hp digital home networking

phoneline USB network adapter

model hn210p

acknowledgements and notices

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acknowledgements

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conventions

The following conventions are used in this guide:

symbols

The > symbol guides you through a series of software steps. For example:

Click **Start > Settings > Control Panel** to view the active control panels.

warnings

A Warning indicates possible damage to the HP Gateway or to other equipment. A Warning can also indicate a possible harm to yourself or to others.

For example:

Warning: *Plugging into a nongrounded electrical socket can damage your Gateway.*

contents

introduction

hp digital home networking phoneline USB network adapter

Congratulations on your purchase of the HP Digital Home Networking Phoneline USB Network Adapter. The Phoneline USB Network Adapter allows your phone line to carry network data at the same time it carries your regular telephone voice service. There is no need for extra hubs or cables. The network runs on a standard home-grade telephone line.

The adapter is equipped with two standard telephone ports and one USB port, which connects to any 1 Mbps or 10 Mbps network without swapping devices or running multiple adapters. The adapter connects to your Windows PC's USB port. Plug the Phoneline USB Network Adapter into any standard wall jack, and you are networked.

features

The Phoneline USB Network Adapter has plug-and-play compatability with Windows 98, Millenium, 2000, and XP and includes the following:

❑ Network up to 30 computers using existing telephone line

❑ Easy plug-and-play installation

❑ 10 Mbps transfer rate over telephone lines

❑ External USB network adapter with two RJ-11 modular telephone ports

❑ USB cable and phoneline cable included — nothing more to buy

❑ Four easy-to-read LED status indicators

❑ HomePNA-compatible technology

❑ Backward compatible with 1 Mbps HomePNA-compatible hardware

❑ No hubs or switches required — data travels over your phone lines

❑ Share high-speed Internet access with your home phone line network users

getting to know the phoneline USB network adapter

ports

Phoneline USB Network Adapter Ports
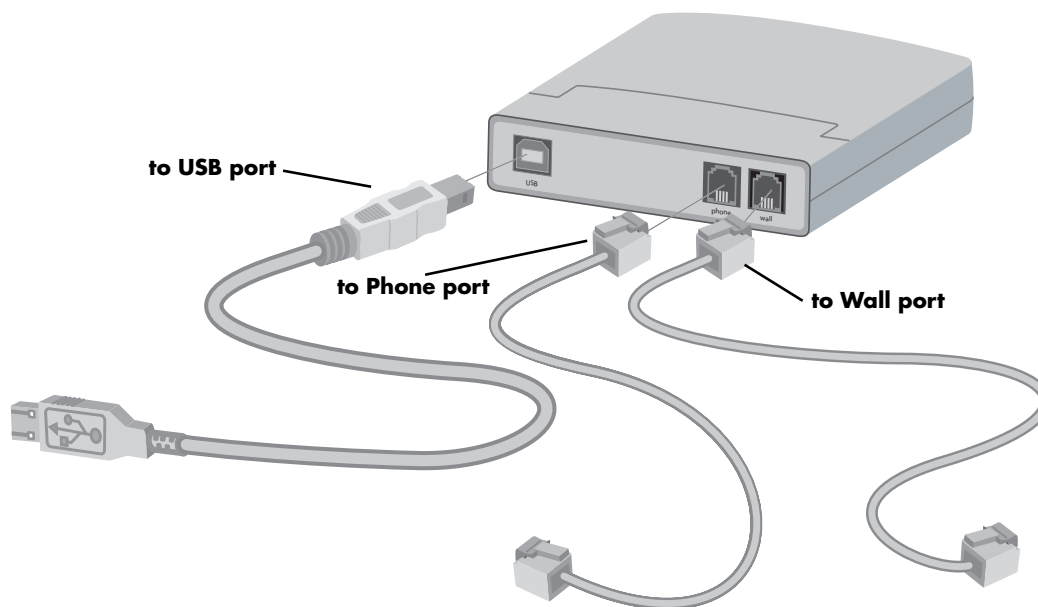
USB	Connect the Type B square end of the Universal Serial Bus (USB) cable (provided) to the adapter's USB port and the Type A rectangular end to your computer's Type A USB port.
Wall	Connect one end of the phone line cable provided to the adapter's wall port and the other to a standard phone wall jack in your home.
Phone	You can connect a telephone to the phone port if desired.

