BitStorm™ 6200 CPE

User's Guide

Document Number 6210-A2-GB20-00

November 2003

PARADYNE®

Notice

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Trademarks

Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.

2. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.

3. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.

4. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous high voltage points or other risks. Refer all servicing to qualified service personnel.

5. General purpose cables are used with this product for connection to the network. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer. Use a UL Listed, CSA certified, minimum No. 24 AWG line cord for connection to the Digital Subscriber Line (DSL) network.

6. When installed in the final configuration, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.

7. A rare phenomenon can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate buildings are **interconnecte**d, the voltage potential may cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action prior to interconnecting the products.

8. Input power to this product must be provided by one of the following: (1) a UL Listed/CSA certified power source with a Class 2 or Limited Power Source (LPS) output for use in North America, or (2) a certified transformer, with a Safety Extra Low Voltage (SELV) output having a maximum of 240 VA available, for use in the country of installation.

9. In addition, since the equipment is to be used with telecommunications circuits, take the following precautions:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.

CE Marking

When the product is marked with the CE mark on the equipment label, a supporting Declaration of Conformity may be downloaded from the Paradyne World Wide Web site at **www.paradyne.co**m. Select *Support -> Technical Manuals -> CE Declarations of Conformity.*

FCC Declaration

An FCC Declaration of Conformity may be downloaded from the Paradyne World Wide Web site at **www.paradyne.co**m. Select *Support -> Technical Manuals -> Declarations of Conformity.*

Notice to Users of the United States Telephone Network

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council for Terminal Attachment (ACTA). On the bottom side of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the Telephone Company.

This equipment is intended to connect to the Public Switched Telephone Network through a Universal Service Order Code (USOC) type RJ11C jack. A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It has been designed to be connected to a compatible modular jack that is also compliant.

The Ringer Equivalence Number (or REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local Telephone Company. The REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point. For example, 03 represents a REN of 0.3.

If the ADSL modem causes harm to the telephone network, the Telephone Company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the Telephone Company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The Telephone Company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the Telephone Company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service. If trouble is experienced with the ADSL modem, refer to the repair and warranty information in this document.

If the equipment is causing harm to the telephone network, the Telephone Company may request that you disconnect the equipment until the problem is resolved.

The user may make no repairs to the equipment.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If the site has specially wired alarm equipment connected to the telephone line, ensure the installation of the ADSL modem does not disable the alarm equipment. If you have questions about what will disable alarm equipment, consult your Telephone Company or a qualified installer.

Notice to Users of the Canadian Telephone Network

NOTICE: This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation IC before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

NOTICE: The Ringer Equivalence Number (REN) for this terminal equipment is labeled on the equipment. The REN assigned to each terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

If your equipment is in need of repair, contact your local sales representative, service representative, or distributor directly.

CANADA – EMI NOTICE:

This Class B digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du règlement sur le matérial brouilleur du Canada.

Table of Contents

1 Introduction

Congratulations on becoming the owner of a BitStorm 6200 CPE (Customer Premises Equipment). Your LAN (Local Area Network) will now be able to access the Internet via the CPE's ADSL connection.

This user's guide shows how to set up the BitStorm 6200 CPE and how to use its web interface.

1.1 Models

The BitStorm 6200 Series CPE comes in two models:

- Model 6210 – is set in the factory to run in bridge mode. It does not support router functions.
- Model 6211 – is set in the factory to run in router mode. It has configuration options outside the scope of this manual. See the *BitStorm 6211 CPE User's Guide* (document number 6211-A2-GB20) for more information. It is available at **www.paradyne.com**. Select *Support -> Technical Manuals -> BitStorm DSL Systems.*

Definition

*A **bridge** is a device that forwards any message from one part of a network to another. The Model 6210 CPE is a bridge.*

*A **router** is a device that forwards messages according to their network addresses. The Model 6211 CPE is a router.*

1.2 Features

- Built-in ADSL modem in the CPE, which offers up to 8Mbps/800Kbps Internet surf speed for Downstream/Upstream, respectively.
- 10/100BaseT Ethernet router to provide Internet connectivity to all computers on your LAN via additional Ethernet Switch/HUB.
- NAT (Network Address Translation) and Firewall functions to provide secure Internet access for your LAN (Model 6211 only).
- Configuration program accessible via Microsoft Internet Explorer. Note that Netscape is not supported.

1.3 System Requirements

In order to use the BitStorm 6200 CPE for Internet access, you must have the following:

- ADSL service subscription from your ISP.
- One computer containing an Ethernet 10BaseT/100BaseT network interface card (NIC).
- (Optional) An Ethernet hub/switch, if you are connecting the device to several computers on an Ethernet network.
- For system monitoring or configuration using the supplied web-based program: a web browser such as Internet Explorer Version 5.5 or later.

1.4 Using this Document

1.4.1 Notational conventions

- For brevity, the BitStorm 6200 CPE is referred to as "the CPE."
- The terms *LAN* and *network* are used interchangeably to refer to a group of Ethernet-connected computers at one site.

1.4.2 Typographical conventions

- **Boldface** type text is used for items you select from menus and drop-down lists, and text strings you type when prompted by the program.

1.4.3 Special messages

This document uses the following icons to call your attention to specific instructions or explanations.

 **Note**	*Provides clarification or non-essential information on the current topic.*
 **Definition**	*Explains terms that may be unfamiliar to the reader.*
 **WARNING**	*Provides messages of high importance, including messages relating to personal safety or system integrity.*

1.5 Getting Support

Obtain support for your BitStorm 6200 CPE from the service provider you received the device from.

