HN System

Upgrading to a Model HN7000S Remote Terminal

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Understanding safety alert messages

Safety alert messages call attention to potential safety hazards and tell you how to avoid them. These messages are identified by the signal words DANGER, WARNING, CAUTION, or NOTICE, as illustrated below. To avoid possible property damage, personal injury, or in some cases possible death, read and comply with all safety alert messages.

Messages concerning personal injury

The signal words DANGER, WARNING, and CAUTION DANGER indicate hazards that could result in personal injury or in some cases death, as explained below. Each of these signal words indicates the severity of the potential hazard.

⚠️ DANGER

DANGER indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.

⚠️ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠️ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

Messages concerning property damage

A NOTICE concerns property damage only.

NOTICE

NOTICE is used for advisory messages concerning possible property damage, product damage or malfunction, data loss, or other unwanted results—but not personal injury.
Safety symbols

The generic safety alert symbol

⚠️

calls attention to a potential personal injury hazard. It appears next to the DANGER, WARNING, and CAUTION signal words as part of the signal word label. Other symbols may appear next to DANGER, WARNING, or CAUTION to indicate a specific type of hazard (for example, fire or electric shock). If other hazard symbols are used in this document they are identified in this section.

Additional symbols

This document uses this symbol

⚠️

to indicate a safety alert message that concerns a potential electric shock hazard.
Chapter 1
Introduction

This manual explains how to uninstall a DW7000, DW6000, DW4020, or DW4000 remote terminal and replace it with your new HN7000S remote terminal.

This introductory chapter discusses the following topics:

- Obtaining help during the upgrade on page 1
- System requirements on page 2
- Summary of the upgrade process on page 3
- Disposing of the old remote terminal on page 3

Use only the correct instructions

You do not need to follow all of the instructions in this manual. Many of the instructions are specific to the remote terminal model you are replacing or to a specific computer operating system. Check each section before proceeding to make sure it applies to your setup. Instructions that are model-specific or operating system-specific are identified as such.

Obtaining help during the upgrade

This section explains how to obtain technical support should you need help upgrading your remote terminal. Be sure that you complete the procedures in the following chapters, in the order presented, before seeking assistance.

If you purchased this product through a Hughes retail channel, call Customer Care at 1-866-347-3292.

If you purchased this product from a value-added reseller (VAR), please contact your VAR, rather than Hughes, for assistance. Your VAR is trained to assist you with any technical problems you might experience during the upgrade of your HN7000S remote terminal.
System requirements

The HN7000S self-hosted remote terminal is designed to connect to your computer. To operate with the HughesNet network, your computer must meet the following requirements:

**Microsoft Windows Vista Home Basic**
- Processor speed: 800 MHz
- System memory: 512 MB
- Free hard disk space: 150 MB

**Microsoft Windows Vista Home Premium, Business, Enterprise, or Ultimate**
- Processor speed: 1 GHz
- System memory: 1 GB
- Free hard disk space: 150 MB

**Microsoft Windows XP, Professional or Home Edition**
- Processor speed: 233 MHz. *Recommended:* 300 MHz or higher
- System memory: 128 MB. *Recommended:* 256 MB or more
- Free hard disk space: 150 MB

**Microsoft Windows 2000, Professional Edition with Service Pack 4**
- Processor speed: 133 MHz
- System memory: 128 MB
- Free hard disk space: 150 MB

**Apple Mac 10.1 or higher**
- Processor speed: 300 MHz
- System memory: 128 MB
- Free hard disk space: 150 MB

**Networking requirements**
- Ethernet port
- Ethernet cable (provided)
- Ethernet NIC, 10/100 Mbps, configured as follows:
  - Auto-negotiate
  - DHCP enabled (obtain an IP address automatically)

To determine whether your system meets these installation requirements, you can use the HughesNet Activation Software CD included in your upgrade kit. To do so, follow the procedures outlined in Chapter 3 – *Installing the HN7000S remote terminal.*
The following items are not included in the upgrade kit.

- A functioning 10/100 BaseT Ethernet interface must be installed on the computer that will be connected to the HN7000S.
- If the Ethernet cable in the upgrade kit is not long enough to connect your computer to the HN7000S remote terminal, you may need to obtain a longer one. You can use a crossover or straight-through Cat-5 Ethernet cable to connect your computer to the HN7000S remote terminal.
- A power strip or surge protector. If you do not have one, proceed with the installation using a standard wall outlet or other power source.

Summary of the upgrade process

Upgrading your remote terminal to an HN7000S consists of the following high-level steps:

- Uninstalling your current remote terminal
- Proper disposal of the old remote terminal
- Installing the HN7000S remote terminal
- Follow-up tasks, including:
  - Confirming that the remote terminal’s software is current
  - Accessing my HughesNet.com
  - Additional tasks

Disposing of the old remote terminal

Hughes encourages you to dispose and recycle responsibly in accordance with state and local codes. Many local organizations will collect your electronic equipment and recycle the materials. For information on electronic equipment recycling options, see the Electronic Industries Alliance Consumer Education Initiative web page at [http://www.eiae.org](http://www.eiae.org).
Chapter 2

Uninstalling your current remote terminal

This chapter explains how to uninstall your current modem or remote terminal.

The following topics are discussed:

- Inventorying upgrade kit components on page 5
- Uninstalling a DW4000 on page 6
- Uninstalling a DW7000, DW6000, or DW4020 on page 9

Inventorying upgrade kit components

Before installing your new HN7000S remote terminal, make sure you have all the items shown in Figure 1.

Note: If you are upgrading from a DW7000/DW6000/DW4020, you will reuse the DW7000/DW6000/DW4020 power supply, power cords, and Ethernet cable. Your upgrade kit does not contain replacements for these items.
Uninstalling a DW4000

The process of uninstalling a DW4000 consists of the following tasks:

- Removing Internet connection sharing (ICS) software from your computer (if you are not using ICS, you can skip this task)
- Removing DIRECWAY software from your computer
- Disconnecting the indoor receive unit (IRU) and indoor transmit unit (ITU) stack from your computer

Note: If you are uninstalling a DW4020, see Uninstalling a DW7000, DW6000, or DW4020 on page 9.

