

# **Ambit Cable Modem**

**U10C018**



***User's Guide***

***Rev. 1.03***

**January 3<sup>rd</sup>, 2008**

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# 1. Before You Begin

Your new cable modem provides high-speed access to the Internet by an active Internet Connection through your cable service provider. This user guide describes how to set up and use the cable modem. Before installing the cable modem, you should read this user guide to ensure proper cable modem operation.

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## Understand the Cable Modem's Features

Your cable modem has the following features to help you access and use the Internet:

- Two-way design allows the cable modem to send and receive data over the cable television network.
- Cable bandwidth allows data rates of up to 38 megabits per second (Mbps)\*, which is faster than analog modems, integrated services digital network (ISDN), or asymmetric digital subscriber line (ADSL).
- Using your cable line means that the cable modem is always on, always connected, and does not tie up your phone line.
- Plug-and-play operation through universal serial bus (USB) ensures easy setup and installation.
- Data Over Cable Service Interface Specification (DOCSIS<sup>™</sup>) compliance ensures interoperability with DOCSIS compliant cable operators.
- Windows Hardware Quality Labs (WHQL) certification ensures interoperability with Microsoft Operating Systems.

*\*NOTE: Speeds may vary based on the following factors:*

- *Computer equipment including available RAM and processor speed*
- *Software applications utilizing your computer's resources*
- *Network traffic depending on the time of day*
- *Limitations set by your Cable Service Provider*

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## Contact Your Local Cable Operator

Before installing your new cable modem, you must contact your local cable service provider to activate your Internet account. Be sure to have the cable modem's MAC address available, which can be found on the underside of the cable modem.

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## Prepare Your Area for Cable Modem Installation

Before installing your cable modem, you should first prepare your area. To do this:

1. Locate your cable outlet and ensure that it is located within proper distance of your cable modem and computer. Be sure not to bend the cable as this may strain the connector and cause damage.
2. Ensure that the temperature in the room where the cable modem will be operating is between 0 and 40°C (32 and 104°F)

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## Gather Supplied and Required Items

You will use a variety of items to install your cable modem. Some of the items are supplied with your cable modem.

### Supplied

Verify that these items were included in the cable modem's package:

- Cable modem
- Power adapter
- USB cable (1 .5m)
- Ethernet cable (1. 8m)
- CD containing USB drivers
- This User's Guide

### Not Supplied

Verify that these items are available before beginning the installation:

- If using the cable modem's USB port:
  - o A PC running Windows 98 Second Edition (SE), Windows Me, Windows 2000, or Windows XP. The cable modem's USB setup does not support the Macintosh operating system, Windows 98 First Edition, and NT.
  - o Windows 98 SE, Windows Me, Windows 2000, or Windows XP CD or diskettes.
  - o An active USB port on your PC.
- If using the cable modem's Ethernet port:
  - o A PC running Windows 95 (or later) operating system or a Macintosh computer running system 7.6 (or later) operating system
  - o An active Ethernet port on your PC or Macintosh

Be sure to follow the instructions provided for the port that you want to use.

Using the USB port allows you to install the cable modem faster and easier than using the ethernet port, because you do not have to install and configure a network interface card (NIC).

USB, however, only enables you to connect one computer to the cable modem. Using the ethernet port allows you connect multiple computers to a cable modem through the use of additional equipment that is not included. Please contact your cable service provider for more information on using multiple computers.

## **2. Installing the Cable Modem Using the USB Port**

This chapter explains the process of installing your cable modem using the USB port. First, you will install the hardware (cable modem, USB cable, coax cable, and power adapter). You will then install the cable modem drivers and verify that the computer USB port is functioning properly.

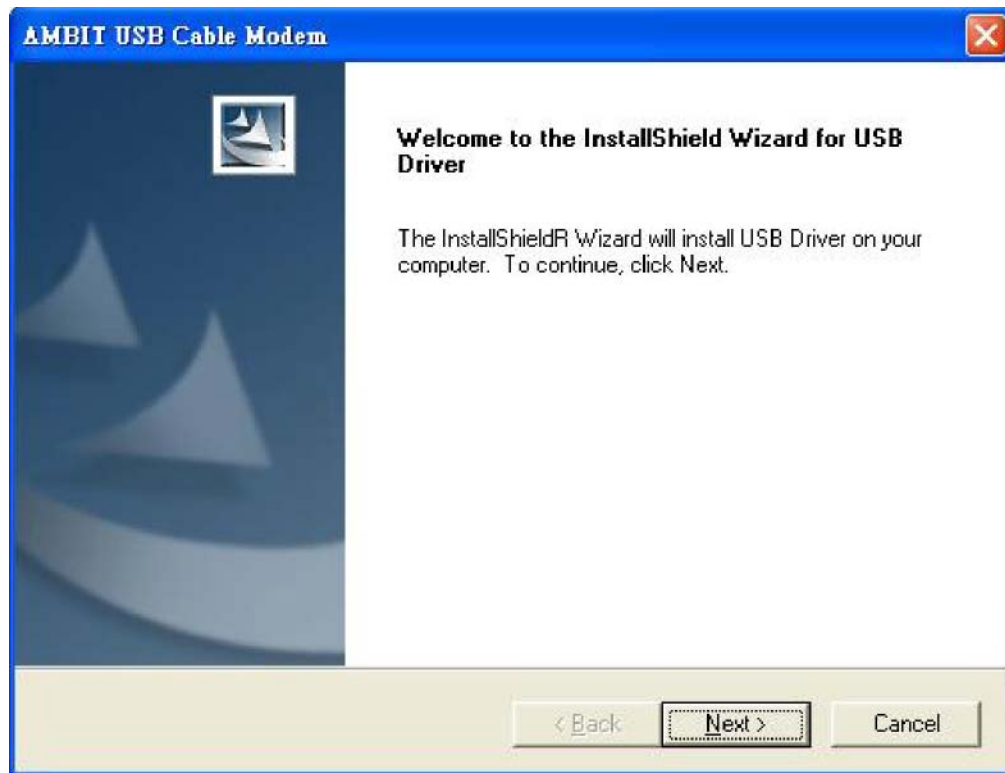
*NOTE: The cable modem's USB setup does not support the Macintosh operating system, Windows 95 & NT.*

