

Wireless MAXg ADSL Gateway User Guide

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Thank you for purchasing a U.S. Robotics Wireless *MAXg* ADSL Gateway (Model 9108), and welcome to its User Guide. The Wireless *MAXg* ADSL gateway is a tool for high-speed Internet access, using cable connections or highly-secure wireless communications. The gateway also supports a USB printer, allowing all machines in your local network to share a printer. This User Guide details aspects of your gateway:

- **Installation, Setup and Uninstallation:** Complete instructions on how to install and configure your gateway.
- **Configuration:** Feature-level discussion of the gateway's Web User Interface (WUI), with examples.
- **Help:** Tutorials, troubleshooting, support, and a glossary.

Technical Support

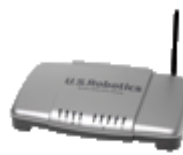
For current product support and contact information, go to the U.S. Robotics Web site at:

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

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Notes about Your Gateway Features

The gateway's *MAXg* feature provides a maximum speed of up to 125 Mbps, delivering large files like MP3s, digital photos, and digital video through your network fast and efficiently. And with *MAXg*, your network is protected with a maximum security suite of capabilities, including Wi-Fi Protected Access (WPA), WPA2/802.11i (AES Encryption), MAC address authentication, and more.

In addition to providing state-of-the-art wireless connectivity, your *MAXg* gateway includes an integrated print server, allowing you to share your USB printer with other computers on your network and a 4-Port Ethernet switch for connecting Ethernet devices.

Firewall - Stateful Inspection

The U.S. Robotics Wireless *MAXg* ADSL Gateway provides firewall stateful inspection for intrusion detection. The gateway tracks all packets originating from the LAN and records each connection's address pair and the TCP/UDP port pairs. When receiving TCP/UDP packets from the Internet, the IP addresses and port numbers must match the tracking records. Otherwise, the gateway drops the packet.

For ICMP packets, only outgoing ICMP request packets originating from the LAN are forwarded to the Internet, and its related incoming ICMP reply packets from the WAN side are allowed to come into the LAN. For example, you can ping any device on the Internet from a computer on the LAN, but you cannot ping the gateway or any LAN device from the Internet.

Also, the gateway does not let ICMP redirect packets in, since they could be used to reroute traffic through attacking machines. The only exception to the above firewall rules occurs when remote technical support access is explicitly allowed by the local user. The gateway then responds to ping request packets and allows remote access to the gateway's Web User Interface (WUI). The gateway firewall also prevents LAND attacks and SYN floods:

- SYN floods: the gateway firewall drops all unsolicited TCP SYN requests received from the Internet.
- Land attacks: this type of attack forces a victim machine into an unending loop. The gateway firewall can prevent such attacks by disallowing any packets with the same source and destination address.

Security - Remote and Local Access Accounts

- The U.S. Robotics Wireless *MAXg* ADSL Gateway WUI provides a local **admin** account, a local non-administrative **user** account, and a remote technical **support** account, all with password protection. The **support** account allows the local administrative user to

explicitly let a remote technician access the gateway's WUI.

- The **user** account can view the configuration parameters but not change them.
- The **support** account does not work in bridge mode since there is no public IP address assigned to the gateway.
- The remote technical support user can read/write the configuration but cannot change security settings. When remote access security is enabled by a local administrator, the remote user can access the modem via telnet or a browser from the Internet, but not from the LAN.
- The maximum length for user names and passwords is 15 characters.

DHCP Server

The gateway provides DHCP server service over the LAN interface when the network operating mode is set to PPPoE, PPPoA, MER or IPoA mode. When enabled, the DHCP server responds to DHCP request packets from LAN devices and assigns:

- An unused IP address within the start-end IP address range configured by the user to the LAN device.
- The gateway's LAN interface IP address as the primary DNS server address to the LAN device. The ADSL gateway performs DNS relay between the LAN device and the real DNS server at the remote service provider site.
- The gateway's LAN interface IP address as the default gateway to the LAN device.

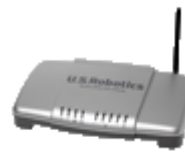
DHCP Client

The gateway provides DHCP client service for each Internet interface operating in the **MER** network operating mode. If enabled, the DHCP client requests the WAN interface IP address, primary and secondary DNS server addresses, and default gateway from the DHCP server at the service provider site. If the DHCP client function is disabled, the user must manually configure the WAN IP address, DNS server addresses and default gateway.

DNS Relay

The gateway provides DNS Relay service only when the NAPT function is enabled. It forwards the DNS inquiry packets received from the LAN devices to the primary DNS server at the remote site and vice versa. The DNS response packets received from the remote DNS server are relayed back to the LAN device. ([Click here](#) for more information about NAPT.)

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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, 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 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 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.

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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
935 National Parkway
Schaumburg, IL 60173
U.S.A

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USA

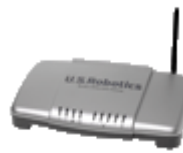
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Regulatory Information

Manufacturer's Declaration of Conformity

U.S. Robotics Corporation
935 National Parkway
Schaumburg, IL 60173
U.S.A.

declares that this product conforms to the FCC's specifications:

Part 15, Class B

Operation of this device is subject to the following conditions:

- 1) this device may not cause harmful electromagnetic interference, and
- 2) this device must accept any interference received including interference that may cause undesired operations.

This equipment complies with FCC Part 15 for Home and Office use.

Caution to the User: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Detachable Antenna Information

FCC Part 15, Subpart C, Section 15.203 Antenna requirement

9108 users: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

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.

Radio and Television Interference:

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.

USR declares model 9108 is limited in CH1~11 from 2400 to 2483.5 MHz by specified firmware controlled in USA. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Part 68 Registration

Customer Information

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the bottom of this equipment is a label that contains, among other information, a product identifier in the format US: AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

This equipment uses the following Universal Service Order Code (USOC) jacks: RJ11C.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See this document for details.

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US: AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3).

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

There are no serviceable parts in this equipment.

If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

UL Listing/CUL Listing:

If you use your own telephone cable, you must use a minimum No. 26 AWG and FCC compliant telephone cable.

For External modems:

This information technology equipment is UL Listed and C-UL Listed for both the US and Canadian markets respectively for the uses described in the User Guide.

For Internal Modems:

This information technology equipment is UL Listed and C-UL Listed for both the US and Canadian markets respectively for use with UL-Listed personal computers that have installation instructions detailing user installation of card accessories.

For Laptop/Notebook Modems:

This information technology equipment is UL Listed and C-UL Listed for both the US and Canadian markets respectively for use only with UL Listed laptop or notebook computers.

For Canadian Modem Users

Industry Canada (IC)

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.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make electrical ground connections by themselves, but should contact the appropriate inspection authority or an electrician, as appropriate.

Customer Information

Notice: This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

Notice: The Ringer Equivalence Number (REN) for this terminal equipment is **X.XB**. The REN assigned to each terminal equipment provides an indication of the maximum number of

terminals allowed to be connected to a telephone interface. The termination on a interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

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 MAXg ADSL Gateway, Model 9108, 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:

Germany, Austria, 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
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France	2454-2483.5 MHz	10 mW EIRP outdoor
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Regulatory Channel Frequency

Channel	Frequency (MHz)	FCC	Canada	ETSI
1	2412	X	X	X
2	2417	X	X	X
3	2422	X	X	X
4	2427	X	X	X
5	2432	X	X	X
6	2437	X	X	X
7	2442	X	X	X
8	2447	X	X	X
9	2452	X	X	X
10	2457	X	X	X
11	2462	X	X	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 **X.XX** W/kg.

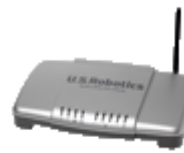
EU Detachable Antenna Information

This U.S. Robotics wireless device has been designed to operate with the antenna included in this package only. Together this device and antenna combination has been tested and approved by a European Agency conforming with the European R&TTE directive 1999/5/EC to meet the radiated power level requirement of 100mW e.i.r.p. Replacement of this antenna must only be done with an authorized U.S. Robotics component that has been designed and tested with the unit to the requirements of directive 1999/5/EC. Please refer to the U.S. Robotics Web site to get product antenna ordering information.

Operating Channels:	<ul style="list-style-type: none"> ■ IEEE 802.11g compliant ■ 11 channels (US, Canada) ■ 13 channels (ETSI)
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Go to www.usr.com to see the most recent channel restriction information.

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Gateway Installation

Installation Overview & System Requirements

Note: It is important that you have your serial number written down for future reference. If you ever need to call our technical support department, you will need this number to receive assistance. You can find your 12-character serial number on a bar code sticker located on the bottom of the gateway and also on the box. You will also need your model number.

This gateway's EasyConfigurator installation software works with the following operating systems:

- Windows XP, Me, 2000, NT 4.0, 98
- Macintosh
- Linux

You will need to have a computer with an Ethernet Network Interface Card (NIC) installed and/or an 802.11b/g compatible wireless adapter installed, as well as a Web browser that works with the HTML 4.01 specification with Javascript enabled.

What You Need Before You Begin

You will need active ADSL and Internet service from your local telephone company or Internet Service Provider (ISP) before you try to go on the Internet. You may also need the following from your ISP:

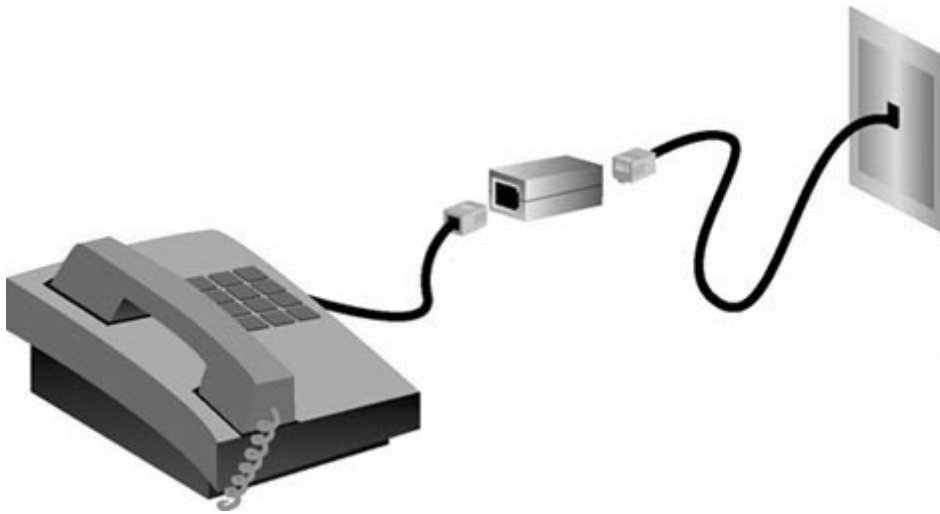
- VPI/VCI values
- ADSL standard (modulation)
- Encapsulation mode
- Authentication (PAP or CHAP) for PPP connections
- Your user name and password, if they were assigned by your ISP.

Step 1. Connect Microfilter (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 gateway, you may want to ask your ISP if you need to purchase one or more of them.

