RCA DCW615A Cable Router

Quick Guide

(*Draft User's Manual*)

15.21

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

Prohibition of co-location

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

15.105 Federal Communications Commission (FCC) Requirements, Part 15

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

---Reorient or relocate the receiving antenna.

---Increase the separation between the equipment and receiver.

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

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

Caution Statement of the FCC Radio Frequency Exposure

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65C and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247(b)(4) addressing RF Exposure from radio frequency devices. The radiation output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation—as a mobile device but use in a body-worn way is strictly prohibit. When using this device, a certain separation distance between antenna and nearby persons has to be kept to ensure RF exposure compliance. In order to comply with the RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20cm.

Regulatory information / Disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user' s authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

MPE Statement (Safety Information)

Your device contains a low power transmitter. When device is transmitted it sends out Radio
Frequency (RF) signal.

Safety Information

CAUTION: To maintain compliance with FCC' s RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

Table of Contents

Introduction

Overview

Thank you for purchasing the RCA DCW615 Cable Router. This cable router 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 – 100 times faster than a 56K dial-up modem. Once the cable router is powered up, you are online to enjoy real-time 3D animation, video conferencing, and perform other data intensive operations.

Features

DOCSIS Features

- Cable Modem (CM) is 1.0 and non 1.1 upgradeable
- Concatenation, Fragmentation, Payload Header suppression, IGMP and BPI and BPI Plus are supported features for DOCSIS 1.1
- 4/16/32/64/128/256/512/1024 QAM Downstream Receiver
- 2/4/8/16/32/64/128/256 QAM Advanced TDMA Upstream Transmitter
- Both IP and LLC filters are supported
- Sixteen (16) destination address filters and 256 multicast/unicast DA filters

- Sixteen (16) independent upstream queues for multiple QoS support

USB Features

- OS (Win2K, XP, WinME) supported for USB interface

Wireless Features

- Supports at least one beacon/DTIM interval of within the range 20-1000 μs
- Supports reception of fragmented packets
- Supports reception of RTS and generation of CTS

Firewall Features

- tateful Packet Inspection against both Denial of Service and Distributed Denial of Service attacks and will protect against the following:

  - 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) which allows a computer on the LAN to expose all of its ports to the WAN that are not otherwise filtered
- Logged Events which all security incidents will be logged
- Keyword blocking is based on keywords in a URL and can be specified by the user

NAT Requirements

The implementation of NAT must allow for specific port redirection. Listed below are applications supported.

> FTP
> IRC
> H.323
> Quake
> Blizzard games
> Chat ALG

- Real Audio/Video
- CUSEEME
- Netmeeting
- MS Games but not with game zone
- DIABOLO II
- Activision Games
- PCAnywhere
- SSL
- NNTP

- Port Forwarding, incoming traffic that is not part of an existing connection will be dropped unless the user specifies forwarding of the server to a host on the LAN

Virtual Private Network (VPN) Feature
- Having the ability to enable or disable PPTP and IPSec pass through

Preparations

System Requirements

▶ One RJ-45 Broadband Internet connection, with a Cable Modem

▶ One PC with an installed 10Mbps, 100Mbps, or 10/100 Mbps Ethernet card (optional)

▶ TCP/IP network protocol for each PC

▶ UTP network cable with RJ-45 connector

▶ Microsoft Internet Explorer 4.0 or later, or Netscape Navigator 4.0 or later. (5.0 and 4.7, respectively, are strongly recommended.)

