Maintenance and Service Guide

HP Compaq tc1100 Tablet PC

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This guide is a troubleshooting reference used for maintaining and servicing the tablet PC. It provides comprehensive information on identifying tablet PC features, components, and spare parts, troubleshooting tablet PC problems, and performing tablet PC disassembly procedures.

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1

Product Description

Depending on model, the HP Compaq tc1100 Tablet PC offers a 1.1-GHz Intel® Pentium® M or 900-MHz Ultra Low Voltage Intel Celeron® M processor with 512-KB cache, a 10.4-inch color TFT XGA display, up to 2 GB of 333-MHz DDR SDRAM, and NVIDIA GeForce4 420 Go 4X AGP graphics with 32 MB of video DDR SDRAM.

The primary pointing device on the tablet PC is the tablet PC pen. Handwriting recognition software is available in Microsoft® Windows® XP Tablet PC Edition 2005, the operating system installed on the tablet PC.

HP Compaq tc1100 Tablet PC

The optional keyboard is slightly smaller than a full-size notebook keyboard and it provides 101 data entry keys, cursor control keys, and a pointing stick device.

The optional HP Tablet PC Docking Station (not shown) provides access to a MultiBay and a variety of connectors.

HP Compaq tc1100 Tablet PC with Optional Keyboard

1.1 **Features**

■ 1.2-, 1.1-, or 1.0-GHz Intel Pentium M processor

– or –

■ 900- or 800-MHz Ultra Low Voltage Mobile Intel Celeron M processor with 512-KB integrated cache, depending on model

■ NVIDIA GeForce4 420 Go 4X AGP graphics controller with 32-MB SDRAM

■ 1.0-GB, 768-MB, 512-MB, or 256-MB high-performance DDR SDRAM, expandable to 2 GB, depending on model

- Microsoft Windows XP Tablet PC Edition 2005

- 10.4-inch XGA (1024 × 768) TFT display with over 16.7 million colors

- Keyboard with pointing stick device

- Integrated communication—one of the following:

  ❏ Type III Mini PCI 56Kbps, v.90/high-speed 56K modem, wireless LAN 802.11b, and 10/100 network interface card (NIC)

  ❏ Type III Mini PCI 56Kbps, v.90/high-speed 56K modem and 10/100 network interface card (NIC)

- Integrated Bluetooth® on select models only

- One Type III PC Card slot with support for both 32-bit (CardBus) and 16-bit PC Cards

- One Secure Digital (SD) Memory Card slot

- External 65 W AC adapter with power cord

- Six-cell, 11.1 V, 3.6-Ah Li-Ion battery pack

- 80-, 60-, 40-, or 30-GB high-capacity hard drive, varying by tablet PC model

- Support for the following drives through the MultiBay (with optional External MultiBay or docking station):

  ❏ 1.44-MB diskette drive

  ❏ 24X Max CD-ROM drive

  ❏ 8X Max CD-RW drive

  ❏ 8X Max DVD-ROM drive

  ❏ 8X Max DVD/CD-RW Combo Drive

  ❏ 80-, 60-, 40-, or 30-GB hard drive

■ Support for the following connectors on the tablet PC:

❏ RJ-45 (network)

❏ RJ-11 (modem)

❏ Universal Serial Bus

❏ External monitor

❏ AC power

❏ Stereo audio-out (headphone)

❏ Mono microphone

❏ External MultiBay

❏ Keyboard

❏ Docking station

■ Support for the following connectors on the optional Docking Station:

❏ External MultiBay

❏ RJ-45 (network)

❏ USB

❏ External monitor

❏ AC power

❏ Stereo audio-out (headphone)

1.2 **Clearing a Password**

If the tablet PC has an unknown setup or power-on password, follow these steps to clear the password. These steps do not clear the drivelock password.

1. Remove the battery pack and Mini PCI communications memory module slot cover. Refer to Section 5.3, "Preparing the Tablet PC for Disassembly," for more information.

2. Remove the RTC battery (refer to Section 5.4, "Real-Time Clock Battery").

3. Wait approximately 5 minutes.

4. Replace the RTC battery and reassemble the tablet PC. Do *not* reinsert the battery pack at this time.

5. Connect AC power to the tablet PC.

6. Turn on the tablet PC.

All setup and power-on passwords have been cleared.

1.3 **Power Management**

The tablet PC comes with power management features that extend battery operating time and conserve power. The tablet PC supports the following power management features:

■ Standby

■ Hibernation

■ User customization of settings

■ Smart battery that provides an accurate battery power gauge

■ Battery calibration

■ Power/standby button

■ Advanced Configuration and Power Interface (ACPI) compliance

1.4 **Tablet PC External Components**

The external components on the front of the tablet PC are shown in the following illustration and described in Table 1-1.
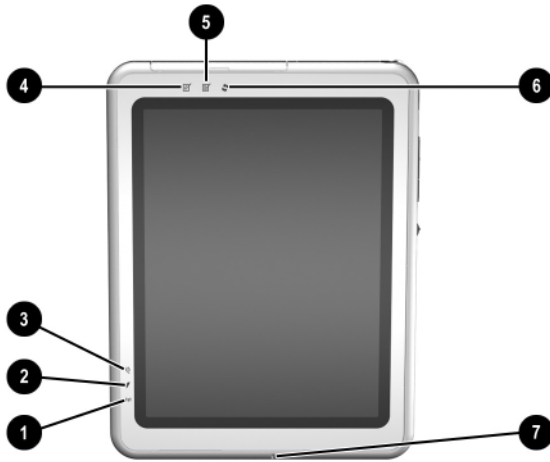
Front Components

**Table 1-1
Front Components**

Item	Component	Function
1	Wireless light	Off: No wireless device is active.
		On: Wireless functionality is enabled.
		Flashing: Wireless functionality is enabled, but is not connected to a network or is not properly configured.
2	Battery light	On: A battery pack is charging.
		Flashing: A battery pack that is the only available power source has reached a low-battery condition.
3	AC adapter light	On: AC power is being supplied through the AC adapter.
4	Tablet PC Input Panel launch button	When Windows is running, opens the Microsoft Tablet PC Input Panel application, which includes a handwriting pad and an on-screen keyboard. While using the on-screen keyboard:
		■ To enter the **ctrl+alt+delete** command, press the button on the tablet PC with the pen tip or a small object such as the end of a paper clip.
		■ To switch the top row of keys between number keys and function keys, tap **Func** on the on-screen keyboard.
5	Journal launch button	When Windows is running, opens and closes the Microsoft Journal application, which supports handwriting.
6	Rotate button	Switches the image between landscape and portrait orientation.
7	Microphone	Inputs monaural sound.

The external components on the top side of the tablet PC are shown in the following illustration and described in Table 1-2.
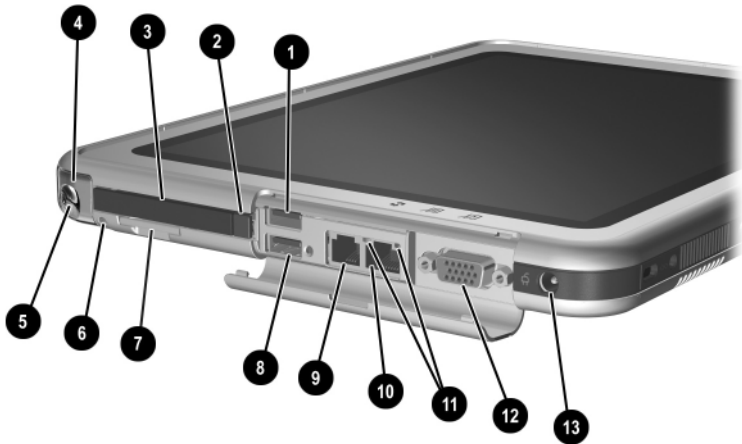
Top Components

Table 1-2
Top Components

Item	Component	Function
1	USB port*	Connects an optional USB 2.0 - or - 1.1 compliant device.
2	PC Card eject button	Ejects an optional PC Card from the PC Card slot.
3	PC Card slot	Supports an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card.

*If an optional External MultiBay is connected to the USB port, the External MultiBay must also be connected to external power. If an External MultiBay is connected to the External MultiBay connector, it is not necessary to connect the External MultiBay to external power.

Table 1-2
Top Components *(Continued)*

Item	Component	Function
4	Pen holder (shown with pen ❺ inserted)	Secures the pen to the tablet PC.
5	Pen	Interacts with the tablet PC whenever the tip is within 0.5 inch of or contacts the screen.
6	Tablet PC tether eyelet	Used with the tether eyelet on the pen, enables you to tether the pen to the tablet PC.
7	SD Card slot	Supports an optional SD Card.
8	External MultiBay connector*	Connects and provides power for an optional USB 1.1 or USB 2.0 device.
9	RJ-11 (modem) jack	Connects a modem cable.
10	RJ-45 (network) jack	Connects an Ethernet network cable.
11	LAN connection lights (2)	Both lights off: The tablet PC is not connected to a LAN.
		Both lights on: The tablet PC is connected to a LAN with a 100-Mbps link.
		Green light on and yellow light off: The tablet PC is connected to a LAN with a 10-Mbps link.
		Green light flashing: Information is being transmitted through the LAN.
12	External monitor port	Connects an optional external monitor or projector.
13	AC power connector	Connects an AC adapter cable, aircraft power adapter, or automobile power charger/adapter.

*If an optional External MultiBay is connected to the USB port, the External MultiBay must also be connected to external power. If an External MultiBay is connected to the External MultiBay connector, it is not necessary to connect the External MultiBay to external power.

The external components on the left side of the tablet PC are shown in the following illustration and described in Table 1-3.
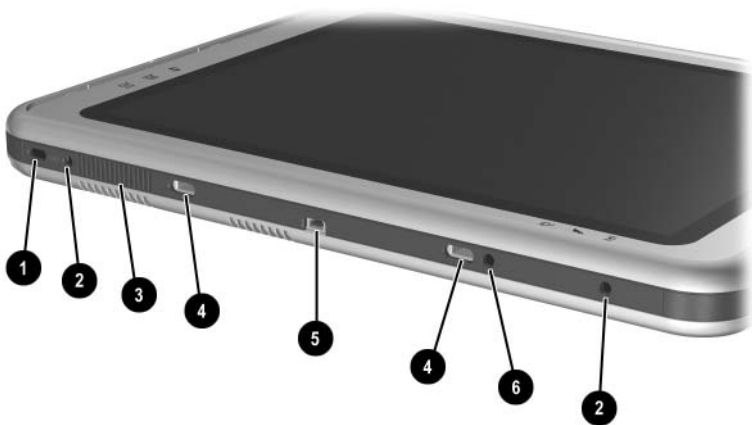

Left-Side Components

Table 1-3
Left-Side Components

Item	Component	Function
1	Security cable slot	Attaches an optional security cable to the tablet PC.
		⚠ Security solutions are designed to act as deterrents These deterrents may not prevent a product from being mishandled or stolen.
2	Screen protector slots (2)	Secure the optional screen protector when it is attached to the tablet PC.

Table 1-3
Left-Side Components *(Continued)*

Item	Component	Function
3	Air vent	Allows airflow to cool internal components.
		⚠ WARNING: To avoid potential discomfort or burns, do not block the air vents or use the tablet PC on your lap for extended periods. This tablet PC is designed to run demanding applications at full power. As a result of increased power consumption, it is normal for the tablet PC to feel warm or hot when used continuously. The tablet PC complies with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950).
4	Universal alignment slots (2)	Secure the portfolio, the optional screen protector, or an optional attachment, such as a tablet PC keyboard, to the tablet PC.
5	Keyboard connector	Connects an optional tablet PC keyboard to the tablet PC.
6	Alignment key slot	Accepts an alignment key to safeguard attachment procedures. For example, matching the alignment key on an optional tablet PC keyboard to the alignment key slot helps you to correctly orient the tablet PC to the keyboard as you connect them.

The external components on the right side of the tablet PC are shown in the following illustration and described in Table 1-4.

Right-Side Components

Table 1-4
Left-Side Components

Item	Component	Function
1	Jog dial	Functions like the **enter** key and the up and down arrow keys on a standard keyboard.
		■ Press inward to enter a command.
		■ Rotate upward to scroll upward.
		■ Rotate downward to scroll downward.

Table 1-4
Left-Side Components *(Continued)*

Item	Component	Function
2	**esc** button	While the tablet PC is ■ Starting up and a flashing pointer is displayed on the screen, opens the Setup utility. ■ In Windows, functions like the **esc** key on a standard keyboard.
3	Windows security button	When pressed with the pen tip or a small object such as the end of a paper clip ■ when Windows is open, enters the **ctrl+alt+delete** command. ■ when the Setup utility is open, enters the reset command.
4	**tab** button	When Windows is running, functions like the **tab** key on a standard keyboard.
5	Q menu button	When Windows is running, opens or closes the Q Menu.
6	E-mail launch button	When Windows is running: ■ Before your Internet or network service is set up, opens the operating system Internet connection wizard. ■ After your Internet or network service is set up, opens your default e-mail application.

Table 1-4
Left-Side Components *(Continued)*

Item	Component	Function
7	Power/standby switch	When the tablet PC is: ■ Off, press to turn on the tablet PC. ■ On, slide and release to initiate standby. ■ In standby, slide and release to resume from standby. ■ In hibernation, slide and release to restore from hibernation. If the system has stopped responding and Windows shutdown procedures cannot be used, slide and hold for 4 seconds to turn off the tablet PC.
8	Power/standby light	■ On: tablet PC is on. ■ Flashing: tablet PC is in standby. ■ Off: tablet PC is off or in hibernation.

The external components on the bottom side of the tablet PC are shown in the following illustration and described in Table 1-5.
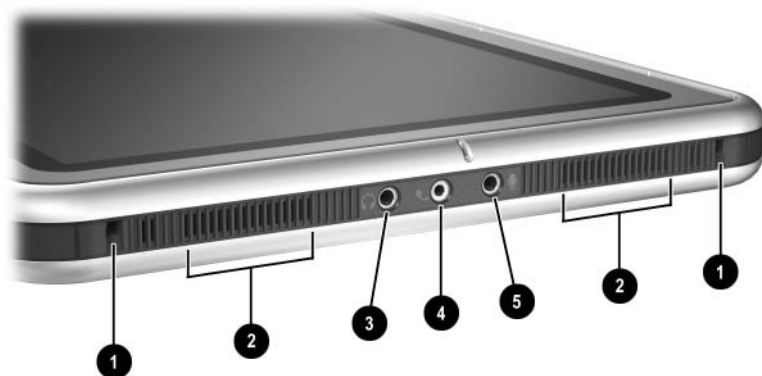
Bottom-side Components

Table 1-5
Rear Components

Item	Component	Function
1	Docking alignment slots (2)	Secure the tablet PC to an optional Tablet PC Docking Station.
2	Speakers (2)	Produce stereo sound.
3	Audio-out (headphone)	Connects optional stereo headphones or powered stereo speakers.
4	Headset jack	Connects an optional headset, such as a mobile telephone headset with a microphone and a monaural ear piece.
5	Audio-in (microphone)	Connects an optional stereo microphone.

The external components on the rear of the tablet PC are shown in the following illustration and described in Table 1-6.
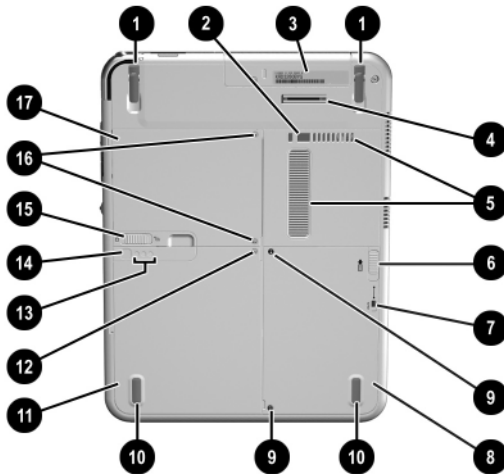
Rear Components

Table 1-6
Rear Components

Item	Component	Function
1	Tilt feet (2)	While the tablet PC is being used in portrait orientation on a flat surface, can elevate the top of the tablet PC to provide a comfortable writing and viewing angle.
2	Docking restraint latch recess	Accepts the docking restraint latch on an optional docking station to secure the tablet PC to the Docking Station.

Table 1-6
Rear Components *(Continued)*

Item	Component	Function
3	Product identification label	Contains the serial number of the tablet PC and a code describing the original configuration of the tablet PC. You will need the serial number if you contact Customer Care.
4	Docking connector	Connects the tablet PC to an optional docking station.
5	Air vent	Allows airflow to cool internal components.
		⚠ WARNING: To avoid potential discomfort or burns, do not block the air vents or use the tablet PC on your lap for extended periods. This tablet PC is designed to run demanding applications at full power. As a result of increased power consumption, it is normal for the tablet PC to feel warm or hot when used continuously. The tablet PC complies with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950).
6	Attachment release latch	Releases an optional screen protector or tablet PC keyboard from the universal attachment slots on the tablet PC.

Table 1-6
Rear Components *(Continued)*

Item	Component	Function
7	Hard drive retention screw	Secures the hard drive bay cover to the tablet PC.
8	Hard drive bay	Holds the system hard drive.
9	Hard drive security screws (2)	Secure the hard drive in the hard drive bay.
10	Pad feet (2)	Stabilize the tablet PC when it is placed on a flat surface.
11	Battery bay	Holds the battery pack.
12	Battery retention screw	Secures the battery pack to the tablet PC.
13	Battery quick check lights (3)	On: Each light represents a percentage of a full charge. For example, when all three lights are on, the battery pack is fully charged. Flashing: When one light is flashing, less than 10% of a full charge remains in the battery pack.
14	Battery quick check button	Activates the battery quick check lights, which display how much of a full charge remains in the battery pack.
15	Battery pack release latch	Releases the battery pack from the battery bay.

Table 1-6
Rear Components *(Continued)*

Item	Component	Function
16	Memory module and Mini PCI compartment cover retention screws	Secure the memory and Mini PCI compartment cover to the tablet PC.
17	Memory module and Mini PCI compartment	Contains one memory slot for a PC133-compliant memory module. Also holds an optional Mini PCI board, such as a modem board or a combination modem and wireless board.
		△ To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use by the governmental agency that regulates wireless devices in your country. If you install a device and then receive a warning message, remove the device to retore tablet PC functionality. Then contact Customer Care.

1.5 **Keyboard Components**

The keyboard top components are shown in the following illustration and described in Table 1-7.
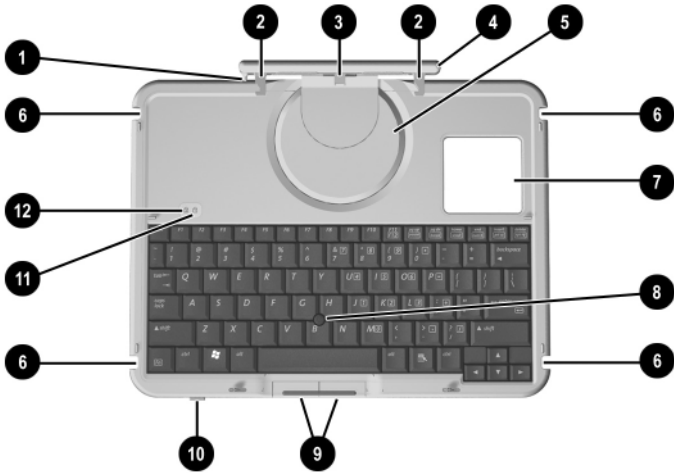
Keyboard Top Components

Table 1-7
Keyboard Top Components

Item	Component	Function
1	Alignment key	Ensures that the tablet PC is attached to the keyboard in the correct orientation.
2	Keyboard hooks (2)	Secure the tablet PC to the keyboard.

Table 1-7
Keyboard Top Components *(Continued)*

Item	Component	Function
3	Keyboard connector	Connects the keyboard to the keyboard connector on the tablet PC.
4	Tilt adjustment	Tilts the tablet PC forward or backward while it is connected to the keyboard.
5	Rotation disk	Rotates the tablet PC clockwise or counterclockwise while it is connected to the keyboard.
6	Docking alignment notches (4)	Help guide the tablet PC and keyboard into an optional HP Tablet PC Docking Station.
7	Docking connector pass-through	Enables the optional docking station to be connected to the tablet PC while the keyboard is attached to the tablet PC.
8	Pointing stick	Moves the cursor and selects and activates items on the screen.
9	Pointing stick buttons (2)	Function like the left and right buttons on an external mouse.
10	Keyboard latch	Slide to lock the keyboard or to release the keyboard from the tablet PC.
11	Caps lock light	When this light is on, the caps lock is on.
12	Num lock light	When this light is on, the numeric keypad is active.

The special keys on the keyboard are shown in the following illustration and described in Table 1-8.

Keyboard Special Keys

Table 1-8
Keyboard Special Keys

Item	Component	Function
1	Function keys	Perform system and application tasks. For example, in the Windows operating system and many applications, pressing **F1** opens a Help file. To enter an **F11** function, press **F11/F12.** To enter an **F12** function, press **Fn+F11/F12.**
2	**Fn** key	Combines with other keys to perform system tasks. For example, pressing **Fn+num lk** turns on the keypad.
3	Windows logo key	Displays the Microsoft Windows Start Menu.
4	Windows applications key	Displays a shortcut menu for items beneath the pointer.
5	Keypad keys	Used like an external numeric keypad.

The components on the rear and bottom of the optional keyboard are shown in the following illustration and described in Table 1-9.
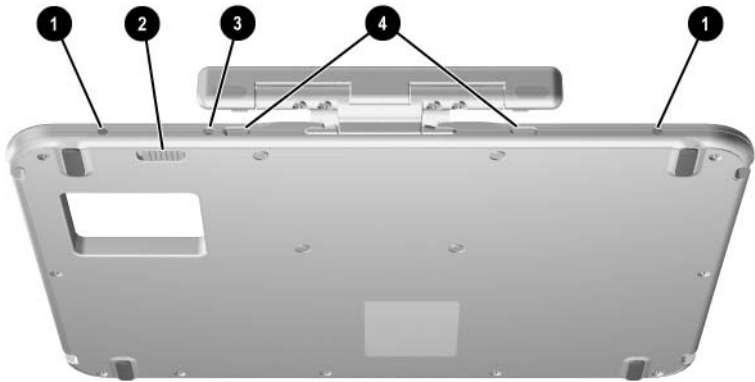
Keyboard Rear and Bottom Components

Table 1-9
Keyboard Rear and Bottom Components

Item	Component	Function
1	Screen protector slots	Attach the screen protector to the keyboard.
2	Attachment release latch	Releases a portfolio or optional screen protector from the keyboard.
3	Universal alignment slots	Secure the portfolio or optional screen protector to the keyboard.
4	Alignment key slots	Accept alignment keys to ensure proper orientation.

