Message Cable Activity Cable Link PC Link Internet Internet On/Off

digital | **BROADBAND**

CABLE MODEM

THOMSON

TOCOM 16193030

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.**

$C\epsilon$

DOCSIS (DCMXX5) or EURO-DOCSIS (TCMXX0) Compliant
The DOCSIS product (model number - - "5") is designed according to DOCSIS
specifications. The Euro-DOCSIS product (model number that ends in "0") is designed
according to Euro-DOCSIS Specifications but can also receive DOCSIS signals (U.S.
standards used by some cable operators in Europe), if the received frequencies are
between 112 - 858 MHz.

North American 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.

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: _____

Table of Contents

Introduction

Cable Modem Features

- DOCSIS models are capable of receiving data at rates of up to 30Mbps‡ (30 Megabits per second).

- Euro-DOCSIS models are capable of receiving data at rates of up to 38Mbps‡ (38 Megabits per second).

- Able to send and receive data over the cable line

- Able to connect 2 computers through Ethernet and USB *at the same time* (if allowed by the cable operator)

- Plug-and-play operation for easy setup and installation

- ON/OFF button to connect and disconnect access to the Internet

- Message waiting notification capability (if allowed by the cable operator)

- Diagnostics via LED or HTTP server (if allowed by the cable operator)

- Able to receive automatic software updates, if initiated by your cable company

  ‡ The following may affect the speed of your cable modem: your computer equipment and configuration (processor speed, amount of RAM, available disk space); the number of programs you are running at the same time; the capacity of your ISP; network traffic levels; the number of Ethernet or USB devices in use on your computer. Your cable company may or may not fully support the speed capabilities of this modem.

What's on the CD-ROM

Insert the cable modem CD-ROM into your CD-ROM drive to view troubleshooting tips, the internal diagnostics, and other valuable information.
Note: You will need to use the CD-ROM to install the USB driver if you are connecting via the USB port.

CD-ROM Contents:

- Electronic file of the instruction book in additional languages
- USB drivers
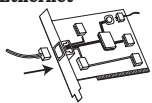- Usage and troubleshooting tips

Accessing the Diagnostics Display through the CD-ROM

A button on the CD-ROM menu called "Look at Diagnostics" (found under the "About My Cable Modem" menu) launches your browser and displays status and diagnostic information stored within the modem in HTML format (if allowed by the cable operator).

Please note that before this page can be displayed, your PC must receive an IP address assignment from the Cable company's server, over the cable network. You may want to "bookmark" the IP address in your browser after the diagnostics page is displayed.

Computer Requirements

Personal computer with the following minimum system requirements (note that the minimum requirements may vary by cable company):

	IBM PC COMPATIBLE	MACINTOSH**
CPU	Pentium preferred	PowerPC or higher
System RAM	16MB (32MB preferred)	24MB (32MB preferred)
Operating System	Windows* 98SE/2000/Me/XP, Linux	Mac OS** 7.6.1 or higher
Available Disk Space	125MB	50MB
Sound Card	Preferred	N/A†
Video	VGA or better (SVGA preferred)	VGA or better (SVGA built-in preferred)
CD-ROM Drive	Required for USB	Required
Ethernet	10BaseT or 100BaseT	10BaseT or 100BaseT
	An Ethernet card makes it possible for your computer to pass data to and from the internet. You must have an Ethernet card and software drivers installed in your computer. You will also need a standard Ethernet cable to connect the Ethernet card to your cable modem.	
USB Port	USB (Windows 98SE/2000/Me/XP only) N/A†	
	The Universal Serial Bus is a high speed bus that enables your computer to communicate simultaneously with a variety of peripherals. However, if you have other peripherals that send and receive a lot of information, such as speakers, printers or scanners, we recommend using an Ethernet card to support this modem.	

†Mac Users: Mac OS or any other OS other than Windows 98SE, Me, 2000, or XP are not currently supported for USB installation. Please use the Ethernet connection.

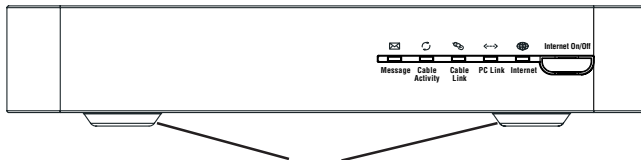***Windows is a trademark of the Microsoft Corporation.**
**Macintosh and the Mac OS are trademarks of Apple Computer, Inc.

Introduction

Placing the Rubber Feet on the Cable Modem

A set of rubber pads have been packaged with your modem. These pads (or "feet") can be attached to keep the modem from sliding around on your desktop.

Attach the pads to the four posts on the bottom of the modem.

Cable Modem Overview

Computer　　**Cable Modem**　　**Cable Company**　　**Internet**
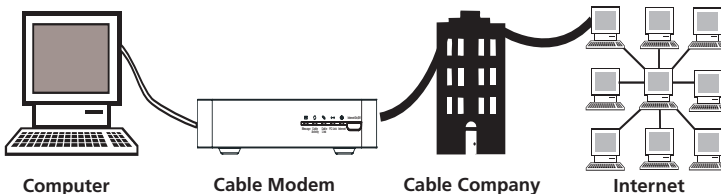
This illustration shows a cable company that offers DOCSIS-compliant or Euro-DOCSIS compliant Internet services

What the Modem Does

The Thomson digital cable modem 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.

4

What the Modem Needs to Do Its Job

- **The Right Cable Company:** Make sure your local cable company provides data services that use cable industry-standard DOCSIS or Euro-DOCSIS technology compatible with your cable modem.

- **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.

Before You Begin

Contact Your Local Cable Company

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

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

Record your information here:

Serial Number: _____

Model Number: _____

MAC Address: _____

Before You Begin

Please verify the following with the cable company:

- The cable service to your home supports DOCSIS-compliant or EuroDOCSIS-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 just your computer from the Internet, use the ON/OFF button.

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.

   Note: Graphics used within this publication are for representation only.

## **Connecting the Cable Modem to a Single Computer**

This section of the manual explains how to connect your cable modem to the USB or Ethernet port on your computer and install the necessary software. Please refer to figure 1 to help you connect your cable modem for the best possible connection.

Attaching the Cable TV wire to the Cable Modem

1. Locate the Cable TV wire. You may find it one of three ways:

    A. Connected directly to a TV, a Cable TV converter box, or VCR. The line will be connected to the jack which should be labeled either IN, CABLE IN, CATV, CATV IN, etc.
    B. Connected to a wall-mounted cable outlet.
    C. Coming out from under a baseboard heater or other location. See Figure 1 for the wiring example.

Notes: For optimum performance, be sure to connect your cable modem to the first point the cable enters your home.

