U.S.Robotics®

Wireless 54Mbps ADSL Router

User Guide

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Wireless 54Mbps ADSL Router

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CHAPTER 1
INSTALLATION

USR5473 Package Contents

USR9110 Wireless 54Mbps ADSL Router
12VDC Power Supply
Installation Guide
One (1) phone cable
One (1) Ethernet cable
USR5422 54Mbps USB Adapter
Installation CD-ROM

Prepare for Installation

Note: It is important that you have your serial number written down before you install the Wireless 54Mbps ADSL Router. You can find your serial number on the bottom label of the Wireless 54Mbps ADSL Router. If you ever need to call our Technical Support department, you will need this number to receive assistance.

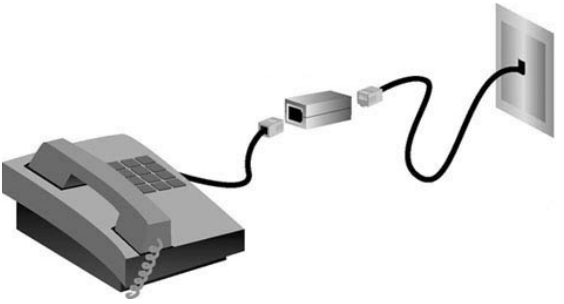
Model Number	Serial Number
USR9110	

Note: Be sure to find out what letter your CD-ROM drives uses before you begin installing your new product. You will need to know this to properly install your software.

Step One: Connect Microfilter(s) (if included or required by your ISP)
A microfilter removes interference between voice and DSL signals. Your ISP will determine if a microfilter is necessary. If a microfilter was not included with the Wireless 54Mbps ADSL Router, ask your ISP if you need to purchase one or more.

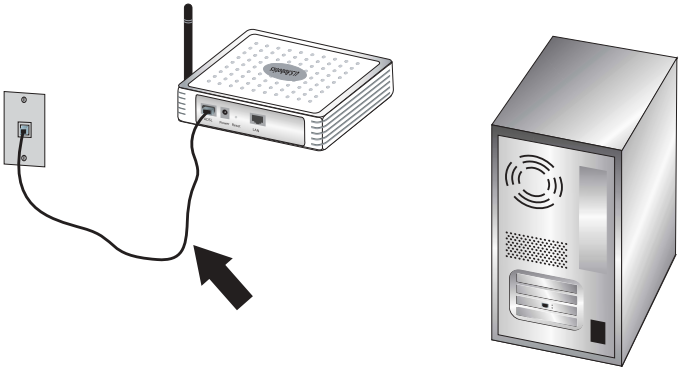
To install a microfilter, plug each device (phone, fax machine, or other telephony device) into the microfilter and then plug the microfilter into the telephone wall jack. Do not install a microfilter on the cable that will connect your Wireless 54Mbps ADSL Router to the telephone jack unless your

microfilter has a connection for both the router and the phone.



Step Two: Connect your Wireless 54Mbps ADSL Router to the wall phone jack

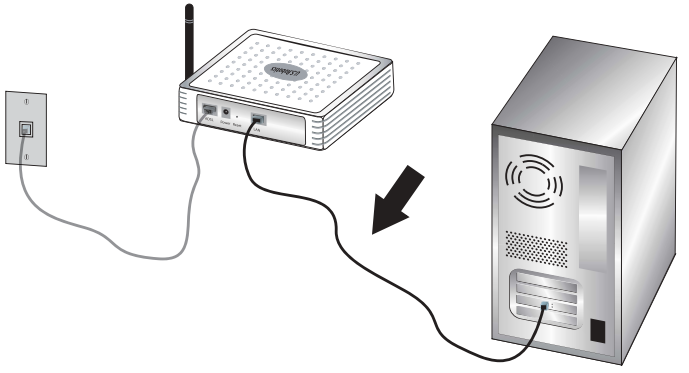
- Turn off your computer.
- Connect one end of the included phone cable to the ADSL port on the Wireless 54Mbps ADSL Router. Connect the other end of the phone cable to a wall phone jack.



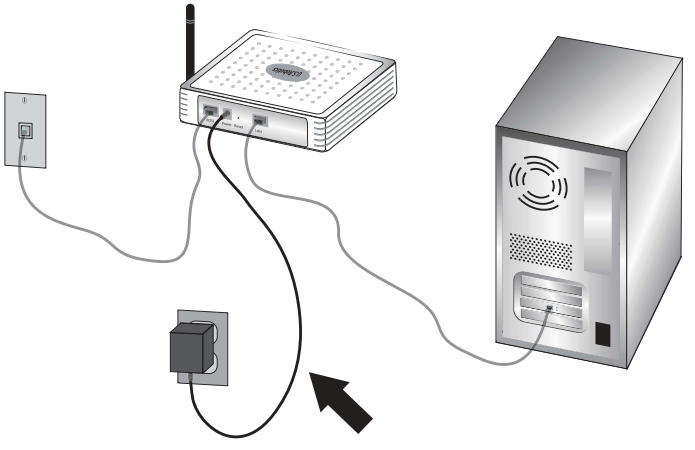
Step Three: Connect your Wireless 54Mbps ADSL Router to your computer and connect the power supply

Connect one end of the supplied Ethernet cable to your computer's Ethernet adapter. Connect the other end to the LAN port on the Wireless 54Mbps

ADSL Router.



Connect the included power adapter to the power socket on the Wireless 54Mbps ADSL Router. Plug the power adapter into a standard power outlet. Turn on your computer.



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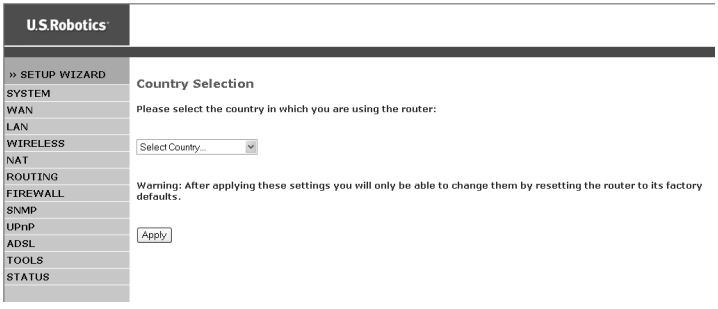
Proceed to Chapter 2 to configure the Wireless 54Mbps ADSL Router.

Chapter 2
Configuring the Wireless 54Mbps ADSL Router

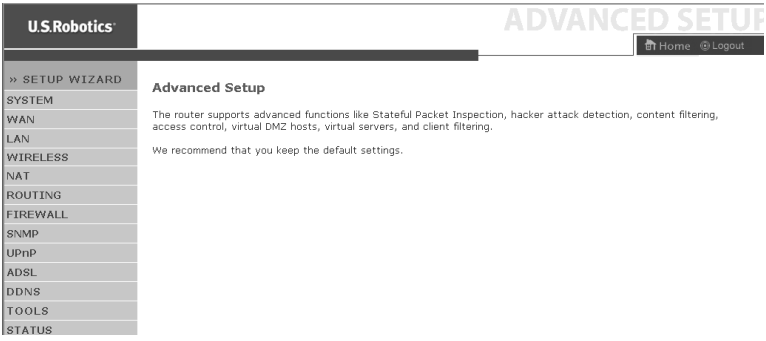
To access the Wireless 54Mbps ADSL Router's Web User Interface, launch a Web browser and type the default IP address of the Wireless 54Mbps ADSL Router in address line: **http://192.168.2.1**.
By default, there is no password, so click **LOGIN** to access the Web User Interface.

If you are logging in to the Web User Interface for the first time, the country selection page will appear. Please select the country in which you will be using the Wireless 54Mbps ADSL Router and then click **Apply**. Then confirm your country selection by clicking **OK**.



Navigating the Web User Interface

This is the advanced setup page:



Setup Wizard: Use the Setup Wizard if you want to quickly set up the Wireless 54Mbps ADSL Router. Go to “Setup Wizard” on page 9.

Advanced Setup: Advanced Setup supports more advanced functions like hacker attack detection, IP and MAC address filtering, virtual server setup, QoS, as well as other functions. Go to “Advanced Setup” on page 20.

Making Configuration Changes

Configurable parameters have a text box or a drop-down list. Once a configuration change has been made on a page, click **SAVE SETTINGS** or **NEXT** at the bottom of the page to enable the new setting.

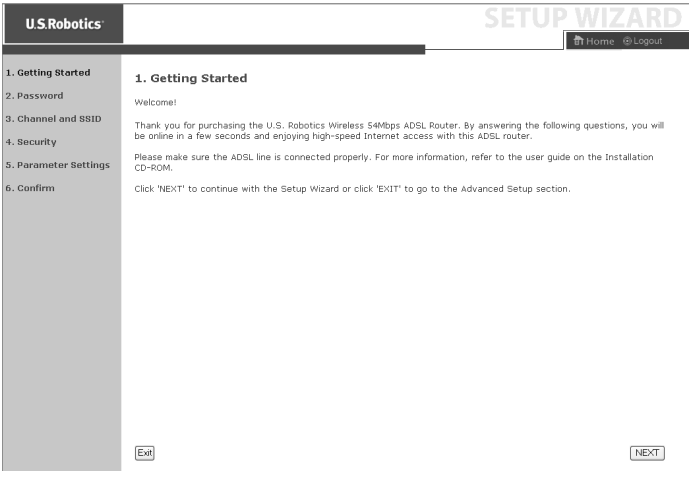
Note: To ensure the screen refreshes after a command entry, be sure that Internet Explorer is configured as follows: Click **Tools**, **Internet Options**, **General**, **Temporary Internet Files**, and **Settings**. The setting for Check for newer versions of stored pages should be **Every visit to the page**.

Setup Wizard

1. Begin the Setup Wizard

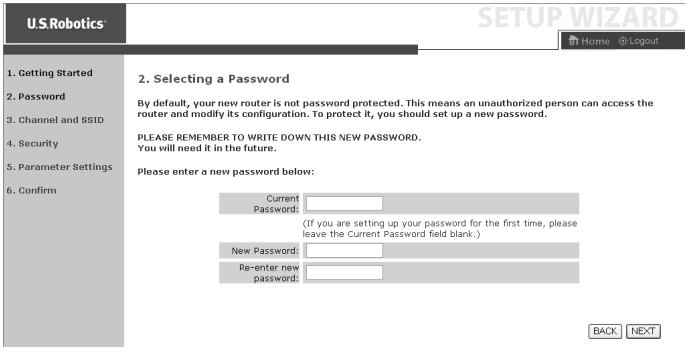
If this is the first time the Setup Wizard has been launched, select your country and click **Apply**. Verify you have selected the correct country and click **OK**.

Click **NEXT**.



2. Create a password for the router

Follow the on-screen instructions to create a password for access to the router. Remember that there is no current password to enter. After creating and confirming a password, click **NEXT**.



3. Enter your wireless network and security information

You will see the Channel and SSID page. Enter the appropriate information for your wireless and security settings. Refer to the table that follows for descriptions of the different settings. Click **NEXT** when done.

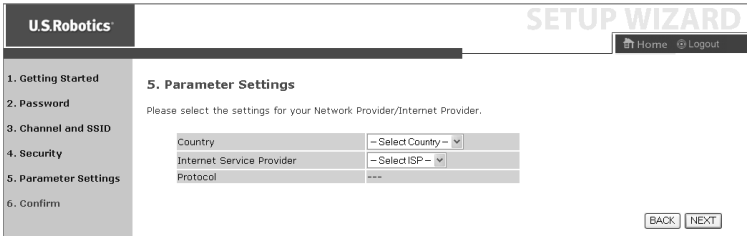
Parameter	Description
SSID	Service Set ID. The SSID must be the same on the Wireless 54Mbps ADSL Router and all of its wireless clients.
SSID Broadcast	Enable or disable the broadcasting of the SSID.

Parameter	Description
Wireless Mode	This device supports both 11g and 11b wireless networks. Make your selection depending on the type of wireless network that you have.
Security Type	For Security, you can select either **No WEP, No WPA**; **WEP Only**; or **WPA Only**. If you select WEP or WPA, you will need to enter either a Pass phrase or a Key on the next page.
Channel	The radio channel used by the wireless router and its clients to communicate with each other. This channel must be the same on the Wireless 54Mbps ADSL Router and all of its wireless clients. The Wireless 54Mbps ADSL Router will automatically assign itself a radio channel, or you may select one manually.

Click **NEXT** to continue.

4. Enter your Parameter Settings

Select the country of your Internet Service Provider (ISP) and the name or type of your ISP. This will automatically configure the Wireless 54Mbps ADSL Router with the correct Protocol, Encapsulation and VPI/VCI settings for your ISP.



If your Country or Internet Service Provider is not listed, you will need to manually enter the settings. Go to “Parameter Setting - Country or ISP Not Listed” in this manual for more information. (It appears later in this document.)

If your ISP uses PPPoA or PPPoE, then you will need to enter the username, password and DNS Server address supplied by your ISP.

If your ISP uses 1483 Routing, then you will need to enter the IP

address, Subnet Mask, Default Gateway and DNS Server address supplied by your ISP.

Note: By default 192.168.2.1 is set for the DNS Server address, this needs to be changed to reflect your ISP's DNS Server address.

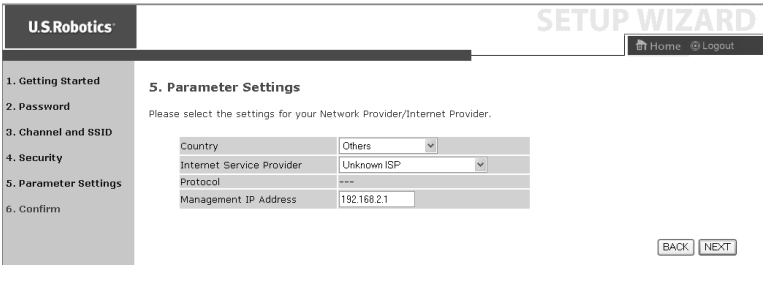
Click **NEXT** to continue to the Confirm settings page.

Parameter Setting - Country or ISP Not Listed

If your Country or Internet Service Provider is not listed in the dropdown menu, select **Other**. This will allow you to manually configure your ISP settings.

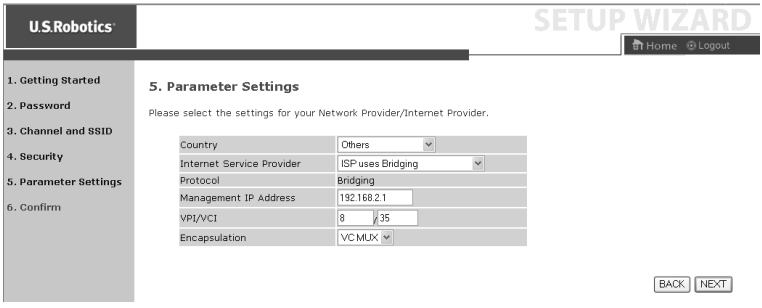
For manual configuration you will need to know the Protocol, DNS Server, Encapsulation, and VPI/VCI settings used by your ISP. If you have a Static IP address you will also need to know the IP address, Subnet Mask, and Gateway address. Please contact your ISP for these details if you do not already have them.

After selecting **Other** you will be required to select the Protocol your ISP uses from the Internet Service Provider dropdown list.



ISP uses Bridging - Parameter Setting

Enter the Bridging settings provided by your ISP.

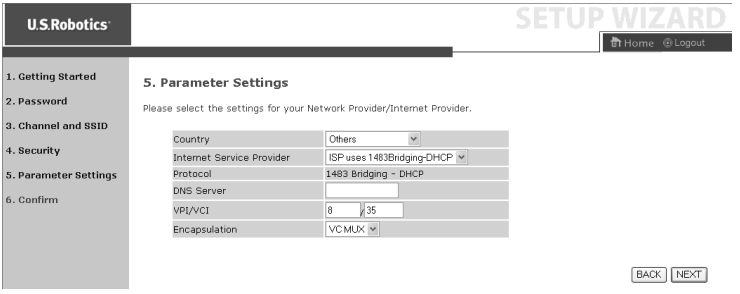


Parameter	Description
Management IP Address	Enter the IP address provided by your ISP. (Default: 192.168.2.1)
VPI/VCI	Enter the Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI) supplied by your ISP.
Encapsulation	Select the encapsulation used by ISP from the dropdown list.

