Cisco Model DPC3008 and EPC3008 8x4 DOCSIS 3.0 Cable Modem

User Guide

Please Read

Important

Please read this entire guide. If this guide provides installation or operation instructions, give particular attention to all safety statements included in this guide.

Notices

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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.

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.

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.

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.

Contents

IMPORTANT SAFETY INSTRUCTIONS

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

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

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

9) 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 are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

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

11) Only use attachments/accessories specified by the manufacturer.

12) 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.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) 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.

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! 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.

Outdoor Grounding System

If this product connects to an outdoor antenna or cable system, be sure the antenna or cable system is grounded (earthed). This provides some protection against voltage surges and built-up static charges.

Article 810 of the National Electric Code (NEC) ANSI/NFPA No. 70-1990, provides the following information:

- Grounding of the mast and supporting structure

- Grounding the lead-in wire to an antenna discharge unit

- Size of the grounding conductors

- Location of the antenna-discharge unit

- Connection to grounding electrodes

- Requirements for the grounding electrodes (see the following antenna grounding diagram as recommended by NEC ANSI/NFPA 70)

⚠ **WARNING: Avoid electric shock and fire hazard! Do not locate an outside antenna system in the vicinity of overhead power lines or power circuits. Touching power lines or circuits might be fatal.**

Example Of Antenna Grounding
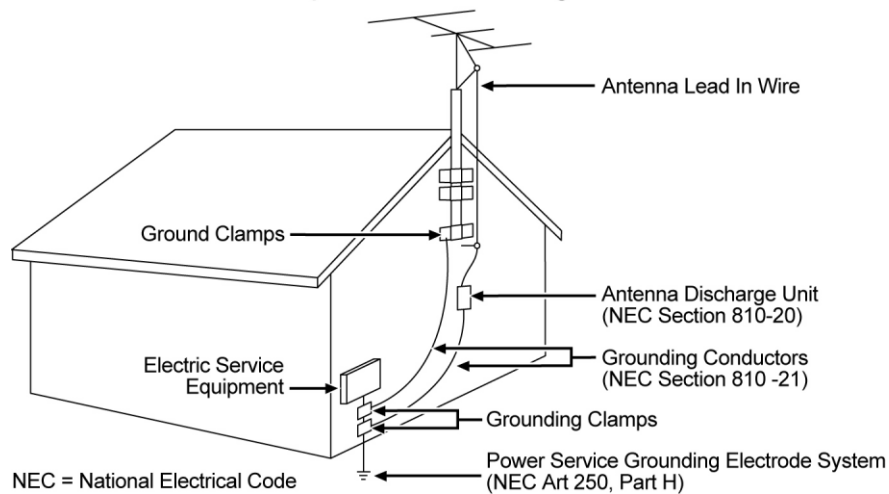
- Antenna Lead In Wire
- Ground Clamps
- Antenna Discharge Unit (NEC Section 810-20)
- Grounding Conductors (NEC Section 810 -21)
- Grounding Clamps
- Electric Service Equipment
- Power Service Grounding Electrode System (NEC Art 250, Part H)

NEC = National Electrical Code

Ground the Product

⚠ **WARNING: Avoid electric shock and fire hazard! 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

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.**

Provide Ventilation and Select a Location

- Remove all packaging material before applying power to the product.
- 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 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.
- Do not block ventilation openings.

Protect from Exposure to Moisture and Foreign Objects

> ⚠ **WARNING: Avoid electric shock and fire hazard! Do not expose this product to dripping or splashing liquids, rain, or moisture. Objects filled with liquids, such as vases, should not be placed on this apparatus.**

> ⚠ **WARNING: Avoid electric shock and fire hazard! Unplug this product before cleaning. 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.**

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.**

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.

20090915_Modem No Battery_Safety

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 service provider or an experienced radio/television technician for help.

Any changes or modifications not expressly approved by Cisco Systems, 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 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.

DOCSIS 3.0 Cable Modem
Model(s): DPC3008 EPC3008
Manufactured by:
Cisco Systems, Inc.
5030 Sugarloaf Parkway
Lawrenceville, Georgia 30044 USA
Telephone: 678-277-1120

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.

RF Exposure Statements

Note: This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 7.9 inches (20 cm) between the radiator and your body.

US

This system has been evaluated for RF exposure for humans in reference to ANSI C 95.1 (American National Standards Institute) limits. The evaluation was based in accordance with FCC OET Bulletin 65C rev 01.01 in compliance with Part 2.1091 and Part 15.27. The minimum separation distance from the antenna to general bystander is 7.9 inches (20 cm) to maintain compliance.

Canada

This system has been evaluated for RF exposure for humans in reference to Canada Health Code 6 (2009) limits. The evaluation was based on evaluation per RSS-102 Rev 4. The minimum separation distance from the antenna to general bystander is 7.9 inches (20 cm) to maintain compliance.

