Congratulations on your purchase of the QuickTime Conferencing ISDN Kit. You can use the equipment in your kit to exchange live video and sound, view and annotate content in a shared window, and transfer files with other users using the H.320 standard.

In addition to videoconferencing, you can use your kit to:

■ **Connect to the Internet over ISDN** You can browse Web sites and download graphics and sound at very high speeds, as well as videoconference with other QuickTime Conferencing users. (To access the Internet, you must have an Internet Service Provider.)

■ **Connect to a local area network (LAN) over ISDN** Using Apple Remote Access 2.0.1 or later, you can connect to any AppleTalk network and transfer data at very high speeds. (Apple Remote Access is not included in the QuickTime Conferencing ISDN Kit. You can purchase it from an Apple-authorized dealer.)

■ **Share your desktop while videoconferencing** Using Timbuktu Pro version 2.0 or later (from Farallon), you can share your desktop with other Timbuktu Pro users and observe or control their computers. (A total of 24 MB of random-access memory [RAM] is required to use Timbuktu Pro with QuickTime Conferencing.)

IMPORTANT For information on how to configure your QuickTime Conferencing ISDN Kit to access the Internet, see the electronic manual *Connecting to the Internet* (located on the *QuickTime Conferencing* CD).

What's in this booklet

This booklet contains information on how to

- order an ISDN line

- install the H.320 ISDN card in your computer

- connect the handset and ISDN line to your computer

- configure the ISDN Setup control panel

Additionally, you'll find a tips and reference section.

IMPORTANT For information on how to install the videoconferencing software, see the online document *Installing Your Software,* located on the *QuickTime Conferencing* CD.

For onscreen instructions on using the QuickTime Conferencing software, open the Apple Media Conference program and choose Apple Media Conference Guide in the Guide (⍰) menu. The Guide is your resource for all information about using the Apple Media Conference software. For more information on using onscreen Guides, see the manual that came with your computer.

For additional information, consult the QuickTime Conferencing World Wide Web site. The Web address is **http://qtc.quicktime.apple.com**.

What's in the QuickTime Conferencing ISDN Kit

The product you purchased comes with the following accessories:

- an H.320 ISDN PCI card with a DAV (Digital Audio and Video) ribbon cable

- a telephone handset, with cord, to use while videoconferencing

- a Network Terminator 1 (NT-1) device and accessories (If you are outside the U.S., you will not need the NT-1 device.)

- an ISDN cable

- a CD containing System Software version 7.5.3 and QuickTime Conferencing software

- a disk containing the H.320 ISDN software

System requirements

To install the QuickTime Conferencing ISDN Kit, you must have the following:

- A Power Macintosh 7500, 7600, or 8500 with at least 16 MB of RAM

- an ISDN line

Ordering the ISDN line

ISDN is an international network (like the telephone network) that supports rapid data transmission. With an ISDN line, you can send and receive both voice and other data (such as pictures, files, or video images) simultaneously, at very high speeds.

The table on the next page summarizes types of ISDN lines available in the U.S. Types of ISDN lines offered may differ from region to region.

When ordering your ISDN service, refer to the guidelines in the table for the type of line you are ordering. You may want to copy the guidelines and fax them to your ISDN service provider to expedite the ordering process.

Obtaining information from ISDN service providers

When the ISDN service provider installs the ISDN line, be sure they provide you the following information:

ISDN switch type (see table) _____

Circuit switch number _____

Voice service number (SPID B1) _____

Voice telephone number (directory number B1) _____

Data service number (SPID B2) _____

Data telephone number (directory number B2) _____

ISDN Service Provider contact person _____

For future reference, write the information in the space provided.

Note: If your ISDN service provider gives you a standard 5ESS ISDN line, you will only get one phone number and one service number (SPID).

ISDN ordering information (for the U.S.)