1.6 HP Tablet PC Docking Station Components

The upper and right-side components on the optional HP Tablet PC Docking Station are shown in the following illustration and described in Table 1-10.
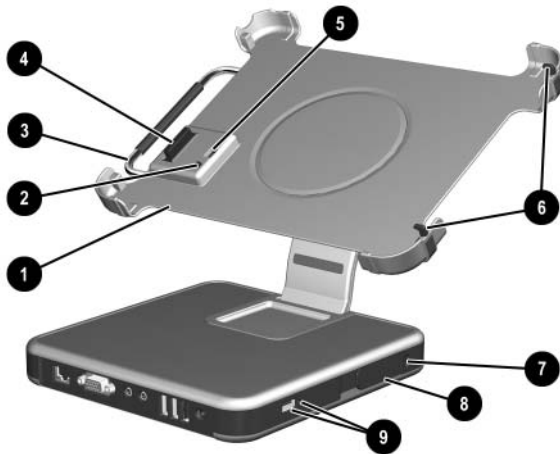
Docking Station Upper and Right-Side Components

Table 1-10
Docking Station Upper and
Right-Side Components

Item	Component	Function
1	Docking stand	Holds the tablet PC when it is docked.
2	Docking eject pin	Disconnects the tablet PC and docking stand docking connectors when the release handle is pulled.
3	Release handle	Ejects the tablet PC from the docking stand.
4	Docking connector	Connects to the tablet PC.
5	Docking restraint latch	Secures the tablet PC to the docking stand.
6	Docking alignment brackets (2)	Fit into the tablet PC docking alignment slots to align the tablet PC in the docking stand.
7	Security cable slot	Attaches an optional security cable to the tablet PC. △ The purpose of security solutions is to act as a deterrent. These solutions do not prevent the product from being mishandled or stolen.
8	MultiBay release lever	Ejects a MultiBay device from the bay.
9	External MultiBay connector	Connects optional USB devices.

The front and left-side components on the optional docking station are shown in the following illustration and described in Table 1-11.

Docking Station Front and Left-Side Components

Table 1-11
Docking Station Front and Left-Side Components

Item	Component	Function
1	Pivot arm	Tilts the docking stand forward and backward to enable different viewing angles and different docking modes.
2	MultiBay	Supports a diskette drive, CD-ROM or CD-RW drive, DVD-ROM drive, DVD/CD-RW Combo Drive, or second hard drive.
3	RJ-45 (network) jack	Connects a network cable.
4	External monitor port	Connects an optional external monitor or overhead projector.
5	Audio-in jack	Connects the stereo audio function of optional audio devices such as CD-ROM players.
6	Audio-out (headphone) jack	Connects optional stereo headphones or powered stereo speakers and connects the audio function of an audio/video device such as a television or VCR.
7	USB ports (3)	Connect optional USB devices.
8	AC power connector	Connects an AC adapter cable, aircraft power adapter, or automobile power charger/adapter.

1.7 **Design Overview**

This section presents a design overview of key parts and features of the tablet PC. Refer to Chapter 3, "Illustrated Parts Catalog," to identify replacement parts, and Chapter 5, "Removal and Replacement Procedures," for disassembly instructions.

The system board provides the following device connections:

■ Memory module

■ Hard drive

■ Display

■ Optional keyboard and pointing stick

■ Audio

■ Intel Pentium M or Celeron M processor

■ Fan

■ PC Card

■ Secure Digital (SD) Memory card (not SD I/O)

■ External MultiBay

■ Modem or modem/NIC

Ⓒ **CAUTION:** To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows or thick rugs, to block airflow.

The tablet PC uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to operate automatically when high temperature conditions exist. These conditions are affected by high external temperatures, system power consumption, power management, battery conservation configurations, battery fast charging, and software applications. Cooling air is taken in through the air vent located on the rear of the tablet PC. Exhaust air is expelled through the air vent located on the left side of the tablet PC.

2

Troubleshooting

⚠ **WARNING:** Only authorized technicians trained by HP should repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module level repair. Because of the complexity of the individual boards and subassemblies, do not attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard. Any indication of component replacement or printed wiring board modification may void any warranty or exchange allowances.

2.1 Setup and Diagnostics Utilities

Selecting Setup or HP Diagnostics

The tablet PC features 2 HP system management utilities:

■ **Setup**—A system information and customization utility that can be used even when your operating system is not working or will not load. This utility includes settings that are not available in Windows.

■ **HP Diagnostics**—A system information and diagnostic utility that is used within your Windows operating system. Use this utility whenever possible to

❏ Display system information.

❏ Test system components.

❏ Troubleshoot a device configuration problem in Windows Tablet PC Edition.

✎ It is not necessary to configure a device connected to a USB port on the tablet PC or to an optional docking station.

Using Setup

Information and settings in Setup are accessed from the File, Security, or Advanced menus:

1. Turn on or restart the tablet PC. Press **F10** while the F10 = ROM Based Setup message displays in the lower-left corner of the screen.

   ❏ To change the language, press **F2.**

   ❏ To view navigation information, press **F1.**

   ❏ To return to the Setup menu, press **esc.**

2. Select the **File**, **Security**, or **Advanced** menu.

3. To close Setup and restart the tablet PC:

   ❏ Select **File > Save Changes**, and Exit and press **enter.**

   – or –

   ❏ Select **File > Ignore Changes**, and Exit and press **enter.**

4. When you are prompted to confirm your action, press **F10.**

Selecting from the File Menu

Table 2-1

File Menu

Select	To Do This
System Information	■ View identification information about the tablet PC, a docking station, and any battery packs in the system. ■ View specification information about the processor, memory and cache size, and system ROM.
Save to Floppy	Save system configuration settings to a diskette.
Restore from Floppy	Restore system configuration settings from a diskette.
Restore Defaults	Replace configuration settings in Setup with factory default settings. Identification information is retained.
Ignore Changes and Exit	Cancel changes entered during the current session, and then exit and restart the tablet PC.
Save Changes and Exit	Save changes entered during the current session, and then exit and restart the tablet PC.

Selecting from the Security Menu

Table 2-2

Security Menu

Select	To Do This
Setup Password	Enter, change, or delete a setup password. (The setup password is called an administrator password in HP Computer Security, a program accessed from the Windows Control Panel.)
Power-on Password	Enter, change, or delete a power-on password.
DriveLock Password	Enable/disable DriveLock; change a DriveLock User or Master password. ✎ DriveLock Settings are accessible only when you enter Setup by turning on (not restarting) the tablet PC.

Table 2-2

Security Menu *(Continued)*

Select	To Do This
Password Options	Enable/disable:
	■ QuickLock
	■ QuickLock on Suspend
	■ QuickBlank
	✎ To enable QuickLock on Suspend or QuickBlank, you must first enable QuickLock.
	✎ Password options can be selected only when a power-on password has been set.
Device Security	Enable/disable:
	■ Ports or diskette drives
	■ Diskette write*
	■ CD-ROM or diskette startup
	✎ Settings for a DVD-ROM can be entered in the CD-ROM field.
System IDs	Enter identification numbers for the tablet PC, a docking station, and all battery packs in the system.

Selecting from the Advanced Menu

Table 2-3

Advanced Menu

Select	To Do This
Language (or press **F2**)	Change the Setup language.
Boot Options	Enable/disable:
	■ QuickBoot, which starts the tablet PC more quickly by eliminating some startup tests. If you suspect a memory failure and want to test memory automatically during startup, disable QuickBoot.
	■ MultiBoot, which sets a startup sequence that can include most bootable devices and media in the system.
Device Options	■ Enable/disable the embedded numeric keypad at startup.
	■ Enable/disable multiple standard pointing devices at startup. To set the tablet PC to support only a single, usually nonstandard, pointing device at startup, select **Disable**.
	■ Enable/disable USB legacy support for a USB keyboard. When USB legacy support is enabled, the keyboard works even when a Windows operating system is not loaded.
	■ Set an optional external monitor or overhead projector connected to a video card in a docking station as the primary device. When the tablet PC display is set as secondary, the tablet PC must be shut down before undocking from a docking station.

Table 2-3

Advanced Menu *(Continued)*

Select	To Do This
Device Options *(continued)*	■ Change the parallel port mode from EPP (Enhanced Parallel Port [default]) to standard, bidirectional, EPP or ECP (Enhanced Capabilities Port).
	■ Set video-out mode to NTSC (default), PAL, NTSC-J, or PAL-M.*
	■ Enable/disable all settings in the SpeedStep window. When Disable is selected, the tablet PC runs in Battery Optimized mode.
	■ Specify how the tablet PC recognizes multiple identical docking stations that are identically equipped. Select **Disable** to recognize the docking stations as a single docking station; select **Enable** to recognize the docking stations individually, by serial number.
	■ Enable/disable the reporting of the processor serial number by the processor to the software.
HDD Self-Test Options	Run a quick comprehensive self-test on hard drives in the system that support the test features.

*Video modes can vary within regions. However, NTSC is commonly used in North America; PAL, in Europe, Africa, and the Middle East; NTSC-J, in Japan; and PAL-M, in Brazil. Other South and Central American regions may use NTSC, PAL, or PAL-M.

2.2 Using HP Diagnostics for Windows

When you access HP Diagnostics for Windows, a scan of all system components is displayed on the screen before the HP Diagnostics window opens.

You can display more or less information from anywhere within HP Diagnostics for Windows by selecting Level on the menu bar.

HP Diagnostics for Windows is designed to test HP components. If third-party components are tested, the results may be inconclusive.

Obtaining, Saving, or Printing Configuration Information

1. Access HP Diagnostics by selecting **Start > Control Panel > Diagnostics for Windows.**

2. Select **Categories**, and then select a category from the drop-down list.

   ❏ To save the information, select **File > Save As.**

   ❏ To print the information, select **File > Print.**

3. To close HP Diagnostics for Windows, select **File > Exit.**

Obtaining, Saving or Printing Diagnostic Test Information

1. Access HP Diagnostics by selecting **Start > Control Panel > Diagnostics for Windows.**

2. Select the **Test** tab.

3. In the scroll box, select the category or device you want to test.

4. Select a test type:

❏ **Quick Test**—Runs a quick, general test on each device in a selected category.

❏ **Complete Test**—Performs maximum testing on each device in a selected category.

❏ **Custom Test**—Performs maximum testing on a selected device.

◆ To run all tests for your selected device, select **Check All.**

◆ To run only the tests you select, select **Uncheck All,** and then select the check box for each test you want to run.

5. Select a test mode:

❏ **Interactive Mode**—Provides maximum control over the testing process. You determine whether the test was passed or failed. You may be prompted to insert or remove devices.

❏ **Unattended Mode**—Does not display prompts. If errors are found, they are displayed when testing is complete.

6. Select **Begin Testing.**

7. Select a tab to view a test report:

❏ **Status tab**—Summarizes the tests run, passed, and failed during the current testing session.

❏ **Log tab**—Lists tests run on the system, the number of times each test has run, the number of errors found on each test, and the total run time of each test.

❏ **Error tab**—Lists all errors found in the tablet PC, along with their error codes.

8. Select a tab to save the report:

❏ **Log tab**—Select **Log tab Save.**

❏ **Error tab**—Select **Error tab Save.**

9. Select a tab to print the report:

Log tab—Select **File > Save As,** and then print the file from your folder.

Troubleshooting Flowcharts

Table 2-4

Troubleshooting Flowcharts Overview

Flowchart	Description
2.1	"Flowchart 2.1—Initial Troubleshooting."
2.2	"Flowchart 2.2—No Power, Part 1."
2.3	"Flowchart 2.3—No Power, Part 2."
2.4	"Flowchart 2.4—No Power, Part 3."
2.5	"Flowchart 2.5—No Power, Part 4."
2.6	"Flowchart 2.6—No Video, Part 1."
2.7	"Flowchart 2.7—No Video, Part 2."
2.8	"Flowchart 2.8—Nonfunctioning Docking Station (if applicable)."
2.9	"Flowchart 2.9—No Operating System (OS) Loading."
2.10	"Flowchart 2.10—No OS Loading from Hard Drive, Part 1."
2.11	"Flowchart 2.11—No OS Loading from Hard Drive, Part 2."
2.12	"Flowchart 2.12—No OS Loading from Hard Drive, Part 3."
2.13	"Flowchart 2.13—No OS Loading from Diskette Drive."
2.14	"Flowchart 2.14—No OS Loading from Optical Drive."
2.15	"Flowchart 2.15—No Audio, Part 1."
2.16	"Flowchart 2.16—No Audio, Part 2."
2.17	"Flowchart 2.17—Nonfunctioning Device."
2.18	"Flowchart 2.18—Nonfunctioning Keyboard."
2.19	"Flowchart 2.19—Nonfunctioning Pointing Device."
2.20	"Flowchart 2.20—No Network or Modem Connection."

Flowchart 2.1—Initial Troubleshooting

Begin troubleshooting.

Is there power? — N → Go to Flowchart 2.2—No Power, Part 1.

Y

Beeps, LEDs, or error messages? — N → Check LED board, speaker connections.

Y

Is there video? (no boot) — N → Go to Flowchart 2.6—No Video, Part 1.

Y

Is the OS loading? — N → Go to Flowchart 2.9—No Operating System (OS) Loading.

Y

Is there sound? — N → Go to Flowchart 2.15—No Audio, Part 1.

Y

All drives working? — N → Go to Flowchart 2.17—Nonfunctioning Device.

Y

Keyboard/ pointing device working? — N → Go to Flowchart 2.18—Nonfunctioning Keyboard or Flowchart 2.19—Nonfunctioning Pointing Device.

Y

Connecting to network or modem? — N → Go to Flowchart 2.20—No Network or Modem Connection.

Y

End

Flowchart 2.2—No Power, Part 1

```
┌─────────────────┐
│   No Power      │
│  (power LED     │
│   is off).      │
└─────────────────┘
          │
          ▼
┌─────────────────┐
│  Remove from    │
│ docking station │
│ (if applicable).│
└─────────────────┘
          │
          ▼
```

No Power (power LED is off).

Remove from docking station (if applicable).

Power up on battery power? — N → *Reset power. → Power up on battery power? — N → Go to Flowchart 2.3—No Power, Part 2.

Y

Power up on AC power? — N → *Reset power. → Power up on AC power? — N → Go to Flowchart 2.4—No Power, Part 3.

Y   Y

Power up in docking station? — Y → Done

N

*NOTES:
To reset the tablet PC, slide and hold the power switch for 4 seconds.

1. Reseat the power cable in the docking station and at the AC outlet.
2. Ensure the AC power source is active.

Done ← Y — Power up in docking station? — N → Go to Flowchart 2.8—Nonfunctioning Docking Station (if applicable).

Flowchart 2.3—No Power, Part 2

```
┌─────────────────────┐
│ Continued from      │
│ Flowchart 2.2—No    │
│ Power, Part 1       │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│ Visually check for  │
│ debris in battery   │
│ socket and clean    │
│ if necessary.       │
└─────────────────────┘
          │
          │        Y
     ◇ Power on? ──────────►  ┌──────────┐
          │                   │  Done    │
          │ N                 └──────────┘
          ▼
┌─────────────────────┐
│ Check battery by    │
│ recharging,         │
│ moving it to        │
│ another tablet PC,  │
│ or replacing it.    │
└─────────────────────┘
          │
          │        N
     ◇ Power on? ──────────►  ┌─────────────┐
          │                   │ Replace     │
          │ Y                 │ power supply│
          ▼                   │(if applicable).│
    ┌──────────┐              └─────────────┘
    │  Done    │                   │
    └──────────┘                   │      N
                              ◇ Power on? ──────►  ┌──────────────────┐
                                   │                │ Go to            │
                                   │ Y              │ Flowchart 2.4—No │
                                   ▼                │ Power, Part 3    │
                              ┌──────────┐          └──────────────────┘
                              │  Done    │
                              └──────────┘
```

Flowchart 2.4—No Power, Part 3

```
Continued from
Flowchart 2.3—No
Power, Part 2.
        │
        ▼
Plug directly
into AC outlet.
        │
        ▼
   Power LED        Y
     on?     ──────────▶   Done
        │ N
        ▼
Reseat AC adapter
in tablet PC and
at power source.
        │
        ▼
   Power on?        Y
              ──────────▶   Done
        │ N
        ▼
                  N
   Power outlet    ──────────▶  Try different
     active?                      outlet.
        │ Y
        ▼
   Replace
 power cord.
        │
        ▼
   Power on?        Y
              ──────────▶   Done
        │ N


   Internal or        External
   external AC    ──────────▶  Replace external
    adapter?                    AC adapter.
        │ Internal
        ▼
     Go to                        │
Flowchart 2.5—No  ◀──────   Power on?   N
Power, Part 4.
                                  │ Y
                                  ▼
                               Done
```

Flowchart 2.5—No Power, Part 4

```
Continued from
Flowchart 2.4—No
Power, Part 3.
```

```
Open
tablet PC.
```

```
Loose or
damaged
parts?
```
Y →
```
Reseat loose
components and
boards and
replace damaged
items.
```
N

```
Close
tablet PC and
retest.
```

```
Power on?
```
N →
```
Replace the following items (if applicable).
Check tablet PC operation after each
replacement:
    1. Internal AC-DC converter*
    2. Internal AC adapter
    3. Processor board*
    4. System board*
*NOTE: Replace these items as a set to prevent
shorting out among components.
```
Y

```
Done
```

Flowchart 2.6—No Video, Part 1

No Video.

Stand-alone or in docking station?

Docking Station → Go to [Flowchart 2.7—No Video, Part 2.](#)

Stand-alone

Internal or external display*?

*NOTE: To change from internal to external display, use the hotkey combination.

Internal → Adjust brightness.

A

Adjust brightness. → Video OK?

Y → Done

N

External

Adjust brightness.

Video OK?

Y → Done

N

Check for bent pins on cable.

Video OK?

N → Try another display.

Y

Done

Replace the following one at a time. Test after each replacement.
1. Cable between notebook and tablet PC display (if applicable)
2. Inverter board (if applicable)
3. Display
4. System board

Internal and external video OK?

N → Replace system board.

Y

Done

Flowchart 2.7—No Video, Part 2

```
Continued from
Flowchart 2.6—No
Video, Part 1.
        │
        ▼
Remove
tablet PC from
docking station,
if connected.
        │
        ▼
Adjust
display
brightness.
        │
        ▼         N
Video OK?  ───────►  Go to
                     Flowchart 2.6—No
        │ Y          Video, Part 1.
        ▼
Check that tablet PC is properly seated
in docking station, for bent pins on
cable, and for
monitor connection.
        │         Y
        ▼ ───────►  Done
Video OK?
        │ N
        ▼
Adjust external
monitor display.
```

```
Check brightness
of external
monitor.
        │
        ▼         Y
Video OK?  ───────►  Done
        │ N
        ▼
Try another
external
monitor.
        │         Y
        ▼ ───────►  Done
Internal
and external
video OK?
        │ N
        ▼
Go to
Flowchart
2.8—Nonfunctioning
Docking Station (if
applicable).
```

Flowchart 2.8—Nonfunctioning Docking Station (if applicable)

2.2.1 Flowchart 2.9—No Operating System (OS) Loading

```
┌─────────────────┐
│   No OS          │
│   loading.*      │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Reseat power    │
│ cord in docking │
│ station and     │
│ power outlet.   │
└─────────────────┘
         │
         │      ┌────────────────────┐
         │      │ No OS loading       │
         ├─────▶│ from hard drive,    │
         │      │ go to              │
         │      │ Flowchart 2.10—No  │
         │      │ OS Loading from    │
         │      │ Hard Drive, Part 1. │
         │      └────────────────────┘
         │
         │      ┌────────────────────┐
         │      │ No OS loading       │
         │      │ from diskette       │
         ├─────▶│ drive, go to       │
         │      │ Flowchart 2.13—No  │
         │      │ OS Loading from    │
         │      │ Diskette Drive.     │
         │      └────────────────────┘
         │
         │      ┌────────────────────┐
         │      │ No OS loading       │
         │      │ from CD-ROM or      │
         │      │ DVD-ROM drive,      │
         ├─────▶│ go to Flowchart    │
         │      │ 2.14—No OS          │
         │      │ Loading from       │
         │      │ Optical Drive.      │
         │      └────────────────────┘
         │
         │      ┌────────────────────┐
         │      │ No OS loading       │
         │      │ from network,       │
         │      │ go to              │
         └─────▶│ Flowchart 2.20—No  │
                │ Network            │
                │ or Modem Connectio │
                └────────────────────┘
```

*NOTE: Before beginning troubleshooting, always check cable connections, cable ends, and drives for bent or damaged pins.

Flowchart 2.10—No OS Loading from Hard Drive, Part 1

```
OS not
loading from
hard drive.
        │
        ▼
   Nonsystem          Y        Go to
   disk message? ──────────→   Flowchart
                               2.11—No OS
        │                      Loading from
        N                      Hard Drive, Part 2.
        ▼
   Reseat
   external
   hard drive.
        │
        ▼
   OS loading?        Y        Done
                 ──────────→
        │
        N
        ▼
   Boot              N
   from        ──────────────────┐
   CD?                            │
        │                        ▼
        Y                  Boot          N     Go to
        ▼                  from     ──────────→ Flowchart
   Check the setup         diskette?           2.13—No OS
   utility for correct                         Loading from
   booting order.          │                   Diskette Drive.
        │                  Y
        ▼                  ▼
   Boot          N    Change boot
   from      ───────→ priority through
   hard drive?        the setup utility
        │             and reboot.
        Y                  │
        ▼                  ▼
   Done  ←────────    Boot         N     Go to
                      from    ──────────→ Flowchart
                      hard drive?        2.17—Nonfunctioning
                           │             Device.
                           Y
```

Flowchart 2.11—No OS Loading from Hard Drive, Part 2

Continued from Flowchart 2.10—No OS Loading from Hard Drive, Part 1.

CD or diskette in drive?
- N → 1. Replace hard drive. 2. Replace system board.
- Y → Remove diskette and reboot.

Boot from hard drive?
- Y → Done
- N → **Boot from diskette drive?**
  - N → Go to Flowchart 2.13—No OS Loading from Diskette Drive.
  - Y → **Hard drive accessible?**
    - Y → Go to Flowchart 2.12—No OS Loading from Hard Drive, Part 3.

Reseat hard drive.

Hard drive accessible?
- Y → Done
- N → Run FDISK.

Hard drive partitioned?
- N → Create partition, then format hard drive to bootable C:\ prompt.
- Y → **Hard drive formatted?**
  - N → Format hard drive and bring to a bootable C:\ prompt.
  - Y → **Tablet PC booted?**
    - Y → Done
    - N → Go to Flowchart 2.12—No OS Loading from Hard Drive, Part 3.

Load OS using Restore disc (if applicable).

Flowchart 2.12—No OS Loading from Hard Drive, Part 3

```
Continued from
Flowchart
2.11—No OS
Loading from
Hard Drive, Part 2.
```

System files on hard drive? — N → Install OS and reboot.

