



INSTALLATION GUIDE

HomePortal Intelligent Gateway

5168N/5168NV

5138N/5138NV

5133N/5133NV

5108N/5108NV

DRAFT
CONTENTS SUBJECT TO CHANGE

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Introduction

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The Home Portal® Intelligent Gateway provides high-speed Internet access, integrated data applications, VoIP (Voice over Internet Protocol), and support for wireless-wireline convergence. The gateway also offers other features such as:

Flexible networking

802.11b/g/n wireless access point with wired Ethernet ports for home networking. One Gigabit Ethernet port is available for higher data transfer speeds.

Superior wireless experience

Wireless technology implemented on the gateway practically eliminates wireless “cold spots” in your home.

Integrated Voice over IP (some models)

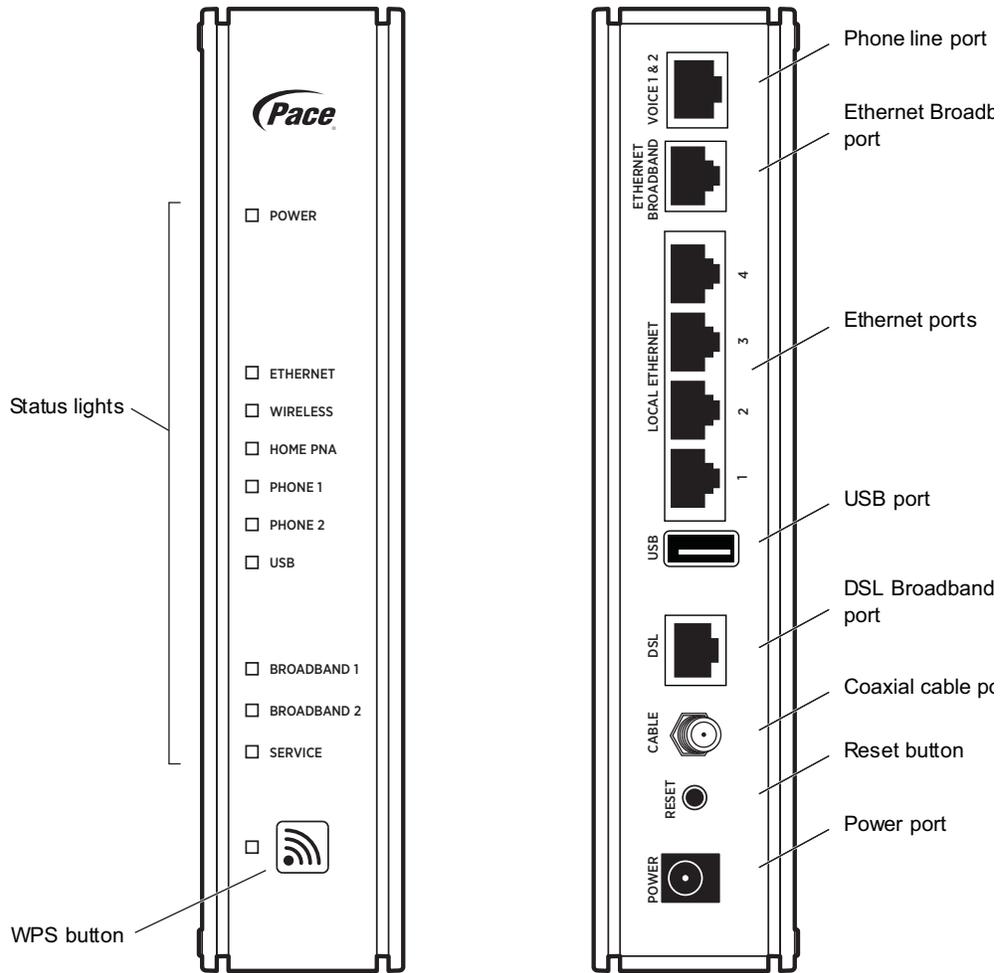
Built-in VoIP capabilities support today’s wireline voice needs. The gateway also serves as the convergence point for service providers to offer wireline-wireless service convergence. VoIP capabilities include full SIP ALG and back-to-back SIP user agent (proxy) to support additional ATA adapters, GSM-UMA (3GPP), and IMS (SCCAN Forum) Voice over Wi-Fi mobile phone support.