Date: _____

To: _____   From: _____

Fax number: _____   Fax number: _____

Phone number: _____   Phone number: _____

|	National ISDN-1 (5E6, 5E7, 5E8, and 5E9)	AT&T Custom 5ESS (with BCS-33 through BCS-36)	Northern Telecom DMS Custom
Service type	Choose Circuit-Switched Data (CSD) on the first B-channel. Choose Circuit-Switched Data/Voice (CSD/V) on the second B-channel.	Choose Circuit-Switched Data (CSD) on the first B-channel. Choose Circuit-Switched Data/Voice (CSD/V) on the second B-channel.	Choose Circuit-Switched Data (CSD) on the first B-channel. Choose Circuit-Switched Data/Voice (CSD/V) on the second B-channel.
TEI assignment	Dynamic	Dynamic	Dynamic
Number of call appearances	1 if you choose CSD/V; otherwise none	1 if you choose CSD/V; otherwise none	N/A
Terminal type	A (basic call terminal)	D if you choose CSD/V; otherwise A (basic call terminal)	A (basic call terminal)
EKTS	No	No	No
Maximum number of B-channels	2	2	2
Bearer service restrictions	None (DMD on both channels)	None (DMD on both channels)	None
Packet mode	No	No	N/A
Phone numbers and SPIDs	2 (one per B-channel), 2 SPIDs	1 phone number, no SPID	2 (one per B-channel), 2 SPIDs
Protocol version control (PVC)	2 (on Northern Telecom lines only)	N/A	N/A
One touch	N/A	No	N/A
Auto hold	N/A	No	N/A
Line configuration	N/A	Point-to-point (do not order multipoint)	N/A
Ringer indicator	N/A	N/A	Yes
Authorized call types	N/A	N/A	CMD
MXK	N/A	N/A	Not applicable, or default
	Make sure you receive the correct service profile identification numbers (SPIDs) with your ISDN line. Also make sure your ISDN provider informs you which B-channel has voice capabilities.	*Note:* The information in this section is for Custom 5ESS lines only. If you can order a 5ESS line that is configured to the National ISDN-1 standard, please refer to those guidelines.	Make sure you receive the correct service profile identification numbers (SPIDs) with your ISDN line. Also make sure your ISDN provider informs you which B-channel has voice capabilities.

Installing the H.320 card

The H.320 card may have already been installed in your computer by an authorized service representative; if it was not, follow these steps:

1 **Refer to the manual that came with your computer. Locate the chapter that explains how to install an expansion card. Follow the instructions to remove the computer's cover.**

2 **Plug the connector at the end of the H.320 card's ribbon cable into the computer's DAV port.**

3 **Install the card. (Follow the instructions in the manual that came with your computer.) The illustrations that follow show the card installed in each model of computer.**

Power Macintosh 7500 and Power Macintosh 7600

H.320 card

Ribbon cable

DAV connector

(front of computer)

Power Macintosh 8500

H.320 card

Ribbon cable   DAV connector
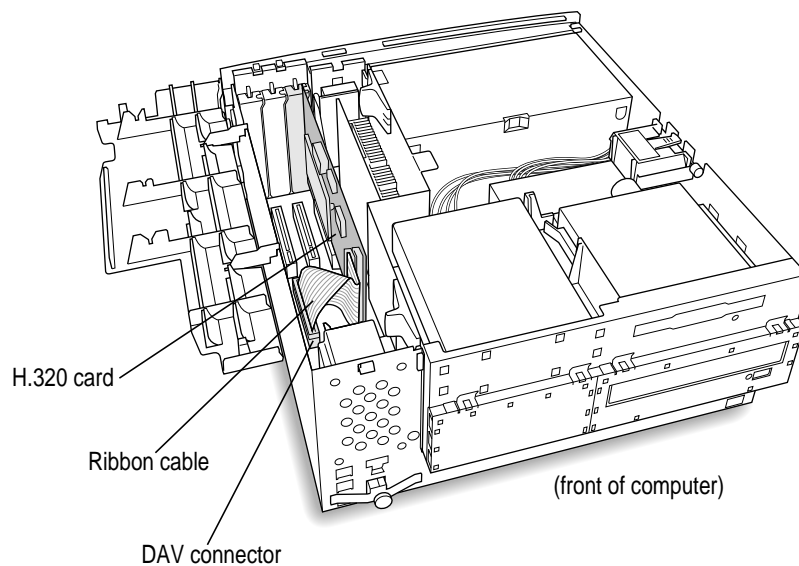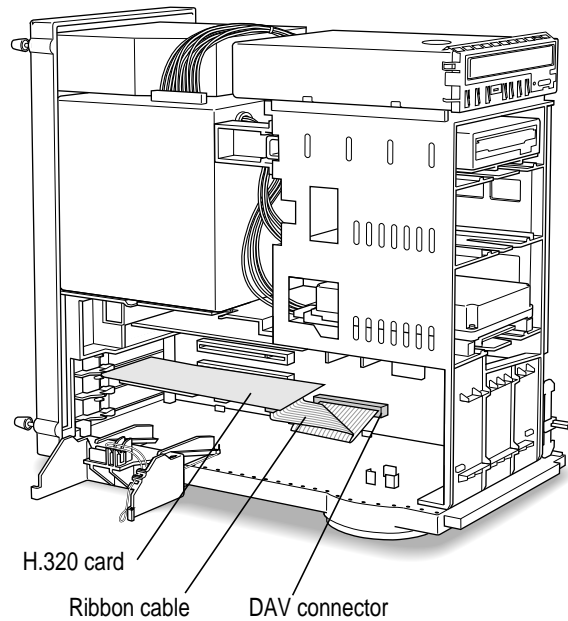
4   **Verify that the card is properly connected. Pull it gently. If it resists and stays in place, it's connected.**

