

# U.S. Robotics®

## U.S. Robotics 802.11g 54Mbps Router



### USER GUIDE

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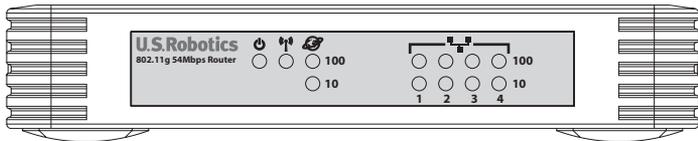


# ABOUT THE 802.11g 54Mbps Router

Congratulations on your purchase of the 802.11g 54Mbps Router. U.S. Robotics is proud to provide you with a powerful yet simple communication device for connecting your home network or local area network (LAN) to the Internet.

## LED Indicators

The 802.11g 54Mbps Router includes status LED indicators, as described in the following figure and table.



LED	Status	Description
PWR (Green) 	On	The 802.11g 54Mbps Router is receiving power.
WLAN (Green) 	On	The 802.11g 54Mbps Router has established a valid wireless connection.
	Flashing	The WLAN port is transmitting or receiving traffic.
WAN (Green) 	On	The WAN port has established a valid network connection.
LAN1-4 100 	On	The indicated LAN port has established a valid 100 Mbps network connection.
	Flashing	The indicated LAN port is transmitting or receiving traffic.

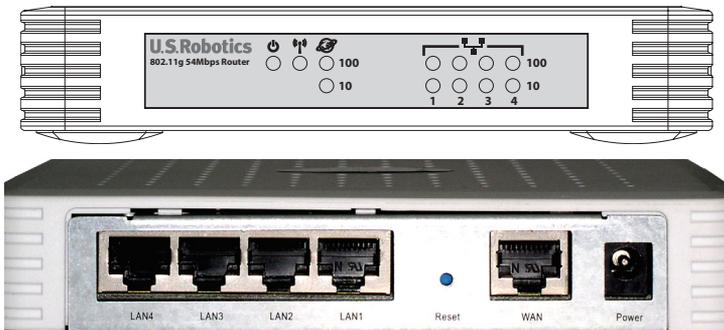
# About the 802.11g 54Mbps Router

LED	Status	Description
 LAN1-4 10	On	The indicated LAN port has established a valid 10 Mbps network connection.
	Flashing	The indicated LAN port is transmitting or receiving traffic.

## Front and Rear Panels

The following figure shows the components of the 802.11g 54Mbps Router:

Figure 1. Front and Rear Panels



Item	Description
LEDs	Power, WLAN, WAN and LAN port status indicators. (See "LED Indicators" on page 1.)
Power Inlet	Connect the included power adapter to this inlet. <b>Warning:</b> Using the wrong type of power adapter may damage your router.
WAN Port	WAN port (RJ-45). Connect your cable modem, DSL modem, or an Ethernet router to this port.

Item	Description
Reset Button	Use this button to reset the power and restore the default factory settings.
 (LAN) Ports	Fast Ethernet ports (RJ-45). Connect devices (such as a PC, hub or switch) on your local area network to these ports.

## System Requirements

You must have an ISP that meets the following minimum requirements:

- Internet access from your local telephone company or Internet Service Provider (ISP) using a DSL modem or cable modem.
- A computer equipped with a 10 Mbps, 100 Mbps, or 10/100 Mbps Fast Ethernet card, or a USB-to-Ethernet converter.
- TCP/IP network protocol installed on each PC that needs to access the Internet.
- A web browser, such as Microsoft Internet Explorer 5.5 or above installed on one PC at your site for configuring the 802.11g 54Mbps Router.

# INSTALLING THE 802.11g 54Mbps Router

## **Basic Installation Procedure**

**Note:** It is important that you have your serial number written down before you install the 802.11g 54Mbps Router. You can find your serial number on the bottom label of the 802.11g 54Mbps Router. If you ever need to call our Technical Support department, you will need this number to receive assistance.

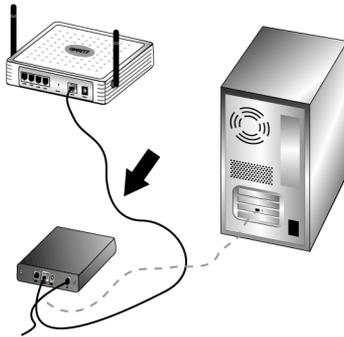
Model Number	Serial Number
USR5462	

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

## **Step One: Connect your modem to the 802.11g 54Mbps Router**

- Turn off your computer and your cable or DSL modem.
- Locate the Ethernet cable from your cable or DSL modem that is connected to your computer's Ethernet adapter.
- If your broadband is connected, disconnect that Ethernet cable from your computer's Ethernet adapter.
- Use the Ethernet cable to connect your cable or DSL modem to the WAN port on the rear of the 802.11g 54Mbps Router.

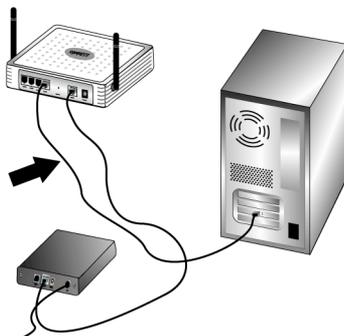
## *Installing the 802.11g 54Mbps Router*



**Note:** Some cable or DSL modems can be connected using either a USB cable or an Ethernet cable. To connect your cable or DSL modem to the 802.11g 54Mbps Router, you must use an Ethernet cable.

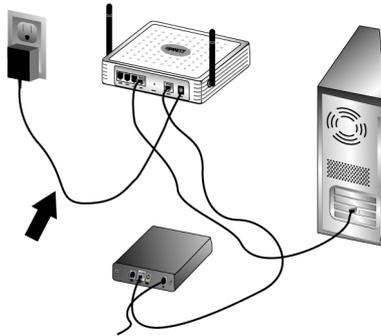
### **Step Two: Connect your 802.11g 54Mbps Router to your computer and connect the power supply**

Connect one end of the supplied Ethernet cable to your computer's Ethernet adapter. Connect the other end to one of the LAN ports on the 802.11g 54Mbps Router.



## Installing the 802.11g 54Mbps Router

Turn on your cable or DSL modem. Connect the included power adapter to the power socket on the 802.11g 54Mbps Router. Plug the power adapter into a standard power outlet. Turn on your computer.



### Step Three: Configure the basic connection settings

**Note:** You will also need to verify that the HTTP Proxy feature of your web browser is disabled. Refer to “Troubleshooting” on page 57.

Perform the steps of the Setup Wizard to configure the basic connection settings of the 802.11g 54Mbps Router.

Your Internet connection user name and password will be required for the installation of the 802.11g 54Mbps Router. Depending on your ISP, you may need to know some of the following information: IP Address, Subnet Mask, Gateway/Router, DNS Servers/ Name Servers, and Service Name (optional).

**Note:** To obtain the necessary information, first look within your login application. If you cannot find all the necessary information, contact your ISP for assistance in obtaining this information.

## *Installing the 802.11g 54Mbps Router*

1. Launch a Web browser. In the location or address line of your Web browser, type **http://192.168.2.1** to access the Web User Interface.

After the connection is established, you will see the Web User Interface. The default password is **admin**. Click **Login**.

When you access the Web User Interface, click the **Setup Wizard**.

**Note:** If you are prompted to connect to the Internet, you may need to select **Try Again** or **Connect**, depending on your Internet browser.

2. Select your Time Zone and then click **Next**.
3. Choose your Broadband Type. (Enter the appropriate information for the type of Internet connection you chose.) When you are finished, click **Next**. Refer to “Broadband Type” on page 12 for more information.
4. If required, enter the IP address Info for the 802.11g 54Mbps Router and then click **Finish**.

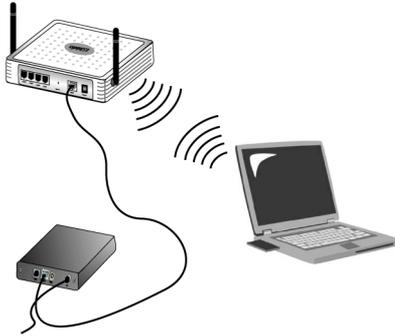
After finishing the Setup Wizard, if it does not report "Connected," perform the steps of the Setup Wizard again.

If Web User Interface still did not report “Connected,” or if at anytime you want to validate your Internet settings, click Advanced Setup and select Status.

### **To make a wireless connection:**

Make sure each wireless adapter that will be connected to the network is set to Infrastructure mode. If you purchased the USR5470 Wireless Starter Kit, refer to the Navigating the Wireless Configuration Utility section of the 802.11g 54Mbps USB Adapter User Guide on the Installation CD-ROM to determine how to change this setting and for instructions on collecting your configuration information. If you are connecting a different wireless adapter, refer to that wireless adapter’s documentation.

## *Installing the 802.11g 54Mbps Router*



When you are finished configuring the basic connection settings, you should now have Internet access. Launch a Web browser and register your product at **[www.usr.com/productreg](http://www.usr.com/productreg)** If the page loads, you are finished with the installation procedure. If the page does not load, refer to the Troubleshooting section.

**Note:** Refer to “Configuring the 802.11g 54Mbps Router” on page 9 for more detailed configuration information. Contact your ISP if you have any questions about your WAN type or your connection information.