### **Installing the Software Drivers Before Hardware Connection**

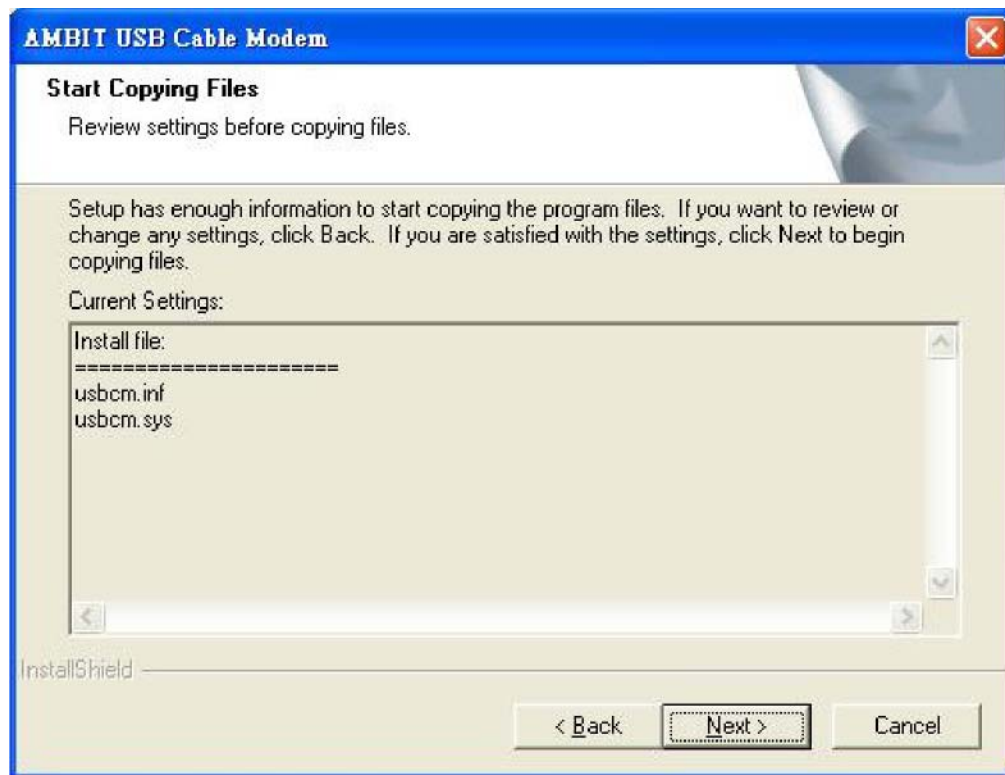
**CAUTION: You should run the "Setup.exe" program first before you connect the USB cable to the PC.**

To install the USB drivers using the Windows operating system:

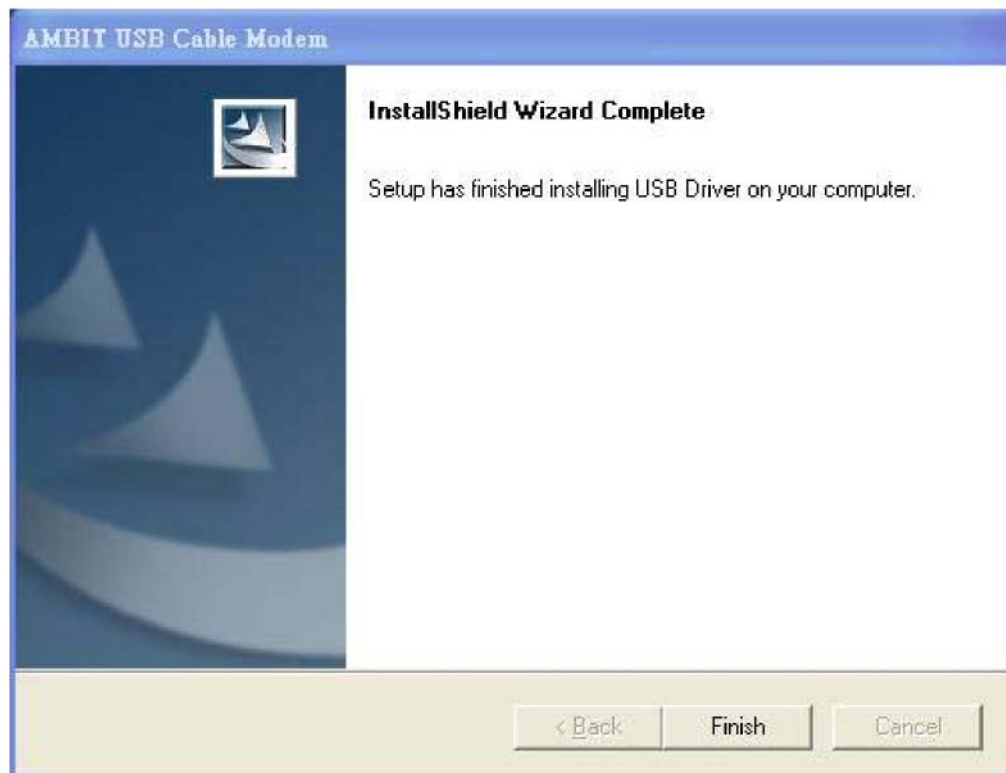
1. Double click the *Setup.exe* program in the CD.
2. You will see the following Welcome screen.



3. Click *Next*. You will see the following Start Copying Files screen.



4. Click *Next*. You will see the following screen.



5. Click *Finish*. Now you can install the hardware.

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## Installing the Hardware

This section explains how to connect the cable modem to the computer, wall outlet, and electrical outlet.

To install the hardware:

1. Power off the computer
2. Connect one end of the coaxial cable to the cable modem's cable connector. Connect the other end of the coaxial cable to the cable wall outlet. Be sure not to bend or over tighten the cables as this may strain the connector and cause damage. If you plan to connect the cable modem and television to the same wall outlet, you must use a cable line splitter (not included).
3. Connect one end of the USB cable to the cable modem's USB port and the other end of the cable to the USB port on the PC.
4. Plug the cable modem's power adapter into the cable modem's power jack and into a wall outlet or surge protector.
5. You are now ready to install the software drivers.

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## Installing the Software Drivers

This section explains how to install the software drivers that your PC requires for the cable modem to operate.

## Installing the Software Drivers in Windows 98 SE Operating System

**CAUTION: You must install the drivers located on the CD that ships with your cable modem. If you use the default Windows-supplied software drivers, you will not be able to properly install the cable modem.**

To install the cable modem software drivers using the Windows 98 operating system:

1. Power on your PC. After your computer boots, Windows detects the cable modem. The Found New Hardware screen appears, followed by the Add New Hardware Wizard screen.



2. Insert the CD into the PC's CD-ROM drive and click *Next*. You will see the following screen.



3. Select *Search for the best driver for your device (Recommended)*. Then select *Next*. You will see the following screen.



