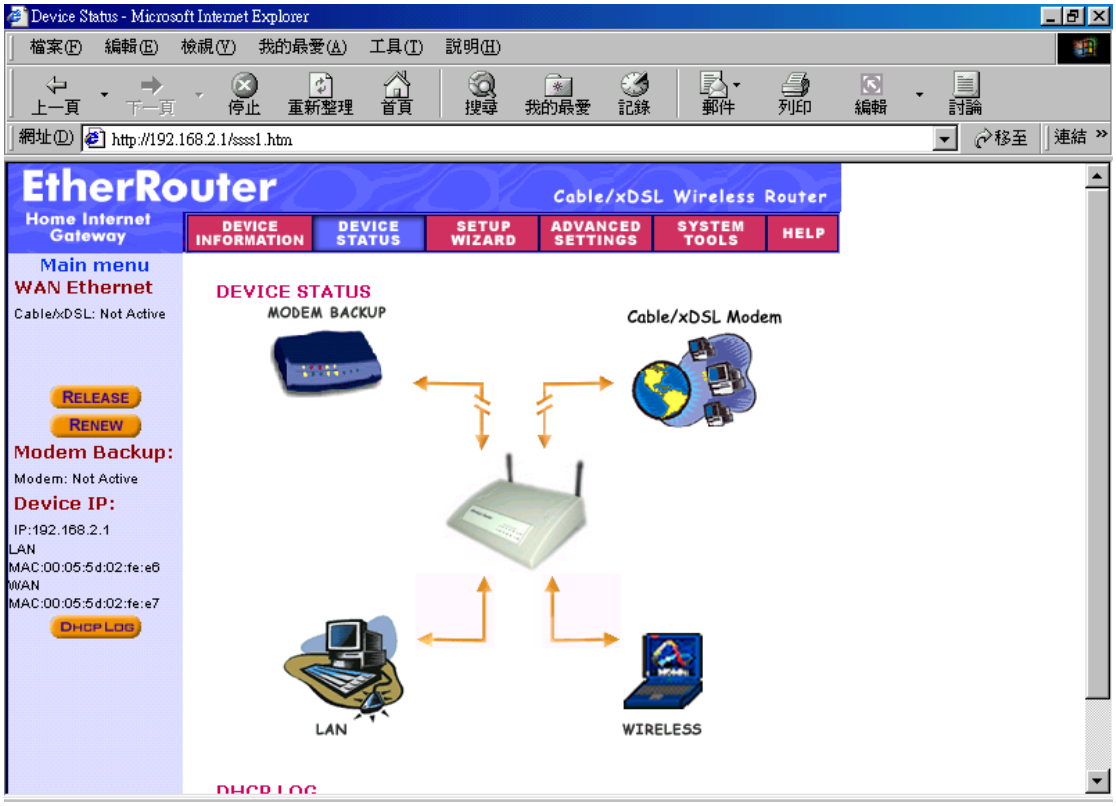
The **IP Address** is the IP Address assigned to LAN side of your Router.

The **Private LAN Mac Address** the Mac Address assigned to the LAN side of your Router.

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

The **Firmware Version** is the current firmware version used by the Router.

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.

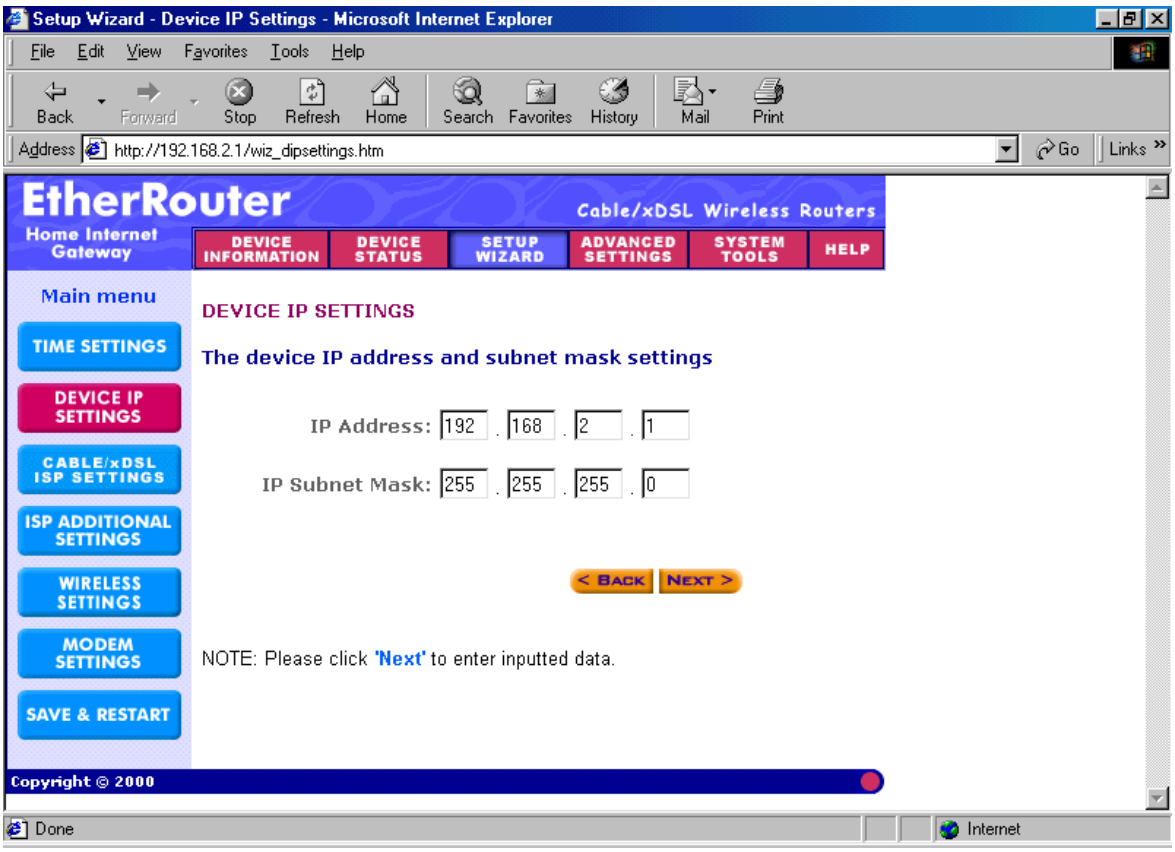
This means that there is a connection.

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 Router.

DEVICE IP SETTINGS

It's the LAN network domain settings. The default value is listed as following. (IP Address: 192.168.2.1, IP Subnet Mask: 255.255.255.0) After changing the settings, click NEXT to continue other network settings.