To install a microfilter, plug each device (phone, fax machine, or other telephony device) into

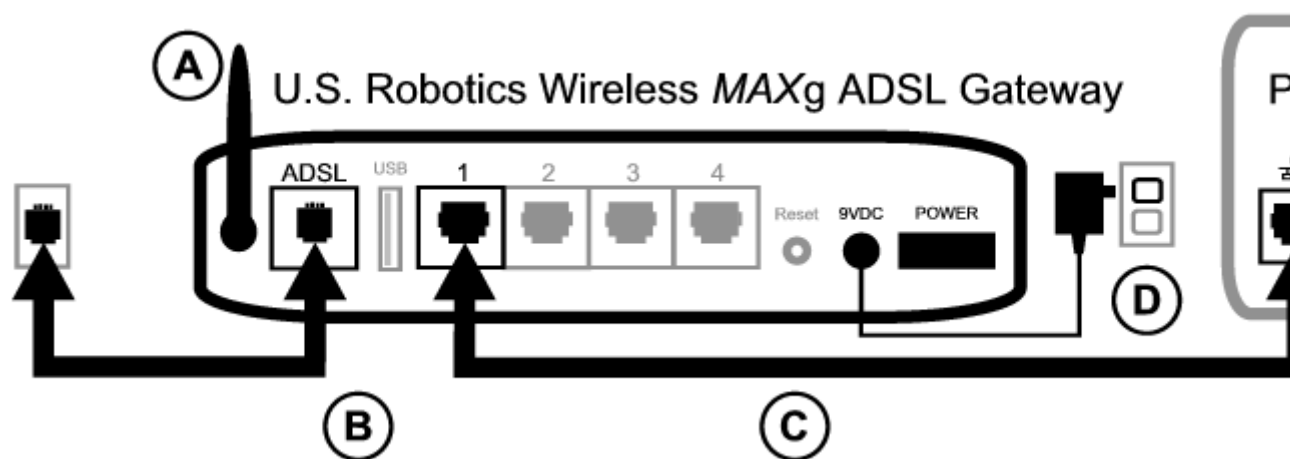
the microfilter, and then plug the microfilter into the telephone wall jack. Do not install a microfilter on the cable that connects your ADSL gateway to the telephone jack unless your microfilter has a connection for both the gateway and the phone.



Step 2. Connect the Antenna and Cables

To configure the gateway, you will initially use the supplied yellow Ethernet cable to connect it to the computer. You can set up a wireless connection later in the installation process, once the gateway is communicating with the Internet.

This diagram shows you how the devices will be connected when the installation is complete:




To make the needed connections, follow these steps:

A. Attach the antenna to the back of the gateway.



B. Connect one end of the telephone cable to the telephone port on the back of your gateway (labeled **ADSL**). Connect the other end to the telephone wall jack.

C. Connect the yellow Ethernet cable. Although you can connect up to four systems this way, you should connect additional devices only after the initial setup is complete. Insert one end of the Ethernet cable into one of the ports on the back of the gateway (labeled **1**, **2**, **3**, and **4**). Connect the other end to the Ethernet port on your computer's network interface card.

D. Plug the AC power adapter into the 9VDC jack on the back of your gateway. Then plug the AC power adapter into a standard wall outlet. If the  LED on the front panel is not lighted, press the power switch on the back of the gateway.

The gateway starts up after you turn on the power. This may take one to two minutes.



E. On the front panel, see if the  and any of the  indicators LEDs are lighted. If they are not, see the [troubleshooting section](#).

Step 3. Install EasyConfigurator

1. Insert the U.S. Robotics installation CD-ROM into your computer CD-ROM drive. The installation should start automatically. This process may take a few moments.



If the installation does not start automatically, you can start it manually.

Windows users: Click **Start** and then **Run**, then type **D:\setup.exe** in the dialogue box and click **OK**. (If your CD drive uses a different letter, type that letter in place of **D**.)

Macintosh users: Open the CD-ROM and double click on either **MacOS X Install** or **MacOS Classic Install** (depending on which operating system your computer uses).

Linux users: Open the CD-ROM, browse to **\platforms\linux**, and double-click on **install.bin**.

2. Select your preferred language and click **OK**.
3. If you are using Windows, the installer runs a qualification test to verify that your system meets the minimum requirements for installation. When done, a **Results** screen displays green flags next to system components that meet requirements and red flags next to any that do not. If your system passes the qualification, click **Next**. If any of your system components do not meet the requirements, click **View Report** to identify them.

Setup now installs the EasyConfigurator.

Step 4. Configure the Gateway with EasyConfigurator

1. This is the EasyConfigurator login window:



If EasyConfigurator does not start up automatically, you can open it yourself.

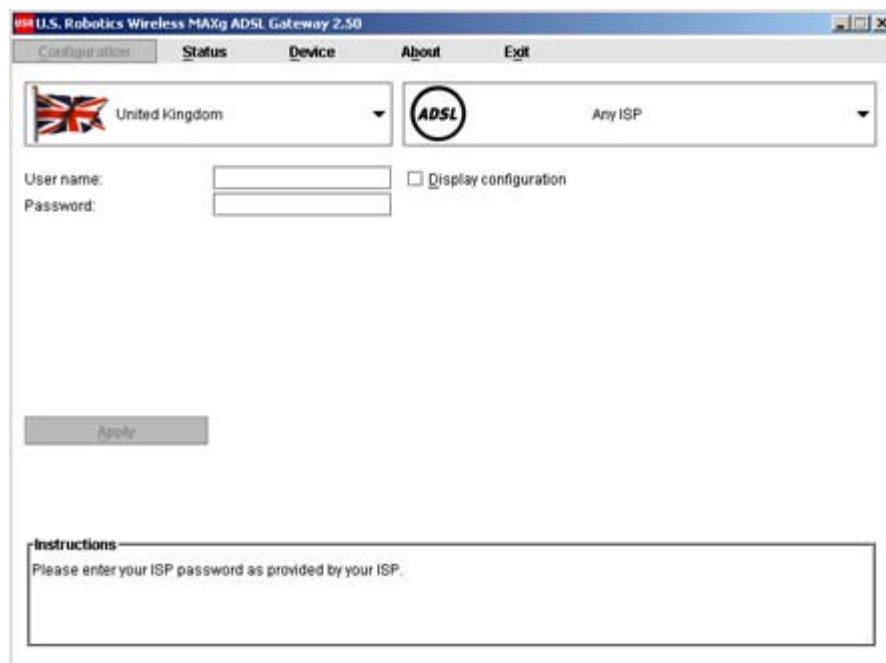
Windows users: Click **Start** and select **Programs** and **U.S. Robotics EasyConfigurator**.

Macintosh and Linux users: Double-click on the EasyConfigurator icon on the desktop.

The default user name and password are already entered for you. Click **Log In** and wait a few moments.



2. This window appears after you log in:



(If this window does not appear, click on **Configuration** near the top of the window.) Select your country and your Internet Service Provider (ISP) from the drop-down lists. If your country or ISP does not appear in the list, select **Other** and manually enter the settings provided by your ISP.

You may need to enter your ISP-supplied user name and password after making your

selections. Click **Apply** to continue.

- EasyConfigurator now configures your gateway based on your ISP selection or manually-entered settings.



At this point, the system attempts to access the Internet. This may take a few minutes, until the following status page appears.



If the status is **CONNECTED TO THE INTERNET**, you have successfully configured your Internet connection. If it does not say **CONNECTED TO THE INTERNET**, go to the Troubleshooting section of this installation guide.

Step 5. Set Up the Wireless Configuration

In wireless communications, devices communicate with each other via radio waves rather than cables. The gateway can communicate wirelessly with any device that has a wireless network adapter that meets wireless networking standards.



To set up wireless communications, click **Status** at the top of the EasyConfigurator screen (if it is not already open). Then click **Configure Wireless**. Log in if the software asks you to (use **admin** as the user name and password). This opens your Web browser to a page for

setting up security on your wireless network. U.S. Robotics strongly recommends that you secure your network as directed on this page.

Secure Your Gateway

Network Name (SSID)

This is the name of your wireless network. Wireless devices need the network name in order to communicate with it.

Network name:

U.S. Robotics recommends that you change the **network** alphanumeric characters that is not easy to guess (such

Follow the on-screen instructions to configure security, and click **Apply** when done. The status page of the gateway's Web user interface automatically appears after you do this.

Status
U.S.Robotics®

Status	Internet	LAN	Wireless	Security	Device
--------	----------	-----	----------	----------	--------

[Register the product](#)

General

Line rate - upstream: **832 Kbps**
 Line rate - downstream: **8000 Kbps**
 LAN IP address: **192.168.1.1**
 WAN IP address: [View](#)
 Default gateway: **192.168.0.254**
 Primary DNS server: **192.168.0.1**
 Secondary DNS server: **192.168.7.1**

Wireless Security

Network name: **MyNetwork**
 Broadcast name: **Enabled**
 Method: **WPA**
 Wireless MAC filter: **Allow all**

Firmware

Version: **3.00L.03.01 (Friday, May 27, 2005 12:19:00 PM)**
1219_052705-3.00L.03.A2pB018b2.d15h

Your wireless network is now secure. You may close EasyConfigurator and the Web user interface.

You can now start up a Web browser. We suggest that you test your connection by registering your product on the following Web page:

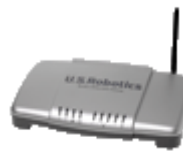
www.usr.com/productreg

You can use the gateway Web user interface (WUI) to enable or disable wireless communications and to set the network name, broadcast status, and security options. The Web user interface is the main tool for configuring and using the gateway. [Click here](#) to find

out how to run the WUI.

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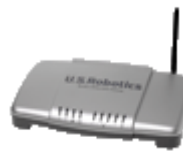
Gateway connections



ADSL	Digital subscriber line RJ-11 service jack
USB	Port that accepts a USB cable to a printer.
1 - 4	Ethernet ports 1 - 4
Reset	A recessed button that resets the gateway (see note below)
9VDC	Input jack that accepts a cable from supplied power adapter
Power	Rocker switch that turns the gateway on and off

NOTE: To reset the gateway, insert a pin or paper clip to briefly push the **Reset** button. If you want to reset the gateway, do not press this button for more than 5 seconds, as this resets the gateway's configuration to the factory defaults.

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Quick Setup

The quick setup feature is a simple way to configure the gateway with the most important settings. If you did not configure the gateway in EasyConfigurator, the following window appears automatically the first time you open the gateway's Web user interface (by opening the address **192.168.1.1**). It also appears if you reset the gateway to its factory defaults:

Thank you for purchasing the **U.S. Robotics Wireless MAXg ADSL Gateway**.

This introductory setup guides you through three easy steps to establish a connection to the Internet and to secure your wireless network. You can access the advanced features of the ADSL Gateway after the setup is complete.

When you're ready to begin, press the **Start** button.

Start →

MAXimum range
MAXimum performance
MAXimum security
MAXimum simplicity



U.S. Robotics means MAX. MAXg

U.S. Robotics®

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To begin the quick setup, click **Start**.

Step 1. Configuring the Internet Connection

This is the first quick setup page:

Setup
1
... 2 ... 3
U.S. Robotics®

Configure Your Internet Connection

In order for your gateway to connect to the Internet, you will need to enter the information your Internet Service Provider (ISP) gave you for your DSL connection. You may need to contact your Internet Service Provider for assistance in determining the correct settings.