Removing ICS software from your computer

Determine which operating system is installed on your computer and select the appropriate procedures to remove the ICS software from the computer:

Windows XP on page 6
Windows 2000 on page 6

Note: These are the only operating systems supported for DW4000

Windows XP

1. Open My Computer or Windows Explorer.
3. Highlight each Local Area Connection until you find the one that is listed as the Satellite Receiver Adapter.
4. Right-click on the Local Area Connection that corresponds to the Satellite Receiver Adapter and click Properties. The Local Area Connection Properties dialog appears.
5. Select the Advanced tab and Click Settings.
6. At the Windows Firewall General tab, select ON and check the Don’t Allow Exceptions checkbox.
7. Click OK to close the Windows Firewall dialog.
8. Click OK to close the Local Area Connection Properties dialog.

Windows 2000

1. Click Start → Settings → Network and Dial-up Connections. The Network and Dial-up Connections dialog box appears.
2. Highlight each Local Area Connection until you find the one that is listed as the Satellite Receiver Adapter.
3. Right-click on the Local Area Connection that corresponds to the Satellite Receiver Adapter and click Properties.
4. At the dialog that appears, select the Sharing tab.
5. Uncheck the checkbox next to Enable Internet Connection Sharing for this connection.
6. Click OK.
7. Close the Network and Dial-up Connections window.

**Uninstalling DIRECWAY software**

When your DW4000 was installed, DIRECWAY software was also installed on your computer. You must remove this software from your computer before installing your new HN7000S terminal. Follow these steps to remove the software:

1. Locate the USB cable that connects the IRU to your computer. See Figure 2.
2. Detach the USB cable from the IRU and the computer.
3. On your computer, go to **Start → Programs → DIRECWAY → Uninstall.**
4. Click Yes on the message confirming that you want to uninstall DIRECWAY.
5. Status messages reporting on the progress of the software removal appear.
6. Reboot your computer if instructed to do so. Ignore or click through any error messages.

**Disconnecting the DW4000 from your computer**

Refer to Figure 2 and complete the steps in this section to disconnect the DW4000 receive modem (IRU) and transmit modem (ITU) stack from your computer.

![Figure 2: Uninstalling a DW4000](image)

1. Turn your computer off.
2. Unplug the power supply AC power cord from the electrical outlet or power source.
3. Unplug the power supply DC power cord from the IRU.

**NOTICE**

- When removing power from the IRU, always unplug the AC power cord from the wall outlet, surge protector, or power strip first.
- Do not pull the DC power cord from the back of the IRU until the AC power cord is disconnected. Doing so could damage the pins and cause a short in the system.

4. Detach the coaxial cable from the IRU.
   You may need to loosen the connector with a 7/16-inch wrench.
5. Label the cable with a tag or small piece of electrical tape with the words *satellite in* written on it.
6. Detach the coaxial cable from the ITU.
   You may need to loosen the connector with a 7/16-inch wrench.
7. Label the cable with a tag or small piece of electrical tape with the words *satellite out* written on it.
8. Dispose of the DW4000 remote terminal. See *Disposing of the old remote terminal* on page 3 for information on disposal and recycling. Do not return the remote terminal to Hughes. You may discard the modems, USB cable, power supply, and 25-pin cable; you are not required to return them.
9. Proceed to Chapter 3 – *Installing the HN7000S remote terminal*.
Uninstalling a DW7000, DW6000, or DW4020

Complete the procedures in this section if you are upgrading from a DW7000, DW6000, or DW4020 remote terminal. Complete the following steps, referring to Figure 3:

1. Turn your computer off.
2. Unplug the power supply from the wall outlet or other power source.
3. Unplug the power supply’s DC power cord from the DW7000/DW6000/DW4020 remote terminal. Set the power supply and cords aside.

**NOTICE**

- When removing power from the DW7000/DW6000/DW4020 remote terminal, always unplug the AC power cord from the wall outlet, surge protector, or power strip first.
- Do not pull the DC power cord from the back of the IRU until the AC power cord is disconnected. Doing so could damage the pins and cause a short in the system.

4. Locate the Ethernet cable that connects the DW7000/DW6000/DW4020 remote terminal to your computer and detach it from the remote terminal. Leave the
other end of the cable attached to your computer; you will reuse it.

5. Detach the coaxial cable from the SAT IN connector on the DW7000/DW6000/DW4020 remote terminal. If the connector is too tight to remove by hand, loosen it with a 7/16-inch wrench. If the connector is warm, let it cool first.
6. Label the cable with a tag or small piece of electrical tape with the words satellite in on it.
7. Detach the coaxial cable from the SAT OUT connector on the DW7000/DW6000/DW4020 remote terminal. If the connector is too tight to remove by hand, loosen it with a 7/16-inch wrench. If the connector is warm, let it cool first.
8. Label the cable with a tag or small piece of electrical tape with the words satellite out.
9. Dispose of the DW7000/DW6000/DW4020 remote terminal. See Disposing of the old remote terminal on page 3 for information on disposal and recycling. Do not return the remote terminal to Hughes. Do not discard the power supply or cords.
10. Proceed to Chapter 3 – Installing the HN7000S remote terminal.
Chapter 3
Installing the HN7000S remote terminal

This chapter explains how to install an HN7000S remote terminal and register it for service.

The following topics are discussed:

• Attaching the pedestal base on page 12
• Using the Activation Software CD on page 13
• Disabling web browser proxy settings on page 15
• Configuring TCP/IP settings on page 17
• Connecting component cables on page 29
• Completing the activation process on page 31
• Testing the connection between the computer and the HN7000S on page 39
• Registering the remote terminal on page 42
Attaching the pedestal base

To ensure adequate ventilation, use the pedestal base to mount the remote terminal in a vertical position. Refer to Figure 4 and follow these steps to attach the pedestal base to the remote terminal:

1. Position the HN7000S and pedestal base as shown in Figure 4, aligning the bottom set of ventilation openings on the HN7000S with the guides on the pedestal base.
2. Gently slide the HN7000S into the pedestal base until it locks into position.