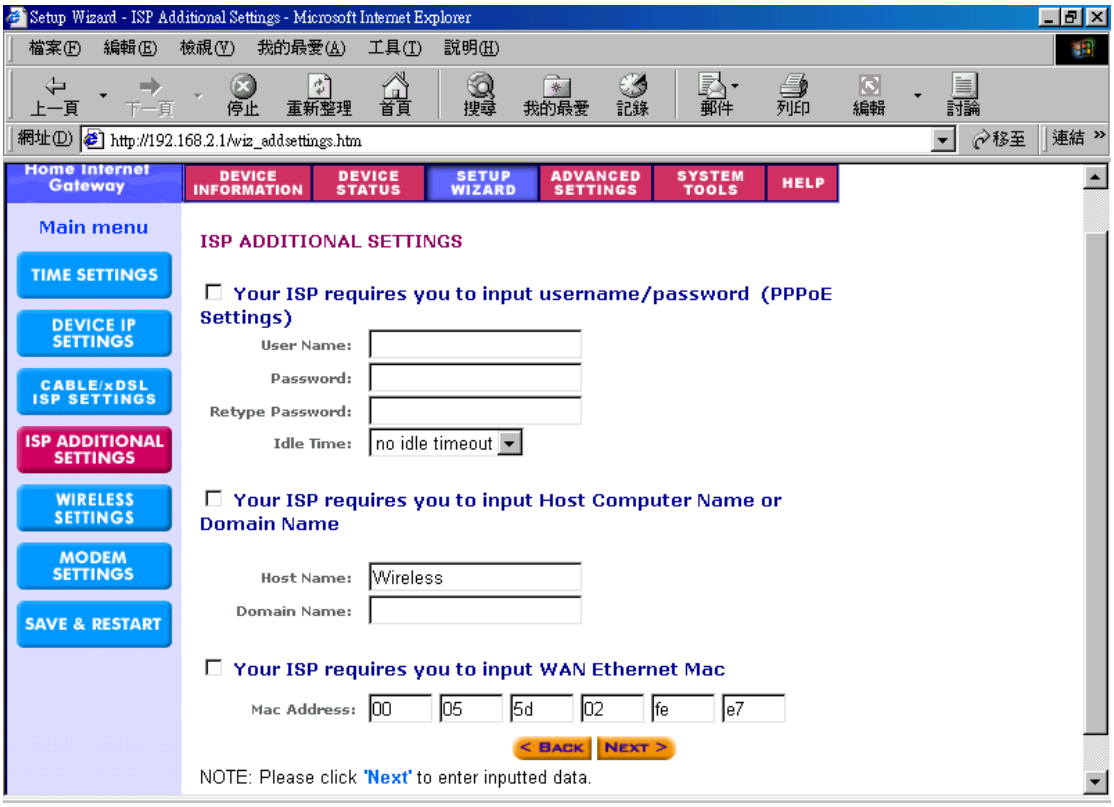
CABLE/ADSL ISP SETTINGS:

Here are the cable/ADSL ISP settings i.e. WAN port network settings.
By default, the WAN port is set to automatically obtain an IP address from your ISP, if ISP provides DHCP server function.
To assign static IP for the WAN port, place a checkmark and enter the settings.

After changing the settings, click NEXT to continue other network settings.

ISP ADDITIONAL SETTINGS:

To set extra ISP settings, user may set the authentication data here while entering ISP. Here also allow user to set the “idle time”, ”host and domain name” and ”WAN Ethernet MAC address”. After changing the settings, click NEXT to continue other network settings.



DSL users:

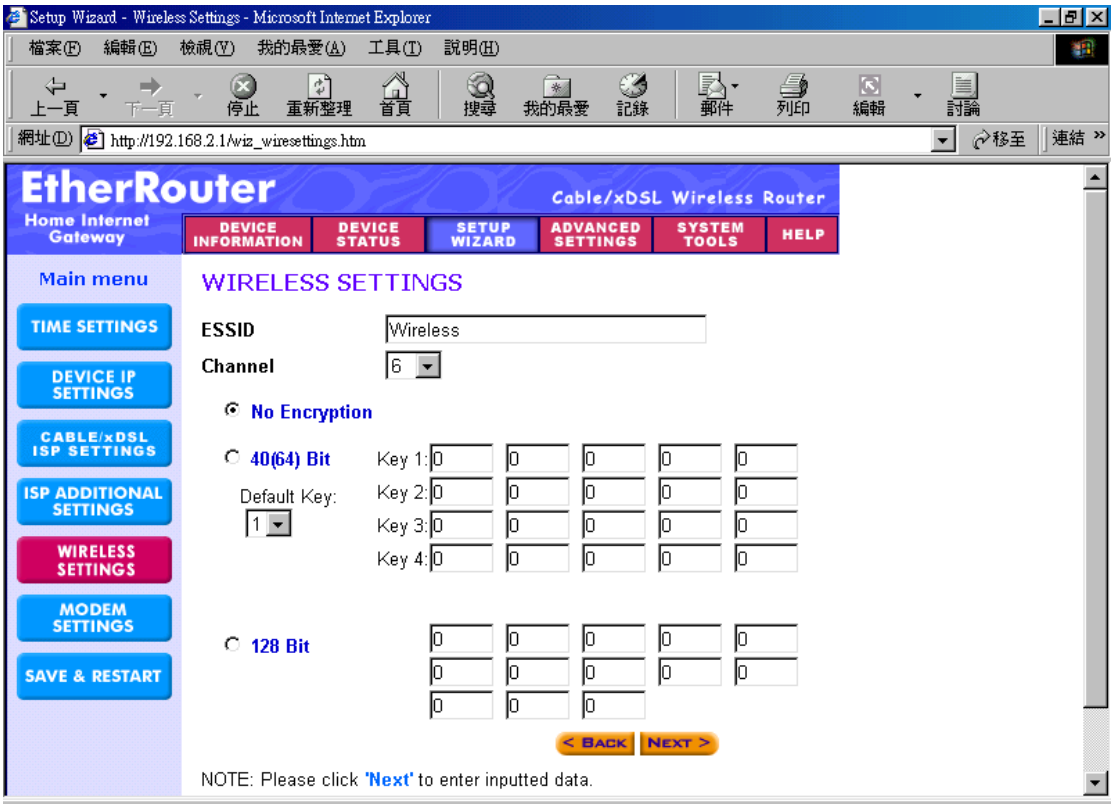
If you are using a PPPoE client to connect to your DSL provider, then place a checkmark on the first box, and enter the user name and password in the appropriate box.

Cable modem users:

If you are using a cable modem, then place a checkmark on the second box and enter the host and domain name given by your cable provider.

