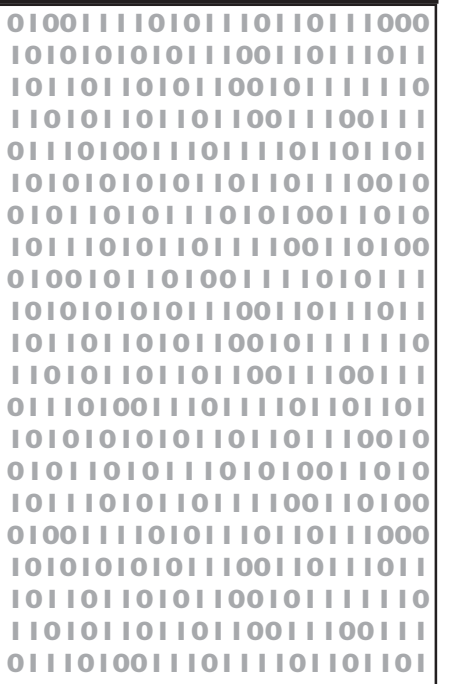
RCA

digital **BROADBAND**

Wireless Cable Gateway



Safety Information

CAUTION
Disconnect power before servicing.

CAUTION
To ensure reliable operation and to prevent overheating, provide adequate ventilation for this modem and keep it away from heat sources. Do not locate near heat registers or other heat-producing equipment. Provide for free air flow around the cable modem and its power supply.

CABLE INSTALLER:

This reminder is provided to call your attention to Article 820-40 of the National Electrical Code (Section 54 of the Canadian Electrical Code, Part 1) which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.

DOCSIS compliant

This product was designed according to Data Over Cable Service Interface Specifications. It will operate on any DOCSIS-compliant Hybrid Fiber Coax (HFC) cable system and offers DOCSIS Baseline Privacy to promote secure Internet transactions.

Power cord Requirement

This product must be operated with the supplied line cord or with a line cord meeting IEC227 H03 VV-F or IEC227 H03 VVH2-F having conductors with a cross-sectional area not less than .75mm^2.

Operating Information

Operating Temperature:0˚ - 40˚ C (32˚ - 104˚ F)

Storage Temperature:-30˚ to 65˚ C

If you purchased this product at a retail outlet, please read the following:

Product Registration

Please fill out the product registration card that came with this product and return it immediately. Returning the card allows us to contact you if needed.

Keep your sales receipt to obtain warranty parts and service and for proof of purchase. Attach it here and record the serial and model numbers in case you need them. The numbers are located on the back of the product.

Model No. _____ Serial No _____

Purchase Date: _____ Dealer/Address/Phone: _____

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Chapter 1: Connections and Setup

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Chapter 1: Connections and Setup

Introduction

Wireless Cable Gateway Features

Thank you for purchasing the DCW615 Wireless Cable Gateway. This device delivers the highest performance in data over cable technology. Ideal for home and small business users, this easy-to-use communication device offers reliable connectivity as well as remarkable data transfer rates – up to 600 times faster than a 56K dial-up modem. Once the DCW615 is activated, you are online to enjoy real-time 3D animation, video conferencing, and perform other data intensive tasks.

The Wireless Cable Gateway provides high-speed, reliable and secure transport capabilities and is designed with DOCSIS upgrade ability for both DOCSIS 1.0 and 1.1. The gateway offers anti-spoofing functions, resulting in greater subscriber privacy and higher system availability. Advanced features such as HomePNA2.0, WLAN IEEE 802.11b, NAT, Firewall, VPN pass through and CableHome are also available now and can be configured.

What's on the CD-ROM

If you connect a PC using the USB port on your gateway, you'll need the USB drivers found on the CD-ROM.

CD-ROM Contents:

- Electronic copy of this user's guide (.pdf format)
- Adobe Acrobat Reader — application you can load to read .pdf format, if you don't have it loaded already
- USB drivers — required if connecting by USB

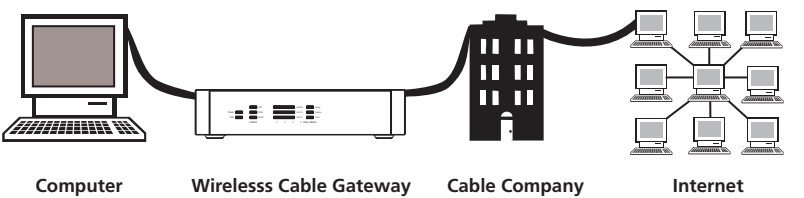
Computer Requirements

- USB 1.0 or 1.1 (PC only), Ethernet (10/100), 802.11b, or HPNA 1.0 or 2.0 connectivity
- A TCP/IP network protocol for each machine
- A network cable with RJ-45 connector for Ethernet connection
- Microsoft Internet Explorer 4.0 or later, or Netscape Navigator 4.0 or later. (5.0 and 4.7 or later, respectively, are strongly recommended.)
- Windows Me, 2000, or XP for USB

Wireless Cable Gateway Overview

Cable Internet Service Requirements

- cable company that offers DOCSIS-compliant Internet services



What the Wireless Cable Gateway Does

The Digital Wireless Cable Gateway serves as a two-way high-speed bridge between your personal computer and a cable Internet Service Provider (ISP). It converts information that originates from the Internet or your computer into electronic messages that can be transported over the same wires your cable company uses to transport video signals.

What the Wireless Cable Gateway Needs to Do Its Job

- **The Right Cable Company:** Make sure your cable company provides data services that use cable TV industry-standard DOCSIS technology.

- **The Internet Service Provider (ISP):** Your cable company provides you access to an Internet Service Provider (ISP). The ISP is your gateway to the Internet. It provides you with a pipeline to access Internet content on the World Wide Web (WWW).

  Check with your cable company to make sure you have everything you need to begin; they'll know if you need to install special software or re-configure your computer to make your cable Internet service work for you.

Contact Your Local Cable Company

You will need to contact your cable company to establish an Internet account before you can use your gateway. You should have the following information ready (which you will find on the sticker on the gateway) :

- The serial number
- The model number
- The Media Access Control (MAC) address

Record your information here:

Serial Number: _____

Model Number: _____

MAC Address: _____

Please verify the following with the cable company:

- The cable service to your home supports DOCSIS-compliant two-way modem access.
- Your Internet account has been set up.
- You have a cable outlet near your PC and it is ready for cable modem service.

Note: It is important to supply power to the modem at all times. Keeping your modem plugged in will keep it connected to the Internet. This means that it will always be ready when you are. To disconnect your computer from the Internet, use the ON/OFF button to put the modem in standby mode.

Important Information

Your cable company should always be consulted before installing a new cable outlet. Do not attempt any rewiring without contacting your cable company first.

System Overview

The Wireless Cable Gateway is connected between your cable company and the PCs within your home, as pictured previously in the Wireless Cable Gateway Overview. The connection to the cable company is made by a coaxial cable, and is referred to as the WAN (Wide Area Network) side of your Wireless Cable Gateway. The connections to your PCs are made by your choice of several standard home networking methods: Ethernet, USB, 802.11b Wireless, or HPNA 2.0, and are referred to as the LAN (Local Area Network) side of your Wireless Cable Gateway. Multiple PCs can use any or all of the LAN side connections simultaneously to share your single cable company connection, up to a maximum of 254 PCs total.

Unlike a simple hub or switch, the gateway's setup consists of more than simply plugging hardware together. You'll need to configure your networked PCs to accept the IP addresses the gateway assigns them (if applicable), and you will also need to configure the gateway with settings provided by your cable company.

Understanding the Wireless Cable Gateway

Connections

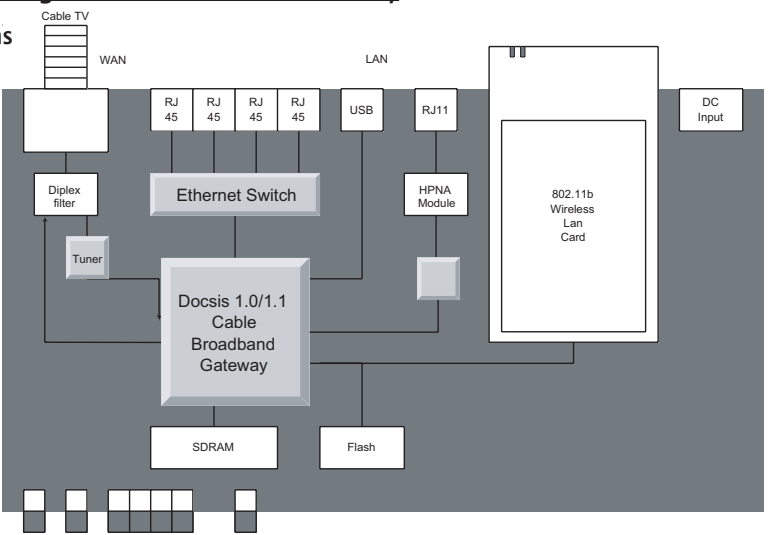


Fig. 1

Your PC: Installing a PC Network Card

If your PC does not already support Ethernet or USB, you must install a network interface card. Following is an example setup procedure:

1. Install an Ethernet card on your motherboard, following the card's directions.
2. Power up your PC and follow the **Add New Hardware Wizard**'s instructions to install the driver. When asked to restart your computer at the end of the installation, click **Yes**.
3. After restarting the system, right-click **My Computer** on the desktop, select **Properties**, click the **Device Manager** tab, and then double-click **Network adapters** to confirm that the Ethernet driver is properly installed.