Click **NEXT** to continue to the Confirm settings page.

ISP uses 1483 Bridging-DHCP - Parameter Setting

Enter the Bridging settings provided by your ISP.

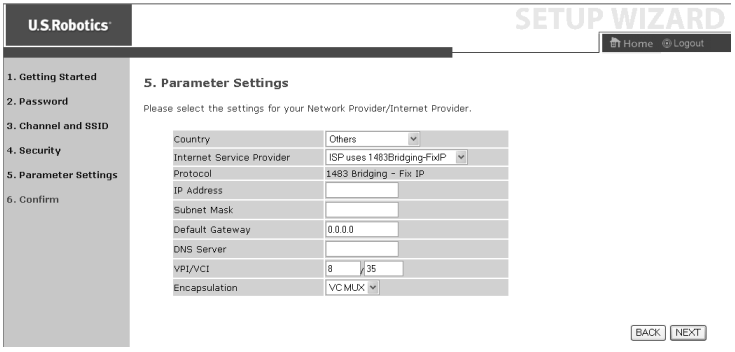


Parameter	Description
DNS Server	Enter the Domain Name Server address.
VPI/VCI	Enter the Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI) supplied by your ISP.
Encapsulation	Select the encapsulation used by ISP from the dropdown list.

Click **NEXT** to continue to the Confirm settings page (see "5. Confirm your settings" later in this document).

ISP uses 1483 Bridging-Fixed IP - Parameter Setting

Enter the bridging settings provided by your ISP.

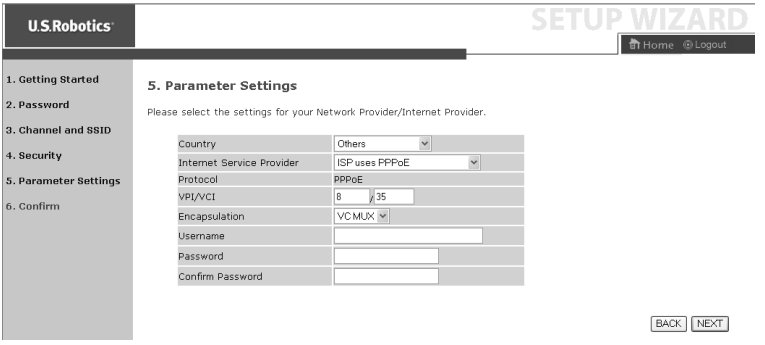


Parameter	Description
IP Address	Enter the IP address provided by your ISP.
Subnet Mask	Enter the subnet mask address provided by your ISP.
Default Gateway	Enter the gateway address provided by your ISP.
DNS Server	Enter the Domain Name Server address.
VPI/VCI	Enter the Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI) supplied by your ISP.
Encapsulation	Select the encapsulation used by ISP from the dropdown list.

Click **NEXT** to continue to the Confirm settings page (see "5. Confirm your settings" later in this document).

ISP uses PPPoE - Parameter Setting

Enter the PPPoE (Point-to-Point Protocol over Ethernet) settings provided by your ISP.

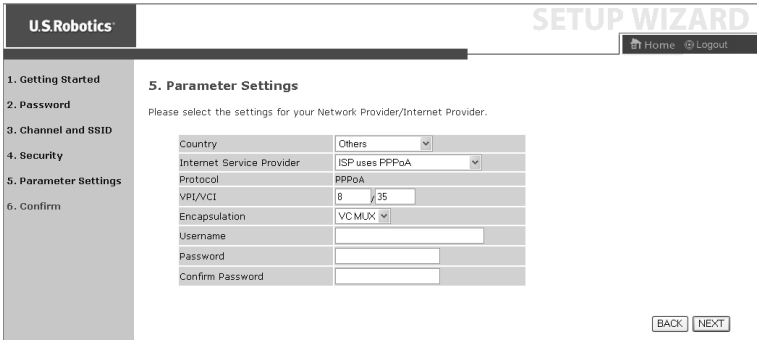


Parameter	Description
VPI/VCI	Enter the Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI) supplied by your ISP.
Encapsulation	Select the encapsulation used by ISP from the dropdown list.
Username	Enter the ISP assigned user name.
Password	Enter your password.
Confirm Password	Confirm your password.

Click **NEXT** to continue to the Confirm settings page (see "5. Confirm your settings" later in this document).

ISP uses PPPoA - Parameter Setting

Enter the PPPoA (Point-to-Point Protocol over ATM) settings provided by your ISP.

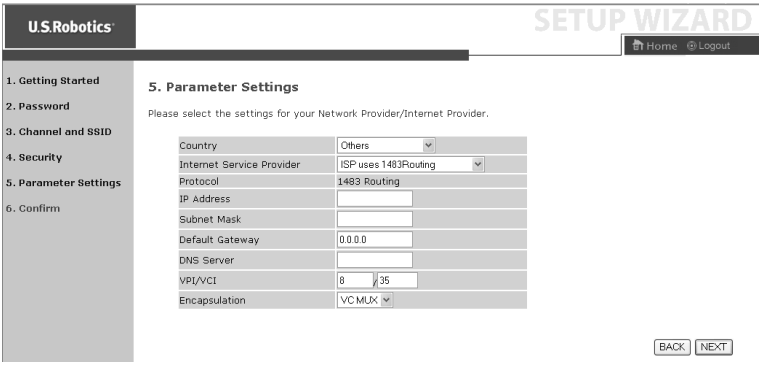


Parameter	Description
VPI/VCI	Enter the Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI) supplied by your ISP.
Encapsulation	Select the encapsulation used by ISP from the dropdown list.
Username	Enter the ISP assigned user name.
Password	Enter your password.
Confirm Password	Confirm your password.

Click **NEXT** to continue to the Confirm settings page (see "5. Confirm your settings" later in this document).

ISP uses 1483 Routing - Parameter Setting

Enter the RFC1483 Routing settings provided by your ISP.

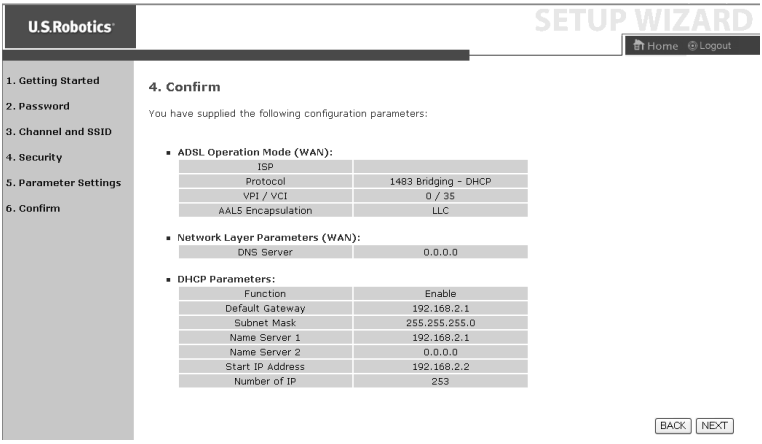


Parameter	Description
IP Address	Enter the IP address provided by your ISP.
Subnet Mask	Enter the subnet mask address provided by your ISP.
Default Gateway	Enter the gateway address provided by your ISP.
DNS Server	Enter the Domain Name Server address.
VPI/VCI	Enter the Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI) supplied by your ISP.
Encapsulation	Select the encapsulation used by ISP from the dropdown list.

Click **NEXT** to continue to the Confirm settings page (see "5. Confirm your settings").

5. Confirm your settings

The Confirm page shows a summary of the configuration parameters. Make sure the parameters for ADSL operation mode (WAN), Network Layer Parameters (WAN), DHCP, and/or ISP parameters are correct (see the following example).



Parameter	Description
ADSL Operation Mode (WAN)	
ISP	The type of ISP you have selected.
Protocol	Indicates the protocol used.
VPI/VCI	Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI).
AAL5 Encapsulation	Shows the packet encapsulation type. See the “WAN” section later in this chapter for more information on encapsulation.
Network Layer Parameters (WAN)	
IP Address	WAN IP address.
Subnet Mask	WAN subnet mask.
Default Gateway	WAN gateway.

Parameter	Description
DHCP Parameters	
Function	Shows the DHCP function is enabled or disabled.
Default Gateway	LAN IP address of the Wireless 54Mbps ADSL Router.
Subnet Mask	The network subnet mask.
Name Server 1	Primary DNS server IP address.
Name Server 2	Alternate DNS server IP address.
Start IP Address	Start IP address of DHCP pool of assigned IP addresses.
Number of IP	Number of IP addresses available for assignment by the DHCP server.

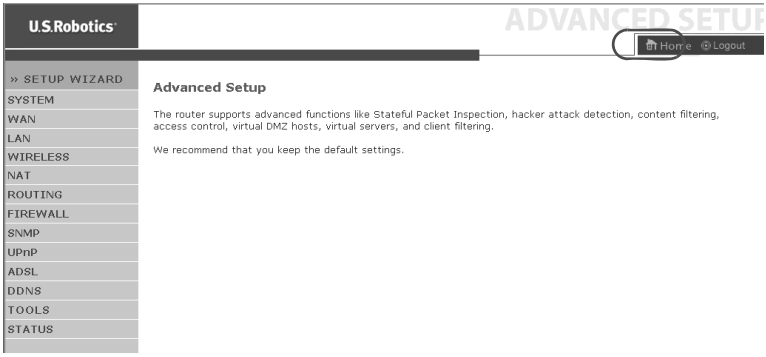
If all the information is correct, click **NEXT** to complete the Setup Wizard. You should now have Internet access. If any of the information is not correct, click **BACK** to get to the appropriate screen, modify the information, and then continue the configuration.

The information you supplied will be saved and the main screen of the Web User Interface will appear.

If at any time you want to validate your Internet settings, click **Status**.

Advanced Setup

Click **Home** in the upper right-hand corner. The left-hand side of the page displays the main menu and the right-hand side shows descriptive information.



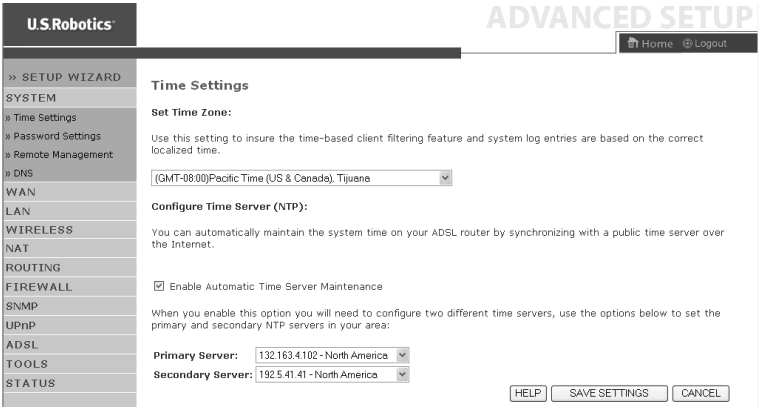
The following table describes the main menu items on the advanced Web User Interface.

Menu	Description
SYSTEM	Sets the local time zone, the password for administrator access, and the IP address of a PC or notebook that will be allowed to manage the Wireless 54Mbps ADSL Router remotely.
WAN	Specifies the Internet connection settings.
LAN	Sets the TCP/IP configuration for the Wireless 54Mbps ADSL Router LAN interface and DHCP clients.
WIRELESS	Configures the radio frequency, SSID, and security for wireless communications.
NAT	Configures Address Mapping, virtual server and special applications.
ROUTING	Sets the routing parameters and displays the current routing table.
FIREWALL	Configures a variety of security and specialized functions including: Access Control, URL blocking, Internet access control scheduling, intruder detection, and DMZ.
SNMP	Community string and trap server settings.
UPnP	With Universal Plug and Play, a device can automatically join a network, obtain an IP address, communicate its capabilities, and learn about the presence and capabilities of other devices. Devices can then directly communicate with each other. This further enables peer-to-peer networking.
QoS	Allows you to optimize network quality by prioritizing data traffic.
ADSL	Sets the ADSL operation type and shows the ADSL status.

Menu	Description
DDNS	Dynamic DNS provides users on the Internet with a method to tie their domain name to a computer or server.
TOOLS	Contains options to backup & restore the current configuration, restore all configuration settings to the factory defaults, update system firmware, or reset the system.
STATUS	Provides WAN connection type and status, firmware and hardware version numbers, system IP settings, as well as DHCP, NAT, and firewall information. Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, and the hardware version and serial number. Shows the security and DHCP client log.

System

Time Settings

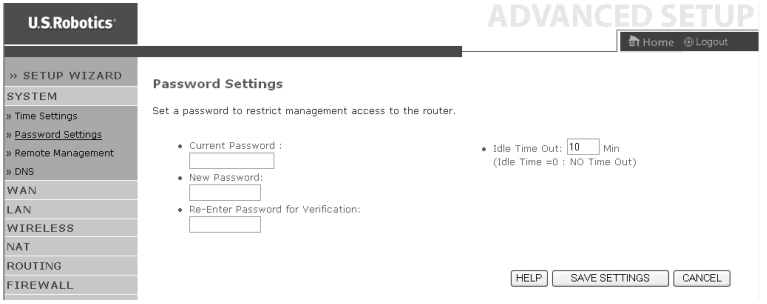


For accurate timing of log entries and system events, you need to set the time zone. Select your time zone from the dropdown list.

If you want to automatically synchronize the Wireless 54Mbps ADSL Router with a public time server, check the box to Enable Automatic Time Server Maintenance. Configure two different time servers by selecting a Primary Server and a Secondary Server.

Password Settings

Use this page to change the password for accessing the Web User Interface of the Wireless 54Mbps ADSL Router.



Passwords can contain from 3~12 alphanumeric characters and are case-sensitive.

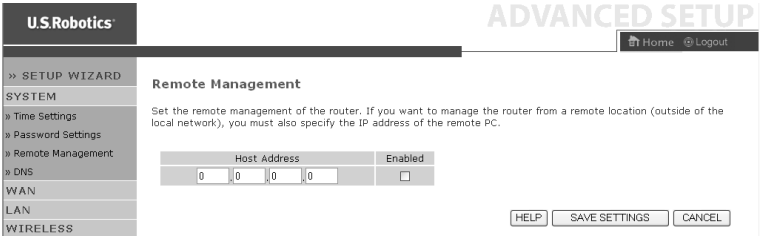
Note: If you lost the password, or you cannot gain access to the Web User Interface, press in and hold the reset button on the rear panel for at least five seconds to restore the factory defaults. By default, there is no password to log in to the Web User Interface.

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the login session is maintained during inactivity. If the connection is inactive for longer than the maximum idle time, it will perform a system logout and you will have to log in again to access the Web User Interface. The default is 10 minutes.

Remote Management

By default, management access is only available to users on your local network. However, you can also manage the Wireless 54Mbps ADSL Router from a remote host by entering the IP address of a remote computer on this screen. Select the **Enabled** checkbox, enter

the IP address of the Host Address, and click **SAVE SETTINGS**.

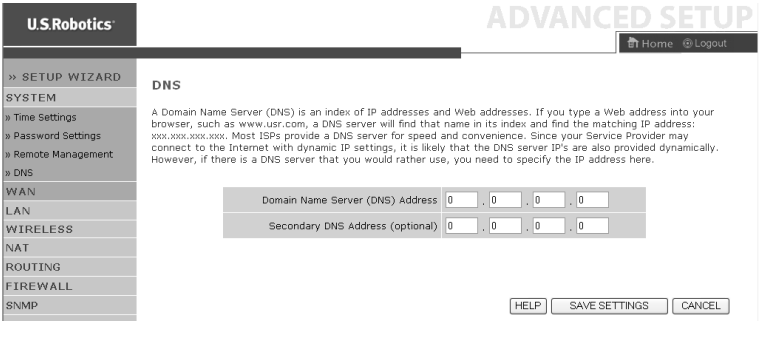


Note: If you select **Enable** and specify an IP address of 0.0.0.0, any remote host can manage the Wireless 54Mbps ADSL Router.