5   **Replace the computer's cover.**

Follow the instructions in the computer's manual to replace the cover.

Plugging in the handset and ISDN cable

1   Connect the telephone handset and ISDN cable provided in your kit to the ports on the H.320 card.

This illustration shows how to connect the telephone handset and ISDN cable to a Power Macintosh 8500. If you have a Power Macintosh 7500 or 7600, plug the handset into the lower jack, and one end of the ISDN cable into the upper jack.
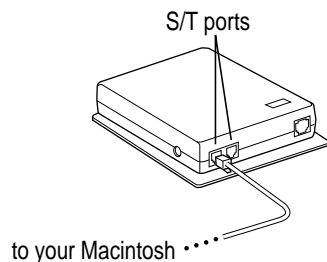
Plug the handset into the left-hand jack.

Plug one end of the ISDN cable into the right-hand jack.
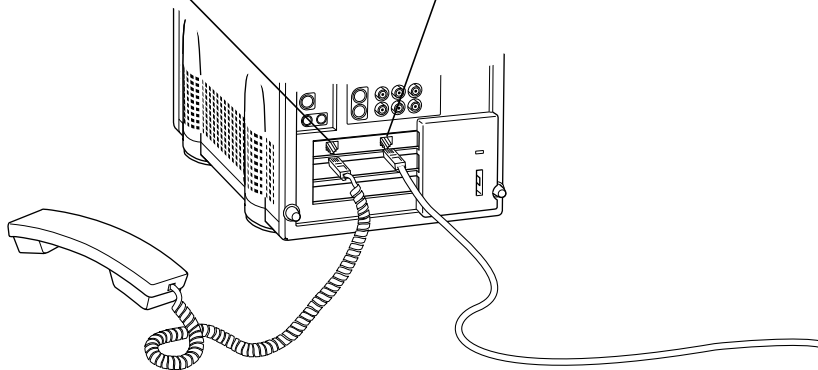
2   Insert the other end of the ISDN cable into the NT-1 device's S/T port.

The NT-1 device has two S/T ports; you can insert the ISDN cable into either of the two ports.

S/T ports

to your Macintosh

IMPORTANT If you have an S-interface wall outlet, you do not need to use the NT-1 device. Instead, insert the other end of the ISDN cable into the S-interface wall outlet.

Connecting the NT-1 device to the ISDN line (for the U.S.)

Inside the NT-1 box, you'll find the cables you need to connect the NT-1 device to the ISDN line.

You will need the

- power adapter
- RJ-45 cable (the wide cable with the large connector) *or* the RJ-11 cable (the narrow cable with the small connector)

Note: Depending on the size of your ISDN line's wall outlet (U-interface), you will need to use either the RJ-45 cable or the RJ-11 cable.
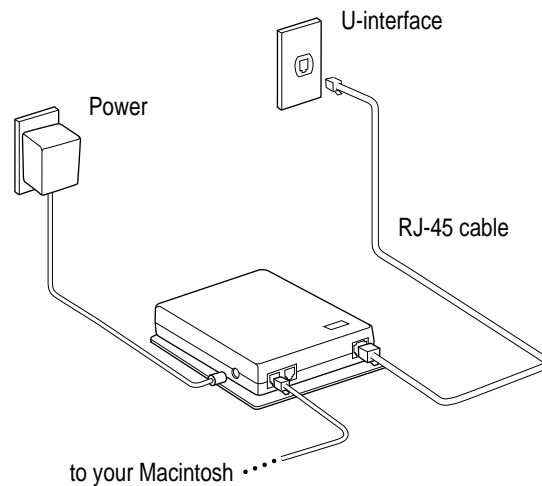
1 Plug the connector end of the power adapter into the side of the NT-1 device.