**NOTICE**

To avoid damage to the HN7000S remote terminal:

- Do not connect the power supply to the remote terminal and power source until instructed to do so.
- Do not block the remote terminal's ventilation openings. Do not place the terminal near heat sources such as radiators, heat registers, ovens, stoves, or other components that produce heat.
- Leave approximately 6 inches of space around the top and sides of the terminal to ensure proper ventilation and to avoid overheating.

![Figure 4: Attaching the HN7000S terminal to the pedestal base](image)
Using the Activation Software CD

The HN7000S shipping carton contains a HughesNet Activation Software compact disc (CD). The activation software verifies that your computer meets certain hardware and software requirements and automatically configures the computer for the HughesNet service.

*If you do not have a HughesNet Activation Software CD, you must manually configure your computer for use with the HN7000S remote terminal. Skip this section and proceed to *Disabling web browser proxy settings* on page 15.*

Use the Activation CD as follows:

1. Make sure your computer is *not* connected to a network.
2. Insert the Activation CD into your computer’s CD-ROM drive.

   Note: If the activation software determines that your computer does not meet the minimum requirements and it cannot correct this situation, it will instruct you to contact Customer Care for assistance.

3. Select the checkbox to accept the software license agreement. If you do not accept the license agreement, you cannot proceed with the upgrade.
4. Follow the on-screen instructions provided by the Activation CD and stop when you see the Connect Your Modem via Ethernet screen shown in Figure 5. You will make the Ethernet connections later.

![Image of Connect Your Modem via Ethernet screen]

Figure 5: Connect Your Modem via Ethernet screen

5. After the activation software confirms that your computer meets the minimum requirements, proceed with *Connecting component cables* on page 29.
Disabling web browser proxy settings

If you have a HughesNet Activation Software CD, you do not have to perform the steps in this section. You can proceed to Connecting component cables on page 29.

If you do not have the activation CD, for proper installation of the HN7000S, you must configure the web browser on your computer so that it does not connect to the Internet through a proxy server. This section explains how to configure the following web browsers:

- Internet Explorer on page 15
- Netscape on page 16

**Internet Explorer**

1. Turn the computer on.
2. Open Internet Explorer.
3. Select Tools → Internet Options.
4. Select the Connections tab as shown in Figure 6.

![Internet Options dialog](image)

Figure 6: Internet Options dialog
5. Click **LAN Settings** to access the Local Area Network (LAN) Settings dialog shown in Figure 7.

![Image of LAN Settings dialog]

**Figure 7: Accessing LAN settings**

6. If the checkbox labeled **Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections)** is checked, uncheck it. See Figure 7.

7. Click **OK** to close the Local Area Network (LAN) Settings dialog.

8. Click **OK** to close the Internet Options dialog.


10. Relaunch Internet Explorer to enable the changes.

**Netscape**

1. Turn the computer on.

2. Open Netscape.

3. Select **Edit → Preferences** to access the Preferences window shown in Figure 8.

4. In the Category pane, select **Advanced → Proxies**.

5. Select the Direct connection to the Internet radio button.

6. Click **OK**.

7. Close Netscape.

8. Relaunch Netscape to enable the changes.
Configuring TCP/IP settings

To install the HN7000S, you must configure the Transmission Control Protocol/Internet protocol (TCP/IP) settings for your computer to support the Dynamic Host Control Protocol (DHCP)—unless you have a HughesNet Activation Software CD.

If you have a HughesNet Activation Software CD, you can skip the steps in this section and proceed to Connecting component cables on page 29.

If your service plan provides a static IP address (or more than one static IP addresses), you will configure the static address (or addresses) later, as explained in Appendix A – Setting a static IP address, on page 61.

Make sure you have your operating system’s installation CD. You may be required to insert the CD in your computer to change the operating system’s TCP/IP settings.

This section explains how to configure TCP/IP settings to support DHCP. Follow the instructions for your computer operating system:

- **Windows Vista** on page 18
- **Windows XP** on page 21
- **Windows 2000** on page 24
- **Macintosh** on page 27
Windows Vista  To configure the TCP/IP settings on a computer running Windows Vista:

1. Select Start → Settings → Control Panel to open the Windows Control Panel.
2. Double-click the Network and Sharing Center icon. The Network and Sharing Center opens (Figure 9).

Figure 9: Network and Sharing Center

3. On the line that shows Connection and Local Area Connection, click View status.
   If a local area connection is not listed, the network is not installed correctly.
The Local Area Connection Status dialog opens (Figure 10).

4. Click the **Properties** button.
   The Local Area Connection Properties dialog opens (Figure 11).

5. Make sure the Client for Microsoft Networks and Internet Protocol (TCP/IP) are installed and checked.
6. From the list below the text This connection uses the following items, select Internet Protocol Version 4 (TCP/IPv4). The item is highlighted after you select it.


8. Click Properties.

The Internet Protocol Version 4 (TCP/IPv4) Properties dialog opens (Figure 12).

![Internet Protocol Version 4 Properties](image)

Figure 12: Internet Protocol Version 4 Properties

9. On the page identified with a General tab at the top, make sure both Obtain an IP address automatically and Obtain DNS server address automatically are selected. If not, select them.

10. Select OK to close the open dialogs and finish the configuration.

11. Restart the computer.
**Windows XP**  To configure the TCP/IP settings on a computer running Windows XP:

1. Click **Start → Settings → Control Panel**.
2. Double-click the Network Connections icon.

    **Note:** If Control Panel is in Category view, select Network and Internet Connections, then select Network Connections.

A list of network adapters appears. If at least one local area connection does not appear under LAN or High-Speed Internet (see Figure 13), the network is not installed correctly.

![Network Connections](image)

**Figure 13: Network Connections**

**Note:** If the Local Area Connection icon appears with a red X, check your connections. You cannot successfully configure your system if the red X is present.

3. Right-click the Local Area Connection icon that represents the Network adapter used to connect the computer to the Satellite Gateway, and select Properties.
4. Make sure Client for Microsoft Networks and Internet Protocol (TCP/IP) are installed and checked. See Figure 14. If NetBEUI appears in the list, uninstall it.

![Local Area Connection Properties dialog](image)

**Figure 14:** Local Area Connection Properties dialog

5. Highlight Internet Protocol (TCP/IP), being careful not to uncheck the checkbox.
6. Click **Properties** to access the Internet Protocol (TCP/IP) Properties dialog (Figure 15).