For remote management via WAN IP address, you need to connect using port 8080. Simply enter WAN IP address followed by :8080, for example, 212.120.68.20:8080.

DNS

Domain Name Servers (DNS) are used to map a domain name (e.g., www.somesite.com) with the IP address (e.g., 123.123.123.123). Your ISP should provide the IP address of one or more Domain Name Servers. Enter those addresses on this page and click **SAVE SETTINGS**.



WAN

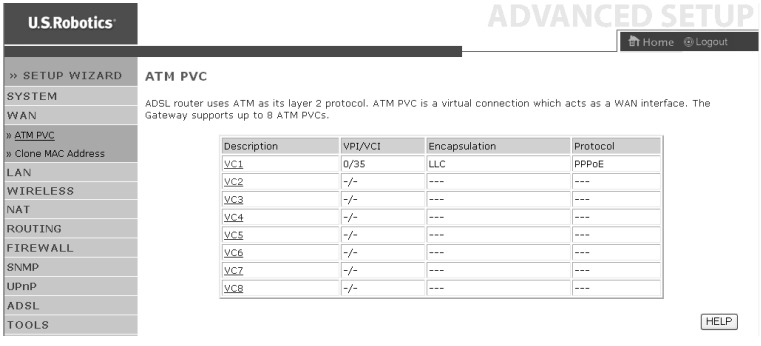
Specify the WAN connection parameters provided by your Internet Service Provider (ISP).

The Wireless 54Mbps ADSL Router can be connected to your ISP in one of the following ways:

- ATM PVC
- Clone MAC

ATM PVC

Enter the ATM (Asynchronous Transfer Mode) virtual connection parameters here.



Parameter	Description
Description	Click on the VC to set the values for the connection.
VPI/VCI	Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI).

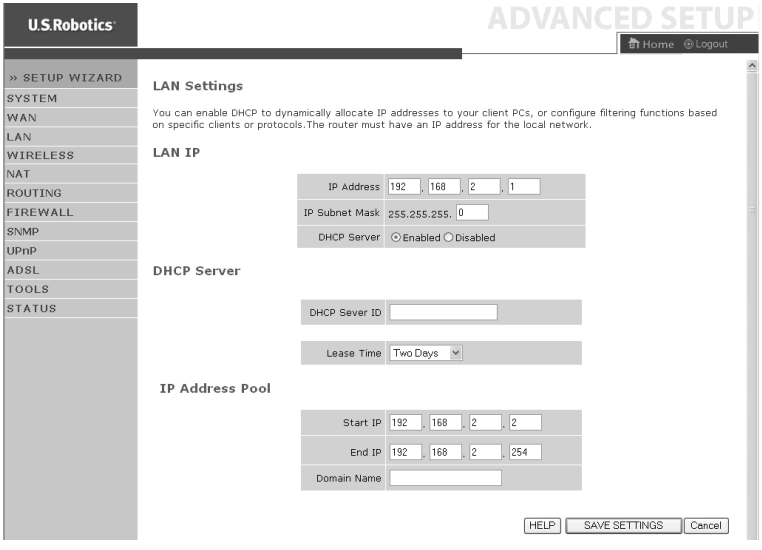
Parameter	Description
Encapsulation	Specifies how to handle multiple protocols at the ATM transport layer. • VC-MUX: Point-to-Point Protocol over ATM Virtual Circuit Multiplexer (null encapsulation) allows only one protocol running per virtual circuit with less overhead. • LLC: Point-to-Point Protocol over ATM Logical Link Control (LLC) allows multiple protocols running over one virtual circuit (using slightly more overhead).
Protocol	Protocol used for the connection.

Clone MAC Address

Some ISPs require you to register your MAC address with them. If this is the case, the MAC address of the Wireless 54Mbps ADSL Router must be changed to the MAC address that you have registered with your ISP.

LAN

Use the LAN menu to configure the LAN IP address and to enable the DHCP server for dynamic client address allocation.



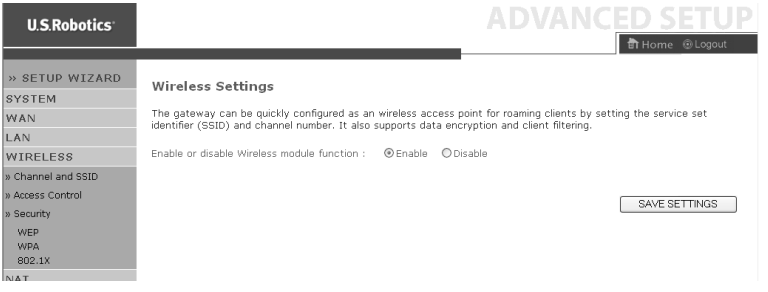
Parameter	Description
LAN IP	
IP Address	The IP address of the Wireless 54Mbps ADSL Router.
IP Subnet Mask	The subnet mask of the network.
DHCP Server	The Wireless 54Mbps ADSL Router comes with the DHCP function. Enable this function to dynamically assign an IP address to client PCs.
DHCP Server	
DHCP Server ID	Specify the DHCP Server ID.
Lease Time	Set the IP lease time. For home networks this may be set to Forever, which means there is no time limit on the IP address lease.

Parameter	Description
IP Address Pool	
Start IP Address	Specify the start IP address of the DHCP pool. Do not include the gateway address of the Wireless 54Mbps ADSL Router in the client address pool. If you change the pool range, make sure the first three octets match the gateway's IP address, i.e., 192.168.2.xxx.
End IP Address	Specify the end IP address of the DHCP pool.
Domain Name	If your network uses a domain name, enter it here. Otherwise, leave this field blank.

Note: Remember to configure your client PCs for dynamic address allocation.

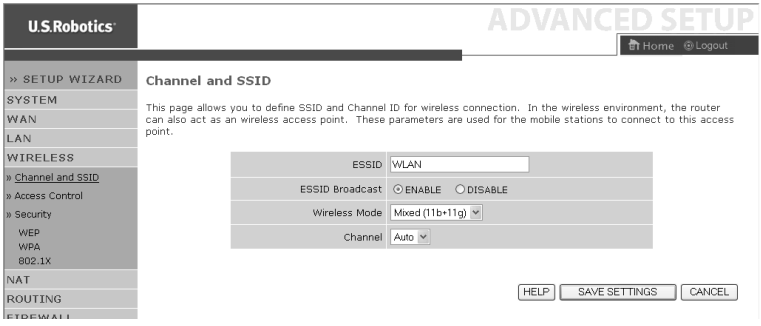
Wireless

The Wireless 54Mbps ADSL Router also operates as a wireless access point, allowing wireless computers to communicate with each other. To configure this function, you need to enable the wireless function, define the radio channel, the domain identifier, and the security options. Select **Enable** and click **SAVE SETTINGS**.



Channel and SSID

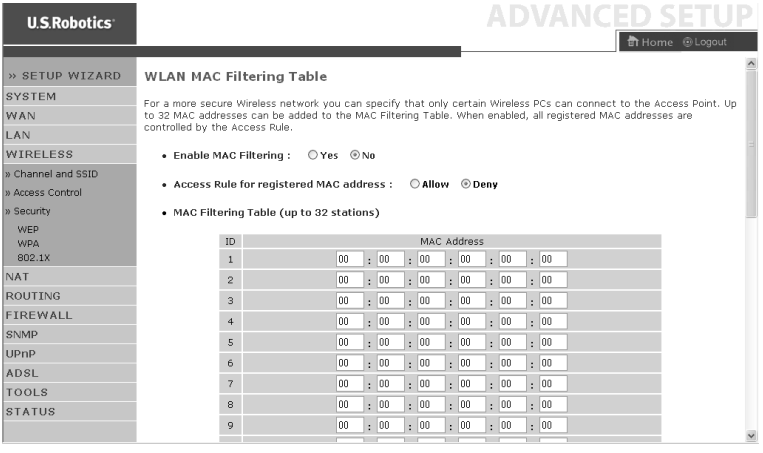
You must specify a common radio channel and SSID (Service Set ID) to be used by the Wireless 54Mbps ADSL Router and all of its wireless clients. Be sure you configure all of the clients to the same values.



Parameter	Description
ESSID	Extended Service Set ID. The ESSID must be the same on the Wireless 54Mbps ADSL Router and all of its wireless clients.
ESSID Broadcast	Enable or disable the broadcasting of the SSID.
Wireless Mode	This device supports both 11g and 11b wireless networks. Make your selection depending on the type of wireless network that you have.
Channel	The radio channel used by the wireless router and its clients to communicate with each other. This channel must be the same on the Wireless 54Mbps ADSL Router and all of its wireless clients. The Wireless 54Mbps ADSL Router will automatically assign itself a radio channel, or you may select one manually.

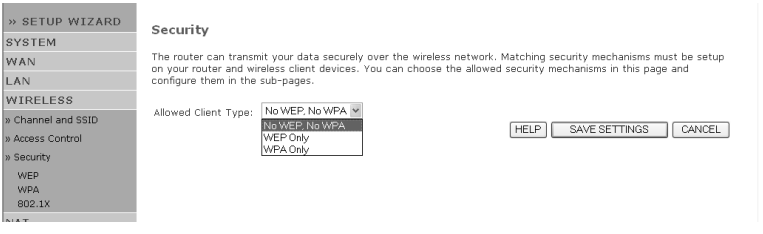
Access Control

The MAC Filtering feature of the Wireless 54Mbps ADSL Router allows you to control access to your network for up to 32 clients based on the MAC (Media Access Control) address of the client machine. This ID is unique to each network adapter. If the MAC address is listed in the table, then the access right of the client machine is controlled by the Access Rule.



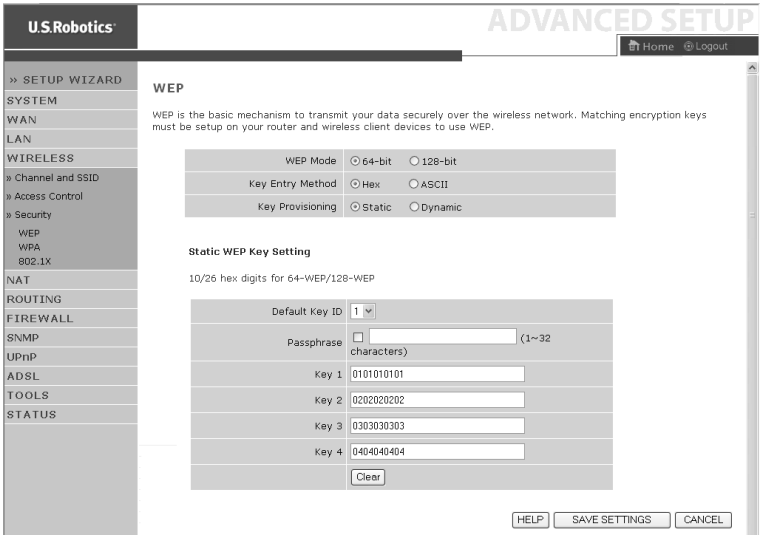
Security

To make your wireless network safe, you should turn on the security function. The Wireless 54Mbps ADSL Router supports WEP (Wired Equivalent Privacy), WPA (Wi-Fi Protected Access), and 802.1x security mechanisms.

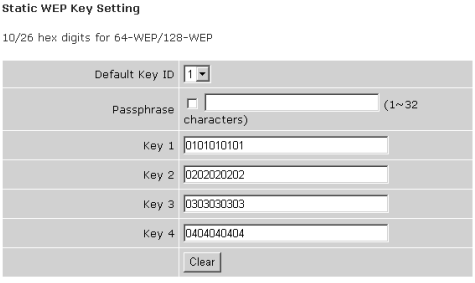


WEP

If you use WEP to protect your wireless network, you need to set the same parameters for the Wireless 54Mbps ADSL Router and all your wireless clients.



Parameter	Description
WEP Mode	Select 64 bit or 128 bit key to use for encryption.
Key Entry Method	Select Hex or ASCII code for encryption key generation.
Key Provisioning	Select Static if there is only one fixed key for encryption. If you want to select Dynamic, you would need to enable 802.1x function first.



You may automatically generate encryption keys or manually enter the keys. To generate the key automatically with passphrase, select **Passphrase** and then enter a string of characters. Select the default key from the dropdown menu. Click **SAVE SETTINGS**.

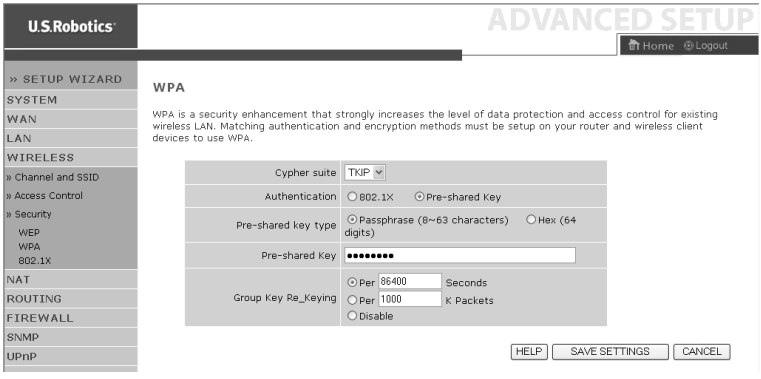
Note: The passphrase can consist of up to 32 alphanumeric characters.

To manually configure the encryption key, enter five hexadecimal pairs of digits for each 64-bit key, or enter 13 pairs for the single 128-bit key. A hexadecimal digit is a number or letter in the range 0-9 or A-F.

WEP protects data transmitted between wireless nodes but does not protect any transmissions over your wired network or over the Internet.

WPA

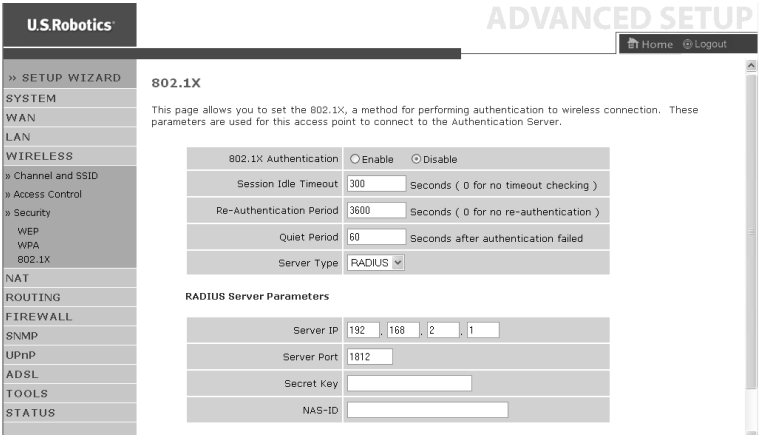
Wi-Fi Protected Access (WPA) combines temporal key integrity protocol (TKIP) and 802.1x mechanisms. It provides dynamic key encryption and 802.1x authentication service.



Parameter	Description
Cypher suite	The security mechanism used in WPA for encryption.
Authentication	Choose 802.1X or Pre-shared Key to use as the authentication method. • 802.1X: for the enterprise network with a RADIUS server. • Pre-shared key: for the Small Office/Home Office (SOHO) network environment without an authentication server.
Pre-shared key type	Select the key type to be used in the Pre-shared Key.
Pre-shared Key	Type in the key here.
Group Key Re-Keying	The period of renewing broadcast/multicast key.

802.1X

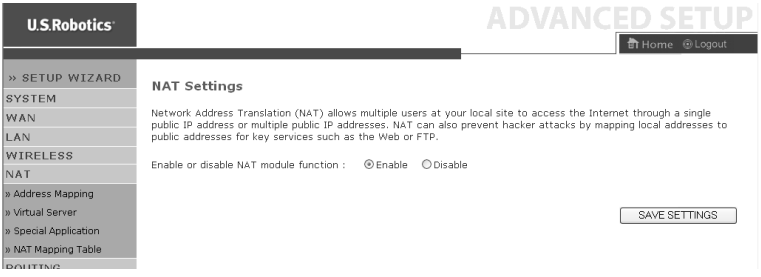
If 802.1x is used in your network, then you should enable this function for the Wireless 54Mbps ADSL Router. These parameters are used for the Wireless 54Mbps ADSL Router to connect to the authentication server.



