

Installing and using your CPE device



Directions for connecting your CPE to a computer or LAN and obtaining high-speed Internet and voice services.

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NOTICE: This equipment has been tested and found to comply with the Radio Frequency Radiation Exposure Limits detailed below. A minimum of 20 centimeters (8 inches) separation between the CPE and the operator and all other persons should be maintained.

Radio Frequency Radiation Exposure Limits

TABLE 1. Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500	—	—	f/300	6
1500-100,000	—	—	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	.2	30
300-1500	—	—	f/1500	30
1500-100,000	—	—	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy, and, if not installed and used in accordance with the installation manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

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Welcome!

This document describes how to install and use your customer premise equipment (CPE), which provides you with high speed internet services. You can connect your CPE to your computer, or you can connect it to a small office/home office (SOHO) local area network (LAN) through a hub, switch, gateway, or router.

BEFORE YOU BEGIN

- Make sure your computer is equipped with an Ethernet network interface card (NIC).
 - The Ethernet cable that is supplied with your CPE plugs into any standard Ethernet NIC. The NIC is not provided with the CPE, but you can purchase a NIC at most computer and electronics stores.
- Find an appropriate location for your CPE.
 - Make sure you are operating the CPE above ground level. The CPE works best when installed on the 1st floor or above, near an outside window. It may not function optimally when installed in a basement.
 - The CPE uses a standard power supply and can sit on a desktop or shelf. You need to locate the CPE close to a power source and to your computer (or to your network device, if applicable).
 - If you choose to place the CPE a good distance from your computer, you may need to purchase a longer Ethernet cable. The supplied cable is 6 feet (1.83 meters) long.

Make sure the longer cable that you might purchase is flexible enough to bend under the bottom of the CPE.

- Locate the components shipped with your CPE device:
 - CPE device

- Software CD-ROM
- Power cable and power supply
- Ethernet cable

Figure 1 illustrates the CPE package contents.