Super fast router

Fast data transfer speeds between your home network and the Internet. The router distributes data seamlessly to all the computers on your home network, without compromising performance or speed.

Professional grade firewall

Detects and defends against common Internet threats (such as Distributed Denial of Service attacks) using Stateful Packet Inspection. Use the gateway configuration tools to set up common applications such as gaming or streaming video.



5100 series HomePortal Intelligent Gateway

Note: The ports and connectors may be slightly different on some models.

Gathering items for installation

To install the gateway, you will need:

- Gateway
- Power adapter
- DSL cable
- Ethernet cable (optional), to connect a computer directly to the gateway using a wired connection
- Phone cable (optional), for connecting voice telephone service
- Gateway stand (optional), for installing the gateway vertically
- DSL filter (optional), for each phone on the same line as the gateway

Finding a suitable location

Before you install the gateway, find an appropriate location for it. Set up the gateway near the main computer or any other device that will connect to it through the wired Ethernet ports.

The gateway also serves as a wireless access point, so you should consider the wireless network when choosing the location for the gateway. Consider the following when determining the location of the gateway:

- Place the gateway at least 5 ft (1.5 m) from cordless phones, microwave ovens, or other electronic devices to avoid potential interference, and at least 6 in (15 cm) from your television to avoid audio hissing or static.
- Place the gateway in an open area to minimize interference from its surroundings. Wireless signal strength is much stronger in an open area than an area with obstructions. In a single-story building, place the gateway as high and as close to each wireless device as possible.
- Keep the gateway away from large metal objects. Metal objects can reflect or obstruct signals, which can negatively impact wireless signal quality.
- Keep the gateway away from water sources like water coolers or aquariums.

Note: We recommend that you use the stand provided with the gateway to install the gateway in a vertical orientation, so that nothing can be stacked on top of it.

Feature comparison

The following table shows the differences among the various models that are described in this document.

Model	WAN interface	Ethernet ports	Wireless	VoIP
5168NV	uDSL*	4 x 10/100	802.11b/g/n (2x2)	2 x FXS
5168N	uDSL*	4 x 10/100	802.11b/g/n (2x2)	
5138NV	uDSL*	4 x 10/100	802.11b/g/n (2x2)	2 x FXS
5138N	uDSL*	4 x 10/100	802.11b/g/n (2x2)	
5133NV	uDSL* – no HPNA	4 x 10/100	802.11b/g/n (2x2)	2 x FXS
5133N	uDSL* – no HPNA	4 x 10/100	802.11b/g/n (2x2)	
5108NV	Ethernet 100Base-TX	4 x 10/100	802.11b/g/n (2x2)	2 x FXS
5108N	Ethernet 100Base-TX	4 x 10/100	802.11b/g/n (2x2)	

* uDSL supports an ADSL or VDSL connection

Installing the Gateway

2

Use the information in this chapter to connect the gateway to the Internet and to your home network.