Your PC: Installing a TCP/IP Stack

Follow these instructions to install the TCP/IP protocol stack on one of your PCs *only* after a network card has been successfully installed inside the PC. These instructions are for Windows Me. For TCP/IP setup under Windows NT, 2000, and XP, refer to your Windows documentation.

1. Click the **Start** button. Choose **Settings** and then **Control Panel**.

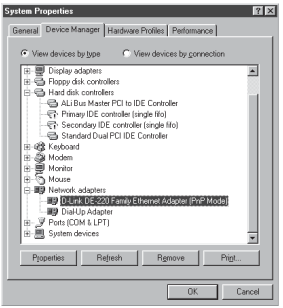


Fig. 8

2. Double-click on the **Network** icon to bring up your Network window. Select the **Configuration** tab.
3. Click the **Add** button.
4. Double-click on **Protocol**.

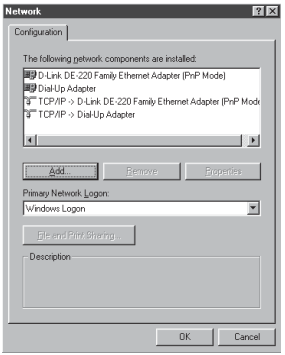


Fig. 9

5. Highlight **Microsoft** under the list of manufacturers.
6. Find and double-click **TCP/IP** in the list to the right (see Figure 9).

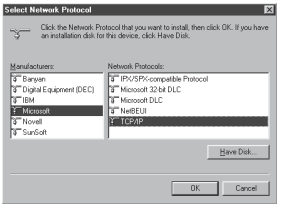


Fig. 10

7. After a few seconds, the main Network window will appear. The TCP/IP Protocol should now be listed.

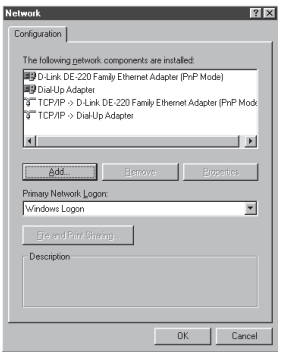


Fig. 11

8. Click the **OK** button again. Windows may ask you for the original Windows installation disk or additional files. Supply them by pointing to the correct file location, e.g., D:\win9x, c:\windows\options\cabs, etc. (if "D" is the letter of your CD-ROM drive).
9. Windows will ask you to restart the PC. Click the **Yes** button.

The TCP/IP installation is now complete.

Your PC: Configuring DHCP on a TCP/IP Stack on a PC

These instructions will help you configure each of your computers to be able to communicate with the gateway to obtain an IP (or TCP/IP) address automatically (called DHCP, Dynamic Host Cofiguration Protocol).

Find out which operating system your computer is running by clicking the **Start** button and then going to the **Settings** option. Then click **Control Panel** and double-click the **System** icon. If your Start menu doesn't have a Settings option, you're running Windows XP. Click the Cancel button when done.

You may need to do this for each computer you are connecting to the gateway.

Important: *These instructions apply only to Windows Me, 2000, or XP machines. For TCP/IP setup under Windows NT, see your Windows manual. By default Windows 2000, Me, and XP have TCP/IP installed and set to obtain an IP address automatically.*

The next few pages tell you, step by step, how to configure your network settings, based on the type of Windows operating system you are using. Make sure that an Ethernet card or adapter has been successfully installed in each PC you want to configure.

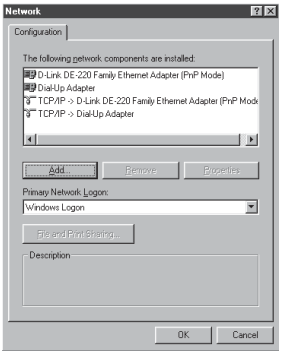


Fig. 12

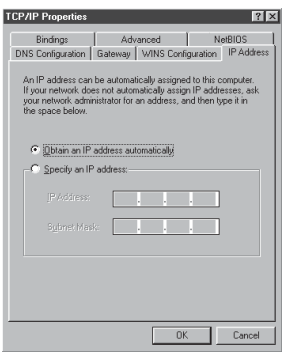


Fig. 13

Configuring Windows Me PCs

1. Go to the Network screen by clicking the **Start** button. Click **Settings** and then **Control Panel**. From there, double-click the **Network** icon.
2. On the Configuration tab, select the **TCP/IP line** for the applicable Ethernet adapter. Do not choose a TCP/IP entry whose name mentions DUN, PPPoE, VPN, or AOL. If **TCP/IP** appears by itself, select that line. (If there is no TCP/IP line listed, you need to install a TCP/IP stack). Refer to *Your PC: Installing a TCP/IP Stack.* Click the **Properties** button.
3. Click the **IP Address** tab. Select **Obtain an IP address automatically**.
4. Now click the **Gateway** tab to ensure that the Installed gateway field is left blank. Click the **OK** button.
5. Click the **OK** button again. Windows may ask you for the original Windows installation disk or additional files. Supply them by pointing to the correct file location, e.g., D:\win9x, c:\windows\options\cabs, etc. (if "D" is the letter of your CD-ROM drive).
6. Windows may ask you to restart your PC. Click the **Yes** button. If Windows does not ask you to restart, restart your computer anyway.

Configuring Windows 2000 PCs

1. Go to the Network screen by clicking the **Start** button. Click **Settings** and then **Control Panel**. From there, double-click the **Network and Dial-up Connections** icon.
2. Select the **Local Area Connection** icon for the applicable Ethernet adapter (it's usually the first Local Area Connection listed). Double-click the **Local Area Connection**. Click the **Properties** button.
3. Select **Internet Protocol (TCP/IP)**, and click the **Properties** button.
4. Select **Obtain an IP address automatically**. Once the new window appears, click the **OK** button. Click the **OK** button again to complete the PC configuration.
5. Restart your computer.

Configuring Windows XP PCs

The following instructions assume you are running Windows XP with the default interface. If you are using the Classic interface (where the icons and menus look like previous Windows versions), please follow the instructions for Windows 2000.

1. Go to the Network screen by clicking the **Start** button and then **Control Panel**. From there, double-click the **Network Internet Connections** icon and then the **Network Connections** icon.
2. Select the **Local Area Connection** icon for the applicable Ethernet adapter (it's usually the first Local Area Connection listed). Double-click the **Local Area Connection**. Click the **Properties** button.
3. Select **Internet Protocol (TCP/IP)**, and click the **Properties** button.
4. Select **Obtain an IP address automatically**. Once the new window appears, click the **OK** button. Click the **OK** button again (or the **Close** button if any settings were changed) to complete the PC configuration.
5. Restart your computer.

Connecting Your Devices

1. Before you begin, make sure that all of your hardware is powered off, including the gateway, PCs, hubs, and switches.
2. Connect one end of an Ethernet cable to one of the LAN ports (labeled 1, 2, 3, or 4) on the back of the gateway and the other end to a standard port on a network device, e.g., a PC, print server, hub, or switch. Repeat the above step to connect more PCs or network devices to the gateway.
3. Connect the coaxial cable from the wall to the CABLE jack on the back of the gateway.
4. Connect the power supply cable to the Power jack on the back of the gateway, then plug the supplied power cable into an AC power outlet.

Activating the Wireless Cable Gateway

Initialization

1. Turn on the gateway's Power switch (the Power indicator on the front of the unit comes on.)

The **Test** indicator comes on for a few seconds when the gateway goes through its self-diagnostic test. The indicator turns off when the self-test is complete.

The Cable Modem section of the gateway proceeds with DOCSIS initialization. In this process, the CM performs the following sequence of steps. For a newly-installed gateway, this can take as much as 20 minutes to complete.

- Tuning - searching for a downstream DOCSIS CM signal
- Ranging - establishing 2-way communication with the cable company
- Connecting - obtaining the CM IP Address (for IP Stack 1)
- Configuring - downloading and applying the cable company CM configuration file
- Registering - establishing Internet access with the cable company

During this process, the LED indicators on the front of the unit indicate progress.

- Receive - If it's flashing, the CM is Tuning - searching for a downstream CM signal.
- Cable-Link - When Receive and Cable-Link are flashing, the modem is now tuned to a downstream cable modem channel and can receive data. Now it searches for an upstream channel so that it can send data.

- USB - When Receive, Cable-Link, and USB are flashing, the modem is now communicating start-up data both downstream and upstream.
- WLAN - When Receive, Cable-Link, USB, and WLAN are flashing, the modem has received its IP address and is downloading its configuration file from the Internet Service Provider (ISP).
- Test - When Receive, Cable-Link, USB, WLAN, and Test are flashing, the modem configuration is complete. It is registering its "as-configured" setting with your Cable Operator. Once complete, all LEDs stop flashing and the Power indicator stays on.