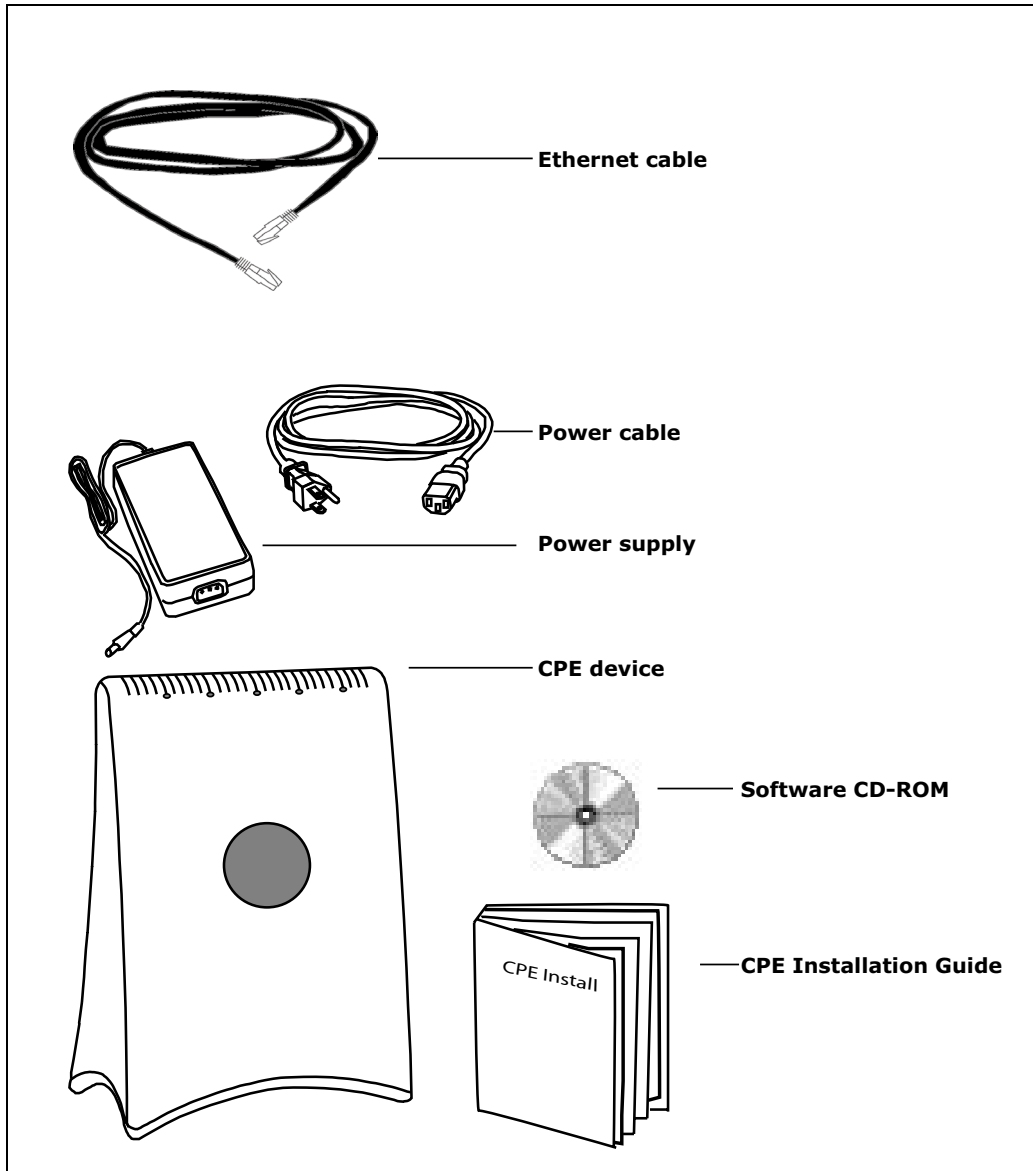


Figure 1: CPE package contents

Table 1 lists the standard contents in your CPE package.

Table 1 CPE package components

Component	Part number
CPE device	123-0010-1000
Power supply	420-0010-1000
Power cord	420-0010-1001
CPE installation guide	104-0010-0002
Installation software CD-ROM	150-0010-0001
Ethernet cable	597-6010-0001

Connecting your CPE to a computer or LAN

INSTALLATION OVERVIEW

The installation consists of the following major tasks, each of which is explained in greater detail in the sections that follow:

- 1 After ensuring your Ethernet NIC is installed properly, make sure your computer is set up to automatically obtain an IP address.
- 2 Perform **one** of the following:
 - If you are connecting the CPE directly to your computer, use the supplied Ethernet cable to do so.
 - If you are connecting the CPE to a hub or switch, use an Ethernet cable appropriate for your network device. This might be a straight through or cross-over cable, depending on how your network device switches signals. The CPE device operates as a hub or a bridge. The supplied cable is a straight through cable.
- 3 Supply power to the CPE.
- 4 Scan for the best signal from your service provider.

SETTING UP THE COMPUTER TO DYNAMICALLY RECEIVE AN IP ADDRESS

You must set up your computer so that the computer can communicate with the CPE. To do so, make sure your computer is set up to dynamically receive an IP address.

- If you are running Windows 95, Windows NT, or Windows 98, go to “Windows 95, Windows 98, Windows NT: Setting up the network connection,” on page 5.

1

- If you are running Windows 2000, go to “Windows 2000: Setting up the network connection,” on page 5.
- If you don’t see your operating system listed here, check the system’s help file. Most explain how to set up a system to dynamically receive an IP address.

1A

WINDOWS 95, WINDOWS 98, WINDOWS NT: SETTING UP THE NETWORK CONNECTION

- 1 From the **Start** menu, select **Settings**. Then select **Control Panel**.
- 2 In the window that appears, double click the **Network** icon.
- 3 Select the TCP/IP entry for the NIC.
- 4 Click **Properties**.
- 5 Select the **IP Address** tab.
- 6 Activate the **Obtain an IP Address automatically** radio button.
- 7 To close the windows, click **OK**.
- 8 Reboot the computer.

1B

WINDOWS 2000: SETTING UP THE NETWORK CONNECTION

- 1 From the **Start** menu, select **Settings**. Then select **Network and Dial-up Connections**.
- 2 Right click the connection you want to alter; that is, the name of your NIC. From the pop-up menu, select **Properties**.
- 3 The Local Area Connection Properties window appears. Select the **Internet Protocol (TCP/IP)** item. Click **Properties**.
- 4 In the window that appears, activate the **Obtain an IP address automatically** radio button. To close the

window, click **OK**. On the remaining open window, click **OK** again.

2

CONNECTING THE CPE TO A COMPUTER OR NETWORK

You can connect the CPE directly to a computer, or you can connect it to a small office/home office (SOHO) network.