EU

This system has been evaluated for RF exposure for humans in reference to the ICNIRP (International Commission on Non-Ionizing Radiation Protection) limits. The evaluation was based on the EN 50385 Product Standard to Demonstrate Compliance of Radio Base Stations and Fixed Terminals for Wireless Telecommunications Systems with basic restrictions or reference levels related to Human Exposure to Radio Frequency Electromagnetic Fields from 300 MHz to 40 GHz. The minimum separation distance from the antenna to general bystander is 20 cm (7.9 inches).

Australia

This system has been evaluated for RF exposure for humans as referenced in the Australian Radiation Protection standard and has been evaluated to the ICNIRP (International Commission on Non-Ionizing Radiation Protection) limits. The minimum separation distance from the antenna to general bystander is 20 cm (7.9 inches).

20100527 FCC DSL_Dom and Intl

CE Compliance

Declaration of Conformity with Regard to the EU Directive 1999/5/EC (R&TTE Directive)

This declaration is only valid for configurations (combinations of software, firmware and hardware) supported or provided by Cisco Systems for use within the EU. The use of software or firmware not supported or provided by Cisco Systems may result in the equipment no longer being compliant with the regulatory requirements.

Language	Declaration
Български [Bulgarian]	Това оборудване отговаря на съществените изисквания и приложими клаузи на Директива 1999/5/ЕС.
Česky [Czech]:	Toto zařízení je v souladu se základními požadavky a ostatními odpovídajícími ustanoveními Směrnice 1999/5/ES.
Dansk [Danish]:	Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Direktiv 1999/5/EF.
Deutsch [German]:	Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU.
Eesti [Estonian]:	See seade vastab direktiivi 1999/5/EÜ olulistele nõuetele ja teistele asjakohastele sätetele.
English:	This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]:	Este equipo cumple con los requisitos esenciales asi como con otras disposiciones de la Directiva 1999/5/CE.
Ελληνική [Greek]:	Αυτός ο εξοπλισμός είναι σε συμμόρφωση με τις ουσιώδεις απαιτήσεις και άλλες σχετικές διατάξεις της Οδηγίας 1999/5/EC.
Français [French]:	Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la Directive 1999/5/EC.
Íslenska [Icelandic]:	Þetta tæki er samkvæmt grunnkröfum og öðrum viðeigandi ákvæðum Tilskipunar 1999/5/EC.
Italiano [Italian]:	Questo apparato é conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 1999/5/CE.
Latviski [Latvian]:	Šī iekārta atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem
Lietuvių [Lithuanian]:	Šis įrenginys tenkina 1999/5/EB Direktyvos esminius reikalavimus ir kitas šios direktyvos nuostatas.
Nederlands [Dutch]:	Dit apparaat voldoet aan de essentiele eisen en andere van toepassing zijnde bepalingen van de Richtlijn 1999/5/EC.
Malti [Maltese]:	Dan l-apparat huwa konformi mal-ħtiġiet essenzjali u l-provedimenti l-oħra rilevanti tad-Direttiva 1999/5/EC.
Magyar [Hungarian]:	Ez a készülék teljesíti az alapvető követelményeket és más 1999/5/EK irányelvben meghatározott vonatkozó rendelkezéseket.
Norsk [Norwegian]:	Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-direktiv 1999/5/EF.
Polski [Polish]:	Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami określonymi Dyrektywą UE: 1999/5/EC.
Português [Portuguese]:	Este equipamento está em conformidade com os requisitos essenciais e outras provisões relevantes da Directiva 1999/5/EC.
Română [Romanian]	Acest echipament este in conformitate cu cerintele esentiale si cu alte prevederi relevante ale Directivei 1999/5/EC.
Slovensko [Slovenian]:	Ta naprava je skladna z bistvenimi zahtevami in ostalimi relevantnimi pogoji Direktive 1999/5/EC.
Slovensky [Slovak]:	Toto zariadenie je v zhode so základnými požiadavkami a inými príslušnými nariadeniami direktív: 1999/5/EC.
Suomi [Finnish]:	Tämä laite täyttää direktiivin 1999/5/EY olennaiset vaatimukset ja on siinä asetettujen muiden laitetta koskevien määräysten mukainen.
Svenska [Swedish]:	Denna utrustning är i överensstämmelse med de väsentliga kraven och andra relevanta bestämmelser i Direktiv 1999/5/EC.

Note: The full declaration of conformity for this product can be found in the Declarations of Conformity and Regulatory Information section of the appropriate product hardware installation guide, which is available on Cisco.com.

The following standards were applied during the assessment of the product against the requirements of the Directive 1999/5/EC:

■ EMC: EN 55022 and EN 55024
　　　EN 61000-3-2 and EN 61000-3-3

■ Safety: EN 60950-1

This product conforms to the following European directives:

$C\epsilon$　　　-1999/5/EC

20090724 CE_Modem/EMTA

About This Guide

Introduction

Welcome. This guide provides instructions and recommendations for placing, installing, configuring, operating, maintaining, and troubleshooting the DPC3008 and EPC3008 DOCSIS 3.0 Cable Modems.