Y ↓

Virus on hard drive? — Y → Clean virus. → OS loading from hard drive? — Y → Done

N ↓

OS loading from hard drive? — N ↓

Diagnostics on diskette? — Y → Replace hard drive.

N ↓

Run SCANDISK and check for bad sectors.

Run diagnostics and follow recommendations.

Can bad sectors be fixed? — N → Replace hard drive.

Y ↓

Fix bad sectors. → Boot from hard drive? — N → Replace hard drive.

Y ↓

Done

Flowchart 2.13—No OS Loading from Diskette Drive

Flowchart 2.14—No OS Loading from Optical Drive

No OS loading from CD-ROM or DVD-ROM Drive.

Disc in drive? → Y → Bootable disc in drive? → N → Install bootable disc and reboot tablet PC.

N

Y

Install bootable disc.

Try another bootable disc.

Boots from CD or DVD? → Y → Done

N

Reseat drive.

Boots from CD or DVD? → Y → Done

N

Booting from another device? → N → Go to Flowchart 2.17—Nonfunctioning Device.

Y

Booting order correct? → Y → Clear CMOS. Refer to Section 1.2, "Clearing a Password," for instructions. → Go to Flowchart 2.17—Nonfunctioning Device.

N

Correct boot order using the Setup utility.

Flowchart 2.15—No Audio, Part 1

```
┌──────────┐     ┌──────────────┐                              ┌──────────┐
│          │     │ Turn up audio│          Y                   │          │
│ No audio.│────▶│ internally or│────▶  ◇ Audio? ◇ ──────────▶│   Done   │
│          │     │ externally.  │                              │          │
└──────────┘     └──────────────┘          │ N                 └──────────┘
                                           │
       ┌───────────────────────────────────┘
       │
       ▼
   ◇ Tablet PC in ◇     Y    ┌──────────┐        ◇ Internal ◇    N   ┌──────────────┐
   ◇ docking station ◇ ────▶│  Undock  │────▶  ◇  audio?  ◇ ──────▶│ Go to        │
   ◇ (if applicable)? ◇      └──────────┘                           │ Flowchart 2.16—No│
       │                                          │ Y                │ Audio, Part 2│
       │ N                                        │                  └──────────────┘
       ▼                                          ▼
┌──────────────┐              ┌──────────────────────────────────────┐
│ Go to        │              │ Replace the following docking station│
│ Flowchart 2.16—No│          │ components one at a time as applicable│
│ Audio, Part 2│              │ Check after each change.             │
└──────────────┘              │   1. Reset docking station audio cable│
                              │   2. Replace audio cable.            │
                              │   3. Replace speaker.                │
                              │   4. Replace docking station audio board│
                              │   5. Replace backplane board.        │
                              │   6. Replace I/O board.              │
                              └──────────────────────────────────────┘
                                           │
                                           ▼
┌──────────────┐                      ◇ Audio? ◇     Y    ┌──────────┐
│ Go to        │                                    ────▶│   Done   │
│ Flowchart    │ ◀──────────────────  ◇        ◇         └──────────┘
│ 2.17—Nonfunctioni│                       │ N
│ ng Device    │
└──────────────┘
```

Flowchart 2.16—No Audio, Part 2

```
┌─────────────────────┐
│   Continued from    │
│ Flowchart 2.15—No   │
│   Audio, Part 1     │
└─────────────────────┘
          │
          ▼
        N
    ╱Audio    ╲          ┌──────────────┐
   ╱ driver in OS╲──────▶│   Reload     │
   ╲ configured? ╱       │ audio drivers.│
    ╲          ╱         └──────────────┘
       Y │
         ▼
        N
    ╱ Correct ╲          ┌──────────────┐
   ╱  drivers for╲──────▶│ Load drivers and│
   ╲ application?╱       │ set configuration│
    ╲          ╱         │    in OS.     │
       Y │                └──────────────┘
         ▼
┌─────────────────┐
│  Connect to     │
│  external       │
│  speaker.       │
└─────────────────┘
         │
         ▼
        N                ┌──────────────┐         Y
    ╱      ╲             │ Replace audio│      ╱      ╲        ┌──────────┐
   ╱ Audio? ╲───────────▶│ board and    │─────╱ Audio? ╲──────▶│   Done   │
   ╲        ╱            │ speaker      │     ╲        ╱       └──────────┘
    ╲      ╱             │ connections  │      ╲      ╱
       Y │               │ in tablet PC │         N │
         │               │ (if applicable).│        ▼
         │               └──────────────┘
         │                                  ┌───────────────────────────────┐
         └─────────────────────────────────▶│ 1. Replace internal speakers.  │
                                             │ 2. Replace audio board (if applicable).│
                                             │ 3. Replace system board.       │
                                             └───────────────────────────────┘
```

Flowchart 2.17—Nonfunctioning Device

```
                    ┌──────────────┐
                    │ Nonfunctioning│
                    │   device.    │
                    └──────┬───────┘
                           │
                           ▼
                    ┌──────────────┐
                    │   Reseat     │
                    │   device.    │
                    └──────┬───────┘
                           │
                           ▼
           ┌───────────────────────────────────────┐
           │ Unplug the nonfunctioning device from  │
           │ the tablet PC, and inspect cables and  │
           │ plugs for bent or broken pins or other │
           │              damage.                   │
           └──────────────────┬────────────────────┘
                              │
                              ▼   Y
```

Any physical device detected? — Y — Fix or replace broken item.

N → Clear CMOS.

Reattach device. Close tablet PC, plug in power, and reboot.

Device boots properly?

N → Possible bad hard drive. Replace drive. → Go to Flowchart 2.9—No Operating System

Possible bad NIC. Replace card. If integrated NIC, replace system board.

Possible bad diskette drive. Replace drive.

Device boots properly? N → Go to Flowchart 2.9—No Operating System

Y → Done

Y → Done

Flowchart 2.18—Nonfunctioning Keyboard

Flowchart 2.19—Nonfunctioning Pointing Device

```
┌─────────────────┐
│ Pointing device │
│ not operating   │
│ properly.       │
└────────┬────────┘
         │
┌────────▼────────┐
│ Connect tablet PC│
│ to good external │
│ pointing device. │
└────────┬────────┘
         │        N
    ◇ External ────────►  ┌──────────┐
      device              │ Replace  │
      works?              │ system   │
         │Y               │ board.   │
         │                └──────────┘
┌────────▼────────┐
│ Reseat internal │
│ pointing device │
│ connector       │
│ (if applicable).│
└────────┬────────┘
         │        N
     ◇ OK? ──────────►  ┌──────────────────┐
         │Y             │ Replace internal │
         │              │ pointing device  │
         │              │ or cable.        │
         │              └────────┬─────────┘
         │                       │
┌────────▼───┐              ◇ OK? ───Y──►  ┌──────┐
│   Done     │                 │N          │ Done │
└────────────┘                 │           └──────┘
                        ┌───────▼──────┐
                        │ Replace      │
                        │ system       │
                        │ board.       │
                        └──────────────┘
```

Flowchart 2.20—No Network or Modem Connection

```
┌─────────────┐
│ No network  │
│ or modem    │
│ connection. │
└─────────────┘
        │
        ▼
     ◇ Network        N    ┌──────────────┐
    or modem jack ────────►│ Replace jack │
      active?              │ or have jack │
        │                  │  activated.  │
        Y                  └──────────────┘
        │
        ▼
     ◇ Digital        Y    ┌──────────────┐
       line?  ────────────►│   Connect    │
        │                  │ to nondigital│
        N                  │    line.     │
        │                  └──────────────┘
        ▼
   ◇ NIC/modem       N    ┌──────────────┐       ◇ OK?    Y   ┌──────┐
    configured  ─────────►│   Reload     │──────►          ───►│ Done │
      in OS?             │ drivers and  │                      └──────┘
        │                │ reconfigure. │          N
        Y                └──────────────┘          │
        │                                           ▼
        ▼                                    ┌──────────────┐
┌──────────────┐                             │   Replace    │
│ Disconnect all│                            │  NIC/modem   │
│  power from   │                            │(if applicable).│
│ the tablet PC │                            └──────────────┘
│   and open.   │                                    │
└──────────────┘                                     ▼
        │                                     ◇ OK?    Y   ┌──────┐
        ▼                                            ───►  │ Done │
┌──────────────┐                                           └──────┘
│Reseat NIC/modem│                            N
│(if applicable).│                            │
└──────────────┘                              ▼
        │                              ┌──────────────┐
        └──────────────────────────── │   Replace    │
                                       │   system     │
                                       │    board.    │
                                       └──────────────┘
```

3

Illustrated Parts Catalog

This chapter provides an illustrated parts breakdown and a reference for spare part numbers and option part numbers.

3.1 Serial Number Location

When ordering parts or requesting information, provide the tablet PC serial number and model number located on the bottom of the tablet PC.

Serial Number Location

3.2 HP Compaq Tablet PC System Major Components
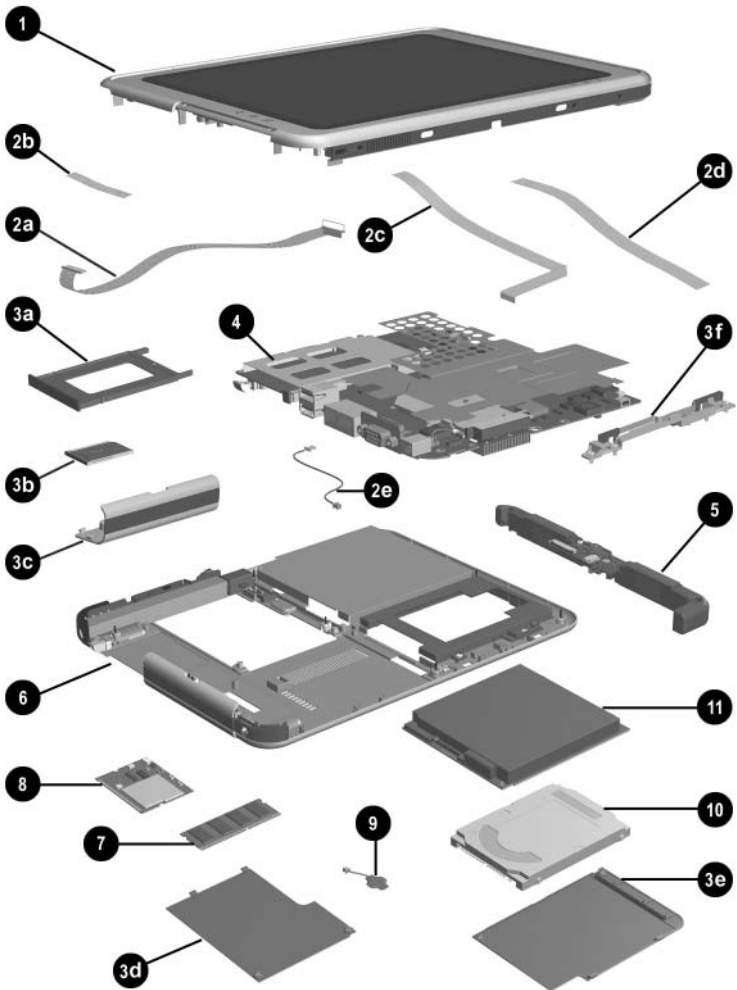
HP Compaq Tablet PC Major Components

Table 3-1
Spare Parts: Tablet PC System Major Components

Item	Description	Spare Part Number
1	**Display components**	
	Display panel assembly	348348-001
	Display bezel with inverter	348336-001
	Inverter	348358-001
	Bridge battery	348328-001
	Digitizer	348337-001
	Wireless antenna	348357-001
	Miscellaneous Cable Kit, includes:	348335-001
2a	Audio cable	
2b	Inverter cable	
2c	Digitizer cable	
2d	Display panel cable	
2e	Modem cable	
	Miscellaneous Plastics/Hardware Kit, includes:	348350-001
3a	PC Card slot space saver	
3b	SD Card slot space saver	
3c	Connector cover	
3d	Mini PCI communications/memory module compartment cover	
3e	Hard drive cover	
3f	Keyboard release assembly	
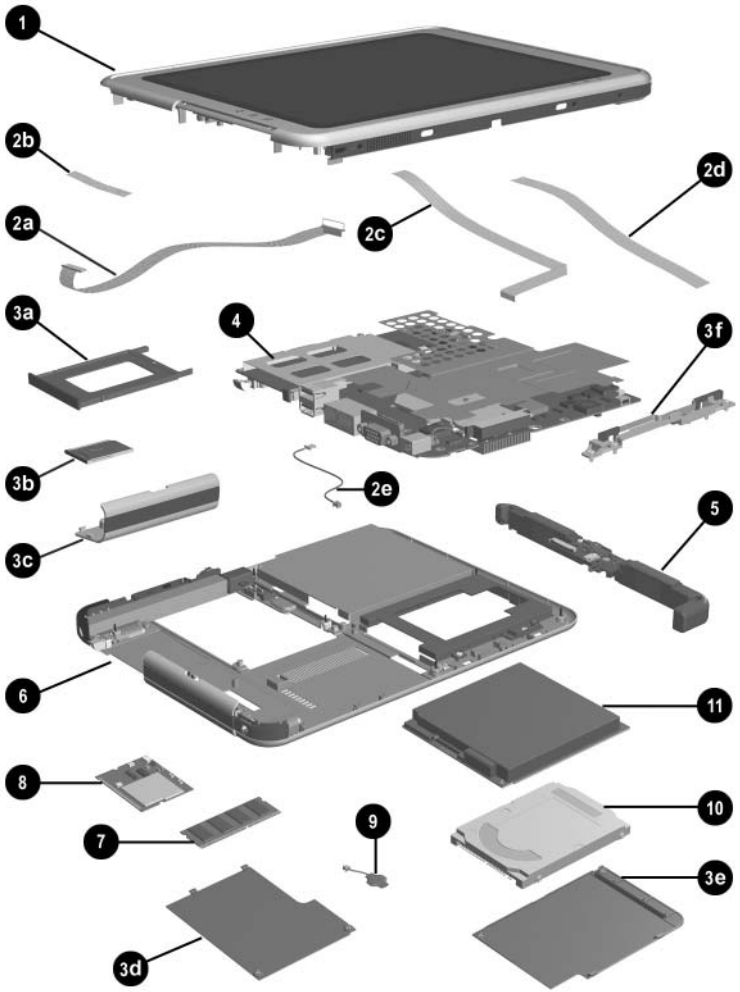
Tablet PC Major Components

**Table 3-1
Spare Parts: Tablet PC System Major Components
*(Continued)***

Item	Description	Spare Part Number
4	**System board** (includes fan and heat sink)	
	Intel Pentium M 753, 1.2-GHz	392604-001
	Intel Pentium M, 1.1-GHz	374023-001
	Intel Pentium M 723, 1.0-GHz	393957-001
	Intel Pentium M, 1.0-GHz	370916-001
	Intel Pentium M, 1.0-GHz	348332-001
	Mobile Intel Celeron M 373, 1.0-GHz	392603-001
	Mobile Intel Celeron M, 900-MHz	370915-001
	Mobile Intel Celeron M, 900-MHz	374024-001
	Mobile Intel Celeron M, 800-MHz	348331-001
	Fan (not illustrated separately)	348342-001
	Modem board (not illustrated separately)	349986-001
	Heat sink (not illustrated separately)	348354-001
5	**Switch board**	348330-001
6	**Base enclosure** (includes battery shield, hard drive bracket, LED board assembly, and shields)	348327-001
	Speaker assembly (includes audio board)	348352-001
7	**Memory module** (DDR, 256 MB)	
	DDR, 1024 MB	348344-001
	DDR, 512 MB	348346-001
	DDR, 256 MB	348345-001
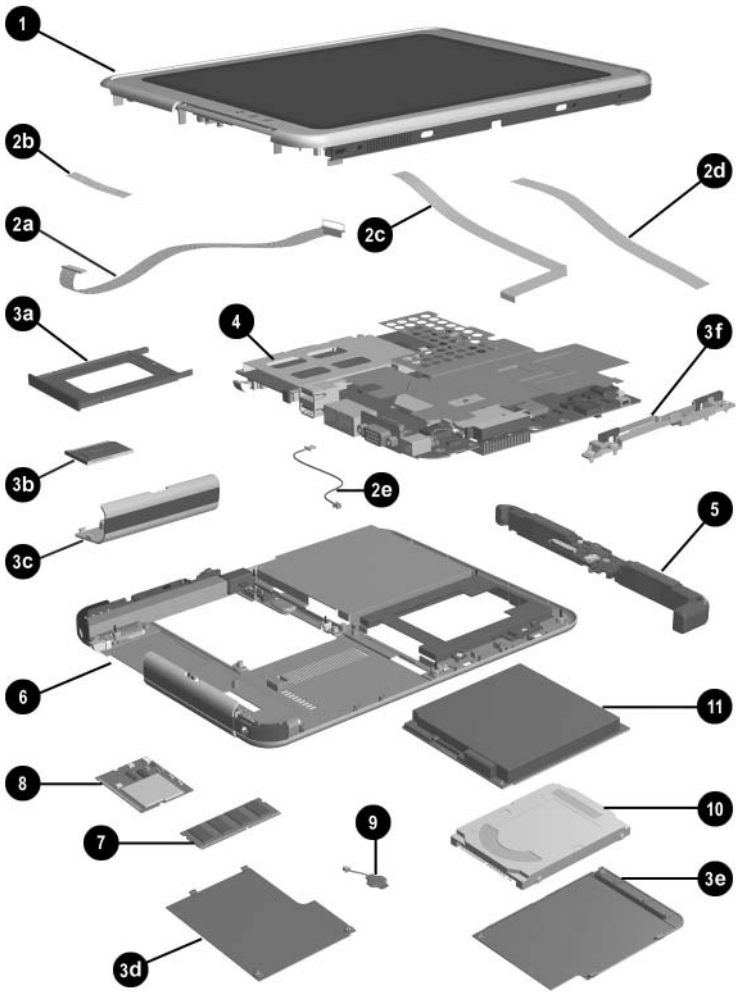
Tablet PC Major Components

Table 3-1
Spare Parts: Tablet PC System Major Components
(Continued)

Item	Description	Spare Part Number
8	**Wireless local area network (LAN) card** (Mini PCI, Type III)	
	802.11a/b/g	349985-001
	802.11a/b/g for international use	385759-002
	802.11a/b/g for use in Europe	385759-021
	802.11a/b/g for use in Japan	349985-291
	802.11a/b/g for use in Japan	385759-291
	802.11a/b/g for use in the United States	385759-001
	802.11b/g for use in most of the world	374157-001
	802.11b/g for use in the rest of the world	374158-001
	802.11b for use in most of the world	348997-001
	802.11b for use in the rest of the world	348996-001
	Bluedog module	379577-001
	Bluetooth module	348334-001
9	**Real-time clock (RTC) battery**	348329-001
10	**Hard drives**	
	30-GB, 4200 rpm	348339-001
	40-GB, 4200 rpm	348340-001
	40-GB, 5400 rpm	374025-001
	60-GB, 5400 rpm	348341-001
	80-GB, 5400 rpm	366786-001
11	**Battery pack, Li-Ion**	348333-001

3.3 Miscellaneous Cable Kit Components
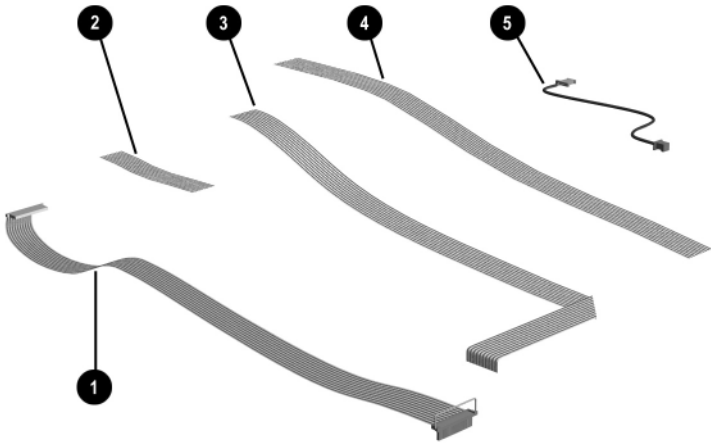
Miscellaneous Cable Kit Components

Table 3-2
Miscellaneous Cable Kit Components
Spare Part Number 348335-001

Item	Description
1	Audio cable
2	Inverter cable
3	Digitizer cable
4	Display panel cable
5	Modem cable

3.4 Miscellaneous Plastics/Hardware Kit Components
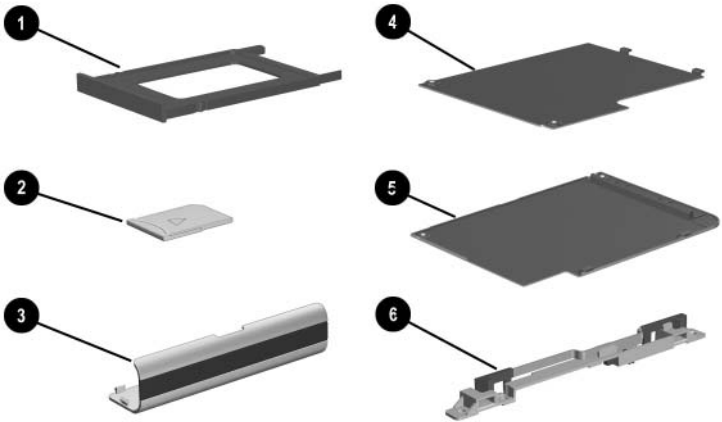
Miscellaneous Plastics/Hardware Kit Contents

Table 3-3
Miscellaneous Plastics/Hardware Kit Components
Spare Part Number 348350-001

Item	Description
1	PC Card slot space saver
2	SD Card slot space saver
3	Connector cover
4	Memory module/Mini PCI communications compartment cover
5	Hard drive cover
6	Keyboard release assembly

3.5 Keyboard

Tablet PC Keyboard

Table 3-4
Tablet PC Keyboard
Spare Part Number Information

Description	Spare Part Number	Description	Spare Part Number
Asia/Pacific	348325-371	Latin America	348325-161
Australia	348325-011	Norway	348325-091
Denmark	348325-081	Russia	348325-251
European	348325-021	People's Republic of China	348325-AA1
European A4	348325-A41		
France	348325-051	Spain	348325-071
French Canada	348325-DB1	Sweden/Finland	348325-B71
German	348325-041	Switzerland	348325-111
Italy	348325-061	Taiwan	348325-AB1
Japan	348325-291	Thailand	348325-281
Japan (English)	348325-391	United Kingdom	348325-031
Korea	348325-AD1	United States	348325-001