- If you are directly connecting the CPE to your computer, go to step 2A.
- If you are connecting the CPE to a network, go to step 2B.

2A

CONNECTING THE CPE TO A COMPUTER

Use the supplied Ethernet cable to connect the CPE to your computer, as follows:

- 1 On the bottom of the CPE, locate the CPE Ethernet jack. Plug one end of the Ethernet cable into the CPE

Ethernet jack.

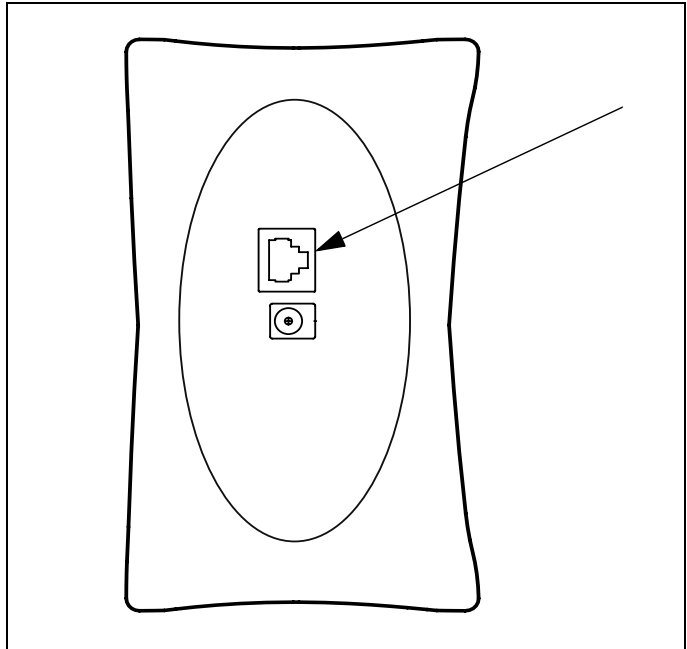


Figure 2: Ethernet Jack Location on Bottom of CPE

- 2 On your computer, locate the NIC jack. Plug the other end of the Ethernet cable into the NIC.

2B

CONNECTING THE CPE TO A NETWORK

Note: Plan to use **only one** CPE on a network. Do **not** use multiple CPEs on the same network.

If you directly connect a CPE to a computer, you use the supplied Ethernet cable (also known as a straight through cable).

However, to connect the CPE to a hub or switch, use an Ethernet cable appropriate for your network device. This might be a straight through or cross-over cable, depending on how your network device switches signals. When determining how to set up your network, remember that the CPE device operates as a hub or a bridge.

3

SUPPLYING POWER TO THE CPE

- 1 Plug the power cable into the power supply, then into the wall outlet.
- 2 Plug the cable from the power box into the CPE's power jack, located on the bottom of the CPE.

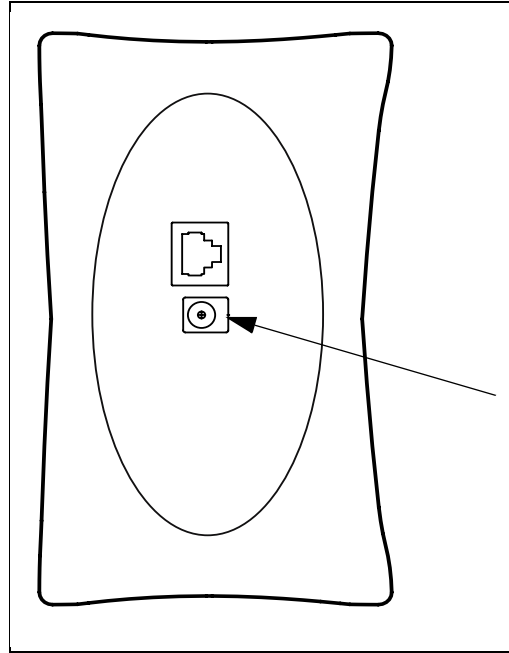


Figure 3: Power Jack Location on Bottom of CPE

When the CPE has a proper power supply, the light emitting diodes (LEDs) on top of the CPE light.

4

FINDING THE STRONGEST SERVICE PROVIDER SIGNAL

Your CPE is equipped with an internal, directional antenna. To provide you with the best service, your CPE searches for the strongest signal transmitted by your service provider.