The splitter must be rated for at least 1GHz.
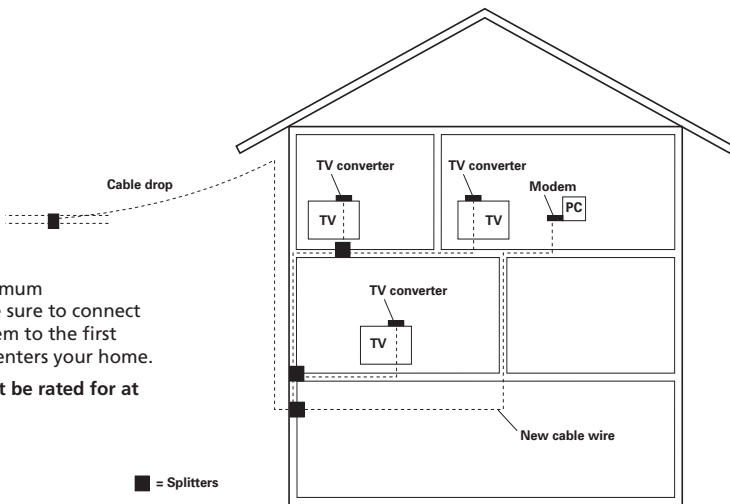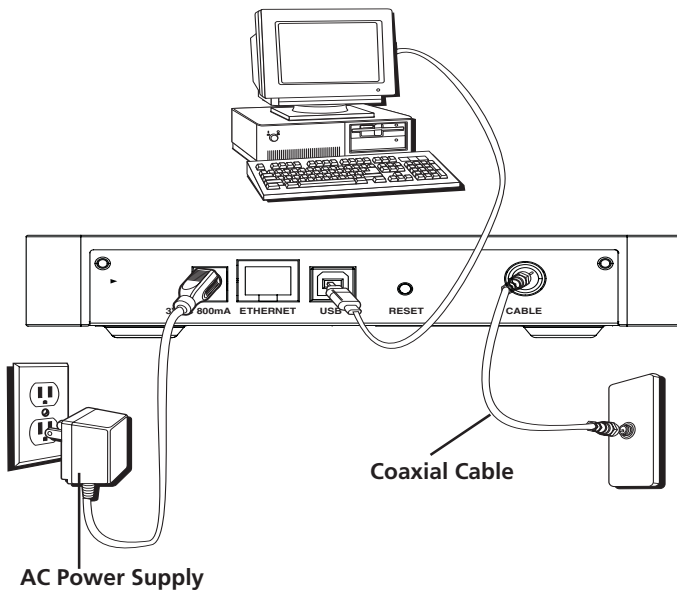
Fig. 1: Basic Home Wiring

Connecting the Cable Modem

Important Connection Information

The cable modem supports both Ethernet and USB connections simultaneously (if allowed by your cable provider).

> **Note:** Only use the power supply provided with this unit. Using other power supplies may damage the unit.

Coaxial Cable

AC Power Supply

Fig. 2:   USB Connection

Below are important points to remember before you connect the cable modem:

- You should have a **Windows® 98 SE (Second Edition), Windows Me (Millennium Edition), Windows 2000, or Windows XP operating system** to use the Universal Serial Bus (USB) connection.

- For **Ethernet connections, go to page 22.**

USB Connection

The cable modem CD included with your modem contains the drivers and other information you need to install your cable modem. Follow instructions 1 through 5 to connect the cable modem to the USB port on your computer. **Instructions must be followed in the order they appear.**

1. Connect one end of the coaxial cable to the cable connection in the wall. Attach the other end of the coaxial cable to the connector on the cable modem labeled "CABLE" (Fig. 2) on page 8.

2. Insert the plug from the AC power supply into the power AC jack on cable modem and the two-prong plug into the AC outlet.

3. Insert the supplied cable modem CD-ROM. Wait momentarily for the cable modem CD window display.

4. Close **all** open applications and dialog boxes, including the cable modem CD window.

    Note: Open applications may interfere with your cable modem installation.

5. Connect one end of the USB cable to the USB port located on the back of your computer. Connect the other end of the USB cable to the USB port on the cable modem's back panel.

    Note: Use only the power supply that accompanied this unit. Using other power supplies may damage the unit.

Next, you need to install the USB driver for your operating system:

- If you have Windows 98 SE, go to step 6 on page 10.
- If you have Windows 2000, go to step 6 on page 14.
- If you have Windows Me, go to step 6 on page 18.
- If you have Windows XP, go to step 6 on page 20.

Connecting the Cable Modem

Using Windows 98 SE for USB Connection

Follow steps 6 through 14 if you have a Windows 98 SE operating system:

6. When the "Add New Hardware Wizard" appears, click "Next" to initiate the search for drivers for your USB device. (Fig. 3)

   Note: If the "Add New Hardware Wizard" did not automatically appear, Windows 98 SE does not recognize the cable modem's presence because your BIOS (Basic Input/Output System) settings may not permit USB and/or Plug-and-Play devices. Please contact your computer's customer service department.

7. Choose "Search for the best driver (recommended)" option, and click "Next." (Fig. 4).

8. Choose ONLY the "CD-ROM drive" option and click "Next" (Fig. 5).

9. Choose "The updated driver (recommended)" option, and click "Next" (Fig. 6).

Fig. 3

Fig. 4

Fig. 5

Fig. 6

10. The search should find the driver for the "RCA or Thomson USB Cable Modem" (Fig. 7). To confirm that this is the case, click "Next" to continue and proceed to step 12. Otherwise, see step 11.

    Important: Do **NOT** continue if the search finds "USB Composite Device" driver. Proceed to step 11.

11. Follow these instructions only if the driver found was NOT the "RCA or Thomson USB Cable Modem."

    A. Click "Back" to return to the previous window.

    B. Ensure that you have selected the "CD-ROM" option.

    C. In **addition** to the CD-ROM selection, choose "Specify a location" (Fig. 8).

    D. In the location box, type in your CD-ROM drive. For example, if your CD-ROM is located on the E: drive, type "E:\."

    E. Click "Next" to continue.

        The search should find the driver for the "RCA or Thomson USB Cable Modem."

    F. Confirm that this is the driver selected, and click "Next" to continue.

Fig. 7

Fig. 8

Connecting the Cable Modem

12. Windows should now prompt you to install the "RCA or Thomson USB Cable Modem" driver. Click "Next" to install the driver.

    At this point, your PC needs to copy Windows 98 SE specific files. If these files are not located on your hard drive, you may need to insert your Windows 98 SE installation media (i.e., Windows disks or Windows CD-ROM), but first remove the cable modem CD-ROM.