2 Getting to Know the BitStorm 6200 CPE

2.1 Parts List

In addition to the CD this document resides on, your package contents should include:

- BitStorm 6200 CPE
- Power adapter (the supplied adapter may look different than the one illustrated here)
- Ethernet cable (RJ45, "straight-through" type)
- Phone cable (RJ11)

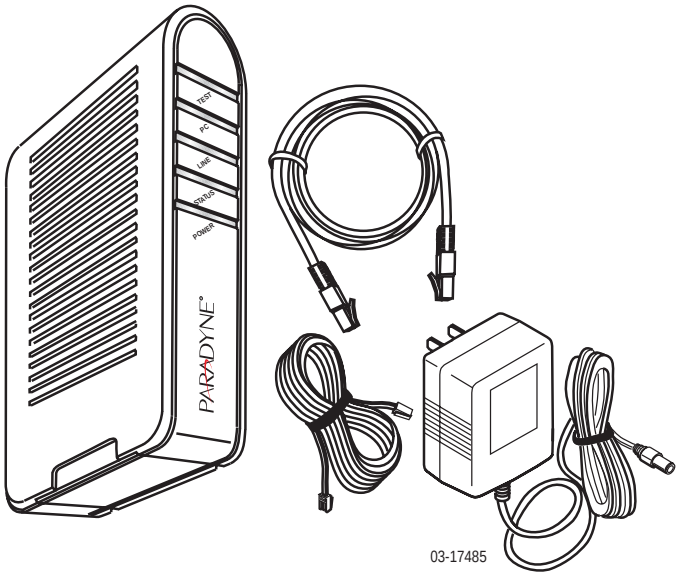

Figure 2.1 BitStorm 6200 CPE Package Contents

2.2 Front Panel

The front panel contains LED indicators that show the status of the unit.

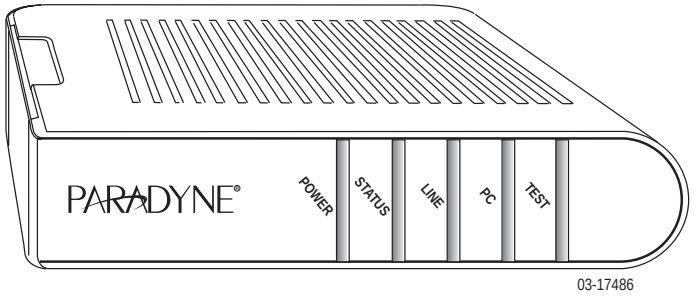

Figure 2.2 Front Panel LEDs

Table 2.1 Front Panel Label and LEDs

Label	Color	Function
POWER	Green	On: Unit is powered on Off: Unit is powered off
STATUS	Green	On: ADSL link is established and active Flashing: Trying to create an ADSL connection Off: No ADSL link
LINE	Green	Flashing: ADSL data transfer
PC	Green	On: LAN link is established Flashing: Data transfer at LAN connection Off: No LAN link
TEST	Green	On: Under test Off: Normal operation

2.3 Rear Panel

The rear panel contains the ports for the CPE's data and power connections.

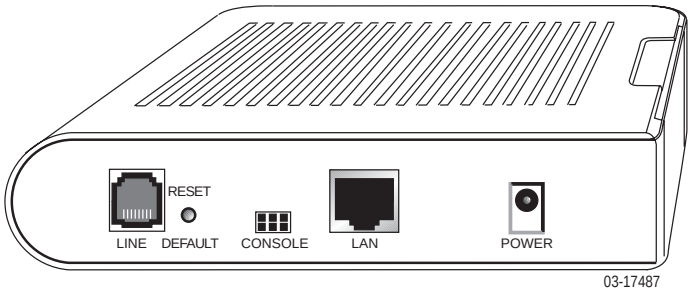

Figure 2.3 Rear Panel Connections

Table 2.2 Rear Panel Labels and Connectors

Label	Function
POWER	Connects to the supplied power adapter
LAN	Connects the CPE to your PC's Ethernet port, or to the uplink port on your LAN's hub/switch, using the cable provided
Console	Serial port for console management
Reset/Default	Reset to default setting
LINE	Connects to your ADSL line

3 Getting Started

This chapter provides basic instructions for connecting the CPE to a computer or a LAN and to the Internet via ADSL.

- Part 1 provides instructions to set up the hardware.
- Part 2 describes how to configure Internet properties on your computer(s).
- Part 3 shows you how to access your CPE.

It is assumed that you have already subscribed to ADSL service with your telephone company or other Internet service provider (ISP). These instructions provide a basic configuration that should be compatible with your home or small office network setup. Refer to the subsequent chapters for additional configuration instructions.

3.1 Connecting the Hardware

In 3.1, you should connect the device to an ADSL line, the power outlet, and your computer or network.

WARNING

Before you begin, turn the power off for all devices. *These include your computer(s), your LAN hub/switch (if applicable), and the CPE.*

Figure 3.1 illustrates the hardware connections. Please follow the steps that follow for specific instructions.

3.1.1 Connect the ADSL line

Connect your ADSL line to the port labeled LINE on the rear panel of the device, and connect the other end of the line to the wall phone jack directly or to an optional POTS splitter. If you use a POTS splitter to connect a telephone to the same wall jack as the CPE, follow the instructions that came with the splitter.

3.1.2 Connect the computers or a LAN

You can use the included Ethernet cable to connect your computer directly to the CPE. Attach one end of the Ethernet cable to the port labeled LAN on the rear panel of the device and connect the other end to the Ethernet port of your computer.

If your LAN has more than one computer, you can attach one end of an Ethernet cable to a hub or a switch and the other to the port labeled LAN on the CPE.

Note that either a crossover or a straight-through Ethernet cable can be used. The CPE determines and adjusts to the type of signal required.

3.1.3 Attach the power adapter

The supplied power adapter may look different than the one illustrated here.