You can find the strongest service provider in your area using one of the following methods:

- Software-assisted method (available for Windows operating systems only)
- LED method (available for any operating system)

Regardless of the method you use, you need to understand which sides of the CPE are its front, back, top, and bottom. Figure 4 illustrates the CPE sides.

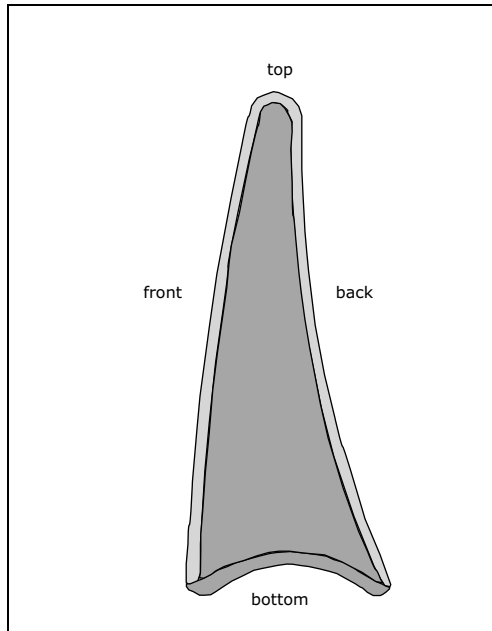


Figure 4: CPE sides

4A

USING THE SOFTWARE-ASSISTED METHOD TO FIND THE STRONGEST SIGNAL

To use the software program to help you search for the strongest service provider signal in your area:

- 1 Locate the software CD supplied with your CPE. Insert the CD into your computer's CD drive and run the Setup program.
- 2 After the software installs, run the program. The CPE

Scan window (Figure 5) appears.

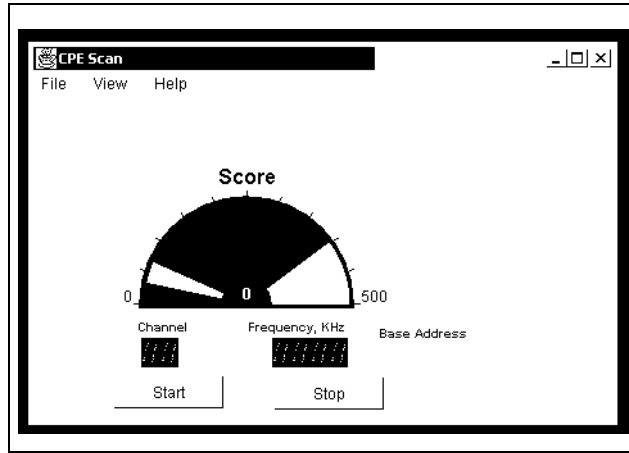


Figure 5: CPE Scan window

- 3 With CPE in hand, stand in front of the window in the room where you plan to operating the CPE.
To scan for the strongest signal, you will rotate the front of the CPE in a 180 degree path in front of the window, much like moving the small hand of a clock to 9:00,

10:30, 12:00, 1:30, and 3:00.

