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Maintenance and Service Guide

HP Pavilion zd8000 Notebook PC

Document Part Number: 372712-002

February 2008

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

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1

Product Description

The HP Pavilion zd8000 Notebook PC offers advanced modularity, Intel® Mobile Pentium® 4 processors, and extensive multimedia support.



HP Pavilion zd8000 Notebook PC

1.1 Features

- The following processors are available, varying by notebook model:
 - ❑ Intel Pentium 4 560 (3.6-GHz) with 800-MHz front side bus (FSB) with HT Technology
 - ❑ Intel Pentium 4 550 (3.4-GHz) with 800-MHz FSB with HT Technology
 - ❑ Intel Pentium 4 540 (3.2-GHz) with 800-MHz FSB with HT Technology
 - ❑ Intel Pentium 4 530 (3.0-GHz) with 800-MHz FSB with HT Technology
 - ❑ Intel Pentium 4 520 (2.8-GHz) with 800-MHz FSB with HT Technology
- The following displays are available, varying by notebook model:
 - ❑ 17.0-inch WSXGA+WVA (1680 × 1050) with Brightview TFT display with over 16.7 million colors
 - ❑ 17.0-inch WXGA+WVA (1440 × 900) with Brightview TFT display with over 16.7 million colors
 - ❑ 17.0-inch WXGA+WVA (1440 × 900) TFT display with over 16.7 million colors
- 100-, 80-, 60-, or 40-GB high-capacity hard drive, varying by notebook model
- 256-MB DDR2 synchronous DRAM (SDRAM) at 400 and 533 MHz, expandable to 2.0 GB
- Microsoft® Windows® XP Home Edition or Windows XP Professional, varying by notebook model
- Full-size Windows keyboard with full-size numeric keypad
- TouchPad pointing device, including a dedicated vertical scroll region and a button that enables/disables TouchPad operation.
- Integrated 10 Base-T/100 Base-TX Ethernet local area network (LAN) network interface card (NIC) with RJ-45 jack

- Integrated high-speed 56K modem with RJ-11 jack
- Integrated wireless support for Mini PCI IEEE 802.11b and 802.11b/g WLAN device
- Support for one Type II PC Card slot, with support for both 32-bit (CardBus) and 16-bit PC Cards
- External 180- and 135-watt AC adapter with 3-wire power cord, varying by notebook model
- 12-cell Li-Ion battery pack
- Stereo speakers with volume up, volume mute, and volume down buttons
- Support for the following optical drives:
 - ❑ 8X Max DVD±RW/R and CD-RW Combo Drive
 - ❑ 24X Max DVD/CD-RW Combo Drive
- Connectors:
 - ❑ External monitor
 - ❑ Universal Serial Bus (USB) v. 2.0 (four ports)
 - ❑ RJ-11 (modem)
 - ❑ RJ-45 (network)
 - ❑ Audio-out (headphone)
 - ❑ Audio-in (microphone)
 - ❑ Power
 - ❑ IEEE 1394 (select models only)
 - ❑ S-Video-out (select models only)
 - ❑ Infrared
 - ❑ Expansion port 2
 - ❑ Digital Media Slot
 - ❑ Digital drive bay
 - ❑ ExpressCard

1.2 Resetting the Notebook

If the notebook you are servicing has an unknown password, follow these steps to clear the password. These steps also clear CMOS:

1. Prepare the notebook for disassembly (refer to [Section 5.3, “Preparing the Notebook for Disassembly,”](#) for more information).
2. Remove the real time clock (RTC) battery (refer to [Section 5.16, “System Board,”](#) for more information on removing and replacing the RTC battery).
3. Wait approximately 5 minutes.
4. Replace the RTC battery and reassemble the notebook.
5. Connect AC power to the notebook. Do not reinsert any battery packs at this time.
6. Turn on the notebook.

All passwords and all CMOS settings have been cleared.

1.3 Power Management

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

- Standby
- Hibernation
- Setting customization by the user
- Hotkeys for setting the level of performance
- Battery calibration
- Lid switch standby/resume
- Power/standby button
- Advanced Configuration and Power Management (ACPM) compliance

1.4 External Components

The external components on the front of the notebook are shown below and described in Table 1-1.