Connect the cylindrical power plug into the POWER connector on the back of the device. If you have a wall-mount adapter, plug the AC adapter into a wall outlet or a power strip. If you have a table-top adapter, use the AC power cord to connect the adapter to a wall outlet or power strip.

3.1.4 Turn on your computer

Turn on and boot up your computer and any other LAN devices, such as hubs or switches.

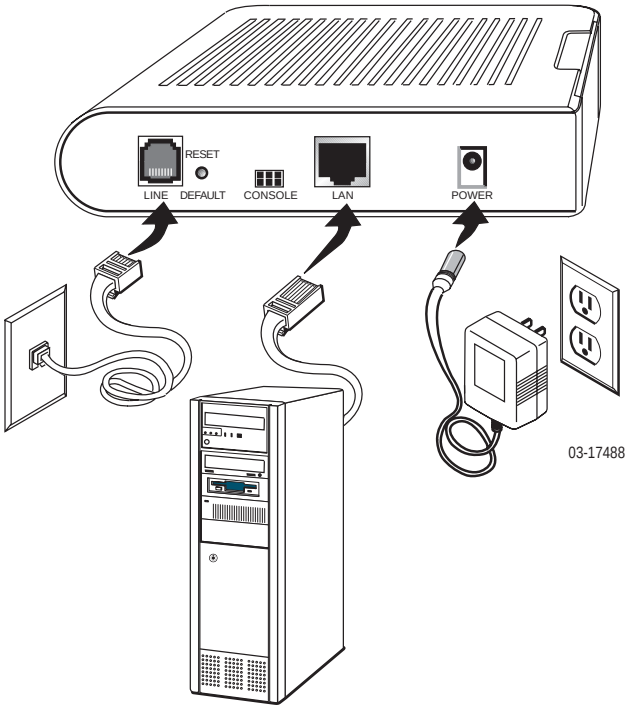

Figure 3.1 Overview of Hardware Connections

You should verify that its LEDs are illuminated as shown in Table 3.1

Table 3.1 LED Indicators

This LED:	...should be:
POWER	Solid green to indicate that the device is turned on. If this light is not on, verify that the power adapter is attached to the CPE and is plugged into a power source.
STATUS	Solid green to indicate that the device can communicate with your ISP via ADSL, or flashing when the device is trying to connect to your ISP.
LINE	Flashing when the device is sending or receiving data over the ADSL connection.
PC	Solid green to indicate that the device can communicate with your PC via Ethernet, or flashing when the device is sending or receiving data over Ethernet.
Test	Off under normal operation.

3.2 Configuring Your PC

Before you start to access the CPE via Ethernet, you must configure your PC's TCP/IP address to be **192.168.1.x**, where **x** is any number between 3 and 254. The subnet mask must be **255.255.255.0**. Your CPE's default IP address is **192.168.1.1**.

3.2.1 Windows XP:

1. In the Windows task bar, click on the **Start** button, and then click on **Control Panel**.
2. Double-click on the **Network Connections** icon.
3. In the LAN or High-Speed Internet window, right-click on the icon corresponding to your network interface card (NIC) and select **Properties**. (Often this icon is labeled *Local Area Connection*). The **Local Area Connection** dialog box is displayed with a list of currently installed network items.
4. Ensure that the check box to the left of the item labeled **Internet Protocol (TCP/IP)** is checked, and click on Properties .

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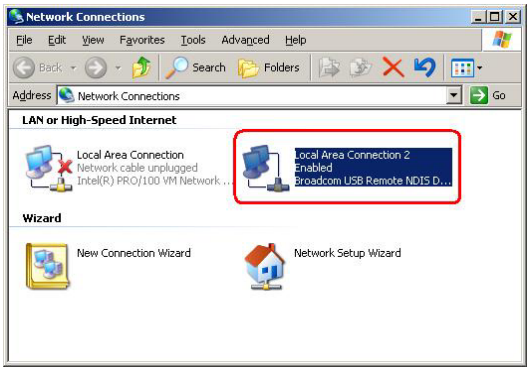

Figure 3.2 Network Connections in Windows XP

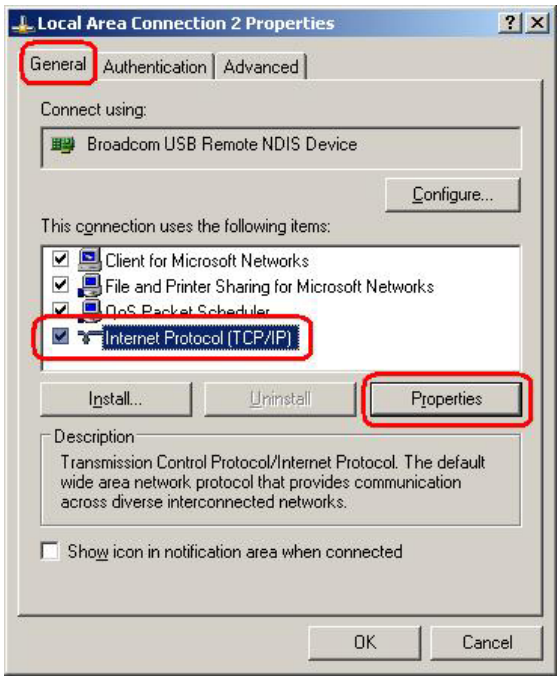

Figure 3.3 Local Area Connection Properties in Windows XP

5. In the **Internet Protocol (TCP/IP) Properties** dialog box, click in the radio button labeled **Use the following IP address** and type **192.168.1.x** (where **x** is any number between 3 and 254) and **255.255.255.0** in the IP address field and Subnet Mask field, respectively.

