CISCO™

Cisco Model DPH650 MoCA to Wireless Adapter User Guide

In This Document

IMPORTANT SAFETY INSTRUCTIONS

Notice to Installers

The servicing instructions in this notice are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions, unless you are qualified to do so.

Note to System Installer

For this apparatus, the coaxial cable shield/screen shall be grounded as close as practical to the point of entry of the cable into the building. For products sold in the US and Canada, this reminder is provided to call the system installer's attention to Article 820-93 and Article 820-100 of the NEC (or Canadian Electrical Code Part 1), which provides guidelines for proper grounding of the coaxial cable shield.

This symbol is intended to alert you that uninsulated voltage within this product may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this product.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

AVIS
RISQUE DE CHOC ÉLECTRIQUE
NE PAS OUVRIR

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

WARNING
TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

This symbol is intended to alert you of the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product.

20070112 SysInstaller 820 English

Notice à l'attention des installateurs de réseaux câblés

Les instructions relatives aux interventions d'entretien, fournies dans la présente notice, s'adressent exclusivement au personnel technique qualifié. Pour réduire les risques de chocs électriques, n'effectuer aucune intervention autre que celles décrites dans le mode d'emploi et les instructions relatives au fonctionnement, à moins que vous ne soyez qualifié pour ce faire.

Remarque à l'attention de l'installateur du système

Avec cet appareil, le blindage/écran du câble coaxial doit être mis à la terre aussi près que possible du point d'entrée du câble dans le bâtiment. En ce qui concerne les produits vendus aux États-Unis et au Canada, ce rappel est fourni pour attirer l'attention de l'installateur sur les articles 820-93 et 820-100 du Code national de l'électricité (ou Code de l'électricité canadien, Partie 1) qui fournissent des lignes directrices concernant la mise à la terre correcte du blindage (écran) du câble coaxial.

Ce symbole a pour but de vous prévenir que des tensions électriques non isolées existent à l'intérieur de ce produit, pouvant être d'une intensité suffisante pour causer des chocs électriques. Il est donc dangereux d'établir un contact quelconque avec l'une des pièces comprises à l'intérieur de ce produit.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

ATTENTION
DANGER ÉLECTRIQUE
NE PAS OUVRIR

ATTENTION : Pour réduire les risques de chocs électriques, ne pas enlever le couvercle (ou le panneau arrière). Ne contient aucune pièce réparable par l'utilisateur. Confier les interventions aux techniciens d'entretien qualifiés.

AVERTISSEMENT
POUR ÉVITER LES INCENDIES OU LES CHOCS ÉLECTRIQUES, NE PAS EXPOSER L'APPAREIL À LA PLUIE OU À L'HUMIDITÉ.

Ce symbole a pour but de vous prévenir de la présence d'instructions importantes relatives au fonctionnement ou à l'entretien (et aux réparations) dans la documentation accompagnant ce produit.

20070112 SysInstaller 820 French

4027494 Rev A

Mitteilung für CATV-Techniker

Die in dieser Mitteilung aufgeführten Wartungsanweisungen sind ausschließlich für qualifiziertes Fachpersonal bestimmt. Um die Gefahr eines elektrischen Schlags zu reduzieren, sollten Sie keine Wartungsarbeiten durchführen, die nicht ausdrücklich in der Bedienungsanleitung aufgeführt sind, außer Sie sind zur Durchführung solcher Arbeiten qualifiziert.

Mitteilung an den Systemtechniker

Für dieses Gerät muss der Koaxialkabelschutz/Schirm so nahe wie möglich am Eintrittspunkt des Kabels in das Gebäude geerdet werden Dieser Erinnerungshinweis liegt den in den USA oder Kanada verkauften Produkten bei. Er soll den Systemtechniker auf Paragraph 820-93 und Paragraph 820-100 der US-Elektrovorschrift NEC (oder der kanadischen Elektrovorschrift Canadian Electrical Code Teil 1) aufmerksam machen, in denen die Richtlinien für die ordnungsgemäße Erdung des Koaxialkabelschirms festgehalten sind.

Dieses Symbol weist den Benutzer auf das Vorhandensein von nicht isolierten gefährlichen Spannungen im Gerät hin, die Stromschläge verursachen können. Ein Kontakt mit den internen Teilen dieses Produktes ist mit Gefahren verbunden.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

ACHTUNG
STROMSCHLAGGEFAHR, NICHT ÖFFNEN

ACHTUNG: Zur Vermeidung eines Stromschlags darf die Abdeckung (bzw. die Geräterückwand) nicht entfernt werden. Das Gerät enthält keine vom Benutzer wartbaren Teile. Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal durchgeführt werden.

WARNUNG
DAS GERÄT NICHT REGEN ODER FEUCHTIGKEIT AUSSETZEN, UM STROMSCHLAG ODER DURCH EINEN KURZSCHLUSS VERURSACHTEN BRAND ZU VERMEIDEN.

Dieses Symbol weist den Benutzer darauf hin, dass die mit diesem Produkt gelieferte Dokumentation wichtige Betriebs- und Wartungsanweisungen für das Gerät enthält.

20070112 SysInstaller 820 German

Aviso a los instaladores de sistemas CATV

Las instrucciones de reparación contenidas en el presente aviso son para uso exclusivo por parte de personal de mantenimiento cualificado. Con el fin de reducir el riesgo de descarga eléctrica, no realice ninguna otra operación de reparación distinta a las contenidas en las instrucciones de funcionamiento, a menos que posea la cualificación necesaria para hacerlo.