13. After the Windows specific files are copied, you may be asked for another USB driver file named "NETRCACM.SYS", located on the cable modem CD-ROM. Remove the Windows 98 SE CD-ROM (if necessary), and reinsert the cable modem CD-ROM that accompanied your cable modem.

14. Windows now informs you that the installation is complete. Click on "Finish" to finalize the process (Fig. 9). When the "System Settings Change" window appears, click "Yes" to restart your computer.

Fig. 9

15. The cable modem installation is now complete. To validate a proper installation, perform the following instructions:

    A. Click on the "Start" icon in the lower left-hand corner of your screen.
    B. Select "Settings," followed by "Control Panel." The "Control Panel" window appears.
    C. Double-click on the "System" icon, and select the "Device Manager" tab.
    D. Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."
        If the "RCA or Thomson USB Cable Modem" does not exist, the cable modem was **NOT** installed correctly, go to Solution 2 on page 35.

Connecting the Cable Modem

Using Windows 2000 for USB Connection

Follow steps 6 through 14 if you have a Windows 2000 operating system:

6. When the "Found New Hardware Wizard" appears, click "Next" to initiate the search for drivers for your USB device (Fig. 10).

   Note: If Windows 2000 does not recognize the cable modem's presence, your BIOS settings may not permit USB and/or Plug-and-Play devices. Please contact your computer's customer service department.

7. Choose the "Search for a suitable driver for my device (recommended)" option, and click "Next" (Fig. 11).

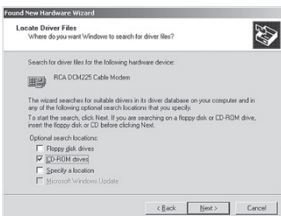8. Choose **ONLY** the "CD-ROM" option and click "Next" (Fig. 12).

Fig. 10

Fig. 11

Fig. 12

9. The search should find the driver for the "RCA or Thomson DCMxxx Cable Modem" (Fig. 13). To confirm that this is the case, click "Next" to continue and proceed to step 11. Otherwise, see step 10.

   Important: Do **NOT** continue if the search finds "USB Composite Device" driver. Proceed to step 10.

10. Follow these instructions **ONLY** if the driver found was NOT the "RCA or Thomson DCMxxx Cable Modem."

   A. Click "Back" to return to the previous window.

   B. Ensure that you have selected the "CD-ROM" option.

   C. In **addition** to the CD-ROM option, choose "Specify a location." Click on "Next" to continue (Fig. 14).

   D. In the location box, type in your CD-ROM drive. For example, if your CD-ROM is located on the E: drive, type "E:\." Click on "Ok" to continue.

   E. Click "Next" to continue.
   The search should find either "RCA or Thomson USB Cable Modem" or "RCA or Thomson DCM xxx Cable Modem."
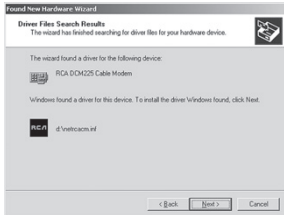

Fig. 13

Fig. 14

Connecting the Cable Modem

11. Windows should now prompt you to install either the "RCA or Thomson USB Cable Modem" or "RCA or Thomson DCMxxx Cable Modem." Click "Next" to install the driver.

    At this point your PC needs to copy Windows 2000 specific files. If these files are not located on your hard drive, you may need to insert your Windows 2000 installation media (i.e., Windows 2000 CD-ROM), but first remove the cable modem CD-ROM.

12. After the Windows specific files are copied, you may be asked for another USB driver file named "NETRCACM.SYS," located on the cable modem CD-ROM. Remove the Windows 2000 CD-ROM (if necessary), and reinsert the cable modem CD-ROM that accompanied your cable modem.

13. Click on "Finish" to complete the process (Fig. 15).

Fig. 15

14. The cable modem installation is now complete. To validate a proper installation, perform the following instructions:

    A. Click on the "Start" icon in the lower left-hand corner of your screen.
    B. Select "Settings," followed by "Control Panel." The "Control Panel" window appears.
    C. Double-click on the "System" icon, select the "Hardware" tab, and choose "Device Manager."
    D. Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."

    The "RCA or Thomson USB Cable Modem" should exist. If the "RCA or Thomson USB Cable Modem" does not exist, the cable modem was **NOT** installed correctly. Go to Solution 2 on page 35.

Connecting the Cable Modem

Using Windows Me for USB Connection

Follow steps 6 through 9 if you have a Windows Me operating system:

6. Windows Me will briefly display the "Found New Hardware Wizard," and automatically proceed to the "Add New Hardware Wizard" (Fig. 16).

    Choose the "Automatic search for a better driver (Recommended)" option, and click "Next."

    Note: If Windows Me does not recognize the cable modem's presence, i.e., the "Add New Hardware Wizard" did not automatically appear, your BIOS settings may not permit USB and/or Plug-and-Play devices. Please contact your computer's customer service department.

7. The automatic search should find and install the driver for the "RCA or Thomson USB Cable Modem" (Fig. 17). Click on "Finish" to complete the process.

8. When the "System Settings Change" window appears, click "Yes" to restart your computer (Fig. 18).
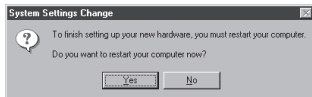

Fig. 16

Fig. 17

Fig. 18

9. The Thomson cable modem installation is now complete. To validate a proper installation, perform the following instructions:

- Click on the "Start" icon in the lower left-hand corner of your screen.
- Select "Settings," followed by "Control Panel." The "Control Panel" window will appear.
- Double-click on the "System" icon, and select the "Device Manager."
- Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."
- The "RCA or Thomson USB Cable Modem" should exist. If "RCA or Thomson USB Cable Modem" does not exist, the cable modem was **NOT** installed correctly. Go to Solution 2 on page 35.

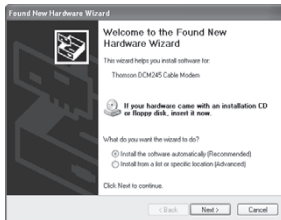# Connecting the Cable Modem

Using Windows XP for USB Connection

Follow steps 6 through 9 if you have a Windows XP operating system:

6. Windows XP will briefly display the "Welcome to the Found New Hardware Wizard," (Fig. 19) and ask you to insert the installation CD-ROM that came with the unit.

   Choose the "Install the software automatically (Recommended)" option, and click "Next."

   Note: If Windows XP does not recognize the cable modem's presence, i.e., the "Welcome to the New Hardware Wizard" did not automatically appear, your BIOS settings may not permit USB and/or Plug-and-Play devices. Please contact your computer's customer service department.