Parameter	Description
802.1X Authentication	Enable or disable this authentication function.
Session Idle timeout	Defines a maximum period of time for which the connection is maintained during inactivity.
Re-Authentication Period	Defines a maximum period of time for which the authentication server will dynamically re-assign a session key to a connected client.
Quiet Period	Defines a maximum period of time for which the Wireless 54Mbps ADSL Router will wait between failed authentications.
Server Type	RADIUS authentication server.
RADIUS Server Parameters	
Server IP	The IP address of your authentication server.
Server Port	The port used for the authentication service.
Secret Key	The secret key shared between the authentication server and its clients.
NAS-ID	Defines the request identifier of the Network Access Server.

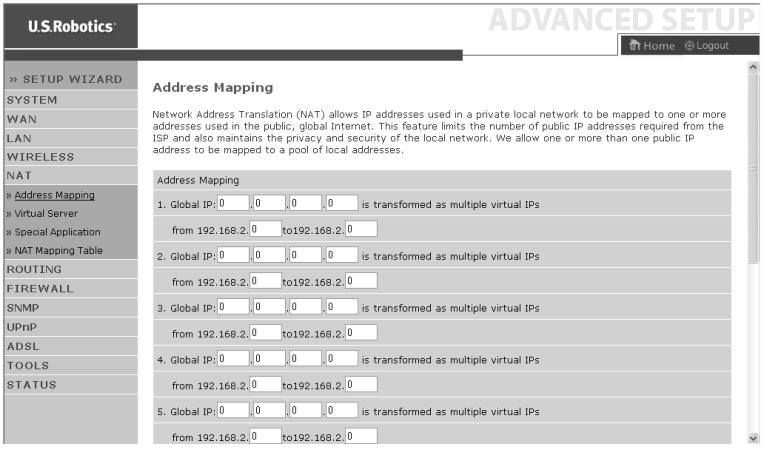
NAT

Network Address Translation allows multiple users to access the Internet, while sharing only one public IP.



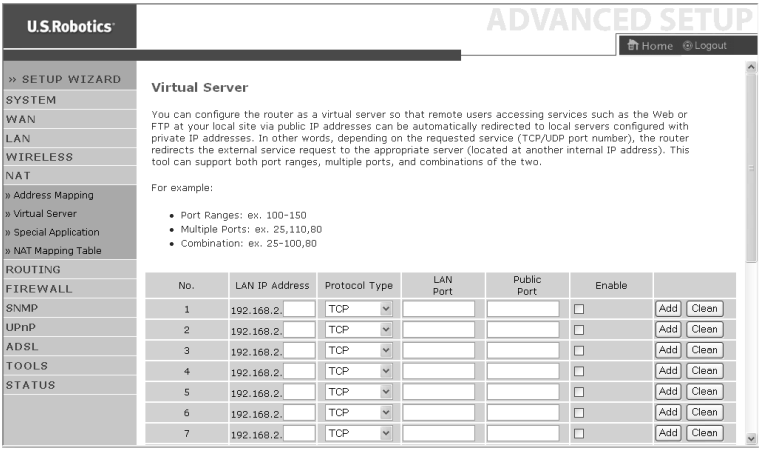
Address Mapping

Allows one or more public IP addresses to be shared by multiple internal users. This also hides the internal network for increased privacy and security. Enter the Public IP address that you wish to share into the Global IP field. In the **from** field, enter a range of internal IPs that will share the global IP.



Virtual Server

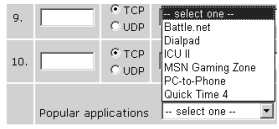
If you configure the Wireless 54Mbps ADSL Router as a virtual server, remote users accessing services such as the Internet or FTP at your local site via public IP addresses can be automatically redirected to local servers with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the Wireless 54Mbps ADSL Router redirects the external service request to the appropriate server (located at another internal IP address).



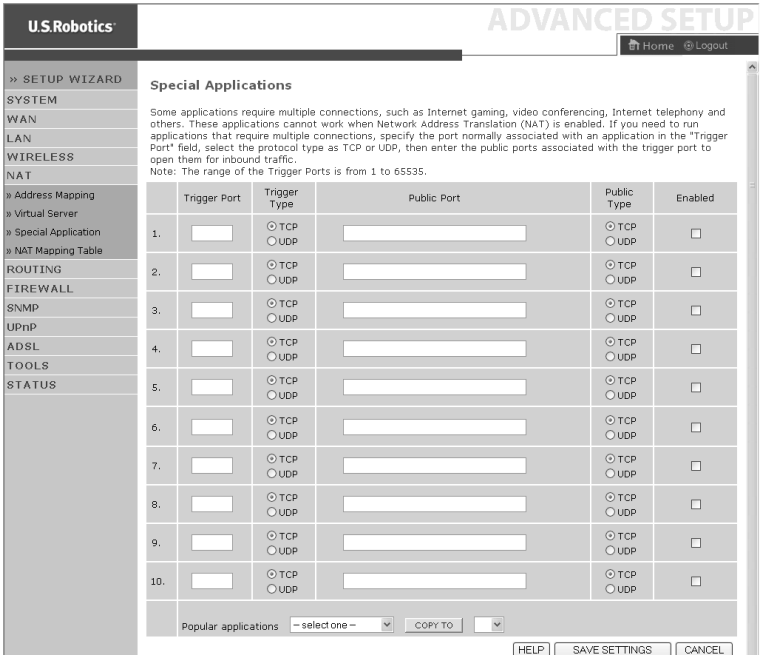
For example, if you set Type/Public Port to TCP/80 (HTTP or Web) and the Private IP/Port to 192.168.2.2/80, then all HTTP requests from outside users will be transferred to 192.168.2.2 on port 80. Therefore, by just entering the IP address provided by the ISP, Internet users can access the service they need at the local address to which you redirect them.

A list of ports is maintained at the following link:
http://www.iana.org/assignments/port-numbers

Special Applications

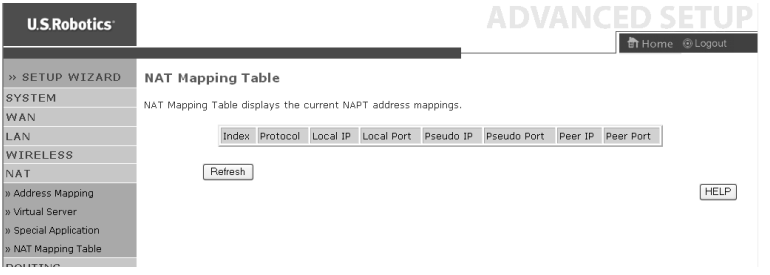


Some applications require multiple connections, such as Internet gaming, video-conferencing, and Internet telephony. These applications may not work when Network Address Translation (NAT) is enabled. If you need to run applications that require multiple connections, use these pages to specify the additional public ports to be opened for each application.



NAT Mapping Table

This page displays the current NAPT (Network Address Port Translation) address mappings.

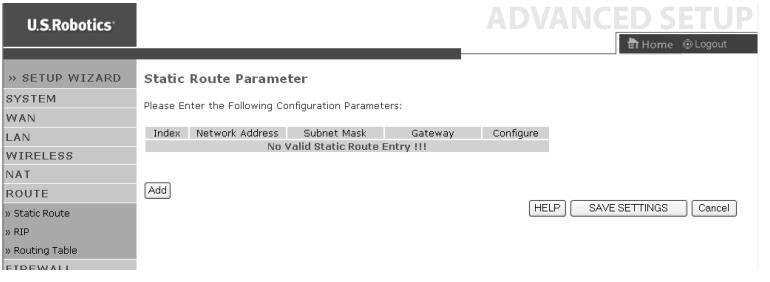


Routing

These pages define routing related parameters, including static routes and RIP (Routing Information Protocol) parameters.

Static Route

Click **Add** to add a new static route to the list.



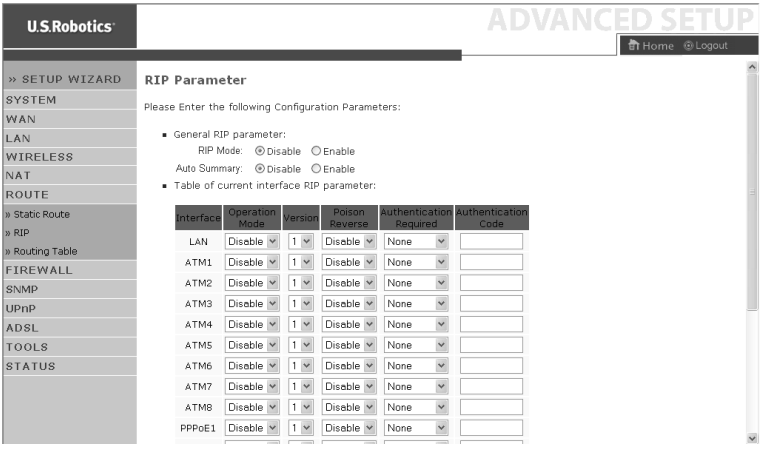
Parameter	Description
Network Address	Enter the IP address of the remote computer for which to set a static route.

Parameter	Description
Subnet Mask	Enter the subnet mask of the remote network for which to set a static route.
Gateway	Enter the WAN IP address of the gateway to the remote network.

Click **SAVE SETTINGS** to save the configuration.

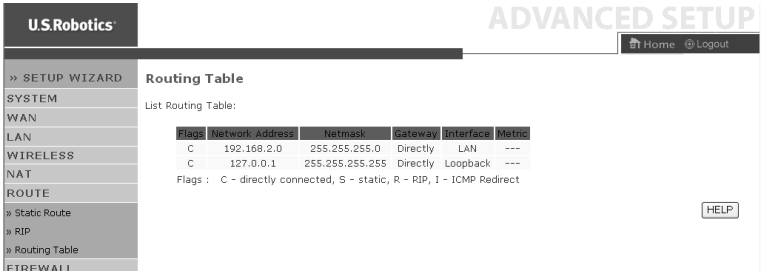
RIP

RIP (Routing Information Protocol) sends routing-update messages at regular intervals and when the network topology changes. When a router receives a routing update that includes changes to an entry, it updates its routing table to reflect the new route. RIP routers maintain only the best route to a destination. After updating its routing table, the router immediately begins transmitting routing updates to inform other network routers of the change.



Parameter	Description
General RIP Parameters	
RIP mode	Globally enables or disables RIP.
Auto summary	If Auto summary is disabled, then RIP packets will include sub-network information from all sub-networks connected to the router. If enabled, this sub-network information will be summarized to one piece of information covering all sub-networks.
Table of current Interface RIP parameter	
Interface	The WAN interface to be configured.
Operation Mode	Disable: RIP disabled on this interface. Enable: RIP enabled on this interface. Silent: Listens for route broadcasts and updates its route table. It does not participate in sending route broadcasts.
Version	Sets the RIP version to use on this interface.
Poison Reverse	A method for preventing loops that would cause endless retransmission of data traffic.
Authentication Required	• None: No authentication. • Password: A password authentication key is included in the packet. If this does not match what is expected, the packet will be discarded. This method provides very little security as it is possible to learn the authentication key by watching RIP packets.
Authentication Code	Password Authentication key.

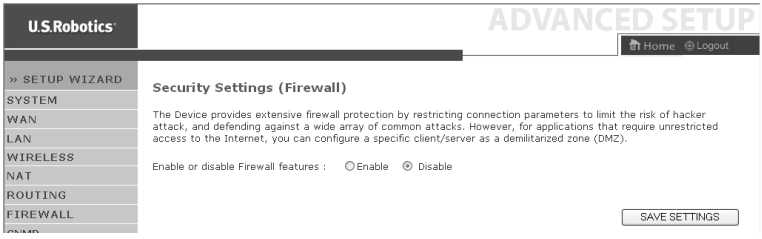
Routing Table



Parameter	Description
Flags	Indicates the route status: C = Direct connection on the same subnet. S = Static route. R = RIP (Routing Information Protocol) assigned route. I = ICMP (Internet Control Message Protocol) Redirect route.
Network Address	Destination IP address.
Netmask	The subnetwork associated with the destination. This is a template that identifies the address bits in the destination address used for routing to specific subnets. Each bit that corresponds to a "1" is part of the subnet mask number; each bit that corresponds to "0" is part of the host number.
Gateway	The IP address of the router at the next hop to which frames are forwarded.
Interface	The local interface through which the next hop of this route is reached.
Metric	When a router receives a routing update that contains a new or changed destination network entry, the router adds 1 to the metric value indicated in the update and enters the network in the routing table.

Firewall

The Wireless 54Mbps ADSL Router's firewall inspects packets at the application layer, maintains TCP and UDP session information, including time-outs and the number of active sessions, and provides the ability to detect and prevent certain types of network attacks.



Network attacks that deny access to a network device are called Denial-of-Service (DoS) attacks. DoS attacks are aimed at devices

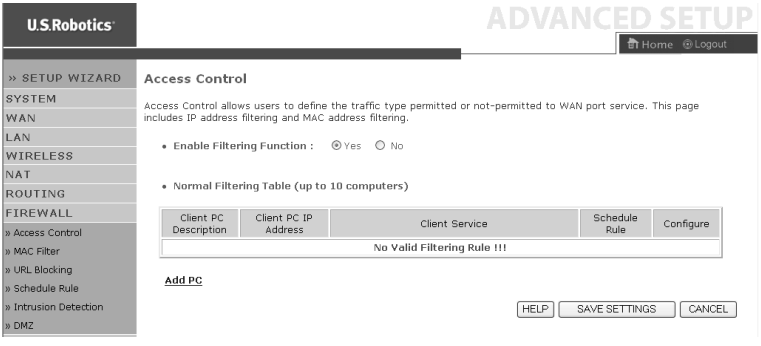
and networks with a connection to the Internet. Their goal is not to steal information, but to disable a device or network so users no longer have access to network resources.

The Wireless 54Mbps ADSL Router firewall function protects against the following DoS attacks: IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding.

The firewall does not significantly affect system performance, so we advise leaving it enabled to protect your network. Select **Enable** and click **SAVE SETTINGS** to open the Firewall submenus.

Access Control

Access Control allows users to define the outgoing traffic permitted or not permitted through the WAN interface. The default is to permit all outgoing traffic.

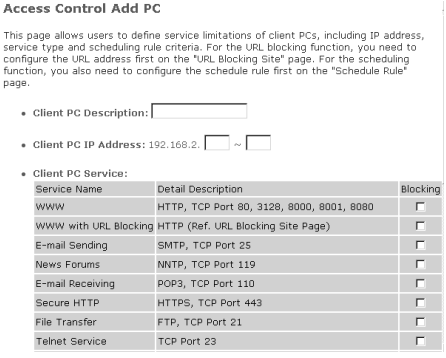


The following items are on the Access Control screen:

Parameter	Description
Enable Filtering Function	Click **Yes** to turn on the filtering function.
Normal Filtering Table	Displays the IP address (or an IP address range) filtering table.

To add the PC to the filtering table:

1. Click **Add PC** on the Access Control screen.
2. Define the appropriate settings for client PC services.
3. Click **OK** and then click **SAVE SETTINGS** to save your settings.



Access Control Add PC

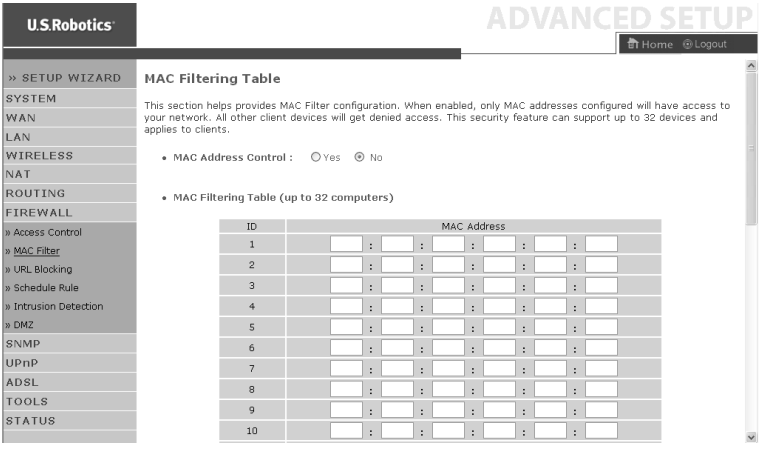
This page allows users to define service limitations of client PCs, including IP address, service type and scheduling rule criteria. For the URL blocking function, you need to configure the URL address first on the "URL Blocking Site" page. For the scheduling function, you also need to configure the schedule rule first on the "Schedule Rule" page.