Nota para el instalador del sistema

En lo que se refiere a este aparato, el blindaje del cable coaxial debe conectarse a tierra lo más cerca posible al punto por el cual el cable entra en el edificio. En el caso de los productos vendidos en los EE. UU. y Canadá, el presente aviso se suministra para llamar la atención del instalador del sistema sobre los Artículos 820-93 y 820-100 del NEC (o Código Eléctrico de Canadá, Parte 1), que proporcionan directrices para una correcta conexión a tierra del blindaje del cable coaxial.

Este símbolo tiene como fin advertirle de que una tensión sin aislamiento en el interior de este producto podría ser de una magnitud suficiente como para provocar una descarga eléctrica. Por consiguiente, resulta peligroso realizar cualquier tipo de contacto con alguno de los componentes internos de este producto.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

ATENCIÓN
RIESGO DE DESCARGA ELÉCTRICA NO ABRIR

ATENCIÓN: con el fin de reducir el riesgo de descarga eléctrica, no retire la tapa (ni la parte posterior). No existen en el interior componentes que puedan ser reparados por el usuario. Encargue su revisión a personal de mantenimiento cualificado.

ADVERTENCIA
PARA EVITAR EL RIESGO DE INCENDIO O DESCARGA ELÉCTRICA, NO EXPONGA LA UNIDAD A LA LLUVIA O A LA HUMEDAD.

Este símbolo tiene como fin alertarle de la presencia de importantes instrucciones de operación y mantenimiento (revisión) contenidas en la literatura que acompaña al producto.

20070112 SysInstaller 820 Spanish

Read These Instructions

Keep These Instructions

Heed All Warnings

Follow All Instructions

Power Source Warning

A label on this product indicates the correct power source for this product. Operate this product only from an electrical outlet with the voltage and frequency indicated on the product label. If you are uncertain of the type of power supply to your home or business, consult your service provider or your local power company.

The AC inlet on the unit must remain accessible and operable at all times.

Ground the Product

⚠ **WARNING: Avoid electric shock and fire hazard! Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.**

If this product connects to coaxial cable wiring, be sure the cable system is grounded (earthed). Grounding provides some protection against voltage surges and built-up static charges.

Protect the Product from Lightning

For added protection, unplug this apparatus during lightning storms or when unused for long periods of time. In addition to disconnecting the AC power from the wall outlet, disconnect the signal inputs.

Verify the Power Source from the On/Off Power Light

When the on/off power light is not illuminated, the apparatus may still be connected to the power source. The light may go out when the apparatus is turned off, regardless of whether it is still plugged into an AC power source.

Eliminate AC Mains Overloads

⚠ **WARNING: Avoid electric shock and fire hazard! Do not overload AC mains, outlets, extension cords, or integral convenience receptacles. For products that require battery power or other power sources to operate them, refer to the operating instructions for those products.**

Prevent Power Cord Damage

Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where the cord exits from the apparatus.

Provide Ventilation and Select a Location

- Remove all packaging material before applying power to the product.

- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

- Do not place this apparatus on a bed, sofa, rug, or similar surface.

- Do not place this apparatus on an unstable surface.

- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

- Do not install this apparatus in an enclosure, such as a bookcase or rack, unless the installation provides proper ventilation.

- Do not place entertainment devices (such as VCRs or DVDs), lamps, books, vases with liquids, or other objects on top of this product.

Protect from Exposure to Moisture and Foreign Objects

Do not use this apparatus near water.

> ⚠ **WARNING: Avoid electric shock and fire hazard! Do not expose this product to liquids, rain, or moisture.**

> ⚠ **WARNING: Avoid electric shock and fire hazard! Unplug this product before cleaning. Clean only with a dry cloth. Do not use a liquid cleaner or an aerosol cleaner. Do not use a magnetic/static cleaning device (dust remover) to clean this product.**

> ⚠ **WARNING: Avoid electric shock and fire hazard! Never push objects through the openings in this product. Foreign objects can cause electrical shorts that can result in electric shock or fire.**

Accessories Warning

> ⚠ **WARNING: Avoid electric shock and fire hazard! Only use attachments/accessories specified by your service provider or the manufacturer.**

Service Warnings

> ⚠ **WARNING: Avoid electric shock! Do not open the cover of this product. Opening or removing the cover may expose you to dangerous voltages. If you open the cover, your warranty will be void. This product contains no user-serviceable parts. Refer all servicing to qualified service personnel.**

Servicing is required when the apparatus has been damaged in any way, such as a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Check Product Safety

Upon completion of any service or repairs to this product, the service technician must perform safety checks to determine that this product is in proper operating condition.

Protect the Product When Moving It

Always disconnect the power source when moving the apparatus or connecting or disconnecting cables.

WARNING: Avoid personal injury and damage to this product! Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart / apparatus combination to avoid injury from tip-over.

20080402 Modem Cable w/out Battery

FCC Compliance

United States FCC Compliance

This device 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 such interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it 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 cable company or an experienced radio/television technician for help.

Any changes or modifications not expressly approved by Scientific-Atlanta, Inc., could void the user's authority to operate the equipment.

The information shown in the FCC Declaration of Conformity paragraph below is a requirement of the FCC and is intended to supply you with information regarding the FCC approval of this device. *The phone numbers listed are for FCC-related questions only and not intended for questions regarding the connection or operation for this device. Please contact your cable service provider for any questions you may have regarding the operation or installation of this device.*

Declaration of Conformity

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

Model: D9476
Manufactured by:
Scientific-Atlanta, Inc.
5030 Sugarloaf Parkway
Lawrenceville, Georgia 30044 USA
Telephone: 770-236-1077

Canada EMI Regulation

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

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

20060628 FCC Standard

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

IMPORTANT NOTE: FCC and IC Radiation Exposure Statement:

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

Industry Canada statement:

This device complies with RSS-210 of the Industry Canada 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.