WIRELESS SETTINGS

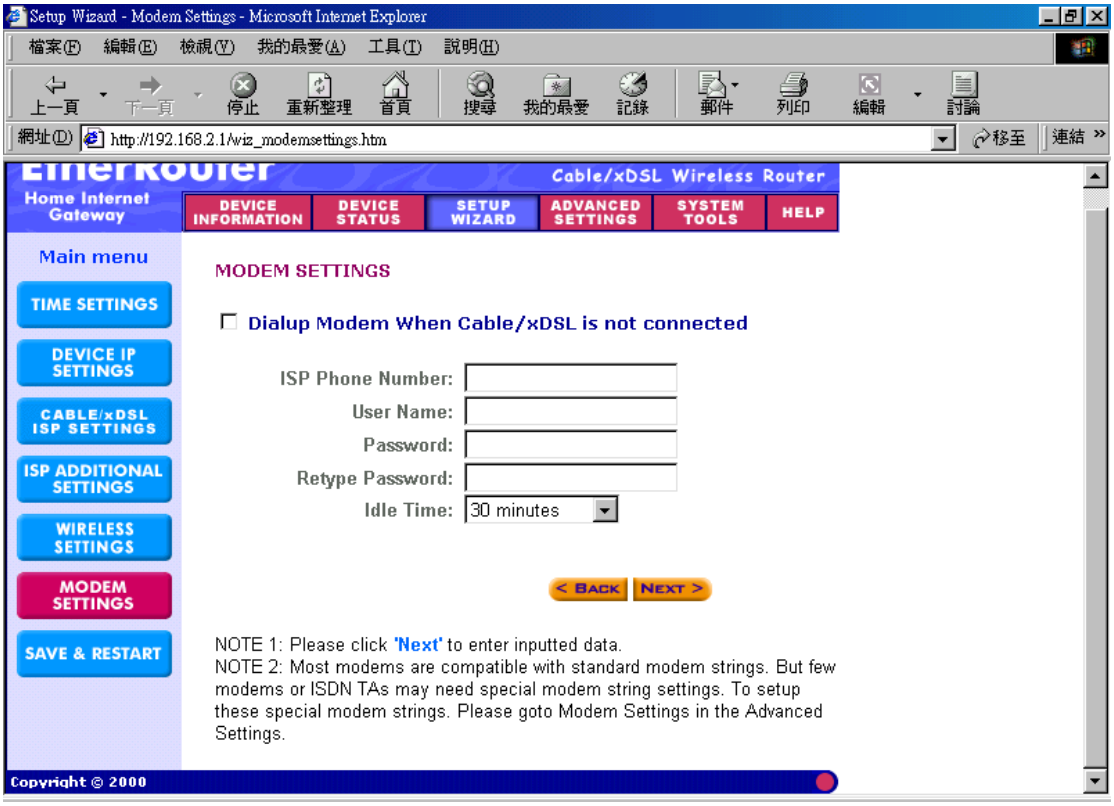
Here allow user to set WIRELESS SOHO ROUTER wireless IP and operation channel. The default value for RF are as followed: ESSID: Wireless, Channel: 6. After changing the setting, click NEXT to save and restart the system.



MODEM SETTINGS

An analog external modem can be used as a dialup backup to the DSL/Cable connection. If you would like to use a modem backup, you need to enable the modem settings function. Click on “Modem Settings” on the left hand side and input the ISP account settings.

Note: If you change the baud rate settings, please check the initial string. (Please refer to the modem’s manual.)



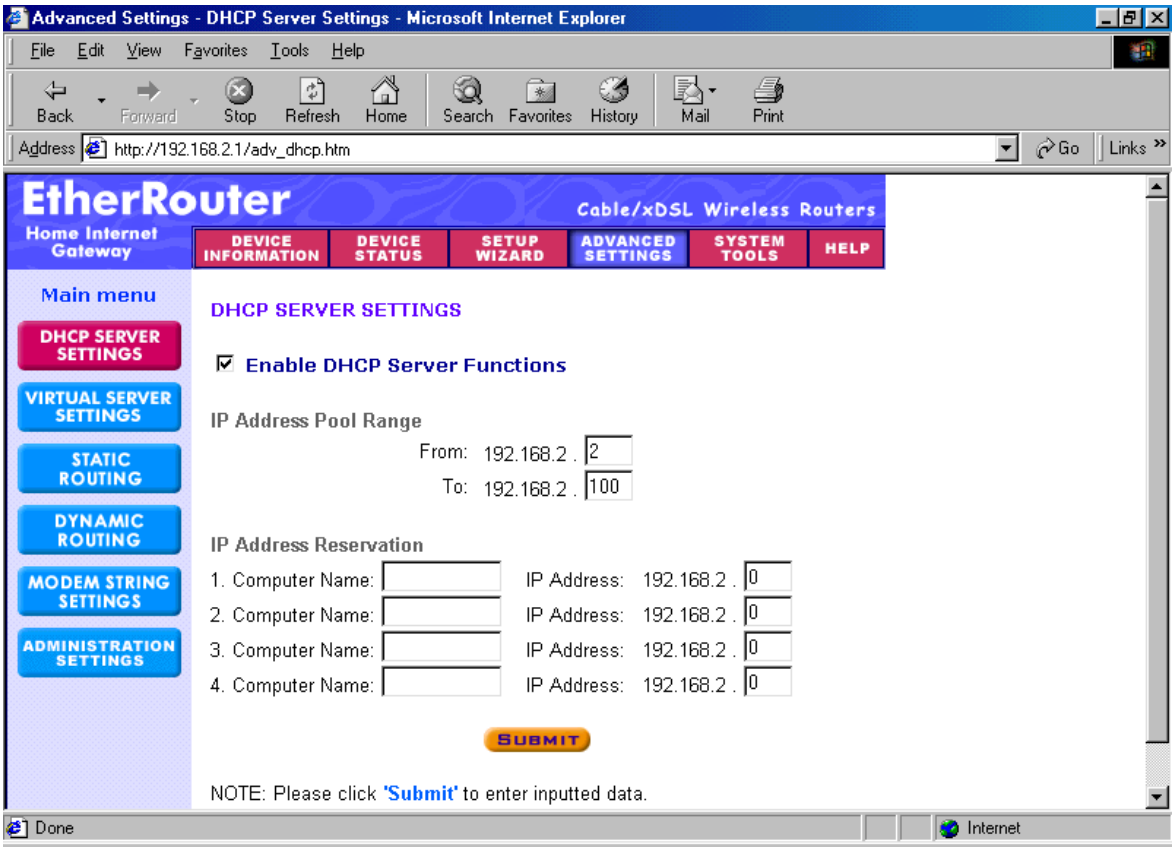
ADVENCED SETTINGS

Click ADVENCED SETTINGS. Here allow user to set the advanced settings as main menu list.