![Internet Protocol Properties dialog]

**Figure 15: Internet Protocol Properties dialog**

7. On the page identified with a General tab at the top, ensure that both the Obtain an IP address automatically and Obtain DNS server address automatically options are selected. If not, select them.

8. Select **OK** to close the open dialogs and finish the configuration.

9. Restart the computer.
Windows 2000  To configure the TCP/IP settings on a computer running Windows 2000:

1. Click **Start → Settings → Control Panel**.
2. Double-click Network and Dial-up Connections.
   The Network and Dial-up Connections window opens (Figure 16).
3. If a local area connection is not listed, the network is not installed correctly.

Figure 16: Network and Dialup Connections

4. Right-click the Local Area Connection icon that represents the HN7000S network connection and select **Properties**.
   If a local area connection is not listed, the network is not installed correctly.
The Local Area Connections Properties dialog appears (Figure 17).

5. Make sure Client for Microsoft Networks and Internet Protocol (TCP/IP) are installed and checked. If NetBEUI appears in the list, uninstall it.
6. Highlight the Internet Protocol (TCP/IP) option.
7. Click Properties.
The Internet Protocol Properties dialog appears (Figure 18).

![Internet Protocol Properties](image)

Figure 18: Internet Protocol Properties

8. Make sure both **Obtain an IP address automatically** and **Obtain DNS server address automatically** are selected. If not, select them.

9. Select OK to close the open dialogs and finish the configuration.

10. Restart the computer.
To configure the TCP/IP settings on an Apple Macintosh computer:

1. From the Mac interface, select **System Preferences**. The Systems Preference menu appears (Figure 19).
2. Select the Network icon, which is circled in Figure 19.

![Figure 19: Mac System Preferences menu](image)
3. Select the TCP/IP tab. See Figure 20.

![Mac Network screen](image)

**Figure 20: Mac Network screen**

4. From the *Configure* drop-down list, select *Using DHCP*. The IP Address field becomes inactive (gray). See Figure 21.

![Select DHCP from the Configure drop-down menu](image)

**Figure 21: Select DHCP from the Configure drop-down menu**

5. Click *Apply Now*. 
Connecting component cables

Refer to Figure 22 and complete the following steps to connect the component cables:

1. Place the HN7000S remote terminal in its pedestal, in the same location where your old remote terminal was installed.
2. Connect the original remote terminal power supply’s DC power cord to the DC IN connector on the HN7000S remote terminal.

Note: Do not connect the AC power cord to the power source until instructed to do so.

3. Connect the coaxial cable labeled *satellite out* to the SAT OUT connector on the HN7000S remote terminal.

![Figure 22: Connecting component cables](image-url)
4. Connect the coaxial cable labeled *satellite in* to the SAT IN connector on the HN7000S remote terminal.

**NOTICE**

The transmit and receive cable connectors must be securely tightened.
- Make sure each connector is properly aligned (not cross-threaded).
- Finger tight with no movement of the connector is adequate.

Note: The remote terminal may operate correctly when first installed even if the transmit and receive cable connectors are not adequately tightened. However, problems could develop later. Therefore, correct operation of the remote terminal is not an indication that the cables are adequately tightened.

5. Connect one end of the Ethernet cable to the LAN port on the remote terminal.
6. Connect the other end of the Ethernet cable to the Ethernet port on your computer.

Note: Do not connect the remote terminal to an Ethernet device, such as a router or hub. To be registered for service, the new remote terminal must be connected directly to the computer.
Completing the activation process

The HughesNet Activation software CD automatically tests the connection between the computer and the HN7000S remote terminal and completes the registration process.

If you do not have a HughesNet Activation Software CD, you must perform these tasks manually. If you do not have the CD, skip this section and proceed to Testing the connection between the computer and the HN7000S on page 39.

After you connect the Ethernet cable, the HughesNet Activation software detects the remote terminal and verifies that it has been installed. Follow these steps as the activation process completes:

1. When the Are You Upgrading Your Modem Hardware? screen appears as shown in Figure 5, click Commission.

![Figure 23: Are You Upgrading Your Modem Hardware? screen](image)

A separate browser window opens (Figure 24), providing a direct link to the HughesNet Web-based auto-commissioning system (WebACS). Through WebACS, you will “swap out”...
the serial number of your old remote terminal for the new HN7000S serial number.

![Registration Screen]

Figure 24: Broadband Satellite - Registration screen

2. In the boxes next to Registration ID, enter the 28-digit registration ID you received when you purchased your upgrade. Enter the registration ID exactly as it appears in the confirmation email you received after purchasing your upgrade. Use capitals or lower-case letters exactly as shown, and enter only the number zero (0), not the letter o.

3. Click Next.
4. Enter your zip code on the Antenna Location screen as shown in Figure 25. **Do not select the** Enter location manually **checkbox.**

![Figure 25: Broadband Satellite - Antenna Location screen](image)

5. Click **Next.**

6. On the screen that appears, verify that the city and state for the zip code you entered is correct and click **Next.** If the antenna location information is not correct, click **Back** to return to the previous screen and re-enter your zip code. The registration process begins. The system establishes a connection with the satellite, then downloads and verifies your encryption keys. During this process, status messages appear on the Registration in Progress screen.

7. Click **Next** when prompted to do so, then click **OK** on the popup message that appears to access the Registration server.

Note: Depending on your computer’s security settings, you may see a Security Warning Alert. Click **Yes** to continue/bypass the message.
8. Read the HughesNet Subscriber Agreement and click **I Agree** to accept the terms.

   *If you do not agree to the Subscriber Agreement, you cannot proceed with the upgrade.*

   Refer to your confirmation email and enter your site account number (SAN) and personal identification number (PIN) in the fields provided on the Registration screen as shown in Figure 26.

![Figure 26: Entering your SAN and PIN](image)

9. Click **Continue**.
10. Click **Swap** on the Registration screen shown in Figure 27 to swap your old remote terminal with the new HN7000S remote terminal.

Figure 27: HughesNet Registration screen
In the Quick Start Guide you received with the HN7000S remote terminal, record the information (or print the page) that appears on the Registration screen shown in Figure 28.