This device has been designed to operate with an antenna having a maximum gain of 5 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Introducing the DPH650

The Cisco® Model DPH650 MoCA™ to Wireless Bridge (DPH650) provides broadband service providers with a cost-effective solution for delivering high-speed home networking over coaxial cable and advanced 802.11 wireless data services.

The DPH650 incorporates wired home networking technology based on the Multimedia over Coax Alliance (MoCA) specifications for high speed data over coax cable. MoCA allows the service provider to offer robust high speed data connections within the home network for the reliable delivery of both video and voice services at speeds up to 200 Mbps.

The DPH650 also features a Wi-Fi Multimedia (WMM) compliant 802.11g wireless access point. When combined, MoCA and wireless networking technologies enable the service provider to offer their subscribers a flexible home networking solution for both wired and wireless applications.

This guide provides procedures and recommendations for placing, installing, configuring, operating, and troubleshooting your DPH650.

Benefits and Features

Your new DPH650 offers the following additional outstanding benefits and features:

Wired and Wireless Home Networking

- 100 Mbps Ethernet, 235 Mbps MoCA

- Designed to meet MoCA and IEEE 802.11g specifications

Connections

- Bridged 10/100 Mbps Ethernet port with 802.11g wireless access point

- Multimedia over Coax Alliance (MoCA)

Design and Function

- Attractive compact design and versatile orientation to stand vertically, lie flat on the desktop or shelf, or mount easily on a wall

- LED status indicators on the front panel provide an informative and easy-to-understand display that indicates the operational status and real-time data transmission activity

- Rugged electronic components for long-term reliability

Management

- Remote management and provisioning using web pages

Software and Documentation

- CD-ROM containing user guide

What's in the Carton?

When you receive Wireless MoCA Access Point, you should check the equipment and accessories to verify that each item is in the carton and that each item is undamaged. The carton contains the following items:

Cisco Model DPH650   One power adapter with power cord
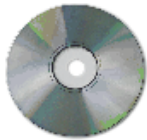
One CD-ROM containing the user guide

Note: Image may vary from actual product and specification.

If any of these items are missing or damaged, please contact your cable service provider for assistance.

Front Panel Description

The front panel of your DPH650 provides LED status indicators that indicate how well and at what state the DPH650 is operating.

Note: Image may vary from actual product and specifications.

1   **POWER** - Illuminates solid green to indicate that power is being applied to the DPH650

2   **MoCA** - Illuminates solid green to indicate that the MoCA function has been enabled and working

3   **WIRELESS** - Illuminates solid green to indicate that the wireless function has been enabled and working

4   **ETHERNET** - Illuminates solid green to indicate the Ethernet port is connected. It blinks to indicate that data is transmitting

5   **WIRELESS SETUP** - Illuminates solid green to indicate that the wireless setup method has been activated

Back Panel Description

The following illustration describes the back panel components of the DPH650.

Note: Image may vary from actual product and specifications.

1 **CABLE** - F-Connector connects to an active cable signal from your service provider.

2 **WIRELESS SETUP** - —Allows you to add new wireless devices to the wireless network of the DPH650.

3 **ETHERNET** - Bridged 10/100 Mbps Ethernet port with 802.11g wireless access point. It supports 10/100BASE-T connections.

4 **RESET** - Reset-to-Default Momentary Switch (Factory Reset)

   Note: This button is for maintenance purposes only. Do not use unless told to do so by your service provider.

5 **POWER** - Connects the Access Point to the 12 VDC output of the AC power adapter that is provided with your Access Point. Only use the AC power adapter and power cord that is provided with your Access Point.

> ⚠ **CAUTION:**
>
> **Avoid damage to your equipment. Only use the AC power adapter and power cord that is provided with your AP.**

System Requirements for the DPH650

To ensure that the DPH650 operates efficiently for high-speed Internet service, verify that all of the Internet devices on your system meet or exceed the following minimum hardware and software requirements.

Important: You will also need an active cable input line and an Internet connection.

Minimum System Requirements for a PC

- A PC with a Pentium MMX 133 processor or greater

- 32 MB of RAM

- Web browsing software

- CD-ROM drive

Minimum System Requirements for Macintosh

- MAC OS 7.5 or later

- 32 MB of RAM

System Requirements for an Ethernet Connection

- A PC with Microsoft Windows 95 operating system (or later) with TCP/IP protocol installed, or an Apple Macintosh computer with TCP/IP protocol installed

- An active 10/100BASE-T Ethernet network interface card (NIC) installed

Where Is the Best Location for the DPH650?

The ideal location for the DPH650 is where it has access to outlets and other devices.

Consider these recommendations:

- Position your PC and DPH650 so that they are located near an AC power outlet.

- Position your PC and DPH650 so that they are located near an existing cable input connection to eliminate the need for an additional cable outlet. There should be plenty of room to guide the cables away from the DPH650 and the PC without straining or crimping them.

- Airflow around the DPH650 should not be restricted.

How Do I Mount the DPH650 on the Wall?

