



HitronTechnologies **USA** Inc.

Broadband Cable Modem with USB & Ethernet

BRG-3520

User Manual



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Chapter 1

Before You Begin

This chapter provides an overview of the Hitron™ “Broadband Cable Modem with USB & Ethernet” BRG-3520 (cable modem) and helps you prepare for its installation.



CAUTION! Be sure to read this entire User Manual from front to back in sequence before installing the Hitron “Broadband Cable Modem with USB & Ethernet” BRG-3520 (cable modem).

Introduction

Thank you for purchasing the Hitron “Broadband Cable Modem with USB & Ethernet” BRG-3520, which is an MCNS DOCSIS™ 1.0 cable modem featuring the latest DOCSIS technology.

The cable modem enables your network cable operator to provide you with broadband applications such as telecommunications, IP dedication for your small office/home office (SOHO), or high-speed residential Internet access. The cable modem provides downstream speed of up to 38 Mbps from the cable network to your computer and 10 Mbps from your computer to the cable network.

The DES data encryption helps ensure privacy for the transmitted information. Another distinctive feature of the cable modem is its easy installation, because DHCP and TFTP clients can obtain automatic access to the IP address and configuration from their network servers via the modem. SNMP agents permit remote configuration and monitoring from a management station equipped with an SNMP server.

Cable Modem Features

This section summarizes the features of the cable modem:

- Full-featured compact, economical cable modem with Ethernet and USB ports
- DOCSIS 1.0-compliant, easily software upgradeable to DOCSIS 1.1
- Capable of handling downstream data transmission speeds up to 38Mbps; upstream to 10Mbps
- RJ-45 10/100BaseT Ethernet port provides traditional industry-standard connection
- USB port allows easy plug-and-play attachment to PCs with the latest Microsoft Windows operating system.

- Extensive SNMP management support: MIB-II,
- Ethernet-like MIB, Bridge MIB, Cable Device MIB,
- Baseline privacy Interface MIB, RF Interface MIB
- Easy-to-read front panel LED's clearly display network status and activity

Local Cable Network Service

Before installing the modem :

- 1 Read this entire User's Manual from front to back in sequence.
- 2 Find the Serial Number, RF and Ethernet address located on a sticker on the cable modem and write them here:

Serial Number S/N: _____

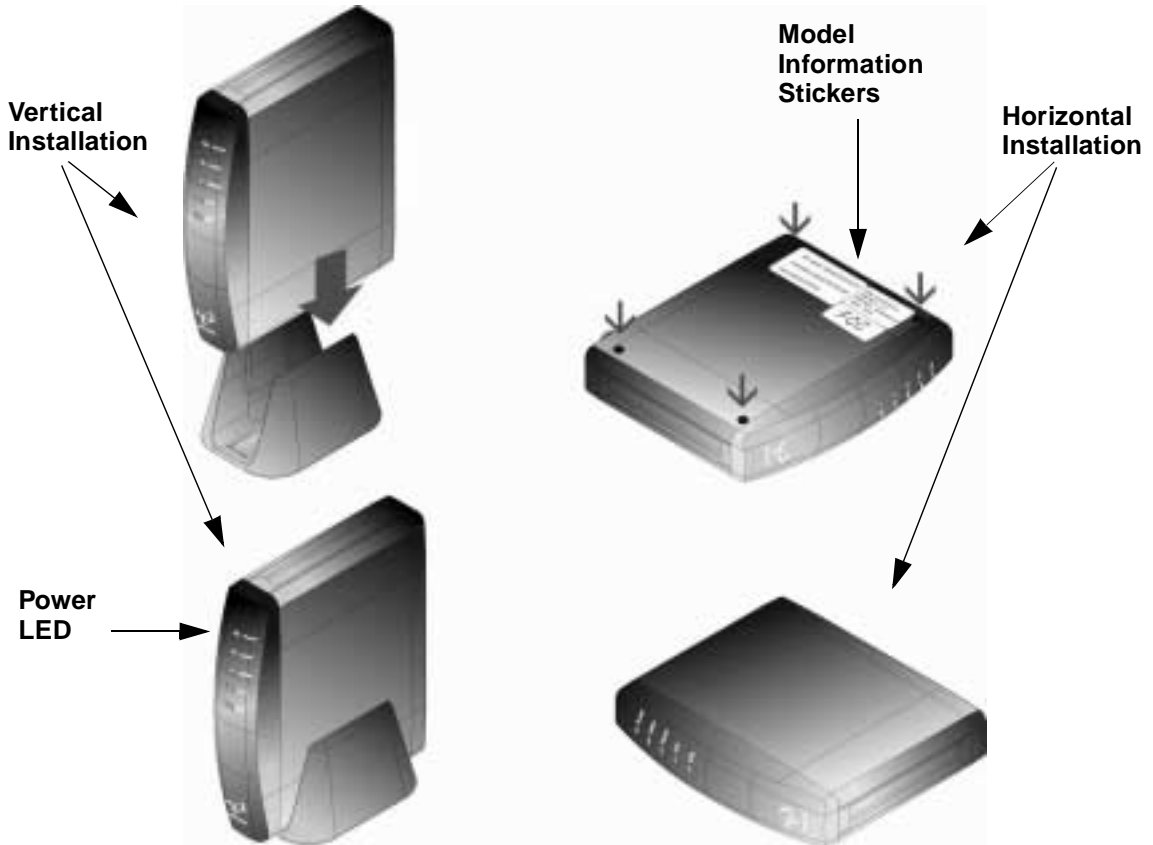
RF and ETH MAC: _____

- 3 Contact your local cable service operator for Internet/cable network access. Your local cable operator will check for cable access availability in your area, install a cable line (if necessary), provide you with an access account, set up configuration and verify other technical details.
- 4 Ask your local cable service provider about adding additional IP addresses to your account. See "Decide Which Installation Process to Use" on page5 for more information.

Prepare Your Workspace for the Cable Modem Installation

Before installing the cable modem, you should prepare your workspace. You can install the cable modem vertically, or attach the included four rubber feet and install the cable modem horizontally.

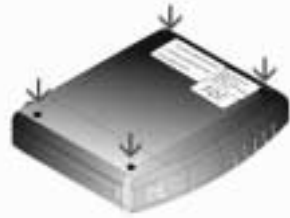
Figure 1 Cable Modem Positioning



To prepare your workspace:

- 1** Position the cable modem so that it is located near the computer and the wall cable outlet. There should be plenty of room to guide the cables away from the cable modem without crimping them.
- 2** Prepare the cable modem:
 - For vertical installation: Place the cable modem securely in the included stand, as shown in Figure 1.
 - For horizontal installation: Use the four included feet to install the cable modem.

For horizontal installation, position and attach the four feet as shown



Remove the backing paper and attach a foot to each of the corners on the cable modem; be sure to attach the feet on the surface that contains the model information stickers, as shown.