Installation overview

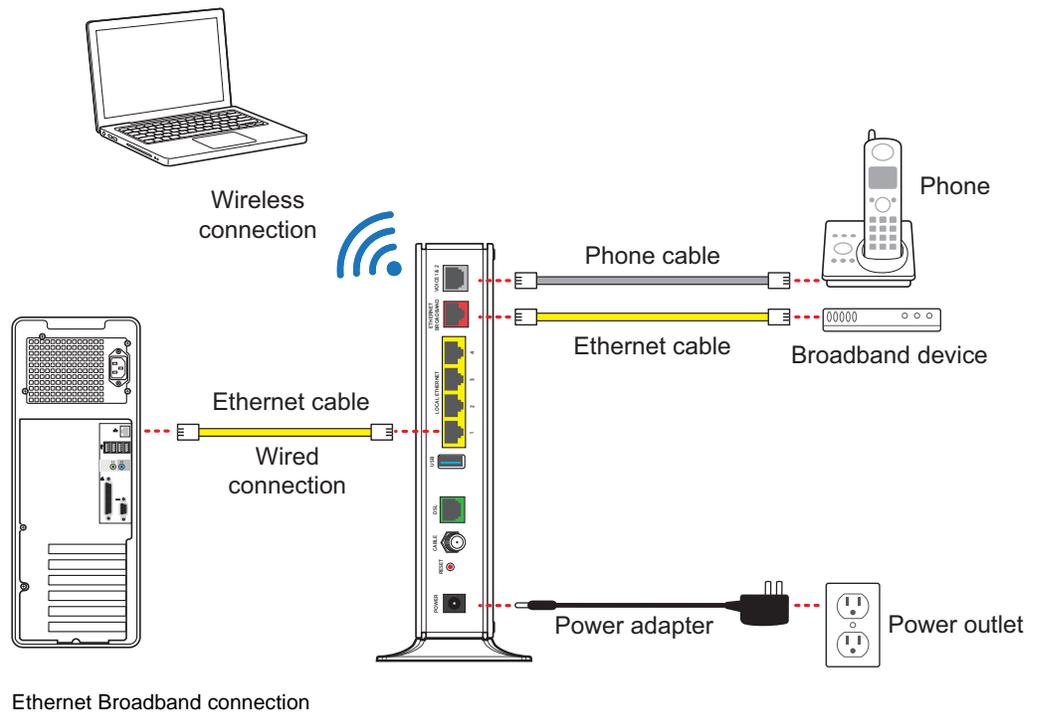
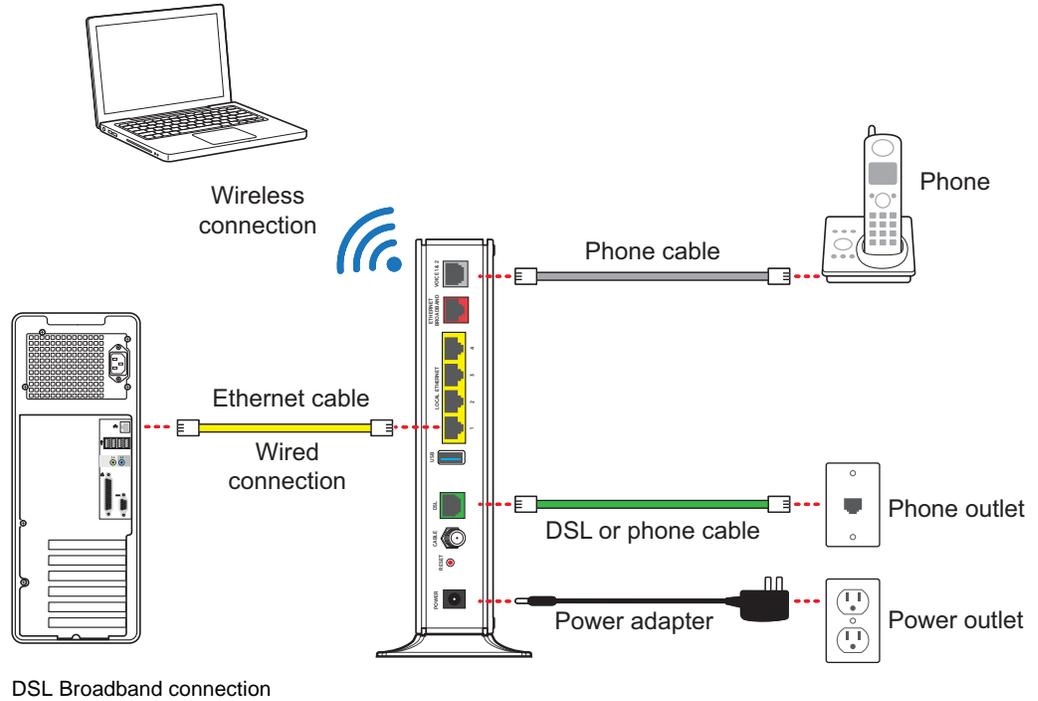
Before installing the gateway, review the package contents and ensure that you have the required items.