Before You Begin

Before you begin, choose an appropriate mounting place. The wall can be made of cement, wood, or drywall. The mounting location should be free of obstructions on all sides, and the cables should be able to easily reach the DPH650 without strain. Leave sufficient clearance between the bottom of the DPH650, and any flooring or shelving underneath, to allow access to cabling. In addition, leave enough slack in all cables so that the cable modem can be removed for any required maintenance without disconnecting the cables. Also, verify that you have the following items:

- Two wall anchors for #8 x 1-inch screws

- Two #8 x 1-inch pan head sheet metal screws

- Drill with a 3/16-in. wood or masonry bit

- A copy of the wall-mounting illustrations shown on the following pages

Mounting Instructions

You can mount the DPH650 directly on a wall using two wall anchors, two screws, and the mounting slots on the bottom of the modem. The modem can be mounted vertically or horizontally. Mount the modem as shown in the following illustration.
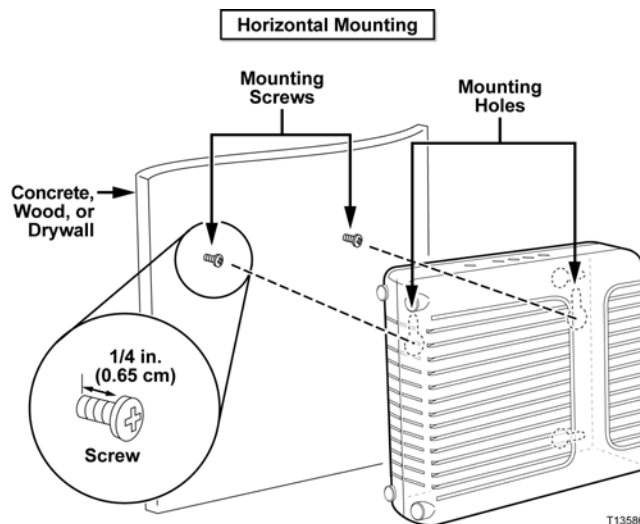
Location and Dimensions of the Wall-Mounting Slots

The following illustration shows the location and dimensions of the wall-mounting slots on the bottom of the DPH650. Use the information on this page as a guide for mounting the DPH650 to the wall.
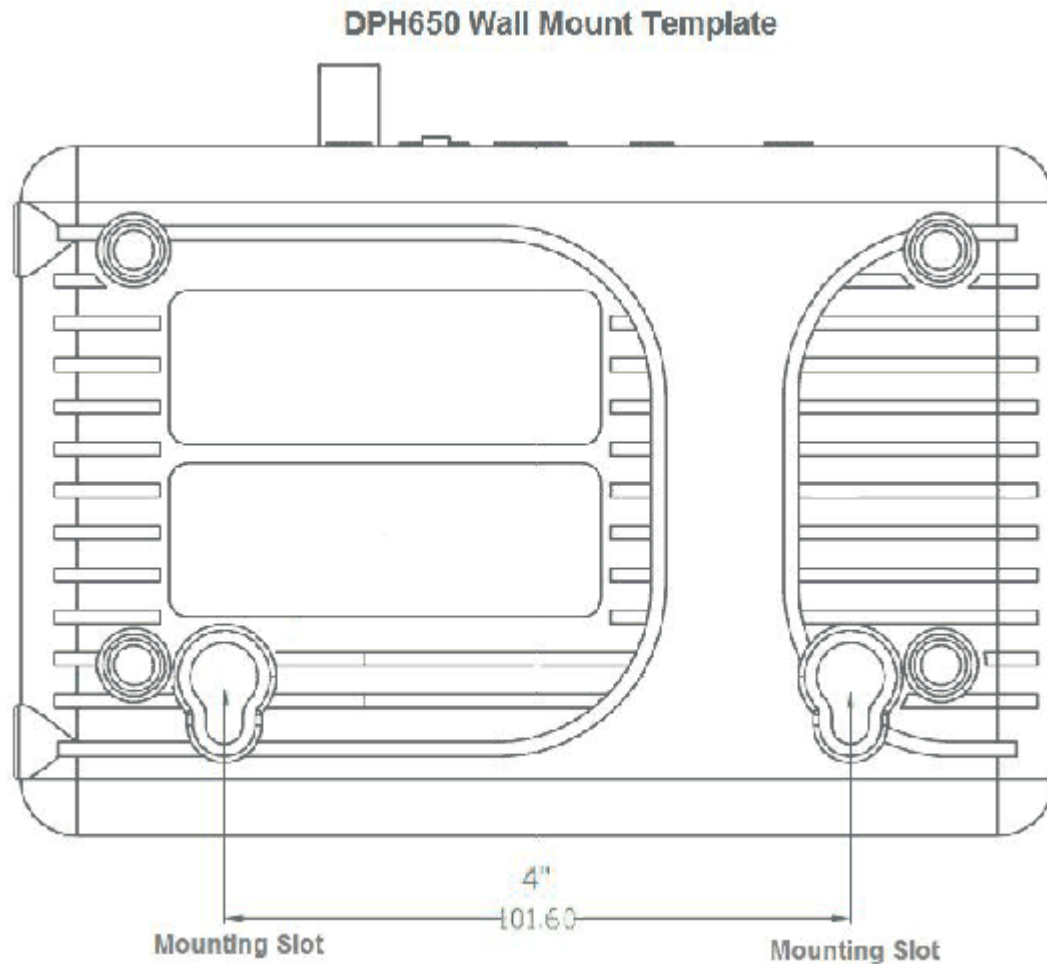
Wall Mounting Instructions

Complete these steps to mount the DPH650 to the wall.

1   Locate the place where you want to mount the DPH650 to the wall.

2   Hold the DPH650 level against the wall and at an angle so that the screw hole mounting guides are facing up and against the wall.

3   Lay a pencil, pen, or other marking tool into each guide and mark the place on the wall where you want to drill the mounting holes.