The installation procedure for the 802.11g 54Mbps Router is now complete. If you experience any difficulties, refer to “Troubleshooting” on page 57 for more detailed information.

# CONFIGURING THE 802.11G 54Mbps ROUTER

The 802.11g 54Mbps Router can be configured by Windows Internet Explorer 5.5 or above. Using the Web User Interface, you can configure the 802.11g 54Mbps Router and view statistics to monitor network activity.

Before you attempt to log into the web-based administration, please verify the following.

1. Your browser is configured properly (see below).
2. Disable any firewall or security software that may be running.
3. Confirm that the cable is securely plugged into your computer and the 802.11g 54Mbps Router (ports 1-4).
4. Make sure that the LED that corresponds with the port you are using is lit green. If you don't have a link light, then try another cable until you get a good link.

## Navigating the Web Browser Interface

To access the 802.11g 54Mbps Router's user interface, enter the 802.11g 54Mbps Router IP address in your web browser `http://192.168.2.1` Then enter the password and click LOGIN. (The default password is **admin**.)



**Note:** Passwords can contain from 3 to 12 alphanumeric characters and are case sensitive.

## Configuring the 802.11g 54Mbps Router

The home page displays the Setup Wizard and Advanced Setup options.



The 802.11g 54Mbps Router's user interface features a Setup Wizard and an Advanced Setup section. Use the Setup Wizard if you want to quickly set up the 802.11g 54Mbps Router for use with a cable modem or DSL modem.

Advanced setup supports more advanced functions like hacker attack detection, IP and MAC address filtering, intrusion detection, virtual server setup, virtual DMZ hosts, and other advanced functions.

### Making Configuration Changes

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, be sure to click the **APPLY** or **NEXT** button at the bottom of the page to enable the new setting.

# Setup Wizard

## Time Zone

Click on the Setup Wizard picture. The first item in the Setup Wizard is Time Zone setup.



For accurate timing of client filtering and log events, you need to set the time zone. Select your time zone from the drop-down list, and click **NEXT**.

# Broadband Type

Select the type of broadband connection you have.

**Note:** If you have any questions regarding what type of service you have, check with your Internet Service Provider for more information.

For a cable modem connection see the following page. For a Fixed-IP xDSL connection see “Fixed-IP xDSL” on page 13, for a PPPoE xDSL connection, see “PPPoE xDSL” on page 14, for a PPTP connection, see “Point-to-Point Tunneling Protocol (PPTP)” on page 15, and for BigPond connection, see “BigPond” on page 16.



The screenshot shows a configuration interface with a sidebar on the left and a main content area on the right. The sidebar contains three items: '1. Time Zone' (checked), '2. Broadband Type' (checked), and '3. IP Address Info' (unchecked). The main content area is titled '2. Broadband Type' and includes a sub-header 'Specify the WAN connection type required by your Internet Service Provider. Specify Cable modem or xDSL Router, Fixed-IP xDSL, PPPoE xDSL, PPTP or BigPond.' Below this are five radio button options, each with an icon and a title: 'Cable Modem or xDSL Router', 'Fixed-IP xDSL', 'PPPoE xDSL', 'PPTP', and 'BigPond'. Each option is followed by a short paragraph of instructions. A 'BACK' button is located in the bottom right corner of the main content area.

**1. Time Zone**  
**2. Broadband Type**  
**3. IP Address Info**

## 2. Broadband Type

Specify the WAN connection type required by your Internet Service Provider. Specify Cable modem or xDSL Router, Fixed-IP xDSL, PPPoE xDSL, PPTP or BigPond.

**Cable Modem or xDSL Router**  
A cable modem or xDSL Router requires minimal configuration. When you have setup an account with your Internet provider, the U.S. Robotics 802.11g Wireless Router will be automatically configured when plugged into the cable modem or xDSL Router. The host name field is optional, but may be required by some Cable Service Providers. If there is a Domain Name Server (DNS) that you would rather use, you need to specify the IP address in the "Advanced Setup | WAN | DNS" page.

**Fixed-IP xDSL**  
Some xDSL Internet Service Providers may assign a fixed IP address for your gateway. If you have been provided with this information, choose this option and enter the assigned IP address, subnet mask, gateway IP and DNS IP addresses for your U.S. Robotics 802.11g Wireless Router.

**PPPoE xDSL**  
If you connect to the Internet using an xDSL Modem and your ISP has provided you with a password, and service name, then your ISP uses PPPoE. You must choose this option and enter the required information.

**PPTP**  
Point-to-Point Tunneling Protocol is a common connection method used for xDSL connections in Europe.

**BigPond**  
In this section you can configure the built-in client for the BigPond Internet service available in Australia.

**BACK**

## Cable Modem or xDSL Router

Your Internet Service Provider may have given you a host name. If so, enter it into the field.

### 3. IP Address Information

#### Cable Modem or xDSL Router

Host Name:	<input type="text"/>
MAC Address:	<input type="text"/>
<input type="button" value="Clone MAC Address"/>	

A cable modem requires minimal configuration. If the ISP requires you to input a Host Name, type it in the "Host Name" field above.

Your connection may require you to clone your MAC address. If required, enter the MAC address of the network adapter that was used to setup your cable connection. Then click **Clone MAC address**.

Click **Finish** to complete the setup. The Status page will be displayed, allowing you to view the connection status, as well as other information. See "Status" on page 56 for details.

## Fixed-IP xDSL

#### Fixed-IP xDSL

IP Address :	<input type="text"/>
Subnet Mask :	<input type="text"/>
Gateway IP Address :	<input type="text"/>
DNS IP Address :	<input type="text"/>

Enter the IP address, Subnet Mask, Gateway IP address, and DNS IP address provided to you by your ISP in the appropriate fields above.

Some xDSL Internet Service Providers may assign a fixed (static) IP address. If you have been provided with this information, choose this option and enter the assigned IP address, Subnet Mask, Gateway IP Address, and DNS IP address. Click **Finish** to complete the setup.

# Configuring the 802.11g 54Mbps Router

## PPPoE xDSL

### 3. IP Address Information



User Name :	<input type="text"/>
Password :	<input type="password"/>
Please retype your password :	<input type="password"/>
Service Name :	<input type="text"/>
MTU :	<input type="text"/> (576<=MTU Value<=1492)
Maximum Idle Time (0-60) :	<input type="text"/> (minutes)
	<input type="checkbox"/> Auto-reconnect

Enter the User Name and Password required by your ISP in the appropriate fields. If your ISP has provided you with a Service Name enter it in the "Service Name" field, otherwise, leave it blank.

Enter the PPPoE User Name and Password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers.

Leave the Maximum Transmission Unit (MTU) at the default value (1454) unless your service provider has specified otherwise.

Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 0)

Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again. Click **Finish** to complete the setup.

## Point-to-Point Tunneling Protocol (PPTP)

### 3. IP Address Information

 **PPTP** Point-to-Point Tunneling Protocol is a common connection method used in European xDSL connections.

PPTP Account :	<input type="text"/>
PPTP Password :	<input type="password"/>
Please retype your password :	<input type="password"/>
Host Name :	<input type="text"/>
Service IP Address :	<input type="text"/>
My IP Address :	<input type="text"/>
My Subnet Mask :	<input type="text"/>
MTU (576-1460) :	<input type="text" value="1460"/>
Maximum Idle Time (0-60) :	<input type="text"/> minutes
Auto-reconnect :	<input type="checkbox"/>

Point-to-Point Tunneling Protocol is a connection method used for xDSL connections in Europe. It can be used to join different physical networks using the Internet as an intermediary.

If you have been provided with the information as shown on the screen, enter the PPTP Account name and password, Host Name, Service IP Address, the assigned IP Address, and Subnet Mask.

Leave the Maximum Transmission Unit (MTU) at the default value (1460) unless your service provider has specified otherwise.

Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 10)

Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again. Click **Finish** to complete the setup.

# Configuring the 802.11g 54Mbps Router

## BigPond

U.S. Robotics Setup Wizard

1. Time Zone  
2. Broadband Type  
3. IP Address Info

### 3. IP Address Information

**BigPond**

In this section you can configure the built-in client for the BigPond Internet service available in Australia.

User Name:

Password:

Please retype your password:

Authentication Service Name:

BACK HELP FINISH

If you use the BigPond Internet Service which is available in Australia, enter the User Name, Password and Authentication Service Name for BigPond authentication. Click **Finish** to complete the setup.

## Advanced Setup

Use the Web User Interface to define system parameters, manage and control the 802.11g 54Mbps Router and its ports, or monitor network conditions. The following table outlines the selections available from this program.

