Cable Modem

User's Manual

User's Guide

Copyright Information

Product Name:	Cable Modem
Manual Revision:	1.00 E1009
Release Date:	April 2002

Safety Statements

Federal Communications Commission Statement

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

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the Federal Communications Commission (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.

> **WARNING! The use of a shielded-type power cord is required in order to meet FCC emission limits and to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used. Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.**

Reprinted from the Code of Federal Regulations #47, part 15.193, 1993. Washington DC: Office of the Federal Register, National Archives and Records Administration, U.S. Government Printing Office.

UL

This product meets all safety requirements per UL-1950 standard.

CE

This certificate of conformity is based on an evaluation of the cable modem that is in compliance with the Low Voltage Directive 73/23/EEC and the Amendment Directive 93/68/EEC.

Contents

Chapter 1 - Overview

Thank you for purchasing this cable modem. This cable modem 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. Once the cable modem is powered up, you are online to enjoy real-time 3D animation, video conferencing, and perform other data intensive operations.

Features

- Compliant to MCNS DOCSIS or Euro DOCSIS standards
- Support network management protocol
- Plug and Play operation for easy setup and operation
- Diagnosis through front panel LEDs
- Software upgradeable if initiated by your cable company
- Low power consumption
- Stylish, compact design

Package Contents

☑ (1) Cable Modem

☑ (1) CAT.5 Ethernet cable (RJ-45)

☑ (1) DC Power adapter

☑ (1) User's Manual

☐ (1) USB Driver Diskette (USB model only)

☐ (1) USB Cable (optional on USB model)

System Requirements

Before connecting the cable modem to your PC, make sure your system is equipped with a LAN controller and supports the TCP/IP protocol.

Installing a Network Card

Preparations

If your system does not have an embedded LAN controller, you must install a network interface card as instructed below (assuming that you are using an Ethernet card under the operating system of Windows 98):

1. Install the network 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.
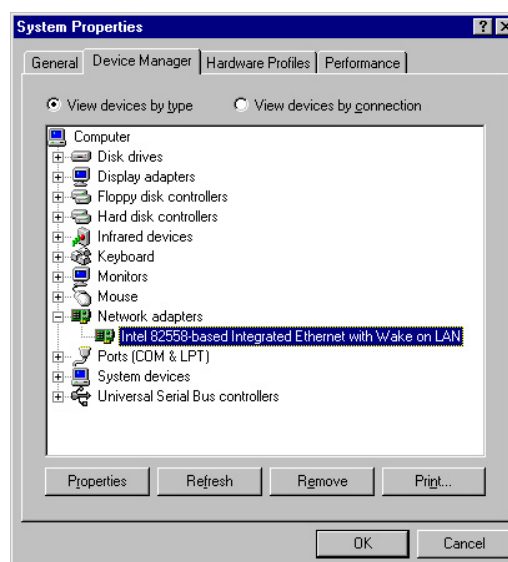
Checking if TCP/IP is already installed

1. Click the **Start** button ▣Start on the desktop. In the **Settings** menu, select **Control Panel** 🖼 Control Panel. Double-click the Network icon 🖳 Network .
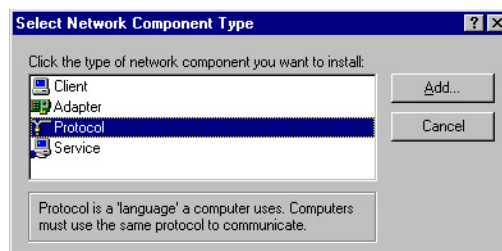
2. In the list of installed network components try to find the TCP/IP protocol. It may be followed by the name of the Ethernet controller. If you cannot locate anything that begins with **TCP/IP**, install it as described below.
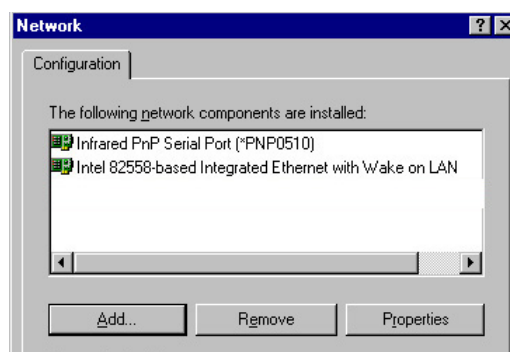
Adding TCP/IP in Network properties