7. Your computer will install the drivers for the "RCA or Thomson USB Cable Modem" (Fig. 20). Click on "Next" to complete the process.

Fig. 19
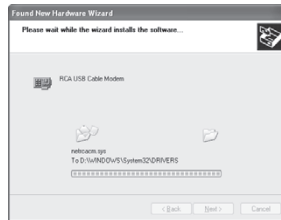
Fig. 20

8. When the "Completing the Found New Hardware Wizard" window appears, click "Finish" to complete the process (Fig. 21).

9. The Thomson cable modem installation is now complete. To validate a proper installation, perform the following instructions:

- Click on the "Start" icon in the lower left-hand corner of your screen.

- Select "Settings," followed by "Control Panel." The "Control Panel" window will appear.

- Double-click on the "System" icon, and select the "Device Manager."

- Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."

- The "RCA or Thomson USB Cable Modem" should exist. If "RCA or Thomson USB Cable Modem" does not exist, the cable modem was **NOT** installed correctly. Go to Solution 2 on page 35.

Fig. 21

Connecting the Cable Modem

Ethernet Connection to One Computer

Make the connections to the modem in the following sequence (Fig. 22):

1. Connect one end of the coaxial cable to the cable connection in the wall, and the other end to the connector on the modem labeled "CABLE."

2. Insert the plug from the AC power supply into the power AC jack on the cable modem and the two-prong plug into the AC outlet.

    Note: Use only the power supply that accompanied this unit. Using other adapters may damage the unit.

3. Connect one end of the Ethernet cable (straight-wired, see below) to the Ethernet port on the back of your computer, and the other end to the ETHERNET port on the cable modem's back panel.

    Make sure that the Ethernet cable is straight-wired (not "null" or crossover-wired). However, you will need a crossover-type cable if you are connecting the modem to a hub, or a hub within a port switch that provides the same function.
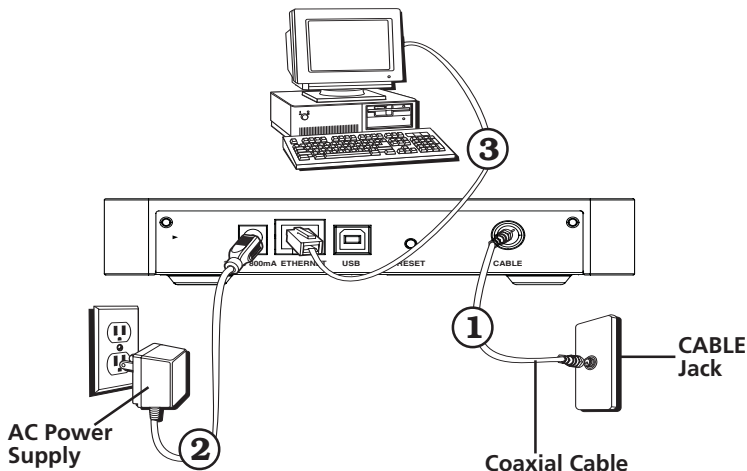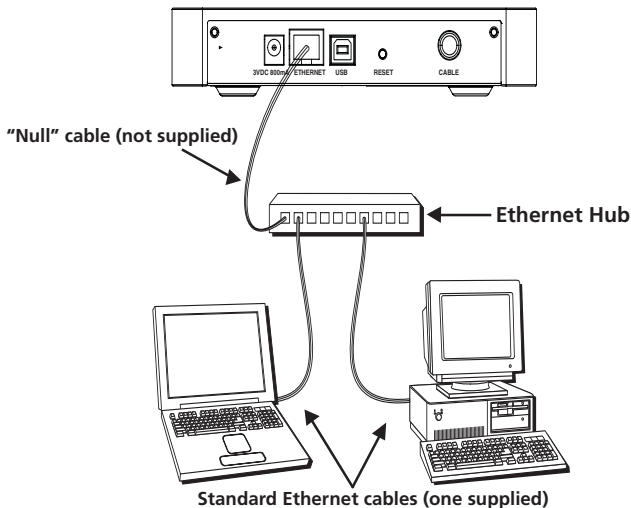

Fig. 22: Ethernet Connection

Connecting More Than Two Computers to the Cable Modem

If you need to connect more than two computers or if you need to connect two computers but USB is not available, you'll need the following additional equipment (if supported by your cable operator):

- Crossover-wired, or "null," category 5 Ethernet cable for the cable modem to be connected to the hub

- 10BaseT or 100BaseT Hub or Switch

- Straight through, or standard, category 5 Ethernet cable (one for each computer to be connected)

  If you have a hub with an uplink port*, a straight through cable can be used in combination with that port in lieu of the crossover cable.

"Null" cable (not supplied)

Ethernet Hub

Standard Ethernet cables (one supplied)

Fig. 23: Ethernet Hub Connection

*An uplink port has a small switch on it to change the polarity of the connection. It can accept either a crossover or a straight cable, depending on the setting.
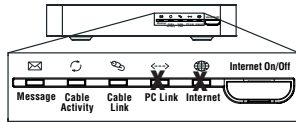
Activating the Cable Modem

Initialization Mode

After you install the cable modem and turn it on for the first time (and each time the modem is reconnected to the power), it goes through five steps before it can be used. Each of these steps is represented by a different pattern of flashing lights on the front of the modem.

Note: All indicators flash once prior to the initialization sequence.
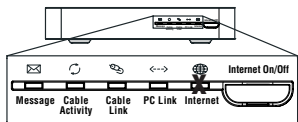
1. Tuning – The cable modem is functional and searching for a downstream cable modem service channel on your cable system.

2. Ranging – The modem is now tuned to a downstream cable modem channel and can now receive data. Now it searches for an upstream channel so that it can send data.
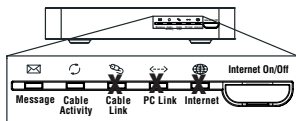
3. Connecting – The cable modem is now commun-icating start-up data both down-stream and upstream.

   The cable company is establishing IP connectivity with your modem.
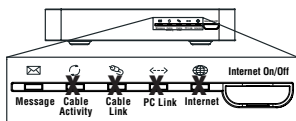
4. Configuring – The cable modem received its IP address and is downloading its configuration file from the Internet Service Provider (ISP).
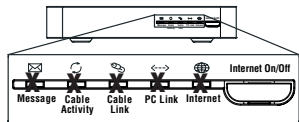
5. Registering – The cable modem configuration is complete. It is registering its "as-configured" settings with your Cable Operator. Once complete, the POWER (INTERNET)*, PC LINK, and CABLE (CABLE ACTIVITY)* indicators stop flashing and remain on.