<b>Menu</b>	<b>Description</b>
System	Sets the local time zone, the password for administrator access, system log server, and the IP address of a PC that will be allowed to manage the 802.11g 54Mbps Router remotely.
WAN	<ul style="list-style-type: none"><li>• Specifies the Internet connection type: (1) Dynamic IP, (2) PPPoE configuration, (3) PPTP, (4) Static IP and ISP gateway address, or (5) BigPond (Internet service available in Australia).</li><li>• Specifies DNS servers to use for domain name resolution.</li></ul>
LAN	Sets the TCP/IP configuration of the 802.11g 54Mbps Router's LAN interface and all DHCP clients.
Wireless	Configures the radio frequency, SSID, WPA/WEP encryption, and 802.1x for wireless communications.
NAT	Shares a single ISP account with multiple users, sets up virtual servers.
Firewall	Configures a variety of security and specialized functions, including: Access Control, Hacker Prevention, and DMZ.
DDNS	Dynamic DNS provides users on the Internet with a method to tie their domain name to a computer or server.
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.
Tools	Contains options to back up and restore the current configuration, restore all configuration settings to the factory defaults, update system firmware, or reset the system.
Status	<p>Provides WAN connection type and status, firmware and hardware version numbers, system IP settings, as well as DHCP, NAT, and Firewall information.</p> <p>Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, and the hardware version and serial number.</p> <p>Shows the security and DHCP client log.</p>

# Configuring the 802.11g 54Mbps Router

## System

### Time Zone



Set the time zone and time server for the 802.11g 54Mbps Router. This information is used for log entries and client access control.

- Set your local time zone settings

Select your time zone from the drop-down list, and set the start and end dates if your area requires daylight savings.

To automatically update the 802.11g 54Mbps Router's internal clock by synchronizing with a public time server over the Internet, choose one of the methods below.

- Get date and time from online time servers (Network Time Protocol)

Choose the online standard time server for your area from the drop-down menu, or enter the IP address of the time server on your network.

- Set date and time using the PC's date and time

Click on the radio button for synchronizing the 802.11g 54Mbps Router's internal clock with the host PC.

- Set date and time manually

For manually setting the date and time, configure the date by selecting the options from the drop-down list, and enter the digits for the time.

# Configuring the 802.11g 54Mbps Router

## Password Settings

The screenshot shows the 'U.S. Robotics' logo in the top left and 'Advanced Setup' in the top right. A navigation menu on the left lists: System, IPv6 Zone, Password Settings, Remote Management, Syslog Server, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'Password Settings' and contains the following text: 'Set a password to secure access to the U.S. Robotics 802.11g Wireless Router Web Management. You can also configure the amount of time that you will stay logged into the U.S. Robotics 802.11g Wireless Router using the idle time settings.'

**Password Options**

Current Password:

New Password:

Confirm New Password:

**Idle Time Out Settings**

Idle Time Out:  Min. (Idle Time > 0 : NO Time Out)

Use this menu to restrict access based on a password. For security you should assign your own password before exposing the 802.11g 54Mbps Router to the Internet. (Default: **admin**)

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

**Note:** If your password is lost, or you cannot gain access to the user interface, press the Reset button on the rear panel (holding it down for at least five seconds) to restore the factory defaults.

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 system logout, and you have to log into the web user system again.  
(Default: 9 minutes)

## Remote Management



Remote Management allows a remote PC to configure, manage, and monitor the 802.11g 54Mbps Router using a standard web browser. Check **Enable** and set the IP address or IP address range of the remote host. Click **APPLY**. (Default: Disable)

**Note:** If you select **Any IP Address** in the Allow Access to field, any host can manage the 802.11g 54Mbps Router.

## Syslog Server



The Syslog Server downloads the 802.11g 54Mbps Router's log file to the server with the IP address specified on this screen. (Default: Disabled)

# Configuring the 802.11g 54Mbps Router

## WAN

Specify the WAN connection type provided by your Internet Service Provider, then click **More Configuration** to enter detailed configuration parameters for the selected connection type.

### Dynamic IP



The Host Name is optional, but may be required by some ISPs. The default MAC address is set to the WAN's physical interface on the 802.11g 54Mbps Router. Use this address when registering for Internet service, and do not change it unless required by your ISP. If your ISP used the MAC address of an Ethernet adapter as an identifier when first setting up your broadband account, only connect the PC with the registered MAC address to the 802.11g 54Mbps Router and click the Clone MAC Address button. This will replace the current 802.11g 54Mbps Router MAC address with the already registered Ethernet adapter MAC address. If you are unsure of which PC was originally set up by the broadband technician, call your ISP and request that they register a new MAC address for your account. Register the default MAC address of the 802.11g 54Mbps Router.

## Point-to-Point Over Ethernet (PPPoE)

The screenshot shows the 'Advanced Setup' interface for PPPoE configuration. On the left is a navigation menu with categories: System, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The 'WAN' section is expanded, showing options for Dynamic IP, PPPoE (selected), Static IP, BigPond, and DNS. The main content area is titled 'PPPoE' and contains the following text: 'Enter the PPPoE user name and password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, then it will be dropped. You can enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.' Below this text, it says 'If your Internet Service Provider requires the use of PPPoE, enter the information below.' The form fields are: 'UserName:' (text input), 'Password:' (password input), 'Please retype your password:' (password input), 'Service Name:' (text input), 'MTU: 1492 (576<=MTU Value<=1492)' (text input), 'Maximum Idle Time (0-60): 0 (minutes)' (text input), and an 'Auto-reconnect' checkbox. At the bottom right are three circular buttons: 'HELP', 'APPLY', and 'CANCEL'.

Enter the PPPoE User Name and Password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers.

The MTU (Maximum Transmission Unit) governs the maximum size of the data packets. Leave this on the default value (1454) unless your service provider has specified otherwise.

Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 10 minutes)

Enable the **Auto-reconnect** option to automatically re-establish the connection as soon as you attempt to access the Internet again.

# Configuring the 802.11g 54Mbps Router

## Point-to-Point Tunneling Protocol (PPTP)

The screenshot shows the 'Advanced Setup' page for PPTP configuration. The left sidebar contains a navigation menu with categories: System, WAN (selected), LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. Under WAN, the following options are listed: Dynamic IP, PPPoE, PPTP (selected), Static IP, BigPond, and DNS. The main content area is titled 'PPTP' and includes a descriptive paragraph: 'Point-to-Point Tunneling Protocol is a common connection method used in European xDSL connections.' Below this is a form with the following fields: PPTP Account, PPTP Password, a field to retype the password, Host Name, Service IP Address, My IP Address, My Subnet Mask, MTU (576-1460) with a value of 1460, Maximum Idle Time (0-60) in minutes, and an Auto-reconnect checkbox. A red asterisk note states: '\* If you have an ISP that changes by the time, change your idle time out value to 1 minute.' At the bottom right, there are three circular buttons: HELP, APPLY, and CANCEL.

Point-to-Point Tunneling Protocol (PPTP) can be used to join different physical networks using the Internet as an intermediary. Using the above screen allows client PCs to establish a normal PPTP session and provides hassle-free configuration of the PPTP client on each client PC.

Enter the PPTP Account, Password, Host Name, and then Service IP Address (usually supplied by your ISP), the assigned IP address, and subnet mask.

Leave the Maximum Transmission Unit (MTU) at the default value (1460) unless your service provider has specified otherwise.

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the PPTP connection is maintained during inactivity. If the connection is inactive for longer than the Maximum

Idle Time, it will be dropped.  
(Default: 0 minutes)

## Static IP



If your Internet Service Provider has assigned a fixed IP address, enter the assigned address and subnet mask for the 802.11g 54Mbps Router, then enter the gateway address of your ISP.

You may need a fixed address if you want to provide Internet services, such as a web server or FTP server.

# BigPond

The screenshot shows the 'Advanced Setup' window for U.S. Robotics. The left sidebar contains a navigation menu with the following items: System, WAN (selected), LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. Under the 'WAN' section, sub-items include Dynamic IP, PPPoE, pPTP, Static IP, BigPond (highlighted in red), and DNS. The main content area is titled 'BigPond' and contains the following text: 'In this section you can configure the built-in client for the BigPond Internet service available in Australia.' Below this text are four input fields: 'User Name:', 'Password:', 'Please retype your password:', and 'Authentication Service Name:'. At the bottom right of the window are three circular buttons labeled 'HELP', 'APPLY', and 'CANCEL'.

BigPond is a service provider in Australia that uses a heartbeat system to maintain the Internet connection. Configure the built-in client with your user name, password and service name to get on line.

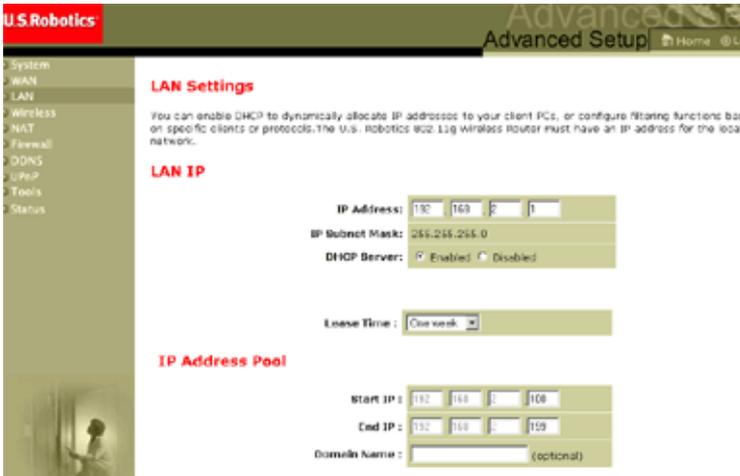
# DNS

The screenshot shows the U.S. Robotics Advanced Setup utility. The left sidebar contains a navigation menu with the following items: System, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The WAN section is expanded, showing sub-options: Dynamic IP, PPPoE, portP, Static IP, BigPond, and DNS (which is currently selected). The main content area is titled 'DNS' and contains the following text: 'A Domain Name Server (DNS) is an index of IP addresses and Web addresses. If you type a Web address into your browser, a DNS server will find that name in its index and find the matching IP address. Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect to the Internet with dynamic IP settings, it is likely that the DNS server IP's are also dynamic. However, if there is a DNS server that you would rather use, you need to specify the IP address here.' Below the text are two input fields for IP addresses. The first is labeled 'Domain Name Server (DNS) Address:' and the second is labeled 'Secondary DNS Address (optional):'. Each field consists of four small input boxes for the octets of an IP address. At the bottom right of the screen are three circular buttons: 'HELP', 'APPLY', and 'CANCEL'.