Mandatory User Configuration

This feature allows you to configure the gateway to function in your network and gain access to the Internet through your cable company. Your ISP may require the use of a Host Name and Domain Name. You will need to get the setup information from your ISP. If you do not have this information, please contact your ISP before proceeding.

The instructions from your ISP will tell you how to set up your PC for Internet access.

Also, you must disable any Internet log-on software (such as Ivasion Winpoet or Enternet 300) and any firewall software (such as ZoneAlarm and Watchdog) on all of your PCs.

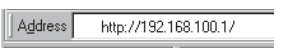


Fig. 14

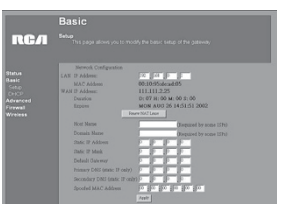


Fig. 15

1. Open your web browser. (It's all right if you get an error message at this point. Continue following these directions). Enter **http://192.168.100.1** in the browser's Address field if your gateway is in the CM Mode, or http://192.168.0.1 if it is in the RG or CH Mode. Press the **Enter** key.
2. An Enter Network Password window appears (for Windows XP users, the screen may look different). Leave the User Name field empty, and enter **admin** in lowercase letters in the Password field (**admin** is the default password). Then, click the **OK** button.

3. If you are in CM or CH mode, the Basic webpage group hyperlink is visible. In this case, select the Basic Setup web page by using the hyperlinks in the sidebar at the left of the screen. Otherwise, skip to step 4. Based on the setup instructions from your cable company, you may need to enter the following information.

   LAN IP Address: The value for the gateway's local IP address is shown on the Setup screen. The default value is 192.168.0.1. We recommend you keep this setting.

   Host Name and Domain Name: These fields allow you to provide a host name and domain name for the gateway. These fields are usually left blank. If requested by your cable company, complete these two fields.

   Static IP Address and IP Mask: If your cable company says that you are connected through a static or fixed IP address, you should enter the field of **Default Gateway, Primary DNS** and/or **Secondary DNS** also.

   Spoofed MAC Address: You can give a spoofed MAC Address to hide your gateway's real MAC address. However, this is NOT recommended, as this could cause an address conflict, causing your connection to the network to be rejected.

4. The gateway provides a Status Security webpage where you can change the web page's access password and restore factory default of the gateway. Also, you can enable/disable the DHCP Server function and change the default "admin" password to the desired password.

IMPORTANT: If you have previously enabled any Internet-Sharing Proxy server software on any of your PCs, disable it.

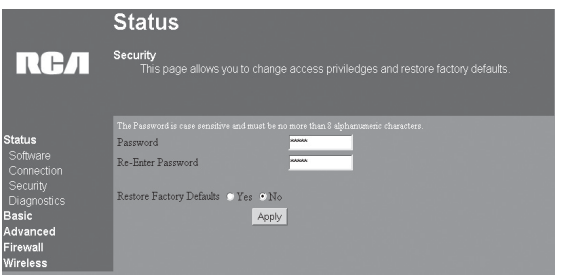


Fig. 16

Some examples of Internet-sharing software are Internet LanBridge, Wingate, ICS, and Sygate. To disable your Internet-sharing software:

- If you are running Netscape Navigator: Click Edit >> Preference >> Advanced >> Proxies >, and click Direct Connection to the Internet.
- If you are running Internet Explorer v5 or better, click Start >> Settings >> Control Panel >> Internet Options >> Connections >> LAN Settings. Remove the checks from all three boxes. Click OK to continue.

5. Click the **Apply** button to save your settings. Close the web browser.
6. Restart your computers so that they can obtain the gateway's new settings.

Communications

Data communication involves the flow of packets of data from one device to another. These devices include personal computers, Ethernet and USB hubs, cable modems, digital routers and switches, and highly integrated devices that combine functions, like the Wireless Cable Gateway.

The gateway integrates the functionality often found in two separate devices into one. It's both a cable modem and an intelligent wireless gateway networking device that can provide a host of networking features, such as NAT and firewall. Figure 2 illustrates this concept, with the cable modem (CM) functionality on the left, and networking functionality on the right. In this figure, the numbered arrows represent communication based on source and destination, as follows:

	Type of Communication
1	Communication between the Internet and your PCs Example: The packets created by your request for a page stored at a web site, and the contents of that page sent to your PC.
2	Communication between your cable company and the cable modem side Example: When your cable modem starts up, it must initialize with the cable company, which requires the cable company to communicate directly with the cable modem itself.
3	Communication between your PCs and the networking side

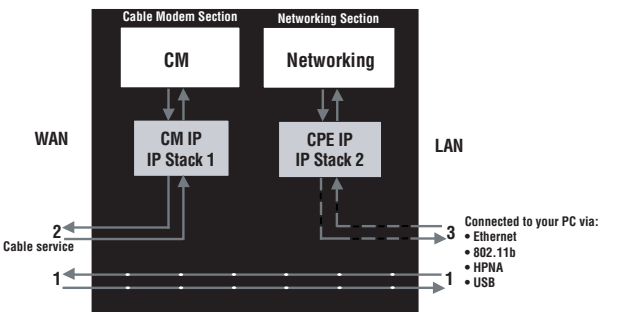


Fig. 2

Example: The Wireless Cable Gateway offers a number of built-in web pages which you can use to configure its networking side; when you communicate with the networking side, your communication is following this path.

Each packet on the Internet addressed to a PC in your home travels from the Internet downstream on the cable company's system to the WAN side of your Wireless Cable Gateway. There it enters the Cable Modem section, which inspects the packet, and, based on the results, proceeds to either forward or block the packet from proceeding on to the Networking section. Similarly, the Networking section then decides whether to forward or block the packet from proceeding on to your PC. Communication from your home device to an Internet device works similarly, but in reverse, with the packet traveling upstream on the cable system.

Cable Modem (CM) Section

The cable modem (or CM) section of your gateway uses DOCSIS Standard cable modem technology. DOCSIS specifies that *TCP/IP over Ethernet* style data communication be used between the WAN interface of your cable modem and your cable company.

A DOCSIS modem, when connected to a Cable System equipped to support such modems, performs a fully automated initialization process that requires no user intervention. Part of this initialization configures the cable modem with a CM IP (Cable Modem Internet Protocol) address, as shown in Figure 3, so the cable company can communicate directly with the CM itself.

Networking Section

The Networking section of your gateway also uses TCP/IP (Transmission Control Protocol/ Internet Protocol) for the PCs you connected on the LAN side. TCP/IP is a networking protocol that provides communication across interconnected networks, between computers with diverse hardware architectures and various operating systems.

TCP/IP requires that each communicating device be configured with one or more TCP/IP stacks, as illustrated by Figure 4. On a PC, you often use software that came with the PC or its network interface (if you purchased a network interface card separately) to perform this configuration. To communicate with the Internet, the stack must also be assigned an IP (Internet Protocol) address. 192.168.100.1 is an example of an IP address. A TCP/IP stack can be configured to get this IP

address by various means, including a *DHCP server*, by you directly entering it, or sometimes by a PC generating one of its own.

Ethernet requires that each TCP/IP stack on the Wireless Cable Gateway also have associated with it an Ethernet MAC (Media Access Control) address. MAC addresses are permanently fixed into network devices at the time of their manufacture. 00:90:64:12:B1:91 is an example of a MAC address.

Data packets enter and exit a device through one of its network interfaces. The gateway offers Ethernet, USB, HPNA, and 802.11b wireless network interfaces on the LAN side and the DOCSIS network interface on the WAN side.

When a packet enters a network interface, it is offered to all the TCP/IP stacks associated with the device side from which it entered. But only one stack can accept it — a stack whose configured Ethernet address matches the Ethernet destination address inside the packet. Furthermore, at a packet's final destination, its destination IP address must also match the IP address of the stack.

Each packet that enters a device contains *source* MAC and IP addresses telling where it came from, and *destination* MAC and IP addresses telling where it is going to. In addition, the packet contains all or part of a message destined for some application that is running on the destination device. IRC used in an Internet instant messaging program, HTTP used by a web browser, and FTP used by a file transfer program are all examples of applications. Inside the packet, these applications are designated by their port number. Port 80, the standard HTTP port, is an example of a port number.

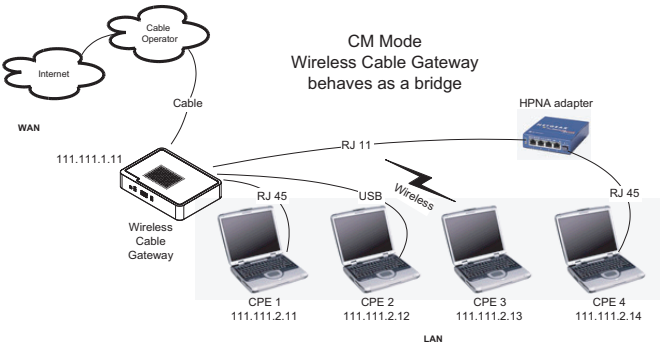
The Networking section of the router performs many elegant functions by recognizing different packet types based upon their contents, such as source and destination MAC address, IP address, and ports.