Protocol: PPP over ATM (PPPoA)

VPI: 0 (0-255)

VCI: 0 (32-65535)

Half-bridge (also known as "IP extension")

Quality of service

DSL Login

If your Internet Service Provider (ISP) provided a user name and password for your Internet connection, please enter them here. If you don't know this information, you may need to contact your ISP for assistance. In that case, complete the setup, and later use the gateway's **Internet** page to configure your Internet connection.

In this page, you can set up the gateway's connection to the Internet. The most important settings are the connection protocol, VPI/VCI values, and various parameters specific to the connection protocol, such as a login user name and password. Your Internet Service Provider should be able to supply you with most of this information.

When you are done entering data in this page, click on **Next**.

Step 2. Wireless Network Name and Security Settings

This is the second quick setup page:

The gateway can be configured to continuously transmit the network name, so setting a meaningful name will help you configure wireless communications with your computers. You will probably want to replace the default network name that appears in the top half of this page.

U.S. Robotics strongly urges you to select the **Secure the gateway...** checkbox. The **Pass phrase** is text you will need to enter if you wish to further configure your gateway's security. It's similar to a password, and you should enter a phrase that would not be easy to guess but that you will be able to remember. [Click here](#) for more information about wireless security.

Click **Next** to continue.

Step 3. Gateway Login

When you open the gateway's Web User Interface to work with the gateway settings, you will need to log in with a user name of **admin**. In this page, enter the password you want to use with this **admin** account.

Setup 1 ... 2 ... **3****U.S. Robotics**

Gateway Login

In order to secure the gateway against unauthorized access, please enter a password for the "admin" user. You will need to enter the user name and password in order to access the gateway in the future, so you may want to write them down.

User name: **admin**
Password:

U.S. Robotics recommends using a password of eight or more alphanumeric characters (such as "Canyon79Snow" or "2Lake6Forest3"). Please note that the user name and password are case-sensitive.

When you're done and are ready to apply all your settings, press **Next -->**.

Enter a password and click **Next**.

Step 4. Wrapping Up

You are now nearly done with the quick setup process. Click **Finish** to save your configuration to the gateway.

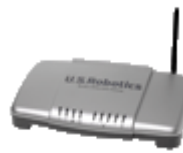
Information**U.S. Robotics**

Gateway Configured

The gateway has been configured

Please press the **Finish** button to save configuration and reset the gateway






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Status LEDs



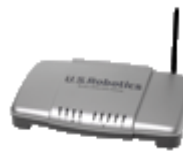
The gateway has several LEDs on its front. The LED conditions listed below indicate the operational status of the gateway.

	Solid	The gateway is powered on.
	Off	The gateway is powered off.
	Solid	The gateway's wireless functionality is enabled.
	Flashing	The gateway and computer are exchanging data over a wireless connection.
	Off	The gateway's wireless function is disabled.
	Solid	The gateway is connected to the Internet.
	Flashing	The gateway is exchanging data with the Internet.
	Off	There is no active IP connection or the device is in ADSL bridge mode.
	Solid	An ADSL link is established.
	Flashing	The gateway is attempting to create an ADSL link.
	Off	There is no current ADSL connection.
 1-4	Solid	There is a physical connection between the gateway and the computer through the corresponding Ethernet port (note the port numbers above the LEDs).
	Flashing	The gateway and computer are exchanging data through an Ethernet port.
	Off	There is no physical connection between the gateway and the computer through the Ethernet port.
	Solid	A printer is linked to the gateway. Click here for information on using a printer with the gateway.

	Flashing	The gateway and printer are exchanging data.
	Off	There is no printer connected to the gateway USB port.

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EasyConfigurator Advanced Features

Firmware Upgrade

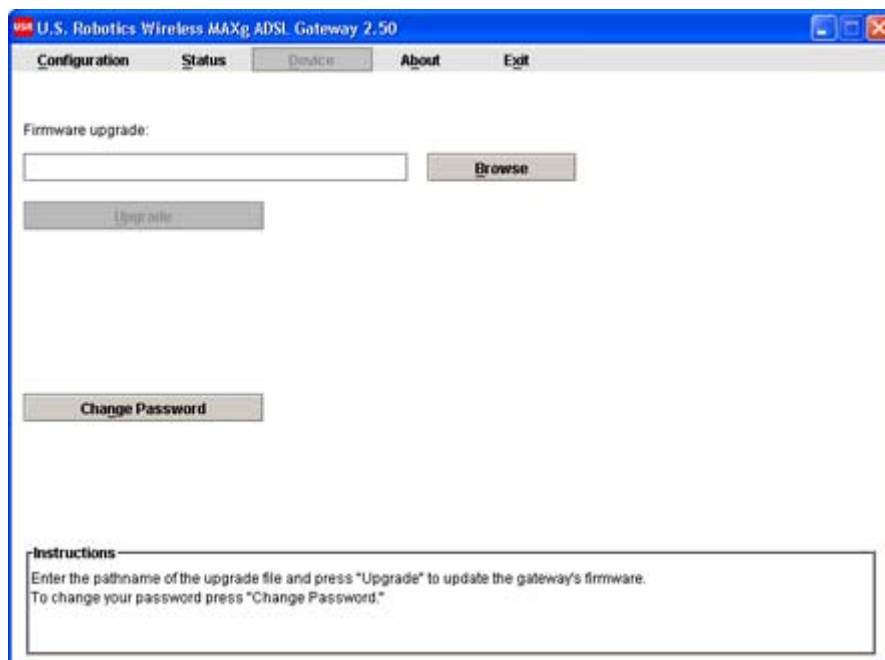
You can download new firmware for your gateway periodically from the U.S. Robotics Web site at www.usr.com/support

To upgrade the firmware, first find the latest version on the Web site and save it to your computer's hard drive. Then open EasyConfigurator:

Windows users: To access EasyConfigurator, click **Start, Programs**, and select **U.S. Robotics EasyConfigurator**.

Macintosh and Linux users: Double-click **EasyConfigurator** from your desktop.

In EasyConfigurator, log in and click on **Device** to open the **Device** page:



Click **Browse**, browse to the location of the firmware file on your hard drive and select it.

Click **Open** and press **Upgrade**. It will take approximately two minutes to upgrade your gateway with the new firmware. When the process is complete, you can close EasyConfigurator. You may need to reconfigure the gateway.

Changing Your Password

Your gateway has three predefined login accounts: **admin**, **user**, and **support**. The default passwords for these accounts are (respectively) **admin**, **user**, and **support**. You can change the password for the **admin** account from the **Device** page of EasyConfigurator (shown above).

From the **Device** page, click on **Change Password**. This window appears:



The screenshot shows a "Change Password" dialog box. The "User name:" field is set to "admin". There are three password input fields: "Current password:", "New password:", and "Confirm password:". Below these fields is a text box with the message "Please enter your current password." and two buttons: "Apply" and "Cancel".

Enter the current password followed by the new password (enter twice to confirm). Then click **Apply**. The gateway will automatically restart.

Note: the default passwords for the **user** and **support** logins are **user** and **support**, respectively. You can change these from the gateway's Web user interface. Just go to the **Security** menu and select **Device Login**.

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Uninstalling EasyConfigurator for Windows Users:

1. Click Windows **Start**, **Control Panel** , **Add or Remove Programs**.
2. In the program list, select **EasyConfigurator** and click **Change/Remove**.
3. Follow the on-screen instructions to uninstall the EasyConfigurator application. This is the only gateway-related software that was installed on your system.

Uninstalling EasyConfigurator for Macintosh and Linux Users:

1. Double-click **Uninstall EasyConfigurator** or **Uninstall U.S. Robotics EasyConfigurator** icon on your desktop. EasyConfigurator is the only gateway-related software that was installed on your system.
2. Follow the on-screen instructions.

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Logging in

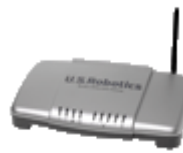
The gateway's Web User Interface (WUI) allows you to set up, modify, and view configuration variables and operational data. Follow this procedure to open the WUI:

1. If the ADSL gateway is not on, turn on the power. Wait for one to two minutes.
2. In a Web browser on the computer, connect to **http://192.168.1.1/** to open the WUI. (If you've modified the gateway's LAN IP address, you must use the new one.) You should see the following screen.



If the default **User name** and **Password** are not already filled in and you haven't changed any account passwords, enter **admin** and **admin**. (If you have changed the password for the **admin** account, enter that as the password.) Then click **OK**.

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Gateway status

These are the options available in the **Status** menu:

- [General Status](#)
- [DSL Status](#)
- [System Log](#)
- [LAN Statistics](#)
- [WAN Statistics](#)
- [ATM Statistics](#)
- [ADSL Statistics](#)

General Status

After you log in to the gateway, the general status page appears:

Status
U.S. Robotics®

Status	Internet	LAN	Wireless	Security	Device
--------	----------	-----	----------	----------	--------

[Register the product](#)

General

Line rate - upstream: **832 Kbps**
 Line rate - downstream: **8000 Kbps**
 LAN IP address: **192.168.1.1**
 WAN IP address: [View](#)
 Default gateway: **192.168.0.254**
 Primary DNS server: **192.168.0.1**
 Secondary DNS server: **192.168.7.1**

Wireless Security

Network name: **MyNetwork**
 Broadcast name: **Enabled**
 Method: **WPA**
 Wireless MAC filter: **Allow all**

Firmware

Version: **3.00L.03.01 (Friday, May 27, 2005 12:19:00 PM)**
1219_052705-3.00L.03.A2pB018b2.d15h

This page shows, among other things, the gateway's data transmission and receipt speeds

and your ISP's gateway address. It also contains information on the gateway's domain name server (DNS), which maps URLs such as **www.usr.com** to four-number IP addresses. You may use this page to confirm your wireless network settings and the gateway's firmware version before upgrading.

DSL Status

This page details specific connectivity values as directed by your ISP.

DSL											U.S.Robotics®
Status	Internet	LAN	Wireless	Security	Device						
VPI/VCI	Con. ID	Category	Service Name	Interface Name	Protocol	Encapsulation	Igmp	QoS	State	Status	IP Address
0/36	1	UBR	pppoe_0_36_1	ppp_0_36_1	PPPoA	VC/MUX	Disabled	Disabled	Enabled	Up	192.168.7.61

Note: If this page does not have values yet, it means that you still need to set up your gateway. You can do this by running EasyConfigurator. (*Windows users:* click **Start, Programs,** and **U.S. Robotics EasyConfigurator.** *Macintosh and Linux users:* double-click on the **EasyConfigurator** icon on the desktop.)

Item	Description
VPI/VCI	DSL connection parameters, similar to an IP address but for an ATM network.
Con. ID	A number value indicating the order of connection.
Category	This is the class of ATM service (UBR - unspecified bit-rate, VBR - variable bit-rate).
Service Name	A name used to define the expected level of service for the access concentrator. (The default is a generic name created by the gateway and not used.)
Interface Name	Table entry name created by the gateway and used only by the gateway.
Protocol	This is the authentication and encapsulation protocol used over ATM on the ADSL connection.
Encapsulation	<i>Encapsulation</i> is a set of rules for building packets. This is the type of ATM encapsulation.
IGMP	The gateway uses the Internet Group Management Protocol to establish host memberships in particular multicast groups on a single network. (One common application of this is with a multicast video stream.)
QoS	The gateway's Quality of Service feature gives high-priority status to certain types of packets (defined by the user). Click here for more information on this.
State	This is the connection state (enabled or disabled).