2 Plug the other end of the power adapter into the power outlet.

3 Plug one end of the RJ-45 (or the RJ-11) cable into the U-interface on the NT-1 device.

4 Plug the other end of the RJ-45 (or RJ-11) cable into your ISDN line wall outlet.

Note: For additional information about the NT-1 device, see the manual that came in the NT-1 box.

IMPORTANT The only way to disconnect power completely is to unplug the power cord. Make sure that at least one end of the power cord is within reach so that you can unplug the NT-1 device in an emergency.

Configuring the ISDN Setup control panel

Before you can start videoconferencing, you must configure the ISDN Setup control panel. This section summarizes the setup procedure. For detailed information, see the online Apple Media Conference Guide, available in the Guide (⌘) menu when Apple Media Conference is active.

1 **Open the ISDN Setup control panel.**

Choose Control Panels from the Apple (⌘) menu; then choose ISDN Setup from the submenu that appears.
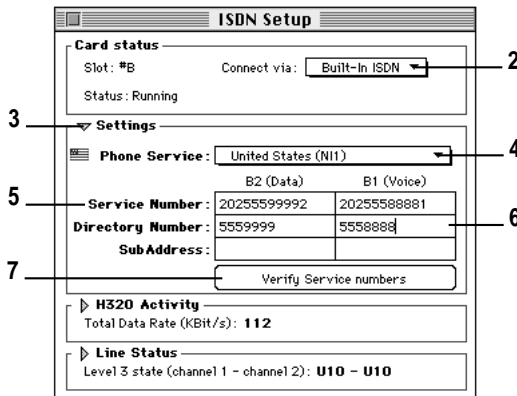
Can't find the control panel? If you don't see the ISDN Setup control panel in the Control Panels folder, you need to install the software. For instructions, see the online document *Installing Your Software,* located on the *QuickTime Conferencing* CD.

2 **Open the "Connect via" pop-up menu and choose Built-In ISDN.**

3 **Click the triangle next to Settings to display the Phone Service pop-up menu. (Skip this step if the pop-up menu is already showing.)**

4 **Open the Phone Service pop-up menu and choose the appropriate settings for your country. There are two choices for the USA and Canada (NI1 or 5ESS).**

If your ISDN service provider gave you one service number (SPID), choose 5ESS. If you have two service numbers (SPIDs), choose NI1.

5   **Enter your ISDN Service Profile Identifier (SPID) service number(s). For USA and Canada (NI1) enter both the voice and data numbers for your ISDN line.**

Note: Often your SPID service numbers look similar to your ISDN telephone numbers. The SPID number can include up to four additional numbers. In this example, the SPID number for voice has the number "1" appended to the telephone number, and the SPID number for data has the number "2" appended.

6   **Enter your ISDN telephone number(s).**

An ISDN telephone number is also called a directory number. (Your videoconferencing partner needs to have your ISDN phone number(s) in order to call you.)

7   **Click "Verify Service numbers" to make sure that the service number(s) (SPIDs) and directory number(s) are entered correctly. (Make sure that the Apple Media Conference program is not running.)**

For additional troubleshooting information, see the manual that came with your NT-1 device.

Note: Once you have configured the ISDN Setup control panel, you may want to make a copy of it and place it in the Control Panels (Disabled) folder within the System Folder. If the ISDN Setup control panel should get corrupted, you will have a backup copy.

The areas at the bottom of the ISDN Setup control panel contain information about the status of your connection when you are communicating with others over an ISDN network. To see this information, click the triangles next to H320 Activity and Line Status so they point downward.

Note: See "Tips and Reference" later in this booklet for additional information about the H320 Activity area and the Line Status area of the ISDN Setup control panel.