- 3 Do not restrict the airflow around the cable modem.
- 4 To enhance the best performance and proper function of the cable modem, place it on a horizontal surface or workplace and make sure that the cable modem does not move when it is operating.

Package Contents

Please make sure that the cable modem package contains all of the following items:

- Hitron™ “Broadband Cable Modem with USB & Ethernet” BRG-3520 (“cable modem”)
- 1 12VDC/1.25A Power adapter



CAUTION! You must use the 12VDC/1.25A power adapter that comes with the Hitron BRG-3520 cable modem. Using the wrong power adapter can damage the cable modem.

- 1 180cm (6') CAT 5 UTP Ethernet cable
- 1 USB cable
- 1 Cable modem stand to install the cable modem in a vertical position
- 4 Rubber feet to install the cable modem in a horizontal position
- 1 Installation Poster
- 1 Hitron Installation and Documentation CD, which contains:
 - User manuals
 - Brochures
 - Installation drivers

Requirements

Verify that you have these items before beginning the installation:

- A cable-line splitter (not included), if you plan to have the cable modem and a television connected to the same wall cable outlet.
- An active two-way cable line.
- To install the cable modem using the Ethernet port:
 - Any PC running Microsoft® Windows® 95, Windows 98, Windows Me, Windows 2000, or Windows NT® operating system or a computer running any other operating (OS) that supports the TCP/IP Internet protocol.
 - An active Ethernet port on your computer.
 - TCP/IP protocol installed. See the “Configuring the TCP/IP Communications Protocol” section in Chapter 2 for more information on installing the TCP/IP protocol.
- To install the cable modem using the USB port:
 - A PC running Windows 98, Windows 2000, or Windows Me operating system (OS). The USB drivers do not support the Macintosh® operating system.
 - Original Windows 98, Windows 2000, or Windows ME installation CD or diskettes.
 - An active USB port on your computer

Decide Which Installation Process to Use

The cable modem enables you to connect to the Internet using either your computer’s Ethernet or USB port.

Be sure to follow the installation steps for the setup you want to use. Using the Ethernet setup enables you to use a hub to connect multiple computers to the cable modem. To do this, you might have to obtain additional IP addresses from your cable operator.

Using the USB port enables you to install the cable modem more quickly and easily than connecting to the Internet using the Ethernet port, because you do not have to install a network interface card (NIC) into your computer. The USB port, however, only enables you to connect one computer to the cable modem.

See “Installing the Cable Modem Using the Ethernet Port” on page 6, or see “Installing the Cable Modem Using the USB Port” on page 13 for more information.

Chapter 2

Installing the Cable Modem Using the Ethernet Port

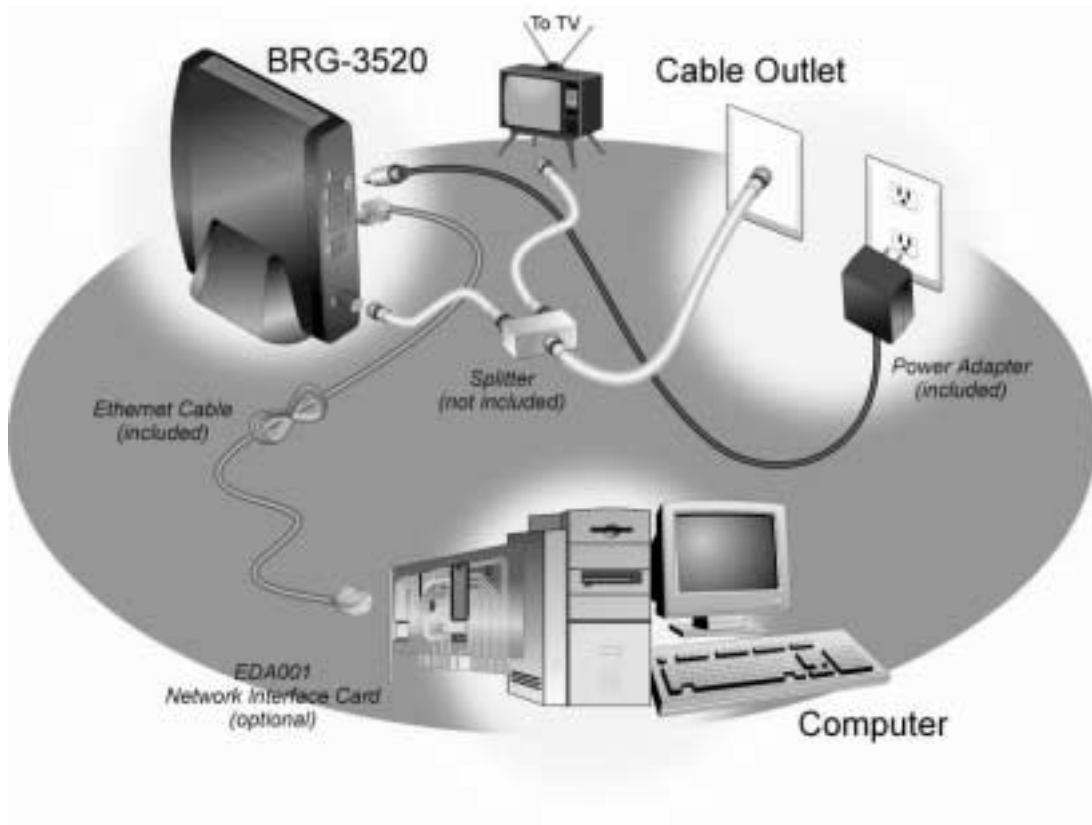


CAUTION! Be sure to read this entire User's Manual from front to back in sequence before installing the Hitron™ "Broadband Cable Modem with USB & Ethernet" BRG-3520 ("cable modem").

This chapter describes how to install the cable modem using the Ethernet port. Using the Ethernet port enables you to use a single connection to the Internet or use a hub to connect multiple computers to the cable modem. You can also use multiple IP addresses from your cable operator when using the Ethernet connection. See "Installing the Cable Modem Using the USB Port" on page 13 to set up the USB Connection.

You can use the Ethernet port to connect to the Internet with the following operating systems: Windows® 95, Windows 98, Windows 98SE, Windows 2000, Windows Me, Windows NT®, or Macintosh® 7.6 (or later).

Figure 2 Cable Modem Setup using a NIC



Verify the TCP/IP Protocol Configuration

Before installing the modem using the Ethernet setup, you must verify that your computer has the TCP/IP protocol installed. Follow the procedure for your operating system to verify or install the TCP/IP protocol.

Configuring TCP/IP on Windows 95, Windows 98, and Windows Me

To configure TCP/IP on a computer with the Windows 95, Windows 98, or Windows Me operating system:

- 1 Right-click the *Network Neighborhood* icon (Windows Me: the My Network Places icon) on the Windows desktop and click *Properties*.