LEDs

Phoneline USB Network Adapter LEDs
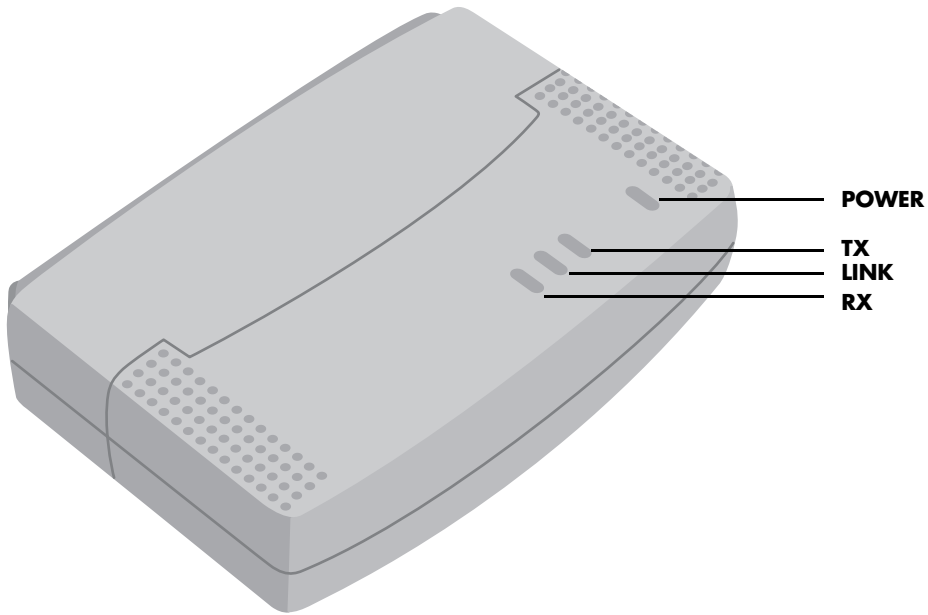
Power	Lights green when the adapter is connected to a power source.
TX	Lights green when the adapter is successfully sending data over your phoneline network.
LINK	Lights green when the adapter is actively connected to your phoneline network.
RX	Lights green when the adapter is successfully receiving (downloading) data from your phone line network.

USB icon

The USB icon identifies a USB port.

USB icon

USB cabling

The Phoneline USB Network Adapter comes with one USB cable. The cable has two plugs:

❑ Type A rectangular plug

❑ Type B square plug
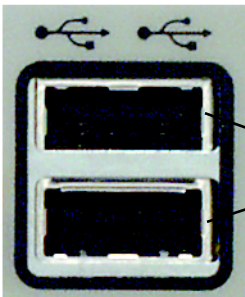
USB plugs

Type A   **Type B**

connecting the cable

Follow the steps below to connect the cable:

1 Connect the Type B square plug to the Phoneline USB Network Adapter.

2 Connect the Type A rectangular plug to the USB port of your computer.

USB port

Typical USB ports on a computer

telephone jack splitter

A telephone jack splitter (which can be purchased with two or more ports) allows you to plug a telephone and multiple computers into a single phone wall jack. Plug your telephone (or fax machine) into one of the splitter's ports and the phone line cable from the computer's network adapter into the other port.

troubleshooting

Windows does not detect new hardware with the Phoneline USB Network Adapter hardware installed, or it continues to detect the adapter each time I restart the PC.

❑ Verify that the adapter is securely inserted into the appropriate port on your computer.

❑ Verify that your system BIOS is USB compatible and that your PC's USB settings are enabled. The motherboard of your PC may have USB options not supported by your Windows operating system. If you are not sure, contact your PC's manufacturer.

Windows can't locate the driver for the Phoneline USB Network Adapter.

❑ Verify that you have inserted the correct CD-ROM into your PC's drive.

❑ The CD-ROM may be defective, files may be missing, or you may be pointing Windows to the wrong drive. Confirm that the CD-ROM includes the files BCM42CTL.DLL, BCM42RLY.SYS, BCM42RLY.VXD, BCM42U.CAT, BCM42U.INF, BCM42U.SYS, and BCMNDIU.DLL. If the files are not on the CD-ROM, contact HP customer care (see your *Quick Start Guide*).

The Windows logon screen doesn't appear after restarting the computer.