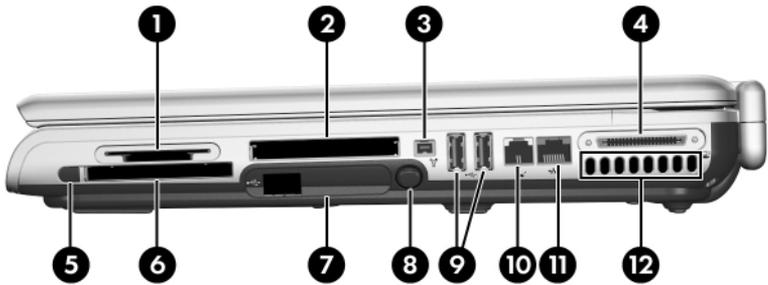
Front Components

Table 1-1

Front Components

Item	Component	Function
1	Display release latch	Opens the notebook.
2	Stereo speakers (2)	Produce stereo sound.
3	Power/standby light	<ul style="list-style-type: none"> ■ On: Notebook is turned on. ■ Blinking: Notebook is in standby. ■ Off: Notebook is off.
4	Battery light	<ul style="list-style-type: none"> ■ On: Battery pack is charging. ■ Blinking: Battery pack has reached a low-battery condition.
5	AC power light	On: Notebook is receiving AC power.
6	Hard drive activity light	On: A notebook drive is being accessed.

The external components on the right side of the notebook are shown below and described in Table 1-2.



Right-Side Components

Table 1-2

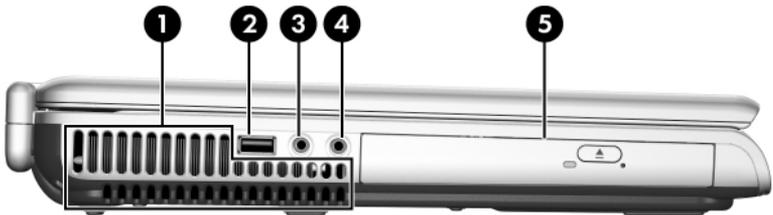
Right-Side Components

Item	Component	Function
1	Digital Media Slot	Supports the following optional digital media: Secure Digital (SD) Memory Card, Secure Digital Input/Output (SD I/O), Memory Stick, Memory Stick Pro, MultiMediaCard, xD-Picture Card, and SmartMedia card.
2	ExpressCard slot	Supports an optional ExpressCard.
3	1394 port	Connects an optional 1394a device such as a scanner, digital camera, or digital camcorder.

Table 1-2
Right-Side Components (Continued)

Item	Component	Function
4	Expansion port 2	Connects to an optional notebook expansion product.
5	PC Card eject button	Ejects an optional PC Card from the PC Card slot.
6	PC Card slot	Supports an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card. Also serves as a storage location for the optional mobile remote control.
7	Digital drive bay	Supports an optional USB digital drive.
8	Digital drive eject button	Ejects an optional USB digital drive from the digital drive bay.
9	USB ports (2)	Connect an optional 1.1- or 2.0-compliant USB device.
10	RJ-11 (modem) jack	Connects the modem cable.
11	RJ-45 (network) jack	Connects an optional network cable.
12	Exhaust vent	Provides airflow to cool internal components.  To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.

The external components on the left side of the notebook are shown below and described in Table 1-3.

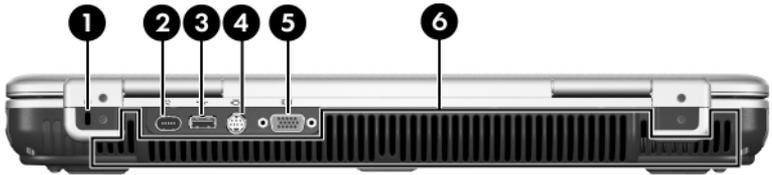


Left-Side Components

Table 1-3
Left-Side Components

Item	Component	Function
1	Exhaust vent	Provides airflow to cool internal components. △ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.
2	USB port	Connects an optional 1.1- or 2.0-compliant USB device.
3	Audio-in (microphone) jack	Connects an optional monaural microphone.
4	Audio-out (headphone) jack (2)	Connect optional headphones or powered stereo speakers. Also connects the audio function of an audio/video device such as a television or VCR.
5	Optical drive	Supports an optical disc. The type of optical drive, such as a combination CD-ROM/DVD-ROM, varies by model.

The external components on the rear panel of the notebook are shown below and described in Table 1-4.