▶ Windows 95, 98, Millennium, NT 4.0, 2000 or XP

Installing a Network Card

If your system does not have an embedded LAN controller, you must install a network interface card. This is an example of setup procedures for some systems:

1. Install an Ethernet card on your motherboard.
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.
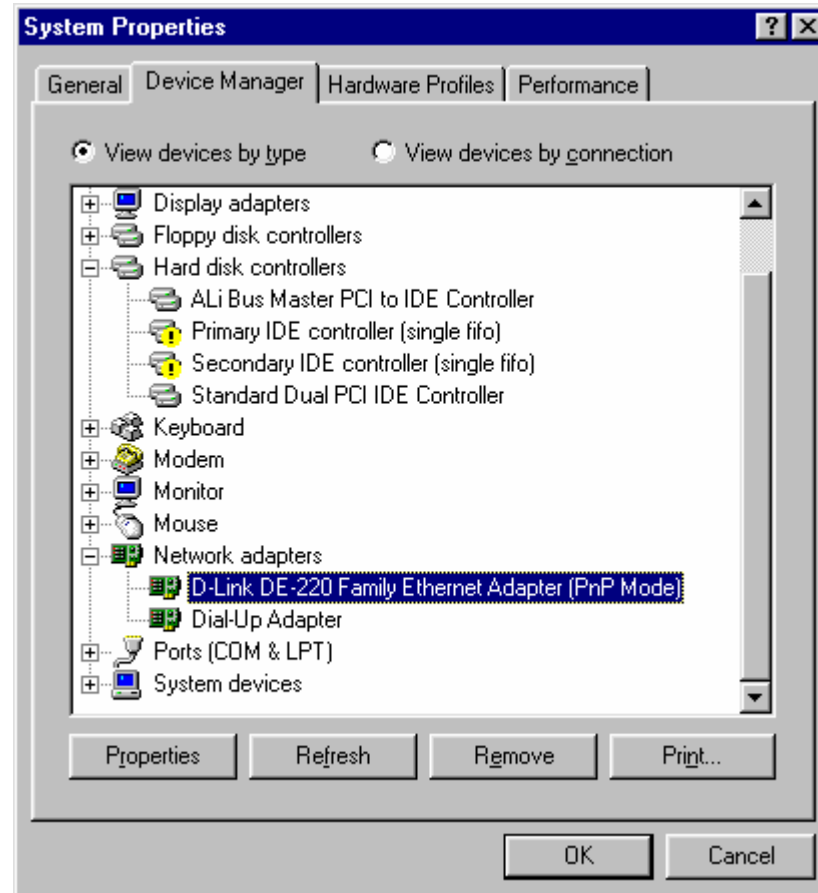

After the TCP/IP protocol is installed, restart your computer and consult the installation guide provided by your

cable operator to complete TCP/IP configurations for router.
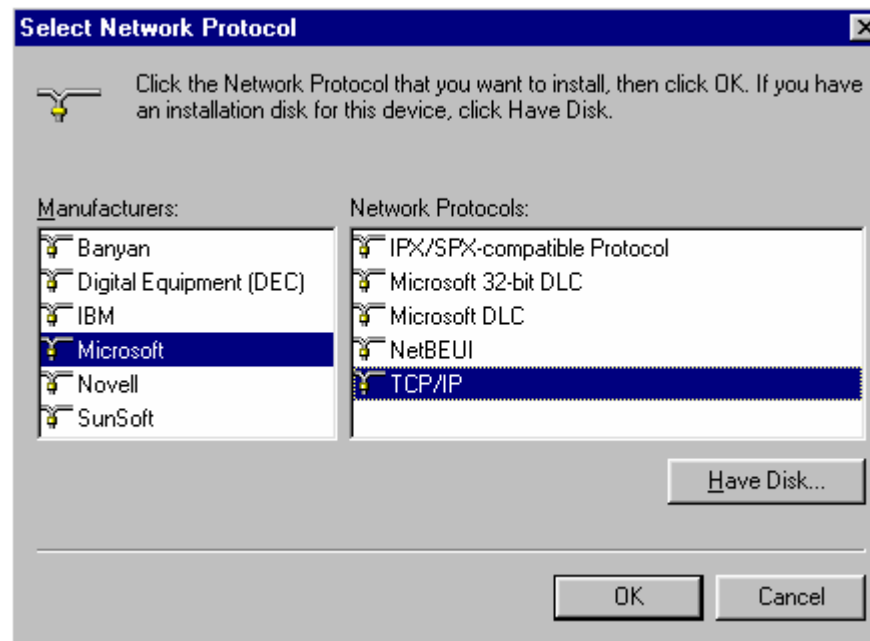
Installing the TCP/IP Protocol