❑ Click **Start**, then click **Log Off** and log back on. If the logon screen still does not appear, the PC manufacturer may have disabled Windows networking. Contact the manufacturer for help. For Windows 2000, consult your Microsoft documentation.

On the Access Control tab, user level access is selected, but Shared Level Access is grayed out and not accessible.

❑ The primary network logon is set to Client for NetWare Networks. On the Configuration tab of the Network Properties window, set the primary network logon to **Client for Microsoft Networks**.

❑ Your personal Web server PC or Microsoft Front Page may require you to choose a user level for security reasons.

In Network Neighborhood I can see my computer but not others.

❑ Verify that the cables are connected correctly and that the **Link** and **TX LEDs** are lit on the Phoneline USB Network Adapter. Replace the cable with one you know works.

❑ Verify that the other computers are turned on.

❏ Verify that the Phoneline USB Network Adapter's phoneline configuration is set to **Auto Configuration**.

❏ If the PCs are far from each other, bring them closer together and connect them directly to each other. This will determine whether the phone line or the adapters are causing the network to malfunction.

I do not want to share a drive or printer anymore, or I want to physically remove a drive or printer from my network.

❏ You will have to manually reconfigure your File and Printer Sharing settings. To disable printer sharing:

1 From the Windows **Start** menu, select **Settings > Printers**.

2 Right-click the printer you wish to disable on the network.

3 Click **Sharing**, then select the **Sharing** tab.

4 Click **Do not share this folder**.

5 Click **Apply**, then **OK**.

❏ To disable drive sharing:

1 On your Windows desktop, double-click **My Computer**, then, right-click the drive you want to stop sharing.

2 Click **Sharing**, then select the **Sharing** tab.

3 Click **Not Shared**.

❏ Click **Apply**, then **OK**.

In Network Neighborhood, I can only see some of the computers on my network when your operating system is Windows 98.

❏ To locate computers on your network when your operating system is Windows 98:

1 On your Windows desktop, right-click **Network Neighborhood**, then select **Find Computer**.

2 In the left panel of the Computer Name box, enter the name of a missing computer and click **Find Now**.

3 Verify that you are using the same protocols and workgroup names on the computers by clicking **Start > Settings > Control Panel**, then double-clicking the **Network** icon.

4 Select the **Configuration** tab, and verify your protocol settings.

5 Add any missing protocols using the **Add** button in the Network window.

6 Select the **Identification** tab, and verify that your workgroup settings are consistent with your other computers.

❏ To locate computers on your network when the operating system is Windows 2000, Me, or XP:

1 On your Windows desktop, right-click **My Network Places**, then select **Search for Computers**.

2 In the left panel in the Computer Name box, enter the name of a missing computer and click **Search Now**.

3 Verify that you are using the same protocols on the computers as follows:

❏ From the Windows **Start** menu select **Settings > Control Panel**.

❏ Double-click the **Networking & Dialup Settings** icon.

❏ Double-click the **Local Area Connection** icon.

4 Verify that you are using the same workgroup names on the computers as follows:

❏ On the Windows desktop, right-click **My Computer** and select **Properties**.

❏ Click the **Network ID** tab. The workgroup (or domain) will be displayed.

My Network Neighborhood is empty.

❏ Verify that your Microsoft Client is installed. See the Windows setup instructions for directions.

❏ Verify that you have logged in correctly. Refresh the screen by pressing **F5** several times.

The LEDs on the adapter flash back and forth in rhythm.

❏ The driver for the Phoneline USB Network Adapter has not been properly installed. Run the installation program again from the CD-ROM.

On some laptop PCs, the Phoneline USB Network Adapter fails to configure correctly after the drivers have been loaded.