4   Using a drill with a 3/16-in bit, drill two holes at the same height and 4 inches apart.

5   Are you mounting the DPH650 into a drywall or concrete surface where a wooden stud is not available?

- If **yes**, drive the anchor bolts into the wall and then go to step 6.

- If **no**, go to step 6.

6   Install the mounting screws into the wall or the anchor bolts, as appropriate, and leave a gap of about 1/4-in. between the screw head and the wall.

7   Verify that no cables or wires are connected to the DPH650.

8   Lift the DPH650 into position. Slip the large end of both mounting slots (located on the back of the DPH650) over the mounting screws, and then slide the modem down until the narrow end of the keyhole slot contacts the shaft of the screw.

   Important: Verify that the mounting screws securely support the DPH650 before you release the unit.

9   Connect the cables and wires to the DPH650.

Connecting the DPH650 for Wireless Networks

> ⚠️ **WARNING:**
>
> **To avoid personal injury or damage to your equipment, follow these steps in the exact order shown.**

Power off your PC and unplug it from the power source.

1   Connect your PC to the **ETHERNET** port using the appropriate data cable.

2   Connect the active RF coaxial cable to the **CABLE** connector. Use an optional cable signal splitter to add a TV, a DHCT or set-top converter, or a VCR.

3   Insert the AC power cord into the **POWER** connector on the back of the DPH650, and then plug the cord into an AC power source.

4   Plug in and power on your networked devices including your PC. The DPH650 will then begin an automatic search to locate and sign on to the broadband data network. This process may take up to 5 minutes. The DPH650 will be ready for use when the **ONLINE** LED status indicator on the front panel stops blinking and illuminates continuously.

5   The next step in setting up your wireless network is to configure your Internet devices for Internet access by configuring the TCP/IP protocol. Go to *How Do I Configure TCP/IP Settings on My Computer?* (see "Configure TCP/IP Settings for Your PC" on page 27).

<<*The DPH650 data sheet states that this product offers "subscribers a flexible home networking solution for both wired and wireless applications." These steps explain how to connect the DPC650 for wireless networks. What are the instructions for connecting the DPH650 in a wired network For example, the front panel has a "Wireless" indicator. Does a switch need to be flipped to enable/disable the Wireless feature? Do other tasks (configuration?) need to be completed when the DPH650 is used in a wired network?*>>

Configure the DPH650

To configure the DPH650, you must first access the web configuration pages.

Accessing the Web Configuration Pages

To gain access to the web configuration pages, you must first configure you computer's TCP/IP settings and change your computer's IP address to 192.168.1.x (where X represents any number from 1 to 249). For assistance, configuring your computer's TCP/IP settings, see *Configure the TCP/IP Settings for Your PC* (see "Configure TCP/IP Settings for Your PC" on page 27).). *<<Reviewers: How can users change the IP address of their computer if they don't know how to do this?>>*

1   Open the Web browser on your PC.

2   Type the following IP address and then select **Go**:

   ■   http://192.168.1.250

3   Type **admin** for both the username and password.

Note: This procedure is not required when the DPH650 obtains its IP address automatically.

The System Page

This page gives the information about the device's model name, vendor and software version.

The Setup Page

The Setup page will let you change or configure some of the settings for the DPH650.

LAN

You may setup the LAN interface's IP address here.

   ■   **IP Address/Subnet Mask:** Enter the LAN's IP address/Subnet Mask.

   ■   **DHCP client:** Select whether to enable/disable the LAN interface to accept DHCP.

   ■   **Gateway IP:** Enter the default gateway used in the subnet.

Wireless Network

   ■   **Radio On/Off:** You may click on the button to turn on /off the wireless radio.

   ■   **Network Mode:** You may choose from the drop-down list to setup the operating mode of the wireless network.

- **Network Name:** Enter the wireless network's SSID (Service Set Identifier)in the field. The DPH650 supports multiple SSIDs. You may enter up to 3 SSIDs in the fields provided.

- **Broadcast Network Name(SSID):** You may enable/disable the broadcasting of your SSID. If you choose to disable the SSID, you will not see the DPH650 when you use site survey to search available wireless networks.

- **BSSID:** Identifies the Basic Service Set Identifier.

- **Frequency:** Selects the channel for your wireless network.

- **Wireless Distribution System (WDS):** You may extend your wireless networks by connecting several networks.

Wireless Advanced

The following Wireless Advanced settings provide additional settings for your wireless functionality.

- **Beacon Interval:** Displays the time interval that the DPH650 uses to announce itself to remote devices. Leave the Beacon Interval at 100ms for compliance with most client cards. The Beacon Interval specifies how often packets are sent by the DPH650 to synchronize a wireless network and its clients.

- **DTIM Interval:** Delivery Traffic Indication Message (DTIM) displays the time interval between broadcast/multicast transmissions. The DTIM interval is a countdown informing the wireless clients of the next window for listening to broadcast and multicast messages. When the DPH650 has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. The DPH650 clients hear the beacons and awaken to receive the broadcast and multicast messages. Leave the DTIM Interval at 3ms for compliance with most clients cards.

- **Fragmentation Threshold:** Sets the fragmentation threshold. The threshold should be set equivalent to the maximum Ethernet frame size allowable on the link including overhead (1536 bytes). Lesser settings can damage data throughput as large frames could be fragmented or collisions could occur. The factory default is 2346.

- **RTS Threshold:** Determines at what packet size beyond which the ready to send/clear to send (RTS/CTS) mechanism is invoked. The factory default is 2347.