* Actual button or LED names may vary per model.

| **Legend** | □Off | ■ On | ✖ Flashing |

Buttons

INTERNET ON/OFF* – Turns the Internet connection ON and OFF for additional security. In OFF mode, the CABLE ACTIVITY LED is also disabled.

> **Important:** Do not press this button when transmitting data over the Internet. The information will be lost and your Internet connection disabled.

Indicators – Operational Mode

INTERNET* – Indicates whether the Internet Connection is active.

PC LINK – Indicates whether the connection between the computer and the modem is active (ready to transmit/receive) or actually transmitting/receiving. The light is off when no carrier is present (or the modem is in standby mode), on when the carrier is present but there's no transmit/receive activity, and flashing when there is transmit/receive activity.

CABLE LINK* – Indicates the status of your cable connection. The light is off when no cable connection is detected and fully lit when the modem is registered with the network and data can be sent.

CABLE ACTIVITY* – Indicates the existence of data traffic in the cable lines. The light is off when no data traffic is present and flashing when data activity exists.

MESSAGE* – This light flashes when you have mail or message (if available through service provider).

> **Note:** If all of the lights are flashing sequentially, it means the cable modem is automatically updating its system software. Please wait for the lights to stop flashing. You cannot use your modem during this time. Do not remove the power supply or reset the cable modem during this process.

* Actual button or LED names may vary per model.

Using the Cable Modem

Reset Switch

Reset switch

The reset switch can be found behind a "toothpick hole" on the back panel. It performs two functions:
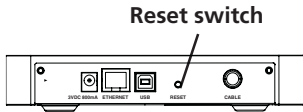
- **Basic Reset** – Press and release the switch to make it perform the same function as disconnecting the power from the modem. It will start up again in Initialization Mode, see page 24.

- **Factory Default Reset** – Unplug the modem from the AC power. Press and hold the reset switch while plugging the modem into AC power. Continue holding the switch. Release the switch when all lights come on (about 6 seconds). This will return the modem to a factory "out of box" condition. **This should only be done if the cable modem has been taken out of service in one location and is being reconnected to a different service, or if instructed to do so by your cable company.**

Other Status Indicators

Three other status light patterns you may see are:
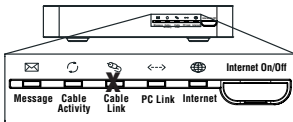
De-Activated – Cable Service Operator has deactivated the cable modem. The cable light flashes slowly.
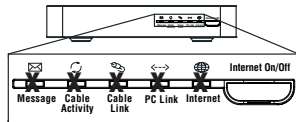
Software downloading or update in progress. Lights flash sequentially from top to bottom.
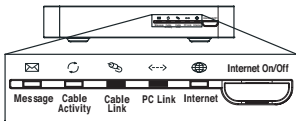
Standby – The modem is in the Standby mode. There is no connection to the Internet. The CABLE LINK light is on and the PC LINK light is on if a computer is connected.

* Actual button or LED names may vary per model.

Legend	□ Off	■ On	✗ Flashing

Frequently Asked Questions

Q. *What if I don't subscribe to cable TV?*

A. If cable TV is available in your area, data service may be made available with or without cable TV service. Contact your local cable company for complete information on cable services, including high-speed internet access.

Q. *How do I get the system installed?*

A. Professional installation from your cable provider is strongly recommended. They will ensure proper cable connection to the modem and your computer. However, your retailer may have offered a self installation kit, including the necessary software to communicate with your cable ISP.

Q. *Once my cable modem is connected, how do I get access to the Internet?*

A. Your local cable company provides your internet service*, offering a wide range of services including email, chat, and news and information services, and a connection to the World Wide Web.

Q. *Can I watch TV and surf the Internet at the same time?*

A. Absolutely! And your phone line won't be tied up while you're online.

Q. *Can I run more than one computer on the modem?*

A. Yes – a single cable modem can support up to 32 computers using Ethernet connectivity.**

Q. *What do you mean by "Broadband"?*

A. Simply put, it means you'll be getting information through a "bigger pipe," with more bandwidth, than a standard phone line can offer. A wider, "broader" band means more information, more quickly.

* Monthly subscription fee applies.

** Additional equipment required. Contact your cable company and ISP for any restrictions or additional fees.

Frequently Asked Questions

Q. *What is DOCSIS and what does it mean?*

A. "Data Over Cable Service Interface Specifications" is the industry standard that most cable companies are adopting as they upgrade their systems. Should you ever decide to move, the Euro-DOCSIS cable modem will work with all upgraded cable systems that are EuroDOCSIS-compliant or DOCSIS*-compliant.

Q. *What is Euro-DOCSIS and what does it mean?*

A. Euro-DOCSIS is the modified DOCSIS standard to accommodate European cable systems which often use 8 MHz channel spacing cable networks.

*If the DOCSIS downstream frequencies match the EuroDOCSIS frequency range.

General Troubleshooting

I can't access the Internet or my email.

- Check all of the connections to your cable modem.

- Your Ethernet card or USB port may not be working. Check each product's documentation for more information.

- The Network Properties of your operating system may not be installed correctly or the settings may be incorrect. Check with your ISP or cable company.

Nothing happens when I press the on/off button.

- Make sure that the AC power supply is fully plugged into a wall outlet.

- Make sure that the power supply cord is fully inserted into the AC adapter connection on the back of the modem.

- Double-check that the AC outlet you are using is not controlled by a switch that is turned off.

All of the lights are flashing in sequence.

- This means the cable modem is automatically updating its system software. Please wait for the lights to stop flashing. The updating process typically lasts less than one minute.

- Do not remove the power supply or reset the cable modem during this process.

The light labeled MESSAGE* is flashing (if available).

- This means that you have new mail to check or a message from your cable operator.

* Actual button or LED names may vary per model.

General Troubleshooting

I can't get the modem to establish an Ethernet connection.

- Even new computers don't always have Ethernet capabilities – be sure to verify that your computer has a properly installed Ethernet card and the driver software to support it.

- Check to see that you are using the right type of Ethernet cable (see page 22).

The modem won't register a cable connection (Cable light not on continuously).

- If the modem is in Initialization Mode, the Power Light will be flashing. Call your Cable company if it has not completed this 5-step process within 30 minutes, and note which step it is getting stuck on. (See page 24 for details.)

- The modem should work with a standard RG-6 coaxial cable, but if you're using a cable other than one your Cable company recommends, or if the terminal connections are loose, it may not work. Check with your Cable company to determine whether you're using the correct cable.

- If you subscribe to video service over cable, the cable signal may not be reaching the modem. Confirm that good quality cable television pictures are available to the coaxial connector you are using by connecting a television to it. If your cable outlet is "dead" call your Cable company.