4. Check the *CD-ROM drive* check box and verify that the CD is in the CD-ROM drive. Click *Next* to have Windows search for the necessary driver files. You will see the following:



5. Select *the updated driver (Recommended) Ambit USB Cable Modem Windows Driver* and click *next*. You will see the following screen.

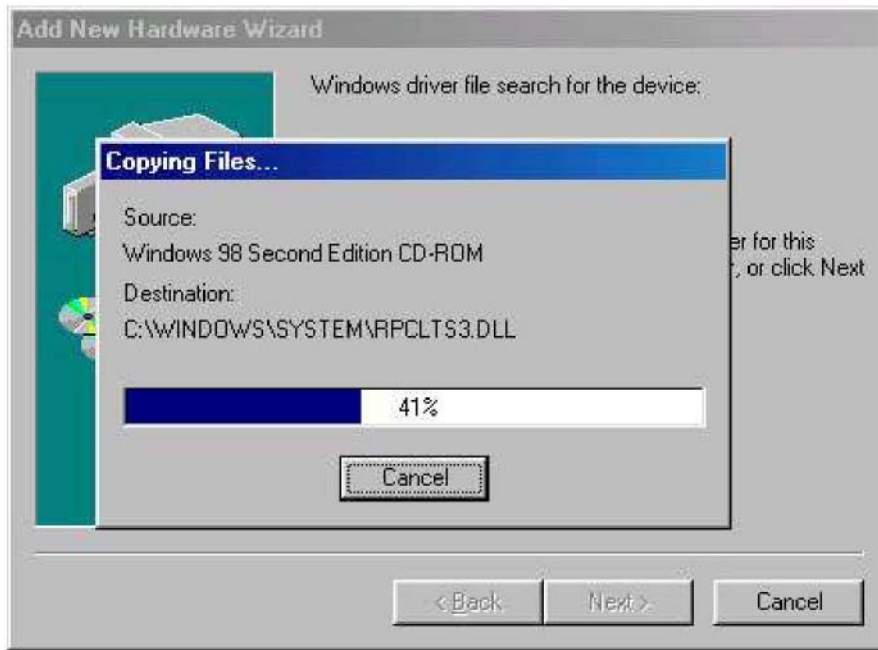
**CAUTION: You must verify that Ambit USB Cable Modem appears on the screen. If USB Composite Device appears, you must click *Back* twice and specify the correct location of the driver files. DO NOT proceed if USB Composite Device is displayed in the above window. Contact your cable provider for further assistance.**



6. Click *Next*. The computer automatically installs the necessary driver files. You may see the following screen



7. If the above screen appears, you must insert the Windows 98 CD so that Windows can copy the remaining files.



8. After files copying is done, you will see the following screen:



9. Click *Finish* to complete the installation. You will see the following screen.



10. Choose *Yes* to restart your computer.

11. After the computer is rebooted, verify that the USB LED is lit on the front of you cable modem. If not, refer to the troubleshooting section later in this chapter.

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## Installing the Software Drivers in Windows Me Operating System

To install the cable modem software drivers using the Windows Me operating system:

1. Power on your PC. After your computer boots, Windows detects the cable modem. The Found New Hardware screen appears, followed by the Found New Hardware Wizard screen.



2. Insert the CD into the PC's CD-ROM and click *Next*. You will see the following screen.



3. Select *Automatic search for a better driver (Recommended)* and click *Next*. The computer automatically copies the necessary driver files from the CD. You will see the following screen.



4. Click *Next*. The computer automatically installs the necessary driver files.



5. Click *Finish* after the computer has copied the necessary files. You will see the following screen.



6. Click *Yes* to restart the computer

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## Installing the Software Drivers in Windows 2000 Operating System

To install the cable modem software drivers using the Windows 2000 operating system:

1. Power on your PC. After your computer boots, Windows detects the cable modem. The Found New Hardware screen appears, followed by the Found New Hardware Wizard screen.



2. Insert the CD into the PC's CD-ROM Drive and click *Next*. You will see the following screen.



3. Select *Search for a suitable driver for my device (recommended)*. Then select *Next*. You will see the following screen



4. Check the *CD-ROM drive* check box and verify that the CD is in the CD-ROM drive. Click

Next to have Windows locate the necessary driver files. You will see the following screen.



5. Click *Next* to install the driver files for the cable modem. You will see the following screen.



7. Click *Finish* to complete the installation.
8. After the installation is completed, verify that the USB LED is lit on the front of you cable modem. If not, refer to the troubleshooting section later in this chapter.

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## Installing the Software Drivers in Windows XP Operating System

1. Power on your PC. After your computer boots, Windows detects the cable modem. The Found New Hardware screen appears, followed by the Found New Hardware Wizard screen.



2. Choose *the software automatically (Recommended)*. Click *Next* to continue. You will see the following screen.



3. Click *Finish* to complete the installation.

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## Troubleshooting the USB Installation

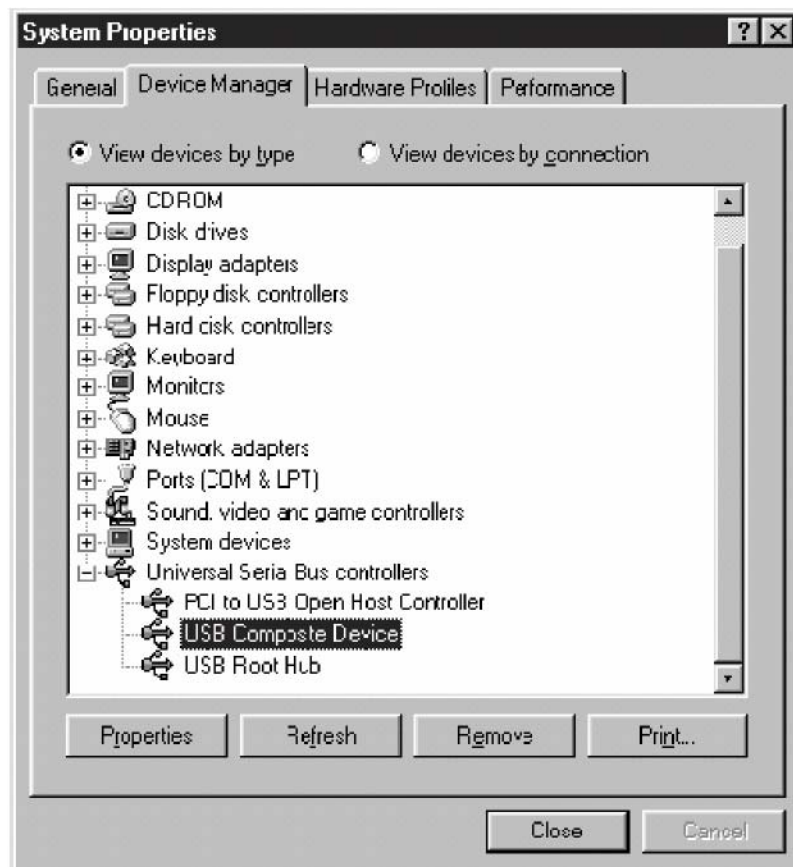
### **None of the LEDs is on when I power on the LAN Cable Modem.**

Check the connection between the power adapter and the cable modem. Power off the cable modem and wait for 5 seconds, and power on the modem again. If the problem still exists, you may have a hardware problem.