- 2 Look for an entry named TCP/IP. If you see TCP/IP listed next to your Ethernet hardware device, you can now go to the section “Connecting the Cable Modem” on page 10. However, if TCP/IP is not listed, you must complete the following steps.
 - a Click *Add*.
 - b Click *Protocol* and click *Add*.
 - c Click *Microsoft®* in the Manufacturers list and Click *TCP/IP* in the Network Protocols list.
 - d Click *OK*.
 - e Click Yes when prompted to restart your computer.

You can now connect the cable modem. See “Connecting the Cable Modem” on page 10 for the instructions.

Configuring TCP/IP on the Windows 2000 Operating Systems

To configure TCP/IP on your Windows 2000 PC:

- 1 Right-click the *My Network Places* icon on the Windows desktop
- 2 Right-click *Local Area Connection* and click *Properties*. Look for an entry named TCP/IP. If you see TCP/IP listed next to your Ethernet hardware device, you can now go to the section “Connecting the Cable Modem” on page 10. However, if TCP/IP is not listed, you must complete the following steps.
 - a Scroll to the Internet Protocol TCP/IP option.
 - b Click to place a check mark in the *Internet Protocol* check box
 - c Click *OK*.
 - d You can now connect the cable modem. See the section “Connecting the Cable Modem” on page 10 or the instructions

Configuring TCP/IP on the Windows NT 4.0 Operating Systems

To configure TCP/IP on your Windows NT 4.0 PC:

- 1 Right-click the *Network Neighborhood* icon and click *Properties*.
- 2 Click the Bindings tab
- 3 Select *All Protocols* from the Show bindings from drop-down list.

- 4 Look for an entry named TCP/IP. If you see TCP/IP listed, double-click it to search for your Ethernet card. If you see your Ethernet card listed, you can now go to the section “Connecting the Cable Modem” on page 10. However, if TCP/IP is not listed, you must complete the following steps:
 - a Click the *Protocols* tab.
 - b Click *Add*.
 - c Click *TCP/IP Protocol* in the Network protocol list.
 - d Click *OK*
 - e Click *Yes* when prompted to restart your computer
 - f You can now connect the cable modem. See “Connecting the Cable Modem” on page 10 for the instructions

Configuring TCP/IP on a Macintosh Computer

Before you install your cable modem, you must verify that the TCP/IP communications protocol and an Ethernet device are installed on your system. Many Macintosh computers have Ethernet devices installed at the factory.

To configure TCP/IP on a Macintosh:

- 1 Click the *Apple*® icon in the Finder™.
- 2 Select *Control Panels* and then *TCP/IP*. The TCP/IP screen appears.
- 3 Select *Edit* in the Finder and select *User Mode...*The User Mode screen appears.
- 4 Select *Advanced*, and then click *OK*. Additional fields appear on the TCP/IP screen.
- 5 Click the selector arrows to the right of the *Configure:* drop-down menu and select *Using DHCP server*.
- 6 Click *Options...*The TCP/IP Options screen appears.
- 7 Select *Active* and check the *Always Connected* check box.
- 8 Click *OK...*The TCP/IP dialog box appears.
- 9 Verify that the *Use 802.3* check box is unchecked. If the box is checked, click the box to remove the check mark. Then click *Info*.
- 10 Click *OK*. If you have made any changes, you are prompted to save the settings.
- 11 Click *OK* to save the settings and exit
- 12 Click *OK* and close the TCP/IP Control Panel (click *File* and scroll down to click *Close*).

Connecting the Cable Modem

Install the cable modem according to the following procedure:

- 1** Power off the computer.
- 2** Unplug the computer from the electrical wall outlet.
- 3** Make these connections:
 - a** Connect the coaxial cable to the cable modem's CATV cable connector.
If you plan to have the cable connected to a television as well as the cable modem, you must use a cable line splitter (not included).
 - b** Plug the cable modem's power adapter into a wall outlet or surge protector and into the cable modem's power jack.
 - c** Plug one end of the Ethernet cable into the cable modem's Ethernet port and the other end of the cable into the existing NIC.
- 4** Plug in the computer.
- 5** Power on the computer. When installation is complete, your setup should resemble the illustration above. The modem is operating properly if the Power, Cable, Status and ETH light emitting diodes (LEDs) are solid green (lit and not blinking).

Troubleshooting the Ethernet Installation

The following troubleshooting procedures apply to the Ethernet installation.

Problem: "I cannot access my e-mail or Internet service."

- 1** Verify that the Power, Cable, Status, and Eth light-emitting diodes (LEDs) are lit and not blinking.
- 2** Check all connections:
 - a** Make sure the coaxial cable is securely connected to the cable jack on the back of the cable modem.
 - b** Verify that the Ethernet cable is securely plugged into both the cable modem and the computer.
 - c** Make sure the power adapter is properly plugged into both the cable modem and a wall outlet or surge protector.
- 3** Power cycle the cable modem by unplugging the power adapter from its electrical outlet and then plugging it back into the outlet. Then try accessing the Internet.
- 4** Power cycle the computer

- a Power off the computer.
 - b Unplug the computer from its electrical outlet or surge protector and then plug it back into the electrical outlet or surge protector.
 - c Try accessing the Internet.
- 5 Call your cable operator to verify that their service is two-way. This cable modem is designed for use with two-way cable plants.
- 6 If you are using a cable line splitter so that you can connect the cable modem and a television at the same time, try removing the splitter and reconnecting the cables so that the cable modem is connected directly to the cable wall jack. Then try accessing the Internet.
- 7 The NIC might be malfunctioning. Refer to its documentation for troubleshooting information.
- 8 Check for a resource conflict (Windows users only). To do this:
 - a Right-click the *My Computer* icon on the Windows desktop.
 - b Click *Properties*.
 - c Click the Device Manager tab and look for a yellow exclamation point or red X over the NIC in the Network adapters field. If you see either, you have an IRQ conflict. To correct this, refer to the manufacturer's documentation that came with your NIC.
- 9 Make sure that TCP/IP is the default protocol in use by your computer.
 - a Release and renew the computer's IP address.

To release and renew the IP address for the Windows 95, Windows 98, and Windows Me operating systems:

 - 1 Click *Start* and click *Run*.
 - 2 Type `wiipcfg` in the *Open* field and click *OK*. The IP Configuration screen appears.
 - 3 In the Ethernet Adapter Information group area, click the drop down arrow and select the *BRG-3520 Broadband Cable Modem with USB & Ethernet*.
 - 4 Click *Release*. The IP address changes to 0.0.0.0.
 - 5 Click *Renew* to refresh the IP address. The refreshed address may or may not be the same as the original IP address.

To release and renew the IP address for the Windows 2000 and Windows NT 4.0 operating system:

 - 1 Click *Start* and select *Programs*, then *Accessories*.
 - 2 Click *Command Prompt*.