Status	The status of the connection — Up means PPP service is running, Down means PPP service it has stopped.
IP Address	The gateway's address obtained from or assigned by your ISP. The gateway uses this address to communicate with the network outside your local area network.

Note: If the **IP Address** field is blank, confirm that your DSL settings are correct. If you are not sure, restore the gateway to factory defaults by using a thin tool such as a paper clip to press the **Reset** button on the back of the gateway for at least five seconds. Then run EasyConfigurator again, paying close attention to the user name and password of the PPP account, supplied by your Internet Service Provider.

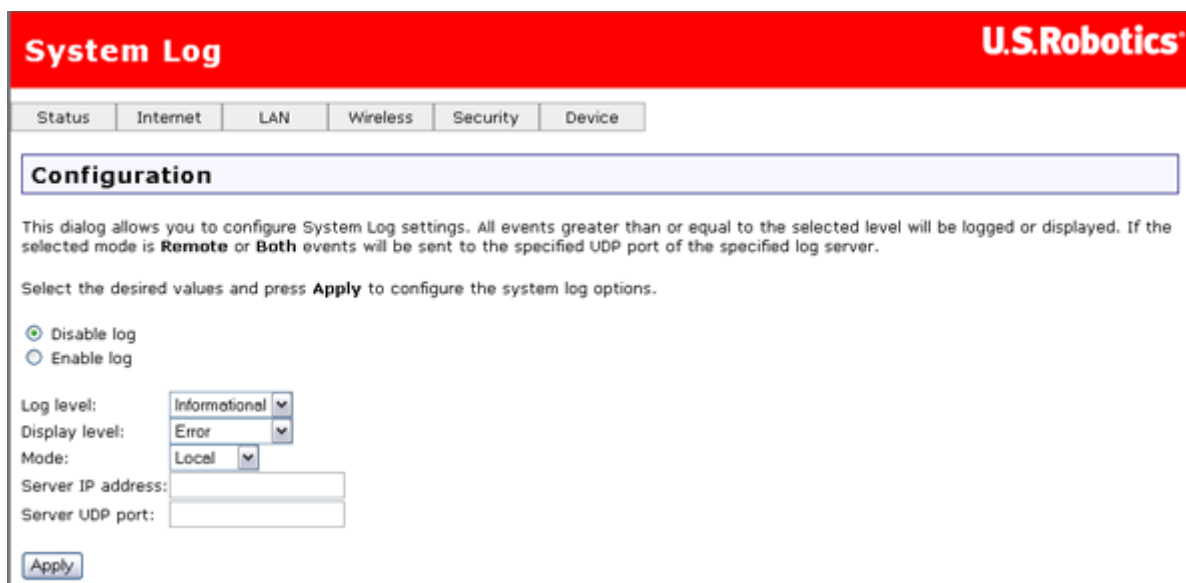
System Log

The system log screen shows you the system events log, where the gateway saves data about the various events and problems that occur. You can customize the types of information stored in the log as well as what parts of that information appear when the log is displayed. The page might look like this when you first open it:



The **Configure** button is for specifying what type of data you want to display in the log:

1. Click **Configure** to display the following page:



2. Select your options for logging and displaying the log:

Option	Description
Disable log / Enable log	Click on one of these options to disable or enable the recording of log data.
Log level	<p>Log Level allows you to configure which types of events are logged. There are several <i>levels</i> of log events:</p> <ul style="list-style-type: none"> ▪ Emergency = system is unusable (these appear in red in the log) ▪ Alert = action must be taken immediately (pale red) ▪ Critical = critical conditions (orange) ▪ Error = error conditions (yellow) ▪ Warning = warning conditions (green) ▪ Notice = normal but significant conditions (blue) ▪ Informational = information events (white) ▪ Debugging = debug-level messages (dark grey on cream) <p>The gateway records all log events at the chosen level and above. For instance, if you set the log level to Critical, all critical, alert, and emergency events are logged, but none of the others are recorded.</p>
Display level	This lets you choose the event level to display in the previous System Log page. This item uses the same event level ranking as Log Level above, but it applies to what events are displayed in the WUI rather than recorded.
Mode	This lets you specify whether log events should be stored in the gateway's local memory, be sent to a remote log server, or both simultaneously. If you choose Remote , the system log will not show the events saved on the remote server. The remote server would be a <i>syslog</i> device, which you would need to set up.
Server IP address	When you select either Remote mode or Both mode, this is the Internet address of the remote log server.
Server UDP port	When you select either Remote mode or Both mode, this is the communication port of the remote log server, to which the gateway will send log data. By convention, port number 514 is often used, but you can enter any port number you like.

3. Click **Apply** to save your settings and view the log with the new settings:

System Log				U.S.Robotics®			
Status	Internet	LAN	Wireless	Security	Device		
Refresh							
Date/Time	Facility	Severity	Message				
Jan 1 02:07:14	syslog	emergency	BCM96345 started: BusyBox v1.00 (2005.05.04-20:52+0000)				
Jan 1 02:07:14	kern	debug	syslog: klogd 8:				
Jan 1 02:07:14	kern	notice	kernel: klogd started: BusyBox v1.00 (2005.05.04-20:52+0000)				
Jan 1 02:07:14	kern	warning	kernel: Linux version 2.6.8.1 (root@localhost.localdomain) (gcc version 3.4.2) #3 Wed May 4 16:19:04 CDT 2005				

LAN statistics

This status screen summarizes the following:

- Data traffic received by the gateway bound for all machines in its local network, and
- Data transmitted from those machines and sent to the Internet.

It shows this both for all machines physically connected to the gateway (via cables) and for all systems wirelessly connected to the gateway. You can use the error and drop statistics to troubleshoot communication problems in your local network.

Statistics									U.S.Robotics®			
Status	Internet	LAN	Wireless	Security	Device							
LAN												
Interface	Received				Transmitted							
	Bytes	Packets	Errors	Drops	Bytes	Packets	Errors	Drops				
Ethernet	594212	5634	0	0	4160064	6010	0	0				
Wireless	0	0	0	0	12889	117	516	0				
Reset Statistics												

WAN statistics

The WAN Statistics page shows the byte transfer, packet transfer, and error statistics for the connection from the gateway to the Internet. Each line in the table is a different gateway-Internet connection.

WAN Statistics													U.S.Robotics®			
Status	Internet	LAN	Wireless	Security	Device											
Service	VPI/VCI	Protocol	Interface	Received				Transmitted								
				Bytes	Packets	Errors	Drops	Bytes	Packets	Errors	Drops					
pppoe_0_36_1	0/36	PPPoA	ppp_0_36_1	1611992	3520	0	0	142380	947	0	0					
Reset Statistics																

Click **Reset Statistics** to set the totals back to zero.

ATM statistics

This page shows statistics from the gateway's low-level ATM protocol.

ATM Statistics
U.S.Robotics

Status
Internet
LAN
Wireless
Security
Device

In Octets	Out Octets	In Errors	In Unknown	In HEC Errors	In Invalid VPI VCI Errors	In Port Not Enable Errors	In PTI Errors	In Idle Cells	In Circuit Type Errors	In OAM RM CRC Errors	In GFC Errors
3502752	208224	0	0	0	0	0	0	0	0	0	0

AAL5 Interface Statistics

In Octets	Out Octets	In Ucast Pkts	Out Ucast Pkts	In Errors	Out Errors	In Discards	Out Discards
3502752	208224	10044	1243	0	0	0	0

AAL5 VCC Statistics

VPI/VCI	CRC Errors	SAR Timeouts	Oversized SDUs	Short Packet Errors	Length Errors
0/36	0	0	0	0	0

ATM layer statistics over the ADSL interface

Field	Description
In Octets	This is the number of octets received by the interface.
Out Octets	The number of octets transmitted over the interface.
In Errors	The number of cells dropped due to uncorrectable HEC errors.
In Unknown	The number of received cells discarded during cell header validation, including cells with unrecognized VPI/VCI values and cells with invalid cell header patterns. If the gateway is set up to discard cells with undefined PTI values, they are also counted here.
In HEC Errors	This is the number of cells received with HEC errors in ATM cell headers.
In Invalid VPI VCI Errors	The number of cells received with an unregistered VCC addresses.
In Port Not Enabled Errors	The number of cells received on ports that have not been enabled.
In PTI Errors	The number of cells received with a payload type indicator (PTI) error in the ATM header.
In Idle Cells	This is the number of idle cells received.
In Circuit Type Errors	The number of cells received with illegal circuit types.
In OAM RM CRC Errors	The number of OAM and RM cells received with cyclic redundancy check (CRC) errors.
In GFC Errors	The number of cells received with non-zero GFCs.

ATM AAL5 layer statistics over the ADSL interface

Field	Description
In Octets	This is the number of received AAL5/AAL0 CPCS PDU octets.
Out Octets	The number of transmitted AAL5/AAL0 CPCS PDU octets.
In Ucast Pkts	The number of received AAL5/AAL0 CPCS PDUs passed to higher layers.
Out Ucast Pkts	The number of AAL5/AAL0 CPCS PDUs received for transmission from higher layers.
In Errors	This is the number of AAL5/AAL0 CPCS PDUs received that contain errors. The errors include CRC-32 errors, SAR timeouts, and oversized SDUs.
Out Errors	The number of AAL5/AAL0 CPCS PDUs that could not be transmitted due to errors.
In Discards	The number of AAL5/AAL0 CPCS PDUs discarded due to input buffer overflow.
Out Discards	This field is not currently used.

ATM AAL5 layer statistics for each VCC over the ADSL interface

Field	Description
VPI/VCI	Each row in the third table represents a different VPI/VCI combination. This item is the VPI/VCI for each row. A VPI/VCI combination is sometimes called a VCC (virtual circuit channel).
CRC Errors	This is the number of PDUs received with CRC-32 errors.
SAR Timeouts	The number of partially-reassembled PDUs discarded because they were not fully reassembled within the required time period. If the re-assembly timer is not supported, this value is zero.
Oversized SDUs	The number of PDUs discarded because the corresponding SDUs were too large.
Short Packet Errors	This is the number of PDUs discarded because their length was less than the size of the AAL5 trailer.
Length Errors	The number of PDUs discarded because the PDU length did not match the length in the AAL5 trailer.
Reset button	Click this button to set the totals back to zero.

ADSL statistics

This page shows the signal attributes of the gateway's ADSL connection.

At the bottom of this page, there is a button for running a bit error rate (BER) test. This test determines the quality of the ADSL connection. There is information on this test below the table describing the fields.