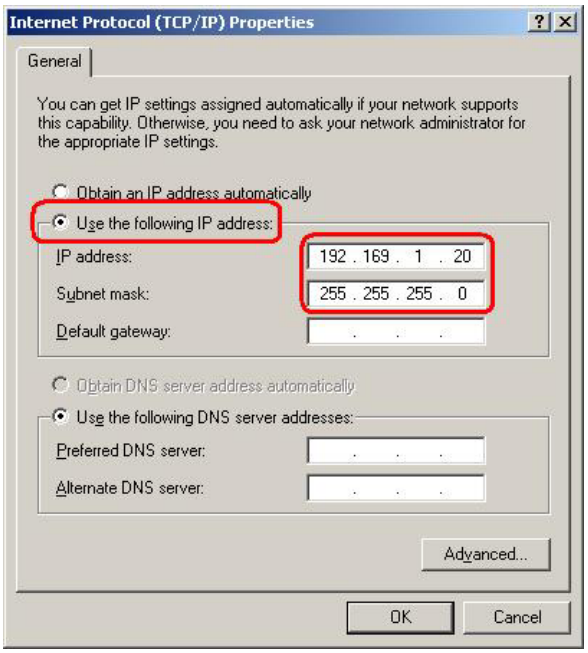

Figure 3.4 TCP/IP Properties in Windows XP

6. Click on OK twice to confirm your changes, and close the **Control Panel**.

3.2.2 Windows 2000:

1. In the Windows task bar, click on the **Start** button, point to **Settings**, and then select **Control Panel**.
2. Double-click on the **Network and Dial-up Connections** icon.
3. In the **Network and Dial-up Connections** window, right-click on the **Local Area Connection** icon, and then select **Properties**.

   The **Local Area Connection Properties** dialog box is displayed with a list of currently installed network components. If the list includes **Internet Protocol (TCP/IP)**, the protocol has already been enabled, in which case you can skip to Step 10.
4. If **Internet Protocol (TCP/IP)** does not appear as an installed component, click on Install...
5. In the **Select Network Component Type** dialog box, select **Protocol**, and then click on Add...
6. Select **Internet Protocol (TCP/IP)** in the **Network Protocols** list, and then click on OK.

   You may be prompted to install files from your Windows 2000 installation CD or other media. Follow the instructions to install the files.
7. If prompted, click on OK to restart your computer with the new settings.
8. After restarting your PC, double-click on the **Network and Dial-up Connections** icon in the **Control Panel**.
9. In **Network and Dial-up Connections** window, right-click on the **Local Area Connection** icon, and then select **Properties**.

10. In the **Local Area Connection Properties** dialog box, select **Internet Protocol (TCP/IP)**, and then click on Properties.
11. In the **Internet Protocol (TCP/IP) Properties** dialog box, click in the radio button labeled **Use the following IP address** and type **192.168.1.x** (where **x** is any number between 3 and 254) and **255.255.255.0** in the IP address field and Subnet Mask field, respectively.
12. Click on OK twice to confirm and save your changes, and then close the **Control Panel**.

3.2.3 Windows Me:

1. In the Windows task bar, click on the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click on the **Network and Dial-up Connections** icon.
3. In the **Network and Dial-up Connections** window, right-click on the **Network** icon, and then select **Properties**.

   The **Network Properties** dialog box is displayed with a list of currently installed network components. If the list includes **Internet Protocol (TCP/IP)**, the protocol has already been enabled, in which case you can skip to Step 11.
4. If **Internet Protocol (TCP/IP)** does not appear as an installed component, click on Add...
5. In the **Select Network Component Type** dialog box, select **Protocol**, and then click Add...
6. Select **Microsoft** in the Manufacturers box.
7. Select **Internet Protocol (TCP/IP)** in the Network Protocols list, and then click on OK.

   You may be prompted to install files from your Windows Me installation CD or other media. Follow the instructions to install the files.
8. If prompted, click on OK to restart your computer with the new settings.
9. After restarting your PC, double-click on the **Network and Dial-up Connections** icon in the **Control Panel**.
10. In **Network and Dial-up Connections** window, right-click on the **Network** icon, and then select **Properties**.
11. In the **Network Properties** dialog box, select **TCP/IP**, and then click on Properties.
12. In the **TCP/IP Settings** dialog box, click in the radio button labeled **Use the following IP address** and type **192.168.1.x** (where **x** is any number between 3 and 254) and **255.255.255.0** in the IP address field and Subnet Mask field, respectively.
13. Click on OK twice to confirm and save your changes, and then close the **Control Panel**.

3.2.4 Windows 95, 98:

1. In the Windows task bar, click on the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click on the **Network** icon.

   The **Network** dialog box is displayed with a list of currently installed network components. If the list includes **TCP/IP**, the protocol has already been enabled, in which case you can skip to Step 9.

3. If **TCP/IP** does not appear as an installed component, click on Add... . The **Select Network Component Type** dialog box appears.
4. Select **Protocol**, and then click Add... .

   The **Select Network Protocol** dialog box appears.
5. Click on **Microsoft** in the Manufacturers list box, and then click **TCP/IP** in the Network Protocols list box.
6. Click OK to return to the **Network** dialog box, and then click OK again.

   You may be prompted to install files from your Windows 95/98 installation CD. Follow the instructions to install the files.
7. Click on OK to restart the PC and complete the TCP/IP installation.
8. After restarting your PC, open the **Control Panel** window, and then click on the **Network** icon.
9. Select the network component labeled **TCP/IP**, and then click on Properties .

   If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.
10. In the **TCP/IP Properties** dialog box, click on the **IP Address** tab.
11. Click in the radio button labeled **Use the following IP address** and type **192.168.1.x** (where **x** is any number between 3 and 254) and **255.255.255.0** in the IP address field and Subnet Mask field, respectively.
12. Click on OK twice to confirm and save your changes. You will be prompted to restart Windows. Please click on Yes and restart your PC again.