- **Client PC Description:**
- **Client PC IP Address:** 192.168.2. ~
- **Client PC Service:**

Service Name	Detail Description	Blocking
WWW	HTTP, TCP Port 80, 3128, 8000, 8001, 8080	☐
WWW with URL Blocking	HTTP (Ref. URL Blocking Site Page)	☐
E-mail Sending	SMTP, TCP Port 25	☐
News Forums	NNTP, TCP Port 119	☐
E-mail Receiving	POP3, TCP Port 110	☐
Secure HTTP	HTTPS, TCP Port 443	☐
File Transfer	FTP, TCP Port 21	☐
Telnet Service	TCP Port 23	☐

MAC Filter

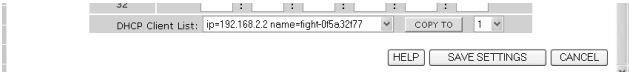
The Wireless 54Mbps ADSL Router can also limit the network access based on the MAC address. The MAC Filtering Table allows the Wireless 54Mbps ADSL Router to enter up to 32 MAC addresses that are allowed access to the WAN port.



Click **Yes** to enable or **No** to disable this function.

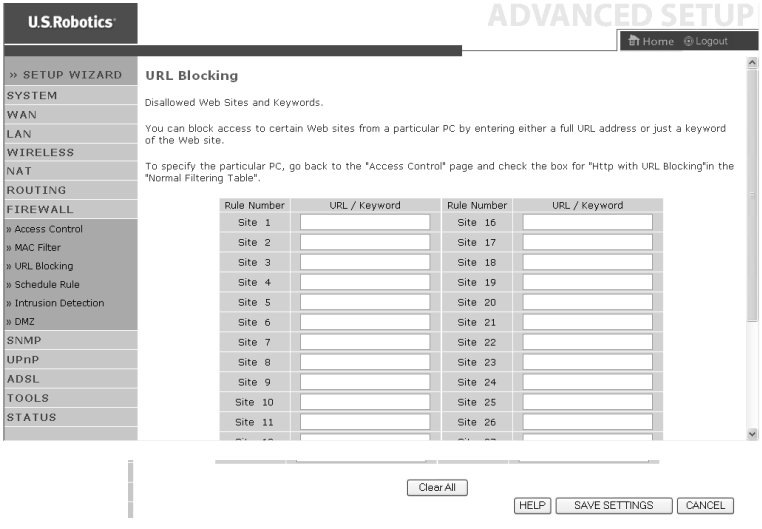
Enter the MAC address in the space provided.

You can also select a client in the DHCP Client List and select the line to which you want to copy the information.



URL Blocking

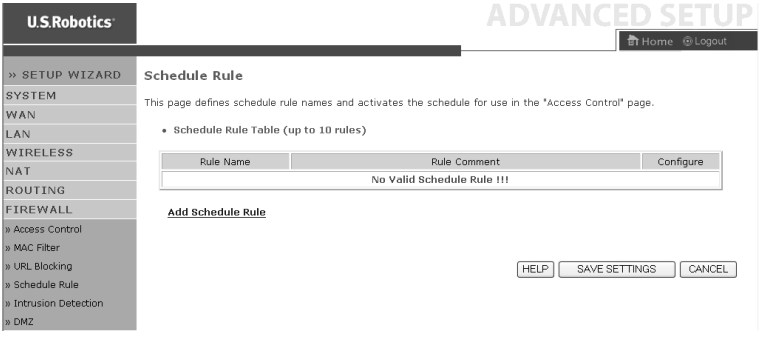
The Wireless 54Mbps ADSL Router allows the user to block access to Web sites by entering either a full URL address or just a keyword. This feature can be used to protect children from accessing violent or pornographic Web sites.



You can define up to 30 sites here.

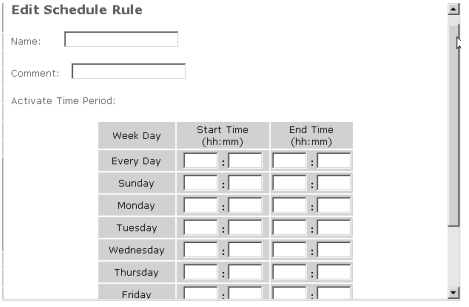
Schedule Rule

You may filter Internet access for local clients based on rules. Each access control rule may be activated at a scheduled time. Define the time schedule on this page and apply the rule on the Access Control page.



Follow these steps to add a schedule rule:

1. Click **Add Schedule Rule**.
2. Define the appropriate settings for a schedule rule (as shown in this example).
3. Click **OK** and then click **SAVE SETTINGS** to save your settings.

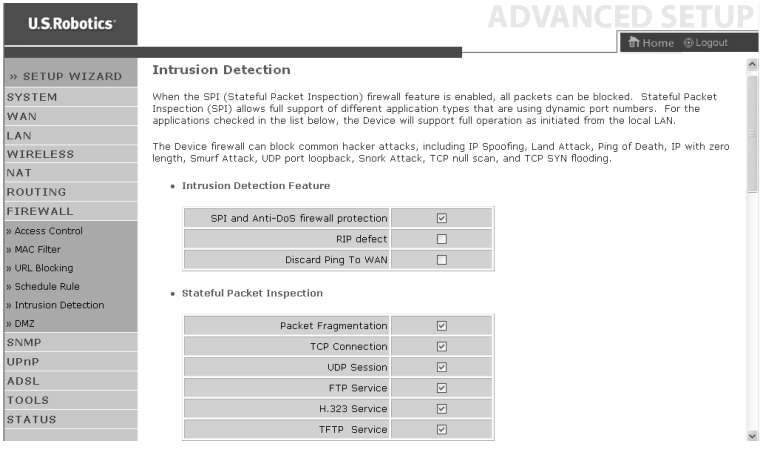


Intrusion Detection

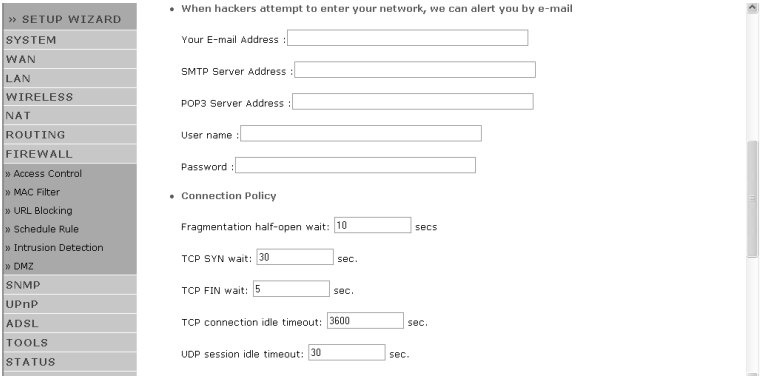
Stateful Packet Inspection (SPI) and Anti-DoS firewall protection (Default: Enabled) — The Intrusion Detection Feature of the Wireless 54Mbps ADSL Router limits access for incoming traffic at the WAN port. When the SPI feature is turned on, all incoming packets will be blocked except for those types marked in the Stateful Packet Inspection section.

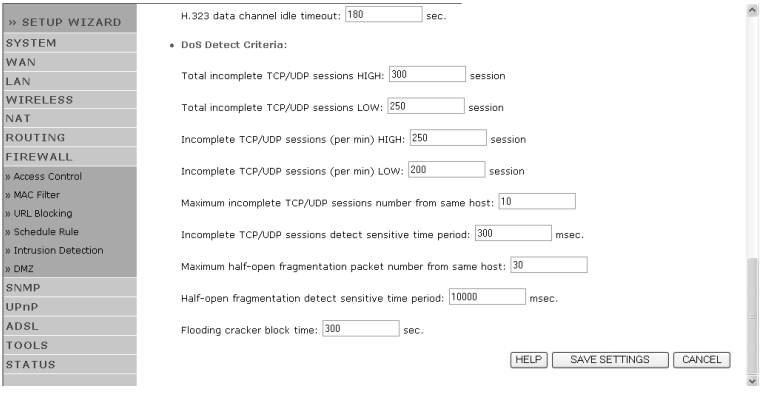
RIP Defect (Default: Disabled) — If an RIP request packet is not acknowledged by the router, it will stay in the input queue and not be released. Accumulated packets could cause the input queue to fill, causing severe problems for all protocols. Enabling this feature prevents the packets from accumulating.

Discard Ping to WAN (Default: Disabled) — Prevent a ping on the Wireless 54Mbps ADSL Router's WAN port from being routed to the network.



Scroll down to view more information.





- Stateful Packet Inspection

This is called a “stateful” packet inspection because it examines the contents of the packet to determine the state of the communications; i.e., it ensures that the stated destination computer has previously requested the current communication. This is a way of ensuring that all communications are initiated by the recipient computer and are taking place only with sources that are known and trusted from previous interactions. In addition to being more rigorous in their inspection of packets, stateful inspection firewalls also close off ports until connection to the specific port is requested.

When particular types of traffic are checked, only the particular type of traffic initiated from the internal LAN will be allowed. For example, if the user only selects **FTP Service** in the Stateful Packet Inspection section, all incoming traffic will be blocked except for FTP connections initiated from the local LAN.

Stateful Packet Inspection allows you to select different application types that are using dynamic port numbers. If you wish to use the Stateful Packet Inspection (SPI) to block packets, select **Yes** in the Enable SPI and Anti-DoS firewall protection field and then select the

inspection type that you need, such as Packet Fragmentation, TCP Connection, UDP Session, FTP Service, H.323 Service, or TFTP Service.

- When hackers attempt to enter your network, we can alert you by e-mail

If the mail server needs to authenticate your identification before sending out any e-mail, please fill in the necessary information in the POP3 server, username and password fields. Otherwise leave the three fields blank.

- Connection Policy

Enter the appropriate values for TCP/UDP sessions as described in the following table:

Parameter	Defaults	Description
Fragmentation half-open wait	10 sec	Configures the number of seconds that a packet state structure remains active. When the timeout value expires, the router drops the unassembled packet, freeing that structure for use by another packet.
TCP SYN wait	30 sec	Defines how long the software will wait for a TCP session to synchronize before dropping the session.
TCP FIN wait	5 sec	Specifies how long a TCP session will be maintained after the firewall detects a FIN packet.
TCP connection idle timeout	3600 sec (1 hour)	The length of time for which a TCP session will be managed if there is no activity.
UDP session idle timeout	30 sec	The length of time for which a UDP session will be managed if there is no activity.
H.323 data channel idle timeout	180 sec	The length of time for which an H.323 session will be managed if there is no activity.

- DoS Detect Criteria

Set up DoS detect and port scan criteria in the spaces provided.

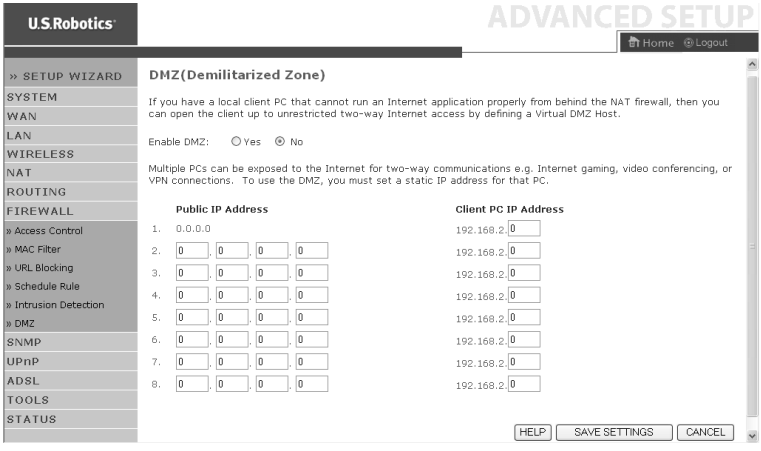
Parameter	Defaults	Description
Total incomplete TCP/UDP sessions HIGH	300 sessions	Defines the rate of new unestablished sessions that will cause the software to *start* deleting half-open sessions.
Total incomplete TCP/UDP sessions LOW	250 sessions	Defines the rate of new unestablished sessions that will cause the software to *stop* deleting half-open sessions.
Incomplete TCP/UDP sessions (per min) HIGH	250 sessions	Maximum number of allowed incomplete TCP/UDP sessions per minute.
Incomplete TCP/UDP sessions (per min) LOW	200 sessions	Minimum number of allowed incomplete TCP/UDP sessions per minute.
Maximum incomplete TCP/UDP sessions number from same host	10	Maximum number of incomplete TCP/UDP sessions from the same host.
Incomplete TCP/UDP sessions detect sensitive time period	300 msec	Length of time before an incomplete TCP/UDP session is detected as incomplete.
Maximum half-open fragmentation packet number from same host	30	Maximum number of half-open fragmentation packets from the same host.
Half-open fragmentation detect sensitive time period	10000 msec	Length of time before a half-open fragmentation session is detected as half-open.
Flooding cracker block time	300 sec	Length of time from detecting a flood attack to blocking the attack.

Note: The firewall does not significantly affect system performance, so we advise enabling the prevention features to protect your network.

DMZ

If you have a client PC that cannot run an Internet application properly from behind the firewall, you can open the client up to unrestricted two-way Internet access. Enter the IP address of a DMZ (Demilitarized Zone) host on this screen. Adding a client to the DMZ

may expose your local network to a variety of security risks, so be careful when using this option.

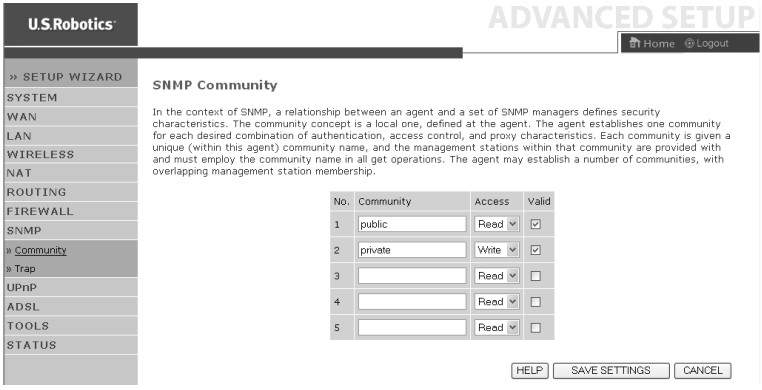


SNMP

Use the SNMP configuration screen to display and modify parameters for the Simple Network Management Protocol (SNMP).

Community

A computer attached to the network, called a Network Management Station (NMS), can be used to access this information. Access rights to the agent are controlled by community strings. To communicate with the Wireless 54Mbps ADSL Router, the NMS must first submit a valid community string for authentication.

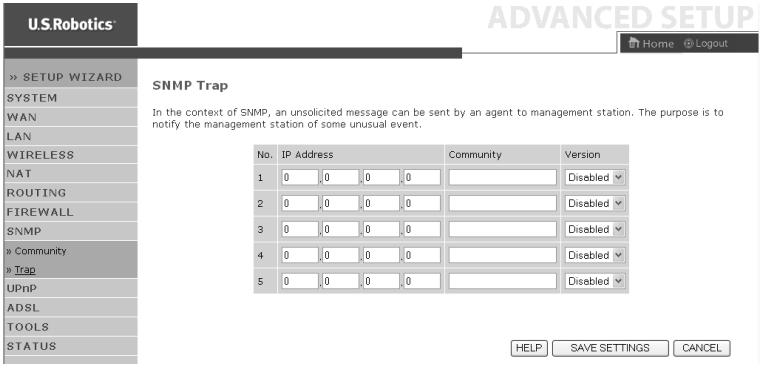


Parameter	Description
Community	A community name authorized for management access.
Access	Management access is restricted to Read Only (Read) or Read/Write (Write).
Valid	Enables/disables the entry.