DHCP SERVER SETTINGS

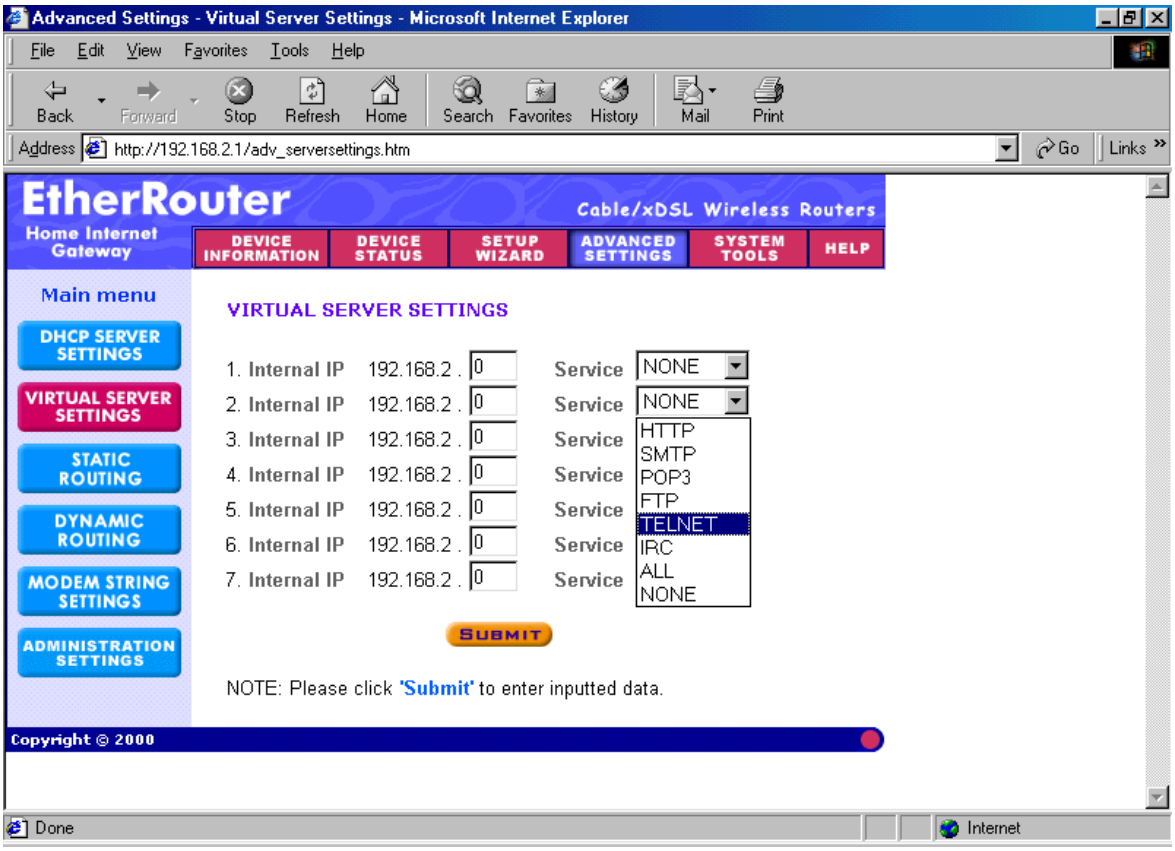
By default, the Wireless Router has DHCP server enabled to assign an IP address ranging from 192.168.2.2 to 192.168.2.100. In addition, the router is capable of reserving up to four sets of IP addresses within the local network for mail, web, or ftp server.

After changing the setting, clicks SUBMIT to change the configuration.



VIRTUAL SERVER SETTINGS

Here allow user to set several kinds of virtual service of the WIRELESS SOHO ROUTER such as HTTP, SMTP, POP3, FTP, TELNET and IRC service. After changing the setting, clicks SUBMIT to enter inputted data.



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 Wireless SOHO 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

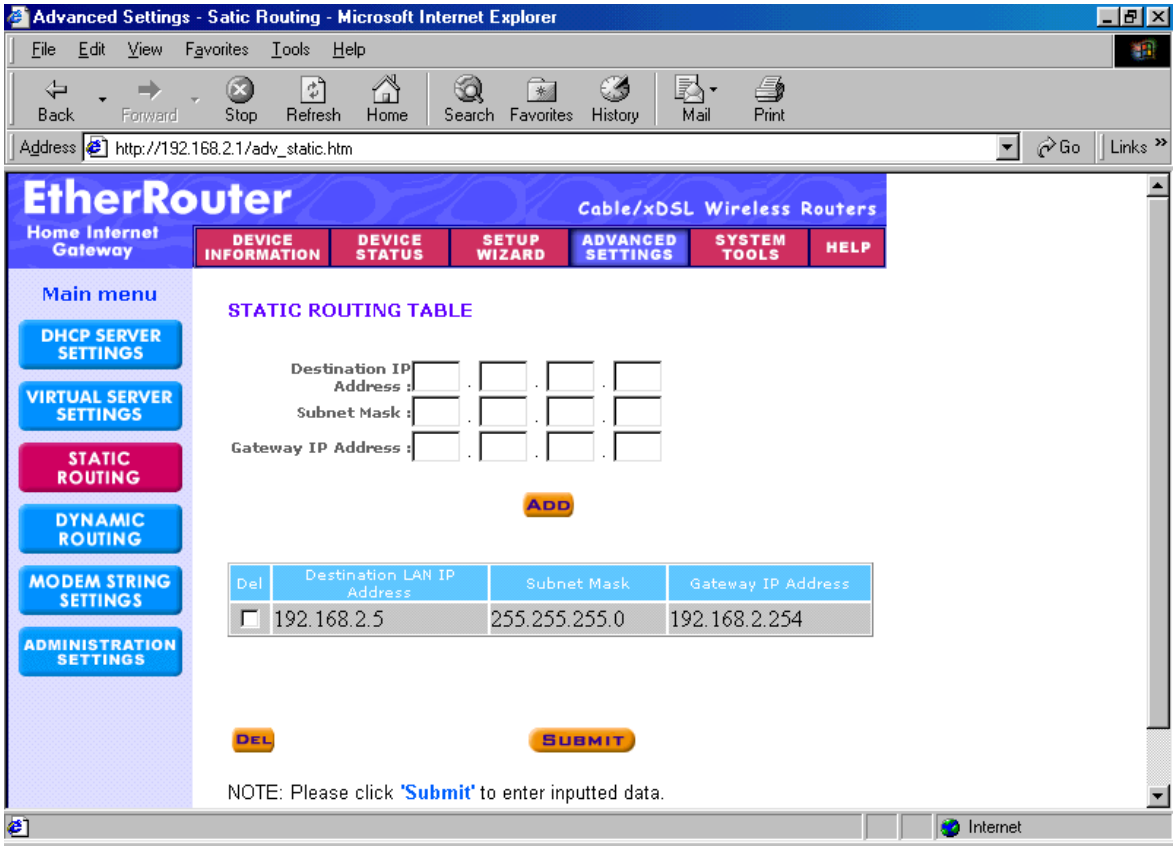
The Virtual Server Settings under Advanced Settings also enables one computer to have full access to the Internet without the protection of the firewall. This allows a computer to be exposed to unrestricted two-way communication outside of your network.

To enable DMZ, select “All” from menu. 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.