Rear Panel Components

Table 1-4

Rear Panel Components

Item	Component	Function
1	Security cable slot	Attaches an optional security cable to the notebook.
2	Power connector	Connects an AC adapter.
3	USB port	Connects an optional 1.1- or 2.0-compliant USB device.
4	S-Video-out jack	Connects an optional S-Video device, such as a television, VCR, camcorder, projector, or video capture card.
5	External monitor port	Connects an optional VGA external monitor or projector.
6	Exhaust vent	Provides airflow to cool internal components.

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

The standard keyboard components of the notebook are shown below and described in Table 1-5.

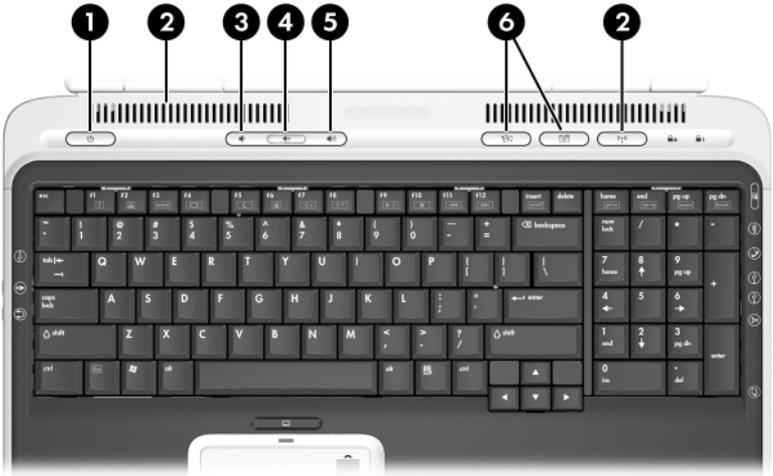


Standard Keyboard Components

Table 1-5
Standard Keyboard Components

Item	Component	Function
1	caps lock key	Enables caps lock and turns on the caps lock light.
2	f1 to f12 keys (12)	Perform system and application tasks. When combined with the fn key, several keys and buttons perform additional tasks as hotkeys.
3	num lock key	Enables numeric lock, turns on the embedded numeric keypad, and turns on the num lock light.
4	Keypad keys (15)	In Windows, can be used like the keys on an external numeric keypad.
5	Arrow keys	Moves the cursor around the screen.
6	Windows applications key	In Windows, displays a shortcut menu for items beneath the pointer.
7	Windows logo key	In Windows, displays the Windows Start menu.
8	fn key	Combines with other keys to perform system tasks. For example, pressing fn+f7 decreases screen brightness.

The upper components of the keyboard are shown below and on the following page and described in Tables 1-6 and 1-7.



Upper Keyboard Components

Table 1-6
Upper Keyboard Components

Item	Component	Function
1	Power/standby button	<p>When the notebook is:</p> <ul style="list-style-type: none"> ■ Off, press to turn on the notebook. ■ On, briefly press to initiate standby. ■ In standby, briefly press to resume from standby. ■ In hibernation, briefly press to restore from hibernation. <p> If the system has stopped responding and Microsoft Windows shutdown procedures cannot be used, press and hold the power/standby button for at least 4 seconds to turn off the notebook.</p>
2	Exhaust vents	<p>Provide airflow to cool internal components.</p> <p> To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.</p>
3	Volume down button	Decreases system volume.
4	Volume mute button	Mutes or restores system volume.
5	Volume up button	Increases system volume.
6	Quick Launch buttons (2)	<p>Launch default multimedia, digital imaging, or music applications (varies by model).</p> <p>To reassign another application to a Quick Launch button, refer to “Using Custom Assignments and Schemes” in Chapter 2 of the <i>Hardware and Software Guide</i> included with the notebook.</p>

The top components of the notebook are shown below and described in Table 1-7.