Note: Up to five community names may be entered.

Trap

Specify the IP address of the NMS to notify when a significant event is detected by the agent. When a trap condition occurs, the SNMP agent sends an SNMP trap message to any NMS specified as a trap receiver.

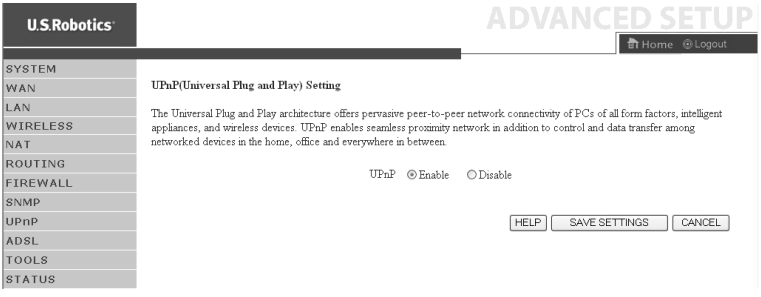


Parameter	Description
IP Address	Traps are sent to this address when errors or specific events occur on the network.
Community	A community string (password) specified for trap management. Enter a word, something other than public or private, to prevent unauthorized individuals from accessing information on your system.
Version	Sets the trap status to disabled, or enabled with V1 or V2c. The v2c protocol was proposed in late 1995 and includes enhancements to v1 that are universally accepted. These include a get-bulk command to reduce network management traffic when retrieving a sequence of MIB variables, and a more elaborate set of error codes for improved reporting to a Network Management Station.

UPnP

Select **Enable** to activate the Universal Plug and Play function of the router. This function allows the device to:

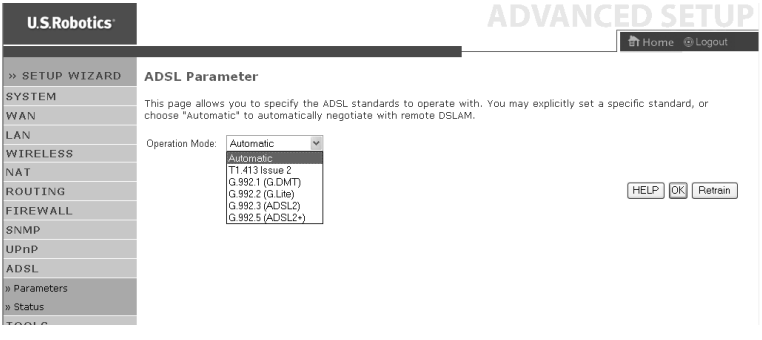
- dynamically join a network
- automatically obtain an IP address



ADSL

ADSL (Asymmetric Digital Subscriber Line) is designed to deliver more bandwidth downstream (from the central office to the customer site) than upstream. This section is used to configure the ADSL operation type and shows the ADSL status.

Parameters

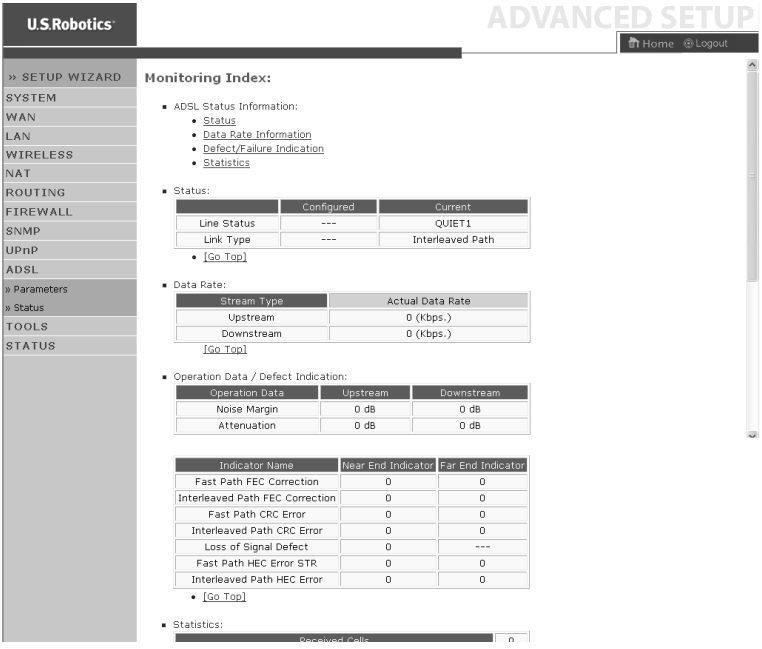


Parameter	Description
Operation Mode	• Automatic • T1.413 issue 2 • G.992.1 (G.DMT) • G.992.2 (G.Lite) • G.992.3 (ADSL2) • G.992.5 (ADSL2+)

This page is designed for the engineer to test the ADSL loop condition. Therefore, it is advised that users should not change the settings here at all.

Status

The Status screen displays information on connection line status, data rate, operation data and defect indication, and statistics.

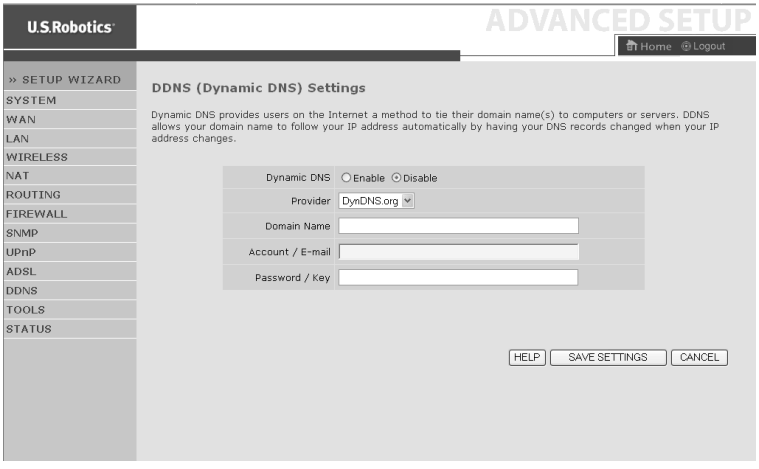


The following items are included on the ADSL status page:

Parameter	Description
Status	
Line Status	Shows the current status of the ADSL line connection.
Link Type	Two types of link: Fast path and Interleaved path.
Data Rate	
Upstream	Maximum upstream data rate.
Downstream	Maximum downstream data rate.
Operation Data/Defect Indication	
Noise Margin	Maximum upstream and downstream noise margin.
Attenuation	Maximum reduction in the strength of the upstream and downstream signal.
Fast Path FEC Correction	There are two latency paths that may be used: fast and interleaved. For either path, a forward error correction (FEC) scheme is employed to ensure higher data integrity. For maximum noise immunity, an interleaver may be used to supplement FEC.
Interleaved Path FEC Correction	An interleaver is basically a buffer used to introduce a delay, allowing for additional error correction techniques to handle noise. Interleaving slows the data flow and may not be optimal for real-time signals such as video transmission.
Fast Path CRC Error	The number of Fast Path Cyclic Redundancy Check errors.
Interleaved Path CRC Error	The number of Interleaved Path Cyclic Redundancy Check errors.
Loss of Signal Defect	Momentary signal discontinuities.
Fast Path HEC Error	Fast Path Header Error Concealment errors.
Interleaved Path HEC Error	Interleaved Path Header Error Concealment errors.
Statistics	(Superframes represent the highest level of data presentation. Each superframe contains regular ADSL frames, one of which is used to provide superframe synchronization, identifying the start of a superframe. Some of the remaining frames are also used for special functions.)
Received cells	Number of cells received.
Transmitted cells	Number of cells transmitted.

DDNS

Dynamic DNS (DDNS) provides users on the Internet with a way to tie their domain name to a computer or server. By enabling this, your domain name will be linked to your IP address so that if your IP address changes, your DNS records will be automatically updated with the new location without any effort on your part. (This is done by a DDNS *provider*.)



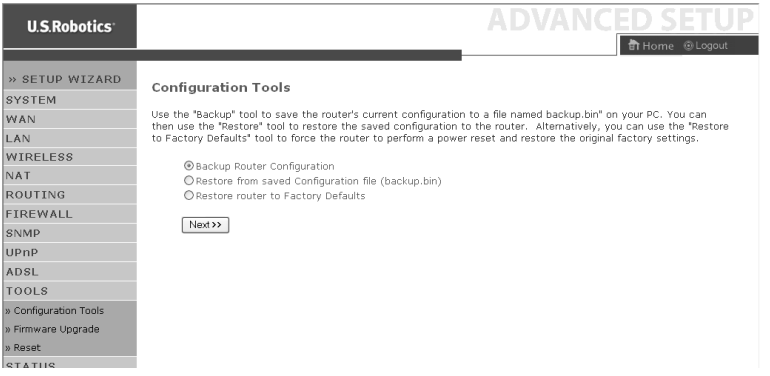
If you enable this feature, you will need to select a DDNS provider and enter the site's Domain Name, your account or e-mail address, and your password or key. When finished, click **SAVE SETTINGS**.

Tools

Use the Tools menu to back up the current configuration, restore a previously saved configuration, restore factory settings, update firmware, and reset the Wireless 54Mbps ADSL Router.

Configuration Tools

Select a function and click **Next**.

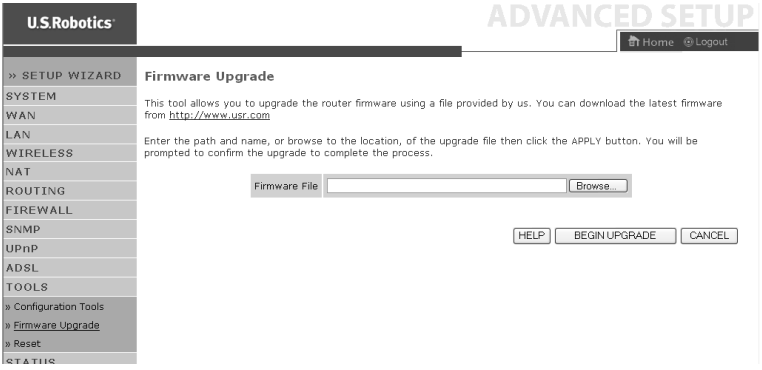


Backup allows you to save the Wireless 54Mbps ADSL Router's configuration to a file. Restore can be used to restore the saved backup configuration file. Restore to Factory Defaults resets the Wireless 54Mbps ADSL Router to the original settings.

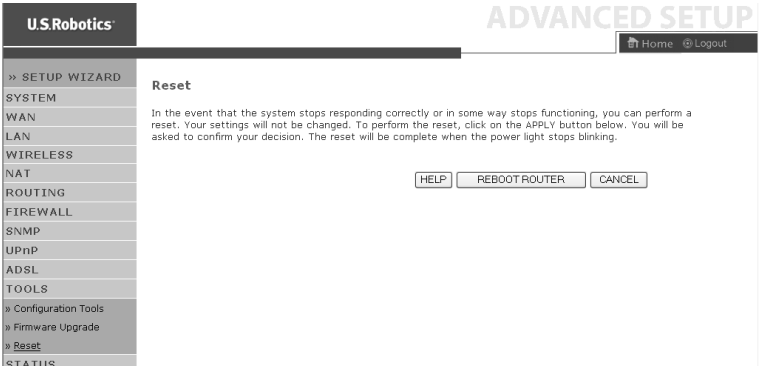
You will be asked to confirm your decision.

Firmware Upgrade

Use the Firmware Upgrade screen to update the firmware or Web User Interface to the latest versions. Download the upgrade file, and save it to your hard drive. Click **Browse** to look for the downloaded file and then click **BEGIN UPGRADE**. Check the Status page Information section to confirm that the upgrade process was successful.



Reset

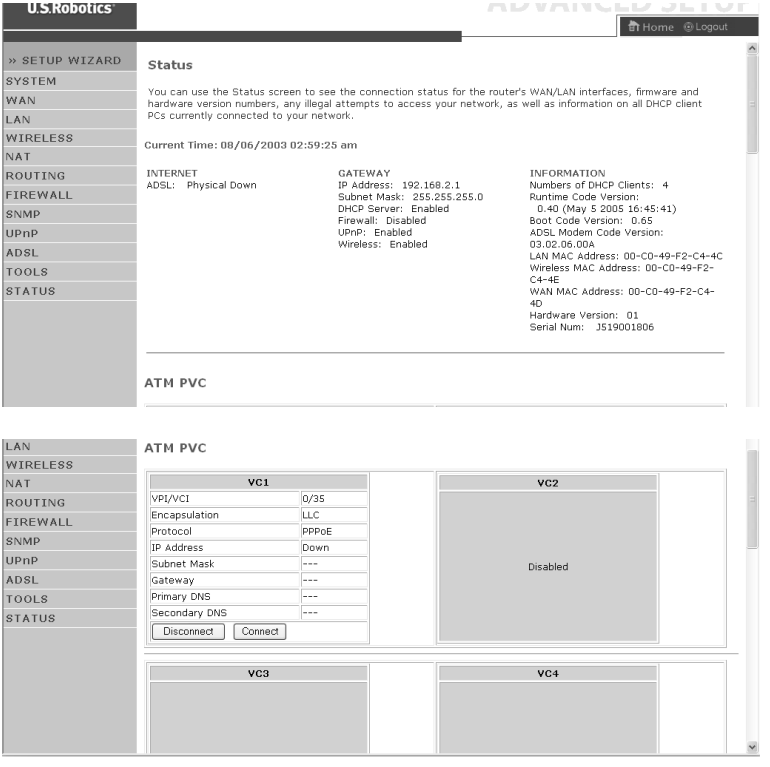


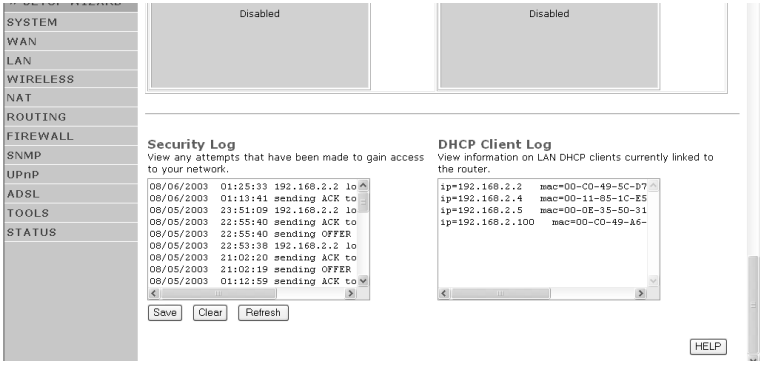
Click **REBOOT ROUTER** to reset the Wireless 54Mbps ADSL Router. If you perform a reset from this page, the configurations will not be changed back to the factory default settings.

Note: If you press the Reset button on the rear panel for one to two seconds, the Wireless 54Mbps ADSL Router will perform a power reset. Press the button for over five seconds and the factory default settings will be restored.

Status

The Status page displays WAN/LAN connection status, firmware, and hardware version numbers, and illegal attempts to access your network, as well as information on DHCP clients connected to your network. The security log may be saved to a file by clicking **Save** and choosing a location.





The following items are included on the Status page:

Parameter	Description
INTERNET	Displays WAN connection type and status.
GATEWAY	Displays system IP settings, as well as DHCP Server and Firewall status.
INFORMATION	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface and for the Wireless 54Mbps ADSL Router, as well as the hardware version and serial number.
ATM PVC	Displays ATM connection type and status.
Disconnect	Click on this button to disconnect from the ATM connection.
Connect	Click on this button to establish a connection to the ATM connection.
Security Log	Displays illegal attempts to access your network.
Save	Click on this button to save the security log file.
Clear	Click on this button to delete the access log.
Refresh	Click on this button to refresh the screen.
DHCP Client Log	Displays information on DHCP clients on your network.

Appendix A
Troubleshooting

This section describes common problems you may encounter and possible solutions to them. The ADSL Router can be easily monitored through panel indicators to identify problems.