Three Networking Modes

Your gateway can be configured to provide connectivity between your cable company and your home LAN in any one of three Networking Modes: CM, RG, and CH. This mode setting is under the control of your cable company, who can select the mode to match the level of home networking support for which you have subscribed. All units ship from the factory set for the RG mode, but a configuration file which the cable company sends the cable modem section during its initialization can change it.

Cable Modem (CM) Mode

Fig. 3



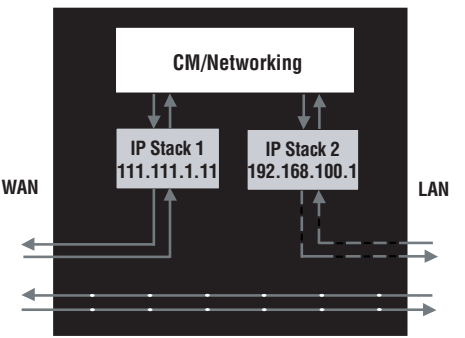


Fig. 4

CM (Cable Modem) Mode provides basic home networking. In this mode, two IP stacks are active:

- IP Stack 1 - for use by the cable company to communicate with the cable modem section only. This stack receives its IP address from the cable company during CM initialization. It uses the MAC address printed on the label attached to the Wireless Cable gateway.
- IP Stack 2 - for use by you, the end user, to communicate with the cable modem and Networking sections, to access the internal web page diagnostics and configuration. This stack uses a fixed IP address: 192.168.100.1. It uses a MAC address of MAC label + 1 (the MAC label is found on the bottom of the unit). E.g., if the MAC address is 00:90:64:12:B1:91, this MAC address would be 00:90:64:12:B1:92.

With CM Mode, your cable company must provide one IP address for the CM section, plus one for each PC you connect from their pool of available addresses. Your cable company may have you or your installer manually enter these assigned addresses into your PC, or use a DHCP Server to communicate them to your PCs, or use a method that involves you entering host names into your PCs.

Note that in CM Mode, packets passing to the Internet to/from your PCs do not travel through any of the IP stacks; instead they are directly bridged between the WAN and LAN sides.

Residential Gateway (RG) Mode

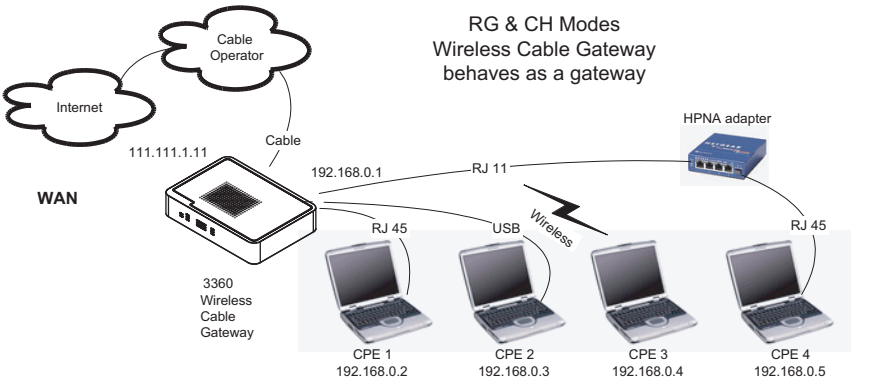


Fig. 5

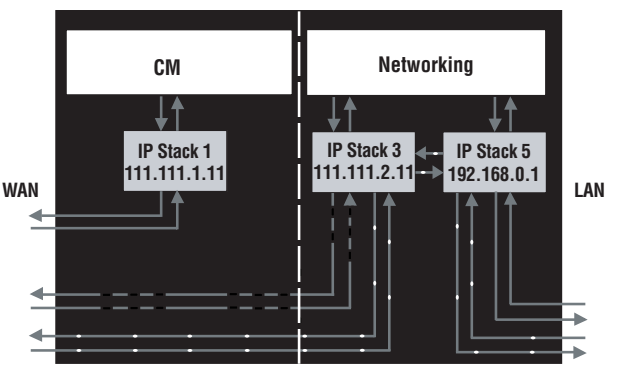


Fig. 6

RG (Residential Gateway) Mode provides basic home networking plus NAT (Network Address Translation). In this mode, three IP stacks are active:

- IP Stack 1 - for use by the cable company to communicate with the Cable Modem section only. This stack receives its IP address from the cable company during CM initialization. It uses the MAC address printed on the label attached to the Wireless Cable Gateway.
- IP Stack 3 - for use by you to remotely (i.e. from somewhere on the WAN side, such as at your remote workplace) communicate with the Cable Modem and Networking sections, to remotely access the internal web page diagnostics and configuration. This stack is also used by your cable company to deliver packets between the Internet and the gateway's networking section so they can be routed to/from your PCs. This stack requires an IP address assigned by the cable company from their pool of available addresses. Your cable company may have you or your installer manually enter assigned addresses into your gateway, or use a DHCP Server to communicate them, or use a method that involves you entering host names. This stack uses a MAC address of MAC label + 2 (the MAC label is found on the bottom of the unit). E.g., if the MAC address is 00:90:64:12:B1:91, this MAC address would be 00:90:64:12:B1:93.
- IP Stack 5 - for use by you to locally (i.e. from somewhere on the LAN side in your home) communicate with the Cable Modem and Networking sections, to access the internal web page diagnostics and configuration. This stack is also used by the gateway's networking section to route packets between the gateway's Networking section and your PCs. This stack uses a fixed IP address: 192.168.0.1. It uses a MAC address of MAC label + 4 (the MAC label is found on the bottom of the unit). E.g., if the MAC address is 00:90:64:12:B1:91, this MAC address would be 00:90:64:12:B1:95.

With RG Mode, your cable company must provide one IP address for the CM section, plus one for the Networking section, from their pool of available addresses. With RG Mode, each PC you connect gets an IP address from a DHCP Server that is part of the Networking section of the gateway.

CableHome (CH) Mode

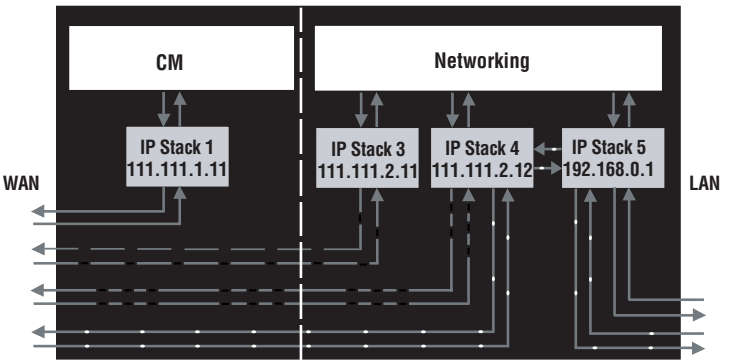


Fig. 7

CH (CableHome) Mode provides all the functionality of RG mode and adds the ability of the cable company to control the home networking configuration of your Wireless Cable Gateway for you, so you don't need to perform the configuration yourself. In this mode, four IP stacks are active:

- IP Stack 1 - for use by the cable company to communicate with the Cable Modem section only. This stack receives its IP address from the cable company during CM initialization. It uses the MAC address printed on the label attached to the Wireless Cable Gateway.
- IP Stack 3 - for use by your cable company to communicate with the Networking section to help you configure and manage your home networking. This stack requires an IP address assigned by the cable company from their pool of available addresses. Your cable company may have you or your installer manually enter assigned addresses into your gateway, or use a DHCP Server to communicate them, or use a method that involves you entering host names. This stack uses a MAC address of MAC label + 2 (the MAC label is found on the bottom of the unit). E.g., if the MAC address is 00:90:64:12:B1:91, this MAC address would be 00:90:64:12:B1:93.

- IP Stack 4 - for use by you to remotely (i.e. from somewhere on the WAN side, such as at your remote workplace) communicate with the Cable Modem and Networking sections, to remotely access the internal web page diagnostics and configuration. This stack is also used by your cable company to deliver packets between the Internet and the Wireless Cable Gateway's Networking section so they can be routed to/from your PCs. This stack requires an IP address assigned by the cable company from their pool of available addresses. Your cable company may have you or your installer manually enter these assigned addresses into your gateway, or use a DHCP Server to communicate them, or use a method that involves you entering host names. This stack uses a MAC address of MAC label + 3 (the MAC label is found on the bottom of the unit). E.g., if the MAC address is 00:90:64:12:B1:91, this MAC address would be 00:90:64:12:B1:94.
- IP Stack 5 - for use by you to locally (i.e. from somewhere on the LAN side in your home) communicate with the Cable Modem and Networking sections, to access the internal web page diagnostics and configuration. This stack is also used by the Wireless Cable Gateway Networking section to route packets between the Wireless Cable Gateway's Networking section and your PCs. This stack uses a fixed IP address: 192.168.0.1. It uses a MAC address of MAC label+ 4 (the MAC label is found on the bottom of the unit). E.g., if the MAC address is 00:90:64:12:B1:91, this MAC address would be 00:90:64:12:B1:95.