- 3 At the command prompt (C:\), type `ipconfig/release`. Windows releases the IP address.
- 4 At the command prompt type `ipconfig/renew`. Windows renews the IP address.
- 5 At the command prompt (C:\), type `exit` and press *Enter* to return to the Windows desktop.

Problem: “All of the LEDs on the front of my cable modem look right, but I cannot access the Internet.”

- 1 If the Power, Cable, Status, and Eth (LEDs) are lit and not blinking the cable modem is operating properly. Try shutting down the computer and then turning it back on. This will cause the computer to re-establish communications with your local cable provider.
- 2 Power cycle the cable modem by removing the power adapter from its outlet and then plugging it back into the outlet. Wait several minutes for the cable modem to re-establish communications with your local cable operator, then try accessing the Internet.
- 3 Verify that you have installed TCP/IP properly (for Windows 95, Windows 98, Windows 98SE, and Windows Me: winipcfg; for Windows 2000: ipconfig), and that the TCP/IP parameters provided by your local cable provider are correct for your computer.
- 4 If you are using a cable line splitter so that you can connect the cable modem and a television to the same outlet:
 - a Try removing the splitter and reconnecting the cables so that the cable modem is connected directly to the cable wall jack.
 - b Wait several minutes, then try accessing the Internet.

Problem: The power on my cable modem goes on and off sporadically.

You may be using the wrong power adapter. Check that the power adapter you are using is the one that came with the cable modem.



CAUTION! You must use the 12VDC/1.25A power adapter that comes with the Hitron BRG-3520 cable modem. Using the wrong power adapter can damage the cable modem.

Chapter 3

Installing the Cable Modem Using the USB Port

! **CAUTION!** Be sure to read this entire User's Manual from front to back in sequence before installing the Hitron™ "Broadband Cable Modem with USB & Ethernet" BRG-3520 (cable modem).

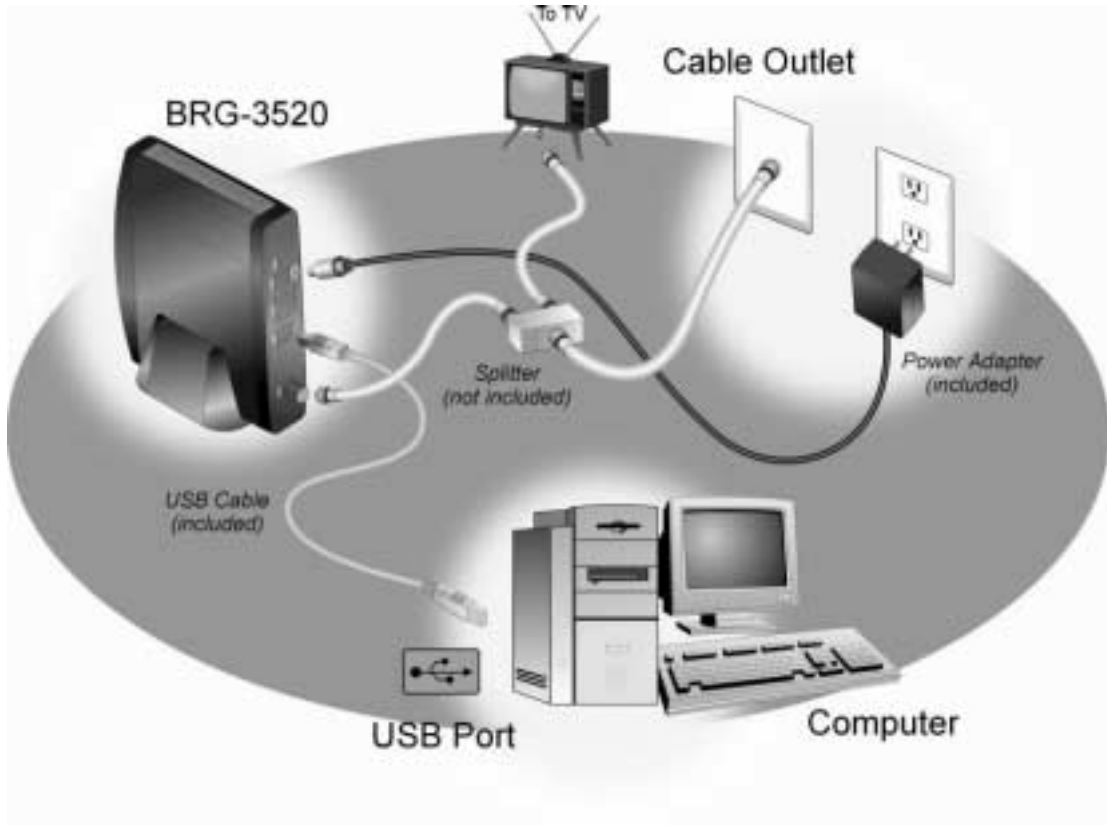
This chapter describes how to install the cable modem using the USB port. First you connect the hardware (cable modem and power adapter). You then install the software drivers and verify that the modem is operating properly.

The USB port does not support the Macintosh® operating system.

Using the USB port to connect to the Internet enables you to install the cable modem more quickly and easily than connecting to the Internet using the computer's Ethernet port, because you do not have to remove the case from the computer to install a network interface card (NIC). Using the USB port, however, enables you to connect only one computer to the cable modem.

See "Installing the Cable Modem Using the Ethernet Port" on page 6 if you wish to install the cable modem using the Ethernet port.

Figure 3 Cable Modem Setup using the USB port



Installing the Hardware (Cable Modem and Power Adapter)

To install the hardware:



WARNING! Risk of electric shock. Do not expose the cable modem to water or moisture.

- 1 Power off the computer (and television, if you plan to have the cable modem and television connected to the same wall cable outlet).
- 2 Unplug the computer (and television).
- 3 Connect the coaxial cable to the cable modem's cable television (CATV) cable connector.

- 4 If you plan to have the cable modem and a television connected to the same wall outlet, you must use a cable line splitter (not included).
- 5 Connect one end of the included USB cable to the USB port on the cable modem and the other end of the cable to the USB port on the computer.



CAUTION! You must use the 12VDC/1.25A power adapter that comes with the Hitron BRG-3520 cable modem. Using the wrong power adapter can damage the cable modem.

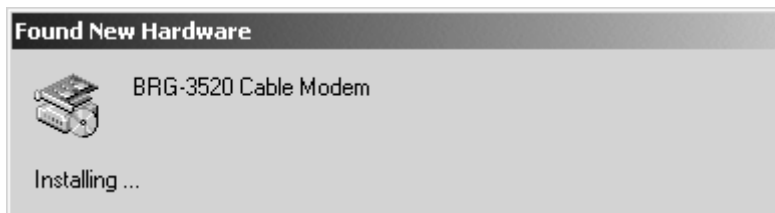
- 6 Plug the cable modem's power adapter into the cable modem's power jack and into a grounded electrical outlet or surge protector that is plugged into a grounded electrical outlet.
- 7 You must now install the software drivers provided on the Installation CD. Be sure to follow the instructions (below) for your specific operating system.
- 8 Plug in the computer (and television).