To install the gateway, you will do the following:

1. “Connecting the power adapter” on page 10
2. “Connecting computers to the gateway” on page 10
3. “Connecting the gateway to the Internet” on page 12
4. “Connecting VoIP telephones” on page 13
5. “Connecting an IPTV set-top box” on page 14

Cabling overview

You can connect the gateway to the Internet using DSL Broadband or Ethernet Broadband. The following diagrams show the connections for both options. For more information, see “Connecting the gateway to the Internet” on page 12.



Connecting the power adapter

The power adapter supplies power to the gateway.

1. Connect one end of the power adapter to the POWER port on the gateway.
2. Connect the cable's other end to an electrical outlet.

After the gateway is powered on, the power light blinks green for a moment and then turns steady green.

Note: Always use the power adapter that was packaged with the gateway because it complies with local requirements.

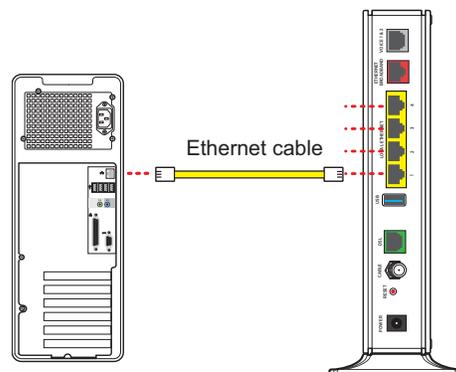
Connecting computers to the gateway

The first computer you connect to the gateway can be used to configure the gateway settings. You can connect more computers and other devices to the gateway using wireless or wired Ethernet.

Connecting devices using wired Ethernet

The gateway has four wired Ethernet ports that you can use to connect computers or other devices.

1. Connect one end of the Ethernet cable to one of the Ethernet ports on the gateway.
2. Connect the other end of the cable to the Ethernet port on the computer.



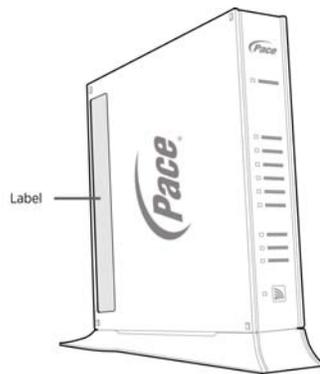
After the gateway recognizes the computer, the **Ethernet** light turns steady green, and blinks when the computer starts transferring data with the gateway.

Connecting devices using wireless

The gateway has an integrated wireless access point that you can use to connect wireless devices to the gateway. By default, the gateway is configured with a network name (SSID) and WPA-PSK/WPA2-PSK security.

1. On the wireless device, view the available wireless networks. The specifics of how you do this depend on the device you are connecting.

The default network name (SSID) and the encryption key (64-bit hex) is printed on the label on the side of the gateway. Mac OS X users might have to enter the “\$” character at the beginning of the encryption key.



2. Select the appropriate network name and connect.
3. At the prompt, enter the encryption key.

After the gateway recognizes the wireless device, the **WIRELESS** light turns steady green, and blinks when the wireless device starts transferring data with the gateway.

You can configure Wi-Fi Protected Setup (WPS) to simplify the process of connecting wireless devices to the network using the PIN or PUSH method.

The PIN method establishes wireless connectivity using a PIN generated by the wireless device. For more information, go to the gateway configuration page at <http://192.168.1.254>.

The PUSH method establishes wireless connectivity if you push the WPS button on the front panel of the gateway and on the wireless device.

For more information, see “Configuring Wi-Fi Protected Setup” in the *HomePortal Intelligent Gateway Configuration Guide*.