1. Click **Add**.
2. Double-click **Protocol**.
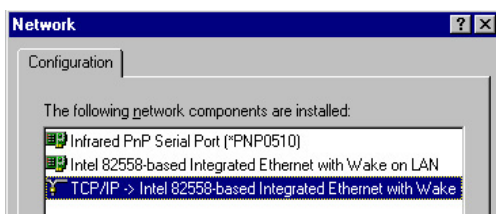
3. Select **Microsoft** from the manufacturers. In the list of network protocols browse to **TCP/IP** and then double-click it.

Changing TCP/IP Settings

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.

Chapter 2 - Installing the Cable Modem
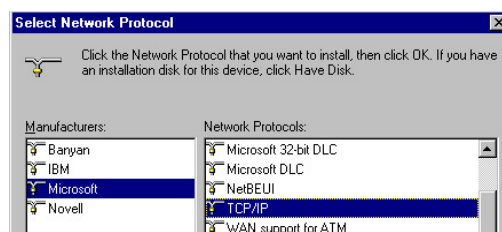
Take the following steps to accomplish the installation procedure:

1. Connect the cable TV coaxial cable to the input connector of a signal splitter.

2. Connect a coaxial cable from one of the output connectors on the splitter to the input connector of your TV set.

3. Use another coaxial cable to connect the other output connector on the splitter and the RF connector on the rear panel of the cable modem.

4. Connect the LAN cable from the LAN port on your computer to the LAN port on the rear panel of the cable modem.

5. Connect the DC power adapter to the POWER input jack on the rear panel of the cable modem. Plug in the DC power adapter to an electrical outlet.

NOTE: If you are not using a television on the cable line, you may skip steps 1 to 3 and connect the cable TV coaxial cable directly to the CABLE connector on the rear panel of the cable modem.
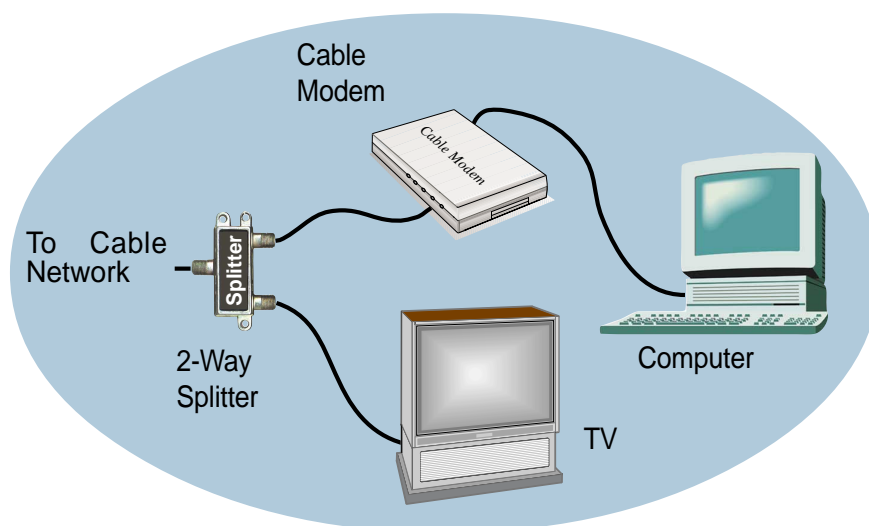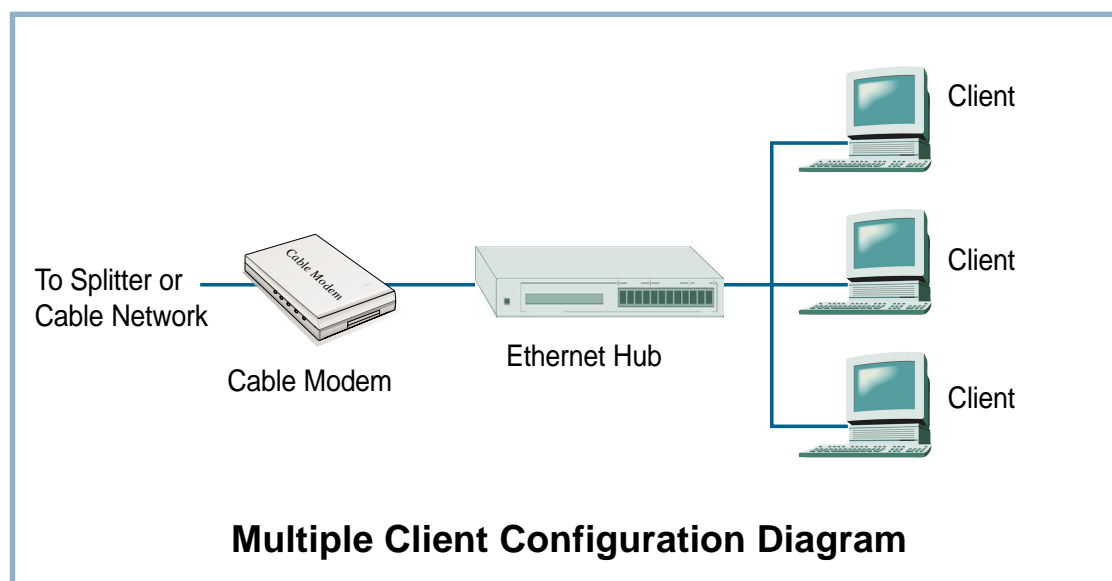