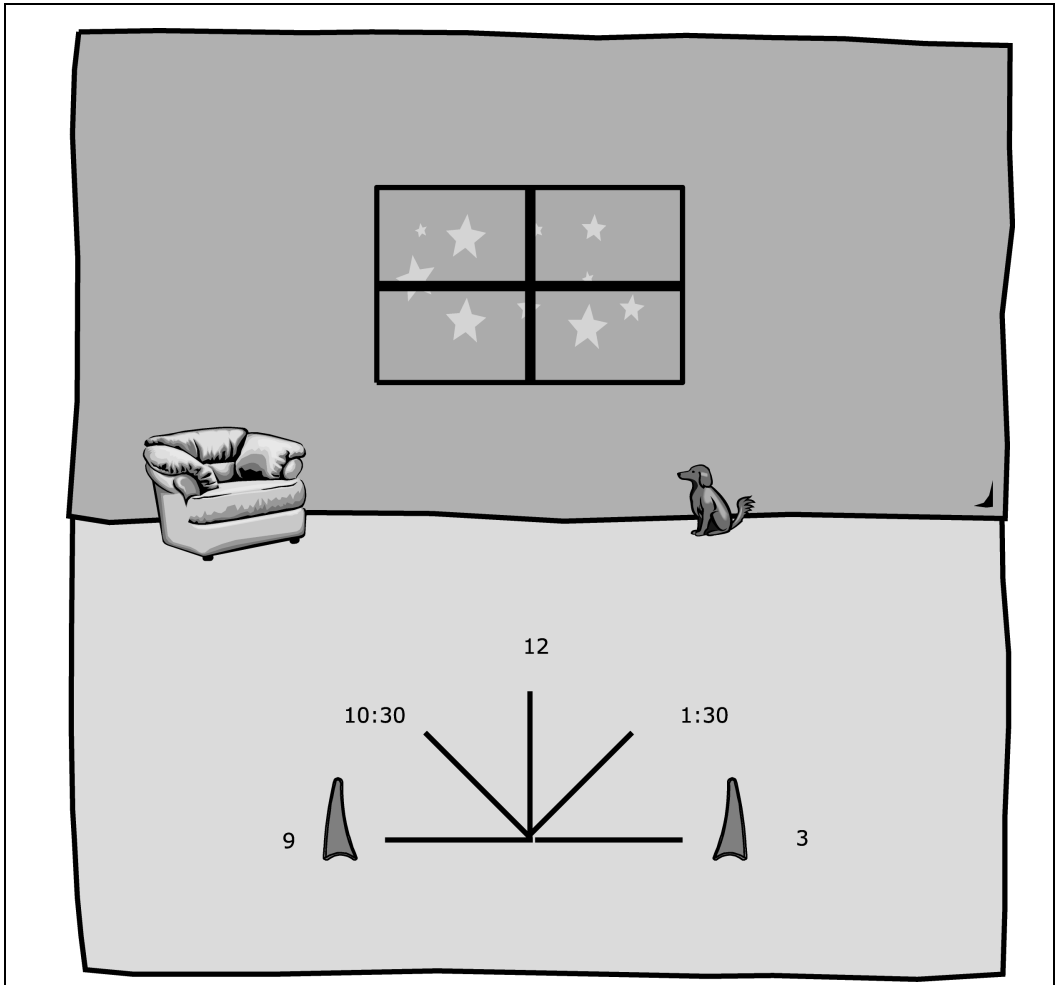


Figure 6: Orienting CPE front during signal scan

- 4 To start a scan for signals from your service provider, click **Start**. Hold the front of the CPE at the 9:00 position for about 5 seconds.

The CPE searches for a signal from your service provider, as indicated by the blinking of LEDs on the CPE.

Note: In most cases, the LEDs on the CPE blink on and off. However, if a service provider cannot be found in your area, the CPE's LEDs chase each other —

that is, an LED blinks on as the previous LED blinks off. For more information, refer to the section “LEDs that don’t blink, but rather chase,” on page 18.

- 5 When the CPE finds a signal, a dialog box displays the strength of the signal.
- 6 To continue your search for the strongest signal, turn your CPE slowly in a semi-circle, stopping at the 10:30, 12:00, 1:30 and 3:00 positions.
- 7 Note the signal strength at each position. The stronger the signal, the more LEDs on the right-side of the device are lit.
- 8 Remembering the strongest signal reported, re-orient your CPE to the direction it was pointed when the strongest signal was found.
- 9 To make sure your CPE is registered with your service provider, wait for the left-most LED on the CPE to be continuously lit. Click **Stop Scan**.

You’ve now found the strongest signal in your area. You only need to re-run the GetConnected program and repeat the scan when you power down your CPE **and** move it.

4B

USING THE LEDs TO FIND THE STRONGEST SERVICE PROVIDER SIGNAL

You can find the strongest service provider signal by using the LEDs on top of the CPE. You can use this method

regardless of the operating system your computer runs.

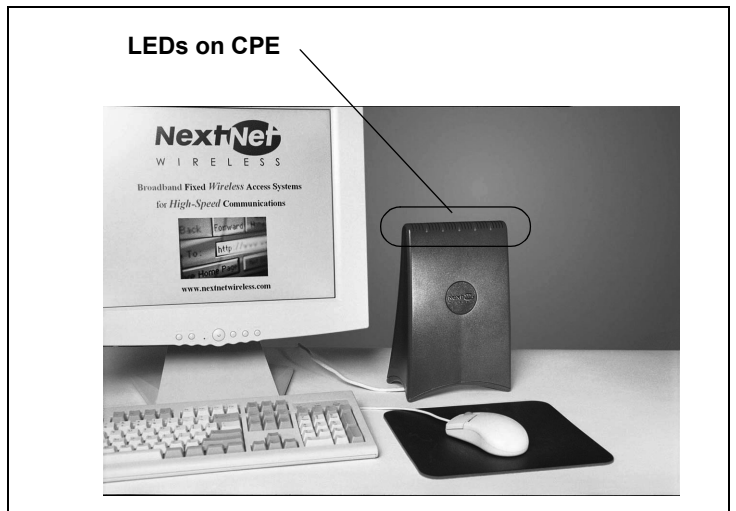


Figure 7: Location of LEDs on CPE

To use the LEDs to find the strongest service provider signal:

- 1** If you have plugged the Ethernet cable into the bottom of the CPE, disconnect the Ethernet cable now.
- 2** Make sure the CPE's power cord is connected to the CPE and to a power source. If your CPE has power, the LEDs on the CPE begin to blink on and off.
- 3** With CPE in hand, stand in front of the window in the room where you plan to operating the CPE.

To scan for the strongest signal, you will rotate the front of the CPE in a 180 degree path in front of the window, much like moving the small hand of a clock to 9:00, 10:30, 12:00, 1:30, and 3:00.

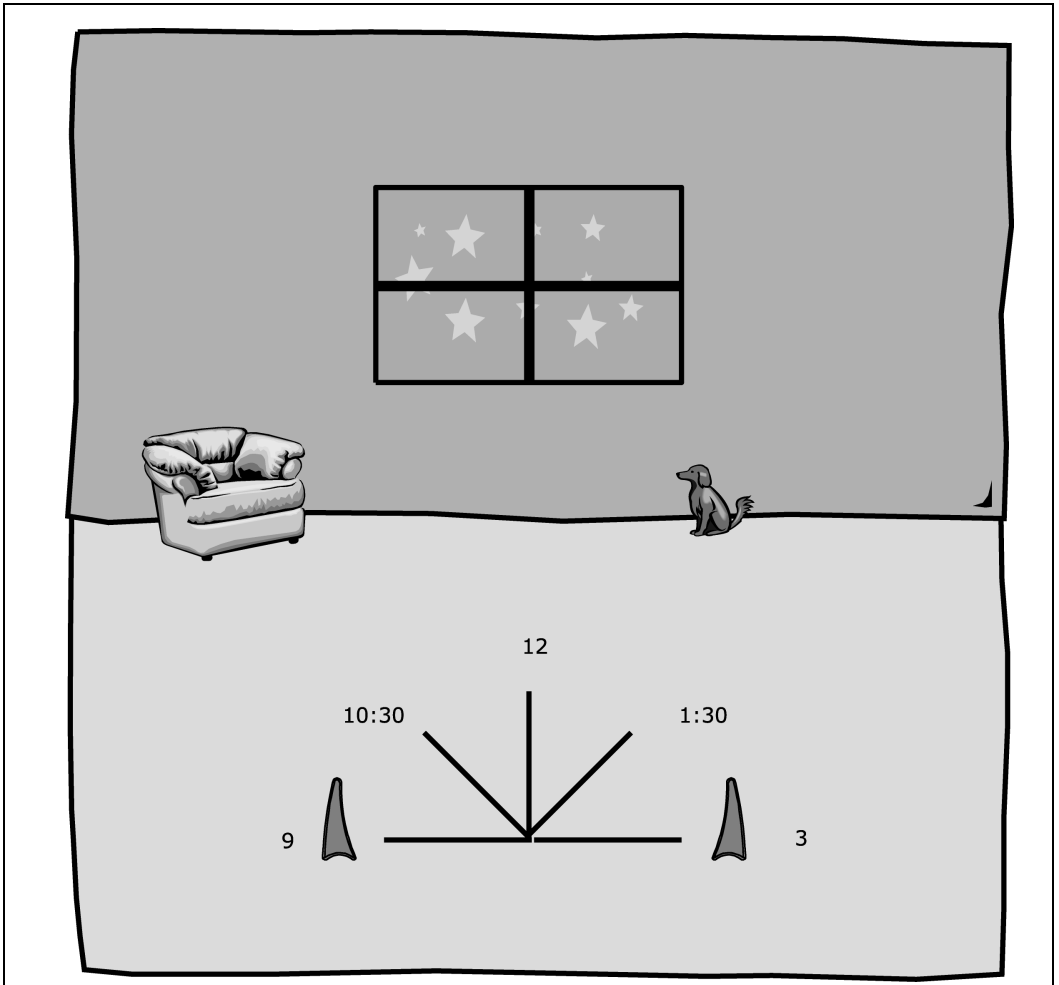


Figure 8: Orienting CPE front during signal scan

- 4 Start the scan by holding the front of the CPE at the 9:00 position for about 5 seconds.
- 5 Check the LEDs on the top of the CPE. The LEDs blink, and indicate the strength of the signal received from your service provider.