3.6 Optional HP Tablet PC Docking Station

Optional HP Tablet PC Docking Station

Table 3-5
Optional HP Tablet PC Docking Station
Spare Part Number Information

Description	Spare Part Number
HP Tablet PC Docking Station	348338-001

3.7 HP Tablet PC Docking Station Components
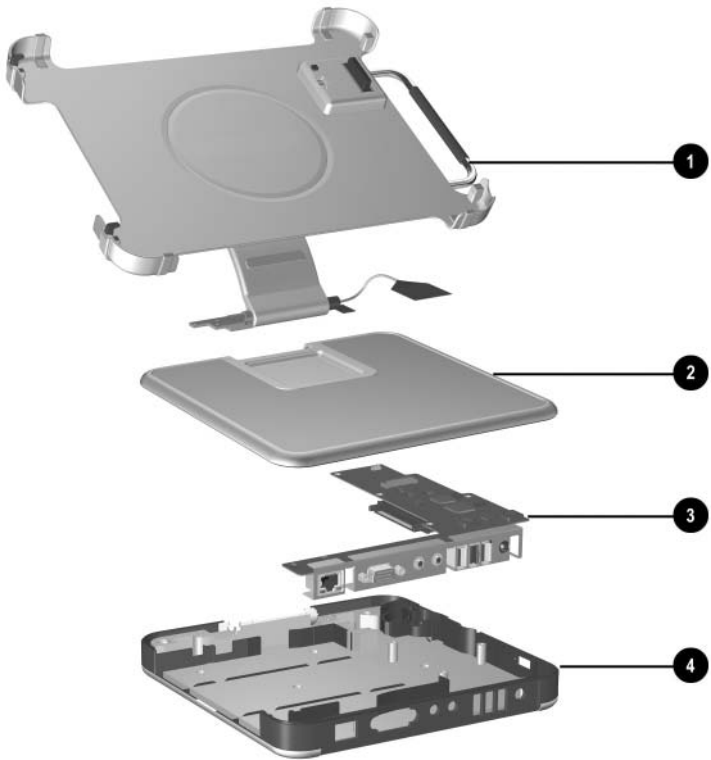
HP Tablet PC Docking Station Components

Table 3-6
HP Tablet PC Docking Station Components
Spare Part Number Information

Item	Description	Spare Part Number
1	Docking stand and pivot arm	349090-001
2	Top case	349091-001
3	Board assembly	349093-001
4	Bottom case	349092-001

3.8 Miscellaneous

Table 3-7
Spare Parts: Miscellaneous (not illustrated)

Description	Spare Part Number	Description	Spare Part Number
AC power cord, 3-wire			
Australia	198723-011	Sweden	198723-101
Europe International	198723-B31	Switzerland	198723-BG1
Italy	198723-061	Taiwan	198723-AB1
Japan	198723-291	The United Kingdom	198723-031
Korea	198723-AD1		
The People's Republic of China	198723-AA1	The United States	198723-001
AC adapter, 65 W			285288-001
Pen (uses a 1.5 VDC, AAAA battery)			
With eraser			344503-001
Without eraser			344418-001
Pen tips			348355-001
Pen receptacle			348356-001
Tablet PC Miscellaneous Screw Kit (includes the following screws; refer to Appendix C, "Screw Listing." for more information on screw specifications and usage.)			348351-001
■ Phillips PM2.0 × 4.0			
■ Phillips PM2.0 × 5.0			
■ Phillips PM2.0 × 3.5			
■ Torx M2.5 × 7.0			

3.9 Sequential Part Number Listing

Table 3-8
Spare Parts: Sequential Part Number Listing

Spare Part Number	Description
344418-001	Pressure sensitive pen without eraser
344503-001	Pressure sensitive pen with eraser
348325-001	Keyboard for use in the United States
348325-011	Keyboard for use in Australia
348325-021	Keyboard for use in Europe
348325-031	Keyboard for use in the United Kingdom
348325-041	Keyboard for use in Germany
348325-051	Keyboard for use in France
348325-061	Keyboard for use in Italy
348325-071	Keyboard for use in Spain
348325-081	Keyboard for use in Denmark
348325-091	Keyboard for use in Norway
348325-111	Keyboard for use in Switzerland
348325-161	Keyboard for use in Latin America
348325-251	Keyboard for use in Russia
348325-281	Keyboard for use in Thailand
348325-291	Keyboard for use in Japan
348325-371	Keyboard for use in the Asia Pacific
348325-391	Keyboard for use in Japan (English)
348325-A41	Keyboard for use in Belgium
348325-AA1	Keyboard for use in the People's Republic of China

Table 3-8
Spare Parts: Sequential Part Number Listing *(Continued)*

Spare Part Number	Description
348325-AB1	Keyboard for use in Taiwan
348325-AD1	Keyboard for use in Korea
348325-B71	Keyboard for use in Sweden and Finland
348325-DB1	Keyboard for use in French Canada
348327-001	Base enclosure with shield
348328-001	Bridge battery
348329-001	RTC battery
348330-001	Power/standby switch
348331-001	System board with 800-MHz Intel Celeron M processor, without memory
348332-001	System board with 1.0-GHz Intel Pentium M processor, without memory
348333-001	Battery pack, Li-Ion, 3.6-AHr
348334-001	Bluetooth wireless device
348335-001	Miscellaneous Cable Kit
348336-001	Top case with inverter
348337-001	Digitizer
348338-001	Docking station
348339-001	Hard drive, 30-GB, 4200-rpm
348340-001	Hard drive, 40-GB, 4200-rpm
348341-001	Hard drive, 60-GB, 5400-rpm
348342-001	Fan
348344-001	Memory module, 1-GB, (333 MHz)
348345-001	Memory module, 256-MB, (333 MHz)

Table 3-8
Spare Parts: Sequential Part Number Listing *(Continued)*

Spare Part Number	Description
348346-001	Memory module, 512-MB, (333 MHz)
348348-001	Display panel assembly (Hydis)
348349-001	Display panel assembly (Toshiba)
348350-001	Miscellaneous Plastics Kit
348351-001	Miscellaneous Screw Kit
348352-001	Speaker assembly
348354-001	Heat sink
348355-001	Pen tips
348356-001	Pen receptacle
348357-001	Wireless antenna
348358-001	Inverter
348996-001	Mini PCI communications card, 802.11b Intel for use in the rest of the world
348997-001	Mini PCI communications card, 802.11b Intel for use in most of the world
349090-001	Docking stand and pivot arm
349091-001	Top case, docking station
349092-001	Bottom case
349093-001	Board assembly
349985-001	Mini PCI communications card, 802.11a/b/g
349985-291	Mini PCI communications card, 802.11a/b/g Japan
349986-001	Modem
366786-001	Hard drive, 80-GB, 5400-rpm

Table 3-8
Spare Parts: Sequential Part Number Listing *(Continued)*

Spare Part Number	Description
370915-001	System board with Intel Celeron M 900-MHz processor (does not include memory)
370916-001	System board with Intel Pentium M 1.0-GHz processor (does not include memory)
374023-001	System board with 1.1-GHz Intel Pentium M processor, without memory
374024-001	System board with 900-MHz Intel Celeron M processor, without memory
374025-001	Hard drive, 40-GB, 5400-rpm
374157-001	Mini PCI communications card, 802.11b/g Intel for use in most of the world
374158-001	Mini PCI communications card, 802.11b/g Intel for use in the rest of the world
379577-001	Mini PCI Bluedog wireless communications card
385759-001	Mini PCI communications card, 802.11a/b/g WLAN for use in the United States
385759-002	Mini PCI communications card, 802.11a/b/g WLAN for international use
385759-021	Mini PCI communications card, 802.11a/b/g WLAN for use in Europe
385759-291	Mini PCI communications card, 802.11a/b/g WLAN for use in Japan
392603-001	System board with Intel Celeron M 373 1.0-GHz processor (does not include memory)
392604-001	System board with Intel Pentium M 753 1.2-GHz processor (does not include memory)
393957-001	System board with Intel Pentium M 723 1.0-GHz processor (does not include memory)

4

Removal and Replacement Preliminaries

This chapter provides essential information for proper and safe removal and replacement service.

4.1 Tools Required

You need the following tools to complete the removal and replacement procedures:

■ Magnetic screwdriver

■ Torx T8 screwdriver

■ Phillips P0 screwdriver

■ Tool kit (includes connector removal tool, loopback plugs, and case utility tool)

4.2 Service Considerations

The following sections include some of the considerations that you should keep in mind during disassembly and assembly procedures.

✎ As you remove each subassembly from the tablet PC, place the subassembly (and all accompanying screws) away from the work area to prevent damage.

Plastic Parts

Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic parts. Apply pressure only at the points designated in the maintenance instructions.

Cables and Connectors

⚠ **CAUTION:** When servicing the tablet PC, ensure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the tablet PC.

Cables must be handled with extreme care to avoid damage. Apply only the tension required to unseat or seat the cables during removal and insertion. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or pulling cables. Ensure that cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced. Handle flex cables with extreme care; these cables tear easily.

4.3 Preventing Damage to Removable Drives

Removable drives are fragile components that must be handled with care. To prevent damage to the tablet PC, damage to a removable drive, or loss of information, observe the following precautions:

■ Before removing or inserting a hard drive, shut down the tablet PC. If you are unsure whether the tablet PC is off or in hibernation, turn on the tablet PC, and then shut it down.

■ Before removing a diskette drive or optical drive, ensure that a diskette or disc is not in the drive. Ensure that the optical drive tray is closed.

■ Before handling a drive, ensure that you discharge any static electricity. While handling a drive, avoid touching the connector.

■ Handle drives on surfaces that have at least 2.54 cm (1 inch) of shock-proof foam.

■ Avoid dropping drives from any height onto any surface.

■ After removing a hard drive, optical drive, or diskette drive, place it in a static-proof bag.

■ Avoid exposing a hard drive to products that have magnetic fields, such as monitors or speakers.

■ Avoid exposing a drive to temperature extremes or liquids.

■ If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging and label the package "FRAGILE: Handle With Care."

4.4 Preventing Electrostatic Damage

Many electronic components are sensitive to electrostatic discharge (ESD). Circuitry design and structure determine the degree of sensitivity. Networks built into many integrated circuits provide some protection, but in many cases the discharge contains enough power to alter device parameters or melt silicon junctions.

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often, the spark is neither felt nor heard, but damage occurs.

An electronic device exposed to electrostatic discharge may not be affected at all and can work perfectly throughout a normal cycle. Or the device might function normally for a while, but because it has been degraded internally, it can fail prematurely.

4.5 Packaging and Transporting Equipment

Use the following grounding precautions when packaging and transporting equipment:

■ To avoid hand contact, transport products in static-safe containers, such as tubes, bags, or boxes.

■ Protect all electrostatic-sensitive parts and assemblies with nonconductive or approved containers or packaging.

■ Keep electrostatic-sensitive parts in their containers until the parts arrive at static-free workstations.

■ Place items on a grounded surface before removing items from their containers.

■ Always be properly grounded when touching a sensitive component or assembly.

■ Store reusable electrostatic-sensitive parts from assemblies in protective packaging or nonconductive foam.

■ Use transporters and conveyors made of antistatic belts and roller bushings. Ensure that mechanized equipment used for moving materials is wired to ground and that proper materials are selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

4.6 **Workstation Precautions**

Use the following grounding precautions at workstations:

■ Cover the workstation with approved static-dissipative material (refer to Table 4-2, "Static-Shielding Materials").

■ Use a wrist strap connected to a properly grounded work surface, and use properly grounded tools and equipment.

■ Use conductive field service tools, such as cutters, screwdrivers, and vacuums.

■ When using fixtures that must directly contact dissipative surfaces, only use fixtures made of static-safe materials.

■ Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.

■ Handle electrostatic-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.

■ Avoid contact with pins, leads, or circuitry.

■ Turn off power and input signals before inserting or removing connectors or test equipment.

4.7 Grounding Equipment and Methods

Grounding equipment must include either a wrist strap or a foot strap at a grounded workstation.

■ When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm ±10% resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, connect a wrist strap with alligator clips.

■ When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of one megohm resistance between the operator and ground. To be effective, the conductive strips must be worn in contact with the skin.

Other grounding equipment recommended for use in preventing electrostatic damage includes:

■ Antistatic tape

■ Antistatic smocks, aprons, and sleeve protectors

■ Conductive bins and other assembly or soldering aids

■ Nonconductive foam

■ Conductive tabletop workstations with ground cords of one megohm resistance

■ Static-dissipative tables or floor mats with hard ties to the ground

■ Field service kits

■ Static awareness labels

■ Material-handling packages

■ Nonconductive plastic bags, tubes, or boxes

■ Metal tote boxes

■ Electrostatic voltage levels and protective materials

Table 4-1 shows how humidity affects the electrostatic voltage levels generated by different activities.

Table 4-1

Typical Electrostatic Voltage Levels

	Relative Humidity		
Event	**10%**	**40%**	**55%**
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tube	2,000 V	700 V	400 V
Removing DIPS from vinyl tray	11,500 V	4,000 V	2,000 V
Removing DIPS from Styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCB	26,500 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V

✎ A product can be degraded by as little as 700 V.

Table 4-2 lists the shielding protection provided by antistatic bags and floor mats.

Table 4-2

Static-Shielding Materials

Material	**Use**	**Voltage Protection Level**
Antistatic plastic	Bags	1,500 V
Carbon-loaded plastic	Floor mats	7,500 V
Metallized laminate	Floor mats	5,000 V

5

Removal and Replacement Procedures

This chapter provides removal and replacement procedures.

Torx T8 and Phillips P0 screws are removed during the disassembly of the tablet PC and the docking station. There are 38 screws, in 4 different sizes, that may have to be removed, replaced, and loosened when servicing the tablet PC. There are 20 screws, in 4 different sizes, that must be removed and replaced when servicing the docking station. Make special note of each screw size and location during removal and replacement.

Refer to Appendix C, "Screw Listing," for detailed information on screw sizes, locations, and usage.

5.1 Serial Number

Report the tablet PC serial number to HP when requesting information or ordering spare parts. The serial number is located on the bottom of the tablet PC.

Serial Number Location

5.2 Disassembly Sequence Chart

Use the following table to determine the section number to be referenced when removing tablet PC components.

Table 5-1

Disassembly Sequence Chart

Section	Description	Number of screws removed
5.3	Preparing the tablet PC for disassembly	
	SD Card and PC Card	0
	Digitizer pen	0
	Battery pack	1
	Memory module and PCI device	2
5.4	Real time clock (RTC) battery	0
5.5	Hard drive	2
5.6	Display panel assembly	8
	Bridge battery	0
	Digitizer	5
5.7	System board	8
	Bluetooth module	0
	Main memory	0
	Modem board	0
5.8	Fan and heat sink	3
5.9	Docking station	17

5.3 Preparing the Tablet PC for Disassembly

Perform the following steps before disassembling the tablet PC.

Before You Begin

1. Save your work, exit all applications, and shut down the tablet PC. If you are unsure whether the tablet PC is off or in hibernation, turn the tablet PC on and then shut it down through the operating system.

2. Disconnect all external devices connected to the tablet PC.

3. Disconnect the power cord.

4. Position the tablet PC so that the SD Card and PC Card slots are toward you.

5. Remove the SD Card and PC Card slot devices or space savers (if any) by following these steps:

   a. Press the SD Card ❶ to release it.

   b. Remove the SD card from the slot ❷.

Releasing the SD Card (space saver shown)
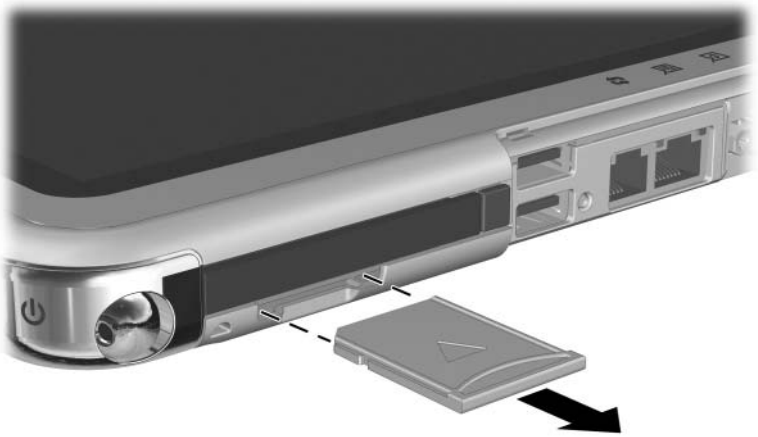
Removing the SD Card (space saver shown)

c. Press the PC Card release button ❶ to release the button from the base enclosure. Press the button a second time to eject the contents of the PC Card slot.

d. Remove the PC Card slot device ❷ from the card slot.

✎ The PC Card slot space saver and SD Card slot space saver are included in the Miscellaneous Plastics/Hardware Kit, spare part number 348350-001.

e. Press the PC Card release button again to reset it ❶.
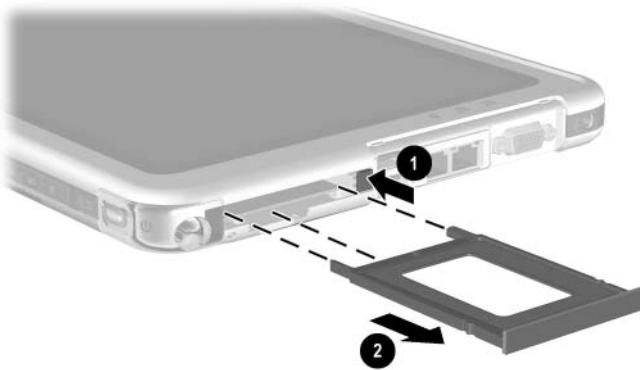
Removing the PC Card Device (space saver shown)

6. Press the end of the pen ❶ to release it from the holder. Then remove the pen from the holder ❷.

7. Open the connector cover by pulling out and down on the notch ❸.
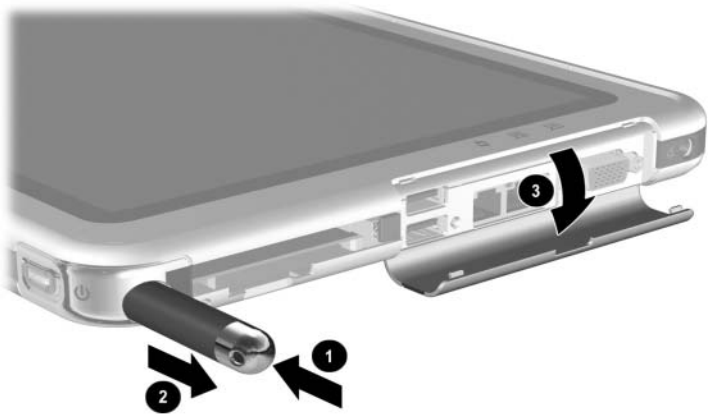
Removing the Pen and Opening the Connector Cover

Battery Pack

Spare Part Number Information

Battery pack, Li-Ion	348333-001

8. Remove the battery pack by following these steps:

   a. Turn the tablet PC upside down, with the power/standby switch and jog dial toward you.

   b. Remove the optional PM2.0×4.0 retention screw ❶ that secures the battery pack to the tablet PC.

   c. Slide the battery release latch ❷ toward the back of the tablet PC and hold it to release the battery pack.

   d. Place your finger in the notch, lift the left side of the battery pack ❸, and swing it to the right.

   e. Remove the battery pack.
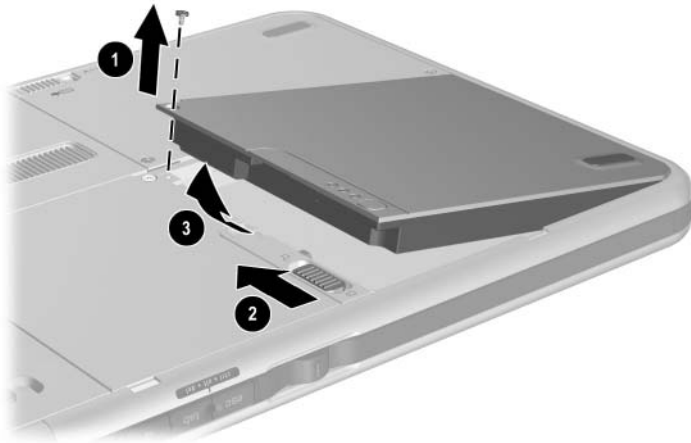
Removing the Battery Pack

Reverse the preceding procedures to install the battery pack.

Mini PCI Communications card

Spare Part Number Information

802.11a/b/g	349985-001
802.11a/b/g for international use	385759-002
802.11a/b/g for use in Europe	385759-021
802.11a/b/g for use in Japan	349985-291
802.11a/b/g for use in Japan	385759-291
802.11a/b/g for use in the United States	385759-001
802.11b/g for use in most of the world	374157-001
802.11b/g for use in the rest of the world	374158-001
802.11b for use in most of the world	348997-001
802.11b for use in the rest of the world	348996-001
Bluedog module	379577-001
Bluetooth module	348334-001

9. Remove the Mini PCI communications card by following these steps:

    a. Remove the two PM2.0×4.0 screws ❶ that secure the Mini PCI communications/memory module slot cover to the tablet PC.

    b. Lift the back edge of the Mini PCI communications/ memory module slot cover ❷ up and swing it toward you.

    c. Remove the Mini PCI communications/memory module slot cover.
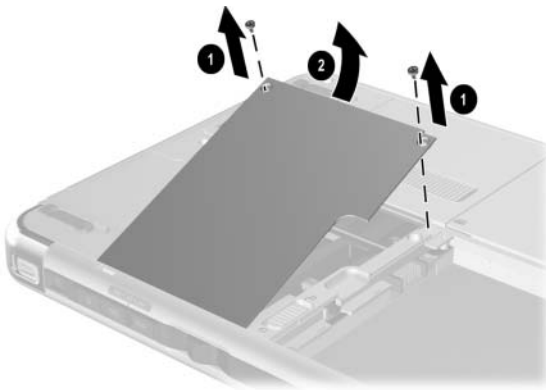
Removing the Memory Module/Mini PCI Communications Compartment Cover

✎ The Mini PCI communications/memory module slot cover is included in the Miscellaneous Plastics/Hardware Kit, spare part number 348350-001.

d. Disconnect the two antenna cables ❶ from the Mini PCI communications card.

e. Spread the retaining tabs ❷ securing the Mini PCI communications card to the system board.

   The edge of the Mini PCI communications card rises at a 45-degree angle.

f. Pull the Mini PCI communications card ❸ away from the connector at a 45-degree angle.
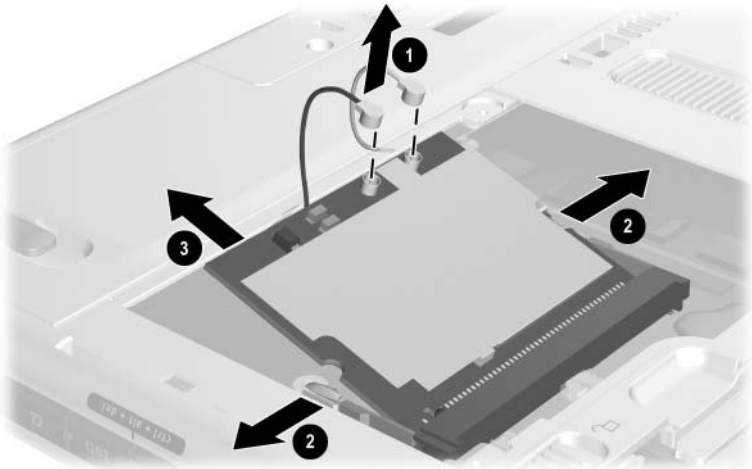
Removing the Mini PCI Communications card

Reverse the preceding procedures to install the Mini PCI communications card.