Wifi-multimedia

You can enable Wi-Fi Multimedia (WMM) support to help improve the Quality of Service (QoS) for your wireless traffic. We recommend that you leave the settings unchanged if you are not sure with your configuration. Changing the values may lead to unexpected blockages of traffic on your wireless LAN; the blockages may be difficult to diagnose.

The WMM screen provides two separate menus to set up the parameters: one is for the DPH650 and the other one is for Wireless Stations.

Typically, voice and video traffic types are delay-sensitive, but are tolerant of some frame losses. On the other hand, data traffic type is delay-tolerable, but requires loss free transmission. So you may adjust these parameters with regard to the characteristics of these types of data to better manage your network flow.

- **AC (Access Category):** Uses the following access categories, which are listed from high to low:

    - VO: Voice

    - VI: Video

    - BE: Best Effort

    - BK: Background

- **AIFS (Arbitrary Interframe Space):** An Interframe Space for different Access Category

- **TXOP (Transmission Opportunity):** WMM (Wireless Multimedia)

- **Transmission Opportunity:** Defined by IEEE 802.11e, the TXOP is the interval of time when a particular STA (station) has the right to initiate transmissions.

- **ACM (Admission Mandatory):** Advertised in the EDCA parameter set element to indicate the admission control is required for each of the ACs.

- **EDCA AP Parameters:** The values of AIFS, CWmin, and CWmax are announced by the DPH650 via beacon frames. The DPH650 can adapt these parameters dynamically depending on the network conditions. Basically, the smaller AIFS and CWmin, the shorter the channel access delay for the corresponding priority, and hence the more capacity share for a given traffic condition. However, the probability of collisions increases when operating with smaller CWmin.

- **EDCA STA Parameters:** Each station maintains a Contention Window (CW), which is used to select the random back off counter. The BC is determined as a random integer drawn from a uniform distribution over the interval (0, CW). The CW size is initially assigned CWmin, and increases when a transmission fails, i.e., the transmitted data frame has not been acknowledged. After any unsuccessful transmission attempt, another back off timer is performed, with an upper bound of CWmax. This reduces the collision probability in case there are multiple stations attempting to access the channel.

- **CW min:** Should be smaller for delay-sensitive data

- **CW max:** Should be smaller for delay-sensitive data

- **AIFSN:** Should be smaller for delay-sensitive data

- **TXOPLimit:** Allows multiple MAC frames consecutively as long as the whole transmission time does not exceed the TXOP limit. For delay-sensitive date, keep this limit larger.

- **ACM:** Admission Mandatory; could be turned on to mandatory execution of the contention control.

Wireless Security

You may setup the encryption method for your wireless network to better protect you wireless networks.

Security Mode

Open: For this type of security mode, your wireless connection is unprotected. This is strongly not recommended.

WEP: This security mode is defined in the original IEEE 802.11. This mode is not recommended now due to its weak security protection. Users are urged to migrate to WPA or WPA2.

Default Transmit Key: Select the key to be used for data encryption.

WEP Encryption: Select a level of WEP encryption, 64 bits (10 hex digits) or 128 bits (26 hex digits). Key 1-4. If you want to manually enter WEP keys, then complete the fields provided. Each WEP key can consist of the letters "A" through "F" and the numbers "0" through "9". It should be 10 characters in length for 64-bit encryption or 26 characters in length for 128-bit encryption.

WPA-PSK: This is the WPA Algorithm. WPA offers you two encryption methods, TKIP and AES for data encryption. Select the type of algorithm you want to use, TKIP or AES. The default is TKIP.

WPA PreShared Key: Enter a PassPhrase Key of 8-63 characters.

WPA2-PSK: This is the WPA2 Algorithm. WPA2 offers you two encryption methods, TKIP and AES for data encryption. Select the type of algorithm you want to use, TKIP or AES. The default is TKIP.

WPA PreShared Key: Enter a PassPhrase Key of 8-63 characters.

802.1x: The 802.1x security method features a use in coordination with a RADIUS server. This should only be used when a RADIUS server has already been setup in the LAN.

IP Address: Enter the address of the RADIUS server.

RADIUS Port: Enter the port number of the RADIUS server. The default value is 1812.

Shared Secret: Enter the key shared between the router and the server.

Wireless WPS

The Wi-Fi Protected Setup(WPS) has aimed to ease the setup of the wireless security. You may choose to use this method if your client adapter has also supported WPS.

WPS: Allows wireless clients to be associated securely with the DPH650.

WPS mode: Allows the Personal Information Number (PIN) or Push Button Configuration (PBC) method to be used to authorize a new client to the DPH650. The PIN method requires the use to enter a client device PIN, obtained from a client application web interface. The PBC method requires the user to push buttons on the DPH650 and client devices within a two-minute period to connect them.

Management

Administrator Settings: Configures the administrator's account with the account name and password.

NTP Settings

You may select this option to have the DPH650 get the time and date from the Network Time Protocol (NTP) time server you specified below.

Time Zone: Sets the time zone where the DPH650 resides.

NTP Server: Identifies the IP address of the NTP server.

NTP Synchronization: Sets the number of seconds that the DPH650 should synchronize with the NTP server.

DDNS Settings

Dynamic DNS Provider: The DDNS provider.

Account: The DDNS account name.

Password: The DDNS Password

DDNS: The DDNS hostname assigned by your DDNS service.

Upload Firmware

You may update your firmware with this function. To apply this firmware, click Browse and select the firmware that you would like to load. Then click Apply.

Settings Management

Export Settings: Exports settings to be saved on your local disk.

Import Settings: Allows you to import firmware.

Load Factory Defaults: Replaces any settings that you have customized by loading the device with the default (factory) settings.

Status

This page shows the status of the system.