### **When attempting to install the USB driver in Windows 98 SE, I receive the following error message: Device not installed at this time. Driver not found.**

This usually occurs when the wrong driver has been installed. To remove the wrong driver and install the correct driver:

1. Right-click on the *My Computer* icon on your desktop and choose *Properties*.
2. Click the *Device Manager* tab
3. Click the plus sign next to *Universal Serial Bus controllers* to view the list of installed USB device drivers.



4. Select *USB Composite Device* and click *Remove*
5. Click *Refresh*

The Add New Hardware Wizard window appears, displaying the device name *USB Composite Device*. Refer to the proper operating system instructions in this chapter for information on reinstalling the driver properly.

**All of the LEDs on the front of my modem look correct, but I cannot access the Internet.**

- If the **power, usb, sync, and ready** LEDs are solidly lit, the cable modem is working properly. Use the following procedures to verify connectivity between the PC and the cable modem:
  - Launch Your PC's Internet Browser (e.g., Netscape, IE)
  - Enter <http://192.168.100.1> into your browser. This URL connects you directly to the web server within your cable modem. A successful connection indicates that the PC is able to communicate with the cable modem. The next step is to enter a public URL to ensure connectivity between the cable modem and your cable service provider. If this fails, please contact your cable service provider for further assistance.

- Try restarting the computer so that it could re-establish a connection with the cable modem.
- Power cycle the cable modem by removing the power adapter from the electrical outlet and plugging it back in. Wait for the cable modem to re-establish communications with your cable service provider.
- Remove any other USB devices from your computer and connect the cable modem's USB cable directly to the USB port on your computer.
- If you are using a cable splitter, try removing the splitter and connect the cable modem directly to the cable wall outlet. Wait for the cable modem to re-establish communications with your cable service provider.
- Your USB or coaxial cable may be damaged. Try using another cable.
- If none of these suggestions work, contact your cable service provider for further assistance.

### **Uninstalling the USB Driver**

1. Insert the supplied CD into your CD-ROM drive
2. Click on the *My Computer* icon on your desktop. Then click on the icon that belongs to your CD-ROM Drive.
3. Locate the file called "Uninstall" and click on the file. This program will remove all the necessary files from you computer.

### 3. Installing the Modem Using the Ethernet Port

This chapter explains the process for installing your cable modem using the ethernet port. Using the ethernet port allows to you connect multiple computers to the cable modem using additional equipment which is not included. Please contact your cable service provider for more information on using multiple computers.

See Chapter 2 “Installing the Cable Modem Using the USB Port” for instructions on installing the cable modem using the USB port.

You can use the cable modem’s Ethernet port if you have:

- A PC running Windows 95 (or later) operating system or a Macintosh computer running system 7.6 (or later) operating system
- An active Ethernet port on your PC

Before you begin, verify that your Network Interface Card (NIC) has been installed and configured for use with your cable modem. The cable modem requires TCP/IP to be installed. Contact your cable service provider for assistance with installing and configuring TCP/IP. After installed the hardware, your computer can connect the cable modem directly by using Network Interface Card. Unlike USB installation, there is no needed for software installation for the ethernet connection.

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#### Installing the Hardware

This section explains how to connect the cable modem to the computer, wall cable outlet, and electrical outlet.

To install the hardware:

1. Power off the computer
2. Connect one end of the coaxial cable to the cable modem’s cable connector. Connect the other end of the coaxial cable to the cable wall outlet. Be sure not to bend or over tighten the cables as this may strain the connector and cause damage. If you plan to connect the cable modem and television to the same wall outlet, you must use a cable line splitter (not included).
3. Connect one end of the ethernet cable to the cable modem’s ethernet port and the other end of the cable to the ethernet port on the PC or network interface card (NIC).
4. Plug the cable modem’s power adapter into the cable modem’s power jack and into a wall

outlet or surge protector.

5. If the **power**, **enet**, **sync**, and **ready** LEDs are solidly lit, the cable modem is working properly.

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## Troubleshooting the Ethernet Installation

### **None of the LEDs are on when I power on the Cable Modem.**

Check the connection between the power adapter and the cable modem. Power off the cable modem and wait for 5 seconds, and power on the modem again. If the problem still exists, you may have a hardware problem.

### **The enet LED on my cable modem is not lit.**

- Try restarting the computer so that it could re-establish a connection with the cable modem.
- Check for a resource conflict (Windows users only). To do this:
  - 1) Right-click on the *My Computer* icon on your desktop and choose *Properties*.
  - 2) 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 one, you may have an IRQ conflict. Refer to the manufacturer's documentation or contact your cable service provider for further assistance.
- Verify that TCP/IP is the default protocol for your network interface card (NIC)
- Power cycle the cable modem by removing the power adapter from the electrical outlet and plugging it back in. Wait for the cable modem to re-establish communications with your cable service provider.
- Your ethernet cable may be damaged. Try another cable.

### **All of the LEDs on the front of my modem look correct, but I cannot access the Internet.**

- If the **power**, **enet**, **sync**, and **ready** LEDs are solidly lit, the cable modem is working properly. Try restarting the computer so that it could re-establish a connection with the cable modem.
- Power cycle the cable modem by removing the power adapter from the electrical outlet and plugging it back in. Wait for the cable modem to re-establish communications with your cable service provider.
- If your PC is connected to a hub or gateway, try connecting the PC directly into the cable

modem.

- If you are using a cable splitter, try removing the splitter and connect the cable modem directly to the cable wall outlet. Wait for the cable modem to re-establish communications with your cable service provider.
- Your ethernet or coaxial cable may be damaged. Try using another cable.
- If none of these suggestions work, contact your cable service provider for further assistance.

## 4. Cable Modem LEDs and Connectors

This chapter describes the functions of the cable modem's LEDs and connectors.