With CH Mode, your cable company must provide one IP address for the CM section, plus two for the Networking section, from their pool of available addresses. Each PC you connect gets an IP address from a DHCP Server that is part of the Networking section of the gateway.

USB MAC Address

USB allows a single PC to be connected directly via your Wireless Cable Gateway USB port. Other PCs can, of course, be connected to your other networking interfaces: wireless, HPNA, and Ethernet. If you have a PC connected by USB, the following information is helpful.

The PCs you have connected by 802.11b Wireless, and HPNA technologies associated with your gateway all send and receive packets that contain the Ethernet-style MAC address associated with that network interface. USB technology, however, uses a different addressing approach. In this situation, your gateway modifies the packets going to and from your USB-connected PC to make them look Ethernet-style when passed between you and your cable company. To do this, the gateway must effectively "loan" an Ethernet-style address for use in all these packets. For this purpose, the gateway uses a MAC address of MAC label + 5 (the MAC label is found on the bottom of the unit). E.g., if the MAC address is 00:90:64:12:B1:91, this MAC address would be 00:90:64:12:B1:96.

MAC and IP Addresses Summary

This table summarizes all the MAC and IP addresses that may be associated with the TCP/IP communication stacks and USB handling in your Wireless Cable Gateway. The ones actually used depend upon your gateway Operating Mode, as explained above. At minimum, your cable company will need to know the MAC address associated with IP Stack 1, which is the MAC address shown on the modem label.

Stack Name	Purpose - Mode	MAC Address	IP Address
IP Stack 1	CM WAN access - all Modes	per label on CM	assigned by cable company during initialization
IP Stack 2	local management - CM Mode only	CM label + 1	fixed at 192.168.100.1
IP Stack 3	CableHome remote management - CH Mode only end-user remote management, LAN WAN access - RG Mode only	CM label + 2	assigned by cable company
IP Stack 4	WAN data access - CH Mode only	CM label + 3	assigned by cable company
IP Stack 5	local management - RG, CH Modes only LAN gateway	CM label + 4	fixed at 192.168.0.1
---		CM label + 5	USB MAC

Table 1. MAC and IP Addresses

Chapter 3: Advanced Configuration

Advanced User Configuration

The Wireless Cable Gateway offers local management capability through a built in HTTP server and a number of diagnostic and configuration web pages. These pages are available from http://192.168.0.1 in RG and CH modes, and http://192.168.100.1 in CM Mode. Not all pages are available in some modes.

Some information on two of the following web pages MUST BE configured, as explained in Mandatory User Configuration: Status...Security web page and Basic...Setup web page.

In addition, more configuration and diagnostics are possible through the following additional web pages, most of which are aimed at controlling the advanced networking functions of the gateway.

To navigate between pages, use the hyperlinks on the sidebar which appear on the left side of all pages.

Your cable company may not support the reporting of some items of information listed on your gateway's internal web pages. In such cases, the information field appears blank. This is normal.

In the CM Mode, the simplest configuration mode of the gateway, or in the CH Mode, where you have subscribed to an outside service (your cable company or another party) to remotely manage your home network configuration, you will see only the Status and Wireless web page hyperlinks in the sidebar, indicating only these page groups are available.

In the RG Mode, the mode where you manage your home network configuration, you will see web page hyperlinks to all five page groups: Status, Basic, Advanced, Firewall, and Wireless. The following section explains all of the available pages for all of the modes.

Status Web Page Group

Software Web Page (Fig. 17)

The *Information* section of this page provides hardware and software information about your gateway that may be useful to your cable company. You can view your operating software version but not change it. This is because your gateway adheres to the DOCSIS Cable Modem standard, which requires that your cable company perform any software upgrade of the gateway from the gateway WAN side.

The *Status* section of this page shows how long your gateway has operated since last being powered up, and some key information the Cable Modem section received during the initialization process with your cable company. If *Network Access* shows "Allowed," then your cable company has configured your gateway to have Internet connectivity. If *Network Access* shows otherwise, you may not have Internet access, and should contact your cable company to resolve this.

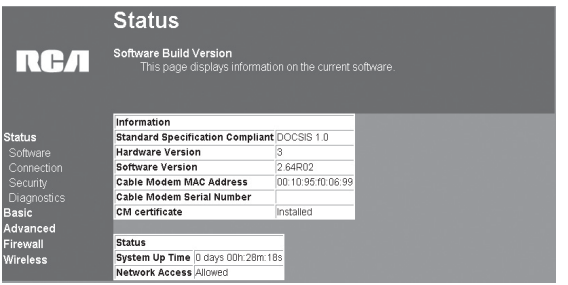


Fig. 17

Connection Web Page (Fig. 18)

This page reports diagnostic information about the initialization and operating status of your gateway that can be useful at the time of installation. It can also be useful to your cable company's support technician if you're having problems.

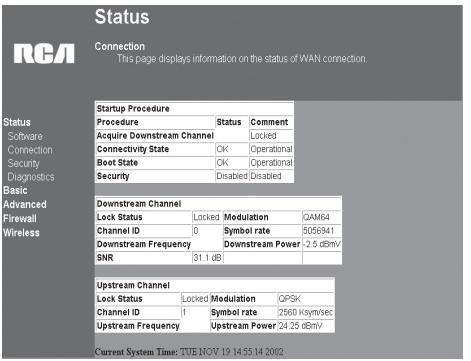


Fig. 18

Security Web Page (Fig. 19)

This page is used to set a password that enables you to access all the internal web pages as explained before under Mandatory User Configuration. The password can be a maximum of 8 characters and is case sensitive. In addition, this page can be used to restore the gateway to its original factory settings. Use this with caution, as all the settings you have made will be lost. To perform this reset, set Restore Factory Defaults to YES and click Apply. This has the same affect as a factory reset using the rear panel reset switch, where you hold in the switch until all indicators come on, then release.

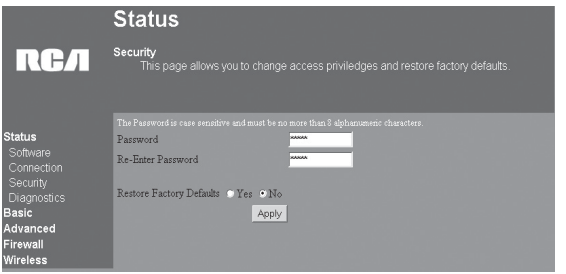


Fig. 19

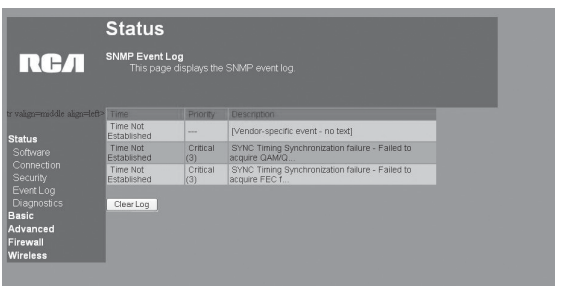


Fig. 20

Event Log Web Page (Fig. 20)

This page provides diagnostic information regarding the cable modem section of your gateway that may be useful to your cable company if you are having startup or operation issues. As long as your gateway startup and operational performance is normal, any messages contained in this log can be ignored.

Diagnostics Web Page (Fig. 21)

This page verifies you have IP connectivity from your gateway to other IP addresses on the WAN or LAN side, such as when you want to confirm you have successfully configured one of your PCs for TCP/IP operation.

When you *ping* an Internet device, you send a packet to its TCP/IP stack, and it sends one back to yours. Enter the IP address you want to *ping*, then click Start Test. Wait a few seconds, then click your web browser's *refresh* button. Success reported in the *Results* box means IP connectivity is working from your CM TCP/IP stack to the target's stack.

Note: Firewalls may cause pings to fail but still provide you TCP/IP access to selected devices behind them. Keep this in mind when pinging a device that may be behind a firewall. Ping is most useful to verify connectivity with PCs you know have no firewall, such as your own PCs on your LAN side.

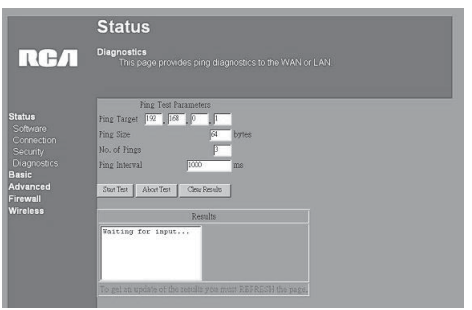


Fig. 21

Basic Web Page Group

Setup Web Page (Fig. 22)

This page gives you the ability to enter some data your cable company may require, as explained before in Mandatory User Configuration. In addition, it enables you to change your default LAN side IP address from 192.168.0.1, and to view your WAN side IP address and lease information.

Your gateway can provide NAT/PAT (Network and Port Address Translation) as an element of security to prevent others from reaching your PCs when not authorized. To accomplish this, the gateway watches packets you send from your PC to Internet sites. Each time you send to a site (destination IP address) and application at that site (port), it translates your PC's original IP and source port to new ones, and adds a row to its Connection Table maintained internally. (Note the different meaning of 'connection' here to describe an IP connection versus a physical cabling connection). If and when that site/application replies, it looks up the connection and reverses the IP/port process to direct the response to your PC.