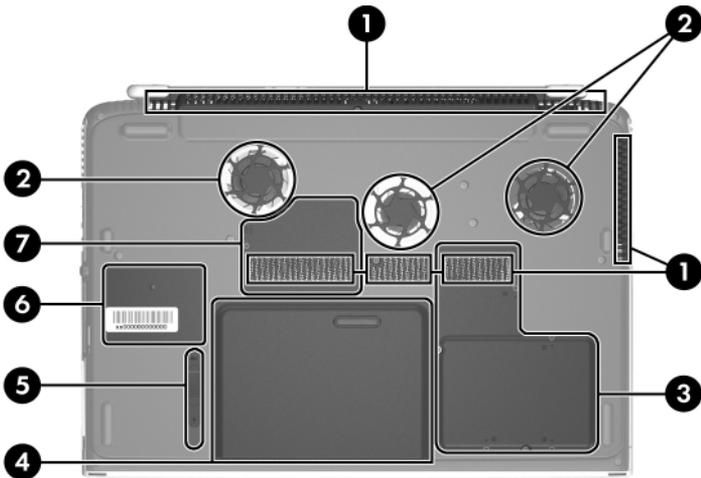


Notebook Top Components

Table 1-7
Notebook Top Components

Item	Component	Function
1	TouchPad	Moves the pointer and selects or activates items on the screen.
2	TouchPad light	On: TouchPad is enabled.
3	TouchPad button	Enables/disables the TouchPad.
4	Wireless button	Turns the wireless network device on and off (select models only).
	Wireless light	On: An integrated wireless device has been enabled.
5	Caps lock light	On: caps lock is on.
6	Num lock light	On: num lock or the numeric keypad is on.
7	TouchPad scroll zone	Scrolls up or down.
8	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.

The external components on the bottom of the notebook are shown below and described in Table 1-8.



Bottom Components

Table 1-8

Bottom Components

Item	Component	Function
1	Exhaust vents (4)	Provide airflow to cool internal components. △ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.

Table 1-8
Bottom Components (Continued)

Item	Component	Function
2	Fans (2)	<p>Provide airflow to cool internal components.</p> <p>△ To prevent overheating, do not obstruct fans. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.</p>
3	<p>Hard drive bay</p> <p>Mini PCI compartment</p>	<p>Holds the internal hard drive.</p> <p>Holds an optional wireless LAN device.</p> <p>△ To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use in your notebook 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 restore notebook functionality. Then contact Customer Care.</p>
4	Battery bay	Holds a battery pack.
5	Battery pack release latch	Releases a battery pack from the battery bay.
6	Label areas (2)	Contains the notebook serial number and other applicable regulatory labels.
7	Memory module compartment	Contains two memory slots that support replaceable memory modules. The number of preinstalled memory modules varies by notebook model.

1.5 Design Overview

This section presents a design overview of key parts and features of the notebook. Refer to [Chapter 3, “Illustrated Parts Catalog,”](#) to identify replacement parts, and [Chapter 5, “Removal and Replacement Procedures,”](#) for disassembly steps.

The system board provides the following device connections:

- Memory module
- Mini PCI communications devices
- Hard drive
- Display
- Keyboard and TouchPad
- Audio
- Intel Pentium 4 processors
- PC Card



CAUTION: To properly ventilate the notebook, allow at least a 7.6-cm (3-inch) clearance on the left and right sides of the notebook.

The notebook uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to be turned on 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. Exhaust air is displaced through the ventilation grill located on the left side of the notebook.

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 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 Computer Setup

Computer Setup is 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.

Using Computer Setup

Information and settings in Computer Setup are accessed from the Main, Security, Advanced, or Tools menus:

1. Turn on or restart the notebook. Press **f10** while the F10 = ROM-Based Setup message is displayed in the lower-left corner of the screen.
 - ❑ To change the language, use the cursor control keys to navigate to the **Advanced** menu.
 - ❑ To view navigation information, press **f1**.
 - ❑ To return to the Computer Setup menu, press **esc**.

2. Select the **Main, Security, Advanced,** or **Tools** menu.
3. To close Computer Setup and restart the notebook:
 - ❑ Select **Exit > Exit Saving Changes**, and then press **enter**.
 - or –
 - ❑ Select **Exit > Exit Discarding Changes**, and then press **enter**.
 - or –
 - ❑ Select **Exit > Load Setup Defaults**, and then press **enter**.
4. When you are prompted to confirm your action, press **f10**.

Selecting from the Main Menu

Table 2-1

Main Menu

Select	To Do This
System Information	<ul style="list-style-type: none">■ Change the system time and system date.■ View identification information about the notebook.■ View specification information about the processor, memory and cache size, and system ROM.