Cable Service Connections

Powering Up

When all connections have been properly made and the power is ON, the cable modem will automatically start the self-test and search for the active cable channel provided by your cable operator. Now you are all set and ready to surf the Internet at a marvelous speed!

Multiple Client Configuration

The cable modem supports up to 15 pieces of consumer premises equipment. If you can obtain multiple IP addresses from your cable operator, you can hook up as many computers to the cable modem as the number of the IP addresses, using a hub in-between (as shown below). Each connected client PC will then be assigned one dynamic IP address by the cable operator.

Chapter 2

Multiple Client Configuration Diagram

To Splitter or Cable Network

Cable Modem

Ethernet Hub

Client

Client

Client

If you would like to use the USB interface, connect the USB cable modem to your computer using the USB cable and install the driver as shown here.
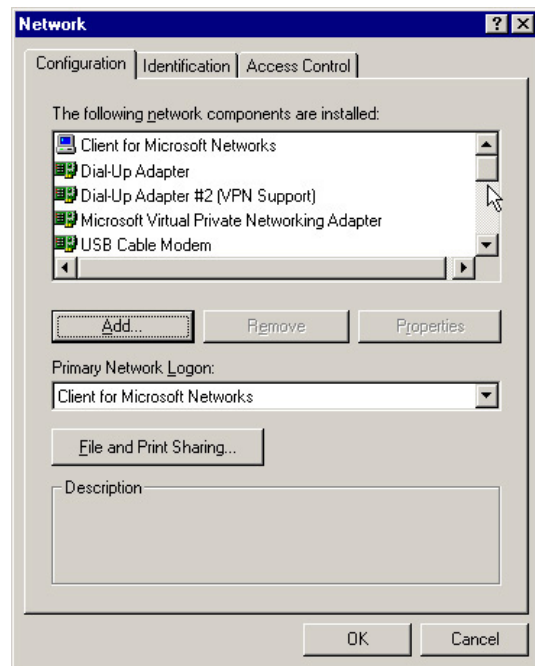
Windows ME

Installing the Driver

1. Turn ON the cable modem your computer.

2. If you have not connected the cable modem to your computer using the USB cable, do so now.

3. Windows will detect that a new hardware has been added and will start the **Add New Hardware Wizard**.

4. Insert the cable modem driver disk into your computer.

5. Click **Next**. (Automatic search...)

9. The Wizard searches for the driver and finds the correct device driver. Click **Next**.

11. After the initial setup files are copied, the wizard indicates it has completed he driver installation. Click **Finish**.