When the **power**, **sync**, and **ready** LEDs are lit, the cable modem is working properly. The **usb** or **enet** LED should also be lit depending on what port is being used.

The following provides an overview of the LEDs on the front of the cable modem and what the LEDs mean.

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### LEDs on the Front of the Modem



- **power:** Indicates that the cable modem has successfully completed internal power-on tests.
- **usb:** Indicates connectivity between the USB port on the cable modem and the PC's USB port
- **enet:** Indicates connectivity between the ethernet port on the cable modem and the PC's ethernet port.
- **send:** Indicates that data is being transmitted from the cable modem to the cable network.
- **recv:** Indicates that data is being received from the cable network.
- **sync:** Indicates the connection status between the cable modem and the cable network. The LED is lit when the cable modem has established a downstream channel with the cable service provider's Cable Modem Termination System (CMTS).
- **ready:** Indicates that the cable modem has completed the ranging/registration process and is ready to send/receive data.

Installation problems with the cable modem are commonly due to the cable network and its topography. LEDs on the front panel of the cable modem reveal operational status and help you determine problem areas.

<b>LEDs indications</b>							
(“X” means not indicated)							
<b>Initialization Sequence</b>	<b>power</b>	<b>usb</b>	<b>enet</b>	<b>send</b>	<b>recv</b>	<b>sync</b>	<b>ready</b>
<b>Power ON</b>	On	On	On	On	On	On	On
<b>Hardware Testing</b>	On	Off	Off	Off	Off	Off	On
<b>Search Downstream Channel</b>	On	X	X	X	Blink	Off	Off
<b>Downstream Locked</b>	On	X	X	X	X	On	Slow Blink
<b>Search Upstream Channel</b>	On	X	X	X	X	On	Fast Blink
<b>Ranging OK and Registration Success</b>	On	X	X	X	X	On	On
<b>Ethernet Port</b>							
	<b>power</b>	<b>usb</b>	<b>enet</b>	<b>send</b>	<b>recv</b>	<b>sync</b>	<b>ready</b>
<b>Send Data</b>	On	Off	Blink	Blink	X	On	On
<b>Receive Data</b>	On	Off	Blink	X	Blink	On	On
<b>USB Port</b>							
	<b>power</b>	<b>usb</b>	<b>enet</b>	<b>send</b>	<b>recv</b>	<b>sync</b>	<b>ready</b>
<b>Send Data</b>	On	Blink	Off	Blink	X	On	On
<b>Receive Data</b>	On	Blink	Off	X	Blink	On	On

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## Connectors on the Back of the Modem

This list of connectors describes where to connect the cables and power adapter when installing the cable modem.

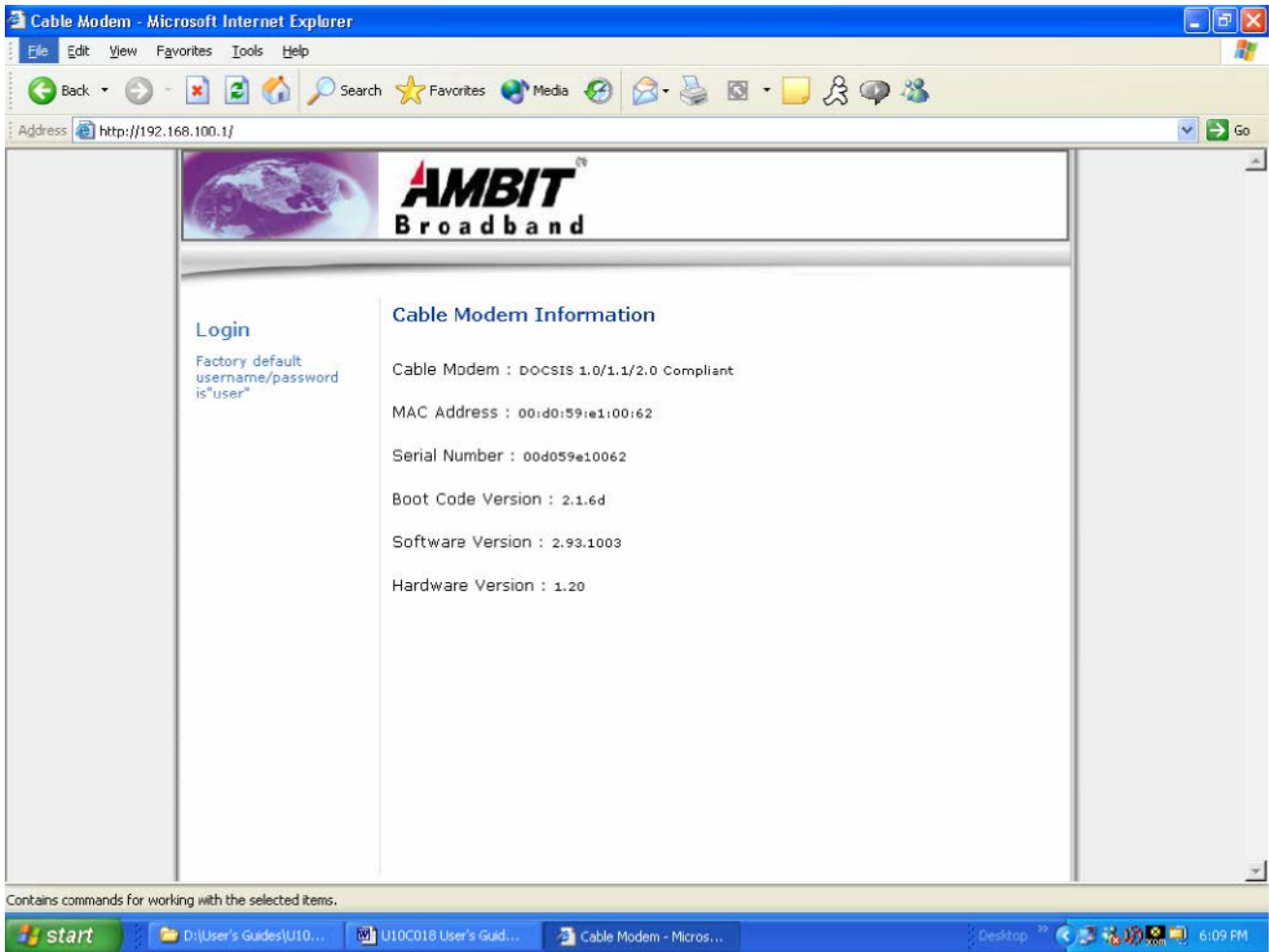


1. **power:** This is where you plug the included power adapter. Remember to use only the power adapter that came with the cable modem.
2. **enet:** This is where you plug the included ethernet cable. The other end connects to the ethernet port on the PC or NIC. It is not required when using the USB.
3. **usb:** This is where you plug the included USB cable. The other end connects to the USB port on your PC. It is not required when using the ethernet port.
4. **cable:** This is where you connect the coaxial cable (not included) that leads to the cable splitter (not included) or the cable wall outlet.