System Info

System UP Time: The uptime of the device.

System Platform: The model number of the device.

Operation Mode: The device's operation mode.

Local Network

Local IP Address/Netmask: The LAN's IP Address/Netmask.

Statistics

Memory: The amount of memory used/left.

All Interfaces

Name: The name of the interface.

RX packets: The number of packets received by the specified interface.

RX bytes: The number of bytes received by the specified interface.

TX packets: The number of packets transmitted by the specified interface.

TX bytes: The number of bytes transmitted by the specified interface.

Configure TCP/IP Settings for Your PC

To configure TCP/IP protocol, you need to have an Ethernet Network Interface Card (NIC) with TCP/IP communications protocol installed on your system. TCP/IP is a communications protocol used to access the Internet. This section contains instructions for configuring TCP/IP on your Internet devices to operate with the DPH650 in Microsoft Windows or Macintosh environments.

Configuring TCP/IP

TCP/IP protocol in a Microsoft Windows environment is different for each operating system. Follow the appropriate instructions in this section for your operating system.

Configuring TCP/IP on Windows 95, 98, 98SE, or ME Systems

1   Click **Start**, select Settings, and choose **Control Panel**.

2   Double-click the Network icon in the Control Panel window.

3   Read the list of installed network components under the **Configuration** tab to verify that your PC contains the TCP/IP protocol/Ethernet adapter.

4   Is TCP/IP protocol listed in the installed network components list?

   - If **yes**, go to step 7.
   - If **no**, click Add, click Protocol, click Add, and then go to step 5.

5   Click **Microsoft** in the Manufacturers list.

6   Click **TCP/IP** in the Network Protocols list, and then click OK.

7   Click the **TCP/IP Ethernet Adapter** protocol, and then choose **Properties**.

8   Click the **IP Address** tab, and then select **Obtain an IP address automatically**.

9   Click the **Gateway** tab and verify that these fields are empty. If they are not empty, highlight and delete all information from the fields.

10   Click the **DNS Configuration** tab, and then select **Disable DNS**.

11   Click **OK**.

12   Click **OK** when the system finishes copying the files, and then close all networking windows.

13   Click **YES** to restart your computer when the System Settings Change dialog box opens. The computer restarts. The TCP/IP protocol is now configured on your PC, and your Ethernet devices are ready for use.

14   Try to access the Internet. If you cannot access the Internet, go to *Having Difficulty?* (on page 30). If you still cannot access the Internet, contact your service provider for further assistance.

Configuring TCP/IP on Windows 2000 Systems

1   Click **Start**, select Settings, and choose Network and Dial-up Connections.

2   Double-click the **Local Area Connection** icon in the Network and Dial-up Connections window.

3   Click **Properties** in the Local Area Connection Status window.

4   Click **Internet Protocol (TCP/IP)** in the Local Area Connection Properties window, and then click Properties.

5   Select both **Obtain an IP address automatically** and Obtain DNS server address automatically in the Internet Protocol (TCP/IP) Properties window, and then click OK.

6   Click **Yes** to restart your computer when the Local Network window opens. The computer restarts. The TCP/IP protocol is now configured on your PC, and your Ethernet devices are ready for use.

7   Try to access the Internet. If you cannot access the Internet, go to *Having Difficulty?* (on page 30). If you still cannot access the Internet, contact your service provider for further assistance.

Configuring TCP/IP on Windows XP Systems

1   Click **Start**, and depending on your Start menu setup, choose one of the following options:

  ■   If you are using the Windows XP Default Start Menu, select **Connect to**, choose **Show all** connections, and then go to step 2.

  ■   If you are using the Windows XP Classic Start Menu, select **Settings**, choose **Network Connections**, click **Local Area Connection**, and then go to step 3.

2   Double-click the **Local Area Connection** icon in the LAN or High-Speed Internet section of the Network Connections window.

3   Click **Properties** in the Local Area Connection Status window.

4   Click **Internet Protocol (TCP/IP)**, and then click Properties in the Local Area Connection Properties window.

5   Select both **Obtain an IP address automatically** and **Obtain DNS server address automatically** in the Internet Protocol (TCP/IP) Properties window, and then click **OK**.

6   Click **Yes** to restart your computer when the Local Network window opens. The computer restarts. The TCP/IP protocol is now configured on your PC, and your Ethernet devices are ready for use.

7   Try to access the Internet. If you cannot access the Internet, go to *Having Difficulty?* (on page 30). If you still cannot access the Internet, contact your service provider for further assistance.

Configuring TCP/IP on Macintosh Systems

1 Click the **Apple** icon in the upper-left corner of the Finder. Scroll down to **Control Panels**, and then click **TCP/IP**.

2 Click **Edit** on the Finder at the top of the screen. Scroll down to the bottom of the menu, and then click **User Mode**.

3 Click **Advanced** in the User Mode window, and then click **OK**.

4 Click the Up/Down selector arrows located to the right of the Connect Via section of the TCP/IP window, and then click **Using DHCP Server**.

5 Click **Options** in the TCP/IP window, and then click Active in the TCP/IP Options window.

  Note: Make sure that the Load only when needed option is unchecked.

6 Verify that the **Use 802.3** option located in the upper-right corner of the TCP/IP window is unchecked. If there is a check mark in the option, uncheck the option, and then click Info in the lower-left corner.

7 Is there a Hardware Address listed in this window?

  ■ If **yes**, click **OK**. To close the TCP/IP Control Panel window, click **File**, and then scroll down to click **Close**. You have completed this procedure.

  ■ If **no**, you must power off your Macintosh.