3.2.5 Windows NT 4.0:

1. In the Windows NT task bar, click on the **Start** button, point to **Settings**, and then click **Control Panel**.
2. In the **Control Panel** window, double click on the **Network** icon.
3. In the **Network** dialog box, click on the **Protocols** tab.

   The Protocols tab displays a list of currently installed network protocols. If the list includes **TCP/IP**, the protocol has already been enabled, in which case you can skip to Step 9.
4. If **TCP/IP** does not appear as an installed component, click on Add... .
5. In the **Select Network Protocol** dialog box, select **TCP/IP**, and then click on OK .

   You may be prompted to install files from your Windows NT installation CD or other media. Follow the instructions to install the files.

   After all files are installed, a window displays to inform you that a TCP/IP service called DHCP can be set up to dynamically assign IP information.
6. Click on Yes to continue, and then click on OK if prompted to restart your computer.
7. After restarting your PC, open the **Control Panel** window, and then double-click on the **Network** icon.
8. In the **Network** dialog box, click on the **Protocols** tab.

9. In the **Protocols** tab, select **TCP/IP**, and then click on Properties.
10. In the **Microsoft TCP/IP Properties** dialog box, click in the radio button labeled **Use the following IP address** and type **192.168.1.x** (where **x** is any number between 3 and 254) and **255.255.255.0** in the IP address field and Subnet Mask field, respectively.
11. Click on OK twice to confirm and save your changes, and then close the **Control Panel**.

3.2.6 Assigning IP to your PC automatically by DHCP

To use the CPE's DHCP feature (only available in the Model 6211), click in the radio button labeled **Obtain an IP address automatically** instead of **Use the following IP address** in the above procedures.

- By default, the LAN port IP address of the CPE is **192.168.1.1**. (You can change this address, or another address can be assigned by your ISP.)

Note

Your PCs must have IP addresses that place them in the same subnet as the CPE's LAN port.

3.3 Login to your CPE

In this section, you can login to the CPE's web interface by an Ethernet cable, and start to configure settings and observe some statistics of your Internet connection.

1. Open your Web browser, and type the following URL in the address/location box, and press **<Enter>**:

   http://192.168.1.1

   This is the predefined IP address for the LAN port on the CPE.

   A login screen appears, as shown in Figure 3.5.

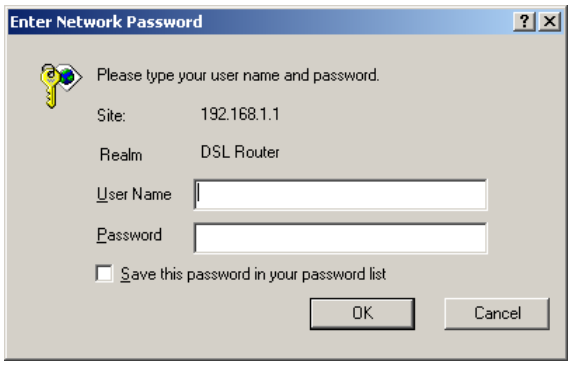

Figure 3.5 Login Screen

   If you have problem connecting to the CPE, verify that your PC is properly configured within the subnet of the CPE's predefined IP address **192.168.1.1**. See sections 3.2.2 to 3.2.6.

2. Enter your user name and password, and then click on OK to displayr the home page of the CPE. The default user name and password are "**user**" and "**user**", respectively.

Note

You can change the password at any time. See section 5.3 User Access.

The home page of the CPE is shown in Figure 3.6.

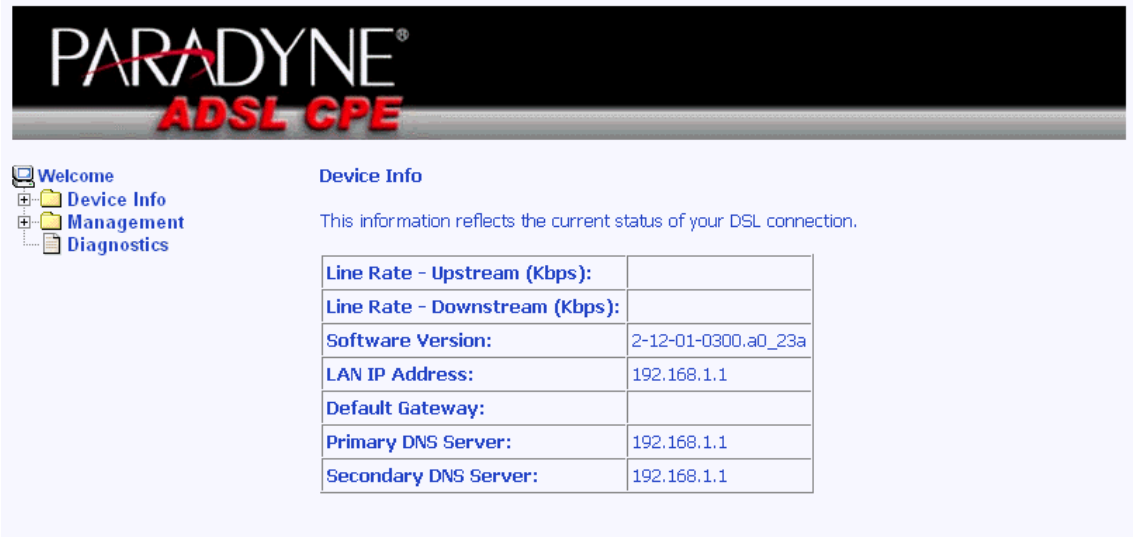

Figure 3.6 BitStorm 6200 CPE Home Page

4 Device Information

This chapter describes your CPE's system information and configuration summary when you click on the "System Info" in the left column.