Opening Apple Media Conference

The Apple Media Conference program is located on your hard disk, in a folder named QuickTime Conferencing. (If you have more than one hard disk, the folder is located on the disk you specified when installing the software.)

To open Apple Media Conference, double-click its icon.

Apple Media Conference

Can't find Apple Media Conference? If you can't find the Apple Media Conference program, you need to install the software. For instructions, see the online document *Installing Your Software,* located on the *QuickTime Conferencing* CD.

When you open Apple Media Conference for the first time, you will be asked to select the type of videoconferencing calls you want to receive. The QuickTime Conferencing ISDN Kit is automatically set up to receive calls over ISDN. (To receive calls over a TCP/IP network instead, click Enable TCP/IP.)

> You will not be able to receive calls using TCP/IP because TCP/IP is disabled. To enable it, go to the TCP Switch panel in the Preferences dialog and select TCP/IP.
>
> [Don't Warn Me Again]   [Enable TCP/IP]   [OK]
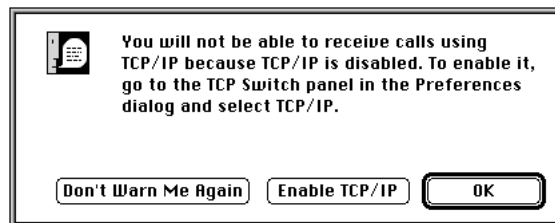
Once you select the call type, you may be asked to type your user name. After you type your name and click OK, you'll see a message asking if you want to go directly to Apple Media Conference Guide, an Apple Guide online help system.

Welcome to Apple Media Conference, a program that lets you set up conferences and collaborate with others, exchanging live video and sound, and sharing information over a network.

Before you begin, you need to:

• Set up your video and sound equipment (optional)
• Specify the type of network your computer is on
• Set your preferences

You may use the guide now, or use it later by using the Guide (?) menu and choosing Apple Media Conference Guide.

Would you like to use the Guide now?

Yes   No

Click here to see instructions for setting up the program.

Click Yes to see instructions that will lead you through setting up your equipment and network. These instructions are part of Apple Media Conference Guide, a complete online reference to answer any questions you may have about Apple Media Conference. When Apple Media Conference is the active program, the Apple Media Conference Guide is available in the Guide (②) menu.

Tips and reference

This section includes:

- tips on how to configure QuickTime Conferencing for use over an H.320 ISDN connection or the Internet over ISDN

- explanations of the line status messages that appear in the ISDN Setup control panel

- explanations of the H.320 activity information that appears in the ISDN Setup control panel

Configuring QuickTime Conferencing for use over different networks

You can use the QuickTime Conferencing ISDN Kit to connect with other QuickTime Conferencing users over either a direct H.320 ISDN connection or the Internet. You need to configure your QuickTime Conferencing software according to your connection method.

The following table summarizes the default settings for each type of connection. For detailed steps on how to configure the QuickTime Conferencing software, see the online Apple Media Conference Guide.

Connection type	Network * connection port	Call using (Network Protocol)	Audio compression	Video compression
H.320 ISDN	MacPPP	H.320	G.728 ***	Hardware H.261
Internet via				
■ **ISDN**	MacPPP	TCP/IP	µGSM **	Software H.261

* Select the network connection port in the TCP/IP control panel.

** Sample rate = 8 kHz, 8 bit, mono

*** Sound source = Hardware H.320

Understanding the status messages in the ISDN Setup control panel

The ISDN Setup control panel provides information about your current ISDN status. It indicates whether your H.320 card is ready for use, whether you are placing or receiving a call, or whether you have an ISDN connection. (To see this information, open the ISDN Setup control panel and click the triangle next to Line Status.)

Click the triangle to display ISDN line status.