13. A dialog box prompts you to restart your computer. Click **Yes**.
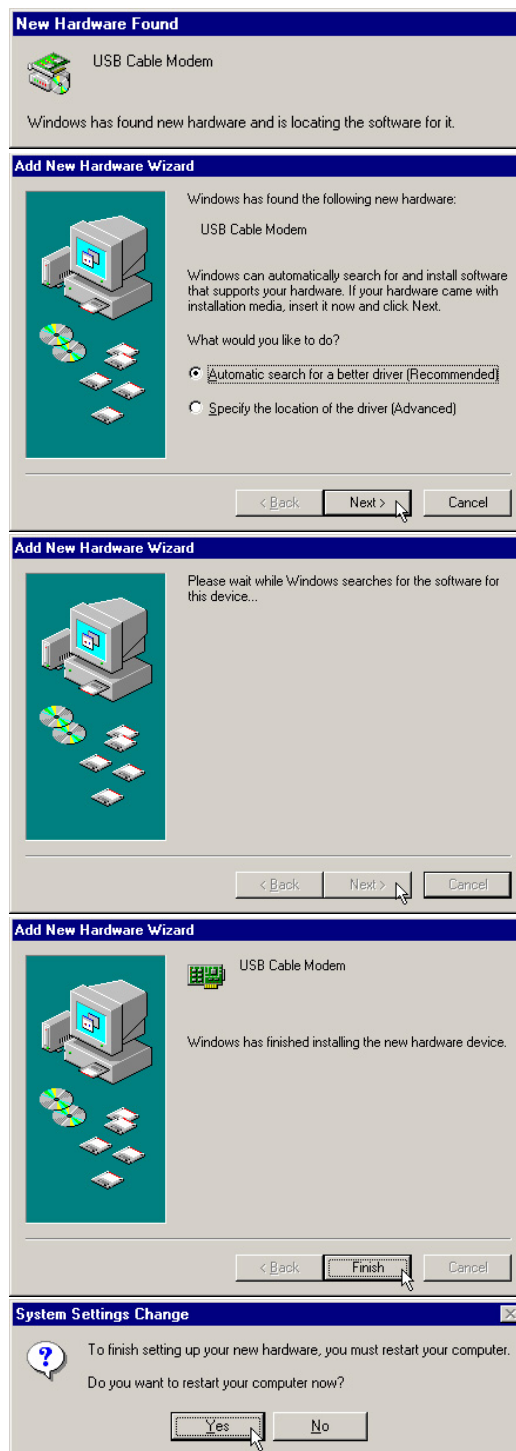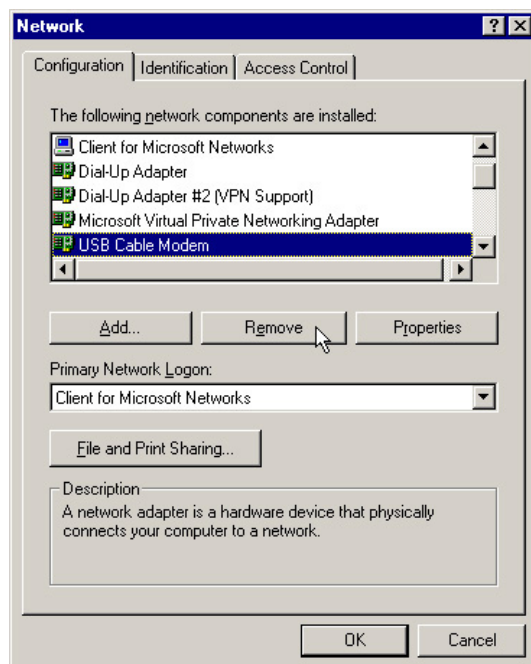
Windows ME