4.1 Summary

You can get the general status report from the CPE by selecting *Device Info -> Summary* (shown in Figure 4.1)

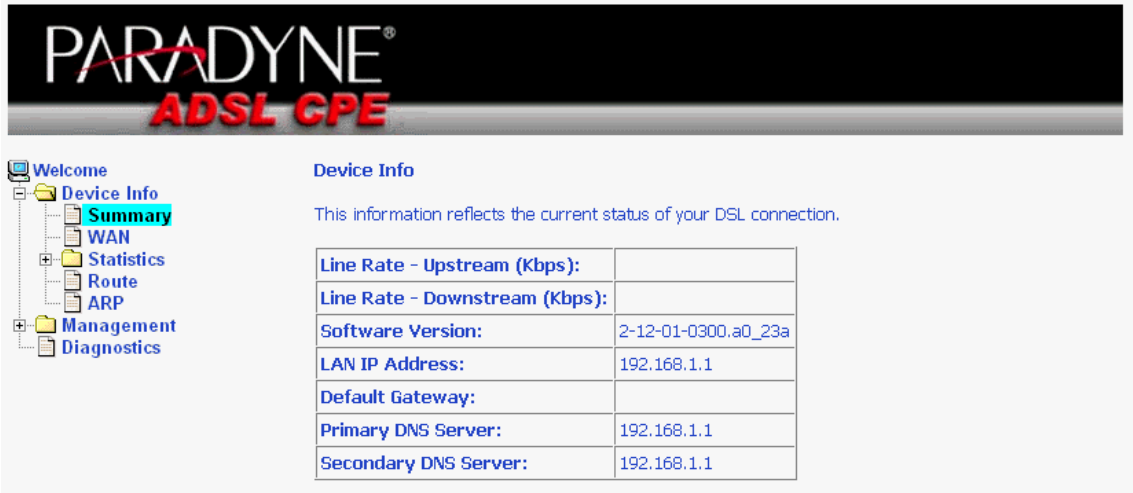

Figure 4.1 Status Summary

4.2 WAN

You can get the WAN status report from the CPE by selecting *Device Info -> WAN* (shown in Figure 4.2).

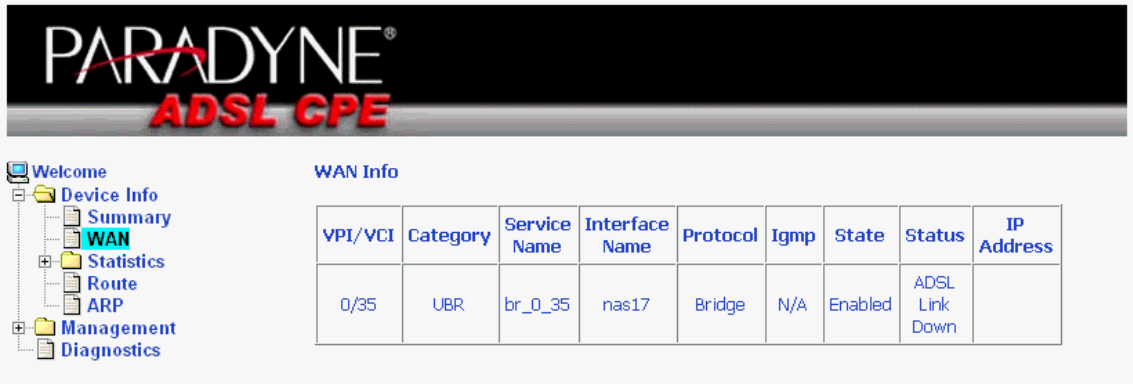

Figure 4.2 WAN Status

4.3 Statistics

4.3.1 LAN Statistics

You can get the LAN status report from the CPE by selecting *Device Info -> Statistics -> LAN* (shown in Figure 4.3).

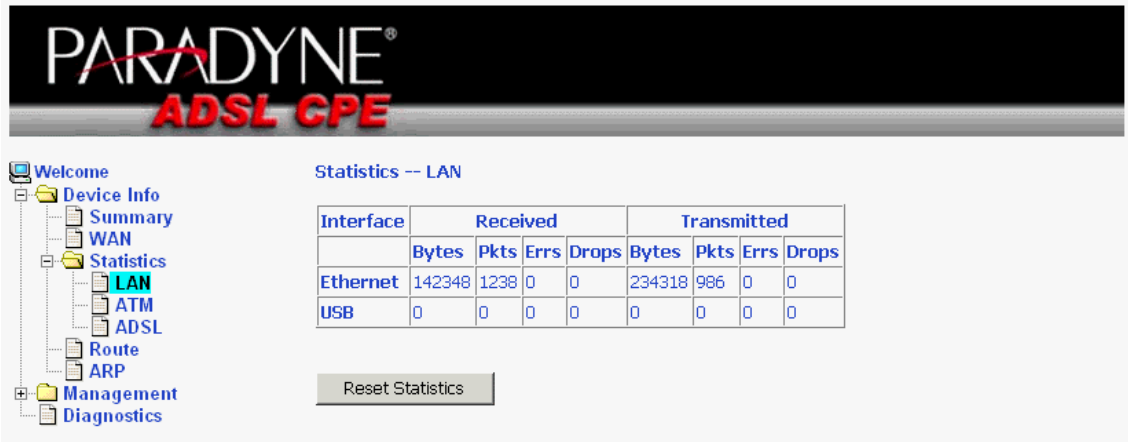

Figure 4.3 LAN Statistics Page

4.3.2 ATM Statistics

You can get the ATM status report from the CPE by selecting *Device Info -> Statistics -> ATM* (shown in Figure 4.4).