11. Click **Continue**.

The HN7000S remote terminal downloads its configuration parameters from the Network Operations Center (NOC).
12. Click **Restart** on the Registration Complete screen shown in Figure 41 to restart the HN7000S remote terminal.

![Figure 29: Restarting the HN7000S remote terminal](image)

13. Click **Close** on the Terminal Reset screen.
   The WebACS browser window closes and you are returned to the HughesNet Activation software window.
   The activation software guides you through the remainder of the activation process. It verifies that the terminal is commissioned, and that its software is up to date, and configures a public IP address (if available with your service plan).
Upon completion of this process, a new browser window opens displaying the HughesNet Tools home page shown in Figure 30.

![HughesNet Tools home page](image)

Figure 30: HughesNet Tools home page

*This completes the activation process. Proceed to Chapter 4 – Completing the upgrade.*
Testing the connection between the computer and the HN7000S

You only need to perform this test if you do not have a HughesNet Activation Software CD.

If you have the Activation Software CD, this process is performed automatically, so you can skip this section and proceed to Chapter 4 – Completing the upgrade.

To test the connection between the computer and remote terminal:

1. Connect the power supply’s AC power cord to the power strip, surge protector, or other power source.
2. Restart the computer.
3. Observe the HN7000S remote terminal’s front panel LEDs (Figure 31).
   - The Power LED is solidly illuminated to indicate that the remote terminal is on.
   - The LAN LED comes on within 30 seconds to indicate that the remote terminal is detecting LAN activity.
4. The Power LED starts blinking to indicate that it is operating with factory-installed software. The remote terminal downloads the most current software version during the registration process. The Power LED is solidly illuminated after the remote terminal is registered for service.

Note: If the LEDs do not appear as described above, make sure you are using the correct power supply. If the correct power supply is in place, contact Customer Care for assistance.
5. Perform a ping test:
   a. On the Windows task bar, select Start → Run, then type cmd and click OK to open a Command window.
   b. Type ping 192.168.0.1 and press ENTER.
      If the computer is properly connected to the remote terminal, reply messages will appear on the screen as shown in Figure 32, indicating that the ping test has
succeeded. Skip to Registering the remote terminal on page 42.

If the ping test fails, messages will appear on the screen indicating that the request has timed out, as shown in Figure 33. A failed ping test may indicate that the computer is not properly connected to the remote terminal. Complete the procedures in the following section, Troubleshooting a failed ping test.
### Troubleshooting a failed ping test

Complete the following steps if the ping test fails:

1. Make sure your computer’s NIC is installed properly.
2. Make sure the TCP/IP settings for your computer’s operating system are configured to support DHCP. Refer to the procedures in Configuring TCP/IP settings on page 17.
3. Verify that the cable connections shown in Figure 22 on page 29 are secure.
4. If the cable connections are secure, power cycle the remote terminal:
   a. Unplug the power supply’s AC power cord from the power source. *Do not unplug the power cord from the remote terminal.*
   b. Wait 30 sec.
   c. Plug the AC power cord back into the power source.
5. Restart the computer.
6. Ping the remote terminal again.
   If the ping test fails again, contact Customer Care for technical support.

### Registering the remote terminal

You only need to follow the instructions in this section if you *do not have* a HughesNet Activation Software CD.

If you have the Activation Software CD, this process is performed automatically, so you can skip this section and proceed to Chapter 4 – *Completing the upgrade*.

To register your new remote terminal for service:

1. Open a web browser on the computer connected to the remote terminal.
2. Every HN7000S remote terminal has a web interface known as the System Control Center. To access the System Control Center, type `192.168.0.1` in the browser’s address or location bar and press **ENTER**. The System Control Center Home page appears as shown in Figure 34.

   ![System Control Center](image)

   **Note:** If the System Control Center does not appear, make sure the web browser is configured to not connect through a proxy server. Refer to *Disabling web browser proxy settings* on page 15.
3. Click **Start Registration** on the System Control Center home page to access the Registration screen.

4. In the boxes next to **Registration ID**, enter the 28-digit registration ID you received when you purchased your upgrade. Enter the registration ID exactly as it appears in the confirmation email you received after purchasing your upgrade. Use capitals or lower-case letters exactly as shown, and enter only the number zero (0), not the letter o.

5. Click **Next**.

Note: Do not be alarmed if the **System Status** indicator is red and the word **Problem** appears beneath it. This indicates that the HN7000S remote terminal has not been registered yet.
6. Enter your zip code on the Antenna Location screen as shown in Figure 35. Do not select the Enter location manually checkbox.

7. Click Next.

8. Verify that the city and state for the zip code you entered is correct on the Verification of Antenna Location screen shown.
in Figure 36. If the information is incorrect, click **Back** and enter the correct ZIP code.

![Figure 36: Verifying that your location is correct](image)

9. Click **Next**.
Status messages are displayed on the Registration in Progress screen shown in Figure 37.

![Registration in Progress screen](image)

**Figure 37: Registration in Progress screen**

10. Click **Next** when prompted to do so, then click **OK** on the pop-up message that appears to access the registration server.

Note: Depending on your computer’s security settings, you may see a **Security Warning Alert**. Click **Yes** to continue/bypass the message.

11. Click **I Agree** to accept the subscriber agreement.
12. Refer to your confirmation email and enter your site account number (SAN) and personal identification number (PIN) on the Registration screen as shown in Figure 38.

Figure 38: Entering your SAN and PIN

13. Click Continue.
14. Click **Swap** on the Registration screen shown in Figure 39 to swap your old remote terminal with the new HN7000S remote terminal.

![Figure 39: Swapping the old remote terminal with the HN7000S](image_url)
15. In the Quick Start Guide you received with the HN7000S remote terminal, record the information (or print the page) that appears on the Registration screen shown in Figure 40.

![Figure 40: Recording registration information](image)

16. Click **Continue**.
   The HN7000S remote terminal downloads its configuration parameters from the NOC.
17. Click **Restart** on the Registration Complete screen shown in Figure 41 to restart the HN7000S remote terminal.