Connecting the gateway to the Internet

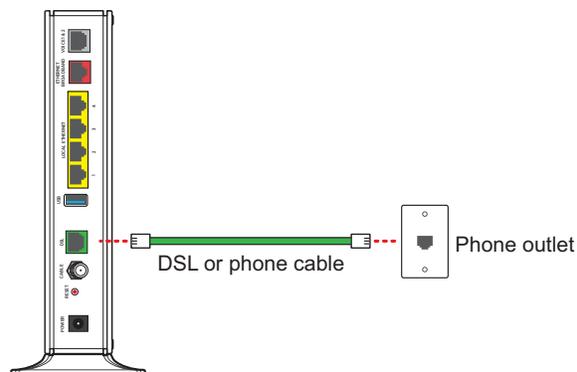
You can connect the gateway to the Internet using the DSL Broadband port or the Ethernet Broadband port.

Connecting using the DSL port

Connect the gateway to the Internet through the DSL port.

1. Connect one end of a phone cord to the gray DSL port on the gateway.
2. Connect the other end of the phone cord to the wall outlet.

After the gateway recognizes the connection, the Broadband light blinks green for a moment and then turns steady green.

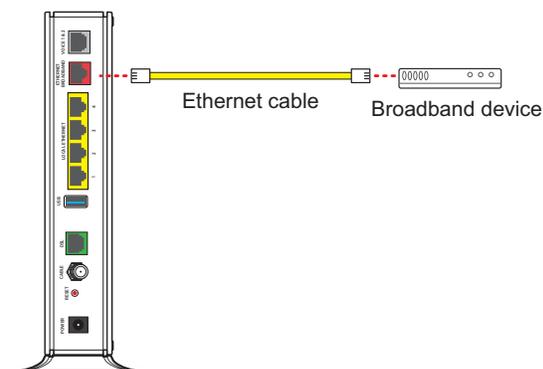


Connecting using the Ethernet port

Connect the gateway to the Internet through the Ethernet port.

1. Connect one end of an Ethernet cable to the Ethernet port on the gateway.
2. Connect the other end of the Ethernet cable to the broadband device.

After the gateway recognizes the connection, the Broadband light blinks green for a moment and then turns steady green.



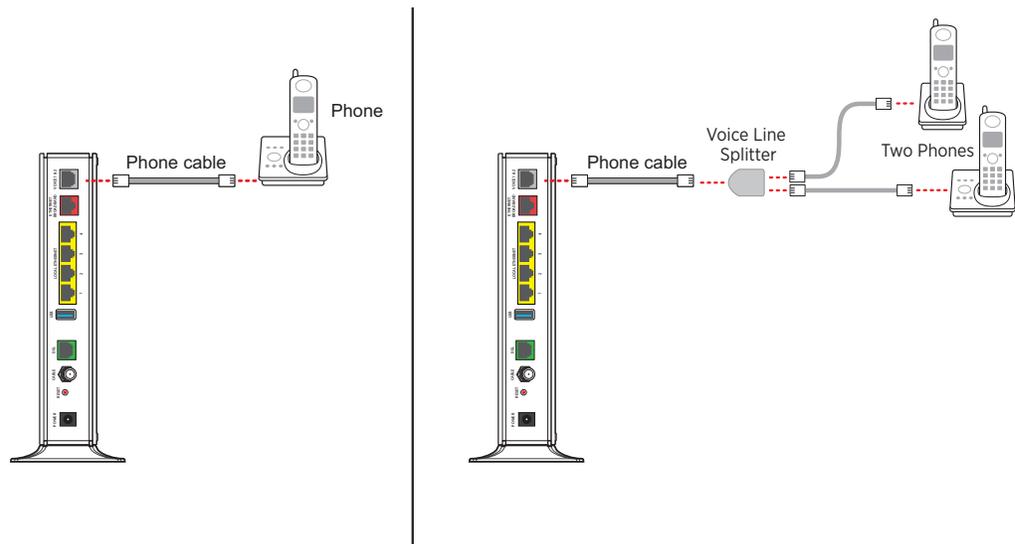
Connecting VoIP telephones

Some models include an RJ-14 port (Phone 1 & 2) that can support up to two phone lines using a splitter or multi-jack adapter.



WARNING: Do not connect the VoIP lines to your current home telephone wiring, especially if your home has an alarm system. Ensure that you are subscribed to VoIP service before configuring VoIP on the gateway.