Installing the Software Drivers

After installing the hardware, use the software driver installation procedure for your computer's operating system.

Installing the Software Drivers (Windows 98 OS)

After installing the hardware, the Found New Hardware screen appears, followed by the Add New Hardware Wizard screen.





- 1 Select *Specify the location of the driver (Advanced)* and click *Next*.



2 When prompted for the installation medium:

- a Select *Search for the best driver for your device. (Recommended)*.
- b Check the *Specify a location:* check box.

The location of the file is:

D:\USB Drivers

where D represents your computer's CD-ROM drive. If necessary, replace D with the letter of your computer's CD-ROM drive.

NOTE: You can either click *Browse* to locate the file, or you can type **D:\USB Drivers** into the field next to the browse drop-down list.

- 3 Insert the Hitron Installation and Documentation CD into the CD-ROM drive.
- 4 Click *Next* to search for the necessary driver files. If Windows finds an updated driver, select *The updated driver (Recommended) Hitron* and click *Next*.



CAUTION! Before proceeding to step 5, you must verify that BRG-3520 Cable Modem appears on the screen. If USB Composite Device appears, you must: (a) click *Back* twice. (b) Check the *Specify a location* check box, (c) type the letter of your CD-ROM drive followed by:\ (For example, D:\) in the *Specify a location* field. Then repeat step 3 and step 4. If Windows notifies you that it could not locate a driver for this device, you must click *Cancel*

and use Windows Device Manager to remove the USB Composite Device from your available Universal Serial Bus Controllers list and then re-install the software using the procedure in this User Manual. Contact your local cable operator for help with removing the USB Composite Device with the Windows Device Manager.

- 5 Click *Next*. The computer automatically copies the necessary driver files from the CD and notifies you when it finishes copying the driver files.
- 6 Follow the installation prompts.
- 7 If prompted, insert the Windows 98 CD into the CD-ROM drive.
- 8 Click *OK*. If the Copying Files dialog box appears, make sure that you have inserted the Windows 98 CD and that you have pointed it to the correct CD-ROM path. After you point the *Copy files from* field to the correct path, click *OK*. The computer automatically copies the necessary system files.
- 9 Click *Finish* after the computer has copied the necessary files. The System Settings Change dialog box appears.
- 10 Click *Yes* to restart the computer.
- 11 After the computer is completely rebooted, verify that the cable modem is operating properly. See the documentation that came with the cable modem for details.



- 12 When the *Windows has finished installing the new hardware device* message appears, click *Finish*.
- 13 When prompted to restart the PC, remove the CD from the CD-ROM drive and click *Yes*.

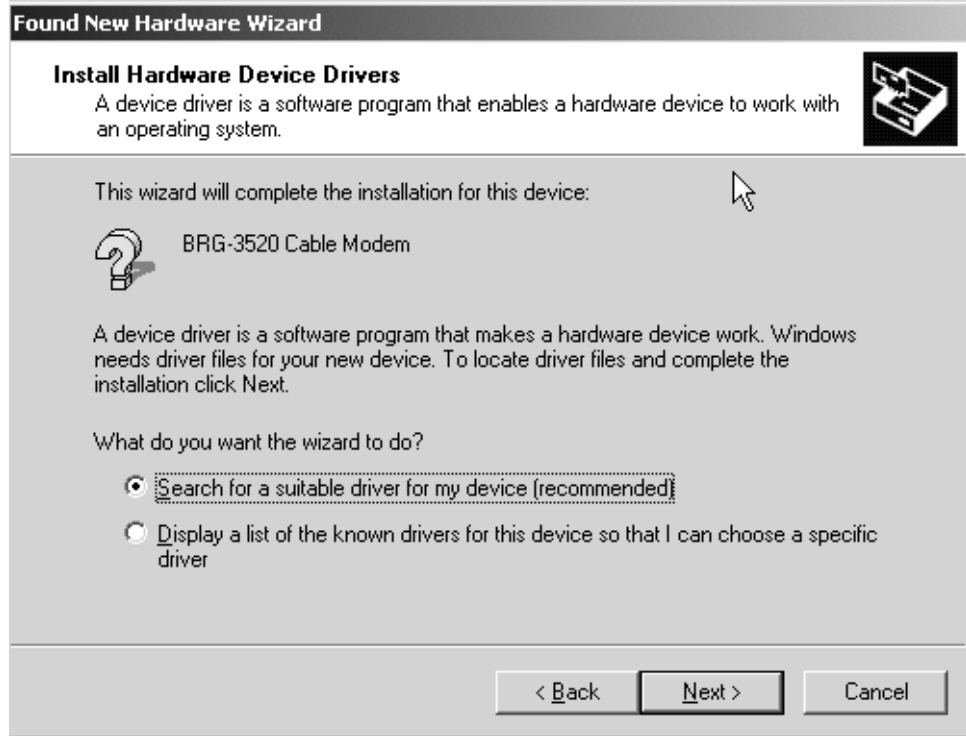
Installing the Software Drivers (Windows 2000 OS)

This section explains how to install the cable modem using the USB Connections with the Windows 2000 operating system (OS).

- 1 Power on the computer. After the computer boots up:
 - a Windows detects the cable modem.
 - b The Found New Hardware screen appears.



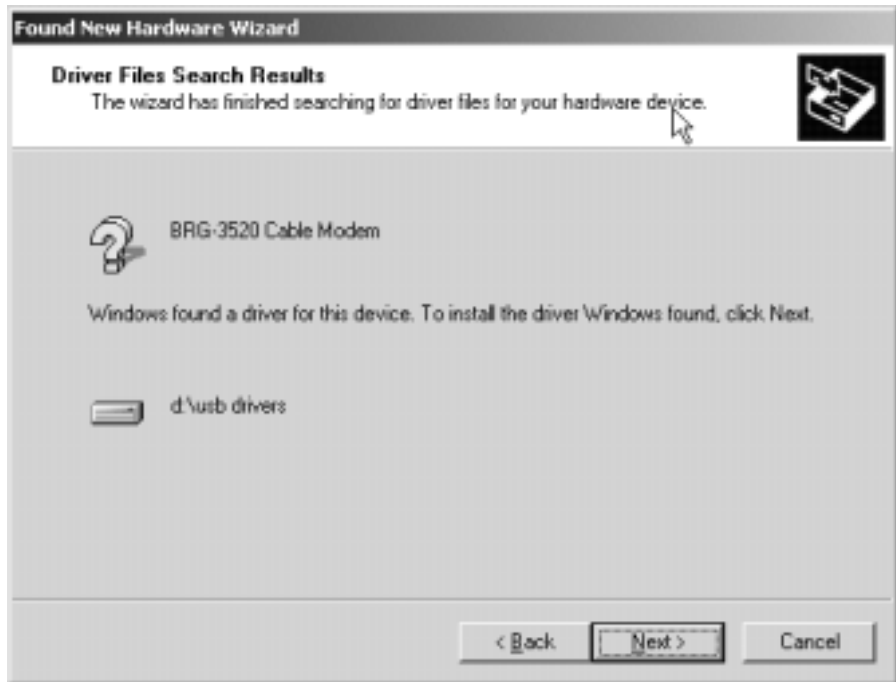
- c The Found New Hardware Wizard screen appears.