The Connection Table manages itself, but you can also force this table to be cleared manually. To do this, click the Renew NAT Lease button.

You can enter a spoofed MAC address that causes your gateway networking stack to use that MAC address when communicating instead of the usual WAN MAC address (CM label + 2, as explained in Chapter 1). Enter the desired MAC address and press Apply.

Caution: If you enter a MAC address in use by another party, it can cause an address conflict on the network that could affect both you and that party.

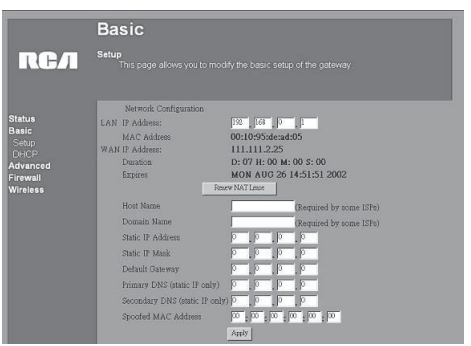


Fig. 22

DHCP Web Page (Fig. 23)

This page gives you the ability to activate and deactivate the DHCP server function of your gateway, and, if the DHCP server is activated, to see DHCP leases it has provided.

With this function activated, your cable company's DHCP server provides one IP address for your gateway, and your gateway's DHCP server provides IP addresses, starting at the address you set in Starting Local Address, to your PCs. A DHCP server *leases* an IP address with an expiration time.

To change the lowest IP address that your gateway will issue to your PCs, enter it into the *Starting Local Address* box and then click Apply.

To set the maximum number of PCs to which the gateway will issue IP addresses, enter it in the *Number of CPEs* box and then click Apply. (*CPE* is another term sometimes used for PC.) The *DHCP Client Lease Info* section shows leases the gateway DHCP server has made, including the IP and MAC addresses of each PC's TCP/IP stack. Since MAC addresses are unique and permanently fixed into hardware, you can identify any PC listed by its MAC address. The gateway provides leases for 1 hour, and has an automatic renewal mechanism that will keep extending a lease as long as the associated PC remains active. If your PC is set to "obtain an IP address automatically," it is set to perform DHCP each time it is rebooted.

You can cancel an IP address lease by selecting it in the DHCP Client Lease Info list and then clicking the Force Available button. If you do this, you may have to perform a DHCP Renew on that PC, so it can obtain a new lease.

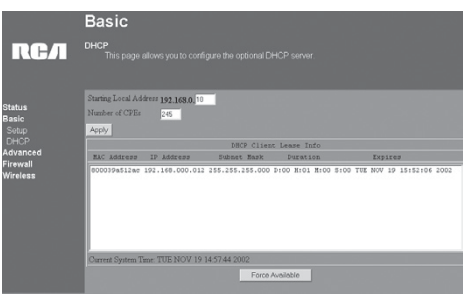


Fig. 23

Advanced Web Page Group

Options Web Page (Fig. 24)

This page allows you to enable/disable some features of the Wireless Cable Gateway. Check *WAN Blocking* and then Apply to prevent others on the WAN side from being able to ping your gateway. With WAN Blocking on, your gateway will not respond to pings it receives, effectively "hiding" your gateway.

Check *Ipsec Pass Through* and then Apply to enable IpSec type packets to pass WAN <=> LAN. IpSec (IP Security) is a security mechanism used in Virtual Private Networks (VPNs). E.g., your employer may offer VPN connectivity to your office network to provide security.

Click *PPTP Pass Through* and then Apply to enable PPTP type packets to pass WAN <=> LAN. PPTP (Point to Point Tunneling Protocol) is another mechanism sometimes used in VPNs.

Click *Remote Config Management* and then Apply to make the configuration web pages in your gateway accessible from the WAN side. Then you could, for example, access your home gateway configuration from your workplace, if that location also had Internet connectivity. Page access is limited to only those who know the gateway access password you set using the Status...Security web page.

Click *Multicast Enable* and then Apply to enable multicast traffic to pass WAN <=> LAN. You may need to enable this to see some types of broadcast streaming and content on the Internet, such as webcasting of a popular live event.

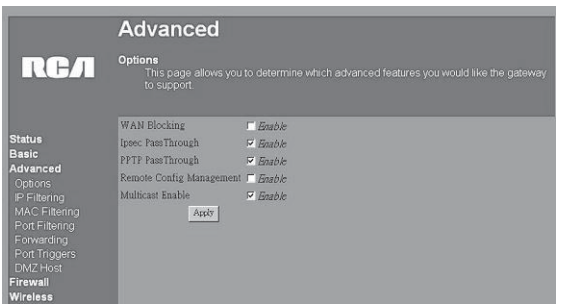


Fig. 24

IP Filtering Web Page (Fig. 25)

This page enables you to enter the IP address ranges of PCs on your LAN that you don't want to have outbound access to the WAN. These PCs can still communicate with each other on your LAN, but packets they originate to WAN addresses are blocked by the gateway.

MAC Filtering Web Page (Fig. 26)

This page enables you to enter the MAC address of specific PCs on your LAN that you wish to NOT have outbound access to the WAN. As with IP filtering, these PCs can still communicate with each other through the gateway, but packets they send to WAN addresses are blocked.

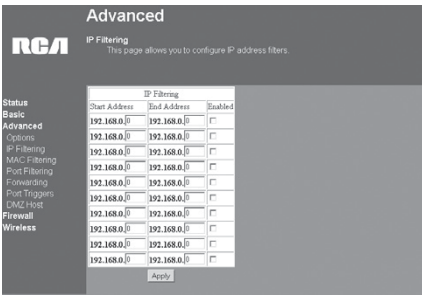


Fig. 25

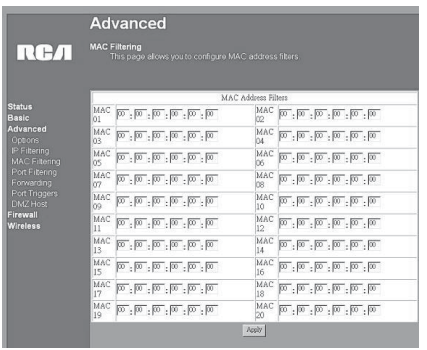


Fig. 26

Port Filtering Web Page (Fig. 27)

This page enables you to enter ranges of destination ports (applications) that you don't want your LAN PCs to send packets to. Any packets your LAN PCs send to these desination ports will be blocked. For example, you could block access to worldwide web browsing (HTTP = port 80) but still allow email service (SMTP port 25 and POP-3 port 110). To enable filtering, set Start Port and End Port for each range, and click Apply. To block only one port, set both Start and End ports the same.

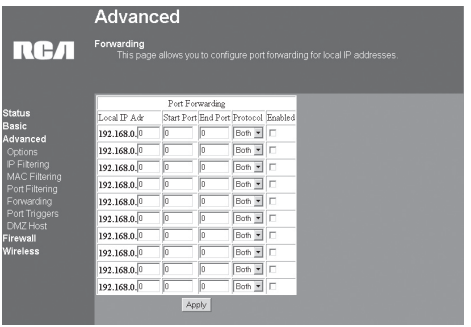


Fig. 27

Forwarding Web Page (Fig. 28)

For LAN <=> WAN communications, the gateway normally only allows you to originate an IP connection with a PC on the WAN; it will ignore attempts of the WAN PC to originate a connection onto your PC. This protects you from malicious attacks from outsiders. However, sometimes you may wish for anyone outside to be able to originate a connection to a particular PC on your LAN if the destination port (application) matches one you specify.

This page allows you to specify up to 10 such rules. For example, to specify that outsiders should have access to an FTP server you have running at 192.168.0.5, create a rule with that address and Start Port = 20 and End Port = 21 (FTP port ranges) and Protocol = TCP (FTP runs over TCP vs the other transport protocol, UDP), and click Apply. This will cause inbound packets that match to be forwarded to that PC rather than blocked. As these connections are not tracked, no entry is made for them in the Connection Table. The same IP address can be entered multiple times with different ports.

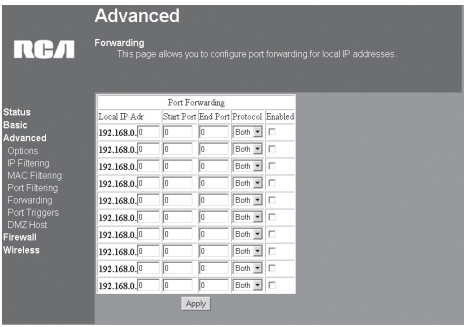


Fig. 28

Port Triggers Web Page (Fig. 29)

Some Internet activities, such as interactive gaming, require that a PC on the WAN side of your gateway be able to originate connections during the game with your game playing PC on the LAN side. You could use the Advanced...Forwarding page to construct a forwarding rule during the game, and then remove it afterwards (to restore full protection to your LAN PC) to facilitate this. Port Triggering is an elegant mechanism that does this work for you, each time you play the game.