Purpose

This guide covers the following product models:

- DPC3008 DOCSIS 3.0 Cable Modem

- EPC3008 DOCSIS 3.0 Cable Modem

All features described in this guide are standard to these models of cable modems unless otherwise noted. For the purpose of this guide, whenever a feature or option applies to only a specific model, the model number is specified. If a model number is not specified, then the feature or option applies to both of the models.

Audience

This guide is written for the home subscriber.

Document Version

This is the second formal release of this document.

1

Introducing the DOCSIS 3.0 Cable Modem

Introduction

This chapter provides an overview of cable modem features, indicators, and connectors to help you become familiar with the cable modem and the benefits it offers. This chapter also lists the accessories and equipment that are provided with the cable modem so you can verify that you received all of these items.

In This Chapter

Introduction

Welcome to the exciting world of high-speed Internet. Your new cable modem is a cable modem that meets industry standards for high-speed data connectivity. The cable modem delivers data and wired (Ethernet) capabilities to connect a variety of devices in the home or small office and support high-speed data access, all in one device. With a cable modem, your Internet enjoyment and personal productivity will surely soar.

The DPC3008 and EPC3008 provide a faster connection to the Internet by incorporating eight bonded downstream channels along with four bonded upstream channels. These bonded channels deliver downstream data rates in excess of 340 Mbps. That's up to eight times faster than conventional single-channel DOCSIS 2.0 cable modems.

Your new cable modem offers the following outstanding benefits and features:

DOCSIS

- Eight (8) bonded downstream channels with data rates in excess of 340 Mbps (DPC) or 440 Mbps (EPC)

- Four (4) bonded upstream channels with data rates in excess of 120 Mbps

- Designed to meet DOCSIS and EuroDOCSIS 3.0 specifications as well as backward compatibility with existing DOCSIS and EuroDOCSIS 2.0, 1.1, and 1.0 networks

- Enhanced packet processing technology to maximize performance

- Expanded tuning range, 88-1002 MHz

Connections

- 10/100/1000BASE-T auto-sensing/autoMDIX Ethernet port

- Support for up to 64 users (on user-supplied Ethernet hubs)

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

- Multiple-color LED status indicators on the front-panel provide an informative and easy-to-understand display that indicates the cable modem operational status

- TR-068 color-coded connectors and cables for easy installation and setup

- Rugged electronic components for long-term reliability

Management

- Software upgradeable by network download

- Remote manageability using SNMP V1/V2 and V3

What's In the Carton?

When you receive your cable modem, 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:

One DPC3008 or EPC3008 DOCSIS 3.0 Cable Modem

One AC power adapter with power cord (image may vary from actual product)

One Ethernet cable


One CD-ROM containing the user guide

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

Note: You need an optional cable signal splitter and additional standard RF coaxial cables if you want to connect a VCR, a Digital Home Communications Terminal (DHCT) or a set-top converter, or a TV to the same cable connection as your cable modem.

Front Panel Description

The front panel of your cable modem provides LED status indicators that indicate how well and at what state your cable modem is operating. See *Operation of Front Panel Indicators* (on page 15), for more information on front panel LED status indicator functions.
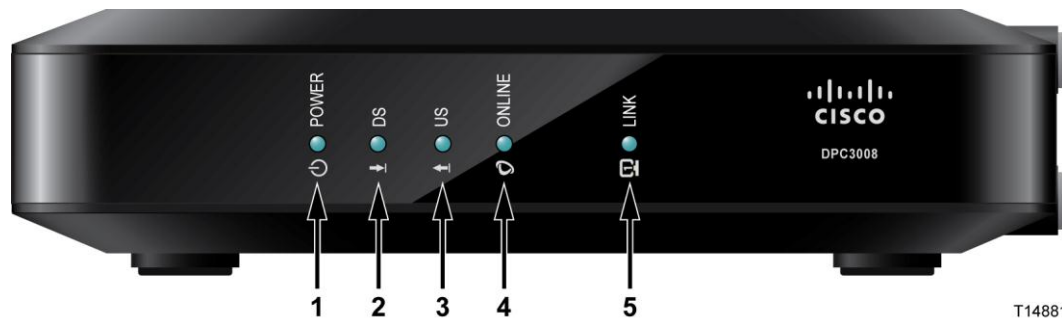
1. **POWER**—ON, power is applied to the cable modem
2. **DS**—ON, the cable modem is receiving data from the cable network
3. **US**—ON, the cable modem is sending data to the cable network
4. **ONLINE**—ON, the cable modem is registered on the network and fully operational
5. **LINK**—ON, the Ethernet connection is operational. BLINKING indicates that data is being transferred over the Ethernet connection. OFF indicates that the Ethernet connection is not connected or has been disabled by the user

Note: After the cable modem is successfully registered on the network, the POWER, DS, US, and ONLINE LEDs illuminate continuously to indicate that the cable modem is active and fully operational.