Statistics
U.S.Robotics®

Status
Internet
LAN
Wireless
Security
Device

ADSL

Mode:	G.DMT	
Type:	Fast	
Line coding:	Trellis On	
Status:	No Defect	
Total ES:	0	
Total SES:	0	
Total UAS:	11	
	Downstream	Upstream
SNR margin (dB):	17.1	10.0
Attenuation (dB):	0.5	3.0
Output power (dBm):	7.8	11.9
Attainable rate (Kbps):	10976	1048
Rate (Kbps):	8000	832
K (number of bytes in DMT frame):	251	27
R (number of check bytes in RS code word):	0	0
S (RS code word size in DMT frame):	1	1
D (interleaver depth):	1	1
Super frames:	57752	57750
Super frame errors:	0	0
RS words:	0	0
RS correctable errors:	0	0
RS uncorrectable errors:	0	N/A
HEC errors:	0	0
OCF errors:	0	0
LCD errors:	0	0
ES errors:	0	0

This table describes the fields on the page:

Field	Description
Mode	This is the modulation protocol — G.DMT , T1.413 , or G.lite .
Type	The channel type, which can be Interleave or Fast .
Line coding	This indicates whether Trellis coding is off or on.
Status	This is the status of the DSL link.
Total ES	This is the total number of "error seconds" — seconds where there was at least one error.
Total SES	The total number of "severe error seconds" — seconds with ten or more errors.
Total UAS	The number of "unavailable seconds" — seconds when the ADSL link was unavailable.
SNR margin (dB)	This is a signal-to-noise ratio (SNR) margin for traffic going in both directions.
Attenuation (dB)	An estimate of the average loop attenuation downstream and upstream.
Output power (dBm)	The total output power in both directions.
Attainable rate	This is the maximum achievable downstream rate.
Rate (Kbps)	The actual rate at which data is flowing in both directions.
K	This is the number of data bytes in an ADSL

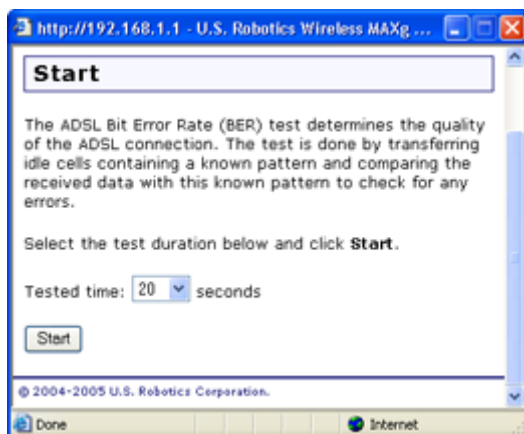
	data frame.
R	The number of redundant check bytes per Reed-Solomon code word.
S	The length of the Reed-Solomon code word, in data frames.
D	The interleaver depth.
Super frames	This is the total number of super frames.
Super frame errors	The number of super frames received that had errors.
RS words	This is the total number of Reed-Solomon code words.
RS correctable errors	The number of Reed-Solomon code words with correctable errors.
RS uncorrectable errors	The number of R-S code words that had uncorrectable errors.
HEC errors	The total number of header error checksum errors.
OCD errors	The number of out-of-cell delineation errors.
LCD errors	The total of lost-cell-delineation errors.
ES errors	The total extended superframe errors.

Bit error rate (BER) test

A bit error rate test is available from the ADSL statistics page. Follow this procedure to run a bit error rate test.

Warning: Running this test may cause your ADSL connection to be lost.

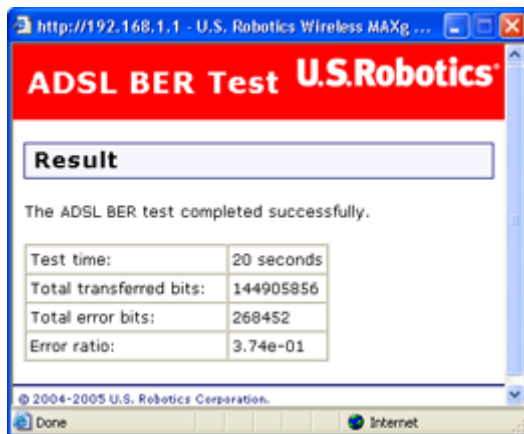
1. Below the table in the ADSL statistics page, click **ADSL BER Test**. This window appears:



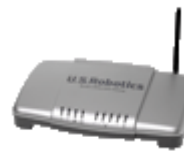
2. In **Tested time**, pick a length for the test. Then click **Start** when ready to begin the test. The window shows you the test status. You can click **Stop** any time to end the test.



3. The results appear in the window when the test is done.



Wireless MAXg ADSL Gateway User Guide


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Internet settings

These are the options available in the **Internet** menu:

- [WAN Setup](#)
- [ADSL Settings](#)
- [Default Gateway](#)
- [DNS Server](#)
- [Access Control - IP Addresses](#)
- [Access Control - Services](#)
- [Dynamic DNS](#)

WAN Setup

The WAN setup page allows you to edit or remove your ISP configuration that you set up either in EasyConfigurator or the quick setup wizard. Click **Edit** to modify the existing Internet connection, or **Add** to define a new one. You will then see a series of pages for entering networking parameters. The last page will have an **Apply** button to store the changes in your gateway. Click **Finish** to save.

WAN Setup
U.S. Robotics®

Status
Internet
LAN
Wireless
Security
Device

Press **Add**, **Edit**, or **Remove** to configure WAN interfaces. Press **Finish** to apply the changes and reboot the system.

VPI/VCI	Con. ID	Category	Service name	Interface name	Protocol	Encapsulation	Igmp	QoS	State	Remove	
0/36	1	UBR	pppoa_0_36_1	ppp_0_36_1	PPPoA	VC/MUX	Disabled	Disabled	Enabled	<input type="checkbox"/>	Edit

[Add](#)
[Remove](#)
[Finish](#)

To remove a Private Virtual Channel (PVC) from this table, click the **Remove** checkbox for the particular VPI/VCI to delete, then click the **Remove** button.

Configuring a Private Virtual Circuit (PVC)

The Wireless MAXg ADSL Gateway supports the following five ISP network operating modes over gateway ADSL interface:

- [PPP over Ethernet \(PPPoE\)](#)

- **PPP over ATM (PPPoA)**
- **MAC Encapsulated Routing (MER)**
- **IP over ATM (IPoA)**
- **Bridging**

The ISP network operating mode depends on the service provider's configuration on the Central Office side and Broadband Access Server (BRAS) for your ADSL line.

Your ISP should be able to provide the following, if needed:

- VPI/VCI values
- ADSL standard (Modulation)
- Encapsulation mode
- Authentication (PAP or CHAP), user name, and password for PPP connections

The following configuration considerations apply:

- If the service provider provides PPPoE service, then the connection selection depends on whether the LAN-side device (typically a computer) is running a PPPoE client or whether the gateway is to run the PPPoE client. The gateway can support both cases simultaneously. Consult your ISP instructions on the appropriate protocol to use.
- NAPT and firewall features are always enabled when PPPoE or PPPoA mode is selected, but they can be enabled or disabled by the user when MER or IPoA mode is selected. NAPT and firewall are always disabled when Bridge mode is selected.

1. Go to the **Internet** menu and select **WAN Setup**.

VPI/VCI	Con. ID	Category	Service name	Interface name	Protocol	Encapsulation	Igmp	QoS	State	Remove	
0/36	1	UBR	pppoa_0_36_1	ppp_0_36_1	PPPoA	VC/MUX	Disabled	Disabled	Enabled	<input type="checkbox"/>	Edit

2. Click **Add** to create a new PVC or **Edit** to modify an existing one.

3. Enter the appropriate VPI, VCI and service category. The valid VPI range is from 0 to 255. The valid VCI range is from 32 to 65535. Click **Next**.

Connection Type

The Connection Type page allows you to select the type of network protocol over the ATM PVC supported by the Internet Service Provider.

The screenshot shows the 'Connection Type' configuration page. At the top, there is a red header with 'U.S. Robotics' on the right. Below the header is a navigation bar with tabs for 'Status', 'Internet', 'LAN', 'Wireless', 'Security', and 'Device'. The 'Internet' tab is selected. The main content area contains the text: 'Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use.' There are five radio button options: 'PPP over ATM (PPPoA)', 'PPP over Ethernet (PPPoE)', 'MAC Encapsulation Routing (MER)', 'IP over ATM (IPoA)', and 'Bridging'. The 'Bridging' option is selected. Below the radio buttons is a dropdown menu for 'Encapsulation mode:' with 'LLC/SNAP-BRIDGING' selected. At the bottom left, there are 'Back' and 'Next' buttons.

Select the protocol as assigned by your ISP and proceed to the matching sections in this manual for further instructions.

PPP over ATM (PPPoA) / PPP over Ethernet (PPPoE)

1. Select the **PPP over ATM (PPPoA)** or **PPP over Ethernet (PPPoE)** radio button.
2. Select the appropriate Encapsulation Mode and click **Next**. The following page appears:

The screenshot shows the 'PPP User Name and Password' configuration page. At the top, there is a red header with 'U.S. Robotics' on the right. Below the header is a navigation bar with tabs for 'Status', 'Internet', 'LAN', 'Wireless', 'Security', and 'Device'. The 'Internet' tab is selected. The main content area contains the text: 'PPP usually requires that you have a user name and password to establish your Internet connection. Please enter the user name and password your ISP provided.' There are two text input fields for 'User name:' and 'Password:'. Below these is a dropdown menu for 'Authentication method:' with 'Automatic' selected. There is a text input field for 'MTU:' with '1500' entered, followed by the text 'bytes (PPPoE: 1-1492,PPPoA: 1-1500)'. There is a checked checkbox for 'Dial on demand (with idle timeout timer)' and a text input field for 'Inactivity timeout:' with '0' entered, followed by the text 'minutes (1-4320)'. There is an unchecked checkbox for 'PPP IP extension'. At the bottom left, there are 'Back' and 'Next' buttons.

The page provides fields to enter the **User name** and the **Password**. The user interface allows a maximum of 256 characters in the user name and a maximum of 32 characters in the password. For PPPoE, there is a PPPoE service name that can be blank unless your Internet Service Provider gives you a value to enter.

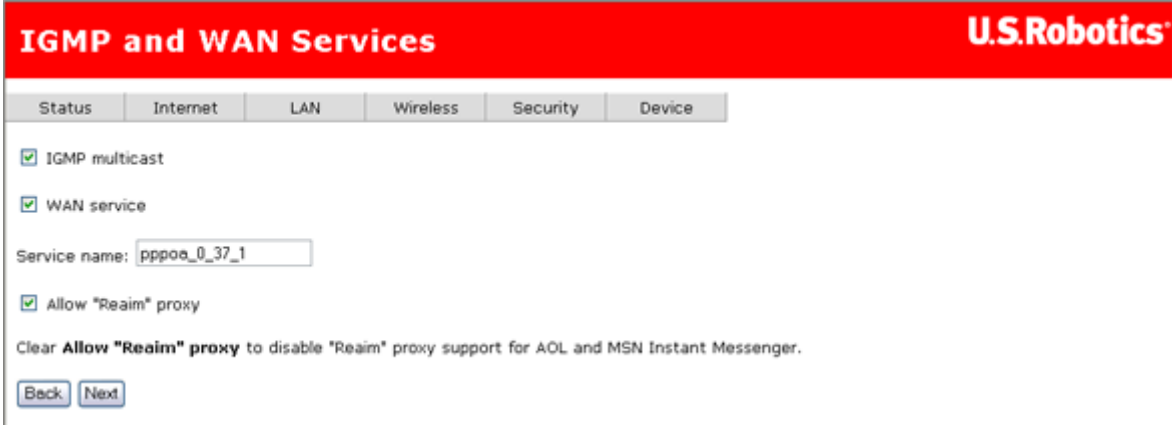
Authentication method is default to **Automatic**. It is recommended that you leave the **Authentication method** in **Automatic**, however, you may select **PAP** or **CHAP** if necessary. The default value for MTU (Maximum Transmission Unit) is **1500** for PPPoA and **1492** for PPPoE. Do not change these values unless your ISP asks you to.