❑ After loading the drivers:

1 Log off and disconnect the adapter from your laptop's USB port.

2 Turn off your laptop.

3 Reconnect the adapter.

4 Reboot the laptop

5 Log back on.

specifications

general

Model number	hn210p
Standards	HomePNA Version 2.0-compatible, Universal Serial Bus (USB) Version 1.0 or higher
Protocol	CSMA/CD
Ports	one USB Type B port two standard modular RJ–11 telephone ports with pass-through feature
Speed	10 Mbps or 1 Mbps
Cabling	standard copper telephone cable with RJ–11 connectors
Topology	daisy chain
Bus speed	12 Mbps (buffered) USB
LEDs	Power, TX, Link, RX

environmental

Dimensions	97 mm x 66 mm x 30 mm (3.8 in x 2.6 in x 1.2 in)
Power	5V bus, powered by PC
Certifications	FCC Part 68 and Part 15, Class B
Operating temperature	32° F to 122° F (0° C to 49° C)
Storage temperature	–4° F to 158° F (–20° C to 70° C)
Operating humidity	10% to 85% noncondensing
Storage humidity	5% to 90% noncondensing

glossary

10BaseT

Ethernet standard topology for twisted pair (T) cabling (transfer rate of 10 Mbps over 100 meters).

100BaseT

Fast Ethernet twisted pair cabling (transfer rate of 100 Mbps over 100 meters).

ad-hoc network

Group of computers, each with a wireless LAN network adapter, connected as an independent wireless local area network for the duration of a single communications session. An ad-hoc wireless LAN is applicable at a departmental scale for a branch or SOHO (small office/home office) operation.

ADSL (Asymmetric Digital Subscriber Line)

A DSL modem technology geared to acceptable Internet performance in which downstream data transfer (downloading data from the Internet to the subscriber) is faster than upstream data transfer (uploading data from the subscriber).

ATM (Asynchronous Transfer Mode)

Asynchronous transfer mode (broadband switching). ATM (asynchronous transfer mode) — a dedicated-connection switching technology that transmits digital data over a physical medium using digital signal technology. An individual cell is processed asynchronously relative to other related cells and is queued before being multiplexed over the transmission path.

broadband

Fast Internet access through DSL, cable modem, or other means.

BSS (Basic Service Set)

One wireless network.

BSSID (Basic Service Set Identification)

A unique name (or ID) used by all computers on the network. A specific ad-hoc LAN. Computers in a BSS must be configured with the same BSSID.

bus topology

Simple way of connecting computers in a network linearly along a single cable (each connected to the cable, not one to another).

client/server network

Network in which one computer (the "server") shares resources with other computers, called "clients" (as opposed to a peer-to-peer network).

CSMA/CD (Carrier Sense Multiple Access/Collision Detect)

The protocol for carrier transmission access in an Ethernet network in which each device senses whether the line is idle and then sends data. If another device sends data at the same time, a collision occurs, the data is discarded, and the devices try again.

default gateway

The router used to forward all traffic not addressed to a station within the local subnet.

DHCP (Dynamic Host Configuration Protocol)

A utility for assigning TCP/IP addresses to workstations automatically (a unique IP address must be assigned to each computer in the network). When computers are moved within the network, DHCP allows automated IP addresses to be assigned automatically. DHCP "leases" an IP address to a device for a specific amount of time, which is useful in education and other environments where users change frequently. DHCP also supports static IP addresses for computers needing a permanent IP address, such as those containing Web servers. See static IP address.

DCHP Client

A device configured to receive a DHCP address.

DHCP Server

A device configured to assign IP addresses to DHCP clients.

DMZ (Demilitarized Zone)

Computer host or small network inserted as a "neutral zone" between a company's private network and the external public network. It prevents outside users from having access to an internal server containing confidential data.

DMZ Hosting

Allows one IP address (or computer) to be exposed to the Internet. Some applications require multiple TCP/IP ports to be open. It is recommended that you set your computer with a static IP address if you want to use DMZ Hosting.

DNS (Domain Name System)

Method for matching Internet domain names with IP addresses. When a Uniform Resource Locator (URL) is entered into a Web browser, a domain name server retrieves the corresponding IP address for the domain name specified ("name resolution") and sends the request to the appropriate server. Domain names are convenient "handles" for IP addresses.

DSL (Digital Subscriber Line)

Transmits data bi-directionally at high speeds.

DSSS (Direct Sequence Spread Spectrum)

Generates a redundant bit pattern for each bit to be transmitted. This bit pattern is called a chip (or chipping code). The longer the chip, the greater the probability that the original data can be recovered. Even if one or more bits in the chip are damaged during transmission, statistical techniques embedded in the radio can recover the original data without the need for retransmission. To an unintended receiver, DSSS appears as low-power wideband noise and is rejected (ignored) by most narrowband receivers.

dynamic IP address

An IP address that is automatically assigned (typically by a DHCP server) in a TCP/IP network, as opposed to a static IP address.