- 2 Select *Search for a suitable driver for my device (recommended)* and click *Next*.



- 3 Check the *Specify a location* check box and click *Next* to search for the necessary driver files.
- 4 Insert the Hitron Installation and Documentation CD into the computer's CD-ROM drive.
- 5 The location of the file is:
D:\USB Drivers
If necessary, replace D with the letter of your computer's CD-ROM drive. You can either type the location of the file into the *Copy manufacturer's files from* field, or click *Browse* to locate the file.
- 6 When the correct location of the driver file appears, click *OK*.



- 7 The Found New Hardware Wizard displays the search results.
- 8 Click *Next* to install the driver files for the cable modem.

If the Digital Signature Not Found screen appears, click *Yes* to continue the driver installation.



- 9 The Found New Hardware Wizard completes the driver installation. Click *Finish* to close the wizard.
- 10 Verify that the Power, Cable, Status, and USB LED lights are solid green and not blinking. If they are lit and not blinking, installation is now complete; otherwise, see “Troubleshooting the USB Installation” on page 26 for help. See “Cable Modem Front and Rear Panels” on page 30 for more information about the front panel LEDs.

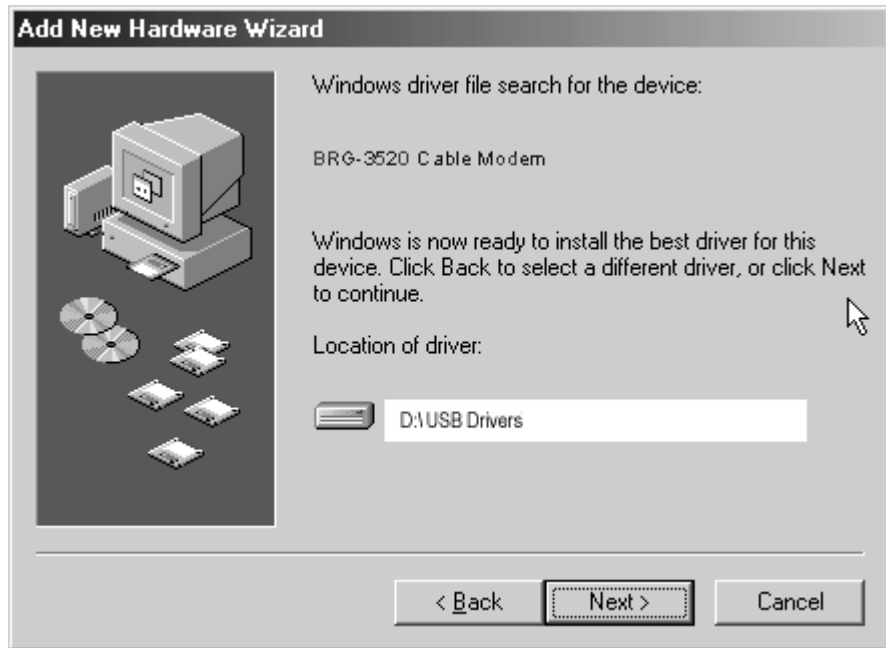
Installing the Software Drivers (Windows Me OS)

This section explains how to install the cable modem using the USB port with the Windows Me operating system (OS):

- 1 Power on the computer. After the computer boots up:
 - a Windows detects the cable modem.
 - b The Found New Hardware screen appears.
 - c The Add New Hardware Wizard screen appears.
- 2 Insert the Hitron Installation and Documentation CD into the computer’s CD-ROM drive.



- 3 Select *Specify the location of the driver (Advanced)* and click *Next*.
- 4 Follow the onscreen prompts to install the software driver from the Hitron Installation and Documentation CD. The location of the file is:
D:\USB Drivers
If necessary, replace D with the letter of your computer's CD-ROM drive.



- 5 When Windows locates the device driver, click *Next*. The computer copies the necessary driver files from the CD.



- 6 Click *Finish* after the computer has copied the necessary files. The System Settings Change dialog box appears.
- 7 Click *Yes* to restart the computer.
- 8 Verify that the Power, Cable, Status, and USB LEDs are solid green and not blinking. If they are lit and not blinking, installation is now complete; otherwise, see “Troubleshooting the USB Installation” on page e26 for help. See “Cable Modem Front and Rear Panels” on page 30 for more information about the front panel LEDs.

Troubleshooting the USB Installation

The following troubleshooting procedures apply to the USB installation.

Problem: “I cannot access my e-mail or Internet service.”

- 1 Verify that the Power, Cable, and Status, and USB LEDs are lit and not blinking.
- 2 Verify that the USB LED is green or blinking green.
- 3 Check all connections:

- a Make sure the coaxial cable is securely connected to the cable jack on the back of the cable modem.
 - b Verify that the USB cable is securely plugged into both the cable modem and the computer.
 - c Make sure the power adapter is properly plugged into both the cable modem and a wall outlet or surge protector.
- 4 Power cycle the cable modem by unplugging the power adapter from its electrical outlet and then plugging it back into the outlet. Then try accessing the Internet.
- 5 Power cycle the computer. To do this:
 - a Power off the computer.
 - b Unplug the computer from its electrical outlet or surge protector and then plug it back into the electrical outlet or surge protector.
 - c Power the computer on.
 - d Try accessing the Internet.
- 6 Call your cable operator to verify that their service is two-way. This cable modem is designed for use with two-way cable plants.
- 7 If you are using a cable line splitter so that you can connect the cable modem and a television to the same cable wall jack, try removing the splitter and reconnecting the cables so that the cable modem is connected directly to the cable wall jack. Then try accessing the Internet.
- 8 If you use the Windows 98 operating system, verify that you have fewer than five TCP/IP bindings. To do this:
 - a Click *Start*, select *Settings*, and click *Control Panel*.
 - b Double-click *Network* and count the number of TCP/IP bindings listed. For the cable modem to operate, your computer cannot have more than four TCP/IP bindings. You must remove enough TCP/IP bindings so that your computer has no more than four bindings.
 - c After you remove the extra bindings, uninstall the cable modem, following the instructions in this user's manual.
 - d Reboot the computer and re-install the cable modem, following the instructions in this user's manual.
 - e Release and renew the computer's IP address.