## 5. Web User Interface

### Accessing the Web User Interface

1. The PC connected to the cable modem must support TCP/IP connection and dynamic DHCP IP address acquisition, and must have a web browser installed.
2. Open the web browser and set the URL location as: <http://192.168.100.1>



3. Click LOGIN. Enter *user* for User name and *user* for Password, and then click *OK*.

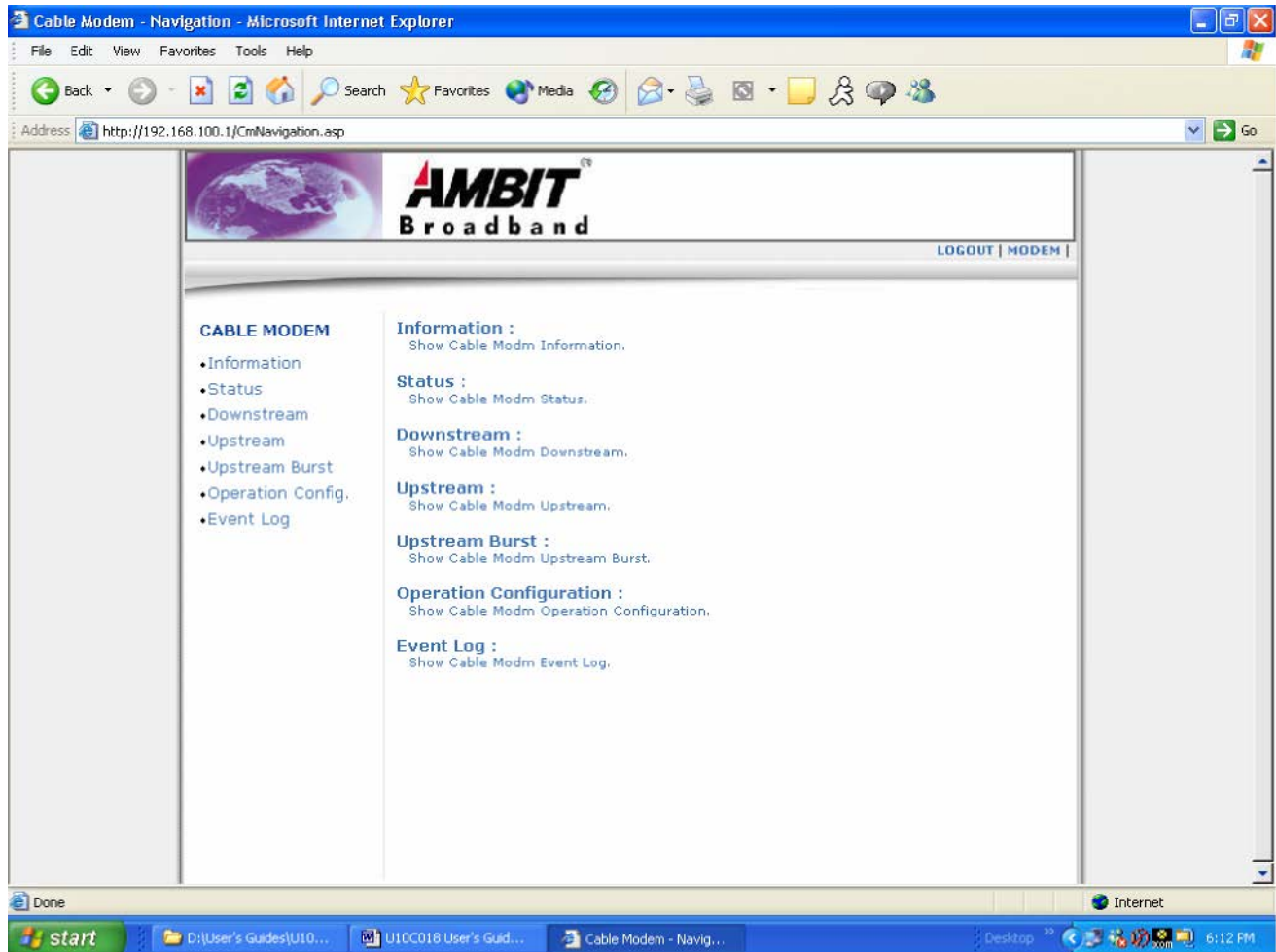


4. If the user enters an incorrect user name and/or password, the web user interface displays “401 Unauthorized”.

\*\*\* User Name:*user* & Password:*user* only can access to Firewall control, Parental control, and Diagnostics.

## Web User Interface Home Page

A main menu is shown at the top of the pages and the user can select different options to view cable modem information. They include:



## Cable Modem Information

The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying `http://192.168.100.1/CmInfo.asp`. The page content includes the AMBIT Broadband logo and a navigation menu with the following items:

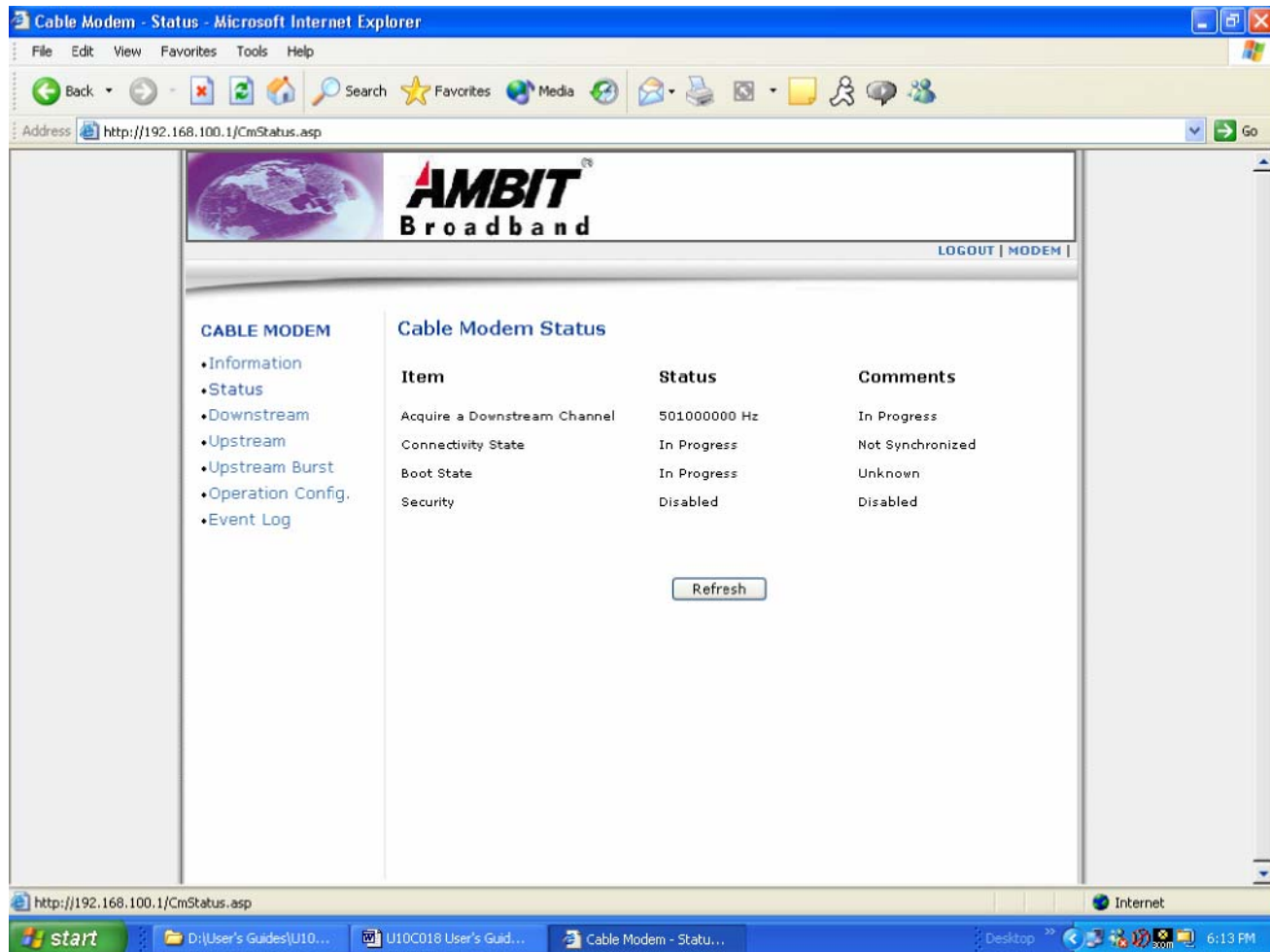
- Information
- Status
- Downstream
- Upstream
- Upstream Burst
- Operation Config.
- Event Log

The main content area is titled "Cable Modem Information" and lists the following details:

- Cable Modem : DOCSIS 1.0/1.1/2.0 Compliant
- MAC Address : 00:d0:59:e1:00:62
- Serial Number : 00d059e10062
- Boot Code Version : 2.1.6d
- Software Version : 2.93.1003
- Hardware Version : 1.20

The Windows taskbar at the bottom shows the Start button, several open applications including "D:\User's Guides\U10...", "U10C018 User's Guid...", and "Cable Modem - Infor...", and the system tray with the time 6:13 PM.

## Cable Modem Status



- **Refresh**

Click **“Refresh”** to update result.

## Downstream

The screenshot shows a web browser window titled "Cable Modem - Downstream - Microsoft Internet Explorer". The address bar displays "http://192.168.100.1/CmDnstream.asp". The page header features the "AMBIT Broadband" logo and a "LOGOUT | MODEM" link. A left-hand navigation menu lists several options: "CABLE MODEM", "Information", "Status", "Downstream", "Upstream", "Upstream Burst", "Operation Config.", and "Event Log". The main content area is titled "Cable Modem Downstream" and displays the following status information:

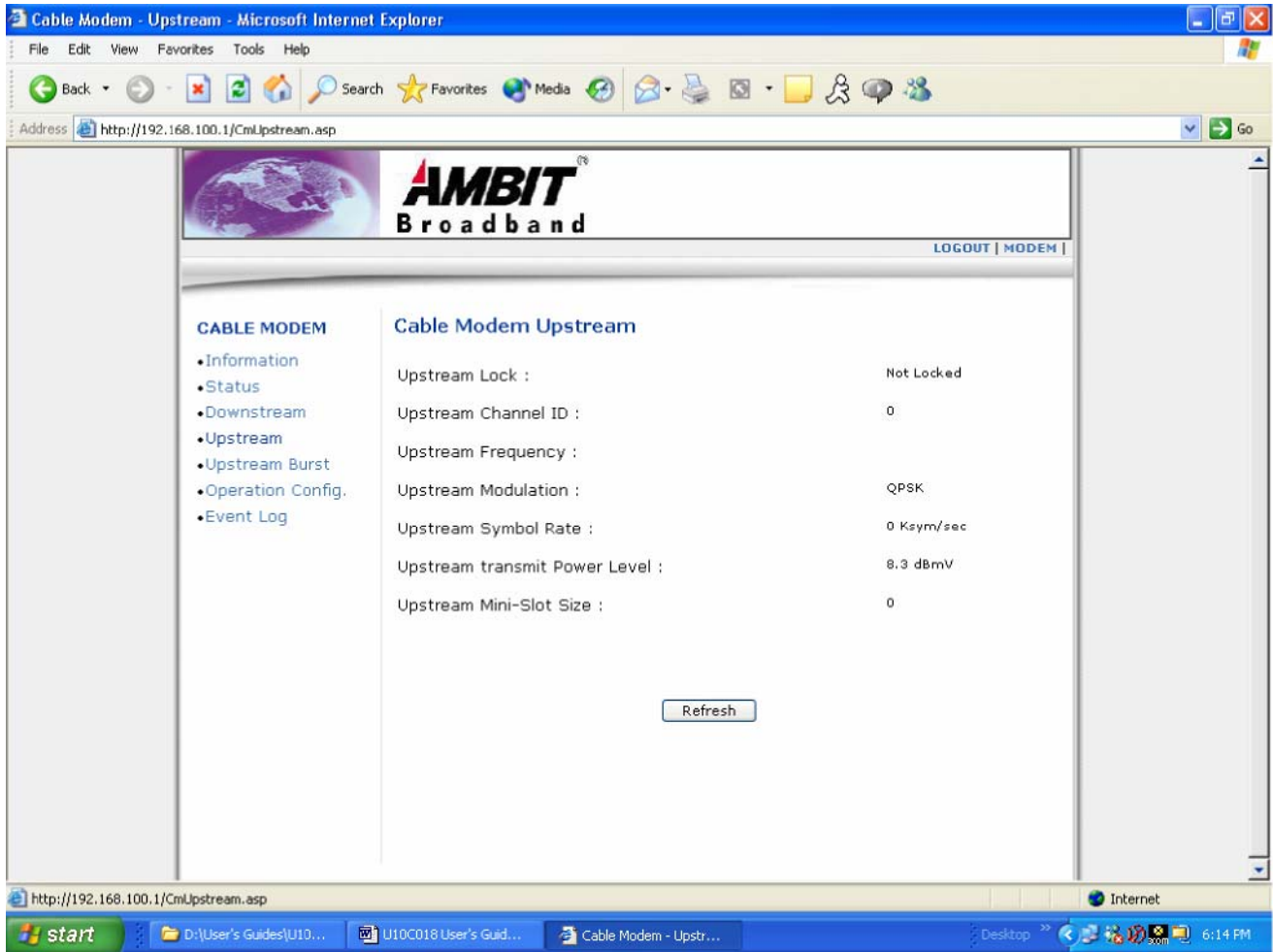
Downstream Lock :	Not Locked
Downstream Channel Id :	0
Downstream Frequency :	
Downstream Modulation :	unknown
Downstream Symbol Rate :	Unknown
Downstream Interleave Depth :	128
Downstream Receive Power Level :	-23.6 dBmV
Downstream SNR :	23.5 dB