The stronger the signal from the service provider, the more LEDs on the device are lit; for example, if all 5 LEDs are lit, the signal from the service provider is very

strong. If only 1 LED is lit, the signal is weaker.

- 6 Rotate the front of the CPE to the 10:30 position. At the 10:30 position, stop the rotation for about 5 seconds.

Again, the LEDs blink, indicating the strength of the signal received from your service provider.

- 7 Continue to rotate the CPE as described in step 6, stopping at the positions of 12:00, 1:30, and 3:00.

Note the signal strength at each rotation. Again, the stronger the signal, the more LEDs on the CPE blink on and off.

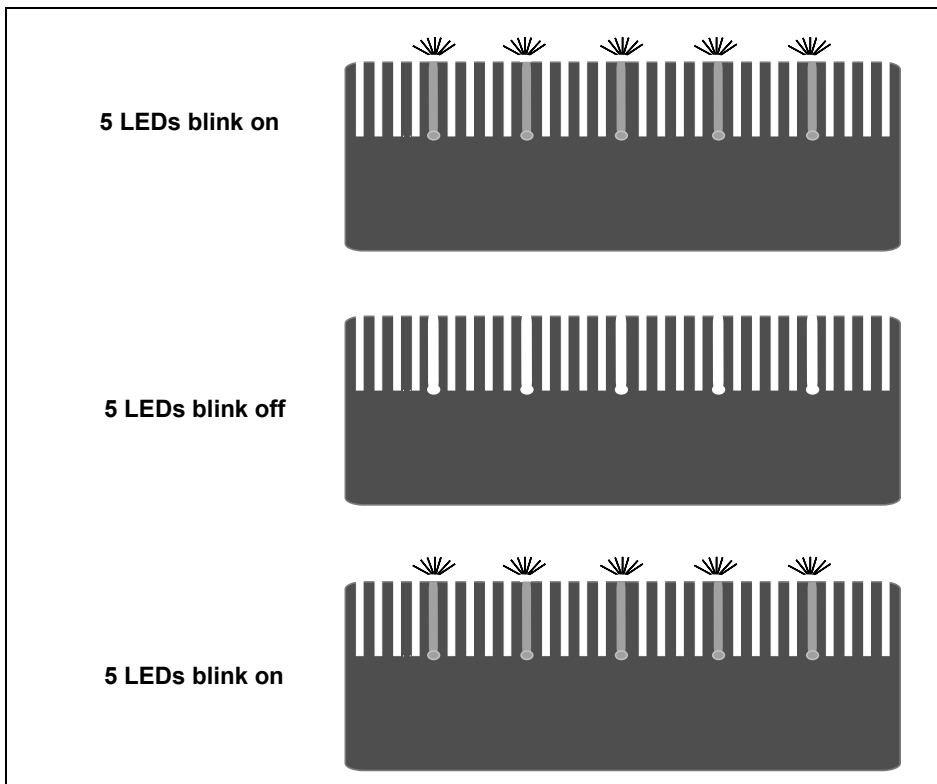


Figure 9: LEDs on CPE indicating service provider signal strength (example)

Note: In most cases, the LEDs on the CPE blink on and off. However, if a service provider cannot be found

in your area, the CPE's LEDs chase each other — that is, an LED blinks on as the previous LED blinks off. For more information, refer to the section “LEDs that don't blink, but rather chase,” on page 18.

- 8** After you've completed the rotation, re-orient the front of the CPE to the direction it was pointed when the strongest signal was found.
- 9** Plug in the Ethernet cable jack on the bottom of the CPE. The CPE then registers with your service provider.
- 10** When your CPE is registered, the LEDs on the CPE are continuously lit. You can now use the device to obtain high-speed internet services.

If you power down your CPE and move it, you must repeat this procedure to find another signal.

Troubleshooting

This section describes common issues with CPE installation, and how to resolve the issues if you encounter them.

LEDs THAT DON'T BLINK, BUT RATHER CHASE

If your CPE is unable to find a service provider signal, the LEDs on your CPE don't blink, but rather they “chase” each other, with an LED blinking on as the previous LED blinks off. Figure 10 illustrates LEDs in chase mode.