1. Connect one end of the phone cable to the gray Phone Lines 1 & 2 port on the gateway.
2. Do one of the following:
 - For one phone, connect the phone cable directly to the telephone.
 - For two phones, connect the phone cable to a splitter and then to the telephones.



After the gateway recognizes the phones (Line 1 and Line 2), the **Phone 1** and **Phone 2** lights turn steady green and blink when the associated phone is active.

This chapter provides information about common gateway installation issues. If an issue has more than one potential cause, the most common cause is listed first.

LAN issues

Use the information in this section to identify and resolve common issues related to the home network.

Can't connect to the gateway through the Ethernet port

- The Ethernet cable may be loose or disconnected. Check the connections to ensure that the cable is securely connected. The **Ethernet** light blinks green when there is a working link to a device.

A wireless device cannot get an IP address

- The device may not be set up with the appropriate security type or security key. Ensure that the wireless device is using the appropriate credentials.
- The wireless device and the gateway may be using different wireless modes, such as 802.11b, 802.11g, or 802.11n. Ensure that the wireless device and the gateway are using compatible modes.

The wireless signal is weak

- The wireless device may be out of range. Ensure that the wireless device is within the range of the gateway.

I cannot set a custom encryption key on the gateway user interface

- The custom encryption key may not conform with the security mode, key length, key type, or value type. Configure the custom encryption key so that it conforms to the security mode, key length, key type, or value type.

Connection issues

Use the information in this section to identify and resolve common issues related to connectivity.

The Power light is not on

- The power cable may be loose or disconnected. Check the power cable to ensure that the cable is securely connected. If the power cable is plugged in to a power strip or switched outlet, ensure that it is on. Ensure that you are using the power supply that came with the gateway.
- The power supply may be faulty. Verify that the light on the power supply is green.
- The AC outlet may be faulty. Try plugging the gateway in to a known good outlet.

The Power light blinks immediately after the device starts, and then turns steady green

- The Power light blinks during POST (Power on self-test). This is normal behavior.

The Power light is red

- The POST (Power on self-test) may have failed. Press and hold the Reset button on the gateway for 10 seconds.

The Broadband light is blinking

- The Ethernet or DSL cable may be loose or disconnected. Check the connections to ensure that the cable is securely connected.
- The DSL connection may not be established. Press and hold the Reset button on the gateway for 10 seconds. If resetting the gateway does not fix the problem, contact your service provider.

The Broadband light blinks green for a long time, then turns red

- The gateway may have failed to synchronize with the service provider network. Check the connections to ensure that the cable is securely connected.
- Your Internet service may not be activated. Contact your service provider.

The Service light is blinking

- Your Internet service may not be activated. Contact your service provider.

The Service light is red

- The user name and password may have been entered incorrectly. Verify the user name and password on the gateway configuration page, and try again.
- Your Internet service may not be activated. Contact your service provider.

The Ethernet light is not on

- The Ethernet cable may be loose or disconnected. Check the connections to ensure that the cable is securely connected.

The Wireless light is not on

- No devices on your home network are currently connected to the gateway over the wireless connection.

The Internet is not accessible but the gateway configuration page is accessible

- The Ethernet or DSL cable may be loose or disconnected. Check the connections to ensure that the cable is securely connected.

VoIP issues

Use the information in this section to identify and resolve common issues related to VoIP (Voice over Internet Protocol).

The Phone 1 and Phone 2 lights are not on

- The data cable may be loose or disconnected. Check the connections to ensure that the cable is securely connected.
- The lines or SIP server may be configured incorrectly. If the issue persists, contact your service provider.

No dial tone

- The service may be down. Verify that the phone is in Active mode. If the issue persists, contact your service provider.

Regulatory Information



Declaration of conformity

The following sections describe regulatory compliance by region.

FCC/Industry Canada compliance

This device has been tested and certified as compliant with the regulations and guidelines set forth in the Federal Communication commission - FCC part 15, FCC part 68 and Industry Canada - ICES003 and RSS-210 Radio and telecommunication regulatory requirements / Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada. Cet appareil numérique de la classe [*] est conforme à la norme NMB-003 du Canada.