Back Panel Description

The following illustration identifies the back panel components on the DPC3008 and EPC3008 cable modems. Descriptions for each component follow the illustration.
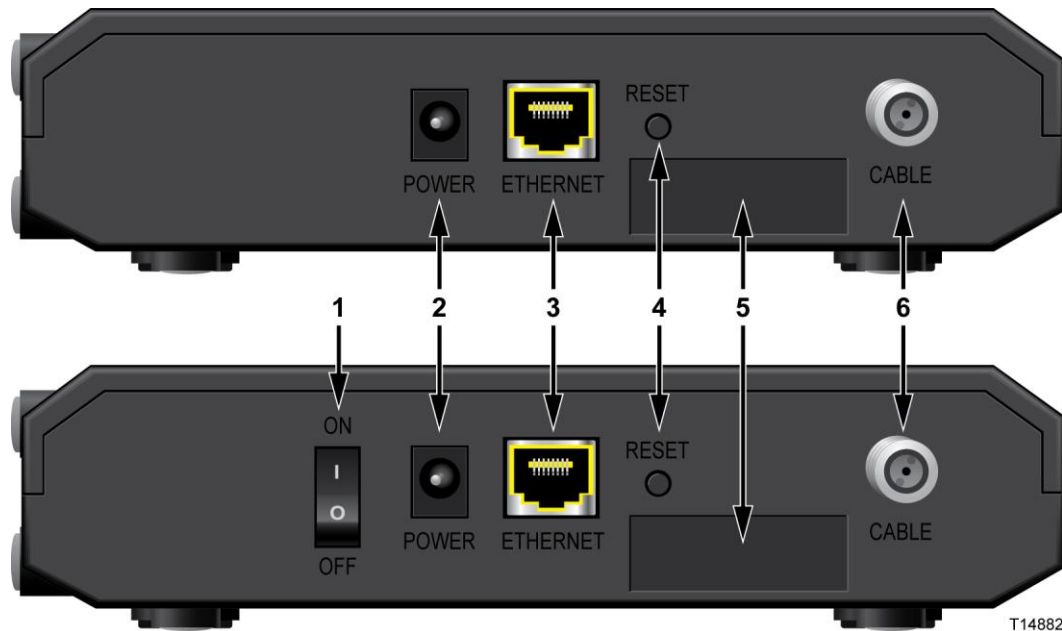
1 **ON/OFF SWITCH (Provided only on products that carry the CE mark)**—Allows you to turn off of the cable modem without removing the power cord. Turning the cable modem off using this switch ensures that the unit is consuming no energy.

   Important: Use only the power supply provided with your cable modem.

2 **POWER**—Connects the cable modem to the AC power adapter that is provided with your cable modem

3 **ETHERNET**—One RJ-45 Ethernet port connects to the Ethernet port on your PC or your home network

4 **RESET**—A momentary pressing (1-2 seconds) of this switch causes a reset-to-factory default of all settings and then reboots the cable modem

   ⚠ **CAUTION:**

   The RESET button is for maintenance purposes only. Do not use unless instructed to do so by your service provider. Doing so may cause you to lose any settings you have selected.

5 **MAC ADDRESS LABEL**—Displays the MAC address of the cable modem

6 **CABLE**—F-connector connects to an active cable signal from your service provider

2

Installing the DOCSIS 3.0 Cable Modem

Introduction

This chapter describes how to properly install the cable modem and to connect the cable modem to a computer and other devices.

In This Chapter

Installation Preparations

Before installing the cable modem make sure that your system meets or exceeds the requirements listed in this section. Also make sure that your have prepared your home and home devices as described in this section.

What Are the System Requirements for Internet Service?

To ensure that your cable modem operates efficiently for high-speed Internet service, you must have an Internet-capable PC, Mac, or Internet appliance equipped with an Ethernet port. To access the user guide for this product, you must have a CD-ROM drive.

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

What Types of Service Accounts Do I Need?

Depending upon the features your cable modem provides, you may need to establish a high-speed Internet access account with a service provider in order to take full advantage of these features.

I Do Not Have a High-Speed Internet Access Account

If you do *not* have a high-speed Internet access account, your service provider will set up your account and become your Internet Service Provider (ISP). Internet access enables you to send and receive e-mail, access the World Wide Web, and receive other Internet services.

You will need to give your service provider information about the cable modem in order to use the high-speed internet feature that this product offers. Refer to *Information Your Service Provider Needs* (on page 9) to learn how to locate the information your service provider needs to establish a high-speed Internet access account for the cable modem

### I Already Have a High-Speed Internet Access Account

If you have an existing high-speed Internet access account, you will need to give your service provider the serial number and MAC address of the cable modem in order to use the high-speed internet feature that this product offers. Refer to *Information Your Service Provider Needs* (on page 9) to learn how to locate this information.