USB Installation Troubleshooting

This section is provided to assist those users who have followed the instructions in this instruction book, and who are still experiencing problems with their USB installation.

Symptoms

- Network error message appears during installation, see below.
- Cable modem does not transfer data (pass traffic, i.e., The "PC LINK" light on your cable modem is not flashing), go to page 35.
- Cable modem stops transferring data, go to page 39.
- Windows response is sluggish once the USB cable is connected, go to page 39.
- Windows response is sluggish following a computer reboot, go to page 39.
- The hourglass stays up for several minutes, go to page 39.
- A network error message is displayed, go to page 39.
- The cable modem was successfully installed. Following the cable modem installation, you install or update an Internet Service Provider's software (e.g., AOL). Now, the cable modem is no longer functioning properly. **(Windows 98 SE only)**, go to page 40.

Symptom 1

Network error message appears during installation
A network error message may appear if there are too many network devices installed on your computer system. This message may **resemble** Figure 1 (TS Fig. 1) below.
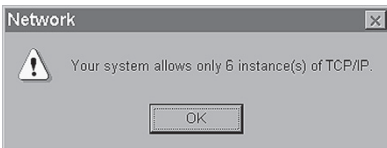
TS Fig. 1

USB Troubleshooting

Solution 1:

In this situation, the cable modem is not installed correctly. Therefore, you must:

A. Uninstall the USB cable modem.

B. Remove another network adapter to allow sufficient space on your computer system for the USB cable modem.

C. Reinstall the USB cable modem.

1A. Uninstall USB cable modem

Windows 98 SE

1) Remove the "RCA or Thomson USB Cable Modem" network adapter following the Windows 98 SE instructions outlined in Solution 1B, Remove Another Network Adapter, on page 34.

2) Remove both the "netrcacm.sys" and the "netrcacm.inf" file.

   a) Left click on the "Start" icon in the lower left-hand corner of your screen.

   b) Select "Find," followed by "Files and Folders." The "Find All Files" window (TS Fig. 2) appears.
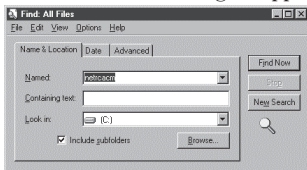
TS Fig. 2

   c) In the "Named:" box, type "netrcacm." In the "Look-in:" box, use the pull down menu to select your local hard drive (e.g., "c:\").

   d) Click the "Include subfolders" box, and press "Find Now."

      The "netrcacm.sys" file and the "netrcacm.inf" file should both appear.

   e) Highlight both files and right click on "Delete."

   f) The "Confirm Multiple File Delete" window appears. Click on "Yes" to confirm your approval to delete both files.

   g) Close all open windows.

Windows 2000

1) Remove the "RCA or Thomson USB Cable Modem" network adapter following the Windows 2000 instructions outlined in Solution 1B, Remove Another Network Adapter, on page 34.

2) Remove the "netrcacm.sys."

   a) Left click on the "Start" icon in the lower left-hand corner of your screen.

   b) Select "Search," followed by "For Files or Folders." The "Search Results" window appears. The window may resemble the one below (TS fig. 3).

   c) In the "Containing Text:" box, type "netrcacm." In the "Look in:" box, use the pull down menu to select your local hard drive (e.g., "c:\"), and press "Search Now."

   The search should find the netrcacm.sys file.

   d) Highlight this file and press "Delete."

   e) The "Confirm File Delete" window appears. Click on "Yes" to confirm your approval to delete this file.

   f) Close all open windows.

3) Remove the correct "inf" file.

   Note: In Windows 2000, the name of the "inf" file may not be consistent.

   a) Left click on the "Start" icon in the lower left-hand corner of your screen.

   b) Select "Search," followed by "For Files or Folders." The "Search Results" window appears.
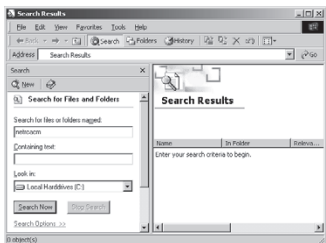
TS Fig. 3

USB Troubleshooting

    c) In the "Search for Files or Folders named:" box, type "oem?.* oem??.*" In the "Look in:" box, use the pull down menu to select your local hard drive (e.g., "c:\"). Press "Search Now."

    d) The search should find several oem files (e.g., oem0.inf, oem0.pnf, oem2.inf etc).

    e) Highlight each "oemX.inf" file individually. Double click on the file to open it. Once the file is open, scroll down to the end of the file. If the end of the file states "RCA or Thomson USB based Digital Cable Modem Win2000 Driver," you have opened the correct file.

    f) Close this file. Highlight the name, and press the "Delete" key on your keyboard. (e.g., oem2.inf). The "Confirm File Delete" window appears. Press "Yes to All."

    g) In addition to the ".inf" file, highlight the equivalent ".pnf" file, and press the "Delete" key on your keyboard (e.g., oem2.pnf). The "Confirm File Delete" window appears. Press "Yes to All."

    h) Close all open windows.

1B. Remove another Network Adapter

Windows 98 SE

1) Left click on the "Start" icon in the lower left-hand corner of your screen.

2) Select "Settings," followed by "Control Panel." The "Control Panel" window appears.

3) Double-click on the "Network" icon, and select the "Configuration" tab.

4) Scroll down the list and highlight the network adapter(s) you wish to remove. Click the "Remove" button. It is your decision as to which network adapter(s) is removed.

    Note: Network adapters are identified in the description box as you scroll down the list.

5) The "System Settings Change" window appears. Click "Yes" to restart your computer.

Windows 2000

1) Left click on the "Start" icon in the lower left-hand corner of your screen.

2) Select "Settings," followed by "Control Panel." The "Control Panel" window appears.

3) Double-click on the "System" icon. Select the "Hardware" tab followed by the "Device Manager."

4) Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."

5) Highlight the network adapter(s) you wish to remove and click the "Action" tab located in the upper left-hand corner of the window. Select "Uninstall." It is your decision as to which network adapter(s) is removed.

6) The "Confirm Device Removal" window appears. Ensure that the correct network adapter has been selected for removal and click "Ok."

1C. Reinstall the cable modem

Reinstall the cable modem by following the instructions on page 9.

Symptom 2:

Cable modem does not transfer data (Pass traffic).
You have completed the cable modem installation, but the cable modem will not transfer data (i.e., The "PC LINK" light on your cable modem is not flashing).

Solution 2:

In this situation, the cable modem will not pass traffic. Therefore, you must:
A. Validate a proper installation.

B. Test for the possibility that the Dynamic Host Control Protocol (DHCP) lease from the cable Company is correct if "RCA or Thomson USB Cable Modem" exists.