Manufacturer: Pace Americas

Models: 5168N, 5168NV, 5138N, 5138NV, 5133NV, 5133N, 5108NV, 5108N

Part 15 of FCC rules/IC RSS-210

This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). 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 of the device.

Le présent appareil est conforme aux normes CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause

harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate this equipment.

TIA 968 (Part 68 of FCC rules)/IC CS-03

This equipment complies with the Telecommunication Industry Association TIA-968 (FCC part 68) and Industry Canada CS-03 Telecommunication requirements. On the product is a label that contains, among other information, the IC and FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information may be provided to the telephone company.

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the device not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0) / L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum RENs for the calling area.

This product cannot be used on telephone-company-provided coin service. Connection to Party Line Service is subject to state tariffs.

An FCC-compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant. If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. 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 this equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications to maintain uninterrupted service. If trouble is experienced with this equipment, please contact Pace Americas, or your local Pace Americas distributor or service center in the U.S.A. for repair and/or warrant

information. If the trouble is causing harm to the telephone network, the telephone company may request you to remove this equipment from the network until the problem is resolved. No repairs can be done by a customer on this equipment. It is recommended that the customer install an AC surge arrestor in the AC outlet to which this device is connected. This is to avoid damage to the equipment caused by local lightning strikes and other electrical surges.

MPE/SAR/RF exposure information

This device was verified for RF exposure and found to comply with Council Recommendation 1999/519/EC and FCC OET-65 RF exposure requirements. This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

WARNING: While this device is in operation, a separation distance of at least 20 cm (8 inches) must be maintained between the radiating antenna inside the EUT and the bodies of all persons exposed to the transmitter in order to meet the FCC RF exposure guidelines. Making changes to the antenna or the device is not permitted. Doing so may result in the installed system exceeding RF exposure requirements. This device must not be co-located or operated in conjunction with any other antenna or radio transmitter.

Safety information

The following sections describe the safety guidelines for this product.

AC adapter

This product is intended to be supplied with a listed Pace or 2Wire Direct Plug-In AC/DC power adapter marked Class 2 or LPS and rated 12V, 3A or 14.5VDC, 2.5A for all 50xxNV-xxx and 50xxN-xxx models.

The AC/DC power adapter supplied with this product is designed to ensure your personal safety and to be compatible with this equipment.

Please follow these guidelines:

- Do not use the adapter in a high moisture environment. Never touch the adapter when your hands or feet are wet.
- Allow adequate ventilation around the adapter. Avoid locations with restricted airflow.
- Connect the adapter to a proper power source. The voltage and grounding requirements are found on the product case and/or packaging.
- Do not use the adapter if the cord becomes damaged.
- Do not attempt to service the adapter. There are no serviceable parts inside. Replace the unit if it is damaged or exposed to excess moisture.

Telecommunication cord

Caution: To reduce the risk of fire, use only No. 26 AWG or larger UL Listed or CSA Certified Telecommunication Line Cord.

Internal telephone ports (VoIP)

Telecommunication equipment connected to this port (e.g., via “Voice 1 & 2” port) should be UL Listed and the connections shall be made in accordance with Article 800 of the NEC.

Repairs

Do not, under any circumstances, attempt any service, adjustments, or repairs on this equipment. Instead, contact your local Pace Americas distributor or service provider for assistance. Failure to comply may void the product warranty.

Location – electrical considerations

CAUTION: Due to risk of electrical shock or damage, do not use this product near water, including a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool. Also, avoid using this product during electrical storms. Avoid locations near electrical appliances or other devices that cause excessive voltage fluctuations or emit electrical noise (for example, air conditioners, neon signs, high-frequency or magnetic security devices, or electric motors).

Location – environmental considerations

Do not plug the AC/DC power adapter into an outdoor outlet or operate the residential gateway outdoors. It is not waterproof or dustproof, and is for indoor use only. Any damage to the unit from exposure to rain or dust may void your warranty.

Do not use the residential gateway where there is high heat, dust, humidity, moisture, or caustic chemicals or oils. Keep the gateway away from direct sunlight and anything that radiates heat, such as a stove or a motor.

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