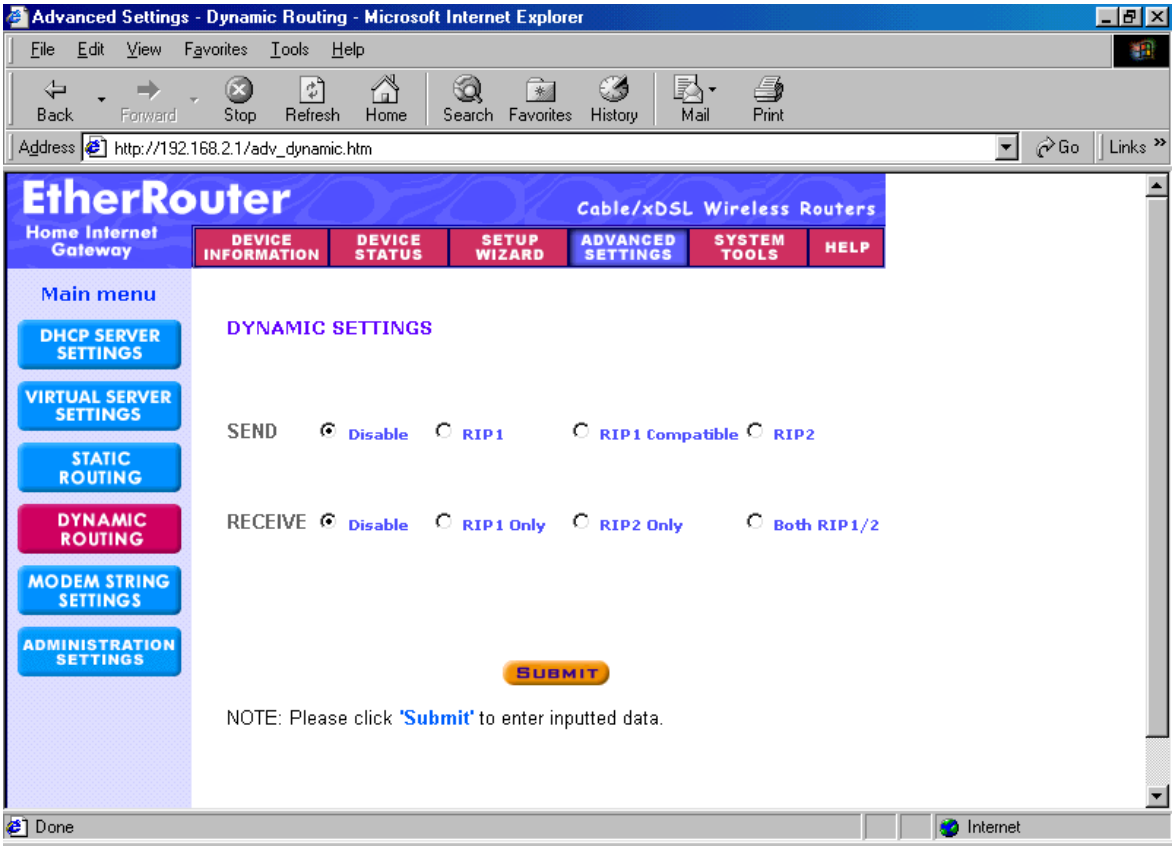
Use DMZ only when needed and not for extended periods of time.

STATIC SETTINGS



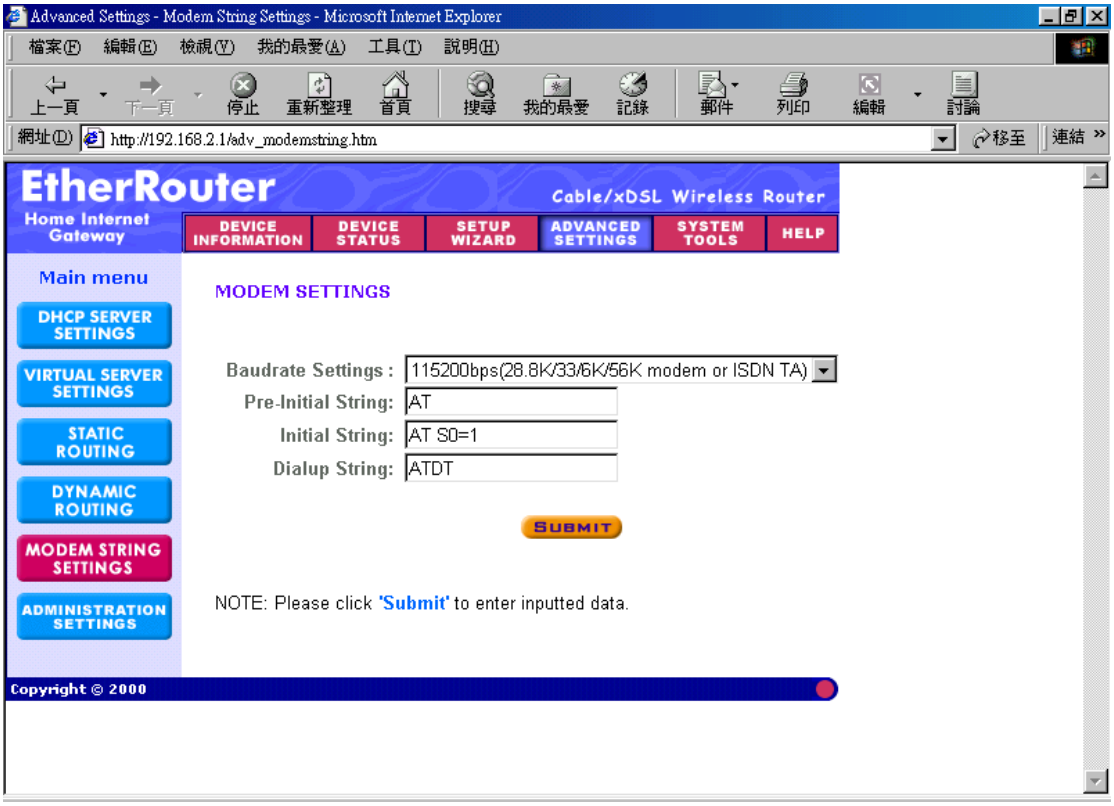
In Static Routing, the user has the ability to add a static route to the routing table by simple entering the destination IP, subnet mask, and gateway. Clicking on “Add” and then “Submit” which requires a restart for the IP address to be incorporated into the routing table.

DYNAMIC SETTINGS



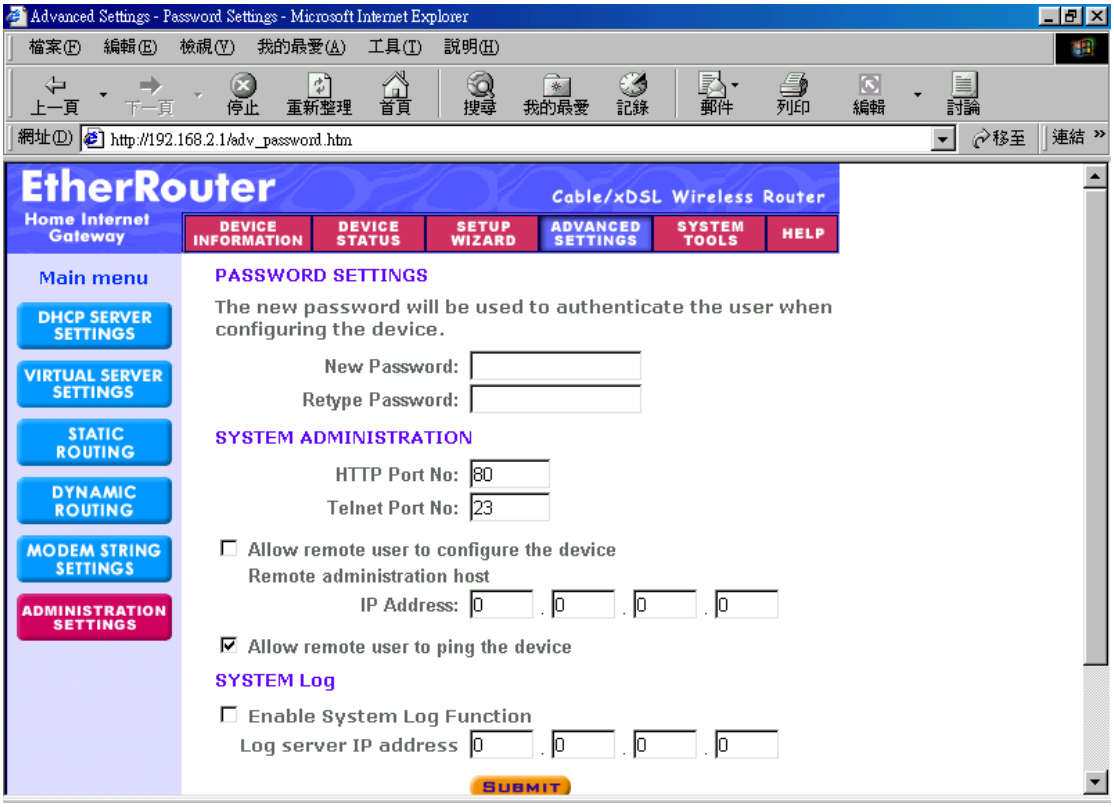
By default, the Router will not send or receive any routing Internet protocols (RIP) to update the routing table. However, the user can enable the Router to automatically send and receive RIP packets to establish routes for commonly used paths.