Memory Module

Spare Part Number Information

1024-MB DDR memory module	348344-001
512-MB DDR memory module	348346-001
256-MB DDR memory module	348345-001

10. Remove the memory module by following these steps:

    a. Remove the Mini PCI communications/memory module slot cover.

    b. Spread the retaining tabs ❶ securing the memory module ❷ to the system board. The edge of the memory module rises at a 45-degree angle.

    c. Pull the memory module ❸ away from the connector at a 45-degree angle.
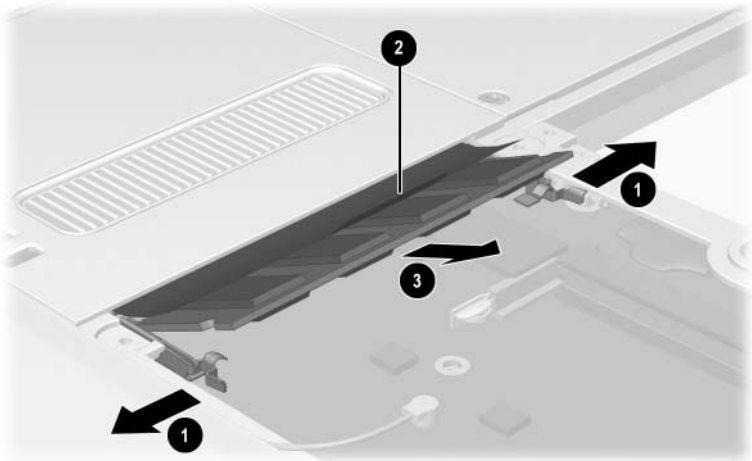
Removing the Memory Module

Reverse the preceding procedures to install the memory module.

5.4 Real-Time Clock Battery

Real-Time Clock (RTC)Battery

Spare Part Number Information

RTC battery	348329-001

Perform the following steps to remove the RTC battery:

1. Prepare the tablet PC for disassembly (refer to Section 5.3, "Preparing the Tablet PC for Disassembly").

2. Turn the tablet PC upside down, with the power switch and jog dial toward you.

3. Disconnect the RTC battery cable ❶ from the system board.

4. Remove the RTC battery ❷ from the tablet PC.
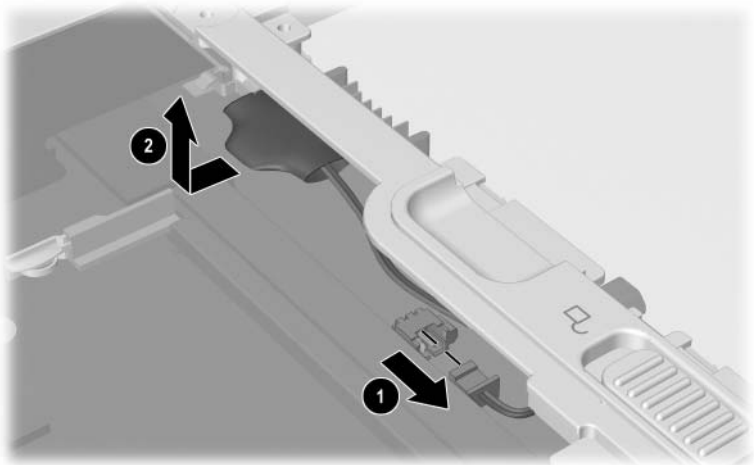
Removing the RTC Battery

Reverse the preceding procedures to install the RTC battery.

5.5 Hard Drive

Hard Drive

Spare Part Number Information

80-GB, 5400 rpm	366786-001
60-GB, 5400 rpm	348341-001
40-GB, 5400 rpm	374025-001
40-GB, 4200 rpm	348340-001
30-GB, 4200 rpm	348339-001

Remove the hard drive as follows:

1. Prepare the tablet PC for disassembly (refer to Section 5.3, "Preparing the Tablet PC for Disassembly").

2. Remove the RTC battery (refer to Section 5.4, "Real-Time Clock Battery").

3. Turn the tablet PC upside down with the power switch and jog dial toward you.

4. Remove the two PM2.0×4.0 screws ❶ that secure the hard drive cover to the tablet PC.

5. Lift the front edge of the cover ❷ and swing the cover back.

6. Remove the hard drive cover.

✎ The hard drive cover is included in the Miscellaneous Plastics/Hardware Kit, spare part number 348350-001.
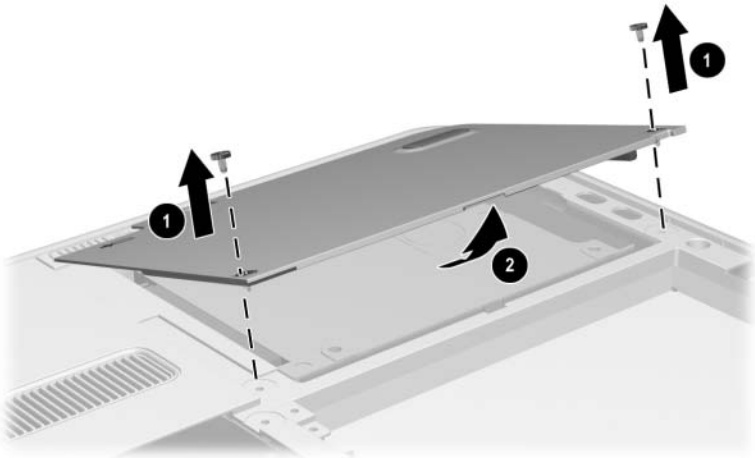
Removing the Hard Drive Cover

7. Use the tab ❶ on the right side of the hard drive to slide the drive ❷ to the right and disconnect it from the system board.

8. Remove the hard drive ❸ from the tablet PC.
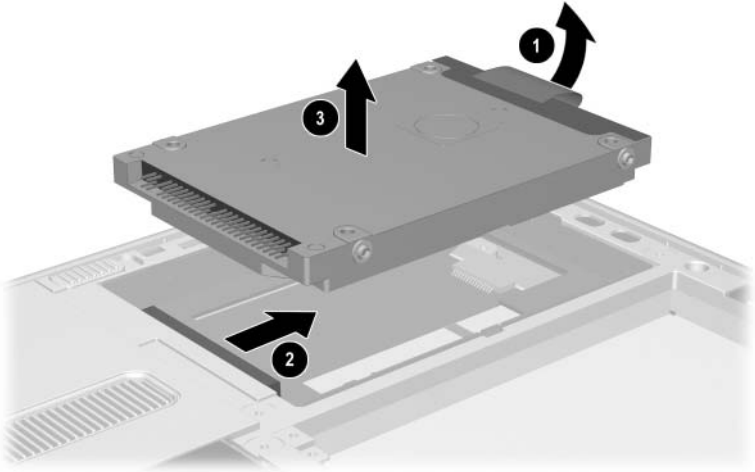
Removing the Hard Drive

Reverse the preceding procedures to install the hard drive.

5.6 Display Panel Assembly

Display Panel Assembly Components

Spare Part Number Information

Display panel assembly	348348-001
Inverter	348358-001
Display bezel with inverter	348336-001
Bridge battery	348328-001
Digitizer	348337-001
Wireless antenna	348357-001

To remove and disassemble the display panel assembly:

1. Prepare the tablet PC for disassembly (refer to Section 5.3, "Preparing the Tablet PC for Disassembly").

2. Remove the RTC battery (refer to Section 5.4, "Real-Time Clock Battery").

3. Remove the hard drive (refer to Section 5.5, "Hard Drive").

4. Turn the tablet PC upside down with the power switch and jog dial toward you.

5. Remove the six TM2.5×8.0 screws ❶ that secure the display panel assembly to the base enclosure.

6. Open the tilt foot ❷ in the bottom-left corner and remove the TM2.5×8.0 screw ❸ that secures the display panel assembly to the base enclosure.
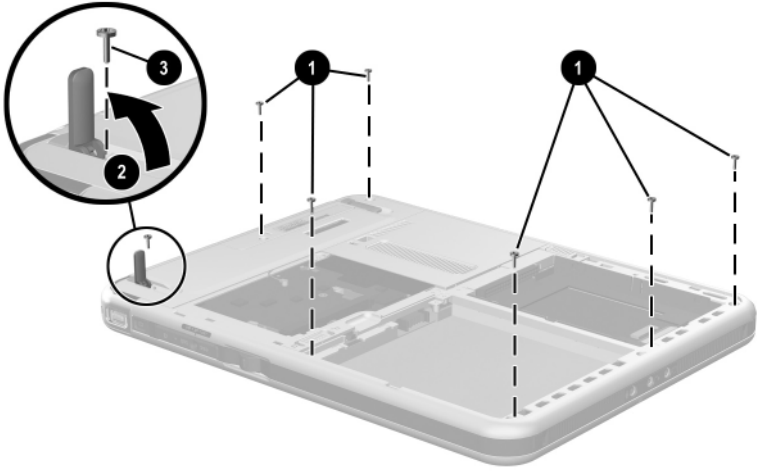
Removing the Display Panel Assembly Screws

7. Slide and hold the keyboard release latch ❶ to the right.

8. Remove the TM2.5×8.0 screw ❷ that secures the display panel assembly to the base enclosure.

9. Lift the edge of the insulator ❸ nearest the edge of the base enclosure.

10. On the right side of the hard drive bay, pull the plastic tab connected to the digitizer cable ❹ to the right to disconnect the cable.
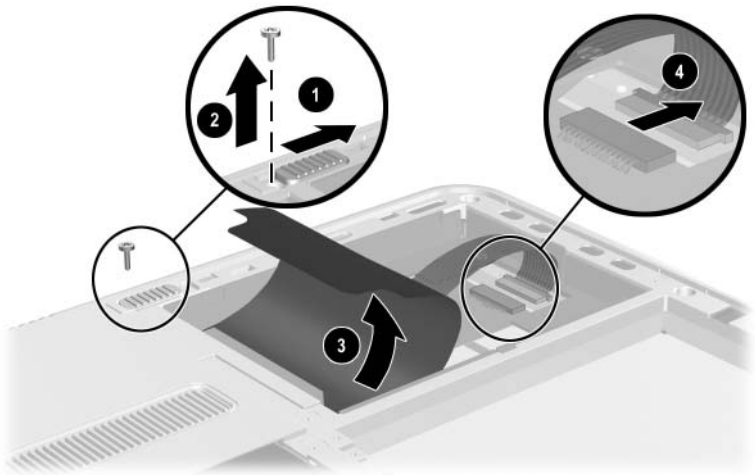
Removing the Display Panel Assembly Screw and Disconnecting the Digitizer Cable

11. Position the tablet PC right side up with the connector cover toward you. Make sure that the connector cover is open.

12. On the side of display panel assembly farthest from you, use a flat edge to pry the edge of the display panel assembly over the audio-out (headphone), headset, and microphone jacks.

13. Separate the display panel assembly from the base enclosure along the edge farthest from you. Swing the base enclosure toward you until it is resting on the table.
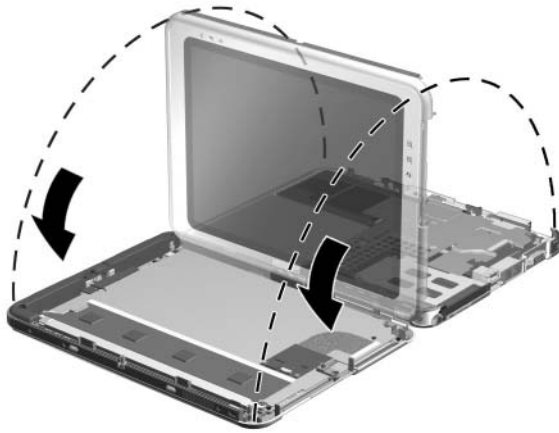
Separating the Display Panel Assembly and Base Enclosure

14. Release the ZIF connector ❶ to which the audio cable is attached, and then disconnect the cable ❷.

15. Release the ZIF connector ❸ to which the inverter cable is attached, and then disconnect the cable ❹.

16. Separate the display panel assembly and the base enclosure.
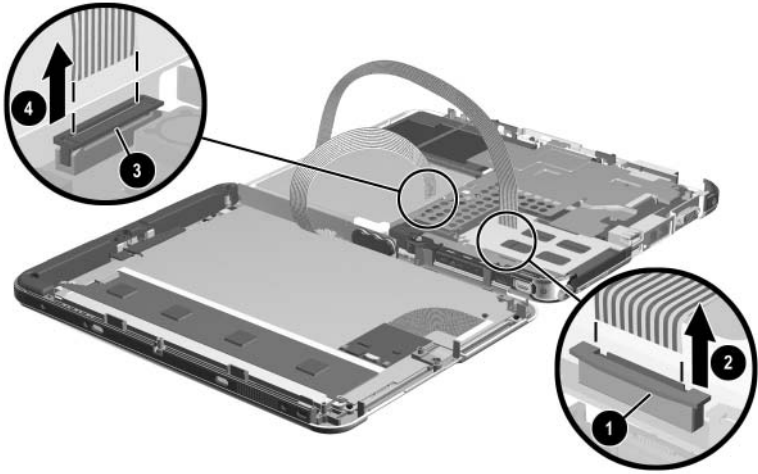
Disconnecting the Audio and Inverter Cables

Reverse the preceding procedures to reassemble and install the display panel assembly.

17. Remove the bridge battery as follows:

    d. Remove the bridge battery ❶ from the panel bezel.

    a. Disconnect the bridge battery cable ❷ from the panel inverter board.
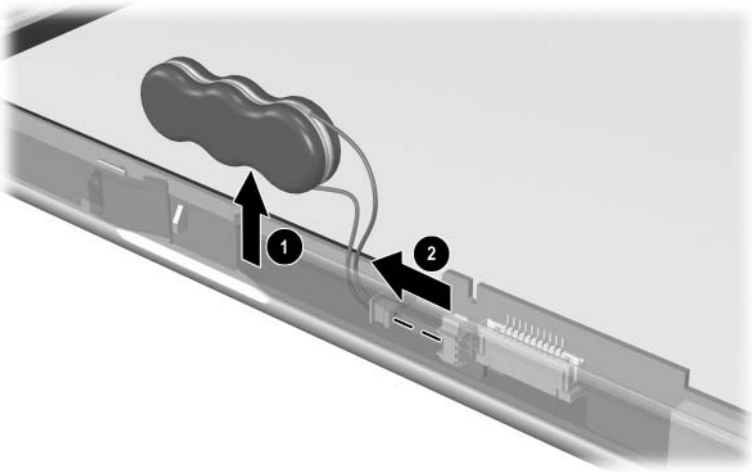
Removing the Bridge Battery

18. Remove the digitizer as follows:

   a. Release the ZIF connector ❶ to which the digitizer cable is attached and disconnect the cable from the system board ❷.

   b. Swing the two flex cables ❸ to the right.
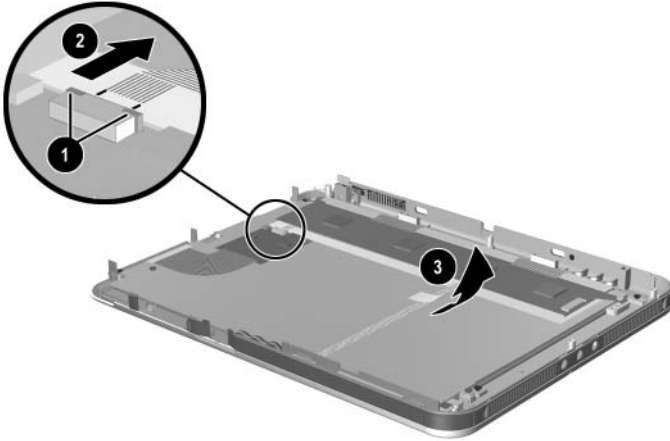
Disconnecting the Digitizer Cable.

c. Remove the two PM 2.0×5.0 screws on the left side and the PM2.0×4.0 screw on the nearest side of the digitizer panel that secure the bracket to the panel assembly.
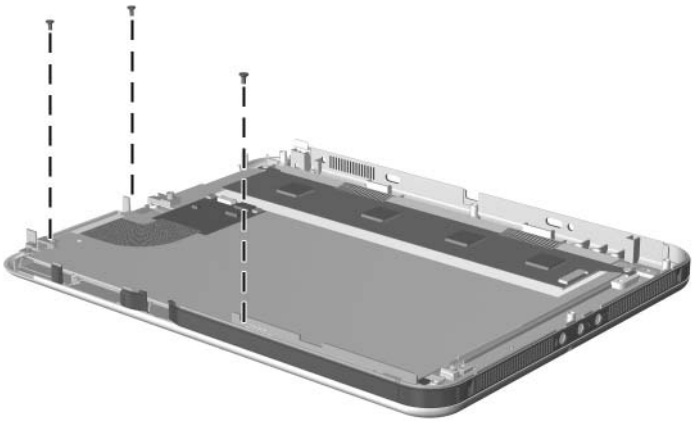
Removing the Bracket Screws

d. Remove the two PM2.0×4.5 screws ❶ that secure the digitizer to the display panel assembly.

e. Lift the front edge of the digitizer ❷ and slide it out ❸ of the display panel.
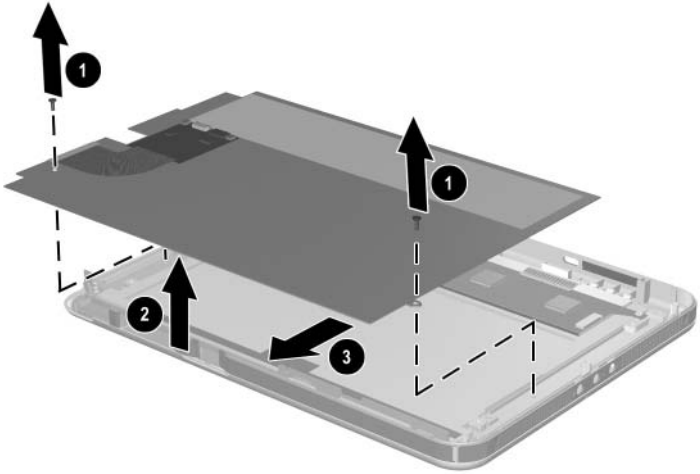
Removing the Digitizer

5.7 System Board

System Board

Spare Part Number Information

System board with fan and heat sink	
Intel Pentium M 753, 1.2-GHz	392604-001
Intel Pentium M, 1.1-GHz	374023-001
Intel Pentium M 723, 1.0-GHz	393957-001
Intel Pentium M, 1.0-GHz	370916-001
Intel Pentium M, 1.0-GHz	348332-001
Mobile Intel Celeron M 373, 1.0-GHz	392603-001
Mobile Intel Celeron M, 900-MHz	370915-001
Mobile Intel Celeron M, 900-MHz	374024-001
Mobile Intel Celeron M, 800-MHz	348331-001

Perform the following steps to remove the system board:

1. Prepare the tablet PC for disassembly (refer to Section 5.3, "Preparing the Tablet PC for Disassembly").

2. Remove the RTC battery (refer to Section 5.4, "Real-Time Clock Battery").

3. Remove the hard drive (refer to Section 5.5, "Hard Drive").

4. Remove the display panel assembly (refer to Section 5.6, "Display Panel Assembly").

5. Remove the Bluetooth board as follows:

   a. Position the tablet PC base enclosure so that the heat sink grille is toward you.

   b. Disconnect the Bluetooth bpard connector from the system board ❶.

   c. Slide the Bluetooth board ❷ away from you and lift it away from the base enclosure.
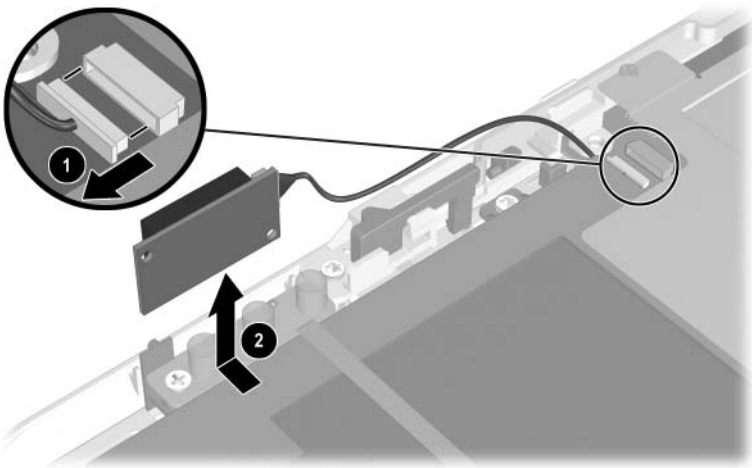
Removing the Bluetooth Board

6. Remove the four PM2.0×3.5 screws ❶ that secure the system board shield to the base enclosure.

7. Lift the shield from the system board ❷.

8. Separate the adhesive ❸ from the system board.
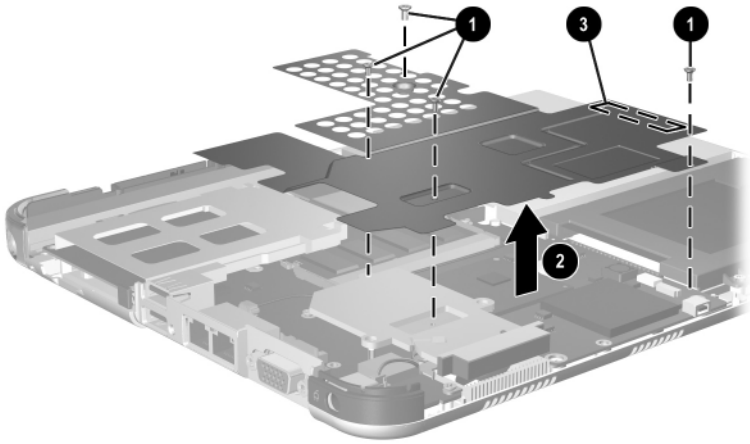
Removing the System Board Shield

9. Release the ZIF connector ❶ to which the audio cable is attached and disconnect the cable ❷ from the system board.

10. Release the ZIF connector ❸ to which the button board cable is attached and disconnect the cable ❹ from the system board.
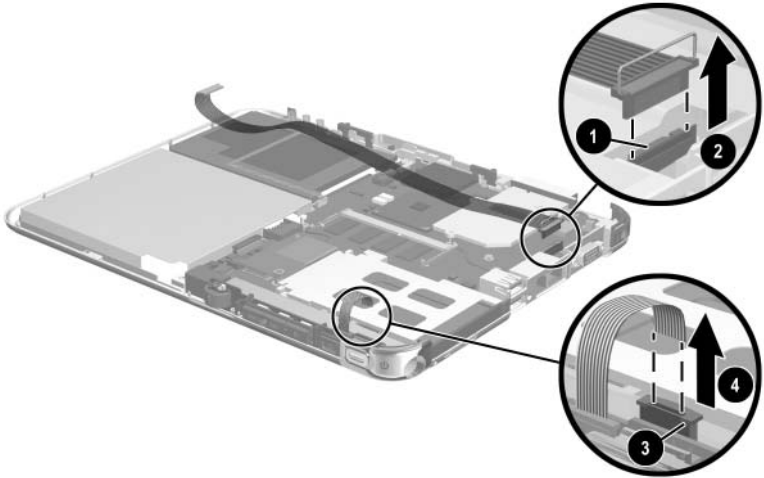
Disconnecting the Audio and Button Board ZIF Connectors

11. Remove the system main memory by following these steps:

    a. Spread the retaining tabs ❶ securing the main memory board to the system board.