Follow these instructions to install the TCP/IP protocol on one of your PCs *only* after a network card has been successfully installed inside the PC. These instructions are for Windows 95, Windows 98, and Windows Me. For TCP/IP setup under Windows NT, 2000, and XP, see your Windows documentation.

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

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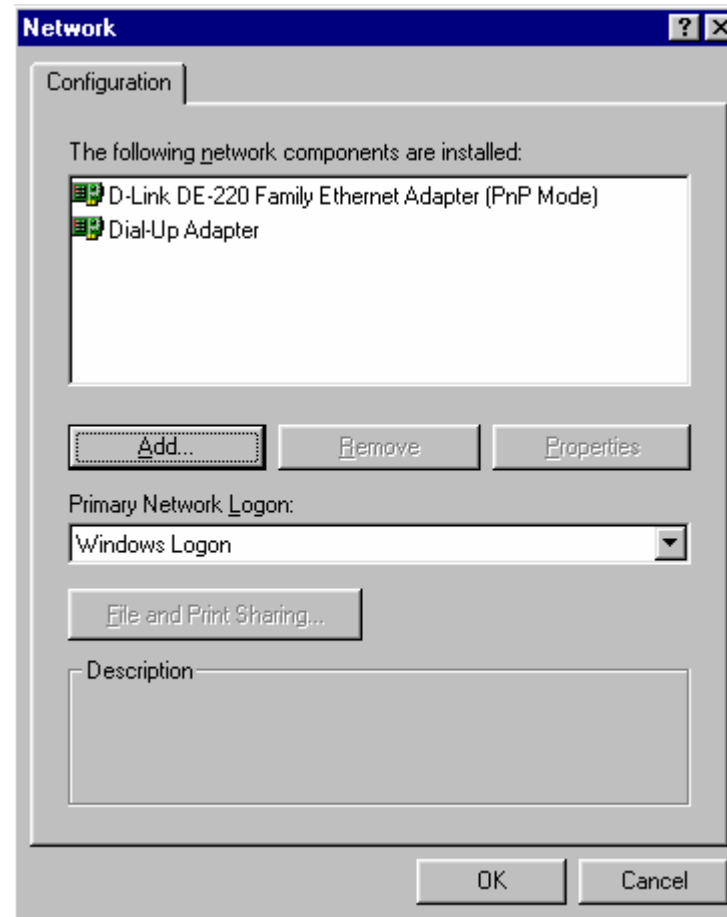
3.   Click the **Add** button.