Port Triggering works as follows. Imagine you want to play a particular game with PCs somewhere on the Internet. You make a one time effort to set up a Port Trigger for that game, by entering into Trigger Range the range of destination ports your game will be sending to, and entering into Target Range the range of destination ports the other player (on the WAN side) will be sending to (ports your PC's game receives on). Application programs like games publish this information in user manuals. Later, each time you play the game, the gateway automatically creates the forwarding rule necessary (see Advanced...Forwarding discussion above). This rule is valid until 10 minutes after it sees game activity stop. After 10 minutes, the rule becomes inactive until the next matched outgoing traffic arrives.

For example, suppose you specify Trigger Range from 6660 to 6670 and Target Range from 113 to 113. An outbound packet arrives at the gateway with your game-playing PC source IP address 192.168.0.10, destination port 6666 over TCP/IP. This destination port is within the Trigger Range, so the gateway automatically creates a forwarding rule to forward any inbound packets destined for port 113 to your game-playing PC at 192.168.0.10.

You can specify up to 10 port ranges on which to trigger.

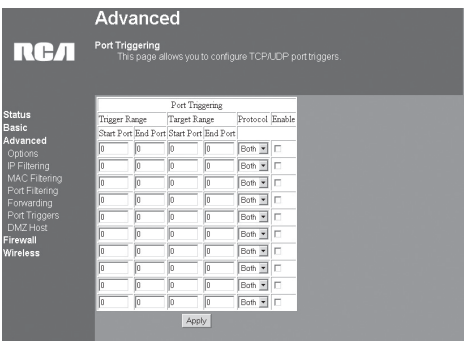


Fig. 29

DMZ Host Web Page (Fig. 30)

Use this page to designate one PC on your LAN that should be left accessible to all PCs from the WAN side, for all ports. For example, if you put an HTTP server on this machine, anyone will be able to access that HTTP server by using your gateway IP address as the destination. A setting of "0" indicates NO DMZ PC. "Host" is another Internet term for a PC connected to the Internet.

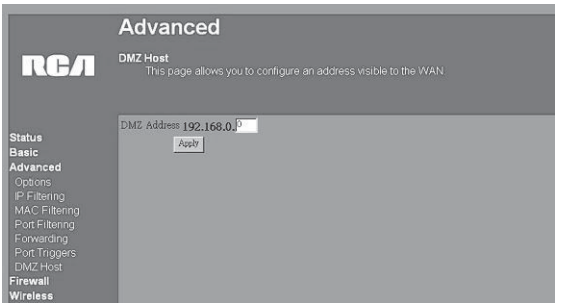


Fig. 30

Firewall Web Pages Group

Web Filter Web Page (Fig. 31)

This page allows you to enable, disable, and configure a variety of firewall features associated with web browsing, which uses the HTTP protocol and transports HTML web pages. On this page, you designate the gateway packet types you want to have forwarded or blocked. You can activate settings by checking them and clicking Apply. Here are some of your choices:

- Activate Keyword Blocking and specify some keywords in the Keyword List to cause blocking of web pages on the WAN side with the specified keyword in the content.
- Activate Domain Blocking and specify some Domain Names (e.g. disney.com) in the Domain List. If you select Deny Domains, the gateway blocks the listed domains. If you select Allow Domains, then access to the listed domains is allowed. If you select Always Block, your choices are always blocked. If you specify a time frame and weekday range, then your choices are only blocked during those date/time frames.

Other types of web-related filtering features can be activated from this page, including Filter Proxy, Filter Cookies, Filter Java Applets, Filter ActiveX, Filter Popup Windows, and Firewall Protection.

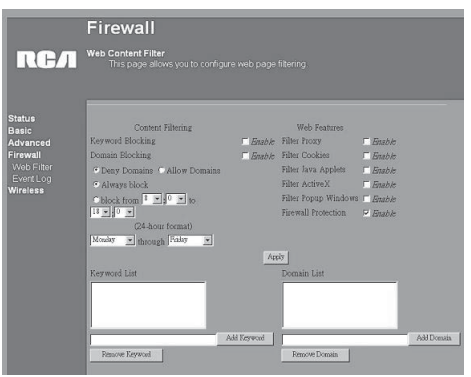


Fig. 31

Event Log Web Page (Fig. 32)

The gateway builds a log of firewall blocking actions that the Firewall has taken. Using this page lets you specify an email address to which you want the gateway to email this log. You must also tell the gateway your outgoing (i.e. SMTP) email server's name, so it can direct the email to it. Enable Email Alerts has the gateway forward email notices when Firewall protection events occur. Click E-mail Log to immediately send the email log. Click Clear Log to clear the table of entries for a fresh start.

The log of these events is also visible on the screen. For each blocking event type that has taken place since the table was last cleared, the table shows Description, Count, Last Occurrence, Target, and Source.

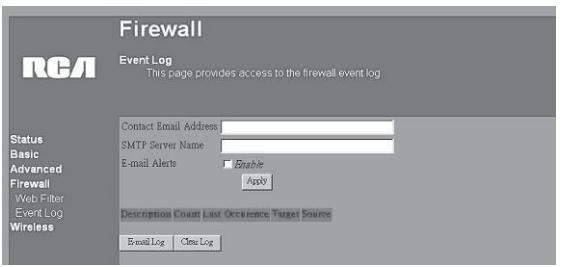


Fig. 32

Wireless Web Pages Group

Basic Web Page (Fig. 33)

Use this page to configure the wireless 802.11b channel in the 2.4 GHz band you want to use and the SSID you will use. These must match the settings you make on your wireless-equipped PC you want to be a part of your LAN.

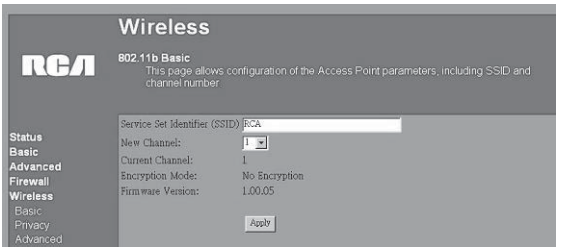


Fig. 33

Privacy Web Page (Fig. 34)

The Privacy feature in the wireless section encrypts, i.e. effectively "scrambles," all radio communication between your gateway and remote wireless-connected PCs. This provides Wired-Equivalent Privacy (WEP) on your wireless LAN. Use this page to activate encryption if desired, and set the type to use, as well as the encryption keys.

Advanced Web Page (Fig. 35)

This page enables some advanced 802.11b settings to be made. The factory default values should provide good results in most cases. We don't recommend you change these settings unless you have technical knowledge of 802.11b wireless technology.

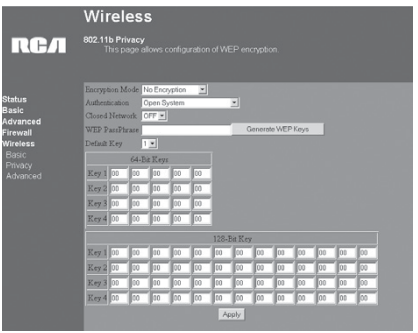


Fig. 34

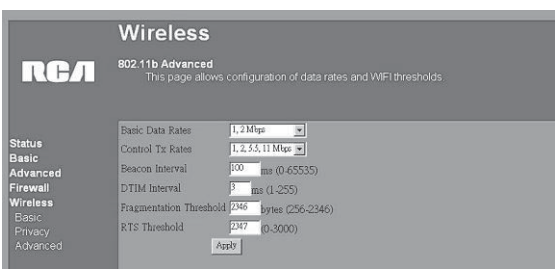


Fig. 35

Chapter 4: Additional Information

Troubleshooting

You can correct most problems you have with your product by consulting the troubleshooting list that follows. If you need service, please contact your service provider.

Unit won't turn on

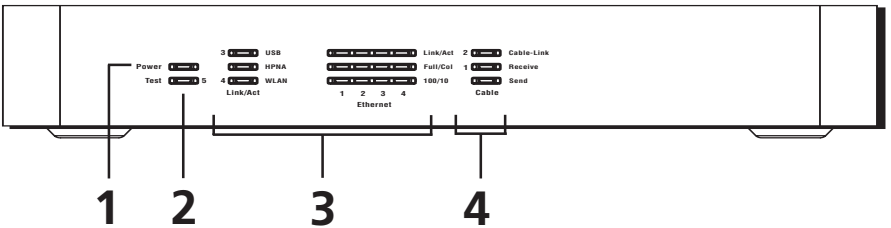
- Make sure the unit is plugged in.
- Check the wall receptacle (or extension cord) to make sure it is "live" by plugging in something else.

Gateway appears to be locked up

- Press and hold the Reset button on the back of the unit for 5 seconds. The unit reboots.

No connection after more than 5 minutes

- Make sure all connections are secure and try connecting to your service provider again. If you still have problems connecting to the network, contact your service provider.



Front of the Unit

1. **Power** Indicates when the unit is on.
2. **Test** Indicates when the unit goes through its self-diagnosis mode during boot-up and restart. It turns off upon successful completion of the startup sequence.

3. **The LAN indicators**

   USB Indicates when the USB port is properly connected to your PC and active.

   HPNA Indicates when the HPNA port is plugged in and ready to transfer data.

   WLAN Indicates when the Wireless PC card is present.