Information Your Service Provider Needs

You will need to give your service provider the following information, which is printed on the bar code label attached to the cable modem:

- The serial number of the cable modem. The serial number consists of a series of decimal characters preceded by **S/N**.

- The CM Media Access Control (CM MAC) address of the cable modem. The CM MAC address consists of a series of hexadecimal characters preceded by **CM MAC**

- Other MAC address numbers as needed

The following illustration shows a sample bar code label; the image may vary from the label on the actual product.
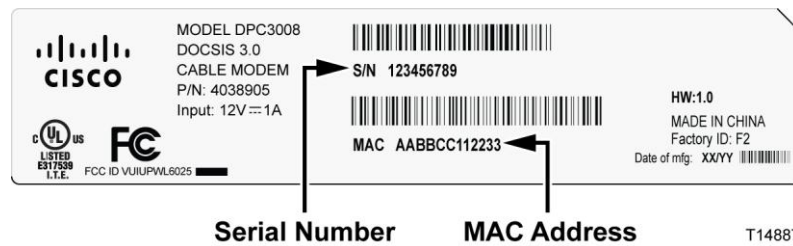
Write down these numbers in the spaces provided:

Serial Number _____

CM MAC Address _____

Where Is the Best Location for My Cable Modem?

The ideal location for your cable modem is where it has access to outlets and other devices. Think about the layout of your home or office, and consult with your service provider to select the best location for your cable modem. Read this user guide thoroughly before you decide where to place your cable modem.

Consider these recommendations:

- Choose a location close to your computer if you will also use the cable modem for high-speed Internet service.

- Choose a location that is near an existing RF coaxial connection to eliminate the need for an additional RF coaxial outlet.

- Choose a location that is relatively protected from accidental disturbance or harm, such as a closet, basement, or other protected area.

- Choose a location so that there is plenty of room to guide the cables away from the cable modem without straining or crimping them.

- Choose a location that allows adequate ventilation around the cable modem.

How Do I Mount the Cable Modem on a Wall? (Optional)

If you wish, you can mount the cable modem to a wall. This section describes how to mount the cable modem to a wall, and includes a list of equipment you will need along with suggestions for choosing an appropriate place to mount the cable modem.

Select an Appropriate Place to Mount the Cable Modem

You may mount the cable modem to a wall that is made of cement, wood, or drywall. When choosing an appropriate mounting place, refer to the following recommendations:

- Ensure that the mounting location is free of obstructions on all sides, and the cables should be able to easily reach the cable modem without strain.

- Leave sufficient clearance between the bottom of the cable modem and any flooring or shelving underneath to allow access to cabling.

- Allow enough slack in all cables so that the cable modem can be removed for any required maintenance without disconnecting the cables.

Equipment Needed

Verify that you have the following items that you will need to mount the cable modem:

- 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, as appropriate for the wall composition

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

Position the Cable Modem

Use the following illustration to guide you in positioning the cable modem on the wall.
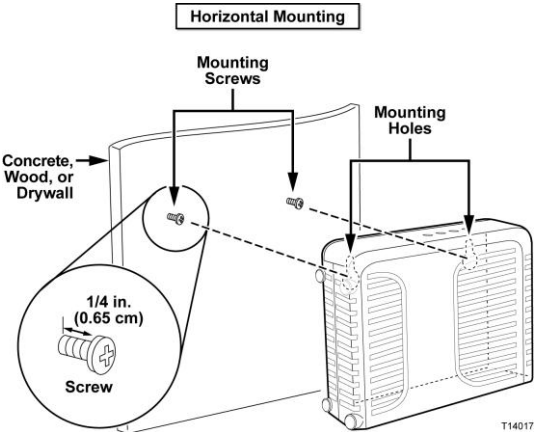
Location and Dimensions of the Wall-Mounting Slots

The following illustration shows the location and dimensions of the wall-mounting slots on the bottom of the cable modem. Use this illustration as a guide for mounting the cable modem to the wall.

Note: Image not to scale.