Domain Name Servers map numerical IP addresses to the equivalent domain name (e.g., www.usr.com). Your ISP should provide the IP address of one or more domain name servers. Enter those addresses in this screen.

# Configuring the 802.11g 54Mbps Router

## LAN



- LAN IP – Use the LAN menu to configure the LAN IP address for the 802.11g 54Mbps Router and to enable the DHCP server for dynamic client address allocation.
- Set a period for the lease time if required. For home networks this may be set to **Forever**, which means there is no time limit on the IP address lease.
- IP Address Pool – A dynamic IP address range may be specified (192.168.2.2–254). IP addresses running from 192.168.2.100–199 are the default values. Once the IP addresses, e.g. 192.168.2.100–199, have been assigned, these addresses will be part of the dynamic IP address pool. IP addresses from 192.168.2.2–99, and 192.168.2.200–254 will be available as static IP addresses.

Remember not to include the address of the 802.11g 54Mbps Router in the client address pool. Also remember to configure your client PCs for dynamic IP address allocation.

## Wireless

To configure the 802.11g 54Mbps Router as a wireless access point for wireless clients (either stationary or roaming), all you need to do is define the radio channel, the Service Set Identifier (SSID), and encryption options.

### Channel and SSID

The screenshot shows the 'Advanced Setup' web interface for a U.S. Robotics router. The left sidebar contains a navigation menu with the following items: System, WAN, LAN, Wireless (selected), Channel and SSID (selected), Security, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'Channel and SSID' and includes a descriptive paragraph: 'This page allows you to define SSID, Transmission Rate, g Nitro and Channel ID for wireless connection. In the wireless environment, this U.S. Robotics 802.11g Wireless Router can also act as a wireless access point. These parameters are used for the mobile stations to connect to this access point.' Below the text are several configuration fields: 'Network Name (SSID):' with a text input field containing 'SSID'; 'SSID Broadcast:' with radio buttons for 'Enable' and 'Disable' (selected); 'Wireless Mode:' with a dropdown menu set to 'Mixed (11b+11g)'; '54g+:' with radio buttons for 'Enable' and 'Disable' (selected); 'Transmission Rate:' with a dropdown menu set to '11Mbps'; and 'Channel:' with a dropdown menu set to 'Auto'. At the bottom right of the form are three circular buttons labeled 'HELP', 'APPLY', and 'CANCEL'.

You must specify a common radio channel and SSID (Service Set ID) to be used by the 802.11g 54Mbps Router and all of your wireless clients. Be sure you configure all of your clients to the same values.

*Network Name (SSID):* The Service Set ID. This should be set to the same value as the other wireless devices in your network. (Default: USR5462)

**Note:** The SSID is case sensitive and can consist of up to 32 alphanumeric characters.

## Configuring the 802.11g 54Mbps Router

**SSID Broadcast:** Broadcasting the SSID on the wireless network for easy connection with client PCs. For security reasons, disable SSID broadcast. (Default: Enable)

**Note:** If you disable SSID, it will not show up in your site survey and in order to connect to it, a manual profile will have to be created. Refer to the Navigating the Wireless Configuration Utility section of the 802.11g 54Mbps USB Adapter User Guide on the Installation CD-ROM.

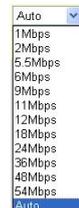
**Wireless Mode:** Set the communication mode for the 802.11g 54Mbps Router. (Default: Long Range Mixed (11b+11g))



The Long Range Mixed (11b+11g) is an enhanced operation mode. The 802.11g standards combines the IEEE 802.11a speed with 54 Mbps. It provides a long range wireless connectivity of 100 m (328 feet) associated with the IEEE 802.11b standards by offering faster speeds and longer distances from a wireless access point to a wireless PC card.

**54g+:** 54g+ is a technology that utilizes standards based on frame-bursting to achieve higher throughput. With 54g+ enabled, aggregate throughput (the sum of the individual throughput speeds of each client on the network) can improve by up to 25% in 802.11g only networks and up to 75% in mixed networks comprised of 802.11g and 802.11b equipment. (Default: Enable)

**Transmission Rate:** Set the rate of data transmitted from the 802.11g 54Mbps Router. The lower the data rate, the longer the transmission distance. (Default: Auto)



**Channel:** The radio channel through which the 802.11g 54Mbps Router communicates with PCs in its BSS. (Default: 11)

**Note:** The available channel settings are limited by local regulations.

### Security



If you are transmitting sensitive data across wireless channels, you should enable Wi-Fi Protected Access (WPA) or Wired Equivalent Privacy (WEP) encryption. Encryption security requires you to use the same protocol set (WPA or WEP) and encryption/decryption keys for the 802.11g 54Mbps Router and all of your wireless clients.

For a more secure network, the 802.11g 54Mbps Router can implement one or a combination of the following security mechanisms:

- Wi-Fi Protected Access (WPA) page 33
- Wired Equivalent Privacy (WEP) page 34

The security mechanisms that may be employed depend on the level of security required, the network and management resources available, and the software support provided on wireless clients. A

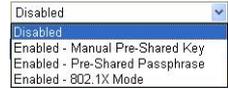
## Configuring the 802.11g 54Mbps Router

summary of wireless security considerations is listed in the following table.

<b>Security Mechanism</b>	<b>Client Support</b>	<b>Implementation Considerations</b>
WEP	Built-in support on all 802.11b and 802.11g devices	<ul style="list-style-type: none"><li>• Provides only common security</li><li>• Requires manual key management</li></ul>
WPA mode	Requires WPA-enabled system and protocol driver for network adapter (native support provided in Windows XP)	<ul style="list-style-type: none"><li>• Provides good security in small networks</li><li>• Requires configured RADIUS server, or manual management of pre-shared key</li></ul>
	<i>802.1x mode</i> Requires WPA-enabled system and network adapter driver (native support provided in Windows XP)	<ul style="list-style-type: none"><li>• Provides robust security in WPA-only mode (i.e., WPA clients only)</li><li>• Requires configured RADIUS server</li><li>• 802.1x Extensible Authentication Protocol (EAP) type may require management of digital certificates for clients and server</li></ul>

### WPA Encryption Type

WPA is a stronger wireless security solution than WEP. It uses a combination of 802.1x authentication and broadcast/session keys.



- Pre-Shared Key/Passphrase

If there is no authentication server on your SOHO network, you can issue the Pre-Shared Key to the clients that connect to the 802.11g 54Mbps Router. Be sure to use the same key for the 802.11g 54Mbps Router and the connected clients.

- Notes:**
1. Manual Pre-Shared Key supports up to 64-Hex characters.
  2. Type 8~63 Hex characters for the Pre-Shared Passphrase.
  3. Do not use a key that is long and complex for your clients to type accurately.
  4. A Hex (hexadecimal) digit is a number or letter in the range 0-9 or A-F.

- 802.1X Mode

The 802.11g 54Mbps Router allows you to use 802.1x authentication for an enterprise network environment with a RADIUS server installed.

In 802.1x mode, access will be checked against the authentication database stored on the 802.11g 54Mbps Router. You must specify the authentication period, and the corresponding parameters in the RADIUS Server Parameters field for the remote authentication protocol.

A screenshot of the WPA (WiFi Protected Access) configuration page. The page title is "WPA (WiFi Protected Access)". Under "WPA Encryption Type", a dropdown menu is set to "Enabled - 802.1X Mode". Below this, the "802.1X" section contains the following fields:

- Re-Authentication Period: 3600 Seconds (0 for no re-authentication)
- Quiet Period: 60 Seconds after authentication failed
- RADIUS Server Parameters:
  - Server IP: [ ] . [ ] . [ ] . [ ]
  - Server Port: 1812
  - Secret Key: [ ]
  - NAS-ID: [ ]

## Configuring the 802.11g 54Mbps Router

### WEP Encryption Type

Disabled
Disabled
40bit/64 bit encryption
128bit encryption

You can choose between standard 40-bit/64-bit or the more robust 128-bit encryption.

You may manually enter the keys or automatically generate encryption keys. To manually configure the keys, enter five hexadecimal pairs for each 40/64-bit key, or enter 13 pairs for the single 128-bit key. For automatic 64-bit security, enter a passphrase and click **Generate**. Four keys will be generated (as shown below). Choose a key from the drop-down list or accept the default key. Automatic 128-bit security generates a single key. (Default: Open)

**Note:** Active ASCII keys must be exactly 5 characters for 40/64-bit WEP.

Active ASCII keys must be exactly 13 characters for 128-bit WEP.