ESS (Extended Service Set)

More than one wireless network.

ESSID (Extended Service Set Identification)

A unique name (or ID) used by users roaming among the multiple wireless networks. An infrastructure configuration can support roaming capability for mobile workers. More than one BSS can be configured as an ESS. Users within an ESS can roam freely between BSSs while served as a continuous connection to the network. Wireless stations and wireless access points within an ESS must be configured with the same ESSID and radio channel.

Ethernet

Protocol and cabling scheme allowing transfer of data at 10 Mbps.

Ethernet card

See NIC (Network Interface Card).

FHSS (Frequency Hopping Spread Spectrum)

Uses a narrowband carrier that changes frequency in a pattern known to both transmitter and receiver. Properly synchronized, the net effect is to maintain a single logical channel. To an unintended receiver, FHSS appears to be short-duration impulse noise.

firewall

A set of related programs, located at a network gateway server, that protects the resources of a network from users in other networks. It also controls access of internal users to outside resources. A firewall, working closely with the Gateway, examines each network packet to determine whether or not to forward it to its destination.

firmware

Programming inserted permanently onto a chip within a computing device.

FTP (File Transfer Protocol)

Enables electronic exchange of bulk information over an intranet or the Internet.

gateway

Hardware or software acting as a translator between two different protocols; a router.

HomePNA (Home Phoneline Networking Alliance)

See HPNA (Home Phoneline Networking Alliance).

host

Computer on network that provides services to other computers.

HPNA (Home Phoneline Networking Alliance)

A standard for home local area networks using phoneline connections.

IEEE (Institute of Electrical and Electronics Engineers)

The IEEE promotes the development and application of electrotechnology and allied sciences, fosters the develoment of standards that often become national and international standards, publishes several journals, and has local and regional chapters.

infrastructure

LAN incorporating both wired and wirelss devices. Allows wireless devices to access a central database.

Internet

Worldwide network of networks linking millions of computers together; *see also* WAN (Wide Area Network).

intranet

Private home or business network.

IP (Internet Protocol) address

A unique 12-digit number (for example, 205.112.134.121) identifying each sender and receiver of network packets across the Internet.

IPSec (Internet Protocol Security)

A developing standard for security on the Internet.

IPX (Internet Packet eXchange)

A Novell NetWare communications protocol similar to IP (Internet Protocol) used to route messages from one node to another on a network.

ISM band

The FCC and its counterparts outside the U.S. have set aside bandwidth for unlicensed use on the ISM band. In particular, the spectrum in the vicinity of 2.4 GHz is being made available worldwide.

ISP (Internet Service provider)

Company or organization providing access to the Internet.

LAN (Local Area Network)

Computers and peripherals linked together by cabling in a home, business, or local area with communication via networking protocols.

MAC (Media Access Control) address

A computer's unique hardware number that identifies it over a network.

Mbps

Megabits per second.

NAT (Network Address Translation)

Translation of an IP address in one network to a different IP address known within another.

Netware™

Novell's network operating system.

network

System connecting two or more computers and peripherals enabling them to communicate and share resources.

network adapter

See NIC (Network Interface Card).

network mask

See subnet mask.

NIC (Network Interface Card)

Card or adapter that allows a computer to connect to a network. Also called a network adapter. Ethernet cards and phoneline adapters are examples.

PCI (Peripheral Component Interconnect)

Specification defining an interconnection system between a PC and attached devices through up to ten expansion slots.

PCMCIA (Personal Computer Memory Card International Association) card

A memory card or I/O device that is inserted into a PC, usually a notebook or laptop computer.

peer-to-peer network

Network in which all computers are of equal rank and share resources equally, as opposed to a client/server network.

peripheral

Any piece of equipment attached to a computer, including printers, scanners, CD-ROM burners, Zip drives, or other means.

Ping (Packet Internet Groper)

Internet utility used to determine whether a particular IP address is online. It can be used to test and debug a network by sending out a data packet and waiting for a response.

PNA (Phoneline Networking Alliance)

See HPNA (Home Phoneline Networking Alliance).

PPPoE (Point-to-Point Protocol over Ethernet)

Method used mostly by DSL providers for connecting personal computers to a broadband modem for Internet access. Similar to a dial-up connection but at higher speeds.