Mounting the Cable Modem on a Wall

1   Using a drill with a 3/16-inch bit, drill two holes at the same height and 4 inches apart.
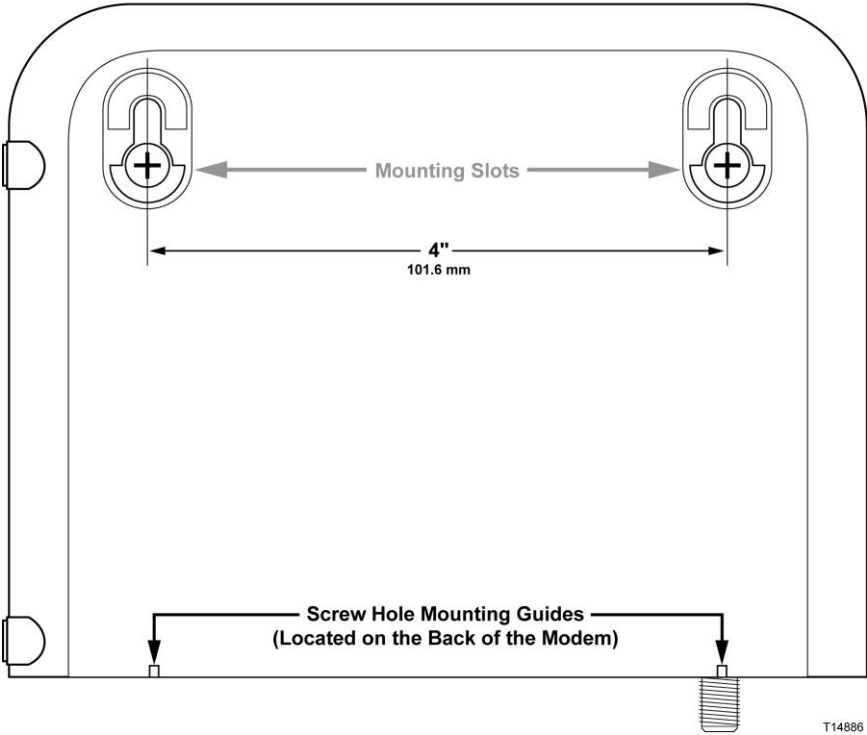
    Note: The preceding graphic illustrates the location of the mounting holes on the back of the cable modem.

2   Are you mounting the cable modem into a drywall or concrete surface where a wooden stud is available?

    ■   If **yes**, go to step 3.

    ■   If **no**, drive the anchor bolts into the wall, and install the mounting screws into the anchor bolts; leave a gap of about 1/4-inch between the screw head and the wall. Then, go to step 4.

3   Install the mounting screws into the wall; leave a gap of about 1/4-inch between the screw head and the wall. Then, go to step 4.

4   Verify that no cables or wires are connected to the cable modem.

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

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

Install the Cable Modem

This section describes how to connect your cable modem to support the services that the cable modem offers.

Connect Devices to the Cable Modem

The following illustration shows all of the possible connections that can be made to your cable modem for various services. Although your model may not support all of the services pictured, you can determine which services your model supports by referring to the Benefits and Features list in *Introduction* (on page 2).

If your cable modem to supports high-speed Internet service, you can share that Internet connection with other Internet devices in your home or office. Sharing one connection among many devices is called *networking*.

Note: Professional installation may be available. Contact your local service provider for further assistance.
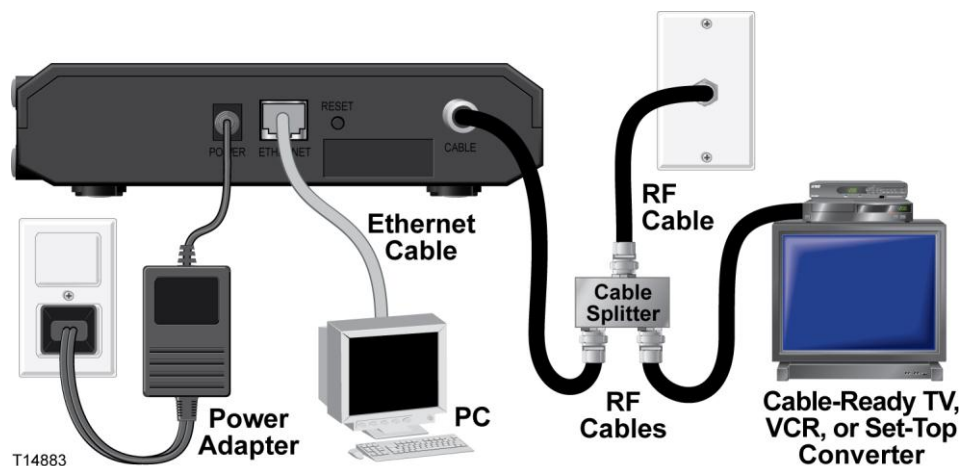
Connect the Cable Modem

The following installation procedure ensures proper setup and configuration for the cable modem.

1   Choose an appropriate and safe location to install the cable modem (close to a power source, an active cable connection, and your PC-if using high-speed Internet). For assistance, go to *Where Is the Best Location for My Cable Modem?* (on page 9).

⚠️   **WARNING:**

Hazardous electrical voltages can exist on the Ethernet or coax cable wiring. Be sure to disconnect AC power from all devices and carefully follow all instructions below.

2   Power off your PC and other networking device; then, unplug them from the power source.

3   Connect the active RF coaxial cable from your service provider to the coax connector labeled **CABLE** on the back of the cable modem.