4. Double-click on **Protocol**.

5. Highlight **Microsoft** under the list of manufacturers.

6. Find and double-click **TCP/IP** in the list to the right (see Figure below).

7. After a few seconds, the main Network window will appear. The TCP/IP Protocol should now be listed.
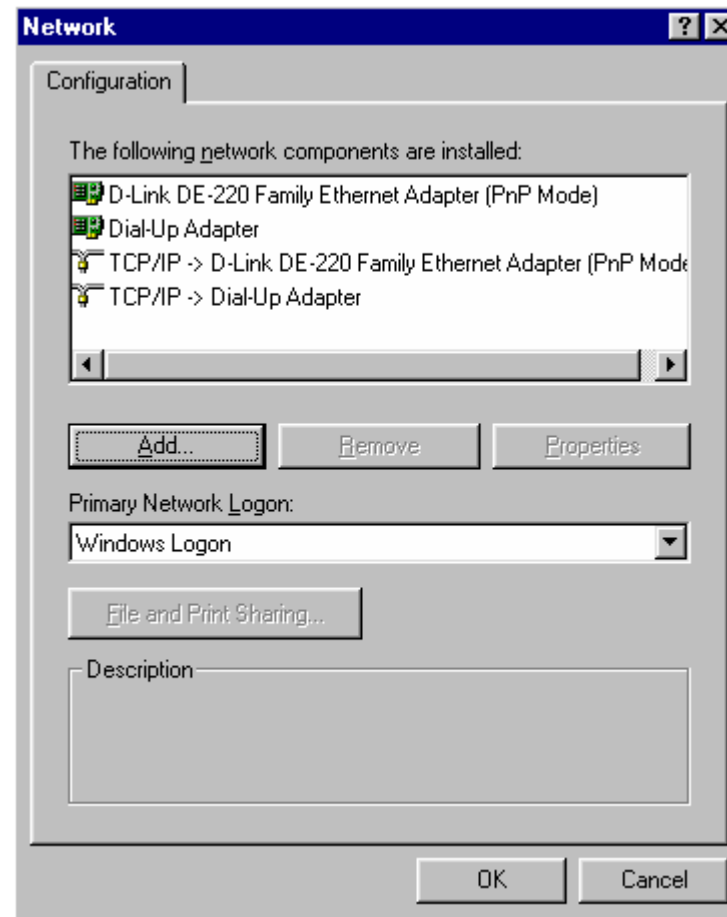
8. Click the **OK** button. Windows may ask for original Windows installation files. Supply them as needed, e.g., c:\windows\options\cabs, D:\win98, D:\win95, D:\win9x.

9.   Windows will ask you to restart the PC. Click the **Yes** button.

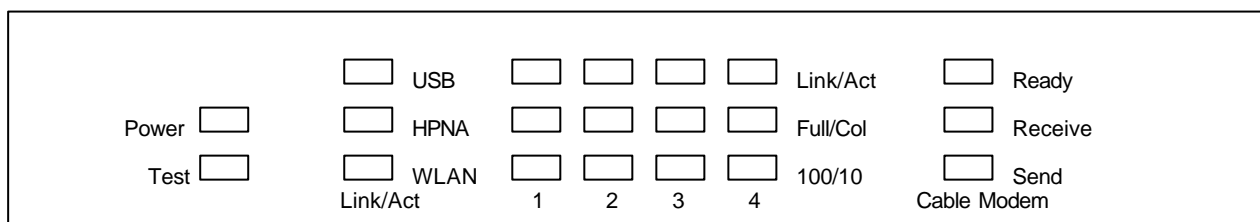**The TCP/IP installation is now complete.**

Using the Router

The Front Panel

Power		Green. The power LED illuminates when the device is powered on.

Power   *Green*. The power LED illuminates when the device is powered on.

Test   *Red*. The Test LED illuminates when the device goes through its self-diagnosis mode during boot-up and restart. It will turn off upon successful completion of the diagnosis.

The LAN indicators

USB   *Green*. The USB LED illuminates when the USB port is properly connected to your PC.

HPNA   *Green.* The HPNA LED illuminates when the HPNA port is plugged in and ready to transfer data.

WLAN   *Green*. The WLAN LED illuminates when the Wireless PC card slide-in.

Link/Act *Green*. Steady on when link is up and blinking when data is following through this LAN port.

Full/Col *Green.* Steady on when it operates at full duplex mode. *Off* at half duplex mode. *Blinking* when collision is occurred on this port.

100/10   *Green.* Steady on when a successful 100/10Mbps connection is made through the corresponding port.

The WAN indicators

Ready   *Green.* Steady on when cable is registered and ready to transfer data. *Blinking* when no downstream RF carrier present.

Receive   *Green.* Blinking when user data going through the cable modem to PC present.

Send   *Green.* Blinking when user data going through the cable modem from PC present.