To release and renew the IP address for the Windows 98 and Windows Me operating systems:

- 1 Click *Start* and click *Run*.

- 2 Type `winiipcfg` in the *Open* field and click *OK*. The IP Configuration screen appears.
- 3 In the Ethernet Adapter Information group area, click the drop down arrow and select the Hitron cable modem.
- 4 Click *Release*. The IP address changes to 0.0.0.0.
- 5 Click *Renew*. Windows refreshes the IP address. The refreshed address may or may not be the same as the original IP address.
- 6 Click *OK* to return to the Windows desktop.

To release and renew the IP address for the Windows 2000 and Windows NT® 4.0 operating systems:

- 1 Click *Start* and select *Programs*, then *Accessories*.
- 2 Click *Command Prompt*.
- 3 At the command prompt (C:\), type `ipconfig/release` and press *Enter*. Windows releases the IP address.
- 4 At the command prompt type `ipconfig/renew`. Windows renews the IP address.
- 5 At the command prompt (C:\), type `exit` and press *Enter* to return to the Windows desktop.

Problem: “When attempting to install the USB drivers with Windows 98 or Windows 98SE, I receive this error message: Device not installed at this time. Driver not found.”

- 1 Insert the Installation CD into your computer’s CD-ROM drive.
- 2 Click *Start* and select *Settings*.
- 3 Click *Control Panel*.
- 4 Double-click *System*.
- 5 Click the Device Manager tab.
- 6 Click the plus sign next to *Universal serial bus controller* to view the list of installed USB device drivers.
- 7 Select *USB Composite Device*.
- 8 Click *Remove*.
- 9 Click *Refresh*. The Add New Hardware Wizard screen appears, displaying the device name *USB Composite Device*. After you install the correct driver, Windows displays the name *BRG-3520 Cable Modem*.

- 10 Follow the on-screen instructions to install the correct device driver. See “Installing the Software Drivers (Windows 98 OS)” on page 15 for step-by-step instructions.

Problem: “All of the LEDs on the front of my cable modem look right, but I cannot access the Internet.”

- 1 If the Power, Cable, Status, and Eth LEDs are lit and not blinking the cable modem is operating properly. Try shutting down the computer and then turning it back on. This will cause the computer to re-establish communications with your local cable provider.
- 2 Power cycle the cable modem by removing the power adapter from its outlet and then plugging it back into the outlet. Wait several minutes for the cable modem to re-establish communications with your local cable operator, then try accessing the Internet.
- 3 Verify that you have installed TCP/IP properly (for Windows 95, 98SE, and Me: winipcfg; for Windows 2000: ipconfig), and that the TCP/IP parameters provided by your local cable provider are correct for your computer.
- 4 If you are using a cable line splitter so that you can connect the cable modem and a television to the same outlet:
 - a Try removing the splitter and reconnecting the cables so that the cable modem is connected directly to the cable wall jack.
 - b Wait several minutes, then try accessing the Internet.

Problem: The power on my cable modem goes on and off sporadically.

You might be using the wrong power adapter. Check that the power adapter you are using is the one that came with the cable modem.



CAUTION! You must use the 12VDC/1.25A power adapter that comes with the Hitron BRG-3520 cable modem. Using the wrong power adapter can damage the cable modem.

Chapter 4

Cable Modem Front and Rear Panels

! **CAUTION!** Be sure to read this entire User's Manual from front to back in sequence before installing the Hitron™ "Broadband Cable Modem with USB & Ethernet" BRG-3520 (cable modem).

This chapter describes the light emitting diodes (LEDs) on the front panel and the connectors on the rear panel of the cable modem.

Front Panel LEDs

The LEDs on the cable modem indicate:

- The current performance of the cable modem.
- The condition of the network connection between the cable modem and your cable service provider.
- The condition of the connection between your cable modem and electrical power.

Figure 4 Front Panel LEDs

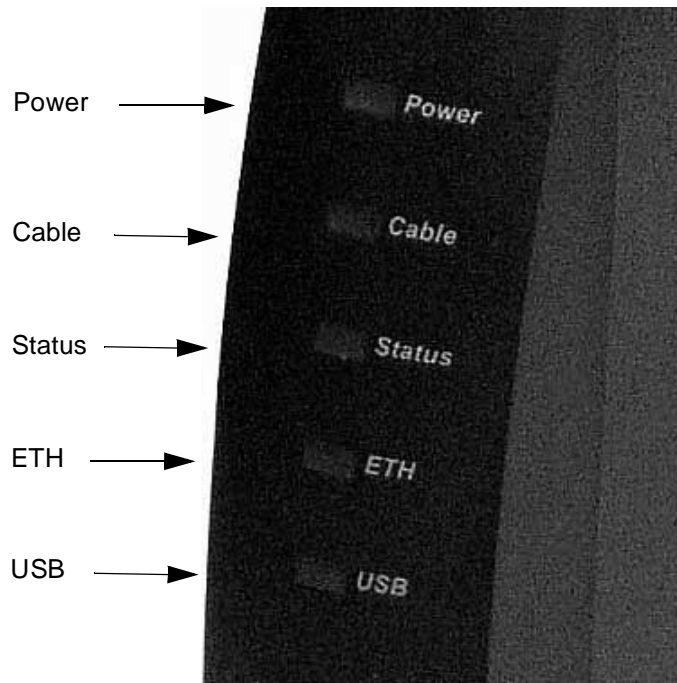


Figure 5 What the LED Activity Means

LED LABEL	COLOR	DESCRIPTION
Power	Green	Cable modem is plugged in to an electrical outlet and is and receiving power
Cable	Orange-Blinking	The modem is searching for the DOWNSTREAM frequency
	Orange	Downstream frequency is locked. Searching for UPSTREAM frequency
	Green	Upstream frequency is locked
Status	Green-Blinking	Modem is registering with the cable company's head-end
	Green	Modem is ready for data transfers
ETH	Green	Valid Ethernet link status
	Green-Blinking	Cable modem is transmitting/receiving data through the Ethernet port
USB	Green	USB interface is connected
	Green-Blinking	Data is being sent/received through the USB port