C. Ensure that your RCA or Thomson cable modem network adapter is enabled.

D. Uninstall the USB cable modem if neither A, B, or C is applicable.

2A. Validate a proper installation.

Windows 98 SE

1) Click on the "Start" icon in the lower left-hand corner of your screen.

2) Select "Settings," followed by "Control Panel." The "Control Panel" window appears.

USB Troubleshooting

3) Double-click on the "System" icon, and select the "Device Manager" tab.

4) Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."

   The "RCA or Thomson USB Cable Modem" should exist. If "RCA or Thomson USB Cable Modem" does not exist, the cable modem was **NOT** installed correctly.

5) If the cable modem was not installed correctly, uninstall the USB cable modem in accordance with the instructions outlined in Solution 1A, Uninstall USB cable modem, on page 32 and attempt a reinstallation following the USB installation on page 9.

Windows 2000

1) Click on the "Start" icon in the lower left-hand corner of your screen.

2) Select "Settings," followed by "Control Panel." The "Control Panel" window appears.

3) Double-click on the "System" icon, select the "Hardware" tab, and choose "Device Manager."

4) Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."

   The "RCA USB Cable Modem" should exist. If "RCA or Thomson USB Cable Modem" does not exist, the cable modem was **NOT** installed correctly.

5) If the cable modem was not installed correctly, uninstall the cable modem in accordance with the instructions outlined in Solution 1A, Uninstall the USB cable modem, on page 32 and attempt a reinstallation following the USB installation on page 9.

2B. Test for the possibility that the Dynamic Host Control Protocol (DHCP) lease from the cable Company is correct if "RCA or Thomson USB Cable Modem" exists.

Windows 98 SE

A test known as "Winipcfg" can be utilized to determine if this is your problem. Please follow the instructions below to perform the "Winipcfg" test.

1) Left click on the "Start" icon in the lower left-hand corner of your screen.
2) Select "Run."
3) The "Run" window appears. Type "winipcfg" in the text box, and click the "Ok" button.
4) The "IP Configuration" window appears. Use the drop down box to select the "RCA or Thomson Digital Cable Modem."
5) A list of addresses should appear. Locate the IP address. If the first three digits of the IP address are "169," your DHCP lease failed. Please contact your Internet Service Provider (ISP) and ensure that they correctly provisioned your service for your digital cable modem with the correct serial number and MAC address.
6) Once the IP configuration error has been corrected, you must unplug the USB cable and plug it back in.

Windows 2000

A test known as "ipconfig / all " can be utilized to determine if this is your problem. Please follow the proceeding instructions to perform the "ipconfig" test.

1) Left click on the "Start" icon in the lower left-hand corner of your screen.
2) Select "Run." The Run window appears.
3) Type "cmd" in the text box, and click the "Ok" button.
4) The command window appears. Type "ipconfig /all." A list of all your adapters appears.
5) Locate the cable modem adapter, and its IP address. If the first three digits of the IP address are "169," your DHCP lease failed. Please contact your Internet Service Provider (ISP) and ensure that they correctly provisioned your service for your digital cable modem with the correct serial number and MAC address.
6) Once the IP configuration error has been corrected, you must unplug the USB cable and plug it back in.

USB Troubleshooting

2C. Ensure that your cable modem network adapter is enabled on your computer system.

This may be a problem if you have another network adapter installed on your computer system that is enabled. To disable other network adapters, follow the instructions outlined below.

Windows 98 SE

1) Left click on the "Start" icon in the lower left-hand corner of your screen.

2) Select "Settings," followed by "Control Panel." The "Control Panel" window appears.

3) Double-click on the "System" icon, and select the "Device Manager" tab.

4) Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."

5) Highlight the network adapter(s) you wish to disable and double-click. To ensure the "RCA or Thomson USB Cable Modem" functionality, you should disable all unused network adapters.

6) The selected network adapter window appears. Click the "Disable in this hardware profiles" box to disable the network adapter, and click "Ok."

7) Close all open windows.

Windows 2000

1) Left click on the "Start" icon in the lower left-hand corner of your screen.

2) Select "Settings," followed by "Control Panel." The "Control Panel" window appears.

3) Double-click on the "System" icon. Select the "Hardware" tab followed by the "Device Manager."

4) Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."

5) Highlight the network adapter(s) you wish to disable and double-click. To ensure the cable modem functionality, you should disable unused network adapters.

6) The selected network adapter window appears. On the pull down menu, select "Do not use this device (disable) and click "Ok."

7) Close all open windows.

2D. Uninstall the USB cable modem if neither A, B, or C is applicable

Uninstall the "USB cable modem" in accordance with the instructions outlined in Solution 1A, Uninstall USB cable modem, on page 32.

Symptom 3:

Cable modem stops transferring data (passing traffic).

Cable modem was functioning properly and suddenly stopped transferring data (passing traffic).

Solution 3:

A) Check your cables — there might be a disconnected, bent, broken, or coiled cable.

B) Unplug the USB cable, and plug it back in while your computer is operational.

Symptom 4:

Windows response is sluggish once the USB cable is connected.
Windows response is sluggish following a computer reboot.
The hourglass stays up for several minutes.
A network error message is displayed as shown in the following figure below.

When a network connection first starts, Windows tries to get a network address, also known as an "IP" address. This process is called DHCP (Dynamic Host Control Protocol), and it can take several minutes to complete. On Windows 98 SE, an hourglass may appear and the system response may be sluggish.
If the coaxial cable is not connected or the cable network is down, you may see a DHCP error as shown in TS fig. 4.

USB Troubleshooting

Solution 4:

A. Wait a few minutes. The cable modem should work properly once the connection is made.

B. If you have waited several minutes and the connection is still not made, follow the instructions outlined in Solution 2B, Test for the Possibility that the Dynamic Host Control Protocol (DHCP) Lease from the Cable Company is Correct if "RCA or Thomson USB Cable Modem" Exists, on page 36 to determine if it is a DHCP error. This message may resemble TS Figure 4 below.
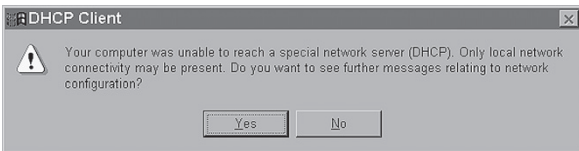
TS Fig. 4

Symptom 5:

The cable modem was successfully installed. Following the cable modem installation, you install or update an Internet Service Provider's software (e.g., AOL.) Now, the cable modem is no longer functioning properly. (Windows 98 SE only)

Some ISP's installation software automatically creates its own TCP/IP protocols and removes the Thomson cable modem TCP/IP protocol.