The Rear Panel
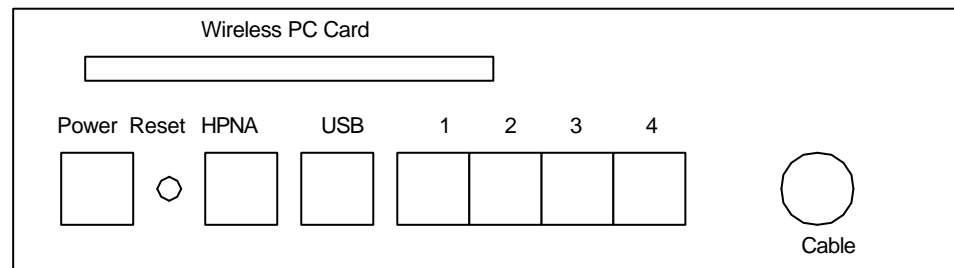
Power   The Power Port is where you will connect the included AC Power adapter.

HPNA   The Home PNA Port (RJ-11 connector).

USB   The USB Port. You can connect the Router to PC using USB line.

Ports 1-4   These four LAN (Local Area Network) ports are where you will connect networked devices, such as PCs, print servers and any other Ethernet devices you want to put on your network. If Port 4 is being used, the Uplink Port will not work.

Cable   The Cable Line Port (Coaxial Copper).

Wireless PC Card   The Wireless Network PC Card is inserted into this slot to enable the wireless features. This slot is not hot swappable.

Reset   Briefly pressing the Reset Button will refresh the Router's connections, potentially clearing any jammed links. Pressing the Reset Button and holding it in for a few seconds will clear all of the Router's data and restore the factory defaults. This should be done only if you are experiencing heavy routing problems, and only after you have exhausted all of the other troubleshooting options. By resetting the Router, you run the risk of creating conflicts between your PCs' actual IP Addresses and What the Router thinks their IP Addresses should be. You may be forced to reboot the entire system(s). If your Router locks up, simply power it down for 5 seconds by removing the power cable from the Router's Power Port. Leaving the power off for too long could result in the loss of network connections.

Connect the Router

Overview

Unlike a simple hub or switch, the Router's setup consists of more than simply plugging hardware together. You will have to configure your networked PCs to accept the IP addresses that the Router assigns them (if applicable), and you will also have to configure the Router with setting(s) provided by your Internet Service Provider (ISP).

The installation technician from your ISP should have left the setup information with you after installing your broadband connection. If not, you can call your ISP to request the data.

Once you have the setup information you need for your specific type of Internet connection, you can begin installation and setup of the Router.

Connecting Your Hardware Together and Booting Up

1. Before you begin, make sure that all of you hardware is powered off, including the Router, 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 Router 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 Router.

3. Connect the cable from your ISP to the **Cable** port on the Router' s back panel.

4. Connect the power-supply cable to the Power port on the rear of the Router, then plug the supplied AC power cable into a power outlet and power on the RCA DCW615.

    - The **Power** LED on the front panel will light up green as soon as the power adapter is connected properly.
    - The **Diag** LED will light up red for a few seconds when the Router goes through its self-diagnostic test. The LED will turn off when the self-test is complete.

5. Power on the network devices that connected to the RCA DCW615.

The Hardware Installation is complete. Continue to the next page to configure your PCs with RCA DCW615.

Configure Your PCs

Overview

The instructions in this chapter will help you configure each of your computer to be able to communicate with the Router.

To do this, you need to configure your PC's network settings to obtain an IP (or TCP/IP) address automatically (called DHCP). Computers use IP addresses to communicate with each other across a network or the Internet.

Find out which operating system your computer is running, such as Windows 95, 98, Millennium, NT 4.0, 2000, or XP. You will need to know which operating system your computer is running. You can find out by clicking the **Start** button and then going to the **Settings** option. Then click **Control Panel**, and then 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 Router.