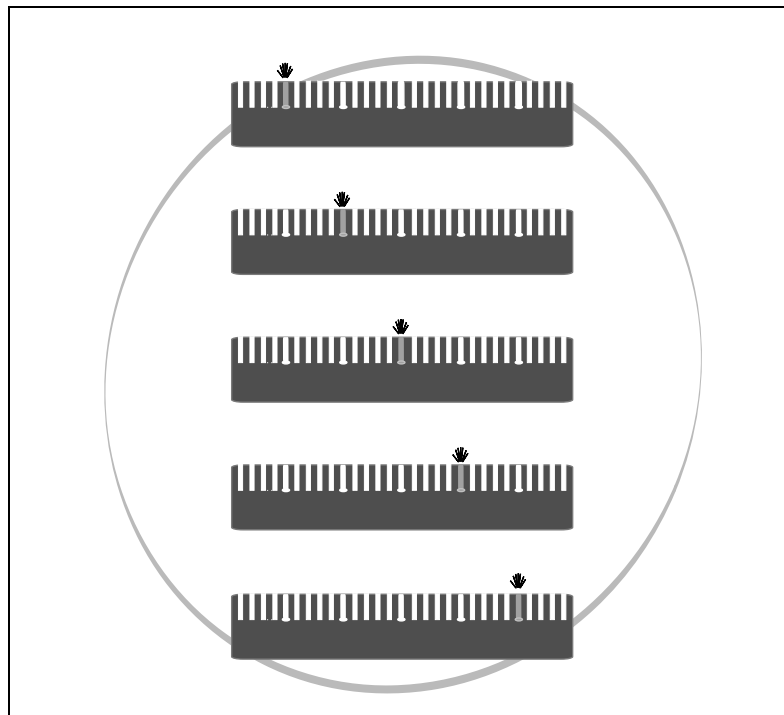


Figure 10: LEDs on CPE indicating no service provider found (chasing LEDs)

For further information about connecting, contact your service provider.

THE LEDs ON THE CPE BLINK MORE SLOWLY THAN NORMAL

When your CPE searches for a service provider signal, the LEDs on the CPE blink on and off rapidly. If you notice the CPE's LEDs blinking more slowly than usual, this usually indicates that your CPE is trying to register with your service provider.

During registration, your service provider may be checking records to indicate that you are a valid user of the service provider's system. In most cases, the registration process happens so quickly you hardly notice a change in the blink rate of the LEDs on your CPE.

However, if the lights blink slowly for an extended time (more than 30 seconds):

- 1** Unplug the Ethernet cable from the bottom of the CPE.
- 2** Re-plug the cable back in.
- 3** Repeat the procedure described in the section "Using the LEDs to find the Strongest Service Provider Signal," on page 12.
- 4** Perform one of the following:
 - If your CPE successfully registers, as indicated by continuously lit LEDs, you can use your connection.
 - If the LEDs on your CPE continue to slowly blink on and off, contact your service provider.

YOU RECEIVE A DIALOG BOX INDICATING THAT YOU CANNOT CONNECT TO YOUR SERVICE PROVIDER

When you try to connect with your service provider, you may receive a message on your computer indicating that you cannot connect at this time.

You may receive this message for any number of reasons, such as the service provider's equipment may be

malfunctioning, your CPE is malfunctioning, or your service provider is still processing your payment or identification records.

If you receive such a message:

- 1 Make a note of the message's contents and any error number that appears.
- 2 Contact your service provider with this information. They should be able to resolve the problem for you.

I CAN SUCCESSFULLY CONTACT MY SERVICE PROVIDER AT HOME, BUT NOT AT WORK OR AT A FRIEND'S HOUSE

You need to repeat the search for a service provider signal each time you power down your CPE and move it.

If you have not repeated the signal search, do so.

If this does not solve the problem, check with your service provider to make sure they offer service to the geographic location from which you are running your CPE.

IF YOU HAVE PROBLEMS GETTING CONNECTED

Contact the electronics or computer store where you purchased the CPE, or contact your service provider, using the contact information on the back cover of this guide.

Congratulations!

After successfully completing these steps, you can use your CPE to obtain high speed, high quality internet and voice services for your home or small office.

STAMP OR PRINT CONTACT INFORMATION
HERE.