The gateway can be configured to disconnect if there is no activity for a specific period of time by selecting the **Dial on demand** check box and entering the **Inactivity timeout**. The entered value must be between 1 minute to 4320 minutes.

The **PPP IP Extension** is a special feature deployed by some service providers. Unless your service provider specifically requires this setup, do not select it. If you need to select it, the PPP IP Extension supports the following conditions:

- It allows only one computer on the LAN.
- The public IP address assigned by the remote using the PPP/IPCP protocol is actually not used on the WAN PPP interface. Instead, it is forwarded to the computer's LAN interface through DHCP. Only one system on the LAN can be connected to the remote, since the DHCP server within the ADSL gateway has only a single IP address to assign to a LAN device.
- NAPT and firewall are disabled when this option is selected.
- The gateway becomes the default gateway and DNS server to the computer through DHCP using the LAN interface IP address.
- The gateway extends the IP subnet at the remote service provider to the LAN computer. That is, the PC becomes a host belonging to the same IP subnet.
- The ADSL gateway bridges the IP packets between WAN and LAN ports, unless the packet is addressed to the gateway's LAN IP address.

3. After entering your settings, click **Next**. The following page appears:



The screenshot shows a web-based configuration interface for a U.S. Robotics device. The page title is "IGMP and WAN Services" and the U.S. Robotics logo is in the top right corner. Below the title is a navigation bar with tabs for "Status", "Internet", "LAN", "Wireless", "Security", and "Device". The "Internet" tab is selected. The main content area contains the following settings:

- IGMP multicast
- WAN service
- Service name:
- Allow "Reaim" proxy

Below these settings is a note: "Clear **Allow 'Reaim' proxy** to disable 'Reaim' proxy support for AOL and MSN Instant Messenger." At the bottom of the form are two buttons: "Back" and "Next".

4. This page allows you to enable **IGMP multicast**, enable **WAN service**, specify a service name, and enable a "Reaim" proxy. After verifying and entering your settings, click **Next**.
5. The summary page presents the entire configuration summary. Click **Apply** if the settings are correct.

WAN Setup
U.S.Robotics

Status
Internet
LAN
Wireless
Security
Device

Summary

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 37
Connection type:	PPPoA
Service name:	pppoe_0_37_1
Service category:	UBR
IP address:	Automatically Assigned
Service state:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP multicast:	Enabled
Quality of service:	Disabled

Click **Apply** to accept these settings. Click **Back** to make any modifications.

After clicking **Apply**, the gateway saves the configuration to the memory and reboots. The WUI will not respond until the system is brought up again.

MAC Encapsulated Routing (MER)

To configure MER, do the following:

1. Select the **MAC Encapsulation Routing (MER)** radio button.
2. Select the appropriate **Encapsulation mode** and click **Next**. The following page appears:

WAN IP Settings
U.S.Robotics

Status
Internet
LAN
Wireless
Security
Device

Enter information provided to you by your ISP to configure the WAN IP settings.

Obtain an IP address automatically
 Use the following IP address:

WAN IP address:
WAN subnet mask:

Obtain default gateway automatically
 Use the following default gateway:

Use IP address:
 Use WAN interface: pppoe_0_37_1/nas_0_37

Obtain DNS server addresses automatically
 Use the following DNS server addresses:

Primary DNS server:
Secondary DNS server:

The values should be provided by your ISP.

3. If IP addressing can be obtained automatically through the DHCP client in the gateway, select **Obtain an IP address automatically**; otherwise, enter the WAN interface IP address and subnet mask.

If you can get a **Default Gateway** address automatically through the DHCP client, select **Obtain default gateway automatically**. Otherwise, select **Use the following gateway**, check **Use IP address** and enter the gateway address provided by your ISP, and check **Use WAN interface**.

If DNS server addresses can be obtained automatically through the DHCP, select **Obtain DNS server addresses automatically**; otherwise, enter the preferred DNS server address and the optional alternative DNS server address and click **Next**. The following page appears:

The screenshot shows the 'Network Address Translation Settings' page. At the top, there is a red header with 'Network Address Translation Settings' and the 'U.S. Robotics' logo. Below the header is a navigation bar with tabs for 'Status', 'Internet', 'LAN', 'Wireless', 'Security', and 'Device'. The main content area contains a description of NAT, followed by three checked checkboxes: 'NAT', 'Firewall', and 'Allow "Reaim" proxy'. Below this is a section titled 'IGMP Multicast and WAN Service' with two checked checkboxes: 'IGMP Multicast' and 'WAN service'. A text input field for 'Service name' contains the value 'pppoe_0_37_1'. At the bottom, there are 'Back' and 'Next' buttons.

- **NAT** checkbox: If the LAN is configured with a private IP address, select this checkbox. If a private IP address is not used on the LAN side, deselect this checkbox.
 - **Firewall** checkbox: If the firewall checkbox is selected, you can configure firewall features after the system comes up from the reboot. If firewall is not used, this checkbox should be de-selected.
 - **Allow "Reaim" proxy** checkbox: Enable this if you want support for AOL or MSN Instant Messenger.
 - You can enable **IGMP Multicast** (mostly used in video streaming), enable **WAN service**, and set the service name.
4. Click **Next**.

WAN Setup **U.S. Robotics**

Status Internet LAN Wireless Security Device

Summary

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 37
Connection type:	MER
Service name:	pppoe_0_37_1
Service category:	UBR
IP address:	Automatically Assigned
Service state:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP multicast:	Enabled
Quality of service:	Disabled

Click **Apply** to accept these settings. Click **Back** to make any modifications.

The summary page presents the entire configuration summary. Click **Apply** to complete the configuration (which requires about 1 minute to complete) or **Back** to change any of the settings.

IP over ATM (IPoA) - (RFC2684 Routed)

To configure IP over ATM (IPoA), do the following.

1. Select the **IP over ATM (IPoA)** radio button.
2. Select the appropriate **Encapsulation mode** and click **Next**. The following page appears:

WAN IP Settings **U.S. Robotics**

Status Internet LAN Wireless Security Device

Enter information provided to you by your ISP to configure the WAN IP settings.

Notice: DHCP is not supported in IPoA mode. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from other WAN connection.

WAN IP address:

WAN subnet mask:

Use the following default gateway:

Use IP address:

Use WAN interface:

Use the following DNS server addresses:

Primary DNS server:

Secondary DNS server:

3. Enter the **WAN IP address** and **WAN subnet mask** provided by your Internet Service Provider.

If you want to set the default gateway, enable **Use the following default gateway** and enter an IP address and/or select an interface.

If you want to set a DNS server address, enable **Use the following DNS server addresses** and IP addresses for a primary and optional secondary DNS server.

Click **Next** to continue.

4. This page appears:

The screenshot shows the 'Network Address Translation Settings' page. At the top, there is a red header with 'Network Address Translation Settings' on the left and 'U.S. Robotics' on the right. Below the header is a navigation bar with tabs for 'Status', 'Internet', 'LAN', 'Wireless', 'Security', and 'Device'. The 'Internet' tab is selected. The main content area contains the following text: 'Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN). Clear NAT to enable DHCP relay. Clear Allow "Reaim" Proxy to disable "Reaim" proxy support for AOL and MSN Instant Messenger.)'. There are three checked checkboxes: 'NAT', 'Firewall', and 'Allow "Reaim" proxy'. Below these is a section titled 'IGMP Multicast and WAN Service' with a light blue background. This section contains two checked checkboxes: 'IGMP Multicast' and 'WAN service'. Below the checkboxes is a text input field for 'Service name' containing the text 'pppoe_0_37_1'. At the bottom of the page are two buttons: 'Back' and 'Next'.

- **NAT** checkbox: If the LAN is configured with a private IP address, you should select this checkbox. If a private IP address is not used on the LAN side, deselect this checkbox to free up system resources for better performance.
- **Firewall** checkbox: If the firewall checkbox is selected, you may configure firewall features after the system comes up from the reboot. If the firewall is not used, de-select this checkbox to free up system resources for better performance.
- **Allow "Reaim" proxy** checkbox: Enable this if you want support for AOL or MSN Instant Messenger.
- You can also enable **IGMP Multicast** (used mostly for video streaming), enable **WAN service**, and set the service name.

Click **Next** to continue.

5. The summary page presents the entire configuration summary. Click **Apply** if the settings are correct.

WAN Setup **U.S.Robotics**

Status | Internet | LAN | Wireless | Security | Device

Summary

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 37
Connection type:	IPoA
Service name:	pppoe_0_37_1
Service category:	UBR
IP address:	192.168.3.1
Service state:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP multicast:	Enabled
Quality of service:	Disabled

Click **Apply** to accept these settings. Click **Back** to make any modifications.

Bridging (RFC 2684)

Select the bridge operating mode if your ADSL service provider tells you that you should.

To configure bridging, do the following:

1. Select the **Bridging** radio button.
2. Select the appropriate **Encapsulation mode** and click **Next**. The following screen appears:

Quality of Service **U.S.Robotics**

Status | Internet | LAN | Wireless | Security | Device

Clear the check box below to disable this WAN service.

Enable bridge service

Service name:

3. Enable or disable bridge service and enter a bridge service name. Click **Next**.
4. The summary page presents the entire configuration summary. Click **Apply** if the settings are correct or **Back** to change any of the settings.

WAN Setup
U.S.Robotics

Status
Internet
LAN
Wireless
Security
Device

Summary

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 37
Connection type:	Bridge
Service name:	ppp0a_0_37_1
Service category:	UBR
IP address:	Not Applicable
Service state:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP multicast:	Not Applicable
Quality of service:	Disabled

Click **Apply** to accept these settings. Click **Back** to make any modifications.

After completing the setup process, you need to release and renew the IP address for the computer connected to the gateway. Then you should be able to browse the Internet.

ADSL Settings

You can use this page to enable or disable ADSL standards for interoperability with your ISP's ADSL network. In most cases, your connection will use **G.DMT** (an ITU-T DSL specification). However, if you experience poor performance or DSL link disruptions, uncheck all but **T1.413** and click **Apply**. You can also contact your ISP for more information or instructions.

ADSL Settings
U.S.Robotics

Status
Internet
LAN
Wireless
Security
Device

Modulation

Select the modulation:

- G.DMT
- G.lite
- T1.413
- ADSL2
- AnnexL
- ADSL2+
- AnnexM

Capability:

- Bitswap
- SRA

Advanced ADSL Settings (ADSL Testing)

The **DSL Advanced Settings** page allows you to select a test mode, which you will generally only do when requested by your Internet Service Provider.