Important: *These instructions apply only to Windows 95, 98, Millennium, 2000, or XP machines. For TCP/IP setup under Windows NT, see your Windows manual. By default Windows 98, 2000, Me, and XP has TCP/IP installed and set to obtain an IP address automatically.*
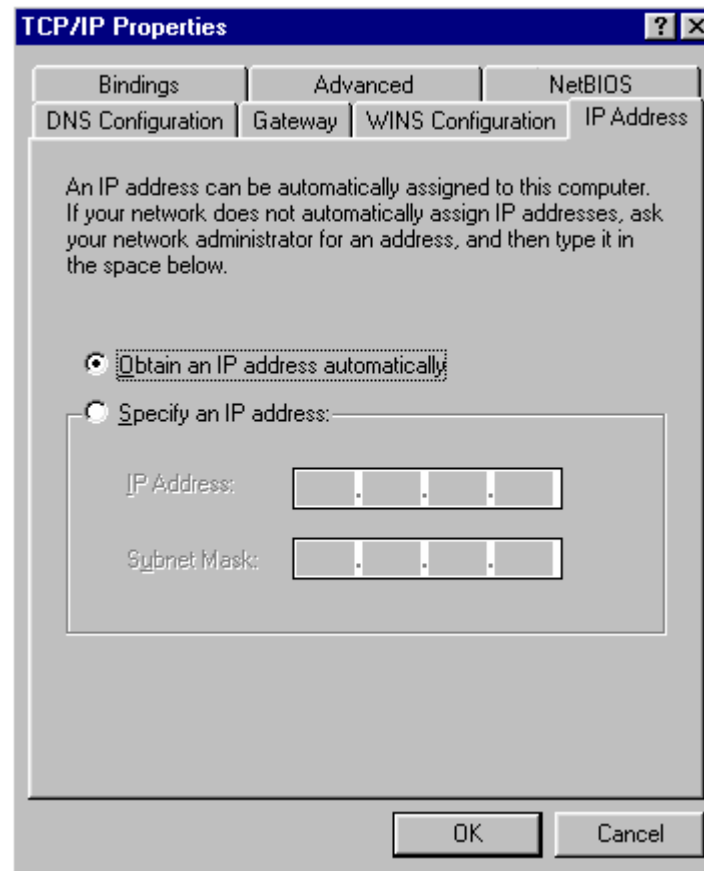
The next few pages tell you, step by step, how to configure your network settings based on the type of Windows operating system you are using. Make sure that an Ethernet card or adapter has been successfully installed in each PC you will configure. Once you've configured your computers, continue to "Configure the Router"