   Link/Act Indicates steady on when link is established and blinks when data is flowing through the corresponding LAN port.

   Full/Col Indicates steady at full duplex mode, off at half duplex mode, and blinks when collisions are detected on the corresponding LAN port.

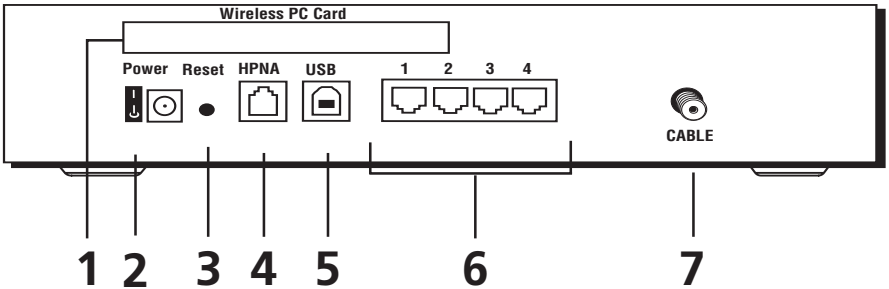
   100/10 Indicates steady on when a successful 100Mbps connection is made through the corresponding LAN port.

4. **The WAN indicators**

   Cable-Link Indicates steady on when cable system initialization is complete and ready to transfer data. Blinks when scanning for a downstream DOCSIS RF carrier.

   Receive Blinks when user data is going through the cable modem to the PC.

   Send Blinks when user data is going through the cable modem from the PC.



Back of the Unit

Description of Jacks (from left to right)

1. Wireless PC card	Connects to the Wireless Network PC Card to enable wireless features. This is not hot swappable.
2. Power switch and jack	Connects to the AC power adapter.
3. Reset button	Resets the gateway's TCP/IP connections. Pressing the Reset button and holding it in for a few seconds will clear all of the gateway's data and restore the factory defaults. This should be done only after you have exhausted all troubleshooting options. By resetting the gateway, you clear all configurations you have set using the gateway web pages, and run the risk of creating conflicts between your PC's actual IP Addresses and the factory default addresses embedded into the gateway.
4. HPNA	Connects to the telephone wiring in your house.
5. USB	Connects to the USB jack on your PC.
6. Ethernet ports	Connect to networked devices, such as PCs, print servers and any other Ethernet devices you want to put on your network.
7. CABLE	Connects to the coaxial cable jack from your cable company.

Detailed Explanation of Jacks

The Wireless Cable Gateway provides the following data connections:

WAN Side:

Cable TV connection- connects to your cable service

LAN Side:

Ethernet RJ-45 jacks — connect up to four 10 or 100 Mbps Ethernet cables to PCs or to Ethernet switches to connect more PCs. Each PC must be equipped with an Ethernet network interface, and must have the TCP/IP protocol configured to operate over that interface.

USB- connects one USB cable to your PC. The PC must be equipped with a USB network interface. In addition, the USB driver on the DCW615 CD-ROM must be installed on the connected PC, and the PC must have the TCP/IP protocol configured to operate over that USB interface.

HPNA- connects one telephone cable from the gateway to your nearest telephone outlet, utilizing your home telephone wiring to extend your LAN to other rooms of your home. Then connect up to 254 PCs via telephone cables and HPNA adapters, to other telephone outlets in your home. Each PC must be equipped with an HPNA network interface (adapter), and must have the TCP/IP protocol configured to operate over that interface.

Wireless Card- utilizes the 2.4 GHz wireless 2-way technology built into the DCW615 to reach up to 254 PCs in your home. Each PC must be equipped with an 802.11b Wireless Interface, and must have the TCP/IP protocol configured to operate over that interface.

Chapter 4: Additional Information

Care and Cleaning

CAUTION: Unplug your unit before cleaning.

You can clean the unit as required, using a soft lint-free cloth. Be sure to occasionally dust the ventilation slots in the cabinet to help assure adequate ventilation.

Never use strong cleaning agents, such as ammonia-based cleaners, or abrasive powder. These types of cleaners will damage the unit.

Avoid placing drinks or vases with water on top of the unit. This could increase the risk of fire or shock hazard or damage to the unit.

Service Information

If you purchased or leased your Wireless Cable Gateway directly from your service provider, then warranty service for the unit may be provided through your service provider or its authorized representative. For information on 1) Ordering Service, 2) Obtaining Customer Support, or 3) Additional Service Information, please contact your service provider.

FCC Declaration of Conformity and Industry Canada Information

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

Trade Name: RCA	Model: DCW615
Equipment Classification:	Computing Device Accessory
Responsible Party:	Thomson Inc. 10330 N. Meridian Street Indianapolis, IN 46290 Telephone 580-634-0151

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and 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 this equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your service provider or an experienced radio/TV technician for help.

FCC regulations state that unauthorized changes or modifications to this equipment may void the user's authority to operate it.

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

Chapter 4: Additional Information

Additional FCC Information

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the back or bottom side 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.

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 and modular RJ11 plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See installation instructions for details.

The Ringer Equivalence Number (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 the 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. The REN number is located on the label of this product.

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 isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a compliant 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 trouble is experienced with this equipment, for repair or warranty information please refer to the appropriate section of this manual. This product is not user serviceable. 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.

Connection to party line service is subject to state tariffs and may not be allowed. Contact the state public utility commission, public service commission or corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure that the installation of this Wireless Cable Gateway does not disable alarm equipment. You may need to consult your Telephone Company or qualified installer.

This product meets the applicable Industry Canada technical specifications. The term "IC" before the certification / registration bumber only signifies that the Industry Canada technical specifications were met.

The Ringer Equivalence Number is an indication of the maximum number of devices allowed to connect to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices does not exceed five.

Chapter 4: Additional Information

Product Specifications

WAN	Cable Interface F type female 75 ohm
LAN	4 10/100 BASE-T 1 USB, 1.1 Connector Type B, 1 HomePNA2.0 RJ-11, 1 IEEE 802.11b (2.4 GHz Unlicensed ISM radio band)
System Power	12V/700mA
Power Supply	12V/1.25A
EMI/EMC	FCC Class B, CE Class B, VCCI Class B.
Operation Requirement	Operating Temp. 0°C to 40°C (32°F to 104°F) Storage Temp. -20°C to 70°C (-4°F to 158°F) Operating
Humidity	10% to 85% Non-Condensing Storage Humidity 5% to 90% Non-Condensing
Dimensions	186 x 155 x 63 (mm)

Main features:

Cable Modem Connection

- DOCSIS 1.0 and 1.1 RFI compliant
- 64/256QAM auto detection downstream
- QPSK/16QAM upstream
- Fragmentation and concatenation enabling Quality of Service (QoS) features
- IP and LLC filtering

HomePNA Interface

- Integrated 32 Mbps HomePNA 2.0
- HomePNA 2.0 allows you to share your cable access using existing home telephone wiring

USB Interface

- USB 1.1 compliant full speed (12 Mbps) device interface for Windows 98SE, Windows 2000, Windows Me, or Windows XP

Wireless Interface

- 11 Mbps IEEE 802.11b Wireless LAN
- Frequency band: 2400-2497 MHz
- Supports 64/128 bit RC4 authentication and encryption
- Fallback rates of 5.5, 2, and 1Mbps
- Communicates with all Wi-Fi certified wireless adapters

Networking

- IEEE 802.1d compliant bridging
- DHCP Client
- DHCP Server
- DNS Relay
- ARP
- ICMP
- FTP/TFTP
- Telnet

Security and Firewall

- Password protected configuration via web browser
- IP filtering; allows you to configure IP address filters
- MAC filtering; allows you to configure MAC address filters
- Port filtering; allows you to configure TCP/UDP port filters
- URL content filtering
- URL filtering blocks Proxy, Cookies, Java and ActiveX
- Traffic and Security Event log
- PAP and CHAP authentication with PPP
- Stateful Packet Inspection to protect against both Denial of Service and Distributed Denial of

Service attacks, including:

- Reassembly attacks
- SYN Attack (SYN Flood)
- ICMP Flood
- Ping of Death Attack
- Tear Drop Attack
- IP Spoofing Attack
- LAND Attack
- Jolt
- Winnuke Attack (Netbios out-of-bound)
- OverDrop
- BONK, BOINK
- Blind Spoofing
- Echo/Chargen
- Storm
- Smurf Attack
- Mime Flood

- De-Militarized Zone (DMZ) support, allowing a LAN side computer to expose all non-filtered ports to the WAN
- URL keyword blocking for web access control

NAT

- With popular ALG support
- With port triggers
- With port forwarding, including support for:

- FTP
- IRC
- H.323
- Quake
- Blizzard games
- Chat ALG
- Real Audio/Video
- CUSEEME
- Netmeeting
- MS Games (excluding game zone)
- DIABOLO II
- Activision Games
- PCAnywhere
- SSL
- NNTP

Virtual Private Network (VPN) Feature

- PPTP and IPSec pass-through can be enabled/disabled

Visit the RCA web site at www.rca.com

Please do not send any products to the Indianapolis address listed in this manual or on the carton. This will only add delays in service for your product.

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Printed in Taiwan
TOCOM 16096620

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