![Restart screen](image)

**Figure 41: Restarting the HN7000S remote terminal**

18. Click **Close** on the Terminal Reset screen. The HN7000S remote terminal is now registered for service.

Note: At this point, the HN7000S is connected and can access the Internet. However, the HN7000S is still downloading software. Therefore, wait about 2 hours before completing the upgrade, starting with *Confirming that the terminal’s software is current* on page 52.
Chapter 4

Completing the upgrade

This chapter discusses the tasks that you must perform to complete the upgrade process after installing and registering the HN7000S remote terminal.

The following tasks are discussed:

- Confirming that the terminal’s software is current on page 52
- Accessing myHughesNet.com on page 54
- Printing the System Information page on page 56
- Creating a shortcut to the System Control Center on page 58

Note: If you are unable to access the Internet and your service plan provides you with a public IP address, see Appendix A – Setting a static IP address. You may need to reconfigure your computer to use a static IP address.
Complete the following steps to confirm that your new HN7000S remote terminal contains the most current software:

1. Open a web browser on a computer connected to the HN7000S remote terminal.
2. Type **192.168.0.1** in the browser’s address or location field and press **ENTER**. The System Control Center home page appears as shown in Figure 42. Note that now the **System Status** indicator is green.

![Figure 42: HN7000S System Control Center home page](image)

3. Click on the **System Status** indicator. The System Status page appears as shown in Figure 43.
4. Locate the Software Download Status field.

   If the status in the right column reads **All files are up-to-date**, the HN7000S remote terminal was successfully registered for service and its software is current. If **All files are up-to-date** does not appear in the field, the HN7000S remote terminal may still be downloading its software from the NOC. If the message does not appear after several minutes, follow these steps to power cycle the HN7000S remote terminal:
a. Unplug the power supply’s AC power cord from the power source. *Do not unplug the power cord from the remote terminal.*
b. Wait 30 sec.
c. Plug the AC power cord back into the power source.
d. Wait 15 minutes, then observe the message in the Software Download Status field on the System Status page.

If *All files are up-to-date* still does not appear in the field, contact Customer Care for assistance.
Accessing myHughesNet.com

You can now access the internet, including the Hughes home page at myHughesNet.com, a feature-rich portal that contains a variety of interactive tools. At this web site, you can check online usage, test satellite speed, manage passwords, check your account and service plan information, and more.

1. Type www.myHughesNet.com and press ENTER. The HughesNet Welcome page appears as shown in Figure 44.
2. If you already have myHughesNet.com account, click Please Login. If you don’t, click Please Join.

Figure 44: My HughesNet welcome page
Downloading the LCCU

The LAN Client Configuration Utility (LCCU) is a tool available to users who have access to the myHughesNet portal. This utility optimizes the web browser on a Windows computer by improving browsing speed. Download the utility and its user guide from myHughesNet.com. If you have multiple computers connected to a LAN, you must install the utility on each computer.

**NOTICE**

Using older versions of the LCCU may degrade system performance and/or adversely affect your browser’s settings. Install only the most current version of the LCCU on your computer(s) after removing any older versions.

Downloading the HN7000S user guide


Follow these steps to download the user guide:

1. Open a web browser on a computer connected to the HN7000S remote terminal.
2. Type [www.myHughesNet.com](http://www.myHughesNet.com) and press ENTER.
3. Log on to myHughesNet.com.
4. Click **Downloads** in the Resources column on the Help Center tab.
5. Locate the user guide and download it.
Printing the System Information page

The System Control Center’s System Information page contains important HN7000S information. You will need to print and keep a copy of this page in the event that you need to contact Customer Care for assistance but are unable to access the System Control Center. Follow the steps below to print a hard copy of the System Information page.

1. Open a web browser on a computer connected to the HN7000S remote terminal and access the System Control center by typing 192.168.0.1, then press ENTER. The System Control Center Home page appears as shown in Figure 45.

2. Click the blue System Info indicator near the top right area of the page to open the System Information page.
3. At the System Information page, click on the Printer icon to print the page. See Figure 46.

Figure 46: Printing the system information page
Creating a shortcut to the System Control Center

You should have a shortcut to the System Control Center on your computer desktop to provide you with quick and easy access to the interface when needed. If there is not already a shortcut on your desktop, follow these steps to create one:

1. Right-click anywhere on your computer desktop and select **New → Shortcut** as shown in Figure 47.

![Figure 47: Creating a shortcut to the System Control Center](image)

2. Type **192.168.0.1** in the field on the Create Shortcut dialog as shown in Figure 48 and click **Next**.

![Figure 48: Entering the System Control Center URL in the Create Shortcut dialog](image)
3. Type **System Control Center** in the field on the Select a Title for the Program window as shown in Figure 49.

![Figure 49: Entering the name of the shortcut](image)

4. Click **Finish** to save the shortcut to your desktop.

Note: You can also add the System Control Center to your browser’s Favorites or Bookmarks list; refer to your browser’s documentation for instructions.

**Other devices**

If you want to use a hub, router, or switch with the HN7000S, connect the device to the HN7000S now, after completing installation of the HN7000S. Refer to the documentation for the device used. For network address information, see Appendix A – *Setting a static IP address*. 
Appendix A

Setting a static IP address

This appendix explains how to set a static IP address on your computer. You can only use a static IP address if your HughesNet service plan provides you with a public IP address or multiple public IP addresses. This appendix includes the following sections:

- *Finding IP address information* explains where to find the address information you will need.
- *Setting a static IP address* explains how you configure the address, depending on your operating system.
Finding IP address information

This section explains how to use the HN7000S System Control Center to find IP address information you will need to configure a static IP address on your computer (or, in some cases, other computers or network devices).

1. Open a web browser on a computer connected to the HN7000S remote terminal.
2. Type 192.168.0.1 in the browser’s address or location field and press ENTER. The System Control Center home page appears as shown in Figure 50.

   ![System Control Center Home page](image)

   Figure 50: System Control Center Home page

3. In the HELP section of the page, click View Help Topics.
5. Click the question, What IP addresses can I configure on the computers connected to my HN7000S terminal?
The System Control Center displays an answer page that includes the information you need to configure the address, for example:

- **Usable IP Address(es):** 67.47.93.170 through 67.47.93.174
- **Subnet Mask:** 255.255.255.248
- **Default Gateway:** 67.47.93.169

Note: This is an example for a customer who has a service plan that allows for five static addresses. *Do not use the numbers shown here to configure your addresses.* Use the numbers displayed by your terminal.