Selecting from the Security Menu

Table 2-2
Security Menu

Select	To Do This
Administrator Password	Enter, change, or delete an Administrator password.
Power-on Password	Enter, change, or delete a power-on password.
DriveLock Passwords	<p>Enable/disable DriveLock; change a DriveLock user or master password.</p> <p> DriveLock Settings are accessible only when you enter Computer Setup by turning on (not restarting) the notebook.</p>
Password Options (Password options can be selected only when a power-on password has been set.)	<p>Enable/disable:</p> <ul style="list-style-type: none"> ■ QuickLock ■ QuickLock on standby ■ QuickBlank <p> To enable QuickLock on standby or QuickBlank, you must first enable QuickLock.</p>
Device Security	<p>Enable/disable:</p> <ul style="list-style-type: none"> ■ Diskette drive startup* ■ CD-ROM or diskette startup <p> Settings for a DVD-ROM can be entered in the CD-ROM field.</p>

*Not applicable to SuperDisk LS-120 drives.

Selecting from the Advanced Menu

Table 2-3
Advanced Menu

Select	To Do This
Language	Change the Computer Setup language.
Boot Order	Enable/disable MultiBoot, which sets a startup sequence that can include most bootable devices and media in the system.
Accessibility Options	Allows electronic and information technology to be accessible to people with varying ranges of abilities.
Video Memory	Displays the amount of video memory available on the notebook.

Selecting from the Tools Menu

Table 2-4
Tools Menu

Select	To Do This
Hard Drive Self Test	Run a quick comprehensive self test on hard drives in the system that support the test features.

2.2 Troubleshooting Flowcharts

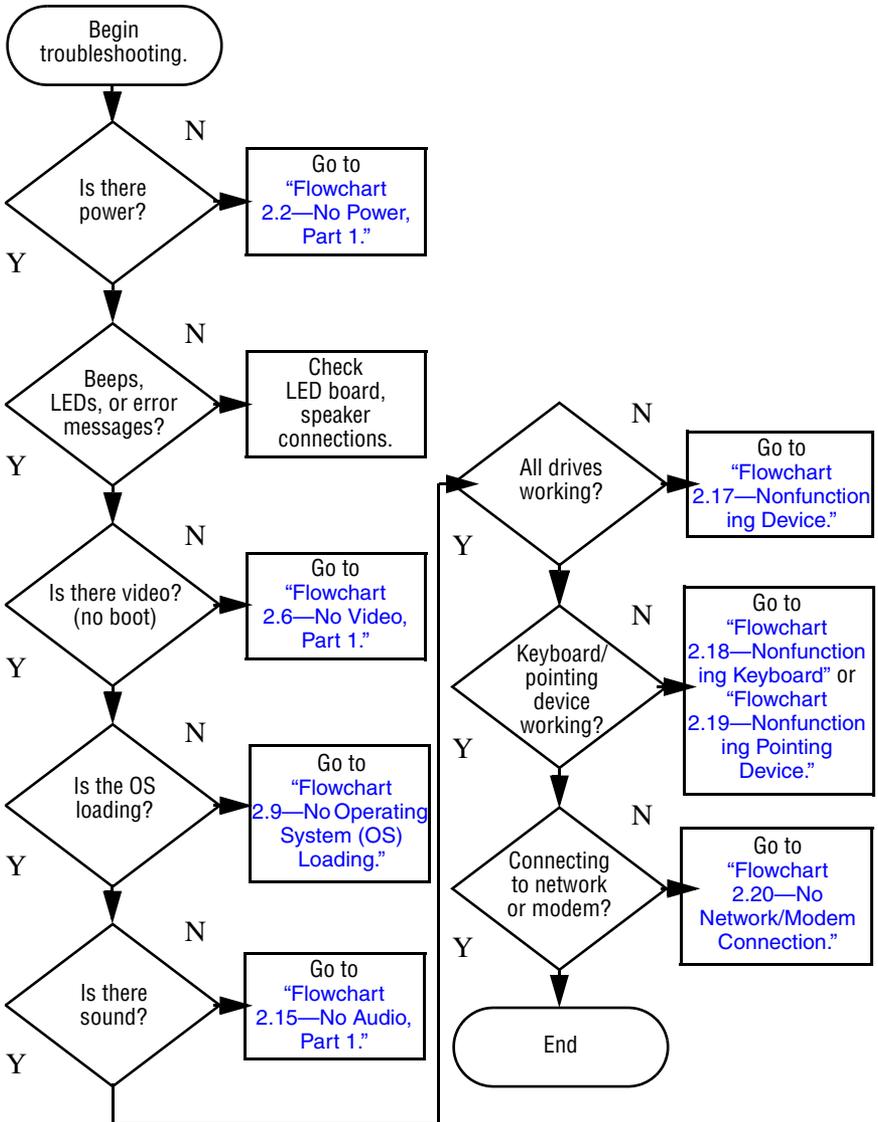
Table 2-5
Troubleshooting Flowcharts Overview