8 With the power off, simultaneously press and hold down the **Command (Apple), Option, P,** and **R** keys on your keyboard. Keeping those keys pressed down, power on your Macintosh but do not release these keys until you hear the Apple chime at least three times, then release the keys and let the computer restart.

9 When your computer fully reboots, repeat steps 1 through 7 to verify that all TCP/IP settings are correct. If your computer still does not have a Hardware Address, contact your authorized Apple dealer or Apple technical support center for further assistance.

Having Difficulty?

Frequently Asked Questions

Q. What if I don't subscribe to cable TV?

A. If cable TV is available in your area, data service may be made available with or without subscribing to cable TV service. Contact your local cable service provider for complete information on cable services, including high-speed Internet access.

Q. How do I arrange for installation?

A. Call your service provider to inquire about professional installation. A professional installation ensures proper cable connection to the modem and to your PC, and it ensures the proper configuration of all hardware and software settings. Contact your cable telephony service provider for more information about installation.

Q. How does the DPH650 connect to my computer?

A. The DPH650 connects to the Ethernet port or to the 10/100BASE-T Ethernet port on your PC. If you want to use an Ethernet interface, Ethernet cards available from your local PC or office supply retailer, or from your service provider. You may also installed a wireless adaptor and connect to the DPH650 wirelessly.

Q. After my DPH650 is connected, how do I access the Internet?

A. You should have already installed cable modem/home gateway that is connected to the internet. Your local service provider becomes your Internet Service Provider (ISP). They offer a wide range of services including e-mail, chat, news, and information services. Your service provider will provide the software you will need.

Q. Can I watch TV and surf the Internet at the same time?

A. Absolutely! If you subscribe to cable television service, you can watch TV and use your Access Point at the same time by connecting your TV and your DPH650 to the cable network using an optional cable signal splitter.

Q. How many clients can I have over the LAN?

A. You may have 253 wireless clients.

Tips for Improved Performance

Check and Correct

If your DPH650 does not perform as expected, the following tips may help. If you need further assistance, contact the technical assistance.

- Verify that the plug to your DPH650 AC power is properly inserted into an electrical outlet.

- Verify that your DPH650 AC power cord is not plugged into an electrical outlet that is controlled by a wall switch. If a wall switch controls the electrical outlet, make sure the switch is in the ON position.

- Verify that the ONLINE LED status indicator on the front panel of the DPH650 is illuminated.

- Verify that your cable service is active and that it supports two-way service.

- Verify that all cables are properly connected, and that you are using the correct cables.

- Verify that your TCP/IP is properly installed and configured if you are using the Ethernet connection.

- If you are using a cable signal splitter so that you can connect the DPH650 to other devices, remove the splitter and reconnect the cables so that the AP is connected directly to the cable input. If the DPH650 now functions properly, the cable signal splitter may be defective and may need to be replaced.

- For best performance over an Ethernet connection, your PC should be equipped with a 10/100BASE-T network interface card.

How Do I Renew the IP Address on My PC?

If your PC cannot access the Internet after the DPH650 is online, it is possible that your PC did not renew its IP address. Follow the appropriate instructions in this section for your operating system to renew the IP address on your PC.

Renewing the IP address on Windows 95, 98, 98SE, and ME Systems

1   Click **Start**, and then click **Run** to open the Run window.

2   Type **winipcfg** in the Open field, and click **OK** to execute the winipcfg command. The IP Configuration window opens.

3   Click the down arrow to the right of the top field, and select the Ethernet adapter that is installed on your PC. The IP Configuration window displays the Ethernet adapter information.

4   Click **Release**, and then click **Renew**. The IP Configuration window displays a new IP address.

5   Click **OK** to close the IP Configuration window, you have completed this procedure.

   Note: If you cannot access the Internet, contact your service provider for further assistance.

Renewing the IP Address on Windows NT, 2000, or XP Systems

1   Click **Start**, and then click **Run**. The Run window opens.

2   Type **cmd** in the Open field and click **OK**. A window with a command prompt opens.

3   Type **ipconfig/release** at the C:/ prompt and press **Enter**. The system releases the IP address.

4   Type i**pconfig/renew** at the C:/ prompt and press **Enter**. The system displays a new IP address.

5   Click the **X** in the upper-right corner of the window to close the Command Prompt window. You have completed this procedure.

   Note: If you cannot access the Internet, contact your service provider for further assistance.

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For Information

If You Have Questions

If you have technical questions, call SciCare™ Services for assistance. Follow the menu options to speak with a service engineer. Use the following table to find the center in your area.

Region	Assistance Centers	Telephone and Fax Numbers
North America South America Central America	Atlanta, Georgia United States	**Technical Support** For *Digital Broadband Delivery System* products only, call: ■ Toll-free: 1-800-283-2636 ■ Local: 770-236-2200 ■ Fax: 770-236-2488 For all products *other than* Digital Broadband Delivery System, call: ■ Toll-free: 1-800-722-2009 ■ Local: 678-277-1120 ■ Fax: 770-236-2306 **Customer Service** ■ Toll-free: 1-800-722-2009 ■ Local: 678-277-1120 ■ Fax: 770-236-5477
Europe	England	Telephone: +44 (0) 8708-325-420 Fax: +44 (0) 8708-325-444
Asia-Pacific	Hong Kong, China	Telephone: 011-852-2588-4745 Fax: 011-852-2588-3139
Australia	Sydney, Australia	Telephone: 011-61-2-8446-5374 Fax: 011-61-2-8446-8015
Japan	Tokyo, Japan	Telephone: 011-81-3-5322-2067 Fax: 011-81-3-5322-1311