6. Print the answer page or carefully write down each value, identified by name—for example:

    Subnet Mask: 255.255.255.248

To configure the static address, you will need to enter the displayed values as explained in *Setting a static IP address* on page 64. You enter the values in screens (dialogs) displayed by your computer operating system.

### Explanation of address parameters

The section explains, usable IP address, subnet mask, and default gateway:

- **Usable IP Address(es)** – This may be a single address or multiple addresses, depending on the service plan you purchased. With a single-address plan, you can assign an IP address to your computer. With a multiple-address plan, you can assign the usable IP addresses to other computers and devices on the same LAN as the HN7000S. You must use a unique address for each device.
- **Subnet Mask** – This is the subnet mask assigned to your remote terminal.
- **Default Gateway** – This is the remote terminal’s IP address.

Note: On the System Control Center System Information page, the *Subnet Mask* is identified as *LAN1 Subnet Mask*, and the *Default Gateway* is identified as *LAN1 IP Address*. 
Setting a static IP address

You can only set a static IP address for your computer if your HughesNet service plan provides you with a public IP address (or multiple public IP addresses). This means the address you assign will be fixed, not dynamically assigned.

The sections that follow explain how to set a static IP address. Follow the instructions for your computer operating system:

- *Windows Vista* on page 65
- *Windows XP* on page 68
- *Windows 2000* on page 72

Note that the values in the screen illustrations in this appendix are examples only; *do not copy these values*. For the IP address, IP address subnet mask, and default gateway values you will need to enter, see *Finding IP address information* on page 62.

The instructions here are for configuring an IP address for a computer. If you need to configure addresses for additional network devices (which you can only do if your service plan supports multiple IP addresses) see the documentation for each specific device.
**Windows Vista** To set a static IP address on a computer running Windows Vista:

1. Select Start → Settings → Control Panel to open the Windows Control Panel.
2. Double-click the **Network and Sharing Center** icon. The Network and Sharing Center opens (Figure 51).

![Network and Sharing Center](image)

**Figure 51: Network and Sharing Center**

3. On the line that shows Connection and Local Area Connection, click **View status**.
The Local Area Connection Status dialog opens (Figure 52).

![Local Area Connection Status](image)

Figure 52: Local Area Connection Status

4. Click the **Properties** button.

   The Local Area Connection Properties dialog opens (Figure 53).

![Local Area Connection Properties](image)

Figure 53: Local Area Connection Properties

5. From the list below the text *This connection uses the following items*, select **Internet Protocol Version 4 (TCP/IPv4)**.
The item is highlighted after you select it.


7. Click Properties.

   The Internet Protocol Version 4 (TCP/IPv4) Properties dialog opens (Figure 54).

   ![Figure 54: Internet Protocol Version 4 Properties](image)

   Note: Figure 54 is an example. Do not copy the numbers in this example to configure your addresses. Instead, follow the numbered steps presented here.

8. Select Use the following IP address.

9. Enter the following information from the Frequently Asked Questions answer page (for the question What IP addresses can I configure…?). If you don’t have the information from the answer page, see Finding IP address information on page 62.

   a. In the IP address field, enter the Usable IP Address(es) from the answer page. The answer page specifies one usable address—or you may have multiple addresses to choose from, depending on your service plan.
   
   b. In the Subnet mask field, enter the Subnet Mask from the answer page.
   
   c. In the Default gateway field, enter the Default Gateway from the answer page.

10. In the Preferred DNS server field, enter 66.82.4.8.

11. In the Alternate DNS server field, enter 66.82.4.12.
12. Click **OK** to close any open dialog boxes.
13. Restart the computer.

**Windows XP**

To set a static IP address on a computer running Windows XP:

1. Open the Windows Control Panel (Figure 55) by selecting Start → Settings → Control Panel.

   ![Figure 55: Control Panel](image)

   **Note:** If Control Panel is in Category view, select Network and Internet Connections, then select Network Connections.

2. Double-click the **Network Connections** icon.
3. The Network Connections dialog opens, showing a list of network adapters appears (Figure 56).

![Figure 56: Network Connections](image)

If you see either of these conditions, the problem must be corrected before you can proceed:

- A Local Area Connection icon must be listed under LAN or High-Speed Internet. If it is not, the network is not installed correctly.
- If the Local Area Connection icon appears with a red X, check your connections. You cannot successfully configure your system if the red X is present.

4. Right-click the Local Area Connection icon that represents the network adapter used to connect the computer to the remote terminal, and select Properties.
The Local Area Connection Properties dialog opens (Figure 57).

5. On the page identified with a General tab at the top, make sure the Client for Microsoft Networks and Internet Protocol (TCP/IP) are listed and checked. If NetBEUI is listed, uninstall it.

6. Highlight Internet Protocol (TCP/IP), being careful not to uncheck the checkbox, and click Properties.
7. The Internet Protocol (TCP/IP) Properties dialog appears (Figure 58).

8. Select **Use the following IP address**.

9. Enter the following information from the Frequently Asked Questions answer page (for the question *What IP addresses can I configure...?*). If you don’t have the information from the answer page, see *Finding IP address information* on page 62.
   a. In the **IP address** field, enter the Usable IP Address(es) from the answer page. The answer page specifies one usable address—or you may have multiple addresses to choose from, depending on your service plan.
   b. In the **Subnet mask** field, enter the Subnet Mask from the answer page.
   c. In the **Default gateway** field, enter the Default Gateway from the answer page.

10. In the **Preferred DNS server** field, enter *66.82.4.8*.

11. In the **Alternate DNS server** field, enter *66.82.4.12*.

12. Click **OK** to close any open dialog boxes.

13. Restart the computer.
To set a static IP address on a computer running Windows 2000:

1. Select **Start** → **Settings** → **Control Panel**.
2. From the Control Panel (Figure 59), select the Network and Dialup Connections icon.

3. Right-click the Local Area Connection icon for the network adapter that connects to the remote terminal and select **Properties** (Figure 60).
The Local Area Connections Properties dialog appears (Figure 61).