WEP (Wired Equivalent Privacy)					
WEP Encryption Type	40bit/64 bit encryption				
Select key generation method	Manual Hex Key				
Manual Hex Keys:	Manual Hex Key ASCII Passphrase				Active Transmit Key
Key 1:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input checked="" type="radio"/>
Key 2:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>
Key 3:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>
Key 4:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>
Valid characters for "Key 1" to "Key 4" are '0-9' and 'A-F'					

WEP (Wired Equivalent Privacy)

WEP Encryption Type: 128bit encryption

Select key generation method: Manual Hex Key

Manual Keys:

Key	00	00	00	00	00	00	00	Active Transmit Key
Key 1:	00	00	00	00	00	00	00	<input checked="" type="radio"/>
Key 2:	00	00	00	00	00	00	00	<input type="radio"/>
Key 3:	00	00	00	00	00	00	00	<input type="radio"/>
Key 4:	00	00	00	00	00	00	00	<input type="radio"/>

Valid characters for "Key 1" to "Key 4" are '0-9' and 'A-F'

If you use encryption, configure the same keys used for the 802.11g 54Mbps Router on each of your wireless clients. Note that Wired Equivalent Privacy (WEP) protects data transmitted between wireless nodes, but does not protect any transmissions over your wired network or over the Internet.

# Configuring the 802.11g 54Mbps Router

## WDS (Wireless Distribution System)

### WDS

When repeater is enabled, this U.S. Robotics 802.11g Wireless Router functions as a wireless repeater and is able to wirelessly communicate with other APs or Wireless Gateways via WDS (Wireless Distribution System) links. You can specify up to six WDS links, where each link is defined by the MAC addresses of the other repeater capable AP or Wireless Gateway. Note that for each repeater AP or Wireless Gateway specified on this page, you must also configure that AP or Wireless Gateway to have a WDS link back to this U.S. Robotics 802.11g Wireless Router .

Enable Repeater:

Check this box to enable this U.S. Robotics 802.11g Wireless Router to communicate directly with other APs or Wireless Gateways over WDS links.

AP MAC address 1:	<input type="text"/>	:	<input type="text"/>								
AP MAC address 2:	<input type="text"/>	:	<input type="text"/>								
AP MAC address 3:	<input type="text"/>	:	<input type="text"/>								
AP MAC address 4:	<input type="text"/>	:	<input type="text"/>								
AP MAC address 5:	<input type="text"/>	:	<input type="text"/>								
AP MAC address 6:	<input type="text"/>	:	<input type="text"/>								



The WDS provides a means to extend the range of a Wireless Local Area Network (WLAN). WDS allows an access point to establish a direct link to other access points, and stations to roam freely within the area covered by the WDS. (Default: Disable)

- Notes:**
1. Be sure that all access points with the same WDS links should use the same operation “Mode” (802.11b or 802.11g) and radio “Channel” number.
  2. Choosing “Auto” of the communication channel is not suggested for using WDS. (See “Channel and SSID” on page 29.)

## *Advanced Setup*

To establish a WDS connection between access points, follow the steps below.

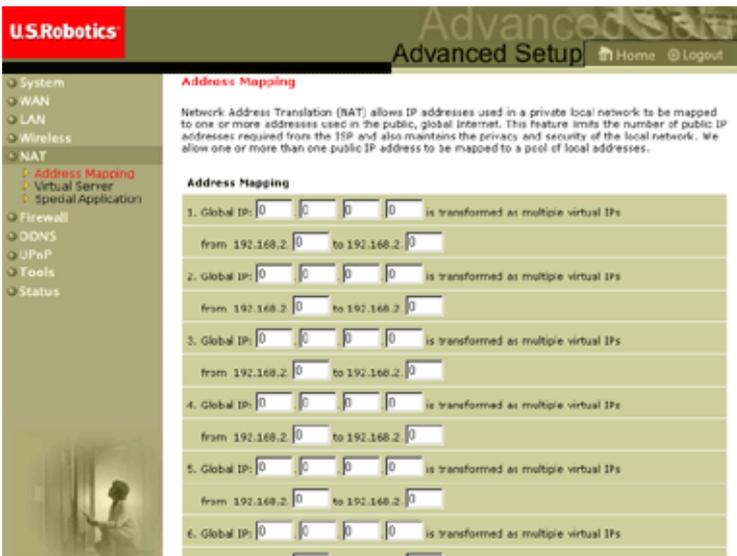
1. Select Enable Repeater.
2. Enter the MAC Address that you are trying to create a WDS link to.
3. Click **Apply**.

# Configuring the 802.11g 54Mbps Router

## NAT - Network Address Translation

From this section you can configure the Address Mapping, Virtual Server, and Special Application features that provide control over the TCP/UDP port openings in the router's firewall. This section can be used to support several Internet based applications such as web, email, FTP, and Telnet.

## Address Mapping



Allows one or more public IP addresses to be shared by multiple internal users. Enter the Public IP address you wish to share into the Global IP field. Enter a range of internal IPs that will share the global IP.

## Virtual Server

**U.S. Robotics** Advanced Setup Home Logout

**virtual server**

You can configure the U.S. Robotics 802.11g Wireless Router as a virtual server so that remote users accessing services such as the Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the U.S. Robotics 802.11g Wireless Router redirects the external service request to the appropriate server (located at another internal IP address).

	Private IP	Service Port	Type	Enabled
1.	192.168.2.1		TCP	<input type="checkbox"/>
2.	192.168.2.1		TCP	<input type="checkbox"/>
3.	192.168.2.1		TCP	<input type="checkbox"/>
4.	192.168.2.1		TCP	<input type="checkbox"/>
5.	192.168.2.1		TCP	<input type="checkbox"/>
6.	192.168.2.1		TCP	<input type="checkbox"/>
7.	192.168.2.1		TCP	<input type="checkbox"/>
8.	192.168.2.1		TCP	<input type="checkbox"/>
9.	192.168.2.1		TCP	<input type="checkbox"/>
10.	192.168.2.1		TCP	<input type="checkbox"/>

If you configure the 802.11g 54Mbps Router as a virtual server, remote users accessing services such as web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the 802.11g 54Mbps 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.

The more common TCP service ports include:  
 HTTP: 80, FTP: 21, Telnet: 23, and POP3: 110

# Configuring the 802.11g 54Mbps Router

## Special Applications

Some applications, such as Internet gaming, videoconferencing, Internet telephony and others, require multiple connections. These applications cannot work with Network Address Translation (NAT) enabled. If you need to run applications that require multiple connections, use the following screen to specify the additional public ports to be opened for each application.



Specify the public port number normally associated with an application in the Trigger Port field. Set the protocol type to TCP or UDP, then enter the ports that the application requires.

## Advanced Setup

Popular applications requiring multiple ports are listed in the Popular Applications field. From the drop-down list, choose the application and then choose a row number to copy this data into.

**Note:** Choosing a row that already contains data will overwrite the current settings.

Example:

ID	Trigger Port	Trigger Type	Public Port	Public Type	Comment
1	6112	UDP	6112	UDP	Battle.net
2	28800	TCP	2300-2400, 47624	TCP	MSN Game Zone

For a full list of ports and the services that run on them, see [www.iana.org/assignments/port-numbers](http://www.iana.org/assignments/port-numbers).

# Configuring the 802.11g 54Mbps Router

## Firewall

The 802.11g 54Mbps Router firewall can provide access control of connected client PCs, block common hacker attacks, including 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 users. (Firewall must be enabled in order to access additional settings.)

**Note:** You must click the Apply button, located in the lower right-hand corner of the screen, for your changes to take affect.

### Access Control

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**Access Control**

Access Control allows users to block PCs on your network from gaining access to the Internet. The user can block PCs based on IP address.

• **Enable Filtering Function:**  Yes  No

• **Normal Filtering Table (up to 18 computers)**

Client PC Description	Client PC IP Address	Client Service	Schedule Rule	Configure
1111	192.168.1.11 ~ 8	SMTP, User Defined Service	Always Blocking	<a href="#">Edit</a> <a href="#">Delete</a>
2322	192.168.2.22 ~ 45	FTP, Restricting	test	<a href="#">Edit</a> <a href="#">Delete</a>

[Add PC](#)

[HELP](#) [APPLY](#) [CANCEL](#)

Using this option allows you to specify different privileges based on IP address for the client PCs. To Enable Filtering Function, click **Yes**.

**Note:** Any PCs configured with Firewall rules need to be added in the Access Control Table.

**Note:** Click **Add PC** and define the appropriate settings for client PC services (as shown in the following screen).

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**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: [1111]
- Client PC IP address: 192.168.2. [11] - [11]
- Client PC Services:

Service Name	Detail Description	Blocking
www	HTTP, TCP Port 80, 8080, 8081, 8082, 8083, 8084	<input type="checkbox"/>
www with URL Blocking	HTTP (Ref. URL Blocking Site Page)	<input type="checkbox"/>
Email Sending	SMTP, TCP Port 25	<input type="checkbox"/>
News Feeds	NNTP, TCP Port 119	<input type="checkbox"/>
Email Receiving	POP3, TCP Port 110	<input type="checkbox"/>
Secure HTTP	HTTPS, TCP Port 443	<input type="checkbox"/>
File Transfer	FTP, TCP Port 21	<input type="checkbox"/>
MSN Messenger	TCP Port 1863	<input type="checkbox"/>
Telnet Service	TCP Port 23	<input type="checkbox"/>
IM	AOL Instant Messenger, TCP Port 5190	<input type="checkbox"/>

## MAC Filtering Table

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**MAC Filtering Table**

This section helps provides MAC Filter configuration. When enabled, only MAC addresses configured will have access to your network. All other client devices will get denied access. This security feature can support up to 32 devices and applies to clients.