Back Panel Connectors

Figure 6 Back Panel Connectors

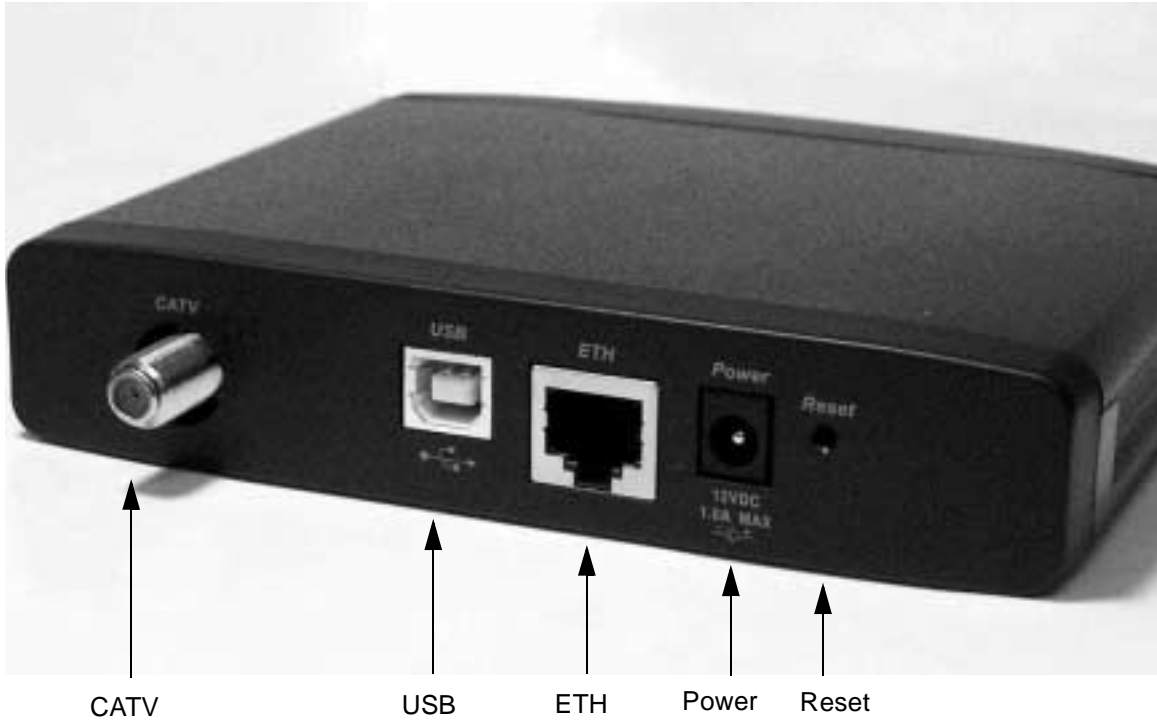


Figure 7 Descriptions of the Back Panel Connectors

ETH	RJ-45 female port for connection of Ethernet cable
USB	USB 'B'-type port. Connects through USB cable to a computer's USB 'A'-type port.
CATV	RF connector to attach the cable for broadband Internet access
PWR	Jack to connect the power adapter included in the product package Caution! You must use the 12VDC/1.25A power adapter that comes with the Hitron BRG-3520 cable modem. Using the wrong power adapter can damage the cable modem.
RESET	Restores factory default settings

Chapter 5

Notices

! **CAUTION!** Be sure to read this entire User Manual from front to back in sequence before installing the Hitron™ “Broadband Cable Modem with USB & Ethernet” BRG-3520 (“cable modem”).

Safety Notice & Warning



WARNING! Risk of electric shock. Do not expose the cable modem to water or moisture.

! **CAUTION!** *You must use the 12VDC/1.25A power adapter that comes with the Hitron BRG-3520 cable modem. Using the wrong power adapter can damage the cable modem.*

- 1 The BRG-3520 cable modem is a high-performance communications device designed for home and office environments. Do not expose the BRG-3520 to temperatures outside of the specified operating temperature range (see “Product Specifications” for information) and do not use it outdoors.
- 2 To avoid overheating the cable modem, allow for the free flow of air around the cable modem and do not place any object on the top of it.
- 3 The manufacturer assumes no liabilities for damage caused by any improper use of the BRG-3520.
- 4 Use a grounded electrical outlet or a surge protector plugged into a grounded electrical outlet.

Product Specifications

Dimensions	120mm (L) x 142mm (W) x 30mm (H) 4.7in x 5.6in x 1.2in
Power Supply	12V/1.25A
Power Consumption	8 Watts
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Operating Humidity	10%~90% Non-Condensing
Cable Interface	Female “F” Type RF Connector
CPE Interface	RJ-45 10/100BaseT USB B-Type

Product Specifications (Continued)

Downstream transmission speed (MAX)	38Mbps
Upstream transmission speed (MAX)	10Mbps

Chapter 6

Technical Support

Contact your local cable operator for technical support. Only your local cable operator can provide technical support for this product.

Additional Product Information

For more information about this product and other Hitron products, visit the HitronTechnologies USA, Inc.™ website:

<http://www.hitrontechusa.com>

Chapter 7

Notices

! **CAUTION!** Be sure to read this entire User Manual from front to back in sequence before installing the Hitron™ “Broadband Cable Modem with USB & Ethernet” BRG-3520 (“cable modem”).

Safety Notice and Warning



WARNING! Risk of electric shock. Do not expose the cable modem to water or moisture.

- 1 The HitronTechnologies USA, Inc. BRG-3520 Broadband Cable Modem with USB & Ethernet (“cable modem”) is a high-performance communications device designed for home and office environments. Do not expose the cable modem to temperatures outside of the specified operating temperature range (see “Safety Notice & Warning” on page 35 for information) and do not use it outdoors.
- 2 To avoid overheating the cable modem, allow free flow of air around the device and do not place any object on the top of it.
- 3 The manufacturer assumes no liabilities for damage caused by any improper use of the cable modem.
- 4 Use a grounded electrical outlet or a surge protector plugged into a grounded electrical outlet when connecting the cable modem to electricity. Follow the installation instructions in this User Manual.

Certification

The HitronTechnologies USA, Inc. BRG-3520 Broadband Cable Modem with USB & Ethernet was certified by CableLabs® for DOCSIS™ 1.0 CW20 in December 2001.

FCC Class B Statement

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 UNDESIRE OPERATION.

UL Listing

This product is UL-listed for use with UL-listed PCs containing instructions specifying user installation of accessories.



Be sure to read this entire User's Manual from front to back in sequence before installing the Hitron™ "Broadband Cable Modem with USB & Ethernet" BRG-3520 (cable modem).

Warranty

HitronTechnologies USA, Inc. warrants this hardware product to be free from defects in workmanship and materials, under normal use and service, for one (1) year from the date of purchase from Hitron or its authorized reseller. Hitron's sole obligation under this express warranty shall be, at Hitron's option and expense, to repair the defective product or part, deliver to Customer equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, Hitron may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of Hitron. Replacement products may be new or reconditioned. Hitron warrants any replaced or repaired product or part for one year from shipment, or the remainder of the initial warranty period, whichever is longer. Customer must contact a HitronTechnologies USA, Inc. Service Center or an Authorized HitronTechnologies USA, Inc. Service Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from HitronTechnologies USA, Inc. or its authorized reseller may be required.