Solution 5:

To reconnect your cable modem TCP/IP protocols, follow the instructions below.

1) Click on the "Start" icon in the lower left-hand corner of your screen.

2) Select "Settings" followed by "Control Panel." The "Control Panel" window appears.

3) Click on the "Network Neighborhood " icon.

4) Choose the "Configuration" tab.

5) Scroll down the list until you come to "RCA or Thomson Cable Modem." If "RCA or Thomson Cable Modem" is not there, your cable modem is not installed correctly. Please proceed to Solution 1 on page 32.

6) The TCP/IP protocols are located below the "RCA or Thomson Cable Modem." Scroll down the list until you come to "TCP/IP RCA or Thomson Cable Modem." Select it. If "TCP/IP RCA or Thomson Cable Modem" is not there, click on the "Add" button.

7) The "Select Network Component Type" window appears. Select "Protocol," and click on the "Add" button.

   A new window appears with a "Manufacturer's" window on the left-hand side and a "Network Protocols" window on the right hand side."

8) In the "Manufacturer's" window, select "Microsoft."

9) In the "Network Protocols" window, select "TCP/IP."

   The addition of the "TCP/IP RCA or Thomson Cable Modem" protocol should be automatic.

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: DCM315
Equipment Classification: Computing Device Accessory

Responsible Party: Thomson Inc.
                                10330 N. Meridian Street
                                Indianapolis, IN 46290
                                Telephone: 317-415-4151

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 the dealer 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 requiements of the Canadian Interference Causing Equipment Regulations.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Minimum System Requirements

	IBM PC COMPATIBLE	MACINTOSH
CPU	Pentium preferred	PowerPC or higher
System RAM	16MB (32MB preferred)	24MB (32MB preferred)
Operating System	Windows 98SE/2000/Me/XP, Linux	Mac OS 7.6.1 or higher
Available Disk Space	125MB	50MB
Sound Card	Preferred	N/A†
Video	VGA or better (SVGA preferred)	VGA or better (SVGA built-in preferred)
CD-ROM Drive	Required for USB	Required
Ethernet	10BaseT or 100BaseT	10BaseT or 100BaseT

USB Port   USB (Windows 98SE/2000/Me/XP only) N/A†

The Universal Serial Bus is a high speed bus that enables your computer to communicate simultaneously with a variety of peripherals. If you have other peripherals that send and receive a lot of information, such as speakers, printers or scanners, we recommend using an Ethernet card to support this modem.

Connecting the Cable Modem

1. Connect one end of the coaxial cable to the cable connection in the wall, and the other end to the connector on the modem labeled CABLE.

2. a. Insert the plug from the AC power supply into the power AC jack on the cable modem.

   b. Insert the power cord into the AC adapter, and then plug into an AC outlet.

3. **For USB Connection:** Connect one end of the USB cable to the USB port on the back of your computer, and the other end to the USB port on the cable modem's back panel. **(See page 9 for instructions on loading the USB driver.)**

   OR

   For Ethernet Connection: Connect one end of the Ethernet cable (straight-wired, see above) to the Ethernet port on the back of your computer, and the other end to the ETHERNET jack on the modem's back panel.

†Mac Users: Mac OS or any other OS other than Windows 98SE, Me, 2000, or XP are not currently supported for USB installation. Please use the Ethernet connection.

Quick Reference

Button/Light/LED Indicators

INTERNET ON/OFF* – Turns the Internet connection ON and OFF for additional security. In OFF mode, the CABLE ACTIVITY LED is also disabled. *Do not press this button when transmitting data over the internet. The information will be lost and your connection disabled.*

INTERNET* – Indicates whether the Internet Connection is active.

PC LINK – Indicates whether the connection between the computer and the modem is active (ready to transmit/receive) or actually transmitting/receiving. The light is off when no carrier is present (or the modem is in standby mode), on when the carrier is present but there's no transmit/receive activity, and flashing when there is transmit/receive activity.

CABLE-LINK* – Indicates the status of your cable connection. The light is off when no cable connection is detected and fully lit when the modem is registered with the network and data can be sent.

CABLE ACTIVITY* – Indicates the existence of data traffic in the cable lines. The light is off when no data traffic is present and flashing when data activity exists.

MESSAGE* – This light flashes when you have mail or message (if available through service provider).

Service Information

If you purchased or leased your cable modem directly from your cable company, then warranty service for the cable modem may be provided through your cable provider or its authorized representative. For information on 1) Order Service, 2) Obtaining Customer Support, or 3) Additional Service Information, please contact your cable company. If you purchased your cable modem from a retailer, see the enclosed warranty card.

* Actual button or LED names may vary per model.

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10BaseT – Unshielded, twisted pair cable with an RJ-45 connector, used with Ethernet LAN (Local Area Network). "10" indicates speed (10 Mbps), "Base" refers to baseband technology, and "T" means twisted pair cable.

DHCP (Dynamic Host Control Protocol) – A protocol which allows a server to dynamically assign IP addresses to workstations on the fly.

DOCSIS (Data Over Cable Service Interface Specifications) – A project with the objective of developing a set of necessary specifications and operations support interface specifications for cable modems and associated equipment.

Ethernet card – A plug-in circuit board installed in an expansion slot of a personal computer. The Ethernet card (sometimes called a Network Interface Card or NIC) takes parallel data from the computer, converts it to serial data, puts it into a packet format, and sends it over the 10BaseT or 100BaseT LAN cable.

EuroDOCSIS – The modified DOCSIS standard to accommodate European cable systems which often use 8 MHz channel spacing cable networks.

F Connector – A type of coaxial connector, labeled CABLE IN on the rear of the cable modem, that connects the modem to the cable system.

HTTP (HyperText Transfer Protocol) – Invisible to the user, HTTP is used by servers and clients to communicate and display information on a client browser.

Hub – A device used to connect multiple computers to the cable modem.

IP Address – A unique, 32-bit address assigned to every device in a network. An IP (Internet Protocol) address has two parts: a network address and a host address. This modem receives a new IP address from your cable operator via DHCP each time it goes through Initialization Mode.

MAC Address – The permanent "identity" for a device programmed into the Media Access Control layer in the network architecture during the modem's manufacture.

Network Driver – A file that is loaded on the computer to allow the computer to recognize the Ethernet card or USB port.

TCP/IP (Transmission Control Protocol/Internet Protocol) – A networking protocol that provides communication across interconnected networks, between computers with diverse hardware architectures and various operating systems.

Universal Serial Bus (USB) – USB is a "plug-and-play" interface between a computer and add-on devices, such as a cable modem.

THOMSON

THOMSON