The Power LED is not illuminated.
Possible Solution
Check connections between the ADSL Router, the external power supply, and the wall outlet.

Possible Solution
If the power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or external power supply. However, if the unit powers off after running for a while, check for loose power connections, power losses, or surges at the power outlet.

If you still cannot isolate the problem, then the external power supply may be defective. In this case, contact Technical Support for assistance.

The Link LED is not illuminated.
Possible Solution
Verify that the ADSL Router and attached device are powered on. Be sure the cable is plugged into both the ADSL Router and the corresponding device.

Possible Solution
Verify that the proper cable type is used and that its length does not

exceed the specified limits.

Possible Solution
Be sure that the network interface on the attached device is configured for the proper communication speed and duplex mode.

Possible Solution
Check the adapter on the attached device and cable connections for possible defects. Replace any defective adapter or cable if necessary.

I cannot ping the ADSL Router from the attached LAN.
Possible Solution
Verify that the IP addresses are properly configured. For most applications, you should use the ADSL Router's DHCP function to dynamically assign IP addresses to hosts on the attached LAN.

However, if you manually configure IP addresses on the LAN, verify that the same network address (network component of the IP address) and subnet mask are used for both the ADSL Router and any attached LAN devices.

Possible Solution
Be sure the device you want to ping (or from which you are pinging) has been configured for TCP/IP.

I cannot connect to the Internet.
Possible Solution
Be sure you have configured the ADSL Router with the correct DSL connection information that was supplied by your ISP.

Possible Solution
Make sure that the power cord and all the Ethernet cables are connected correctly. This includes the cables connecting the Wireless 54Mbps DSL Router and all the computers.

Possible Solution
Check the network cabling between the computer and the ADSL Router.

I forgot or lost the password for the Wireless 54Mbps ADSL Router.
Possible Solution
Press the Reset button on the rear panel for at least five seconds to restore the factory defaults.

A wireless client cannot associate with the ADSL Router.
Possible Solution
Make sure the wireless client has the same SSID settings as the ADSL Router.

Possible Solution
You need to have the same security settings on the clients and the ADSL Router.

The ADSL Router cannot be detected by a wireless client.
Possible Solution
The distance between the ADSL Router and wireless PC may be too great. Make sure the wireless client has the same SSID and security settings as the ADSL Router.

I cannot access the router's Web User Interface.
Possible Solution:
Make sure that the power cord and all the Ethernet cables are connected correctly. This includes the cables connecting the Wireless 54Mbps DSL Router and all the computers.

Possible Solution:

Make sure that your computer is using an IP address that is within the default range of 192.168.2.xxx. Make sure the address of the subnet mask is 255.255.255.0. The Default Gateway should be the IP address of the Wireless 54Mbps DSL Router, which is 192.168.2.1.

Possible Solution:
You need to verify the connection setting of your Web browser and that the HTTP Proxy feature of your Web browser is disabled. You need to do this so that your Web browser can read the configuration pages inside your Wireless 54Mbps DSL Router. Launch your Web browser.
Internet Explorer users: Click **Tools**, **Internet Options,** and then the Connections tab. Select **Never dial a connection**, click **Apply**, and then click **OK**. Click **Tools** again, then click **Internet Options**. Click the Connections tab, and click the **LAN Settings** button. Clear all the check boxes and click **OK.** Click **OK** to close Internet Options.
Netscape Navigator users: Click **Edit**, **Preferences**, and then double-click **Advanced** in the Category window. Click **Proxies**, select **Direct connection to the Internet**, and then click **OK**. Click **Edit** again, then click **Preferences**. Under Category, double-click **Advanced**, then click **Proxies**. Select **Direct connection to the Internet** and click **OK**.

I am no longer able to access the Internet through the Wireless 54Mbps DSL Router.
Possible Solution:
Make sure that the power cord, the DSL cable, and the Ethernet cable are all connected correctly.

Possible Solution:
Make sure that your computer is using an IP address that is within the default range of 192.168.2.xxx. Make sure the address of the subnet mask is 255.255.255.0. The Default Gateway should be the IP address of the Wireless 54Mbps DSL Router, which is 192.168.2.1. To

verify all of these settings, perform the following steps:
Windows 95, 98, or Me Users: Click Windows **Start** and then **Run**. Type **winipcfg** and click **OK**. Check the IP Address, Subnet Mask, Default Gateway, and DNS server data to make sure they are correct. If the information is not correct, click **Release All** and then click **Renew All**.
Windows NT, 2000, or XP Users: Click Windows **Start** and then **Run**. Type **cmd** and click **OK**. At the DOS prompt, type **ipconfig /all**. Check the IP Address, Subnet Mask, Default Gateway, and DNS server data to make sure they are correct. If the information is not correct, type **ipconfig /release** and press ENTER. Then, type **ipconfig /renew** and press ENTER.

My Web User Interface for the Wireless 54Mbps DSL Router is not responding, but I can still access the Internet.
Possible Solution:
If your Web User Interface stops responding, unplug and then plug back in the power supply of the Wireless 54Mbps DSL Router. This will reboot the Wireless 54Mbps DSL Router. If you are still unable to communicate with the router's Web User Interface, use a paperclip to press in and hold the RESET button for five seconds. This will reset the Wireless 54Mbps DSL Router to the factory default settings. If you applied any personal configuration settings, you will need to make the changes again.

I am unable to connect to the wireless function of the Wireless 54Mbps DSL Router.
Possible Solution:
Be certain that you have each Wireless adapter is set to **Infrastructure** mode. If your 802.11g 54Mbps USB Adapter is set to **Ad hoc** mode, you will not be able to use the wireless function. Refer to the documentation that came with your wireless adapter to determine how to change this setting.

Note: Ad hoc mode is used for peer-to-peer network configurations. **Infrastructure** mode is used for integrated wireless and wired LAN configuration.

My computer does not recognise the wireless function of the Wireless 54Mbps DSL Router after I changed the settings.
Possible Solution:
Ensure that you are connecting to the correct Wireless 54Mbps DSL Router by verifying the correct MAC address. Ensure that the correct passphrase and encryption option is being used. If you changed the settings in the configuration of the Wireless 54Mbps DSL Router, you must also change the settings of every Wireless adapter attached to this network. The settings of the Wireless adapters must match the new settings of the Wireless 54Mbps DSL Router.

I cannot achieve 54 Mbps connections to the Wireless 54Mbps DSL Router.
Possible Solution:
Make sure the wireless products you are using to connect to the Wireless 54Mbps DSL Router support 54 Mbps speeds. 54 Mbps wireless products must be used in order to connect to the Wireless 54Mbps DSL Router at a rate of 54 Mbps. Launch the router's Web User Interface and manually set the connection speed to 54 Mbps. If you are using non-U.S. Robotics wireless products, you may need to upgrade the firmware for those products in order to support 54 Mbps connections.

Possible Solution:
Low connection speed or range can also be caused by environmental interference. Try to move the product around to improve the link quality. In addition, keep in mind that other factors such as lead

based paint, concrete walls, and electronic items such as 2.4G phones may affect your wireless range.

I plugged in the 802.11g 54Mbps USB Adapter but I do not see the Configuration Utility icons.

Possible Solution:

If you installed the 802.11g 54Mbps USB Adapter without installing the software and drivers first, you will not see the Configuration Utility. If the Installation CD-ROM is in your CD-ROM drive, remove it. Insert the Installation CD-ROM into your CD-ROM drive, select your product, and then click **Software**. Click **Wireless USB Adapter Utility and Drivers**. Follow the on-screen instructions to finish the installation procedure. If you are prompted, restart your computer.

Windows could not locate the drivers for the 802.11g 54Mbps USB Adapter.

Possible Solution:

The software must be installed before the 802.11g 54Mbps USB Adapter is connected to your computer. Click **Cancel** on the Found New Hardware Wizard screen, unplug the 802.11g 54Mbps USB Adapter from your computer, and perform the Installation Procedure again, making sure to install the software and drivers first.

I cannot connect to the Internet via a wireless connection with the 802.11g 54Mbps USB Adapter.

Possible Solution:

Check the Configuration Utility icon for the 802.11g 54Mbps USB Adapter in the system tray to confirm the connection status. If you are connected to your Wireless Router, the icon will be green or yellow. If the icon is red, open the Configuration Utility and scan the area so that you can connect to the correct wireless network.

Possible Solution:

Try performing the ping procedure to make sure you can connect with different areas of the wireless network and the internet. If at any time during the ping procedure you do not receive a return

message for a successful ping, this means that you cannot connect to that IP address. After you have made the corrections, continue with the ping procedure.

1Click Windows **Start** and then click **Run**. In the Run dialog box, Windows 98 and Me users should type **command** and click **OK**. Windows 2000 and XP users should type **cmd** and click **OK**.

2At the command prompt, type **Ping 127.0.0.1** This is your local host address and this will ensure that the TCP/IP protocol is installed and functioning properly. If you cannot complete this ping, reinstall the TCP/IP protocol on your computer. Refer to your operating system's documentation for instructions.

3Type **Ping** followed by your IP address. To determine your IP address, refer to the previous Possible Solution. This will ensure that your computer is responding to requests and that the 802.11g 54Mbps USB Adapter is properly installed. If you cannot complete this ping, uninstall the 802.11g 54Mbps USB Adapter and repeat the installation procedure.

4Type **Ping** followed by your gateway address to check the communication with your gateway. The default gateway address is the IP address of your wireless router. Check your wireless router to verify this address. This will ensure that you can connect to the wireless network. If you cannot complete this ping, make sure your wireless settings are correct and that the 802.11g 54Mbps USB Adapter is fully inserted into a USB port on your computer.

5Type **Ping** followed by the outside Internet address that is provided by your ISP. This procedure will ensure that your wireless network can connect to the Internet. If you cannot complete this ping, verify your internet connection between your modem and your wireless router or access point.

6Type **Ping** followed by your known DNS server address. This will allow you to resolve valid Internet host names to IP addresses and to verify that you can access the Internet.

Security is enabled on my Wireless 54Mbps DSL Router and my wireless client cannot connect.
Possible Solution:
The 802.11g 54Mbps USB Adapter supports 64 and 128 bit encryption. Verify that all of the security features you have entered for the profile of your 802.11g 54Mbps USB Adapter match the settings for your Wireless 54Mbps DSL Router. For more information about setting up connection profiles and security features, refer to the Navigating the Wireless Configuration Utility section of the User Guide on the U.S. Robotics Installation CD-ROM.

Possible Solution:
If you created a Profile Setting, unplug the 802.11g 54Mbps USB Adapter and then plug it back in.

The U.S. Robotics Installation CD-ROM did not automatically launch when I inserted it into my CD-ROM drive.
Possible Solution:
Some programs may keep the autolaunch feature of the Installation CD-ROM from beginning. Close any open applications and reinsert the Installation CD-ROM. If your CD-ROM still does not automatically launch, click Windows **Start**, **Run**, and type **D:\setup** (if your CD-ROM drive uses a different letter, type that letter in place of "D") and click **OK**.

I accidentally clicked Cancel during the installation procedure of the 802.11g 54Mbps USB Adapter.
Possible Solution:
Remove and reinsert the U.S. Robotics Installation CD-ROM into your CD-ROM drive. Repeat the installation procedure of the software before you install any hardware.

My computer does not recognise the 802.11g 54Mbps USB Adapter.
Possible Solution:
The 802.11g 54Mbps USB Adapter may not be properly connected. Make sure the 802.11g 54Mbps USB Adapter is fully inserted into the USB port on your computer.

The 802.11g 54Mbps USB Adapter does not work properly, and I may need to uninstall the device.
Possible Solution:
Check to be certain the 802.11g 54Mbps USB Adapter is not in use before removing it. The computer may lock up if the 802.11g 54Mbps USB Adapter is removed while in use. If the 802.11g 54Mbps USB Adapter is not functioning correctly, perform the following steps:

Windows XP Users: Click Windows **Start**, **All Programs**, **802.11g Wireless USB Adapter Utility**, and then **Uninstall**.

Windows 98, Me, and 2000 Users: Click Windows **Start**, **Programs**, **802.11g Wireless USB Adapter Utility**, and then **Uninstall**.

I uninstalled the Configuration Utility and my computer doesn't detect the 802.11g 54Mbps USB Adapter when I attempt to reinstall the Configuration Utility.
Possible Solution:
If you uninstalled the Configuration Utility and then reinstalled it, you will need to unplug and then plug back in the 802.11g 54Mbps USB Adapter. Your computer will then detect the 802.11g 54Mbps USB Adapter.

When I perform a Site Survey, I cannot locate the wireless network to which I want to connect.
Possible Solution:
If you do not see the correct wireless network, click **Refresh**.

If you still do not see the correct wireless network when you perform a Site Survey, try creating a profile using the necessary connection information for the appropriate wireless network, selecting the profile, and then clicking **Apply** in the Configuration tab. Refer to the "Navigating the Wireless Configuration Utility" section of the 802.11g 54Mbps USB Adapter User Guide on the Installation CD-ROM for more information about creating a profile.

Additional Support

Note: The product number for the Wireless 54Mbps ADSL Router is 9110. The product number for the 802.11g 54Mbps USB Adapter is 5422. You can find your serial number on the label on each product and on the side of the package. Write your serial number down. If you ever need to call our Technical Support department, you will need this number to receive assistance.

Model Number	Serial Number
USR9110	
USR5422	

1. Go to the Support section of the U.S. Robotics Web site at **http://www.usr.com/support/**.

Many of the most common difficulties users experience have been addressed in the FAQ and Troubleshooting Web pages for your specific product.

2. Submit your technical support question using an online form at **http://www.usr.com/emailsupport/**.

3. Call the U.S. Robotics Technical Support department.

Technical questions about U.S. Robotics products can also be answered by technical support specialists.

Country	Voice	Online	Support Hours
United States & Canada	(888) 216-2850	http://www.usr.com/emailsupport	9:00 A.M. - 5:00 P.M., M-F CT
Austria	07 110 900 116	http://www.usr.com/emailsupport/de	9:00 –17:00, M-F
Belgium (Flemish)	+32 (0)70 233 545	http://www.usr.com/emailsupport/ea	9:00 –17:00, M-F
Belgium (French)	+32 (0)70 233 546	http://www.usr.com/emailsupport/ea	9:00 –17:00, M-F
Czech Republic		http://www.usr.com/emailsupport/cz	
Denmark	+45 7010 4030	http://www.usr.com/emailsupport/uk	9:00 –17:00, M-F
Finland	+358 98 171 0015	http://www.usr.com/emailsupport/ea	9:00 –17:00, M-F
France	082 507 0693	http://www.usr.com/emailsupport/fr	9:00 –17:00, M-F
Germany	01805671548	http://www.usr.com/emailsupport/de	9:00 –17:00, M-F
Hungary	01805671548	http://www.usr.com/emailsupport/hu	9:00 –17:00, M-F
Ireland	1890-252-130	http://www.usr.com/emailsupport/uk	9:00 –17:00, M-F
Italy	848 80 9903	http://www.usr.com/emailsupport/it	9:00 –17:00, M-F
Luxembourg	+352 342 080 8318	http://www.usr.com/emailsupport/bn	9:00 –17:00, M-F
Middle East/Africa	+44 870 844 4546	http://www.usr.com/emailsupport/me	9:00 –17:00, M-F
Netherlands	0900 20 25 857	http://www.usr.com/emailsupport/bn	9:00 –17:00, M-F
Norway	+47 23 50 0097	http://www.usr.com/emailsupport/ea	9:00 –17:00, M-F
Poland		http://www.usr.com/emailsupport/pl	
Portugal	+351 (0)21 415 4034	http://www.usr.com/emailsupport/pt	9:00 –17:00, M-F
Spain	902 117 964	http://www.usr.com/emailsupport/es	9:00 –17:00, M-F
Sweden	+46 (0) 77 128 1020	http://www.usr.com/emailsupport/ea	9:00 –17:00, M-F
Switzerland	+0848 840 200	http://www.usr.com/emailsupport/de	9:00 –17:00, M-F
Turkey		http://www.usr.com/emailsupport/tk	
UK	0870 844 4546	http://www.usr.com/emailsupport/uk	9:00 –17:00, M-F

For current support contact information, go to the following Web site:

http://www.usr.com/support/.