Note: To connect a TV, DHCT, set-top, or VCR from the same cable connection, you will need to install a cable signal splitter (not included). Always check with your service provider before using a splitter as a splitter may degrade the signal.

4   Connect your PC to the cable modem by connecting one end of the yellow Ethernet cable to the Ethernet port on your PC, and the other end to the yellow ETHERNET port on the back of the cable modem .

Note: To install more than one Ethernet device, use an external multi-port Ethernet switch(s) or a cable router (not provided).

5   Locate the AC power adapter provided with your cable modem. Connect the barrel connector end of the power adapter into the POWER input on the back of the cable modem. Then, plug the AC power adapter into an AC outlet to power-up the cable modem.

Note: If your Cable Modem is equipped with a power switch (located on the back panel), make sure that the switch is in the ON position to power-up the Cable Modem.

The cable modem will perform an automatic search to locate and sign on to the broadband data network. This process may take up to 2-5 minutes. The cable modem will be ready for use when the **POWER**, **DS**, **US** and **ONLINE** LEDs on the front panel of the cable modem stop blinking and remain on continuously.

6   Plug in and power on your PC and other home network devices. The **LINK** LED on the cable modem should be on or blinking.

7   At this point, the installation is complete and you can begin surfing the Internet.

Note: If your PC does not have Internet access, refer to *How Do I Configure TCP/IP Protocol?* (on page 20) for information on how to configure your PC for TCP/IP. For Internet devices other than PCs, refer to the DHCP or IP Address configuration section of the User Guide or Operations Manual for those devices.

3

Operation of Front Panel Indicators

Introduction

This section describes the behavior of the front panel indicators when the cable modem is first powered up, during normal operations, and in special conditions.

In This Chapter

Initial Power Up, Calibration, and Registration (AC Power applied)

The following chart illustrates the sequence of steps and the corresponding appearance of the cable modem front panel LED status indicators during power up, calibration, and registration on the network when AC power is applied to the cable modem. Use this chart to troubleshoot the power up, calibration, and registration process of your cable modem.

Note: After the cable modem completes Step 7 (Data Network Registration Complete), the cable modem proceeds immediately to Normal Operations. See *Normal Operations (AC Power applied)* (on page 17).

Front Panel LED Status Indicators During Initial Power Up, Calibration, and Registration						
	High Speed Data Registration					
Step:	**1**	**2**	**3**	**4**	**5**	**6**
Front Panel Indicator	**Self Test**	**Downstream Scan**	**Downstream Signal Lock**	**Ranging**	**Requesting IP Address**	**Request High Speed Data Provisioning File**
1 POWER	On	On	On	On	On	On
2 DS	On	Blinking	On	On	On	On
3 US	On	Off	Off	Blinking	On	On
4 ONLINE	On	Off	Off	Off	Off	Blinking
5 LINK	On	On or Blinking	On or Blinking	On or Blinking	On or Blinking	On or Blinking

Normal Operations (AC Power Applied)

The following chart illustrates the appearance of the cable modem front panel LED status indicators during normal operations when AC power is applied to the gateway.

Front Panel LED Status Indicators During Normal Conditions		
Front Panel Indicator		**Normal Operations**
1	POWER	On
2	DS	On
3	US	On
4	ONLINE	On
5	LINK	■ On - When a single device is connected to the Ethernet port and no data is being sent to or from the cable modem ■ Blinks - When only one Ethernet device is connected and data is being transferred between the consumer premise equipment (CPE) and the wireless home gateway ■ Off - When no devices are connected to the Ethernet ports

Note: In addition to the above indicators, some service providers user color-coded LEDs to indicate detailed channel bonding and data link status. For additional information about color-coded LEDs, check with your service provider.

Special Conditions

The following chart describes the appearance of the cable modem front panel LED status indicators during special conditions to show when you have been denied network access.

Front Panel LED Status Indicators During Special Conditions	
Front Panel Indicator	**Network Access Denied**
1 POWER	Slow Blinking (once per second)
2 DS	Slow Blinking (once per second)
3 US	Slow Blinking (once per second)
4 ONLINE	Slow Blinking (once per second)
5 LINK	Slow Blinking (once per second)

4

Troubleshooting the DOCSIS 3.0 Cable Modem

Introduction

This chapter describes the most common issues that may occur after the cable modem is installed and provides possible solutions and tips for improved performance of the cable modem.

In This Chapter

Frequently Asked Questions

This section provides answers to common questions about the cable modem.

How Do I Configure TCP/IP Protocol?

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 cable modem in Microsoft Windows or Macintosh environments.

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 7 Systems

1   Open Network Connections by clicking the **Start** button, and then clicking **Control Panel**.

2   In the Search box, type **adapter**, and then, under **Network and Sharing Center**, click **View network connections**.

3   Right-click the connection that you want to change, and then click **Properties**. If you are prompted for an administrator password or confirmation, type the password or provide confirmation. The Local Area Connection Properties window opens.