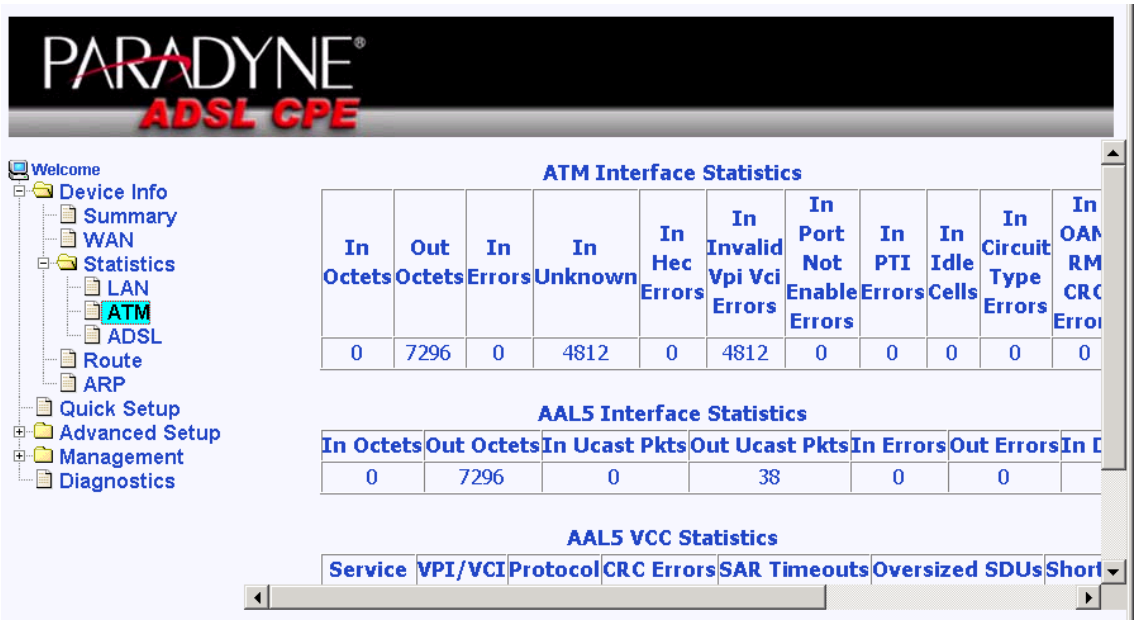

Figure 4.4 ATM Statistics Page

4.3.3 ADSL Statistics

You can get the ADSL status report from the CPE by selecting *Device Info -> Statistics -> ADSL* (shown in Figure 4.5).

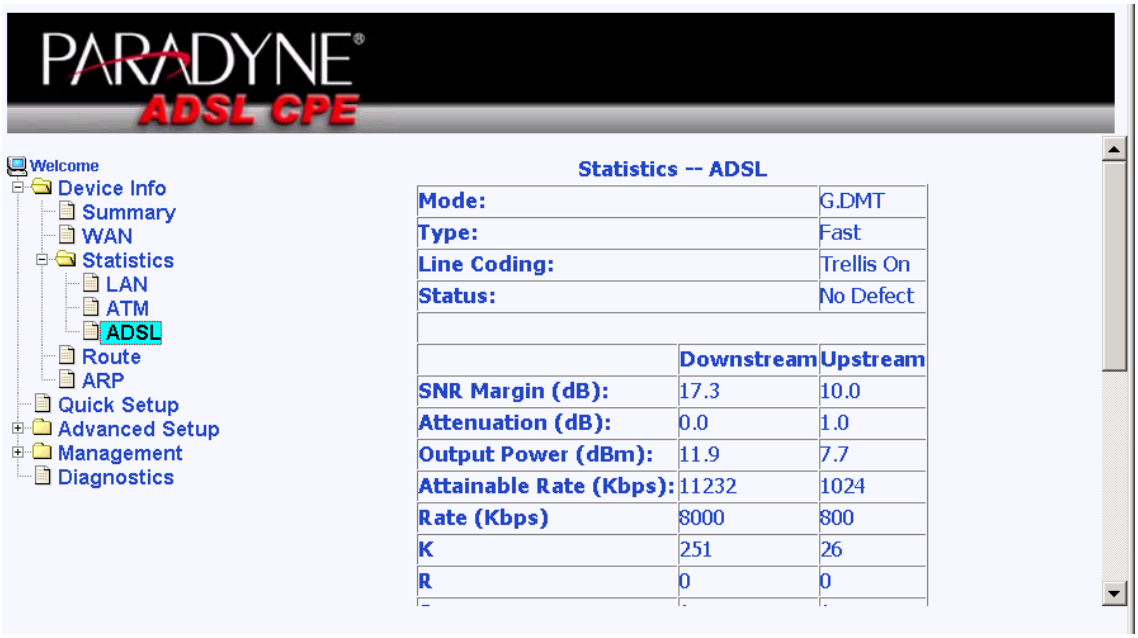

Figure 4.5 ADSL Statistics Page

4.4 Route

You can get the route status report from the CPE by selecting *Device Info -> Route* (shown in Figure 4.6).

Figure 4.6 Route Status

4.5 ARP

You can get the ARP status report from the CPE by selecting *Device Info -> ARP* (shown in Figure 4.7).

Figure 4.7 ARP Status

5 Management

The chapter contains management instructions for software upgrade and restore configuration.

5.1 Update Software

You may update the the CPE's software by selecting *Management -> Update Software.* Choose the proper file location to update your CPE. It will reboot automatically.

Figure 5.1 Update Software Page

5.2 Restore Settings

You may restore the CPE's default settings by selecting *Management -> Restore Settings.* It will restore and reboot automatically after you click on Restore Default Configuration.