![Local Area Connection Properties](image)

**Figure 61: Local Area Connection Properties**

4. Make sure Client for Microsoft Networks and Internet Protocol (TCP/IP) are listed and checked. If NetBEUI is listed, uninstall it.

5. Highlight Internet Protocol (TCP/IP), being careful not to uncheck the checkbox, and click **Properties**.
6. The Internet Protocol (TCP/IP) Properties dialog appears (Figure 62).

![TCP/IP Properties](image)

Figure 62: TCP/IP Properties

Note: Figure 62 is an example. Do not copy the numbers in this example to configure your addresses. Instead, follow the numbered steps presented here.

7. Select Use the following IP address.
8. Enter the following information from the Frequently Asked Questions answer page (for the question *What IP addresses can I configure...?*). If you don’t have the information from the answer page, see *Finding IP address information* on page 62.
   a. In the IP address field, enter the Usable IP Address(es) from the answer page. The answer page specifies one usable address—or you may have multiple addresses to choose from, depending on your service plan.
   b. In the Subnet mask field, enter the Subnet Mask from the answer page.
   c. In the Default gateway field, enter the Default Gateway from the answer page.
9. In the Preferred DNS server field, enter 66.82.4.8.
10. In the Alternate DNS server field, enter 66.82.4.12.
11. Click OK to close any open dialog boxes.
12. Restart the computer.
Appendix B

Conformance with standards and directives

The HN7000S remote terminal has been certified to conform to the standards shown in Table 1. Additional information follows the table.

Table 1: HN7000S standards compliance

<table>
<thead>
<tr>
<th>Category</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>UL60950-1 for the United States</td>
</tr>
<tr>
<td></td>
<td>CAN/CSA-C22.2 No. 60950-1 for Canada</td>
</tr>
<tr>
<td></td>
<td>(see additional information below)</td>
</tr>
<tr>
<td></td>
<td>EN60950-1 for the European Union</td>
</tr>
<tr>
<td>Electromagnetic Interference (EMI)</td>
<td>FCC Part 15 for the United States</td>
</tr>
<tr>
<td></td>
<td>(see additional information below)</td>
</tr>
<tr>
<td></td>
<td>ICES-003 for Canada</td>
</tr>
<tr>
<td>Electromagnetic Compatibility (EMC)</td>
<td>EN301-489-12 for the European Union</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>TIA IPoS</td>
</tr>
<tr>
<td></td>
<td>(see additional information below)</td>
</tr>
</tbody>
</table>

Safety – operating conditions for Canada

In addition to the warnings and safety guidelines listed in this document, the following operating conditions apply to the HN7000S remote terminal used in Canada:

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective operational and safety requirements. The Department does not guarantee that the equipment will operate to the user’s satisfaction.

Before installing the equipment, users should make sure they are permitted to connect to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company’s inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord).
The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

**Repairs in Canada**

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

**WARNING**

To avoid electric shock injury, users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

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**Electromagnetic compatibility (EMI)**

This product conforms to EMI standards of the U.S. FCC, Canadian CSA, and European Union (EU), as detailed in the following sections. The installation and maintenance procedures in the installation and configuration guide must be followed to ensure compliance with these standards.

**NOTICE**

This is a class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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**FCC Part 15**

Standards to which Conformity is declared: FCC Part 15

*This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

Responsible Party’s name: Hughes Network Systems, LLC

Address: 11717 Exploration Lane, Germantown, MD 20876
Telephone: 1-866-347-3292
Trade Name: HUGHES
Type of Equipment: Two-Way Hughes System
Model Number:

HN7000S (1500097-xxxx and 1036599-xxxx)

The Two-Way Hughes System (HN7000S) complies with the Canadian ICES-003, Class B standard.

**Canada Class B warning**

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

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

**R&TTE (EU)**

This product falls within the scope of the EU Radio Equipment and Telecommunications Terminal Equipment (R&TTE) Directive.

**Telecommunications standards**

This section explains compliance with the IP over Satellite (IPoS) standard.

**IPoS**

The Hughes HN System is compliant with the IPoS standard ratified by the Telecommunications Industry Association (TIA-1008), first published in October 2003 and issued as Revision A in May 2006.

![IPoS symbol](image)

Figure 63: IPoS symbol

**Repairs in the United States**

If you experience trouble with the Two-Way Hughes System equipment, contact your service provider for repair or warranty information.
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.

Hughes must make any necessary repairs to the modem portion of this equipment in order to maintain valid FCC registration. Do not attempt to repair or service your remote terminal. Return it to Hughes.

No repairs can be made by customers. All repairs must be performed by Hughes Authorized Service Centers (ASCs). This equipment cannot be used on public coin service provided by the Telephone Company. Connection to Party Line Service is subject to state tariffs. Contact the state public utility commission, public service commission or corporate commission for information.

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirement Documents. The Department does not guarantee the equipment will operate to the user's satisfaction.

Note: 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.

Before installing this equipment, users should make sure they are permitted to connect to the facilities of the local Telecommunications Company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions might not prevent degradation of service in some situations.
Acronyms and abbreviations

A
AC – Alternating current
ASC – Authorized Service Center

C
CD – Compact disc
CSA – Canadian Standards Association

D
DC – Direct current
DHCP – Dynamic host control protocol
DNS – Domain name system

E
EMI – Electromagnetic interference
EU – European Union

F
FCC – Federal Communications Commission

G
GB – Gigabyte

I
ICS – Internet connection sharing
IP – Internet Protocol
IPoS – IP over Satellite
IRU – Indoor receive unit
ITU – Indoor transmit unit

L
LAN – Local area network
LCCU – LAN Client Configuration Utility
LED – Light emitting diode

M
MB – Megabyte
Mbps – Megabytes per second
MHz – Megahertz

N
NOC – Network Operations Center

P
PIN – Personal identification number

R
R&TTE – Radio Equipment and Telecommunications Terminal Equipment

S
SAN – Site account number
SAT – Satellite

T
TCP – Transmission control protocol
TIA – Telecommunications Industry Association

U
USB – Universal serial bus

V
VPN – Virtual private network
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