At the bottom of the main content area, there is a "Refresh" button. The browser's taskbar at the bottom shows the Start button, several open windows, and the system tray with the time "6:14 PM".

- **Refresh**

Click **“Refresh”** to update result.

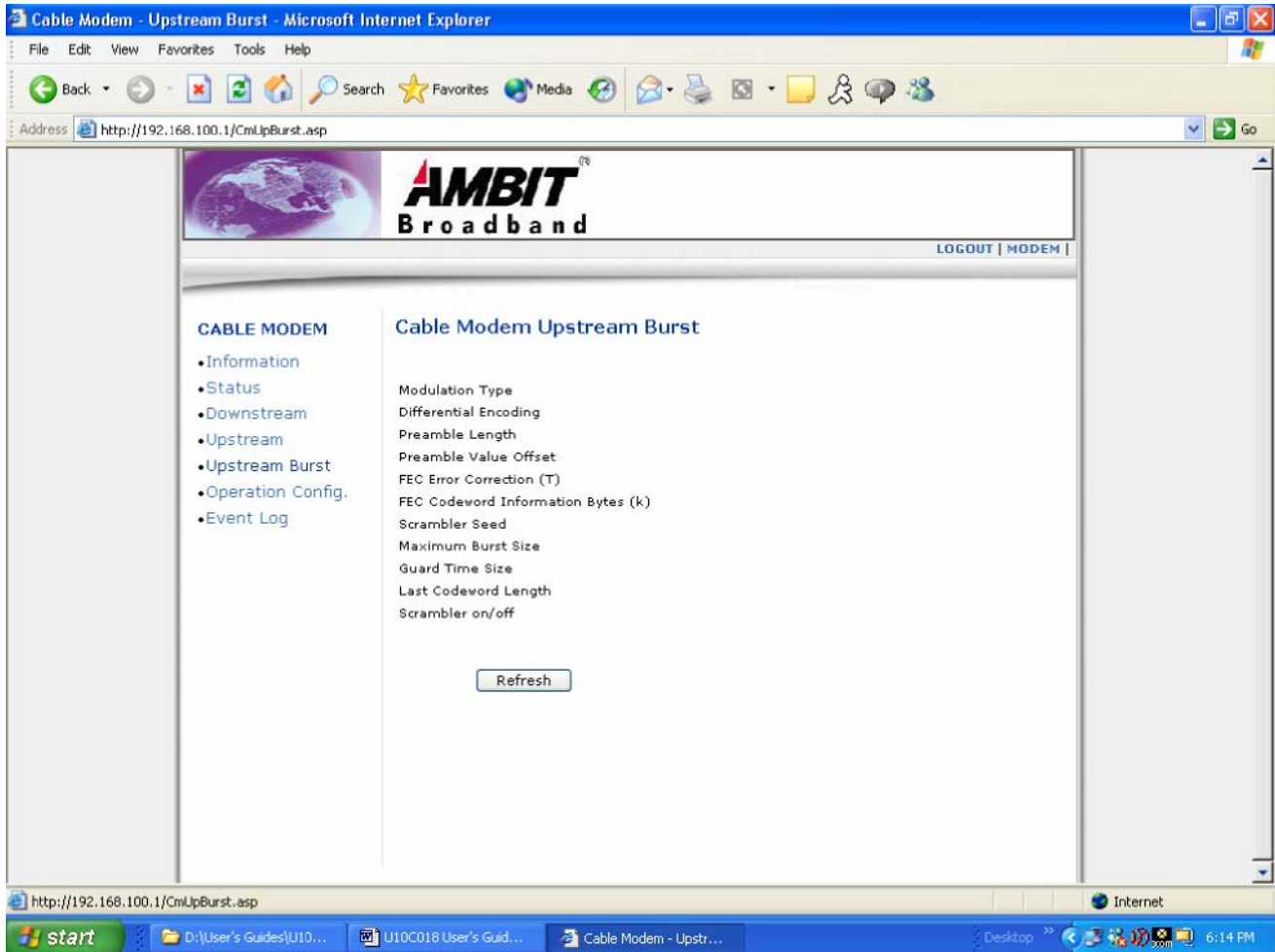
# Upstream



## • Refresh

Click **“Refresh”** to update result.

## Upstream Burst



- **Refresh**

Click **“Refresh”** to update result.

# Operation Parameters



## Event Log

The screenshot shows a web browser window titled "Cable Modem - Event Log - Microsoft Internet Explorer". The address bar displays "http://192.168.100.1/CmEventLog.asp". The page header features the "AMBIT Broadband" logo and navigation links for "LOGOUT" and "MODEM". A left sidebar lists menu items: "CABLE MODEM", "Information", "Status", "Downstream", "Upstream", "Upstream Burst", "Operation Config.", and "Event Log". The main content area is titled "Cable Modem Event Log" and contains a table with headers: "First Time", "Last Time", "Counts", "Level", "ID", and "Text". The table is currently empty. At the bottom of the main area are "Refresh" and "Clear Log" buttons. The Windows taskbar at the bottom shows the Start button, several open applications, and the system tray with the time "6:15 PM".

- **Clear Log**

Click **“Clear Log”** to empty event log.