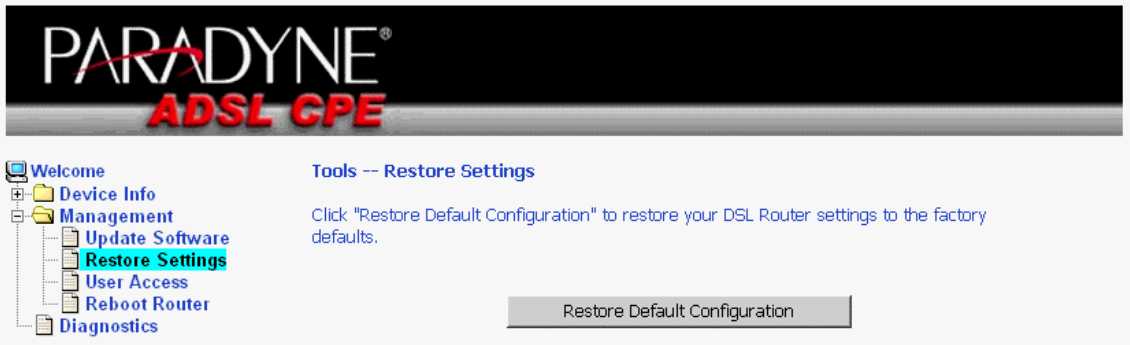

Figure 5.2 Restore Settings

5.3 User Access

User name "**user**" (general user) can access to the CPE to view configuration and statistics, and update the CPE's software. You may change its password by selecting *Management -> User Access*. Enter the password for user name "user" twice and click on Apply.

Figure 5.3 User Access Setup

5.4 Reboot CPE

You may reboot the CPE by selecting *Management -> Reboot Router*. Just click on Reboot Router to reboot.

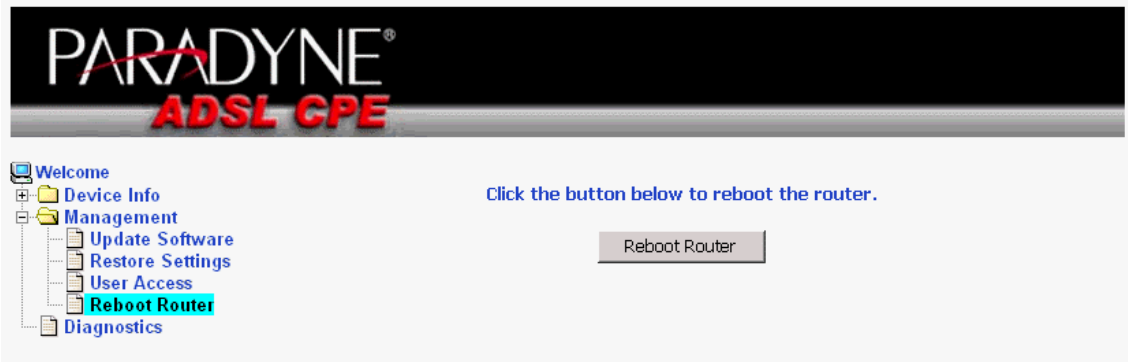

Figure 5.4 Reboot the CPE

6 Diagnostics

This chapter shows the diagnostic report of the CPE (Figure 6.1), which includes:

- The connection status of the CPE to your Ethernet
- The ADSL connection status of the CPE to your ISP and related OAM information.

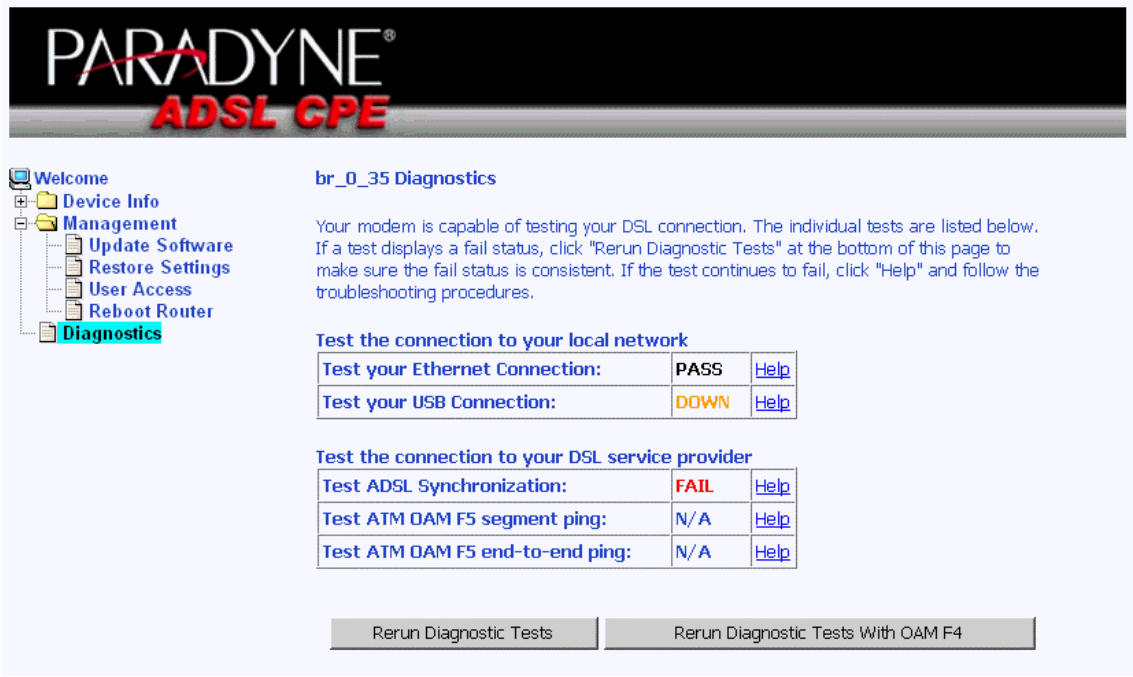

Figure 6.1 Diagnostics Page

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