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.

ADMINISTRATION SETTINGS



Here allow user to change the password to execute setup system. After changing the setting, clicks SUBMIT .

SYSTEM TOOLS

The System Tools section enables you to manage your Wireless SOHO Router and view information related to unit functions. The following functions are described in this chapter.

Intruder Detection Log: View detection logs.

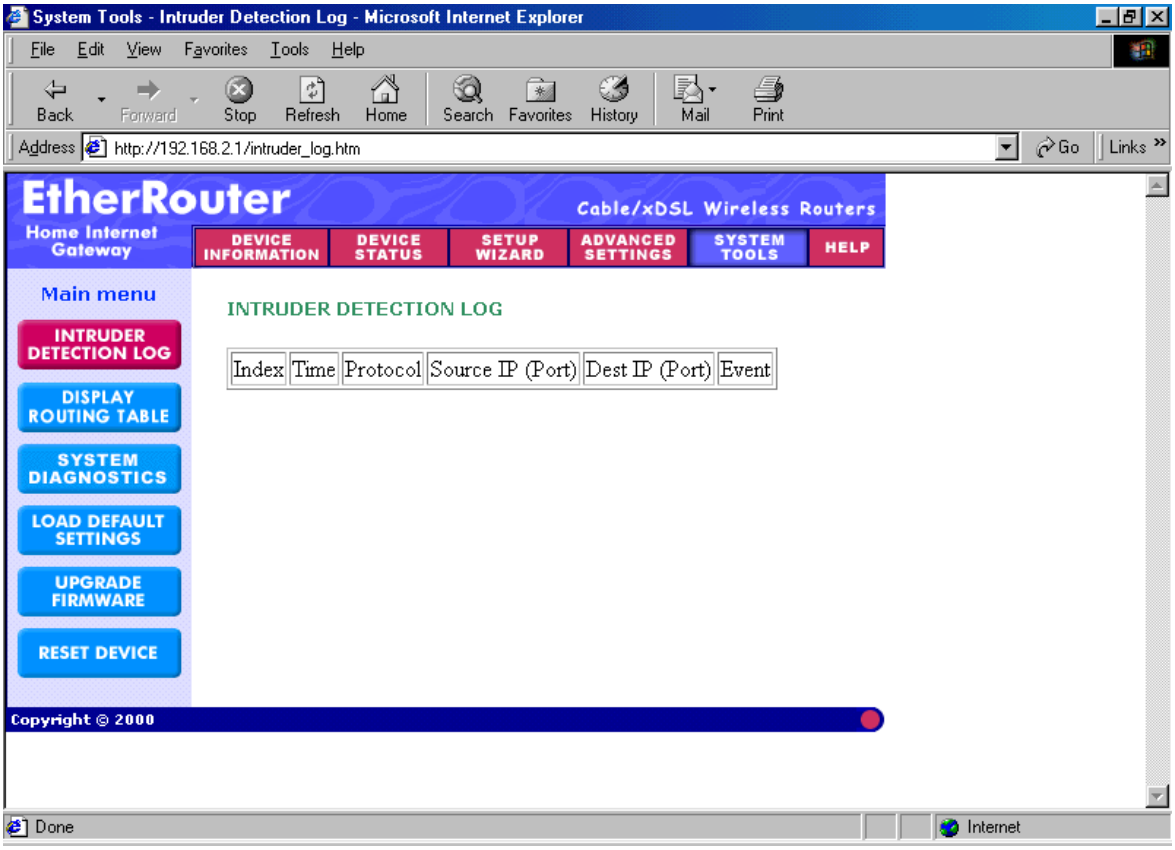
System Diagnostics: Display current status and connection information.

Load Default Settings: Restore settings to factory default.

Upgrade Firmware: Upgrade the firmware with a latest version.

Reset Device: Reboot the Wireless SOHO Router.

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.

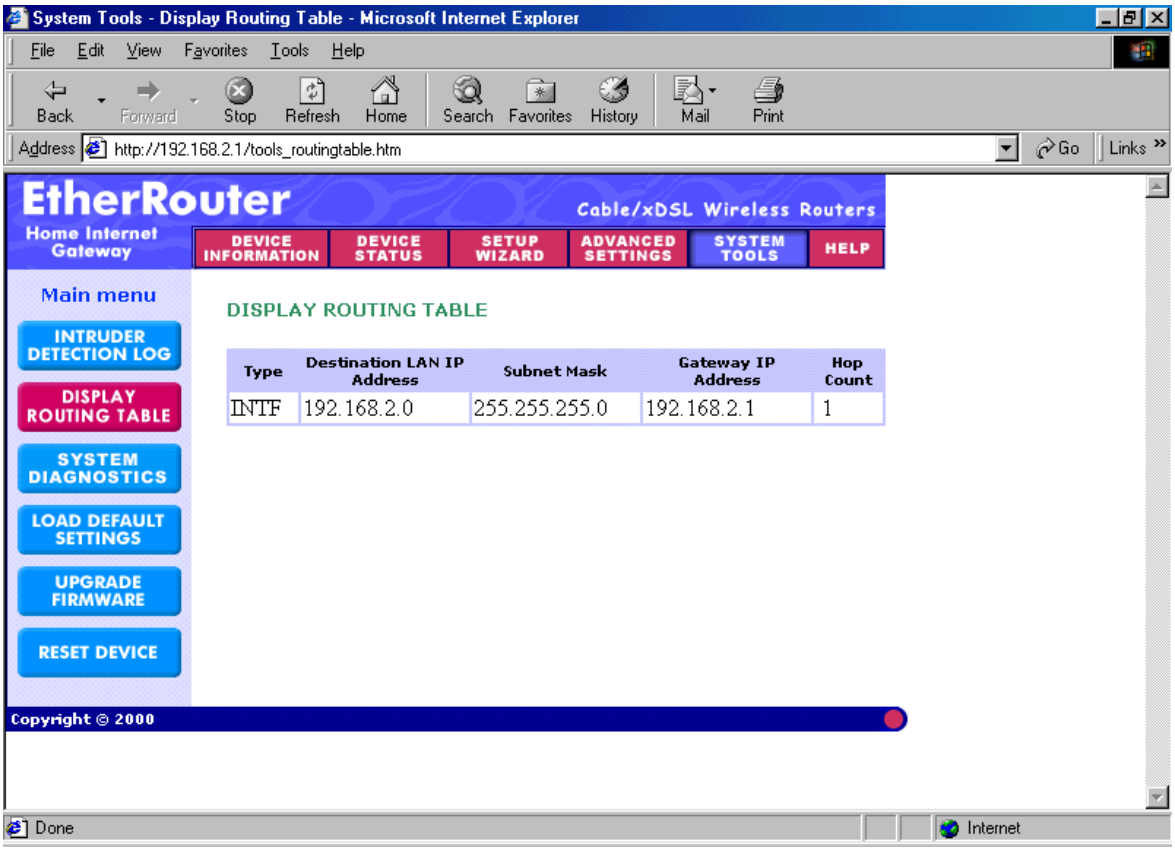
Protocol: (IP, UDP etc.) The type of protocol detected.