Verifying the Driver

1. Right-click "My Network Places" icon on the desktop.

2. You should see "USB Cable Modem"

Deleting the Driver - Network
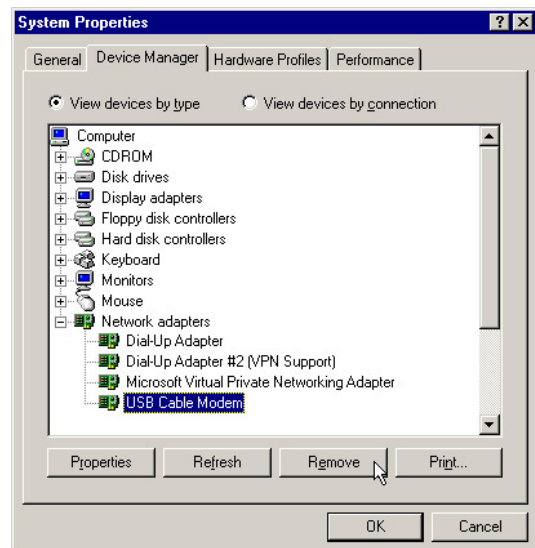
(Either the Network or System will work.)

1. Right-click "My Network Places" icon on the desktop.

2. Select the device and click the remove button.

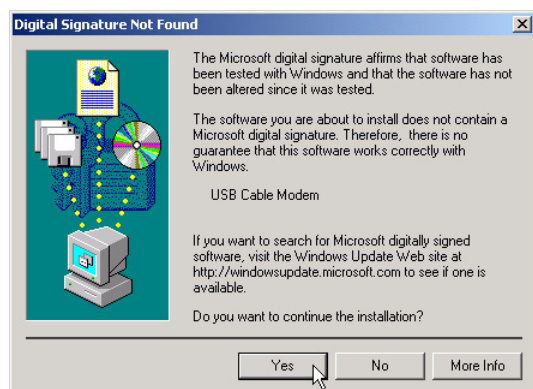### Deleting the Driver - System

(Either the Network or System will work.)

1. Right-click "My Computer" icon on the desktop and select Device Manager.

2. Select the device and click the remove button.

Windows 2000

Installing the Driver

1. Turn ON the cable modem and your computer.

2. If you have not connected the cable modem to your computer using the USB cable, do so now.

3. Windows will detect that a new hardware has been added and will start the **Add New Hardware Wizard**.

4. Insert the cable modem driver disk into your computer.

5. Click **Next**. (Search for a...)

6. Select "Floppy disk drives" and click **Next**.

7. Click next when "usbcm.inf" is found.

8. When "Digital Signature Not Found" is displayed, click **Yes** to continue.

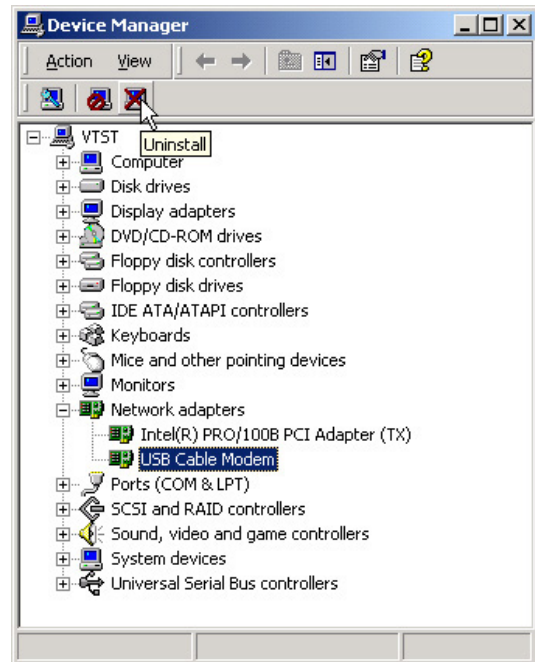9. When installation is complete, click **Finish** to close the wizard.