PPTP (Point-to-Point Tunneling Protocol)

Protocol allowing corporations to extend their corporate network over the Internet through private "tunnels." This has the effect of using the Internet as a large private local area network known as a "virtual private network" or VPN.

print server

A hardware device that enables a printer to be connected directly to a network.

protocol

Network language allowing devices to communicate.

proxy server

Computer with software that controls user access to Internet services and information.

ring topology

See token ring topology.

RIP (Routing Information Protocol)

Widely used protocol for routing traffic on the Internet.

RJ-11

4-wire phoneline cable connector.

RJ-45

8-wire twisted pair connector used for connecting Ethernet devices.

Roaming

Roaming allows a portable computer user to communicate continuously while moving freely throughout an area greater than that covered by a single wireless access point. Before using the roaming function, the computer must be set to the same channel as the wireless access point for the coverage area.

router

Device or software connected to at least two networks that determines where a data packet will next be forwarded on the Internet. Located at the gateway where two networks meet. Often part of a network switch.

RTS/CTS (request-to-send/clear-to-send)

In exchanging data on a network, RTS is a signal sent from one computer or other device requesting permission to send data to a receiving device; CTS is a signal from the receiving computer or device indicating it is ready to receive the data.

server

Computer on a network that provides services to other computers on the network.

SPI (stateful packet inspection)

The ability of a firewall to remember outgoing requests to the Internet from internal network users and only allow responses to those requests back through the firewall, thus denying attempts to access the local network that have not been requested.

spread spectrum

Wideband radio frequency technique designed to trade bandwidth efficiency for reliability, integrity, and security.

SSID (Service Set ID)

A generic term for a Service Set ID.

SSL (Secure Sockets Layer)

Protocol enabling encrypted and authenticated Internet communications.

star (or spanning tree) topology

Ethernet networking in which all devices (including computers, print servers, or additional hubs) are connected through a central hub.

static IP address

Permanent IP address assigned to a node in a TCP/IP network. Network devices serving multiple users, such as servers and printers, are usually assigned static IP addresses, as compared to dynamic IP address.

subnet mask

Method for splitting IP networks into a series of subgroups, or subnets. Also known as a network mask.

switch

A network device that selects a path or circuit for sending a unit of data to its next destination. It may also serve as a router, but at its basic level is simpler and faster than a router.

T1 line

High-speed communications line.

TCP/IP (Transmission Control Protocol/Internet Protocol)

Basic communication language of the Internet (but can also be used in private networks). TCP keeps track of individual data packets, while IP handles the actual delivery of the data.

TFTP (Trivial File Transfer Protocol)

A simple, easy-to-implement protocol for transferring files on a network that lacks most of the features of a normal File Transfer Protocol (FTP) program (it cannot list directories or authenticate users).

token ring topology

Networking layout in which computers and other devices are connected in a unidirectional loop or ring. A computer captures a "token" being passed around the network and waiting for data transmission.

topology

Arrangement of cables and hardware in a network; *see* bus topology, default gateway, star (or spanning tree) topology, and token ring topology.

URL (Uniform Resource Locator)

Unique address on the Internet.

USB (Universal Serial Bus)

USB ports connect high-speed peripherals; supports multiport hubs.

UTP (Unshielded Twisted Pair)

The most common kind of copper telephone wiring connecting home and many business computers to a telephone service.

VPN (Virtual Private Network)

See PPTP (Point-to-Point Tunneling Protocol).

WAN (Wide Area Network)

Communications network that extends over a wide geographic area; sometimes used to mean the Internet.

WEP (Wired Equivalent Privacy)

A data privacy mechanism based on a 64-bit shared key algorithm, as described in the IEEE 802.11 standard.

index

regulatory notices

hewlett-packard company

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

❑ This device may not cause harmful interference, and

❑ This device must accept any interference received, including interference that may cause undesired operation.

❑ Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this equipment not expressly approved by Hewlett-Packard Company may cause harmful interference, and void your authority to operate this equipment. To maintain compliance with FCC Rules and Regulations, use only cable accessories provided.

For further information, contact:

Hewlett-Packard Company
Manager of Corporate Product Regulations
3000 Hanover Street
Palo Alto, Ca 94304
(650) 857-1501

note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, can 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 the receiver.

❑ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

❑ Consult the dealer or an experienced radio/TV technician for help.