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 Expansion Base (if applicable)"
2.9	"Flowchart 2.9—No Operating System (OS) Loading"
2.10	"Flowchart 2.10—No OS Loading, Hard Drive, Part 1"
2.11	"Flowchart 2.11—No OS Loading, Hard Drive, Part 2"
2.12	"Flowchart 2.12—No OS Loading, Hard Drive, Part 3"
2.13	"Flowchart 2.13—No OS Loading, Diskette Drive"

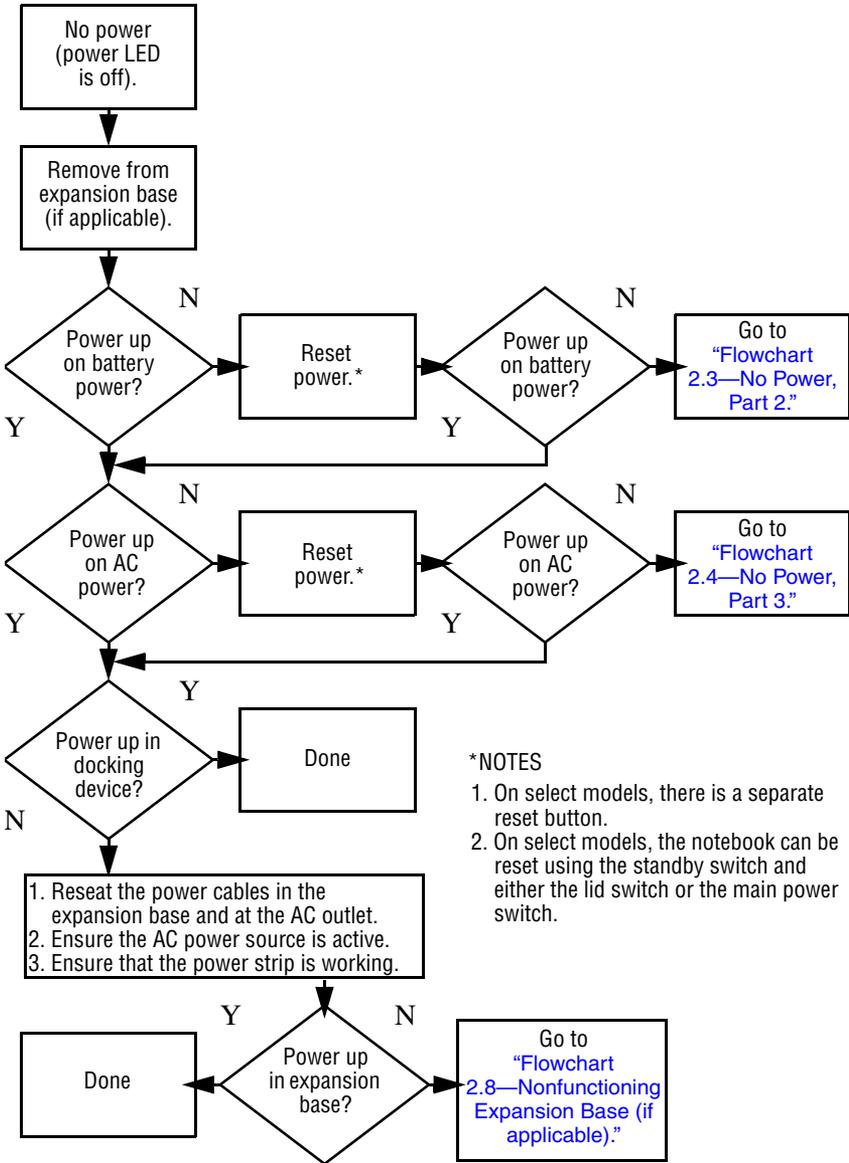
Table 2-5
Troubleshooting Flowcharts Overview (*Continued*)

Flowchart	Description
2.14	"Flowchart 2.14—No OS Loading, 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/Modem Connection"

Flowchart 2.1 – Initial Troubleshooting



Flowchart 2.2—No Power, Part 1



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