Configuring Windows 95, 98, and Millennium PCs

1. Go to the Network screen by click 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 the work **TCP/IP** appears by itself, select that line. (If there is no TCP/IP line listed, refer to "Appendix D: Installing the TCP/IP Protocol.) Click the **Properties** button.
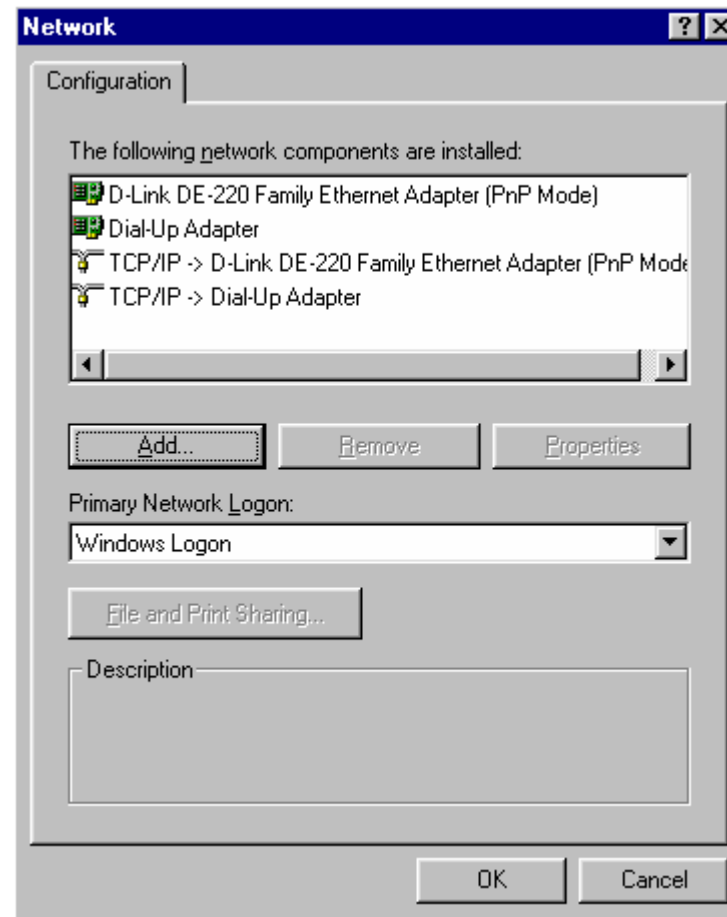
3. Click the **IP Address** tab. Select **Obtain an IP address automatically**.

```
TCP/IP Properties                                    ? X

   Bindings        |      Advanced       |      NetBIOS
DNS Configuration | Gateway | WINS Configuration | IP Address

 An IP address can be automatically assigned to this computer.
 If your network does not automatically assign IP addresses, ask
 your network administrator for an address, and then type it in
 the space below.


     ⊙  Obtain an IP address automatically

     ○  Specify an IP address:

         IP Address:       [    .    .    .    ]

         Subnet Mask:      [    .    .    .    ]




                                    [   OK   ]   [  Cancel  ]
```

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.

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Supply them by pointing to the correct file location, e.g., D:\win98, 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.

Go to "Configure the Router."

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 (usually it is 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.

    Go to "Configure the Router."

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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 (usually it is 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.

Go to "Configure the Router."

Configure the Router

This chapter will show you how to configure the Router to function in your network and gain access to the Internet through your Internet Service Provider (ISP). The RCA DCW615' s Web-based Utility." Your ISP may require the use of a Host Name and Domain Name. *You will need 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. Because you are now using the Router to share Internet access among several computers, you will use the setup information to configure the Router instead of your PC. You only need to configure the Router once using the first computer you set up.

1. Open your web browser. (It is 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. Press the **Enter** key.

2. An Enter Network Password window, shown in below figure, will appear (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. The Router configuration screen will appear. Press **Basic** tab and then select **Setup** menu. Based on the setup instructions from your ISP, you may need to provide the following information.

LAN **IP Address**: The value for the Router's IP address is shown on the Setup screen. The default value is 192.168.100.1. Leave these settings alone.

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

Static IP Address and IP Mask: If your ISP says that you are connecting through a static or fixed IP address from your ISP, 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 real MAC address.

4. The Router also provided Security and DHCP settings in Basic tab. You can change the access priviledge and restore factory default of the Router. Also, you can enable/disable the DHCP Server function.

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

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.*
>
> *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.*

5. If you have already done so, click the **Apply** button to save your settings. Close the web browser.

6. Restart your computers so that they can obtain the Router' s new settings.

Product Specfications

WAN	Cable Interface F type female 75ohm
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)
CPU	140 MHz MIPS32-ISA
SDRAM	128Mb
Flash ROM	64Mb
System Power	12V/700mA
Power Supply	12V/1.25A
EMI/EMC	FCC Class B, CE Class B
Operation Requirement	Operating Temp. 0^0C to 40^0C (32^0F to 104^0F) Storage Temp. -20^0C to 70^0C (-4^0F to 158^0F) Operating Humidity 10% to 85% Non-Condensing Storage Humidity 5% to 90% Non-Condensing
Dimensions	186 x 155 x 63 (mm)