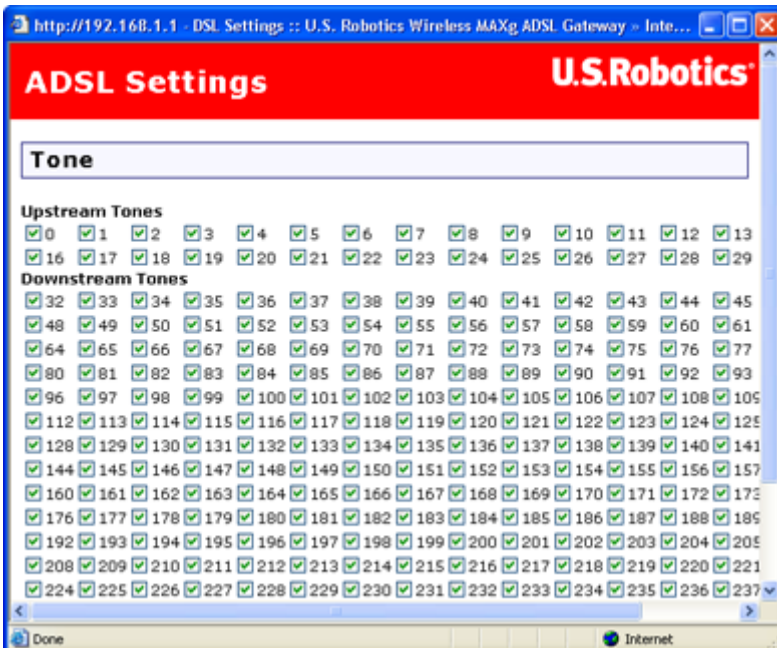
Warning!! Running tests in this page may make your DSL service inoperable. Do not use it unless your ISP asks you to. These tests are designed for use by a Service Provider technician only.



The screenshot shows the "ADSL Settings" page with the "Advanced" tab selected. Under "Select the test mode:", there are four radio button options: "Normal" (selected), "Reverb", "Medley", and "No retrain". There are "Apply" and "Tone Selection" buttons at the bottom.

Tone Selection

If you click on the **Tone Selection** button from the previous page, this window opens.



The screenshot shows the "Tone Selection" window. It has a red header with "ADSL Settings" and "U.S.Robotics". Below the header is a "Tone" tab. The window contains two sections: "Upstream Tones" and "Downstream Tones". Each section has a list of checkboxes numbered from 0 to 237. All checkboxes are currently checked.

Warning: Do not change these settings unless you are instructed to do so by your Internet Service Provider.

You can check or clear all checkboxes by clicking **Check All** or **Clear All**; then click **Apply**.

Default Gateway

In this page, you enter data for the default gateway that your Wireless MAXg ADSL Gateway connects to — in other words, your ISP's machine that your ADSL Gateway communicates with to access the Internet.

The screenshot shows the 'LAN' configuration page for a U.S. Robotics device. The page has a red header with 'LAN' on the left and 'U.S. Robotics' on the right. Below the header is a navigation bar with tabs for 'Status', 'Internet', 'LAN', 'Wireless', 'Security', and 'Device'. The 'LAN' tab is selected. The main content area is titled 'Default Gateway'. It contains the following text: 'If the **Automatically-assigned default gateway** check box is selected, this gateway will accept the first received default gateway assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s). If the check box is cleared, enter the static default gateway AND/OR a WAN interface. Press **Apply** to save it.' Below this is a **Note**: 'If you select the **Automatically-assigned default gateway** check box, you must reboot the gateway to obtain an automatically-assigned default gateway.' There are three checkboxes: 'Automatically-assigned default gateway' (unchecked), 'Use default gateway IP address:' (unchecked), and 'Use WAN interface:' (unchecked). The 'Use WAN interface:' checkbox is followed by a dropdown menu showing 'pppoe_0_36_1/ppp_0_36_1'. At the bottom are two buttons: 'Apply' and 'Reboot Gateway'.

If you want to automatically get the IP address of the ISP's gateway, enable **Automatically-assigned default gateway**. This makes the user-assigned fields disappear. If you select **Automatically-assigned default gateway**, the change does not take effect until you restart the device, which you can do by clicking **Apply**, then **Reboot Gateway**.

If you are configuring your ADSL Gateway for either **Routed Mode (IPoA)** or **Static MER Mode**, you should both enter a static default gateway IP address for the ISP's gateway *and* select the appropriate WAN interface.

Note: You should have both **Use default gateway IP address** and **Use WAN interface** selected at the same time, as they are compatible with each other.

DNS Server Configuration

In this page, you can tell the gateway how to select a domain name service (DNS).

The screenshot shows the 'LAN' configuration page for a U.S. Robotics device, specifically the 'DNS Server' section. The page has a red header with 'LAN' on the left and 'U.S. Robotics' on the right. Below the header is a navigation bar with tabs for 'Status', 'Internet', 'LAN', 'Wireless', 'Security', and 'Device'. The 'LAN' tab is selected. The main content area is titled 'DNS Server'. It contains the following text: 'If the **Automatically-assigned DNS** check box is selected, this gateway will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is cleared, enter the primary and optional secondary DNS server IP addresses. Press **Apply** to save it.' Below this is a **Note**: 'If you select the **Automatically-assigned DNS** check box, you must restart the gateway to get the automatically-assigned DNS addresses.' There are three checkboxes: 'Automatically-assigned DNS' (unchecked), 'Primary DNS server:' (unchecked), and 'Secondary DNS server:' (unchecked). Below the 'Secondary DNS server:' checkbox are two empty text input fields. At the bottom are two buttons: 'Apply' and 'Restart Gateway'.

If you enable **Automatically-assigned DNS**, the gateway uses the DNS IP address provided by your Internet Service Provider during account verification, and the user-defined fields disappear. To manually specify one or more domain name services, disable **Automatically-assigned DNS** and enter the IP addresses of a primary and optionally a secondary DNS.

If you are configuring your gateway for either routed mode or static MER mode, you will need to manually assign a DNS address in the **Primary DNS server** field. You could also optionally enter a secondary DNS server.

These settings will take effect only after you click **Apply**. Then restart the gateway.

Access Control - IP Addresses

This page lets you control access to the gateway's Web user interface device management functions. You can enable or disable access to these functions by IP addresses on your local network. To add an IP address to the list, select **Add**. To remove an IP address from the list, select the appropriate checkbox in the **Remove** column and click the **Remove** button.

Access Control - IP Addresses U.S. Robotics

Status Internet LAN Wireless Security Device

An Access Control List (*ACL*) enables or disables users from managing the DSL Gateway.

Access control mode: Disable Enable

IP Address Remove

Add Remove

Access Control - Services

In this page you can enable or disable access to various Internet services for systems connected to the gateway (in the **LAN** column) and machines on the Internet (the **WAN** column). Click **Apply** to save changes.

Internet
U.S.Robotics®

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Access Control – Services

You can control access to various Internet services for local network systems (LAN) and the Internet. For example, to allow remote access to your ADSL Gateway select the **HTTP Internet** check box.

Services	LAN	Internet (WAN)
FTP	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HTTP	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ICMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SNMP	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SSH	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TELNET	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TFTP	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Dynamic DNS

A DNS (Domain Name Service) resolves an Internet address such as **www.usr.com** into an IP address. A dynamic DNS service allows you to assign a Web name like **myUSRrouter.dynDNS.com** to your router, making it accessible from the Internet without having to know the router's IP address assigned by the service provider.

In this page, you can set parameters that will allow the domain name services to find your gateway. You would use this to bypass the dynamic nature of WAN IP addressing, to have a consistent host name accessible from the Internet.

Note: You will need dynamic DNS service provided by a third part to use this feature.

Dynamic DNS
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Add Dynamic DDNS

This page allows you to add a Dynamic DNS address from DynDNS.org or TZO.

Dynamic DNS provider:

Host name:

Interface:

Dynamic DNS Settings

User name:

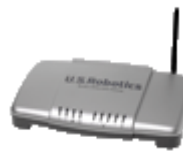
Password:

Enter dynamic DNS information and click **Add**. To remove, select the host name remove

option and click **Remove**.

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Wireless MAXg ADSL Gateway User Guide

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LAN information

These are the options available in the **LAN** menu:

- [DHCP Server](#)
- [Video Interfaces](#)
- [Routing - Routing Table](#)
- [Routing - Static Route](#)
- [Routing - RIP](#)
- [Routing - ARP Table](#)
- [DHCP Clients](#)
- [Quality of Service](#)

DHCP Server

In this page, you can use DHCP (Dynamic Host Configuration Protocol) to control the assignment of IP addresses on your local network (LAN only).

If you make any changes, click **Apply** to save them. They do not take effect, though, until you restart the device, which you can do by clicking **Reboot Gateway**.

LAN **U.S.Robotics®**

Status Internet LAN Wireless Security Device

DHCP Server

Configure the DSL gateway IP address and subnet mask for LAN interface.

IP address:

Subnet mask:

Disable DHCP server

Enable DHCP server

Start IP address:

End IP address:

Lease time: hours

Enable DHCP server relay

DHCP server IP address:

Configure the second IP address and subnet mask for LAN interface

IP address:

Subnet mask:

Universal Plug-n-Play

Universal Plug-n-Play (UPnP)

802.1d

802.1d spanning tree protocol

Item	Description
IP address	This is the IP address that other devices on your local network will use to connect to the gateway.
Subnet mask	This defines the size of your network. The default is 255.255.255.0 .
Disable / Enable DHCP server	The DHCP server assigns an IP addresses from a pre-set pool of addresses upon request from DHCP client (e.g. your computer). Do not disable the DHCP server unless you wish to let another device handle IP address issuance on the local network.
Start / end IP address	This is the beginning and ending range for the DHCP server addresses.
Lease time	The amount of time before the IP address is refreshed by the DHCP server.
Configure the second IP address and...	Use this feature to create a public network on your local LAN, accessible from the Internet. By assigning an address to this interface and then statically setting your LAN clients to the same network, the LAN clients are accessible from the public network (e.g. FTP or HTTP servers).
Universal Plug-n-Play	Universal Plug and Play© is a Microsoft standard for devices to identify themselves to a Windows system for automatic installation and configuration.
802.1d spanning tree protocol	This resolves multiple bridged paths in a network. Only advanced users should enable this feature.
DHCP server relay	Inform the gateway of another DHCP server on your LAN. To do this, disable the DHCP server on the gateway. Then input the IP address of the current DHCP server. Click Apply and restart the gateway.

Video Interfaces

Use this page to re-direct ATM traffic to a specific Ethernet or wireless port, or a group of ports. An application such as multicast streaming of video data to set-top boxes requires this interface. Do not create a bridge group without dedicated ATM service from your Internet

Service Provider.

Video Interfaces
U.S.Robotics

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Multiple LAN interfaces can be mapped to PVC and bridging groups. Each group will perform as an independent network. To support this feature, you must create mapping groups with appropriate LAN and WAN interfaces using the **Add** button. The **Remove** button will remove the grouping and add the ungrouped interfaces to the Default group. A maximum 16 entries can be configured

Enable virtual ports on LAN interface

Group Name	Interfaces	Remove	Edit
Default	eth0, Wireless	N/A	N/A

Click on **Add** to create a new bridge group.