Appendix B
Specifications

Physical Characteristics
Ports
One 10/100Mbps RJ-45 Port
One ADSL RJ-11

ADSL Features
Supports DMT line modulation
Supports Annex A Full-Rate ADSL: up to 8 Mbps downstream, up to 1 Mbps upstream (G.992.1 &T1.413, Issue 2)
Supports G.Lite ADSL: up to 1.5 Mbps downstream, up to 512 Kbps upstream
Dying GASP support

ATM Features
RFC1483 Encapsulation (IP, Bridging and encapsulated routing)
PPP over ATM (LLC &VC multiplexing) (RFC2364)
Classical IP (RFC1577)
Traffic shaping (UBR, CBR)
OAM F4/F5 support
PPP over Ethernet Client

Management Features
Firmware upgrade via web based management
Web based management (configuration)
Power indicators
Event and history logging
Network ping
QoS

Security Features
Password protected configuration access
User authentication (PAP/CHAP) with PPP
Firewall NAT NAPT
VPN pass through (IPSec-ESP Tunnel mode,L2TP, PPTP)

LAN Features
IEEE 802.1d (self-learning transparent Bridging)
DHCP Server
DNS Proxy
Static Routing, RIPv1 and RIP

Applications
Netmeeting, ICQ, Real Player, QuickTime, DialPad, PC Anywhere, Telnet, SNTP, NNTP

Radio Features

Wireless RF module Frequency Band
802.11g Radio: 2.4GHz
802.11b Radio: 2.4GHz
Europe - ETSI
2412~2472MHz (Ch1~Ch13)
France
2457~2472MHz (Ch10~Ch13)

Modulation Type
OFDM, CCK

Operating Channels IEEE 802.11b compliant:
13 channels (ETSI)
4 Channels (France)

Operating Channels IEEE 802.11g compliant:
13 channels (Europe)

RF Output Power Modulation Rate-Output Power (dBm)

802.11b - 1Mbps (16 dBm)
802.11b - 2Mbps (16 dBm)
802.11b - 5.5Mbps (16 dBm)
802.11b - 11Mbps (16 dBm)

Modulation Rate-Output Power (dBm)

802.11g - 6Mbps (15 dBm)
802.11g - 9Mbps (15 dBm)
802.11g - 12Mbps (15 dBm)
802.11g - 18Mbps (15 dBm)
802.11g- 24Mbps (15 dBm)
802.11g - 36Mbps (15 dBm)
802.11g- 48Mbps (15 dBm)
802.11g - 54Mbps (15 dBm)

Sensitivity Modulation Rate-Receiver 2.412 ~ 2.484 HGz Sensitivity (dBm)

802.11b - 1Mbps - (90 dBm)
802.11b - 2Mbps - (88 dBm)
802.11b - 5.5Mbps - (85 dBm)
802.11b- 11Mbps - (84 dBm)

Modulation Rate-Receiver Sensitivity Typical (dBm)
802.11g - 6Mbps - (88 dBm)
802.11g - 9Mbps - (87 dBm)
802.11g - 12Mbps - (84 dBm)
802.11g - 18Mbps - (82 dBm)
802.11g - 24Mbps - (79 dBm)
802.11g - 36Mbps - (75 dBm)
802.11g - 48Mbps - (68 dBm)
802.11g - 54Mbps - (68 dBm)

Environmental
Complies with the following standards:

Temperature: IEC 68-2-14
0 to 50 degrees C (Standard Operating)
-40 to 70 degree C (Non-operation)

Humidity
10% to 90% (Non-condensing)

Vibration
IEC 68-2-36, IEC 68-2-6

Shock
IEC 68-2-29

Drop
IEC 68-2-32

Dimensions
220 x 132 x 30 (mm)

Weight
550 g

Input Power
12 VDC

IEEE Standards
IEEE 802.3, 802.3u, 802.11g, 802.1d
ITU G.dmt
ITU G.Handshake
ITU T.413 issue 2 - ADSL full rate

Standards Conformance Electromagnetic Compatibility
CE, ETSI, R&TTE, ETS 300 328, ETS 301 489

Safety
EN60950

Internet Standards
RFC 826 ARP
RFC 791 IP
RFC 792 ICMP
RFC 768 UDP
RFC 793 TCP
RFC 783 TFTP
RFC 1483 AAL5 Encapsulation
RFC 1661 PPP
RFC 1866 HTML
RFC 2068 HTTP
RFC 2364 PPP over ATM

Appendix C
Regulatory

CE0560! CE Compliance

Manufacturer's Declaration of Conformity

We, U.S. Robotics Corporation of 935 National Parkway, Schaumburg, Illinois, 60173-5157 USA, declare under our sole responsibility that the product, U.S. Robotics Wireless 54Mbps ADSL Router, Model 9110, to which this declaration relates, is in conformity with the following standards and/or other normative documents.

EN300 328
EN301 489-1
EN301 489-17
EN55022
EN55024
EN60950
EN61000-3-2
EN61000-3-3
EN50392

We, U.S. Robotics Corporation, hereby declare the above named product is in compliance and conformity with the essential requirements and other relevant provisions of Directive 1999/5/EC.

The conformity assessment procedure referred to in Article 10(3) and detailed in Annex II of Directive 1999/5/EC has been followed.

This equipment is in compliance with the European recommendation 1999/519/ECC, governing the exposure to the electromagnetic radiation.

Network Compatibility Declaration
This equipment is designed to work satisfactorily on all European Union PSTN networks.

This equipment is supplied with a suitable PSTN connector for the country in which it was supplied. If it is required to use this equipment on a different network to the one for which it was supplied, the user is advised to contact the vendor for guidance regarding connection.

This product can be used in the following countries:
Belgium, Switzerland, Netherlands, Luxembourg, Italy, France, UK, Ireland, Spain, Portugal,

Sweden, Norway, Denmark, Finland, Czech Republic, Poland, Hungary, and Greece

Regarding IEEE 802.11g we currently have the following information about restrictions in the R&TTE countries:

Country	Frequency band	Output power
France	2454-2483.5 MHz	10 mW EIRP outdoor

Regulatory Channel Frequency

Channel	Frequency (MHz)	ETSI
1	2412	X
2	2417	X
3	2422	X
4	2427	X
5	2432	X
6	2437	X
7	2442	X
8	2447	X
9	2452	X
10	2457	X
11	2462	X
12	2467	X
13	2472	X

EU Health Protection

This device complies with the European requirements governing exposure to electromagnetic radiation. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. This wireless device is a transmitter/receiver and has

been designed and manufactured to comply with the exposure limits recommended by the Council of the European Union and the International Commission on Non-Ionizing Radiation Protection (ICNIRP, 1999) for the entire population. The exposure standard for portable equipment uses the "Specific Absorption Rate" as unit of measure. The maximum SAR value of this wireless device measured in the conformity test is 0.25 W/kg.

Operating Channels:

- IEEE 802.11g compliant
- 13 channels (ETSI)

Go to www.usr.com to see the most recent channel restriction information.

APPENDIX D
WARRANTY

U.S. Robotics Corporation Two (2) Year Limited Warranty

1.0 GENERAL TERMS:

1.1 This Limited Warranty is extended only to the original end-user purchaser (CUSTOMER) and is not transferable.

1.2 No agent, reseller, or business partner of U.S. Robotics Corporation (U.S. ROBOTICS) is authorised to modify the terms of this Limited Warranty on behalf of U.S. ROBOTICS.

1.3 This Limited Warranty expressly excludes any product that has not been purchased as new from U.S. ROBOTICS or its authorised reseller.

1.4 This Limited Warranty is only applicable in the country or territory where the product is intended for use (As indicated by the Product Model Number and any local telecommunication approval stickers affixed to the product).

1.5 U.S. ROBOTICS warrants to the CUSTOMER that this product will be free from defects in workmanship and materials, under normal use and service, for TWO (2) YEARS from the date of purchase from U.S. ROBOTICS or its authorised reseller.

1.6 U.S. ROBOTICS sole obligation under this warranty shall be, at U.S. ROBOTICS sole discretion, to repair the defective product or part with new or reconditioned parts; or to exchange the defective product or part with a new or reconditioned product or part that is the same or similar; or if neither of the two foregoing options is reasonably available, U.S. ROBOTICS may, at its sole discretion, provide a refund to the CUSTOMER not to exceed the latest published U.S. ROBOTICS recommended retail purchase price of the product, less any applicable service fees. All products or parts that are exchanged for replacement will become the property of U.S. ROBOTICS.

1.7 U.S. ROBOTICS warrants any replacement product or part for NINETY (90) DAYS from the date the product or part is shipped to Customer.

1.8 U.S. ROBOTICS makes no warranty or representation that this product will meet CUSTOMER requirements or work in combination with any hardware or software products provided by third parties.

1.9 U.S. ROBOTICS makes no warranty or representation that the operation of the software products provided with this product will be uninterrupted or error free, or that all defects in software products will be corrected.

1.10 U.S. ROBOTICS shall not be responsible for any software or other CUSTOMER data or information contained in or stored on this product.

2.0 CUSTOMER OBLIGATIONS:

2.1 CUSTOMER assumes full responsibility that this product meets CUSTOMER specifications and requirements.

2.2 CUSTOMER is specifically advised to make a backup copy of all software provided with this product.

2.3 CUSTOMER assumes full responsibility to properly install and configure this product and to ensure proper installation, configuration, operation and compatibility with the operating environment in which this product is to function.

2.4 CUSTOMER must furnish U.S. ROBOTICS a dated Proof of Purchase (copy of original purchase receipt from U.S. ROBOTICS or its authorised reseller) for any warranty claims to be authorised.

3.0 OBTAINING WARRANTY SERVICE:

3.1 CUSTOMER must contact U.S. ROBOTICS Technical Support or an authorised U.S. ROBOTICS Service Centre within the applicable warranty period to obtain warranty service authorisation.

3.2 Customer must provide Product Model Number, Product Serial Number and dated Proof of Purchase (copy of original purchase receipt from U.S. ROBOTICS or its authorised reseller) to obtain warranty service authorisation.

3.3 For information on how to contact U.S. ROBOTICS Technical Support or an authorised U.S. ROBOTICS Service Centre, please see the U.S. ROBOTICS corporate Web site at: www.usr.com

3.4 CUSTOMER should have the following information / items readily available when contacting U.S. ROBOTICS Technical Support:

- Product Model Number
- Product Serial Number
- Dated Proof of Purchase
- CUSTOMER contact name & telephone number
- CUSTOMER Computer Operating System version
- U.S. ROBOTICS Installation CD-ROM
- U.S. ROBOTICS Installation Guide

4.0 WARRANTY REPLACEMENT:

4.1 In the event U.S. ROBOTICS Technical Support or its authorised U.S. ROBOTICS Service Centre determines the product or part has a malfunction or failure attributable directly to faulty workmanship and/or materials; and the product is within the TWO (2) YEAR warranty term; and the CUSTOMER will include a copy of the dated Proof of Purchase (original purchase receipt from U.S. ROBOTICS or its authorised reseller) with the product or part with the returned product or part, then U.S. ROBOTICS will issue CUSTOMER a Return Material Authorisation (RMA) and instructions for the return of the product to the authorised U.S. ROBOTICS Drop Zone.

4.2 Any product or part returned to U.S. ROBOTICS without an RMA issued by U.S. ROBOTICS or its authorised U.S. ROBOTICS Service Centre will be returned.

4.3 CUSTOMER agrees to pay shipping charges to return the product or part to the authorised U.S. ROBOTICS Return Centre; to insure the product or assume the risk of loss or damage which may occur in transit; and to use a shipping container equivalent to the original packaging.

4.4 Responsibility for loss or damage does not transfer to U.S. ROBOTICS until the returned product or part is received as an authorised return at an authorised U.S. ROBOTICS Return Centre.

4.5 Authorised CUSTOMER returns will be unpacked, visually inspected, and matched to the Product Model Number and Product Serial Number for which the RMA was authorised. The enclosed Proof of Purchase will be inspected for date of purchase and place of purchase. U.S. ROBOTICS may deny warranty service if visual inspection of the returned product or part does not match the CUSTOMER supplied information for which the RMA was issued.

4.6 Once a CUSTOMER return has been unpacked, visually inspected, and tested U.S. ROBOTICS will, at its sole discretion, repair or replace, using new or reconditioned product or parts, to whatever extent it deems necessary to restore the product or part to operating condition.

4.7 U.S. ROBOTICS will make reasonable effort to ship repaired or replaced product or part to CUSTOMER, at U.S. ROBOTICS expense, not later than TWENTY ONE (21) DAYS after U.S. ROBOTICS receives the authorised CUSTOMER return at an authorised U.S. ROBOTICS Return Centre.

4.8 U.S. ROBOTICS shall not be liable for any damages caused by delay in delivering or furnishing repaired or replaced product or part.

5.0 LIMITATIONS:

5.1 THIRD-PARTY SOFTWARE: This U.S. ROBOTICS product may include or be bundled with third-party software, the use of which is governed by separate end-user license agreements provided by third-party software vendors. This U.S. ROBOTICS Limited Warranty does not apply to such third-party software. For the applicable warranty refer to the end-user license agreement governing the use of such software.

5.2 DAMAGE DUE TO MISUSE, NEGLECT, NON-COMPLIANCE, IMPROPER INSTALLATION, AND/OR ENVIRONMENTAL FACTORS: To the extent permitted by applicable law, this U.S. ROBOTICS Limited Warranty does not apply to normal wear and tear; damage or loss of data due to interoperability with current and/or future versions of operating system or other current and/or future software and hardware; alterations (by persons other than U.S. ROBOTICS or authorised U.S. ROBOTICS Service Centres); damage caused by operator error or non-compliance with instructions as set out in the user documentation or other accompanying documentation; damage caused by acts of nature such as lightning, storms, floods, fires, and earthquakes, etc. Products evidencing the product serial number has been tampered with or removed; misuse, neglect, and improper handling; damage caused by undue physical, temperature, or electrical stress; counterfeit products; damage or loss of data caused by a computer virus, worm, Trojan horse, or memory content corruption; failures of the product which result from accident, abuse, misuse (including but not limited to improper installation, connection to incorrect voltages, and power points); failures caused by products not supplied by U.S. ROBOTICS; damage cause by moisture, corrosive environments, high voltage surges, shipping, abnormal working conditions; or the use of the product outside the borders of the country or territory intended for use (As indicated by the Product Model Number and any local telecommunication approval stickers affixed to the product).

5.3 TO THE FULL EXTENT ALLOWED BY LAW, THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, TERMS, OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES, TERMS, OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. U.S. ROBOTICS NEITHER ASSUMES NOR AUTHORISES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, WARRANTY, OR USE OF ITS PRODUCTS.

5.4 LIMITATION OF LIABILITY. TO THE FULL EXTENT ALLOWED BY LAW, U.S. ROBOTICS ALSO EXCLUDES FOR ITSELF AND ITS SUPPLIERS ANY LIABILITY, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCTS, EVEN IF U.S. ROBOTICS OR ITS AUTHORISED RESELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND LIMITS ITS LIABILITY TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT U.S. ROBOTICS OPTION. THIS DISCLAIMER OF LIABILITY FOR DAMAGES WILL NOT BE AFFECTED IF ANY REMEDY PROVIDED HEREIN SHALL FAIL OF ITS ESSENTIAL PURPOSE.

6.0 DISCLAIMER:

Some countries, states, territories or provinces do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damages for certain products supplied to consumers, or the limitation of liability for personal injury, so the above limitations and exclusions may be limited in their application to CUSTOMER. When the implied warranties are not allowed by law to be excluded in their entirety,

they will be limited to the TWO (2) YEAR duration of this written warranty. This warranty gives CUSTOMER specific legal rights, which may vary depending on local law.

7.0 GOVERNING LAW:

This Limited Warranty shall be governed by the laws of the State of Illinois, U.S.A. excluding its conflicts of laws principles and excluding the United Nations Convention on Contracts for the International Sale of Goods.

U.S. Robotics Corporation
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