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 Router 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.

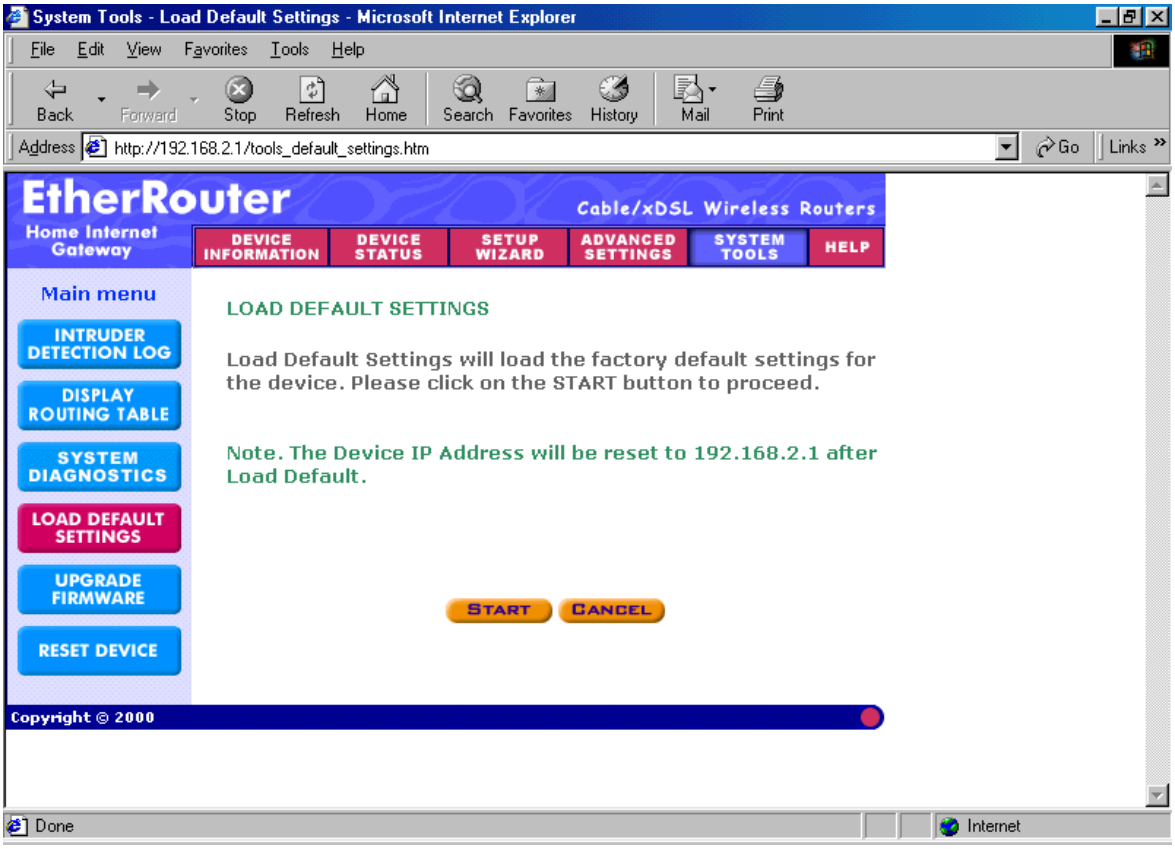
Destination LAN IP Address: Shows the Destination IP Address on the LAN side.

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.

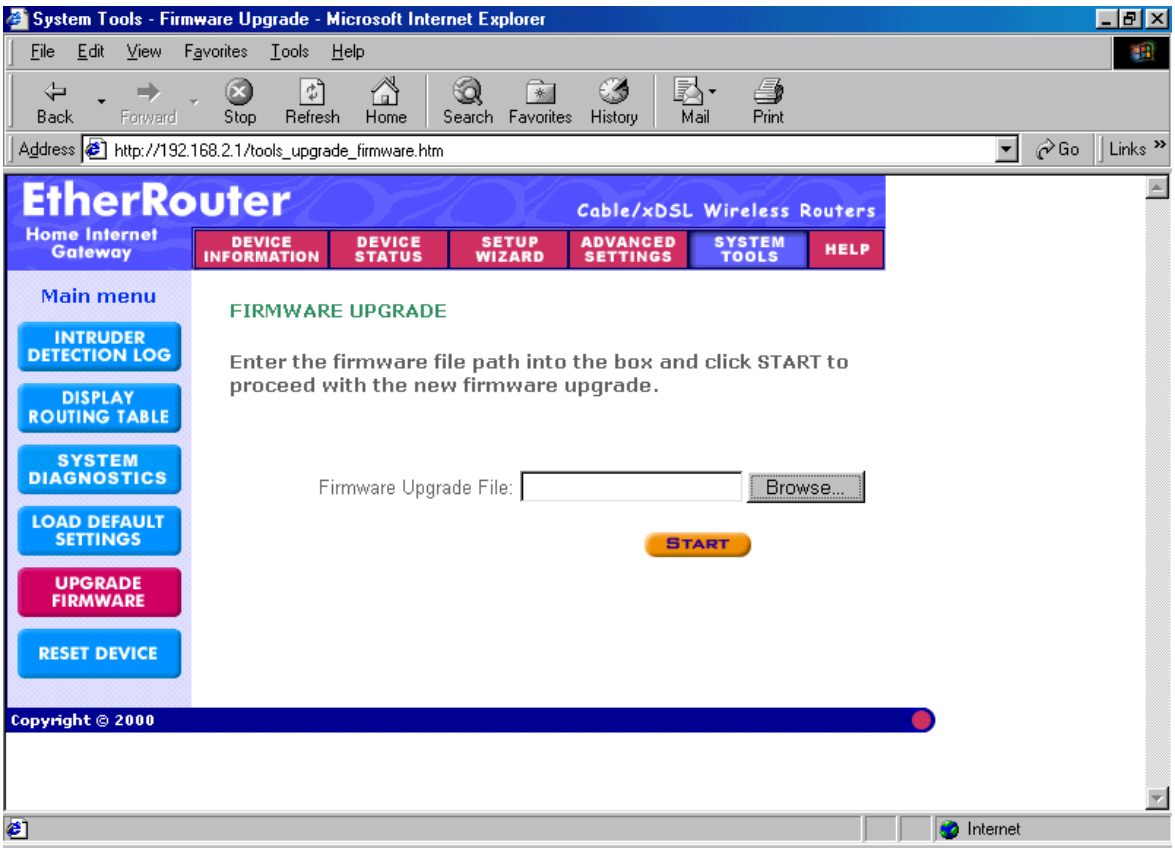
LOAD DEFAULT SETTINGS



The Load Default Settings screen enables you to restore the settings that came as default. Click the Start button to begin the process.