Windows 2000

Verifying the Driver

1. Right-click "My Network Places" icon on the desktop.

2. You should see "USB Cable Modem"

Deleting the Driver - System

1. Right-click "My Computer" icon on the desktop and select Hardware.

2. Click Device Manager button

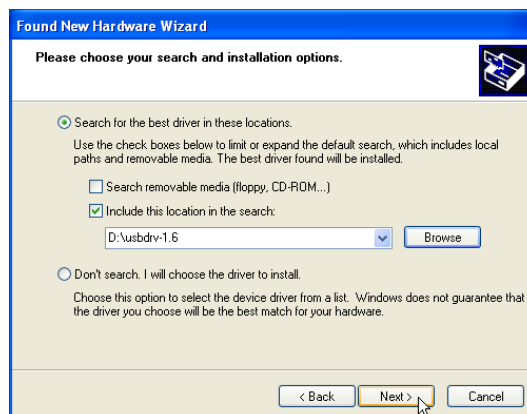3. Select the device and click the remove button.
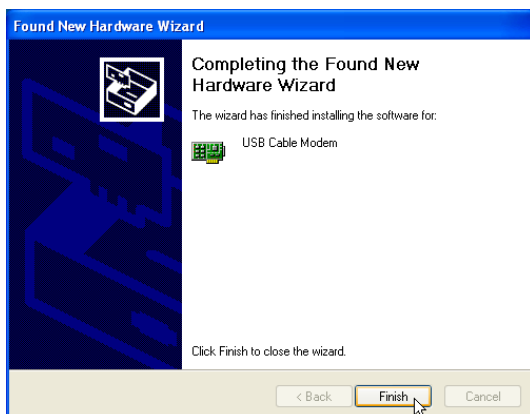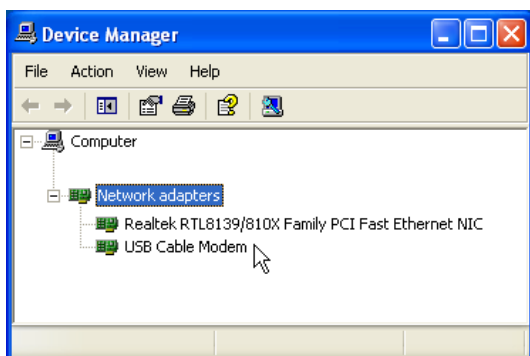
Windows XP

Installing the Driver

When you connect the USB Cable Modem, a "Found New Hardware Wizard" will appear. Click **Next** to continue.

Use "Search for the best..." and check "Include this location...". Enter the path to the USB Cable Modem driver and click **Next** to continue.

You will be notified when the software for the USB Cable Modem has finished installation.
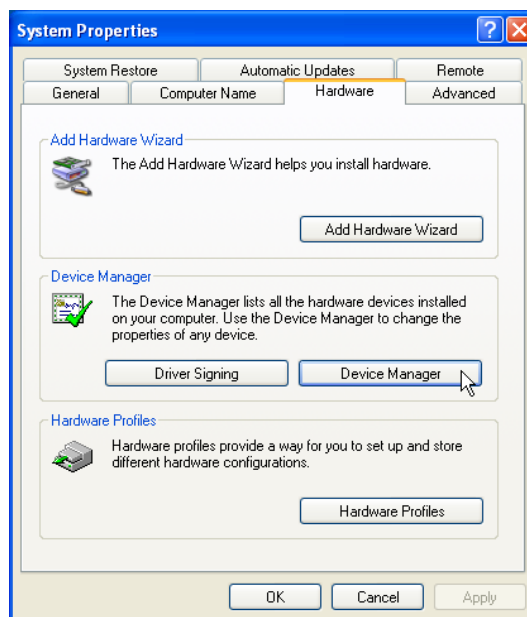
Verifying the Driver

To verify the driver installation, find "USB Cable Modem" under "Network adapters". Device Manager is accessible through Start | My Computer | View system information.