- MAC Address Control:  Yes  No
- MAC Filtering Table (up to 32 computers)

ID	Client PC MAC address					
1	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
2	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
3	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
4	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
5	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
6	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
7	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

The MAC Filtering feature of the 802.11g 54Mbps Router allows you to control access to your network for up to 32 clients based on the

## *Configuring the 802.11g 54Mbps Router*

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, that client machine will have access to the network.

For MAC Address Control, click **Yes**. This will allow only the listed PCs access to the network. Enter the desired MAC addresses and then click **Apply**.

## URL Blocking

To configure the URL Blocking feature, use the table below to specify the web sites (for example, www.somesite.com) and/or keywords you want to filter on your network.

To complete this configuration, you will need to create or modify an access rule in “Access Control” on page 42. To modify an existing rule, click the **Edit** option next to the rule you want to modify. To create a new rule, click the **Add PC** option.

From the Access Control Add PC section check the option for “**WWW with URL Blocking**” in the Client PC Service table to filter out the web sites and keywords specified below.

**U.S. Robotics** Advanced Setup

**URL Blocking**

**Disallowed Web Sites and Keywords.**

You can block access to certain Web sites from a particular PC by entering either a full URL address or just a keyword of the Web site.

To specify the particular PC, go back to the "Access Control" page and check the box for "http with URL Blocking" in the "Normal Filtering Table".

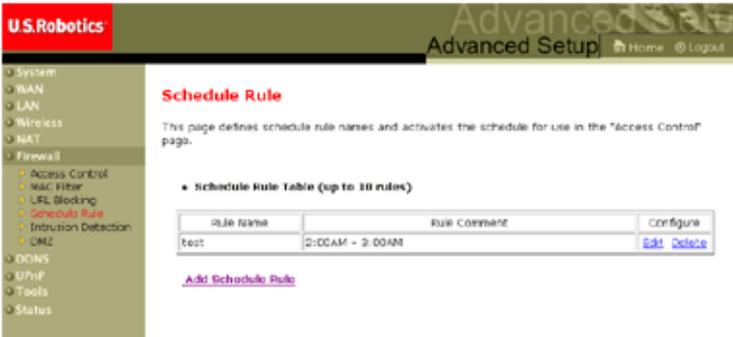
Rule Number	URL / Keyword	Rule Number	URL / Keyword
Site 1		Site 16	
Site 2		Site 17	
Site 3		Site 18	
Site 4		Site 19	
Site 5		Site 20	
Site 6		Site 21	
Site 7		Site 22	
Site 8		Site 23	
Site 9		Site 24	
Site 10		Site 25	
Site 11		Site 26	

Use the above screen to block access to web sites or to web URLs containing the keywords specified in the keyword table.

# Configuring the 802.11g 54Mbps Router

## Schedule Rule

The Schedule Rule feature allows you to configure specific rules based on time and date. These rules can then be used to configure more specific access control.



Enable schedule-based Internet access control.

1. Click **Add Schedule Rule**.
2. Define the settings for the schedule rule (as shown on the following screen).
3. Click **OK** and then click the **APPLY** button to save your settings.

## Edit Schedule Rule

Use this section to create your network schedule rules.

The times you set below are the times periods that you want the Access Control Rule to be active. For example, if you want to block Internet access (block WWW) from 9AM to 9PM during the week. Simply configure 9:00 AM as "Start Time" and 9:00 PM as "End Time" for each weekday - during that time period the user will be unable to access the Internet.

Once the schedule rule is setup, you will need to configure or edit an Access Control rule, and select your Schedule Rule that you want to apply to that Access Control rule. You can set the schedule rule at the bottom of the Access Control Configuration page in the "Scheduling Rule" drop-down option.

Schedule Rule Name:	test
Schedule Rule Comment/Desc:	2:00AM - 3:00AM (ex. 10:30AM - 7:45PM)
Current U.S. Robotics 802.11g Wireless Router Time:	1970/01/01 12:20:25 AM

Week Day	Start Time (Hh:mm)	End Time (hh:mm)
Every Day	2 : 00 AM	3 : 00 AM
Sunday	: AM	: AM
Monday	: AM	: AM

# Configuring the 802.11g 54Mbps Router

## Intrusion Detection

The screenshot shows the 'U.S. Robotics Advanced Setup' web interface. The left sidebar contains a navigation menu with options: System, WAN, LAN, Wireless, NAT, Firewall (expanded), DDNS, UPnP, Tools, and Status. The 'Firewall' section is expanded to show 'Intrusion Detection' in red. The main content area is titled 'Intrusion Detection' and includes a descriptive paragraph: 'When the SPI (Stateful Packet Inspection) firewall feature is enabled, all packets can be blocked. Stateful Packet Inspection (SPI) allows full support of different application types that are using dynamic port numbers.' Below this are two configuration sections: 'FIREWALL CONFIGURATION' and 'E-MAIL ALERT CONFIGURATION'. The 'FIREWALL CONFIGURATION' section has two rows of radio buttons: 'SPI and Anti-DoS firewall protection' (with 'Enable' selected) and 'Discard Ping From WAN' (with 'Enable' selected). The 'E-MAIL ALERT CONFIGURATION' section has four text input fields labeled 'Your E-mail Address:', 'SMTP Server Address:', 'User name:', and 'Password:'.

- SPI and Anti-DoS (Denial-of-Service) firewall protection (Default: Enable) – The Intrusion Detection Feature limits access for incoming traffic at the WAN port. When the SPI (Stateful Packet Inspection) feature is turned on, all incoming packets will be blocked except for those types marked with a check in the Stateful Packet Inspection section.
- Discard Ping from WAN (Default: Enable) – Prevents the router from responding to any PING request on the WAN port.
- E-mail Alert Configuration – Enter your email address. Specify your SMTP and POP3 servers, user name, and password.

## DMZ (Demilitarized Zone)

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**DMZ(Demilitarized Zone)**

If you have a local client PC that cannot run an Internet application properly from behind the NAT firewall, then you can open the client up to unrestricted two-way Internet access by defining a Virtual DMZ Host.

**Enable DMZ:**  Yes  No

Multiple PCs can be exposed to the Internet for two-way communications a.g. Internet gaming, video conferencing, or VPN connections. To use the DMZ, you must set a static IP address for that PC.

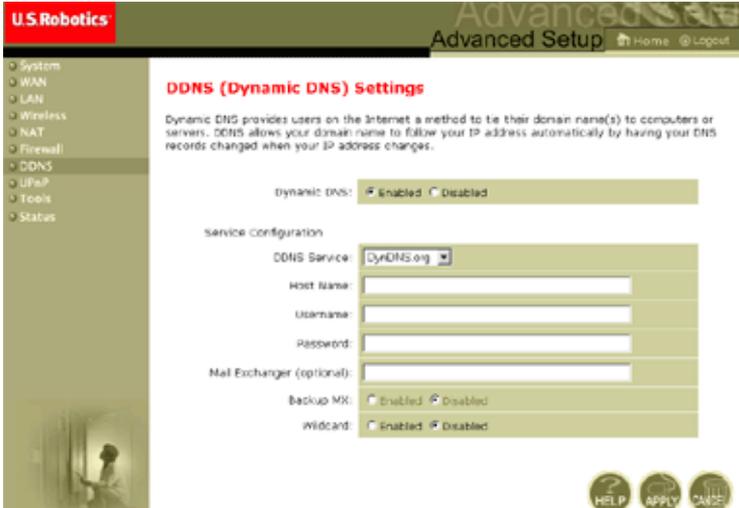
Public IP Address	Client PC IP Address
1. 10.1.16.24	192.168.2.
2. . . .	192.168.2.
3. . . .	192.168.2.
4. . . .	192.168.2.
5. . . .	192.168.2.
6. . . .	192.168.2.
7. . . .	192.168.2.
8. . . .	192.168.2.

HELP APPLY CANCEL

If you have a client PC that cannot run an Internet application properly from behind the firewall, then you can open the client up to unrestricted two-way Internet access. Enter the Public IP address of the DMZ host to this screen. Enter the Client PC IP address for clients that want to connect. Adding a client to the DMZ may expose your local network to a variety of security risks, so only use this option as a last resort.

# Configuring the 802.11g 54Mbps Router

## DDNS (Dynamic DNS) Settings



Dynamic DNS (DDNS) provides users on the Internet with a method to tie their domain name to the router or server. DDNS allows your domain name to follow your IP address automatically by having your DNS records changed when your IP address changes. (Default: Disabled)

The DDNS service dynamically updates DNS information to a static hostname, provided by the DDNS service provider, as clients' IP addresses change.