Routing - Routing Table

The routing table shows the IP addresses or address routes for the computers connected to the gateway to reach different destinations, such as the local network, the gateway, or the outside world beyond the gateway (i.e., the Internet). Here is an example of how it might look:

Routing - Routing Table
U.S.Robotics

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Flags: U - up, I - reject, G - gateway, H - host, R - reinstate
D - dynamic (redirect), M - modified (redirect).

Destination	Gateway	Subnet Mask	Flag	Metric	Service	Interface
192.168.0.254	0.0.0.0	255.255.255.255	UH	0	pppoa_0_36_1	ppp_0_36_1
192.168.1.0	0.0.0.0	255.255.255.0	U	0		br0
0.0.0.0	192.168.0.254	0.0.0.0	UG	0	pppoa_0_36_1	ppp_0_36_1

This table describes each row in the above example.

Row	Description
1	This row shows how the gateway gets to the ISP's gateway, using the pppoa_0_36_1 interface.
2	This shows how the gateway communicates with the LAN interface, using the br0 interface.
3	This data shows how the gateway accesses the Internet, using the pppoa_0_36_1 interface and the ISP's gateway at address 192.168.0.254 .

Routing - Static Route

This page lets you set up static routes to connect machines not on the gateway's local network. A system is not on this local network if the third number in its IP address does not match the third number in the gateway's IP address (for example, if you haven't changed the

gateway's IP address from **192.168.1.x**, a machine whose address does not have **1** as the third number is not on the local network).

The page looks like this when no static routes have been defined:

To define a static route, click **Add**. Another page opens:

Specify settings and click **Apply** when done. This returns you to the previous page, which now shows the new static route data.

Routing - RIP

If you connect another router or gateway to your Wireless MAXg ADSL Gateway, the RIP feature helps the two devices share their routing tables. The gateway supports RIP versions 1 and 2.

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Routing — RIP

To activate RIP for the device, select the **Enabled** radio button for Global RIP Mode. To configure an individual interface, select the desired RIP version and operation, followed by selecting the **Enabled** check box for the interface. Press the **Apply** button to save the configuration, and to start or stop RIP based on the Global RIP mode selected.

Global RIP mode: Disabled Enabled

Interface	VPI/VCI	Version	Operation	Enabled
br0	(LAN)	2	Active	<input type="checkbox"/>
ppp_0_36_1	0/36	2	Passive	<input type="checkbox"/>

Under **Operation**, **Active** means that this gateway sends its routing table data to other gateways and routers, and **Passive** means that it receives this data from other devices but does not send it.

Routing - ARP Table

The ARP table shows the IP and MAC addresses for all computers that have transferred data to the gateway.

Note: This table is not saved when you restart the gateway.

Routing - ARP Table
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IP address	Flags	MAC Address	Device
192.168.1.2	Complete	00:B0:D0:B5:F8:9F	br0

DHCP Clients

The DHCP client page shows the system name, MAC address, IP address, and the amount of time until session expiration for all computers connected to the gateway. The lease time is a maximum session length assigned by the gateway's DHCP server whenever a system logs on to it.

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DHCP Clients

Host Name	MAC Address	IP Address	Lease Time Remaining
BWATSONXP	00:B0:D0:B5:F8:9F	192.168.1.2	23 hours, 29 minutes, 13 seconds

Quality of Service

The Quality of Service feature is useful when some of the traffic handled by the gateway has higher importance than other data being handled at the same time. For example, you might set up your computer to make telephone calls over the Internet. If you have a voice conversation while your computer is also downloading a file, you would want the voice conversation to take precedence over the file download, since delays in transmitting voice messages would cause signal dropouts and poor sound quality.

How QoS works

The QoS feature would help you if all of the following conditions are met:

- The PVC is not in bridge mode (that is, the WAN protocol can be in **PPPoA**, **PPPoE**, **IPoA** or **MER**)
- The PVC is set to one of the following ATM service categories:
 - **UBR-with-PCR**
 - **UBR-without-PCR**
 - **Non-realtime-VBR**
- There are enough ATM TX queues left in the system.

QoS classifies traffic according to classification rules you define. Each rule may contain a combination of the following conditions: protocol (TCP/UDP/ICMP), source IP address/subnet mask, destination IP address/subnet mask, source port (one or range), destination port (one or range). Any session that matches a classification rule receives a certain priority (high, medium, low) and a type of service (normal service, minimum cost, maximum reliability, maximum throughput, or minimum delay).

The priority of the matching rule determines which ATM TX queue to send over the PVC if the packet is routed to this PVC. ATM picks packets to process according to these priorities:

1. ATM service categorizes from the highest to lowest order: CBR, rt-VBR, rrt-VBR, UBR.
2. For the same service category: Priority level from high, medium, to low.
3. For the same priority level: round robin.

QoS only works for QoS-enabled PVCs. If data is routed to a regular QoS-disabled PVC, it will receive the same priority level as the low priority of a QoS-enabled PVC in the same ATM service category.

Enabling QoS

To enable the QoS feature, follow this procedure:

1. Go to the **Internet** menu and select **WAN Setup**.
2. From there, click either **Add** or **Edit**.
3. In the resulting page, click **Enable Quality of Service**.

Configuring QoS

To set up QoS, you define one or more *classes* of data traffic. This is how the page looks if there are no QoS classes:



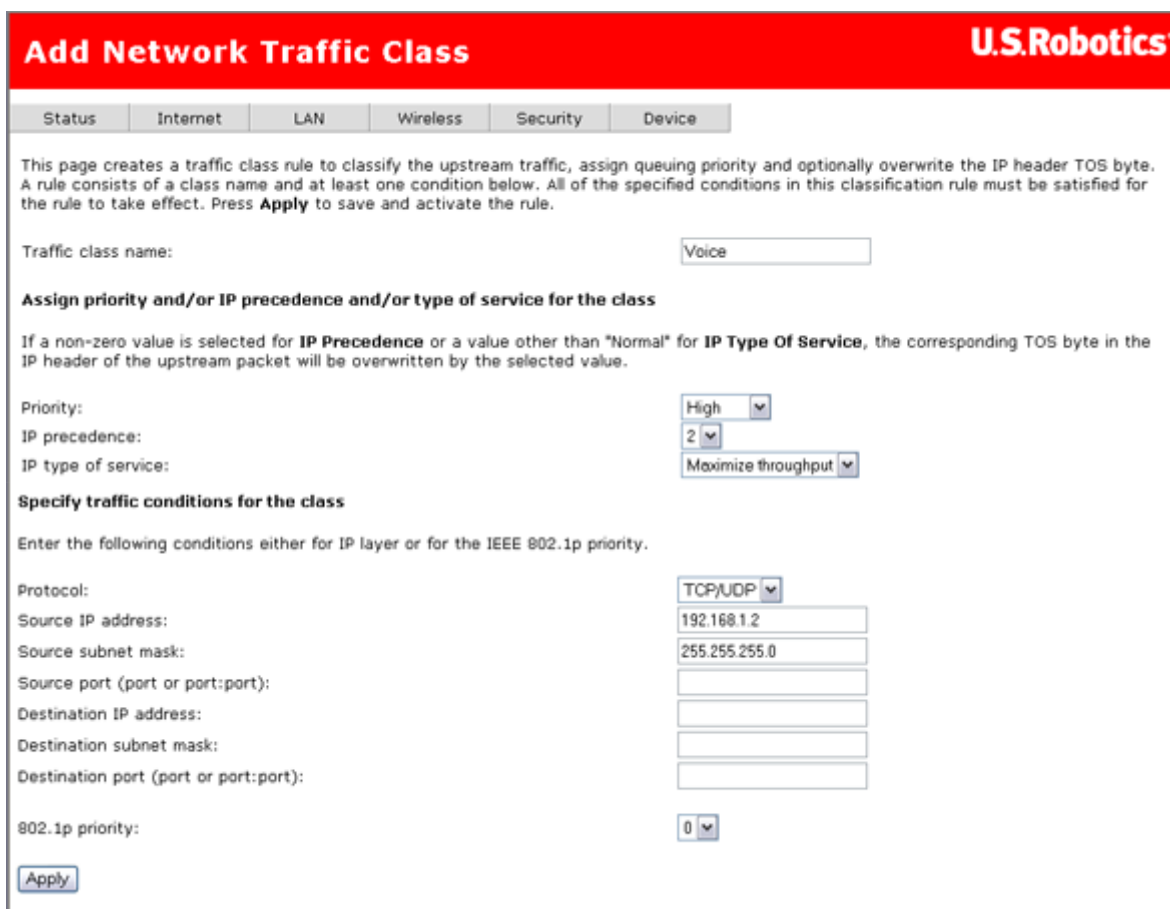
Quality of Service U.S.Robotics

Status Internet LAN Wireless Security Device

Press **Add** or **Remove** to configure network traffic classes.

Class Name	Priority	IP Precedence	IP Type of Service	802.1P	Protocol	Source Address / Mask	Source Port	Dest. Address / Mask	Dest. Port	Remove
<input type="button" value="Add"/> <input type="button" value="Remove"/>										

Define a class by clicking **Add** and entering class parameters.



Add Network Traffic Class U.S.Robotics

Status Internet LAN Wireless Security Device

This page creates a traffic class rule to classify the upstream traffic, assign queuing priority and optionally overwrite the IP header TOS byte. A rule consists of a class name and at least one condition below. All of the specified conditions in this classification rule must be satisfied for the rule to take effect. Press **Apply** to save and activate the rule.

Traffic class name:

Assign priority and/or IP precedence and/or type of service for the class

If a non-zero value is selected for **IP Precedence** or a value other than "Normal" for **IP Type Of Service**, the corresponding TOS byte in the IP header of the upstream packet will be overwritten by the selected value.

Priority:

IP precedence:

IP type of service:

Specify traffic conditions for the class

Enter the following conditions either for IP layer or for the IEEE 802.1p priority.

Protocol:

Source IP address:

Source subnet mask:

Source port (port or port:port):

Destination IP address:

Destination subnet mask:

Destination port (port or port:port):

802.1p priority:

Add Network Traffic Class
U.S.Robotics®

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This page creates a traffic class rule to classify the upstream traffic, assign queuing priority and optionally overwrite the IP header TOS byte. A rule consists of a class name and at least one condition below. All of the specified conditions in this classification rule must be satisfied for the rule to take effect. Press **Apply** to save and activate the rule.

Traffic class name:

Assign priority and/or IP precedence and/or type of service for the class

If a non-zero value is selected for **IP Precedence** or a value other than "Normal" for **IP Type Of Service**, the corresponding TOS byte in the IP header of the upstream packet will be overwritten by the selected value.

Priority:

IP precedence:

IP type of service:

When you click **Apply**, the new class appears in the table.

Quality of Service
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Status	Internet	LAN	Wireless	Security	Device
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Press **Add** or **Remove** to configure network traffic classes.

Class Name	Priority	IP Precedence	IP Type of Service	802.1P	Protocol	Source Address / Mask	Source Port	Dest. Address / Mask	Dest. Port	Remove
Voice	High	2	Maximize Throughput	0	TCP/UDP	192.168.1.2 / 255.255.255.0				<input type="checkbox"/>

For a tutorial on configuring the QoS feature, please [click here](#).