The messages in the Level 3 state provide current information about your ISDN connection.

```
┌──────────────────── ISDN Setup ────────────────────┐
│ ┌ Card status ──────────────────────────────────┐  │
│ │ Slot: #B          Connect via: │Built-In ISDN ▼│ │
│ │                                               │  │
│ │ Status: Running                               │  │
│ ├ ▷ Settings ───────────────────────────────────┤  │
│ │ Country: United States (NI1)                  │  │
│ ├ ▷ H320 Activity ──────────────────────────────┤  │
│ │ Total Data Rate (KBit/s): 112                 │  │
│ ├ ▽ Line Status ────────────────────────────────┤  │
│ │                 Channel 1      Channel 2      │  │
│ │   Usage          H320           H320          │  │
│ │   Tei / Usld    0x42 / 0xFF    0x43 / 0xFF    │  │
│ │   Level 1 state      F7 - activation          │  │
│ │   Level 2 state  7 - established  7 - established │
│ │   Level 3 state  U10 - connected  U10 - connected │
│ └───────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────────┘
```

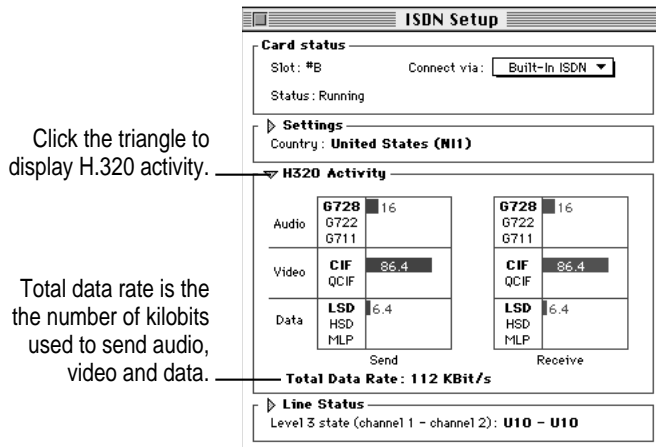"F7-activation" indicates that your computer is properly connected to an ISDN line.

The messages that appear in the Level 3 state (towards the bottom of the ISDN Setup control panel) provide current information about your ISDN connection. Here are some of the messages you are likely to see:

Level 3 state message	Description
U0-inactive	Your H.320 ISDN card is ready to place and receive calls.
U3-initiated call	The network has received your call and is routing it to the number you are dialing.
U4-call presented	The network has delivered your call to the number you are dialing. You are waiting for the receiver to accept your call.
U7-call received	Your H.320 ISDN card is accepting an incoming call.
U10-connected	The ISDN connection is established.

Understanding the H.320 activity information in the ISDN Setup control panel

The ISDN Setup control panel provides information about the activity on your H.320 ISDN connection. (To see this information, open the ISDN Setup control panel and click the triangle next to H320 Activity.)

You can use the activity information to confirm that you are sending audio, video, and other data across the H.320 ISDN connection.

Click the triangle to display H.320 activity.

Total data rate is the the number of kilobits used to send audio, video and data.

The audio field shows the rate at which audio data is transferred over the ISDN connection and the type of audio compression that is used.

The video field shows the rate at which video data is transferred over the ISDN connection and the type of video format that is used.

Note: For detailed steps on how to change the audio compression and the video format, see the online Apple Media Conference Guide.

The data field shows the rate at which other data (such as the content on the whiteboard) is transferred across the network. (LSD indicates that the data is being sent over a low-speed data channel.)

Note: Data rate allocation is done automatically. For example, if you send a large file to your videoconferencing partner, the H.320 software will temporarily increase the data rate for data, and decrease the data rate for video.

Communications regulation information

FCC statement

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. See instructions if interference to radio or television reception is suspected.

Radio and television interference

The equipment described in this manual generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple's instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio. (That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, consult an Apple-authorized service provider or Apple. See the service and support information that came with your Apple product. Or, consult an experienced radio/television technician for additional suggestions. You may find the following booklet helpful: *Interference Handbook* (stock number 004-000-00493-1). This booklet, prepared by the Federal Communications Commission, is available from the U.S. Government Printing Office, Washington, DC 20402.

IMPORTANT Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC Certification and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Apple peripheral devices and Apple shielded cables and connectors between system components. It is important that you use Apple peripheral devices and shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. You can obtain Apple peripheral devices and the proper shielded cables and connectors through an Apple-authorized dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance.

Industry Canada statement

This Class B device meets all requirements of the Canadian Interference-Causing equipment regulations.

Cet appareil numérique de la Class B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

VCCI Class 2 statement

情報処理装置等電波障害自主規制について

この装置は、第二種情報装置（住宅地域又はその隣接した地域において使用されるべき情報装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

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取扱説明書に従って正しい取り扱いをしてください。

QuickTime Conferencing
ISDN Kit

Hardware Installation Manual