**Note:** Please visit the web sites of the DDNS providers for details.

DDNS Service Provider	Web Site
DynDNS.org	<a href="http://www.dyndns.org">http://www.dyndns.org</a>
No-IP.com	<a href="http://www.no-ip.com">http://www.no-ip.com</a>
TZO.com	<a href="http://www.tzo.com">http://www.tzo.com</a>
DYNDNS.COM	<a href="http://www.dyndns.com">http://www.dyndns.com</a>

For using DDNS, click the **Enable** radio button, select the **DDNS Service** type, and then enter the user name, pass key (password), host name or server IP, and email address.

Mail Exchanger (MX) and Backup MX provides you with flexible email configurations. It allows you to control the delivery of your mail for a specified domain or a subdomain. The Wildcard keeps your hostname pointing to your IP address.

The TZO.com powered DNS allows you to host your own web site, email server, FTP site, and more at your own location even if you have a dynamic IP address. The Server Configuration section automatically opens the port options checked in the Virtual Server section.

### UPnP (Universal Plug and Play) Setting



The screenshot shows the U.S. Robotics Advanced Setup web interface. On the left is a navigation menu with options: System, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled "UPnP(Universal Plug and Play) Setting". It includes a descriptive paragraph about UPnP and a control for "UPnP:" with radio buttons for "ON" and "OFF". At the bottom right, there are three circular buttons: HELP, APPLY, and CANCEL.

Enable UPnP by checking ON in the screen above. UPnP allows the device to automatically:

- dynamically join local network

## *Configuring the 802.11g 54Mbps Router*

- obtain an IP address
- convey its capabilities and learn about the presence and capabilities of other devices.

## Tools

Use the **Tools** menu to back up the current configuration, restore a previously saved configuration, restore factory settings, update firmware, and reset the 802.11g 54Mbps Router.

### Tools - Configuration Tools



- Backup Router Settings – Saves the 802.11g 54Mbps Router's configuration to a file.
- Restore Router Settings – Restores settings from a saved backup configuration file.
  1. Select the saved file by clicking the **Browse** button
  2. Click the **“Restore from config file.”**
- Restore to factory defaults – Restores the 802.11g 54Mbps Router settings back to the factory defaults.

# Configuring the 802.11g 54Mbps Router

## Tools - Firmware Upgrade



Use this screen to update the firmware or user interface to the latest version. In the Firmware File field, click **Browse** to look for the downloaded file. Click **APPLY**. Check the Status page Information section to confirm that the upgrade process was successful.

## Tools - Reset

The screenshot shows the U.S. Robotics Advanced Setup web interface. The top navigation bar includes the U.S. Robotics logo, the text "Advanced Setup", and links for "Home" and "Logout". A left-hand menu lists various configuration categories: System, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The "Tools" category is expanded, showing sub-options: Configuration Tools, Firmware Upgrade, and Reset. The "Reset" option is highlighted in red. The main content area is titled "Reset" and contains the following text: "In the event that the system stops responding correctly or in some way stops functioning, you can perform a reset. Your settings will not be changed. To perform the reset, click on the APPLY button below. You will be asked to confirm your decision. The reset will be complete when the power light stops blinking." At the bottom right of the interface, there are three circular buttons: HELP, APPLY, and CANCEL.

Click **APPLY** to reset the 802.11g 54Mbps Router. The reset will be complete when the power LED stops blinking.

**Note:** If you depress the Reset button on the rear panel, the 802.11g 54Mbps Router performs a power reset. If the button is depressed for over five seconds, all the LEDs will illuminate and the factory settings will be restored.

# Configuring the 802.11g 54Mbps Router

## Status

The Status screen displays WAN/LAN connection status, firmware, and hardware version numbers, illegal attempts to access your network, as well as information on DHCP clients connected to your network.



The following items are included on this screen:

Section	Description
INTERNET	Displays WAN connection type and status.
Release	Click on this button to disconnect from the WAN.
Renew	Click on this button to establish a connection to the WAN.
GATEWAY	Displays system IP settings, as well as DHCP and Firewall status.
INFORMATION	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, as well as the hardware version and serial number.
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 all DHCP clients on your network.

# TROUBLESHOOTING

The information outlined in this section describes some useful steps for getting your computer and the 802.11g 54Mbps Router online.

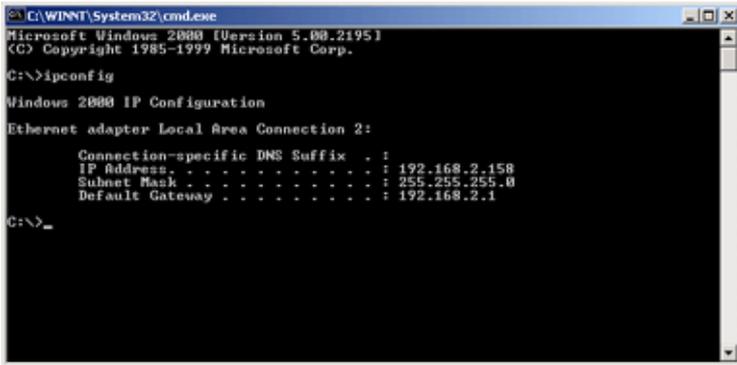
A. Verify your connection to the 802.11g 54Mbps Router.

If you are unable to access the 802.11g 54Mbps Router's web-based administration pages, then you may not be properly connected or configured. The screen shots in this section were taken on a Windows 2000 machine, but the same steps will apply to Windows 95/98/Me/XP.

**(Windows 2000 and XP)** To determine your TCP/IP configuration status please follow the steps below:

1. Click **Start** then choose **Run**.
2. Type **cmd** or command to open a DOS prompt.
3. In the DOS window, type **ipconfig** and verify the information that is displayed.
4. If your computer is set up for DHCP, then your TCP/IP configuration should be similar to the information displayed:
  - IP Address: 192.168.2.x (x is number between 100 and 199 by default.)
  - Subnet: 255.255.255.0
  - Gateway: 192.168.2.1

## Troubleshooting



```
C:\WINNT\System32\cmd.exe
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>ipconfig

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection 2:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 192.168.2.158
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.2.1

C:\>_
```

If you have an IP address that starts with 169.254.xxx.xxx then see the next section.

If you have another IP address configured, then see section C.

**(Windows 98 and Me)**To determine your TCP/IP configuration status please follow the steps below:

1. Click Windows Start and then Run.
2. Type winipcfg and click OK. Select your 802.11g Wireless USB Adapter and check the IP Address, Subnet Mask, Default Gateway, and DNS server data to make sure they are correct.
3. If the information is not correct, click Release All and then click Renew All.

If you have another IP address configured, then see section C.

B. I am getting an IP Address that starts with 169.254.xxx.xxx.

If you are getting this IP address, then you need to check that you are properly connected to the 802.11g 54Mbps Router.

Confirm that you have a green lit LED on the 802.11g 54Mbps Router for the port to which this computer is connected. If not, try another cable.

If you have a green lit LED, open up a DOS window as described in the previous section and type **ipconfig/renew**.

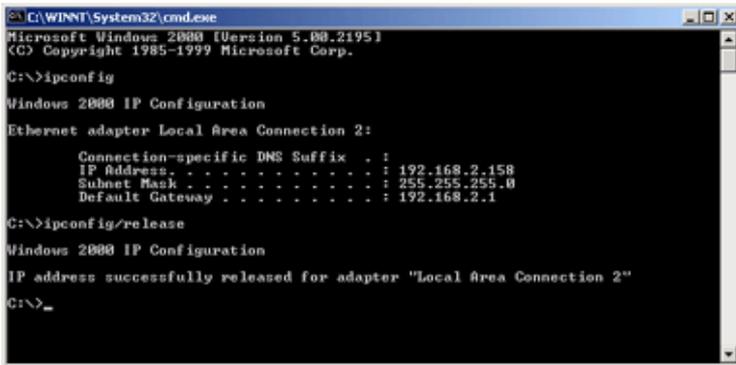
If you are still unable to get an IP address from the 802.11g 54Mbps Router, reinstall your network adapter. Refer to your adapter manual for information on how to do this.

C. I have another IP Address displayed.

If you have another IP address listed then the PC may not be configured for a DHCP connection.

Once you have confirmed that your computer is configured for DHCP, then follow the steps below.