    The end of the memory board opposite the connector rises at a 45-degree angle.

    b. Pull the memory module away from the connector at a 45-degree angle ❷.
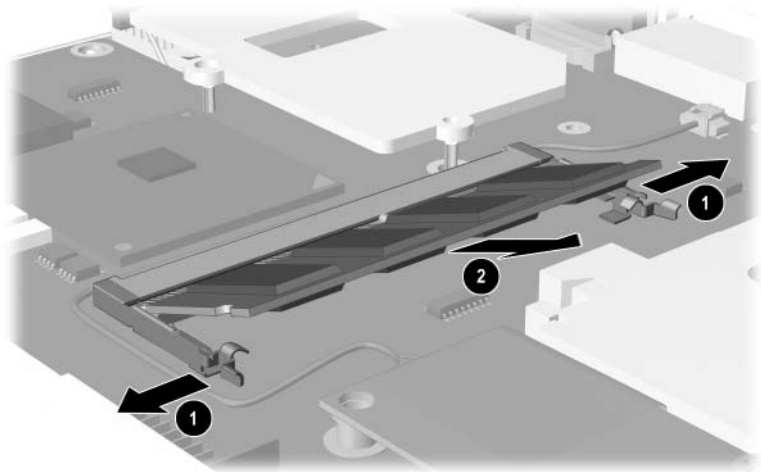
Removing the Main Memory Module

Modem Board

Spare Part Number Information

Modem board	349986-001

12. Remove the modem board by following these steps:

    a. Disconnect the modem board connector from the system board ❶.

    b. Remove the PM2.0×4.5 screw ❷ that secures the modem board to the system board.

    c. Lift the modem and cable assembly from the base enclosure ❸.
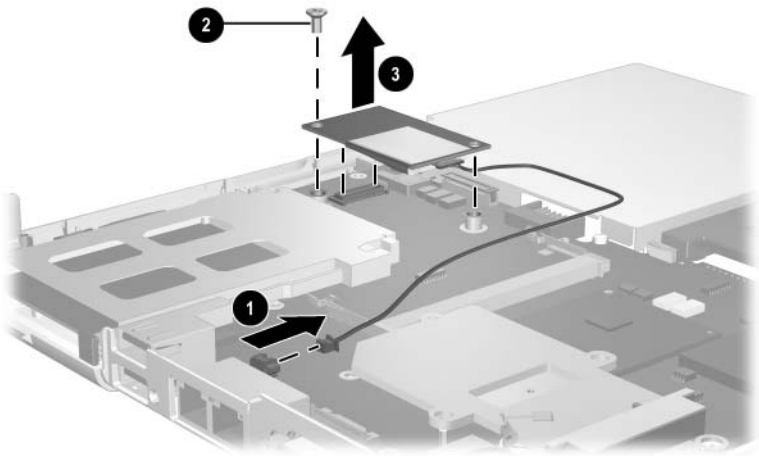
Removing the Modem Board

13. Remove the keyboard release assembly by following these steps:

    a. Remove the four TM2.5×6.0 screws ❶ that secure the keyboard release assembly to the base enclosure.

    b. Lift the keyboard release assembly straight up ❷ and remove it from the base enclosure.
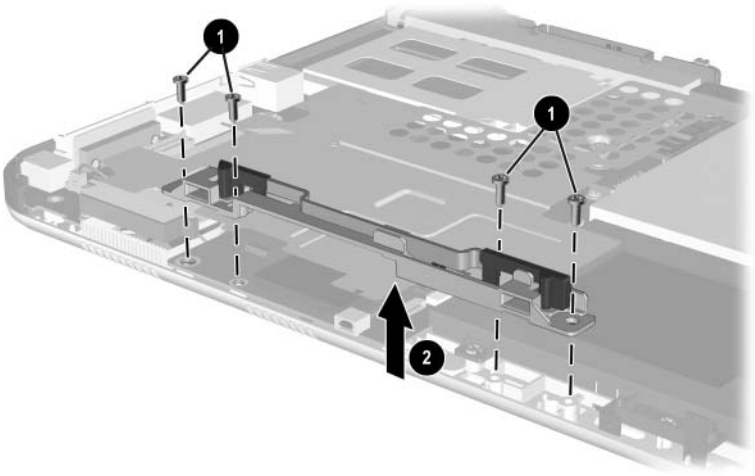
Removing the Keyboard Release Assembly

✎ When installing the keyboard release assembly, make sure the actuator tab ❶ in the base enclosure is in the leftmost position. After this tab is positioned properly, install the keyboard release assembly ❷, and 4 TM2.5×6.0 screws ❸.
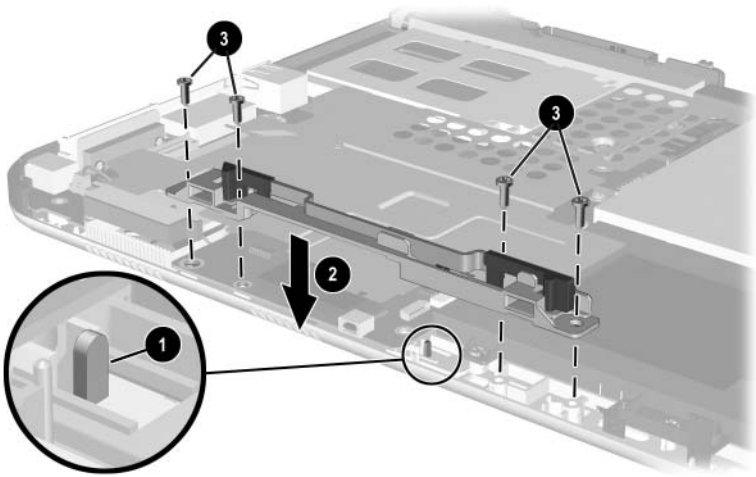
Installing the Keyboard Release Assembly

14. Position the base enclosure so the heat sink grille is to your right.

15. Remove the five PM2.0×4.5 screws that secure the system board to the base enclosure.
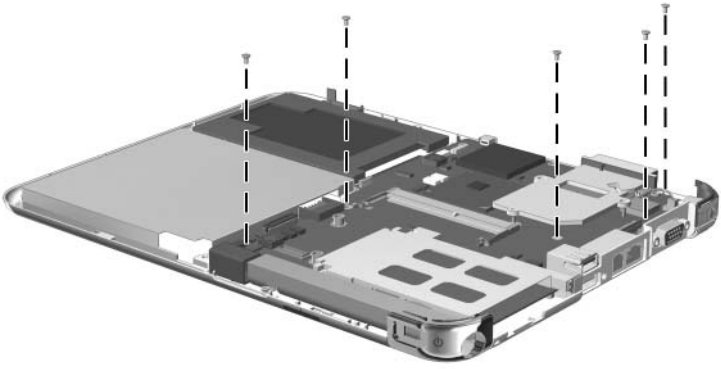
Removing the System Board Screws

16. Use the heat sink grille ❶ to lift the right edge of the system board ❷ until it rests at a 45-degree angle.

17. Slide the system board away from the base enclosure at an angle ❸ to remove it.
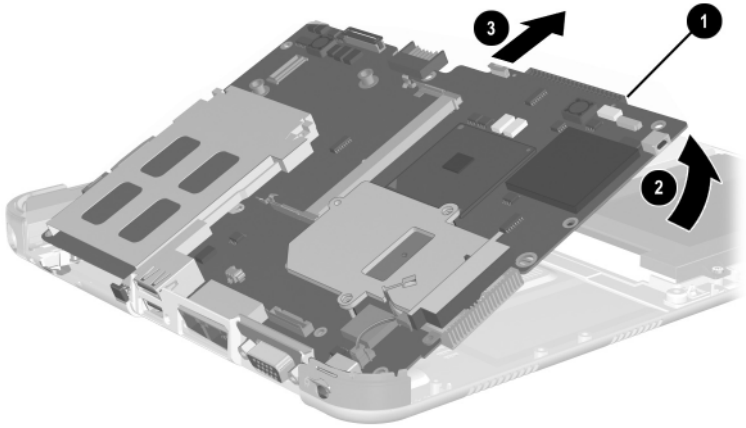
Removing the System Board

Reverse the preceding procedures to install the system board.

5.8 Fan and Heat Sink

Fan and Heat Sink

Spare Part Number Information

Fan	348342-001
	310665-001
Heat Sink	348354-001

✎ The fan and heat sink are included with the system board; however, the fan and heat sink can also be ordered separately.

Perform the following steps to remove the fan and heat sink:

1. Prepare the tablet PC for disassembly (refer to Section 5.3, "Preparing the Tablet PC for Disassembly").

2. Remove the display panel assembly (refer to Section 5.6, "Display Panel Assembly").

3. Remove the system board (refer to Section 5.7, "System Board").

4. Remove the system board shield ❶.

5. Disconnect the fan cable from the system board ❷.

6. Remove the three PM2.0×4.5 screws ❸ that secure the fan and heat sink to the system board.

7. Lift the system board ❹ straight up. The fan and heat sink ❺ will remain resting on the work surface.
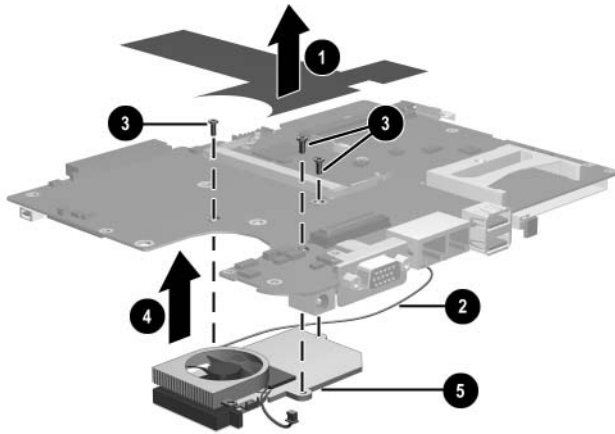
Removing the Fan and Heat Sink

Reverse the preceding procedures to install the system board shield, fan, and heat sink.

5.9 Optional HP Tablet PC Docking Station

Optional HP Tablet PC Docking Station Components

Spare Part Number Information

Optional HP Tablet PC Docking Station	348338-001
Docking stand and pivot arm	349090-001
Top case	349091-001
Board assembly	349093-001
Bottom case	349092-001

Perform the following steps to disassemble the docking station:

1. Position the docking station upside down, resting on the docking stand, with the bottom case toward you.

2. Remove the four TM2.5×7.5 screws that secure the top case to the bottom case.

Removing the Top Case Screws

3. Position the docking station right side up with the rear toward you, and then swing the docking stand to the back.

4. Lift the left edge of the top case ❶ until the rear edge of the case ❷ disengages from the bottom case.

5. Remove the docking station top case ❸.
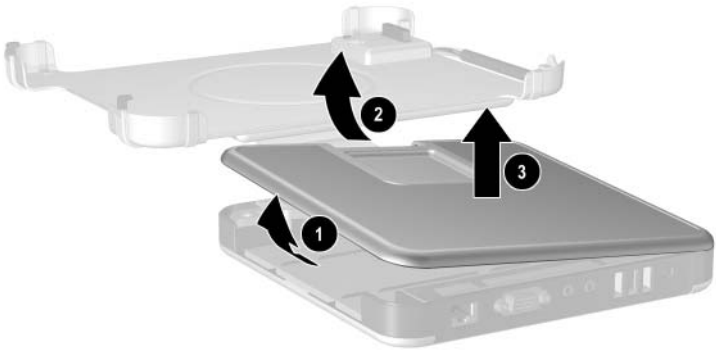
Removing the Top Case

6. Disconnect the docking stand cable ❶ from the board assembly ❷.
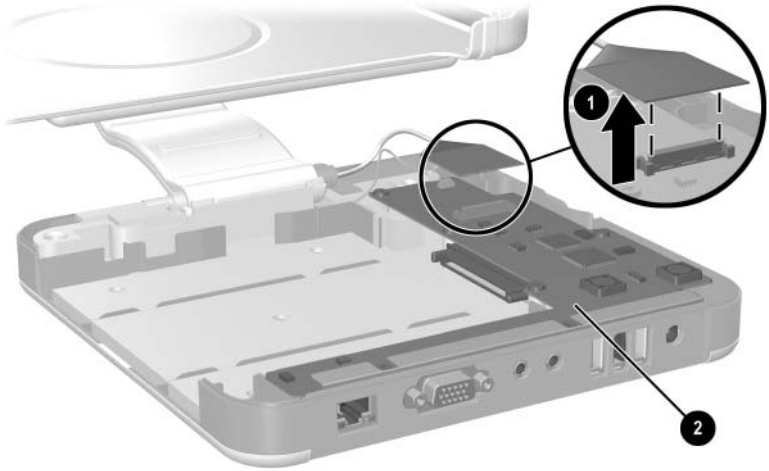
Disconnecting the Docking Stand Cable

7. Position the docking station with the left side toward you.

✎ Make sure the docking stand and pivot arm are supported before removing the following screws. The docking stand and pivot arm can fall if not supported.

8. Remove the following screws:

   ❶ Two PM2.5×8.0 screws that secure the cable bracket to the bottom case.

   ❷ One PM2.5×11.0 screw that secures the pivot arm hinge to the bottom case.

   ❸ Three PM2.5×8.0 screws that secure the pivot arm hinge to the bottom case.

9. Remove the docking stand and pivot arm ❹.
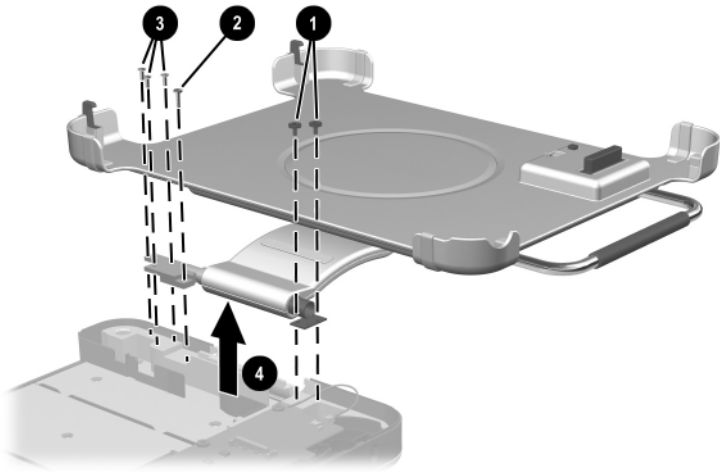
Removing the Docking Stand and Pivot Arm

10. Disconnect the switch cable ❶ from the board assembly.

11. Remove the seven PM2.5×4.0 screws ❷ that secure the board assembly to the bottom case.
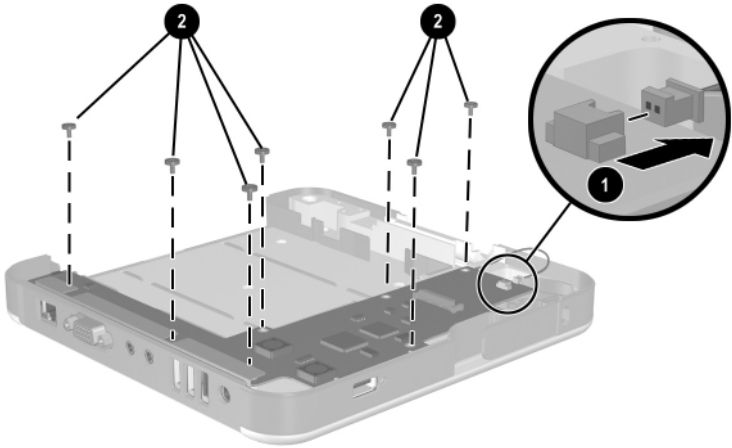
Removing the Board Assembly Screws

12. Lift the edge of the board assembly ❶ until it rests at an angle.

13. Slide the board assembly toward you ❷ until the rear connectors clear the bottom case.

14. Lift the docking station board assembly straight up ❸ to remove it from the bottom case.
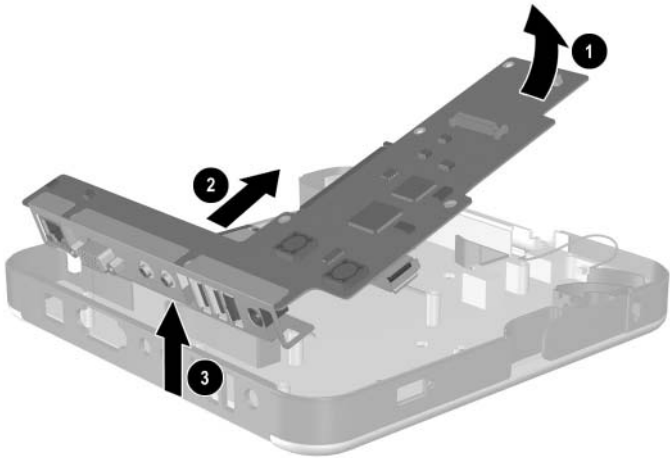
Removing the Board Assembly

Reverse the preceding procedures to assemble the docking station.

6

Specifications

This chapter provides physical and performance specifications.

Table 6-1

Tablet PC

Dimensions		
Height	27.4 cm	10.8 in
Width	21.6 cm	8.5 in
Depth	2.0 cm	0.8 in
Weight (varies by configuration)		
Tablet PC only	1.4 kg	3.1 lb
Tablet PC with keyboard	1.8 kg	4.0 lb
Stand-alone power requirements		
Nominal operating voltage	14.8 VDC	
Maximum operating power	40.0 W	
Peak operating power	38.0 W	
Temperature		
Operating	10°C to 35°C	50°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F

Table 6-1

Tablet PC *(Continued)*

Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 90%, 38.7°C (101.6°F) maximum wet bulb temperature	
Altitude (unpressurized)		
Operating (14.7 to 10.1 psia)	0 to 3,048 m	0 to 10,000 ft
Nonoperating (14.7 to 4.4 psia)	0 to 9,144 m	0 to 30,000 ft
Shock		
Operating	10 g, 11 ms, half-sine	
Nonoperating	60 g, 11 ms, half-sine	

✎ Applicable product safety standards specify thermal limits for plastic surfaces. The tablet PC operates well within this range of temperatures.

Table 6-2

10.4-inch XGA, TFT Display

Dimensions		
Height	23.6 cm	9.29 in
Width	17.3 cm	6.81 in
Diagonal	26.4 cm	10.4 in
Number of colors	Up to 16.8 million	
Contrast ratio	150:1	
Brightness	140 nits typical	
Pixel resolution		
Pitch	0.264 × 0.264 mm	
Format	1024 × 768	
Configuration	RGB vertical stripe	
Backlight	Edge lit	
Character display	80 × 25	
Total power consumption	3.75 W	

Table 6-3

Hard Drives

	80-GB	60-GB
User capacity per drive*	80.0 GB	60.0 GB
Drive height	9.5 mm	9.5 mm
Drive width	70 mm	70 mm
Interface type	ATA-6	ATA-5
Seek times (typical read, including setting)		
Single track	3 ms	3 ms
Average	13 ms	13 ms
Full stroke	24 ms	24 ms
Logical blocks[†]	156,301,488	117,210,240
Disk rotational speed	5,400 rpm	5,400 rpm
Transfer rate		
Interface max (MB/s)[‡]	100	66.6

*1 GB=1,073,741,824 bytes.

[†]System capability may differ.

[‡]Actual drive specifications may differ slightly.

Certain restrictions and exclusions apply. Consult Customer Care for details.

Table 6-3

Hard Drives *(Continued)*

	40-GB	40-GB	30-GB
User capacity per drive*	40.0 GB	40.0 GB	30.0 GB
Drive height	9.5 mm	9.5 mm	9.5 mm
Drive width	70 mm	70 mm	70 mm
Interface type	ATA-5	ATA-5	ATA-5
Seek times (typical read, including setting)			
Single track	3 ms	3 ms	3 ms
Average	13 ms	13 ms	13 ms
Full stroke	24 ms	24 ms	24 ms
Logical blocks‡	78,140,160	78,140,160	58,605,120
Disk rotational speed	4,200 rpm	5,400 RPM	4,200 rpm
Transfer rate			
Interface max (MB/s)†	100	100	100

*1 GB=1,073,741,824 bytes.

†System capability may differ.

‡Actual drive specifications may differ slightly.

Certain restrictions and exclusions apply. Consult Customer Care for details.