4   Click the **Networking** tab.

5   Under **This connection uses the following items**, click either **Internet Protocol Version 4 (TCP/IPv4)** or **Internet Protocol Version 6 (TCP/IPv6)**, and then click **Properties**.

6   To specify IPv4 IP address settings, do one of the following:

- To get IP settings automatically using DHCP, click **Obtain an IP address automatically**, and then click **OK**.

- To specify an IP address, click **Use the following IP address**, and then, in the **IP address**, **Subnet mask**, and **Default gateway** boxes, type the IP address settings.

7   To specify IPv6 IP address settings, do one of the following:

- To get IP settings automatically using DHCP, click **Obtain an IPv6 address automatically**, and then click **OK**.

- To specify an IP address, click **Use the following IPv6 address**, and then, in the **IPv6 address**, **Subnet prefix length**, and the **Default gateway** boxes, type the IP address settings.

8 To specify DNS server address settings, do one of the following:

- ■ To get a DNS server address automatically using DHCP, click **Obtain DNS server address automatically**, and then click **OK**.

- ■ To specify a DNS server address, click **Use the following DNS server addresses**, and then, in the **Preferred DNS server** and **Alternate DNS server** boxes, type the addresses of the primary and secondary DNS servers.

9 To change advanced DNS, WINS, and IP settings, click **Advanced**.

10 When you are finished, click **OK**.

11 Try to access the Internet. If you 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, 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.

How Do I Renew the IP Address on My PC?

If your PC cannot access the Internet after the cable modem 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 7 Systems

1   Click the Windows **Start** button.

2   Type **cmd** in the Search box. The cmd window opens.

3   Type **ipconfig /renew** and press **Enter** to renew the IP address of the computer.

Renewing the IP Address on Windows 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 **ipconfig /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.

Renewing the IP Address on Macintosh Systems

1   Close all open programs.

2   Open your **Preferences** folder.

3   Drag the **tcp/ip preferences** file to the Trash.

4   Close all open windows and empty the Trash.

5   Restart your computer.

6   As your computer starts, 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.

7   When your computer fully reboots, click the **Apple** icon in the upper-left corner of the Finder. Scroll down to **Control Panels**, and then click **TCP/IP**.

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

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

10 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**.

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

    Note: In some cases, the **Load only when needed** option does not appear. If it appears, select the option. A check mark appears in the option.

12 Verify that the **Use 802.3** option located in the upper-right corner of the TCP/IP window is not selected. If there is a check mark in the option, select the option to clear the check mark, and then click **Info** in the lower-left corner.

13 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**.

- If **no**, repeat these instructions from step 6.

14 Reboot your computer.

What if I Don't Subscribe to Cable TV?

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 service provider for complete information on cable services, including high-speed Internet access.

How Do I Arrange for Installation?

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

How Does the Cable Modem Connect to My Computer?

The cable modem connects to the 1000/100BASE-T Ethernet port on your PC. To use the Ethernet interface, Ethernet cards available from your local PC or office supply retailer, or from your service provider. For best performance over an Ethernet connection, your PC should be equipped with a Gigabit Ethernet card.

After My Cable Modem Is Connected, How Do I Access 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.

Can I Watch TV and Surf the Internet at the Same Time?

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

Common Troubleshooting Issues

This section describes common problems and offers solutions.

I don't understand the front panel status indicators

See *Operation of Front Panel Indicators* (on page 15), for more detailed information on front panel LED status indicator operation and function.

The Cable Modem does not register an Ethernet connection

Try one of the following solutions:

- Verify that your computer has an Ethernet card and that the Ethernet driver software is properly installed. If you purchase and install an Ethernet card, follow the installation instructions very carefully.

- Verify the status of the front panel status indicator lights.

The Cable Modem does not register an Ethernet connection after connecting to a hub

If you are connecting multiple PCs to the cable modem, you should first connect the cable modem to the uplink port of the hub using the correct crossover cable. The LINK LED of the hub will illuminate continuously.

The Cable Modem does not register a cable connection

The cable modem works with a standard, 75-ohm, RF coaxial cable. If you are using a different cable, your cable modem will not function properly. Contact your service provider to determine whether you are using the correct cable.

Tips for Improved Performance

If your cable modem does not perform as expected, the following tips may help. If you need further assistance, contact your service provider.

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

- Verify that your cable modem 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 your cable modem 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.

- If you are using the Ethernet connection, verify that your TCP/IP is properly installed and configured.

- Verify that you have called your service provider and given them the serial number and MAC address of your cable modem.

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

- If you are connected to your PC with an Ethernet connection, your PC should be equipped with a Gigabit Ethernet card for best performance.

5

Customer Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.

Access your company's extranet site to view or order additional technical publications. For accessing instructions, contact the representative who handles your account. Check your extranet site often as the information is updated frequently.

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