1. Open a DOS window as described above.
2. Type **ipconfig/release**.



```
C:\WINNT\System32\cmd.exe
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>ipconfig

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection 2:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 192.168.2.158
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.2.1

C:\>ipconfig/release

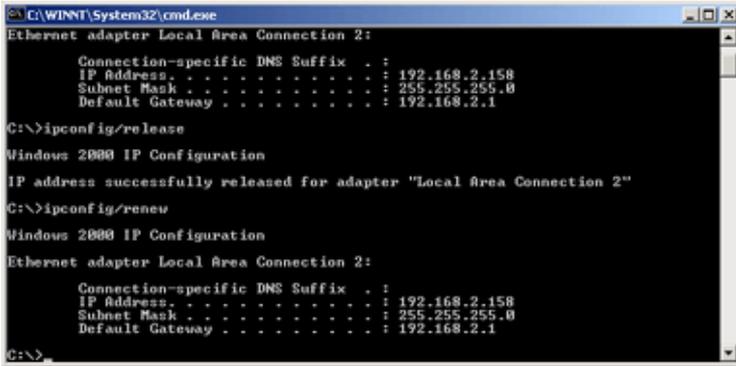
Windows 2000 IP Configuration

IP address successfully released for adapter "Local Area Connection 2"

C:\>_
```

# Troubleshooting

3. Then type **ipconfig/renew**.



- D. The 10/100 LED does not light after a connection is made.
  - 1. Check that the host computer and the 802.11g 54Mbps Router are both powered on.
  - 2. Be sure the network cable is connected to both devices.
  - 3. Verify that Category 5 cable is used if you are operating at 100 Mbps, and that the length of any cable does not exceed 100 m (328 ft).
  - 4. Check the network card connections.
  - 5. The 10BASE-T/100BASE-TX port, network card, or cable may be defective.
- E. If wireless clients cannot access the network, check the following:
  - 1. Be sure the 802.11g 54Mbps Router and the wireless clients are configured with the same Service Set ID (SSID).
  - 2. If authentication or encryption are enabled, ensure that the wireless clients are properly configured with the appropriate authentication or encryption keys.

3. If authentication is being performed through a RADIUS server, ensure that the clients are properly configured on the RADIUS server.
4. If authentication is being performed through IEEE 802.1x, be sure the wireless users have installed and properly configured 802.1x client software.
5. If MAC address filtering is enabled, be sure the client's address is included in the Access Control table.
6. If wireless clients are roaming between various 802.11g 54Mbps Routers make sure all the routers and wireless devices in the Extended Service Set (ESS) are configured to the same SSID, and use the same authentication method.

**F.** If you forgot or lost the password:

Set the 802.11g 54Mbps Router to its default configuration by pressing the reset button on the back panel for 5 seconds or more. The default password is **admin**.

**G.** If you can not view the Web User Interface:

You will need to verify that the HTTP Proxy feature of your web browser is disabled. This is so that your web browser will be able to view the 802.11g 54Mbps Router configuration pages. The following steps are for Internet Explorer.

Windows Internet Explorer 5.5 or above

To ensure proper screen refresh after a command entry, ensure that Internet Explorer 5.5 is configured as follows: Under the menu **Tools/Internet Options/General/**

**Note:** **Temporary Internet Files/Settings**, the setting for "Check for newer versions of stored pages" should be "Every visit to the page."

## Troubleshooting

1. Open Internet Explorer. Click **Tools**, and then select **Internet Options**.
2. In the Internet Options window, click the Connections tab.
3. Click the **LAN Settings** button.
4. Clear all the check boxes and click **OK** to save these LAN settings changes.
5. Click **OK** again to close the Internet Options window.

### Macintosh Internet Explorer

1. Open Internet Explorer. Click **Explorer/Preferences**.
2. In the Internet Explorer Preferences window, under Network, select **Proxies**.
3. Uncheck all check boxes and click **OK**.

H. If all other recovery measures fail, and the 802.11g 54Mbps Router is still not functioning properly, take any of these steps:

1. Reset the 802.11g 54Mbps Router's hardware using the web interface, or through a power reset.
2. Reset the 802.11g 54Mbps Router to its default configuration by pressing the reset button on the back panel for 5 seconds or more. Then click **LOGIN** to access the user interface.

# SPECIFICATIONS

Below is an outline of the technical specifications for the USR5462.

## **Standards**

IEEE 802.3 10BASE-T Ethernet

IEEE 802.3u 100BASE-TX Fast Ethernet

IEEE 802.11b

IEEE 802.11g

## **WAN Interface**

10BASE-T/100BASE-TX

## **LAN Interfaces**

10BASE-T/100BASE-TX

4 RJ-45 ports: LAN data transfer rate is up to 10/20 Mbps (10BASE-T half/full duplex) or 100/200 Mbps (100BASE-TX half/full duplex)

## **Antenna**

2 attached antennas

## **Management**

Browser-based management

Both DHCP Server and Client provided

## **Advanced Features**

Dynamic IP Address Configuration – DHCP, DNS

Wireless Security – WPA, 802.1x, 40/64/128-bit WEP encryption,  
SSID broadcast disabled, MAC address filtering

Firewall – Access control, hacker prevention, logging

Virtual Server via NAT & NAPT

Virtual Private Network – PPTP, L2TP, IPSec pass-through

Intrusion Detection, email Alerts, Parental Control

## Specifications

### Indicator Panel

Power, WLAN, WAN (Link, Activity), LAN (Link/Activity),  
Speed - 10/100 Mbps)

### Dimensions

130 x 85 x 32 mm (5.12 x 3.35 x 1.26 in.)

### Weight

370 g (13.05 oz.)

### Input Power

12V DC, 1000 mA

### Maximum Current

0.04 A<sub>RMS</sub> max. @ 110 V/240 V

### Power Consumption

5 Watts max. @ 100-240 VAC

### Internet Standards

RFC 826 ARP, RFC 791 IP, RFC 792 ICMP, RFC 768 UDP, RFC 793 TCP,  
RFC 854-859 TELNET, RFC 1321 MD5, RFC 1497 BOOTP Extension,  
RFC 1570 PPP LCP Extension, RFC 1631 NAT, RFC1661 PPP, RFC 1700  
Assigned Numbers, RFC 1866 HTML, RFC 1945 HTTP, RFC 1994  
CHAP, RFC 2131 DHCP, RFC 2637 PPTP

### Temperature

Operating 0 to 40 °C (32 to 104 °F)  
Storage -40 to 70 °C (-40 to 158 °F)

### Humidity

5% to 95% (non-condensing)

### Compliances

CE Mark

Emissions

FCC Class B

VCCI Class B

Industry Canada Class B

EN55022 (CISPR 22) Class B

C-Tick - AS/NZS 3548 (1995) Class B

Immunity

## *Specifications*

EN 61000-3-2/3

EN 61000-4-2/3/4/5/6/8/11

Safety

CSA/NRTL (UL1950, CSA 22.2.950)

GS (EN60950)

CB (IEC60950)

## *Specifications*

# REGULATORY AND WARRANTY

## 802.11g 54Mbps Router User Guide (Windows 95, 98, 2000, NT, Me, XP, and Macintosh)

### Regulatory Information

#### FCC Declaration of Conformity

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the manufacturer's instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

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

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

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

#### FCC Channel Restriction

U.S. Robotics declares that USR5462 (FCC ID:RAXWG4005D-U5) is limited in CH1-CH11 by specified firmware controlled in the U.S.A.

#### FCC Radiation Exposure Statement

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

#### UL Listing/CUL Listing

This information technology equipment is UL-Listed and CUL Listed for the uses described in the users guide.

#### Industry Canada Statement

This equipment complies with the Industry Canada Spectrum Management and Telecommunications policy, RSS-210, standard Low Power License-Exempt Radio Communication Devices.

Operation is subject to the following two conditions:

- 1.This device may cause interference.
- 2.This device must accept any interference, including interference that may cause undesired operation of the device.

#### **CE0560** CE Declaration of Conformity

We, U.S. Robotics Corporation of 935 National Parkway, Schaumburg, Illinois, 60173-5157, USA, declare under our sole responsibility that the U.S. Robotics Wireless Turbo Access Point & Router to which this declaration relates is in conformity with the following standards and/or other normative

documents:  
EN300 328-2  
EN301 489-1  
EN301 489-17  
EN60950

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

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

This product can be used in the following countries:

Germany, Austria, Belgium, Switzerland, Netherlands, Luxembourg, Italy, France, UK, Ireland, Spain, Portugal, Sweden, Norway, Denmark, Finland, Iceland, Poland, Hungary, Czech Republic and Greece

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

<b>Country</b>	<b>frequency band</b>	<b>output power</b>
France	2454-2483.5 MHz	10 mW EIRP outdoor

#### 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.

#### **Operating Channels:**

- IEEE 802.11g compliant
- 11 channels (US, Canada)
- 13 channels (ETSI)

Go to [www.usrf.com](http://www.usrf.com) to see the most recent channel restriction information.

#### **Manufacturer's Disclaimer Statement**

The information in this document is subject to change without notice and does not represent a commitment on the part of the vendor. No warranty or representation, either expressed or implied, is made with respect to the quality, accuracy, or fitness for any particular purpose of this document. The manufacturer reserves the right to make changes to the content of this document and/or the products associated with it at any time without obligation to notify any person or organization of such changes. In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use this product or documentation, even if advised of the possibility of such damages.

Please contact our support center for an RMA number before sending your product to the repair address. Product sent to the repair address without an RMA number will be returned unopened.

In United States:  
U.S. Robotics  
c/o Innovate -It  
935 McLaughlin  
San Jose, CA 95122

In Europe:  
FRS Europe BV.  
Draaibrugweg 2  
1332 AC Almer  
The Netherlands

In Canada:  
U.S. Robotics  
Unit-100  
13751 Mayfield Place  
Richmond, B.C. Canada V6V 2G9

## **802.11g 54Mbps Router User Guide (Windows 95, 98, 2000, NT, Me, XP, and Macintosh)**

### **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 authorized 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 authorized 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 authorized 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 cor-

rected.

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](http://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 authorized 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 authorized 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, NEGLIGENCE, 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 authorized 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 caused 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 AUTHORIZED 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.

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