Chapter 3 - Using the Cable Modem

Front Panel

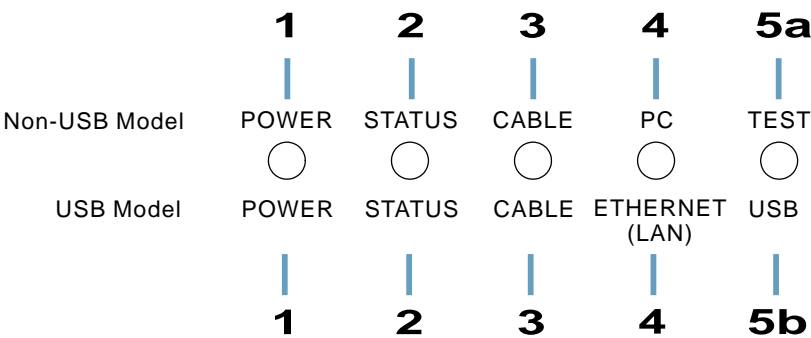| LED Indicator	State	Description
1. Power	ON	Modem is powered ON
	OFF	Modem is powered OFF
2. Status	ON	Modem successfully registered on cable operator's network
	Flashing	Modem is registering on cable operator's network
	OFF	(While Cable Link LED flash) searching for downstream channel
3. Cable	ON	Normal operation
	Flashing	(While Status LED is ON) data streaming down
	Flashing	(While Status LED is OFF) searching for downstream channel
	OFF	—
4. PC/LAN ETHERNET	ON	LAN (cable modem) and PC connection successful
	Flashing	Data transmitting between LAN (cable modem) and PC
	OFF	No connection between LAN (cable modem) and PC
5a. Test	ON	Error (Try reset cable modem, contact customer support)
	OFF	Normal operation
5b. USB	ON	USB (cable modem) and PC connection successful
	Flashing	Data transmitting between USB (cable modem) and PC
	OFF	No connection between USB (cable modem) and PC

Chapter 3

Rear Panel
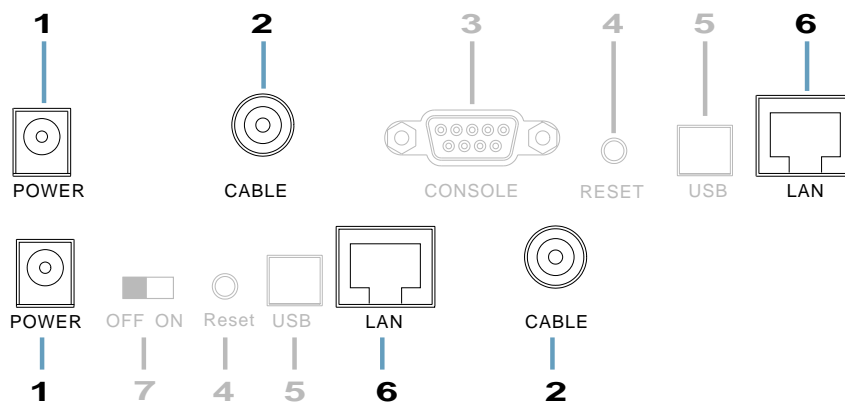
1. POWER

   The provided power adapter converts DC power to DC power for use with this jack. Power supplied through this jack will supply power to the cable modem.

2. CABLE

   The connector may be located right next to the power input jack or the serial port. The F-Type female connector allows cable data communication between the cable modem and the cable service provider through a coaxial cable.

3. CONSOLE (on selected models)

   The 9-pin D-sub serial port supports the RS-232 terminal interface for advanced cable modem management.

4. RESET (on selected models)

   The reset button, when pressed, resets the cable modem without the need to unplug the power cord.

5. USB (USB model)

   The optional USB port allows the modem to be connected to your computer through the USB interface.

6. LAN

   The LAN port supports 10Base-T or 100Base-TX networks. This port allows your PC or Ethernet hub to be connected to the cable modem through a CAT.5 twisted pair LAN cable.

7. Power Switch (on selected models)