Table 6-4

Diskette Drive

(For Use Only in the Docking Station or External MultiBay)

Diskette size	88.9 mm (3.5 in)
Light	On system
Height	12.7 mm (0.5 in)
Bytes per sector	512
Sectors per track	
High density	18 (1.44 MB)
Low density	9
Tracks per side	
High density	80
Low density	80
Read/write heads	2
Average seek times	
Track-to-track (high/low)	3 to 6 ms
Average (high/low)	95 to 174 ms
Settling time	15 ms
Latency average	100 ms

Table 6-5

CD-ROM Drive

(For Use Only in the Docking Station or External MultiBay)

Applicable disc	CD-ROM (Mode 1, 2, and 3) CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R (read only) CD Plus Photo CD (single/multisession) CD-Extra Video CD CD-WO (fixed packets only) CD-Bridge	
Center hole diameter	1.5 cm	0.59 in
Disc diameter		
Standard disc	12 cm	4.72 in
Mini disc	8 cm	3.15 in
Disc thickness	1.2 mm	0.047 in
Track pitch	1.6 µm	
Access time		
Random	< 150 ms	
Full stroke	< 300 ms	
Cache buffer	128 KB	
Data transfer rate		
Sustained, 16X	150 KB/s at 1X	
Variable	1,500 to 3,600 KB/s (10X to 24X)	
Normal PIO Mode 4 (single burst)	16.66 KB/s	
Startup time	< 8 seconds	
Stop time	< 4 seconds	

Table 6-6

DVD-ROM Drive

(For Use Only in the Docking Station or External MultiBay)

Applicable disc	DVD-5, DVD-9, DVD-10 CD-ROM (Mode 1 and 2) CD Digital Audio CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R (read only) CD Plus Photo CD (single/multisession) CD-Bridge	
Center hole diameter	1.5 cm	0.59 in
Disc diameter		
Standard disc	12 cm	4.72 in
Mini disc	8 cm	3.15 in
Disc thickness	1.2 mm	0.047 in
Track pitch	0.74 µm	
Access time		
Random	< 150 ms	
Full stroke	< 225 ms	
Audio output level	Line-out, 0.7 Vrms	
Cache buffer	512 KB	
Data transfer rate		
Max 24X CD	3,600 KB/s (150 KB/s at 1X CD rate)	
Max 8X DVD	10,800 KB/s (1352 KB/s at 1X DVD rate)	
Normal IO Mode 4 (single burst)	16.6 MB/s	
Startup time	< 12 seconds	
Stop time	< 3 seconds	

Table 6-7

DVD/CD-RW Combo Drive

(For Use Only in the Docking Station or External MultiBay)

Applicable disc	DVD-5, DVD-9, DVD-10 CD-ROM (Mode 1 and 2) CD Digital Audio CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R (read only) CD Plus Photo CD (single/multisession) CD-Bridge	
Center hole diameter	1.5 cm	0.59 in
Disk diameter		
Standard disc	12 cm	4.72 in
Mini disc	8 cm	3.15 in
Disk thickness	1.2 cm	0.047 in
Track pitch	0.74 µm	
Access time		
Random	< 150 ms	
Full stroke	< 225 ms	
Audio output level	Line-out, 0.7 Vrms	
Cache buffer	128 KB	
Data transfer rate		
Sustained, 16X	150 KB/s	
Sustained, 4X CD-RW	5,520 KB/s	
Normal PIO Mode 4 (single burst)	16.6 MB/s	
Startup time	< 15 seconds	
Stop time	< 6 seconds	

Table 6-8

External AC Adapter

Weight	0.28 kg	0.62 lb
Power supply (input)		
Operating voltage	90 to 260 VAC RMS	
Operating current	1.7 A RMS	
Operating frequency range	47 to 63 Hz AC	
Maximum transient	4/50 kV	

Table 6-9

6-cell, Li-Ion Battery Pack

Weight	0.30 kg	0.65 lb
Energy		
Voltage	11.1 V	
Amp-hour capacity	3.6 Ah	
Watt-hour capacity	40.0 Wh	
Temperature		
Operating: charging	0°C to 40°C	32°F to 104°F
Operating: discharging	-10°C to 50°C	14°F to 122°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Battery recharge time		
System off or in standby	2.5 hours	
System on (varies depending on system power consumption)	3 to 6 hours	

Table 6-10

System DMA

Hardware DMA	System Function
DMA0	Available for audio
DMA1	Entertainment audio (default; alternate=DMA0, DMA3, none)
DMA2	Diskette drive
DMA3	ECP parallel port LPT1 (default; alternate=DMA0, none)
DMA4	DMA controller cascading (not available)
DMA5	Available for PC Card
DMA6	Not assigned
DMA7	Not assigned

✎ PC Card controller can use DMA 1, 2, or 5.

Table 6-11

System Interrupts

Hardware IRQ	System Function
IRQ0	System timer
IRQ1	Keyboard controller
IRQ2	Cascaded
IRQ3	COM2
IRQ4	COM1
IRQ5	Audio (default)*
IRQ6	Diskette drive
IRQ7	Parallel port
IRQ8	Real time clock (RTC)
IRQ9	Infrared
IRQ10	System use
IRQ11	System use
IRQ12	Internal point stick or external mouse
IRQ13	Coprocessor (not available to any peripheral)
IRQ14	IDE interface (hard drive and optical drive)
IRQ15	System use

✎ PC Cards may assert IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or IRQ15. Either the infrared or the serial port may assert IRQ3 or IRQ4.

*Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none.

Table 6-12

System I/O Addresses

I/O Address (hex)	System Function (shipping configuration)
000 - 00F	DMA controller no. 1
010 - 01F	Unused
020 - 021	Interrupt controller no. 1
022 - 024	Opti chipset configuration registers
025 - 03F	Unused
02E - 02F	87334 "Super I/O" configuration for CPU
040 - 05F	Counter/timer registers
044 - 05F	Unused
060	Keyboard controller
061	Port B
062 - 063	Unused
064	Keyboard controller
065 - 06F	Unused
070 - 071	NMI enable/real time clock
072 - 07F	Unused
080 - 08F	DMA page registers
090 - 091	Unused
092	Port A
093 - 09F	Unused
0A0 - 0A1	Interrupt controller no. 2

Table 6-12

System I/O Addresses *(Continued)*

I/O Address (hex)	System Function (shipping configuration)
0A2 - 0BF	Unused
0C0 - 0DF	DMA controller no. 2
0E0 - 0EF	Unused
0F0 - 0F1	Coprocessor busy clear/reset
0F2 - 0FF	Unused
100 - 16F	Unused
170 - 177	Secondary fixed disk controller
178 - 1EF	Unused
1F0 - 1F7	Primary fixed disk controller
1F8 - 200	Unused
201	Joystick (decoded in ESS1688)
202 - 21F	Unused
220 - 22F	Entertainment audio
230 - 26D	Unused
26E - 26	Unused
278 - 27F	Unused
280 - 2AB	Unused
2A0 - 2A7	Unused
2A8 - 2E7	Unused
2E8 - 2EF	Reserved serial port

Table 6-12

System I/O Addresses *(Continued)*

I/O Address (hex)	System Function (shipping configuration)
2F0 - 2F7	Unused
2F8 - 2FF	Infrared port
300 - 31F	Unused
320 - 36F	Unused
370 - 377	Secondary diskette drive controller
378 - 37F	Parallel port (LPT1/default)
380 - 387	Unused
388 - 38B	FM synthesizer—OPL3
38C - 3AF	Unused
3B0 - 3BB	VGA
3BC - 3BF	Reserved (parallel port/no EPP support)
3C0 - 3DF	VGA
3E0 - 3E1	PC Card controller in CPU
3E2 - 3E3	Unused
3E8 - 3EF	Internal modem
3F0 - 3F7	"A" diskette controller
3F8 - 3FF	Serial port (COM1/default)
CF8 - CFB	PCI configuration index register (PCIDIVO-1)
CFC - CFF	PCI configuration data register (PCIDIVO-1)

Table 6-13

System Memory Map

Size	Memory Address	System Function
640 KB	00000000-0009FFFF	Base memory
128 KB	000A0000-000BFFFF	Video memory
48 KB	000C0000-000CBFFF	Video BIOS
160 KB	000C8000-000E7FFF	Unused
64 KB	000E8000-000FFFFF	System BIOS
15 MB	00100000-00FFFFFF	Extended memory
58 MB	01000000-047FFFFF	Super extended memory
58 MB	04800000-07FFFFFF	Unused
2 MB	08000000-080FFFFF	Video memory (direct access)
4 GB	08200000-FFFEFFFF	Unused
64 KB	FFFF0000-FFFFFFFF	System BIOS

A

Connector Pin Assignments

Table A-1

RJ-45 (Network)

```
 ┌─────────────────────┐
 │  │││││││││           │
 │  1 2 3 4 5 6 7 8     │
 │              ┌───┐   │
 └──────────────┘   └───┘
```
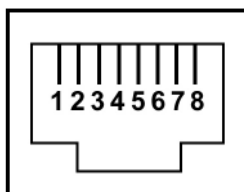
Pin	Signal	Pin	Signal
1	Transmit +	5	Unused
2	Transmit –	6	Receive –
3	Receive +	7	Unused
4	Unused	8	Unused

Table A-2

RJ-11 (Modem)
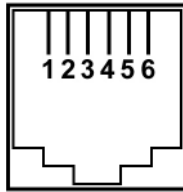
Pin	Signal	Pin	Signal
1	Unused	4	Unused
2	Tip	5	Unused
3	Ring	6	Unused

Table A-3

Universal Serial Bus
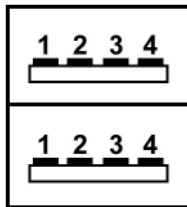
Pin	Signal	Pin	Signal
1	+5 VDC	3	Data +
2	Data –	4	Ground

Table A-4

External Monitor
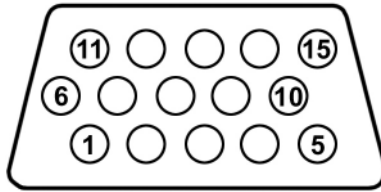
Pin	Signal	Pin	Signal
1	Red analog	9	+5 VDC
2	Green analog	10	Ground
3	Blue analog	11	Monitor detect
4	Not connected	12	DDC 2B data
5	Ground	13	Horizontal sync
6	Ground analog	14	Vertical sync
7	Ground analog	15	DDC 2B clock
8	Ground analog		

Table A-5

Audio-Out (Headphone)
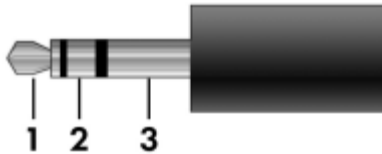
Pin	Signal	Pin	Signal
1	Audio out, left channel	3	Ground
2	Audio out, right channel		

Table A-6

Audio-In Microphone
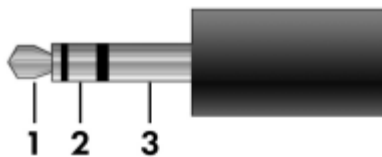
Pin	Signal	Pin	Signal
1	Audio signal in	2	Ground
2	Audio signal in		

B

Power Cord Set Requirements

3-Conductor Power Cord Set

The wide range input feature of the notebook permits it to operate from any line voltage from 100 to 120 or 220 to 240 volts AC.

The power cord set included with the notebook meets the requirements for use in the country where the equipment is purchased.

Power cord sets for use in other countries must meet the requirements of the country where the notebook is used.

General Requirements

The requirements listed below are applicable to all countries.

■ The length of the power cord set must be at least 1.5 m (5.0 ft) and a maximum of 2.0 m (6.5 ft).

■ All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.

■ The power cord sets must have a minimum current capacity of 10 amps and a nominal voltage rating of 125 or 250 V AC, as required by each country's power system.

■ The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the notebook.

Country-Specific Requirements

3-Conductor Power Cord Set Requirements

Country	Accredited Agency	Applicable Note Number
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3

✎ NOTES:

1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.

2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.

3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.

3-Conductor Power Cord Set Requirements *(Continued)*

Country	Accredited Agency	Applicable Note Number
Korea	EK	4
The Netherlands	KEMA	1
Norway	NEMKO	1
People's Republic of China	CCC	5
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
United Kingdom	BSI	1
United States	UL	2

✎ NOTES:

1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.

2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.

3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.

4. The flexible cord must be Type VCTF, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.

5. The flexible cord must be Type RVV, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.

C

Screw Listing

This appendix provides specification and reference information for the screws used in the tablet PC and the docking station. All screws listed in this appendix are available for the tablet PC in the Miscellaneous Screw Kit, spare part number 348351-001 docking station.

Table C-1

Phillips PM2.0×4.0 Screw
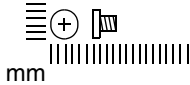
mm	Color	Qty.	Length	Thread	Head Width
	Silver	9	4.0 mm	2.0 mm	3.8 mm
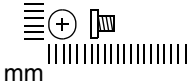
Where used:

❶ One screw that secures the battery pack to the tablet PC (documented in Section 5.3)

❷ Two screws that secure the Mini PCI communications/memory module compartment cover to the tablet PC (documented in Section 5.3)

❸ Two screws that secure the hard drive cover to the tablet PC (documented in Section 5.5)
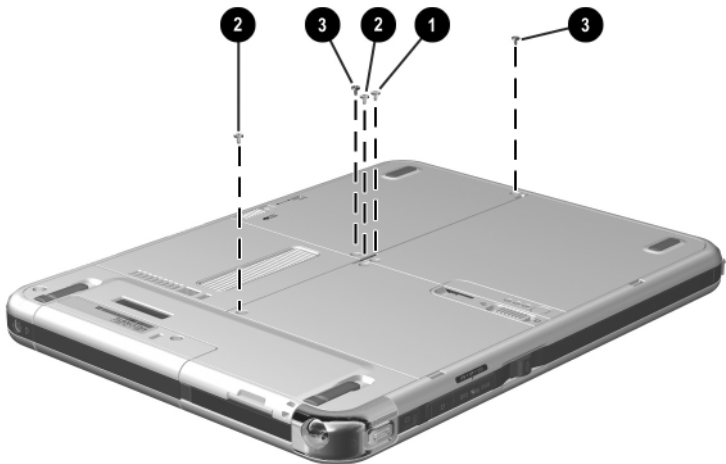
Phillips PM2.0 × 4.0 Screw Locations

Table C-1

Phillips PM2.0×4.0 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Silver	9	4.0 mm	2.0 mm	3.8 mm

Where used:

4 screws that secure the display panel to the display bezel (documented in Section 5.6)
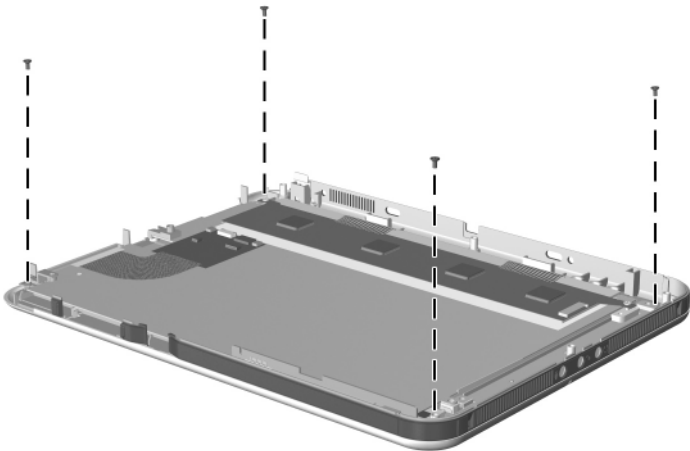
Phillips PM2.0 × 4.0 Screw Locations

Table C-2

Torx T8M2.5×8.0 Screw
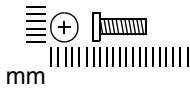
mm	Color	Qty.	Length	Thread	Head Width
	Silver	8	8.0 mm	2.5 mm	4.4 mm
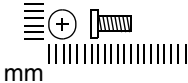
Where used:

❶ Seven screws that secure the display panel assembly to the base enclosure (documented in Section 5.6)

❷ One screw under the keyboard release latch that secures the connector cover and display panel assembly to the base enclosure (documented in Section 5.6)
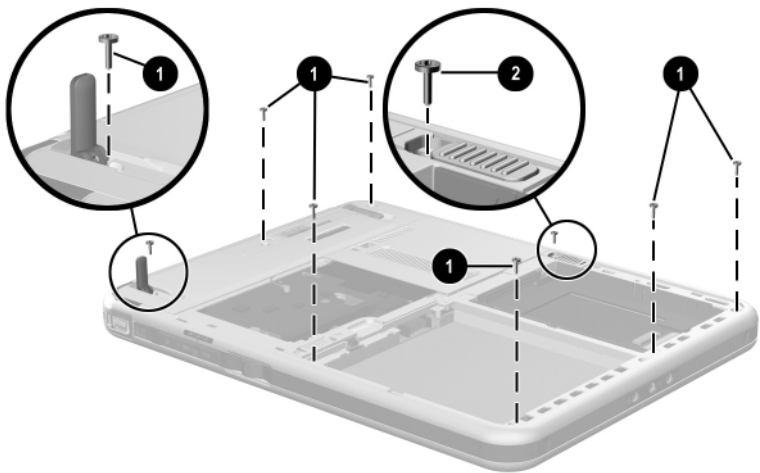
Torx T8M2.5 × 8.0 Screw Locations

Table C-3

Phillips PM2.5×6.0 Screw

	Color	Qty.	Length	Thread	Head Width
mm	Silver	4	6.0 mm	2.5 mm	4.3 mm

Where used:

4 screws that secure the keyboard release assembly to the base enclosure (documented in Section 5.7)
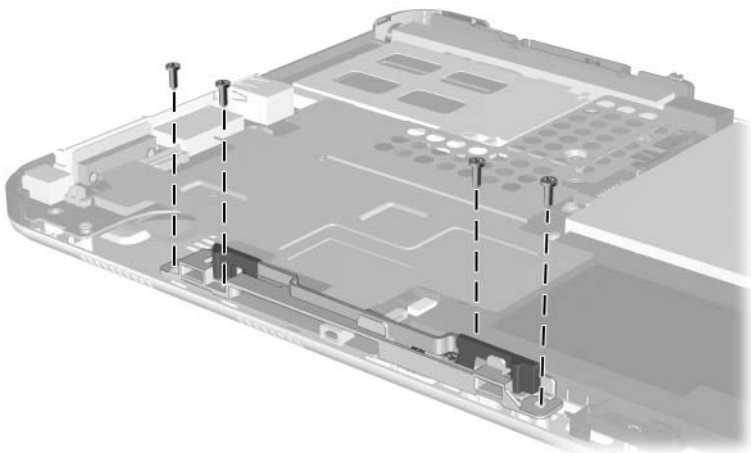
Phillips PM2.5 × 6.0 Screw Location

Table C-4

Phillips PM2.0×3.0 Screw
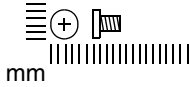
mm	Color	Qty.	Length	Thread	Head Width
	Silver	4	3.0 mm	2.0 mm	3.8 mm
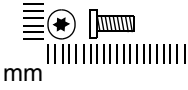
Where used:

4 screws that secure the display panel to the display bezel
(documented in Section 5.6)
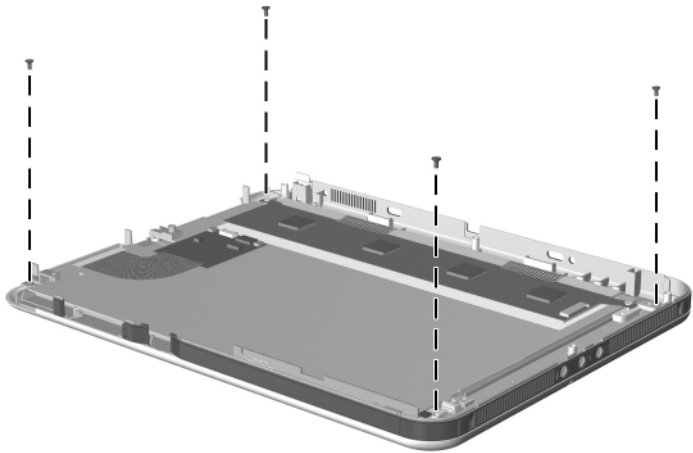
Phillips PM2.0 × 3.0 Screw Locations

Table C-5

Torx M2.5×7.5 Screw

	Color	Qty.	Length	Thread	Head Width
mm	Silver	4	7.5 mm	2.5 mm	4.4 mm

Where used:

4 screws that secure the docking station top case to the bottom case (documented in Section 5.9)

Phillips PM2.5 × 7.5 Screw Locations

Table C-6

Phillips PM2.0×5.0 Screw
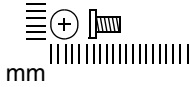
	Color	Qty.	Length	Thread	Head Width
mm	Yellow	3	5.0 mm	2.0 mm	3.8 mm

Where used:

3 screws that secure the display panel bracket to the display panel assembly (documented in Section 5.6)
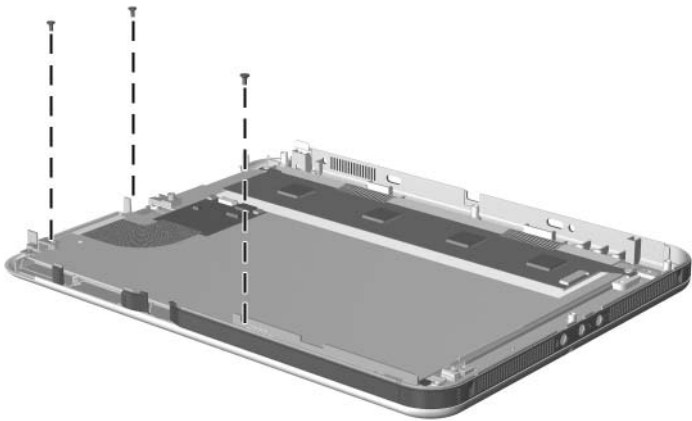
Phillips PM2.0 × 5.0 Screw Locations

Table C-7

Phillips PM2.0×3.5 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Yellow	1	3.5 mm	2.0 mm	3.8 mm

Where used:
One screw that secures the display panel bracket to the display panel assembly
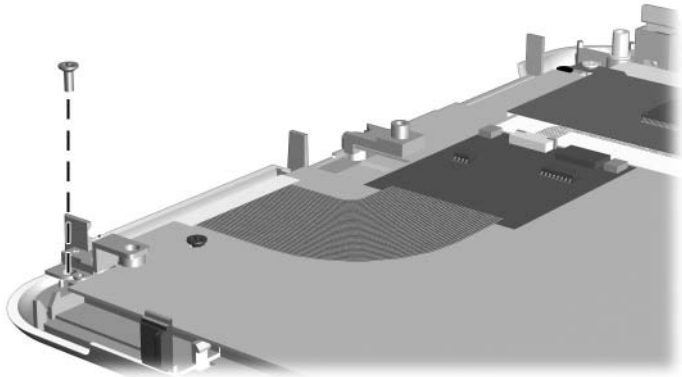
Phillips PM2.0 × 3.5 Screw Location

Table C-8

Phillips PM2.0×4.5 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Yellow	8	4.5 mm	2.0 mm	3.8 mm

Where used:

5 screws that secure the system board to the base enclosure (documented in Section 5.8)
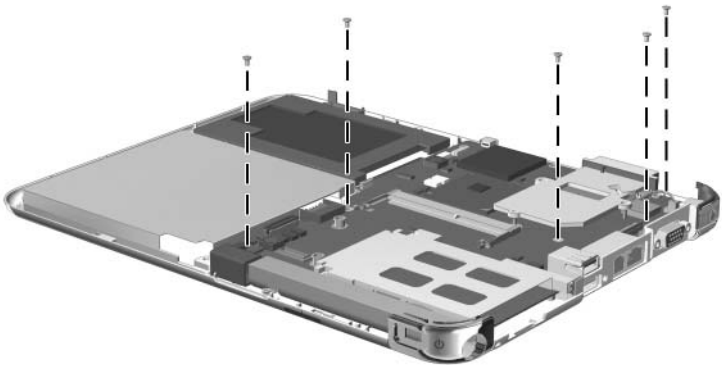
Phillips PM2.0 × 4.5 Screw Locations

Table C-8

Phillips PM2.0×4.5 Screw *(Continued)*

mm	Color	Qty.	Length	Thread	Head Width
	Yellow	8	4.5 mm	2.0 mm	3.8 mm

Where used:

3 screws that secure the fan and heat sink to the system board (documented in Section 5.8)
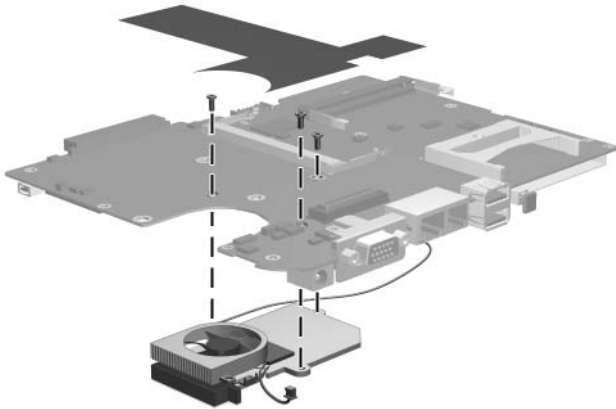
Phillips PM2.0 × 4.5 Screw Locations

Table C-9

Phillips PM2.0×3.5 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Yellow	4	3.5 mm	2.0 mm	3.8 mm

Where used:

4 screws that secure the system board shield to the base enclosure (documented in Section 5.7)
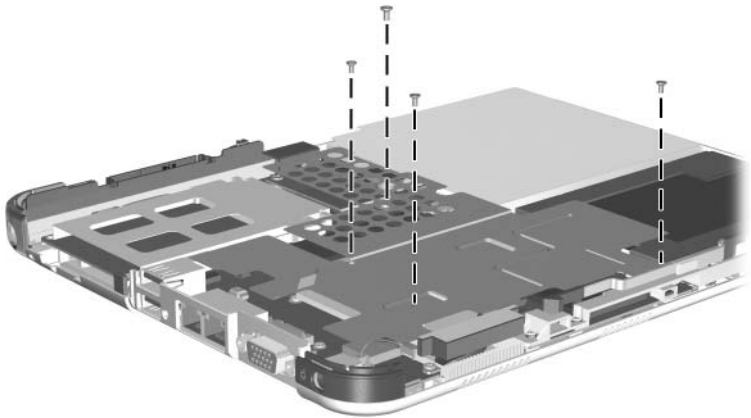
Phillips PM2.0 × 3.5 Screw Locations

Table C-10

Phillips PM2.0×4.0 Screw

	Color	Qty.	Length	Thread	Head Width
mm	Silver	1	4.0 mm	2.0 mm	3.8 mm

Where used:

One screw that secures the switch board to the base enclosure (documented in Section 5.9)
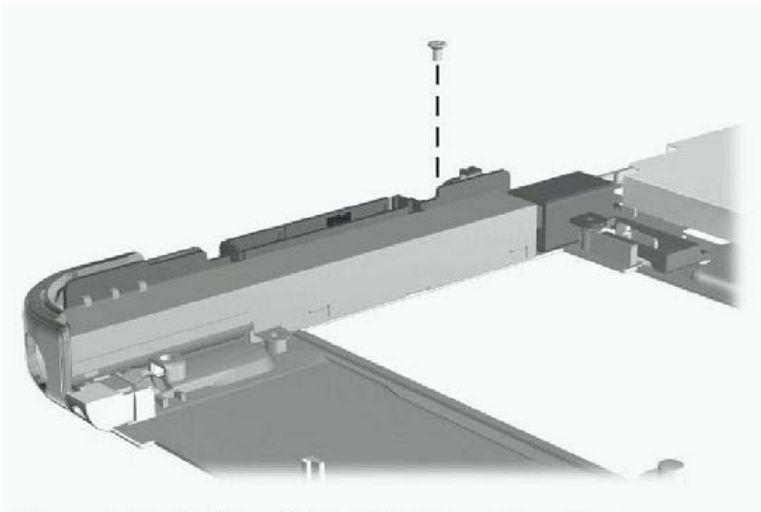
Phillips PM2.0 × 4.0 Screw Location

Table C-11

Torx M2.5×8.0 Screw
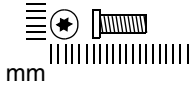
mm	Color	Qty.	Length	Thread	Head Width
	Silver	5	8.0 mm	2.5 mm	4.3 mm
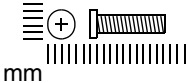
Where used:

❶ Two screws that secure the docking station pivot arm and cable bracket to the bottom case (documented in Section 5.9)

❷ Three screws that secure the docking station pivot arm hinge to the bottom case (documented in Section 5.9)
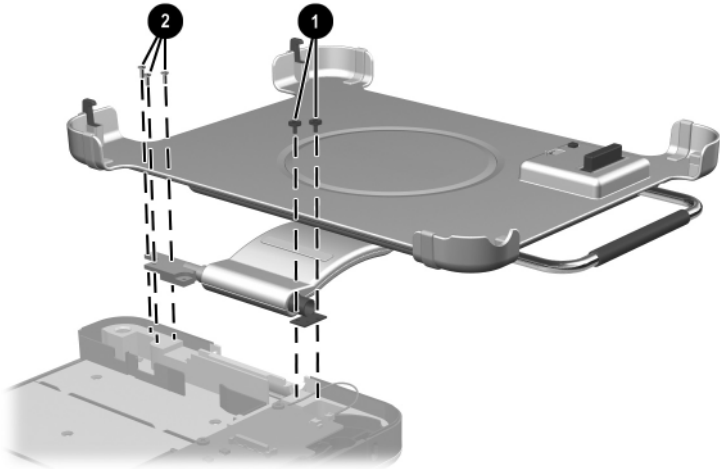
Torx M2.5 × 8.0 Screw Locations

Table C-12

Phillips PM2.5×11.0 Screw

mm	Color	Qty.	Length	Thread	Head Width
	Silver	1	11.0 mm	2.5 mm	4.3 mm

Where used:

One screw that secures the docking station pivot arm hinge to the bottom case (documented in Section 5.9)
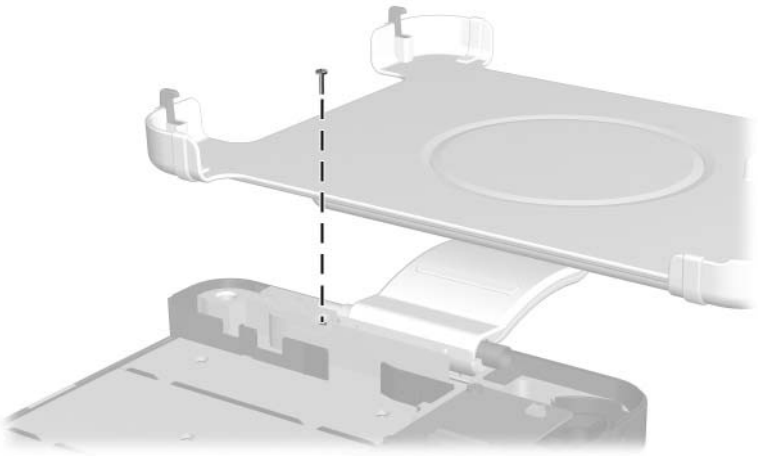
Phillips PM2.5 × 11.0 Screw Location

D

Display Component Recycling

⚠️ **WARNING:** The backlight contains mercury. Caution should be exercised when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.

⚠️ **CAUTION:** The procedures in this appendix can result in damage to display components. The only components intended for recycling purposes are the liquid crystal display (LCD) panel and the backlight. Careful handling should be exercised when removing these components.

✎ **Materials Disposal**

This HP product contains mercury in the display assembly backlight and may require special handling at end-of-life.

Disposal of mercury may be regulated because of environmental considerations. For disposal or recycling information, contact your local authorities or visit the Electronic Industries Alliance (EIA) at http://www.eiae.org.

This appendix provides disassembly instructions for the display assembly. The display assembly must be disassembled to gain access to the backlight ❶ and the LCD panel ❷.
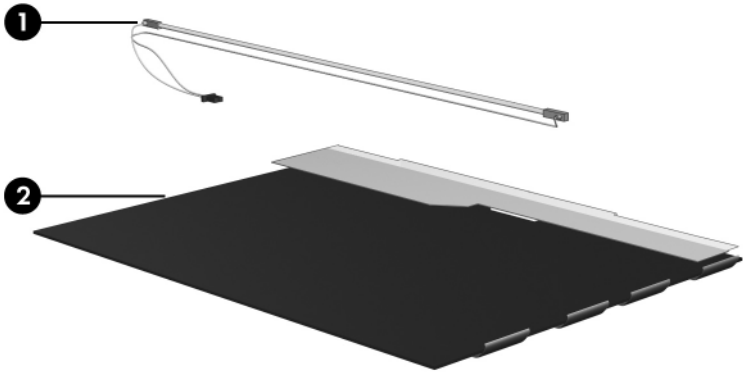
✎ Disassembly procedures differ from one display assembly to another. The procedures provided in this appendix are general disassembly instructions. Specific details, such as screw sizes, quantities, and locations, and component shapes and sizes, can vary from one computer model to another.

Refer to Section 5.6, "Display Panel Assembly," for display assembly disassembly steps.

Perform the following steps to disassemble the display assembly:

1. Remove all screw covers ❶ and screws ❷ that secure the display bezel to the display assembly.
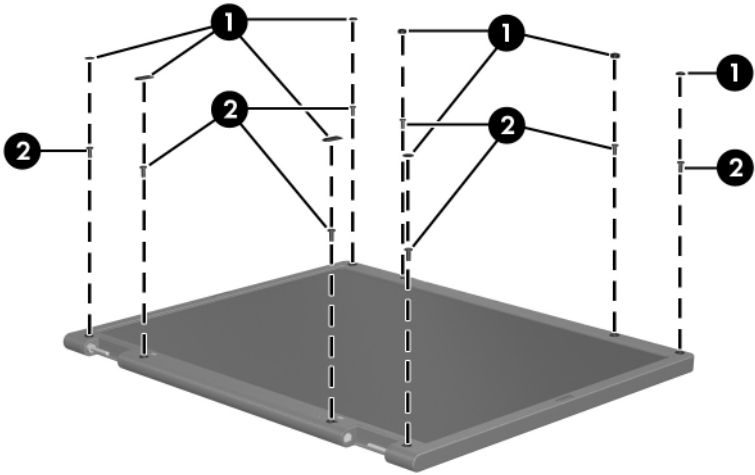
Removing the Display Bezel Screw Covers and Screws

2. Lift up and out on the left and right inside edges ❶ and the top and bottom inside edges ❷ of the display bezel until the bezel disengages from the display assembly.

3. Remove the display bezel ❸.
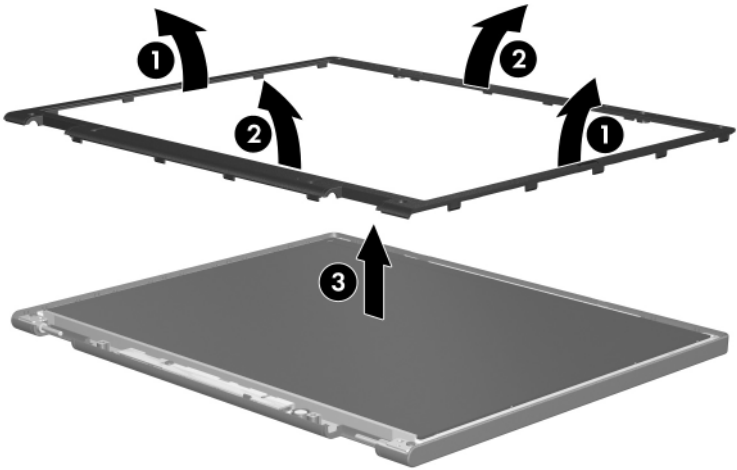
Removing the Display Bezel

4. Disconnect all LCD panel cables ❶ from the display inverter and remove the inverter ❷.
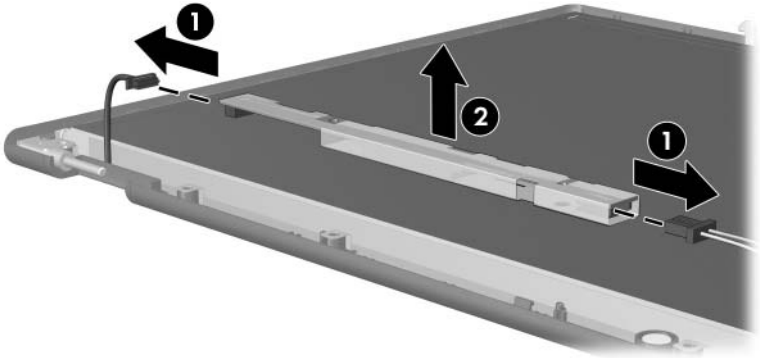
Removing the Display Inverter

5. Remove all screws ❶ that secure the LCD panel to the display enclosure.

6. Remove the LCD panel ❷ from the display enclosure.
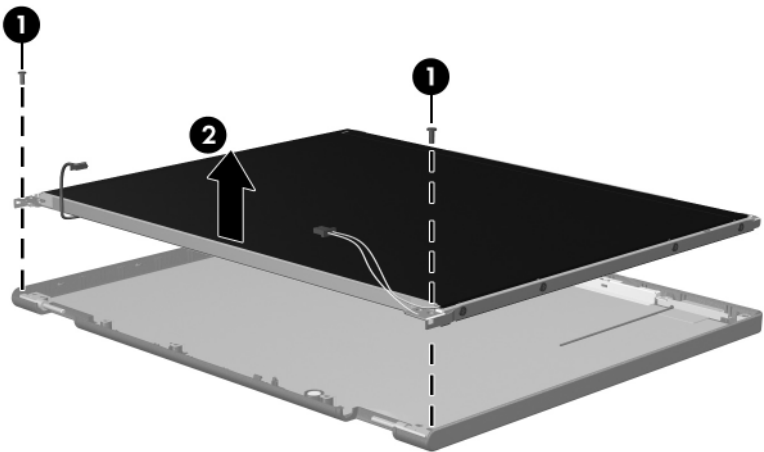
Removing the LCD Panel

7. Turn the LCD panel upside down.

8. Remove all screws that secure the LCD panel frame to the LCD panel.
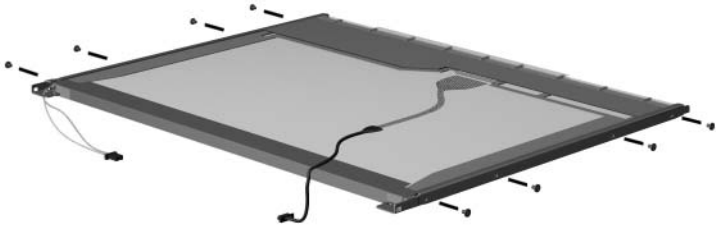
Removing the LCD Panel Frame Screws

9. Use a sharp-edged tool to cut the tape ❶ that secures the side of the LCD panel to the LCD panel frame.

10. Remove the LCD panel frame ❷ from the display panel.
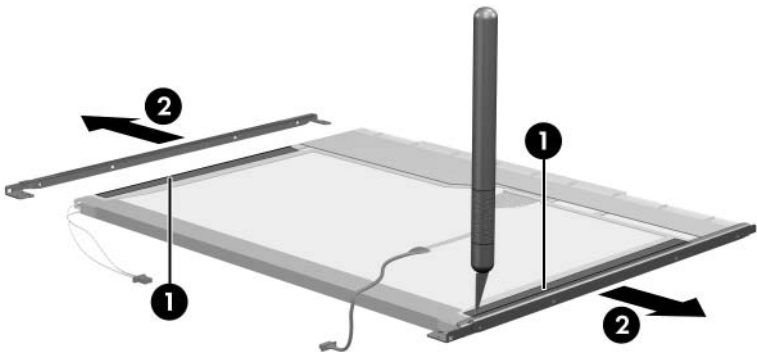
Removing the LCD Panel Frame

11. Remove the screws ❶ that secure the backlight cover to the LCD panel.

12. Lift the top edge of the backlight cover ❷ and swing it forward.

13. Remove the backlight cover.
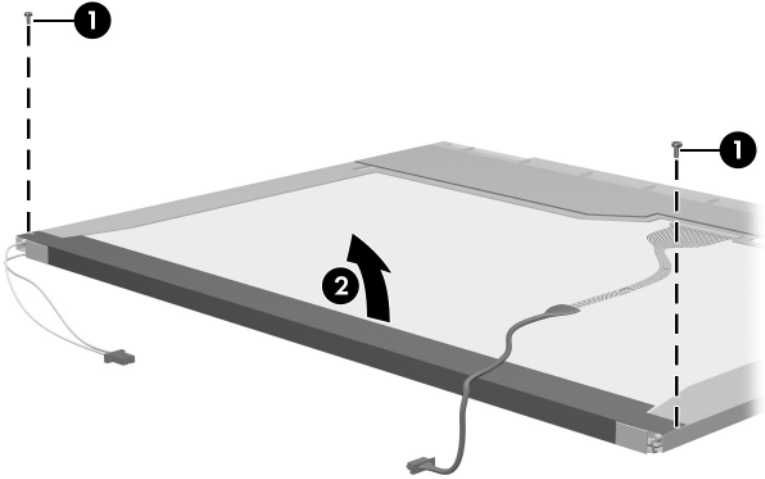
Removing the Backlight Cover

14. Turn the LCD panel right-side up.

15. Remove the backlight cables ❶ from the clip ❷ in the
    LCD panel.
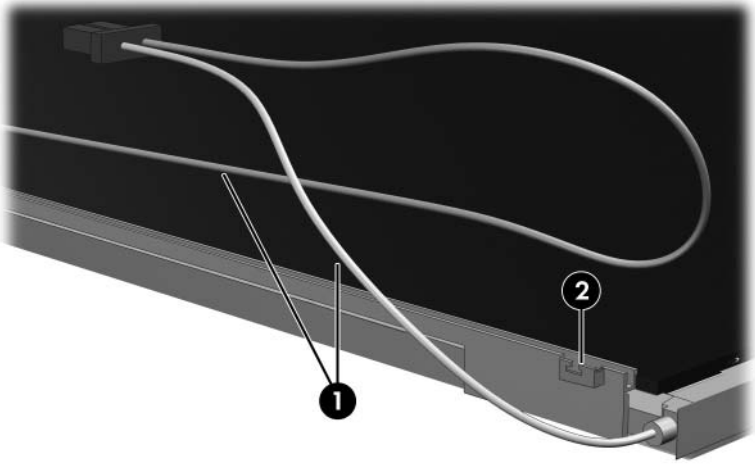
Releasing the Backlight Cables

16. Turn the LCD panel upside down.

17. Remove the backlight frame from the LCD panel.
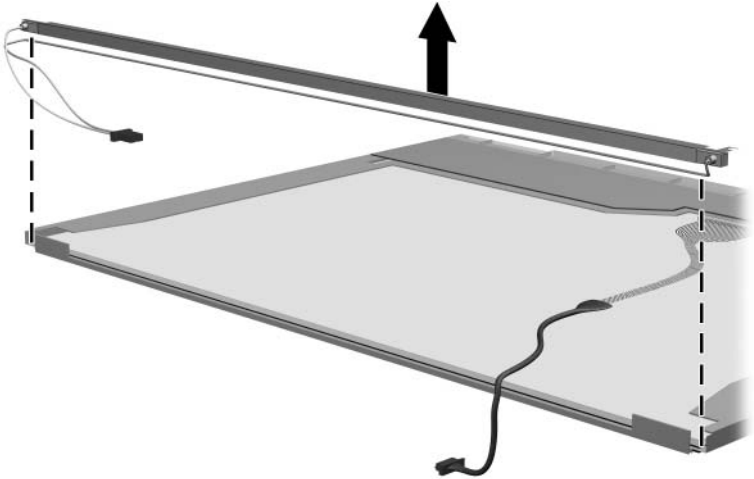
Removing the Backlight Frame

⚠ **WARNING:** The backlight contains mercury. Caution should be exercised when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.

18. Slide the backlight out of the backlight frame.
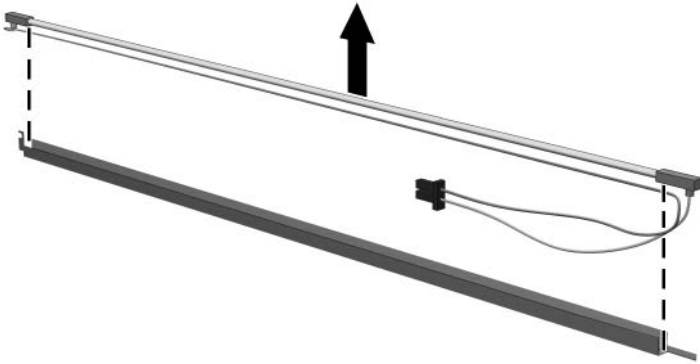
Removing the Backlight

19. Disconnect the display cable ❶ from the LCD panel.

20. Remove the screws ❷ that secure the LCD panel to the LCD rear panel.

21. Release the LCD panel ❸ from the LCD rear panel.

22. Release the tape ❹ that secures the LCD panel to the LCD rear panel.
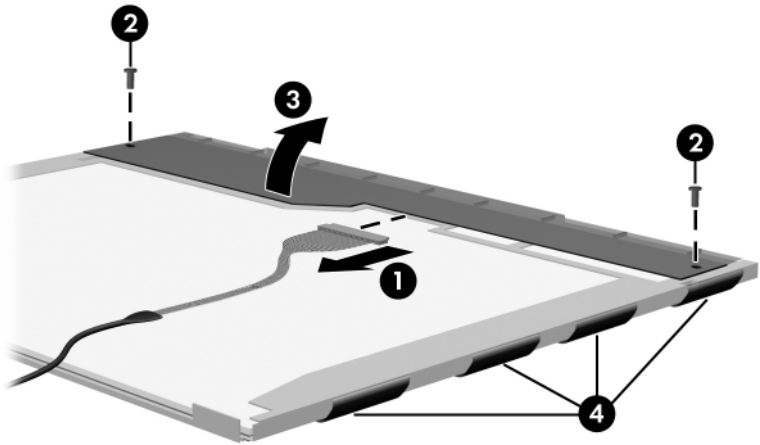
Releasing the LCD Panel

23. Remove the LCD panel.
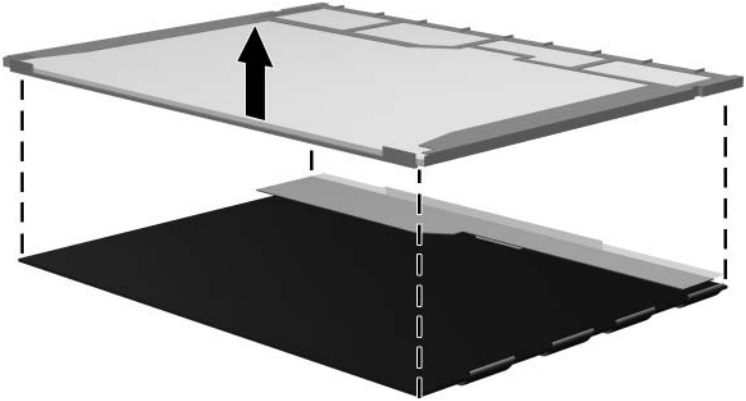
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