UPGRADE FIRMWARE

Here allow user to upgrade firmware. After choosing upgrade firmware, click START to load settings.

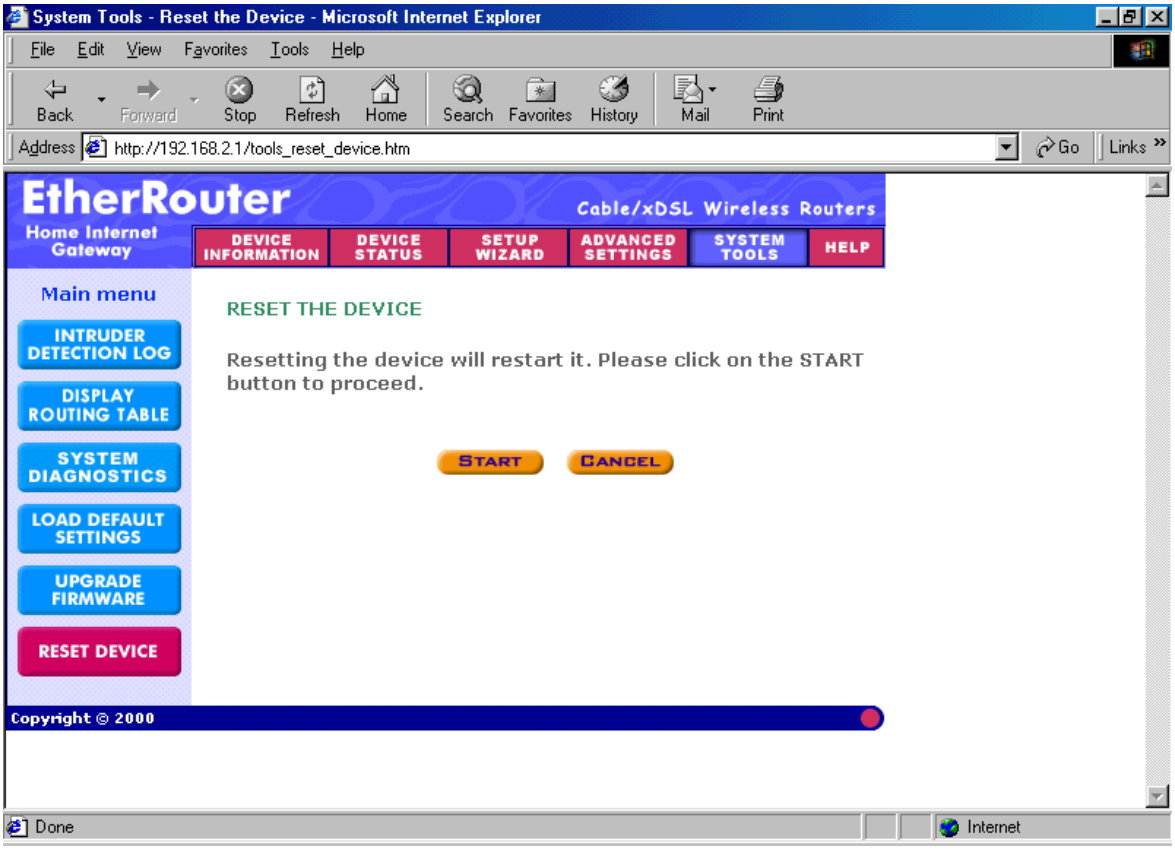


The Upgrade Firmware screen enables you to update the firmware. Updated firmware usually fix problems encountered by users, but may incorporate new features.

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 Wireless SOHO Router. If any changes are made and you want them to take effect, you will need to reset the Wireless SOHO Router to do so. Click the “Start ” button to reset the Wireless SOHO Router.

Click the “Cancel” button to cancel.

Troubleshooting

Basic Functions

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

Cause:

- The power is not connected .

Resolution:

- Connect the power adapter to your WIRELESS SOHO Router and plug it into the power outlet.

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

LAN Connection Problems

I can't access my WIRELESS SOHO Router.

Cause:

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

Resolution:

- Make sure your WIRELESS SOHO Router is powered 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 Router. For example, if the Router is set to 192.168.2.1, change the IP address of your computer to 192.168.2.15 or another unique IP Address that corresponds to the 192.168.2.X subnet.

  Use the Reset button located on the front of your 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 WIRELESS SOHO 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 Wireless SOHO 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 Wireless SOHO Router to your DSL or Cable modem.
- The wrong connection type is used in Setup.
- The username and password is not input correctly.

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.
- 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.

Wireless Troubleshooting

I Can't access the Wireless SOHO 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.
- Make sure that your computer is within range and free from any strong electrical devices that may cause interference.
- Check your IP Address to make sure that it is compatible with the Wireless SOHO Router.

Performing a Factory Reset

Follow these steps to perform a Factory Reset using the Reset button on the back of the Wireless SOHO Router.

1. With the unit on, press and hold the Reset button with a pen or paper clip.
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 Wireless SOHO Router 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.

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 SOHO Router 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 (1- 11)

Most European: 13 (1-13)

France : 4 (10-13)

Japan : 14 (1-14)

Access Point Frequency Range:

5 Mbps

Access Point Data Rate:

11 Mbps
5.5 Mbps
2 Mbps
1 Mbps

Data encryption:

40 bit WEP and ESSID for Security

LED:

Power : Indicate power is ON

Status : Indicate Firmware loading under proceeding

WAN : Indicate WAN port connection

LAN : Indicate LAN port TX/RX operation

WLAN: Indicate Wireless been connected and operation

Power Specifications :

DC power supply

Input: DC 100-240 50-60 Hz 1A

Output: 5V DC 1A converter incl.

Physical Dimensions

195mm(L) * 160mm (W) * 27mm (H)

Weight :

680 g (without power adapter)

Federal Communication Commission Interference Statement

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 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.

IMPORTANT NOTE:

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.

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

R&TTE Compliance Statement

This equipment complies with all the requirements of the DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE).

The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000 .

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this manual and of the computer manufacturer must therefore be allowed at all times to ensure the safe use of the equipment.

EU Countries intended for use

The ETSI version of this device is intended for home and office use in Austria, Belgium, Denmark, Finland, France (with Frequency channel restrictions), Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

The ETSI version of this device is also authorized for use in EFTA member states Iceland, Liechtenstein, Norway and Switzerland.

EU Countries Not intended for use

None.

Potential restrictive use

France: Only channels 10,11,12, and13

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