



hp  
pavilion notebook  
zt1000/xz300  
series  
omnibook notebook  
xt1500 series

Technology Code ID

troubleshooting  
and self-repair  
guide

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## Edition History

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# Technology Codes

HP does not change the name of a product every time the product's technology changes. While this helps ensure continuing market momentum for HP products, it complicates technology deployment and support processes.

To help solve this problem, HP has added a technology code to the serial number of each of its products. Since the BIOS must be matched to the notebook's hardware, the same code is used for the BIOS and the hardware. This manual refers to technology code differences where applicable.

The table below shows the technology codes and the changes they signify for the products. Before downloading software or drivers or performing repairs, note the technology code for the HP notebook model.

Note that the first two characters of the BIOS ID (for example, **IC.M1.02**) indicate the hardware technology. You can also determine the BIOS ID using the BIOS configuration utility, or by pressing Esc during the boot process when the HP logo appears.

This manual contains service information for products with the following technology code.

Technology code	Product name	Details
ID	Pavilion zt1000/xz300 series Omnibook xt1500 series	Intel P4-M and P4c based platform supported with Intel chipset and ATI graphics.

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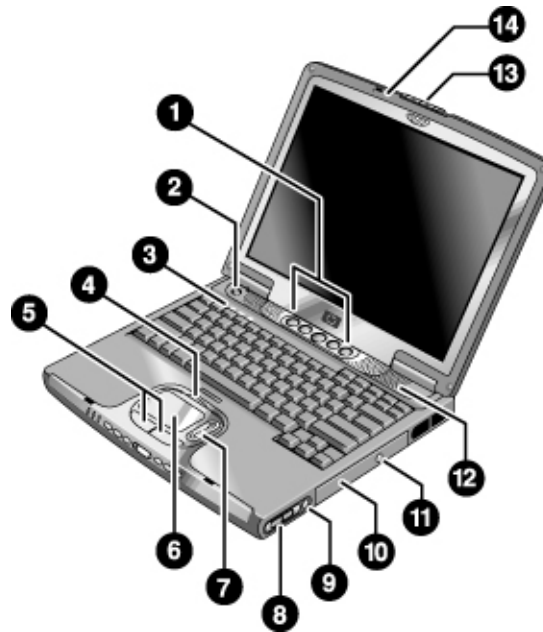
# Product Information

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This section introduces the notebook and its components, and briefly describes basic operation.

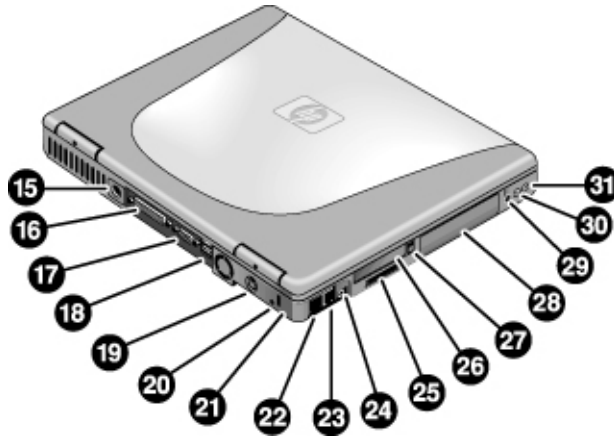
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## Notebook Features



**Figure 1. Front View**

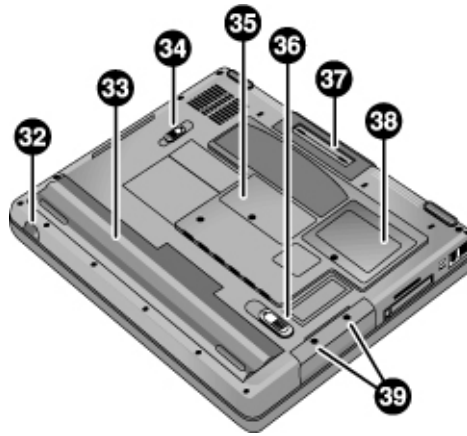
- |  |   |
|--|---|
| 1. One-Touch buttons (programmable).   | 8. Volume controls (selected models).                 |
| 2. Power button.   | 9. Mute button and indicator light (selected models). |
| 3. Keyboard status lights: Caps Lock, Num Lock, CD or DVD drive activity.      | 10. Removable DVD or DVD/CD-RW drive.                 |
| 4. Touch pad/scroll pad on-off button (with on-off indicators on either side). | 11. CD/DVD eject button.                              |
| 5. Left and right click buttons.   | 12. Speaker (one on each side).                       |
| 6. Touch pad.  | 13. Latch.  |
| 7. Scroll pad.   | 14. Built-in microphone.                              |



**Figure 2. Back View**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>15. AC adapter jack.</li> <li>16. Parallel port (LPT1) (colored burgundy).</li> <li>17. External monitor (VGA) port (colored blue).</li> <li>18. Universal serial bus (USB) ports (2).</li> <li>19. S-video (TV out) port (colored yellow) (selected models).</li> <li>20. Reset switch.</li> <li>21. Kensington lock slot (security connector).</li> <li>22. LAN port and indicators.</li> <li>23. Modem.</li> </ul> | <ul style="list-style-type: none"> <li>24. IEEE 1394 connector (selected models).</li> <li>25. SD-MMC Card slot.</li> <li>26. PC Card slot (Type II).</li> <li>27. PC Card eject button.</li> <li>28. Hard disk drive.</li> <li>29. Wireless on-off button and indicator light (selected models).</li> <li>30. External microphone jack (colored pink).</li> <li>31. Headphones jack (colored green).</li> </ul> |
|--|--|





**Figure 3. Bottom View**

32. Infrared port (selected models).

33. Battery.

34. CD/DVD drive latch.

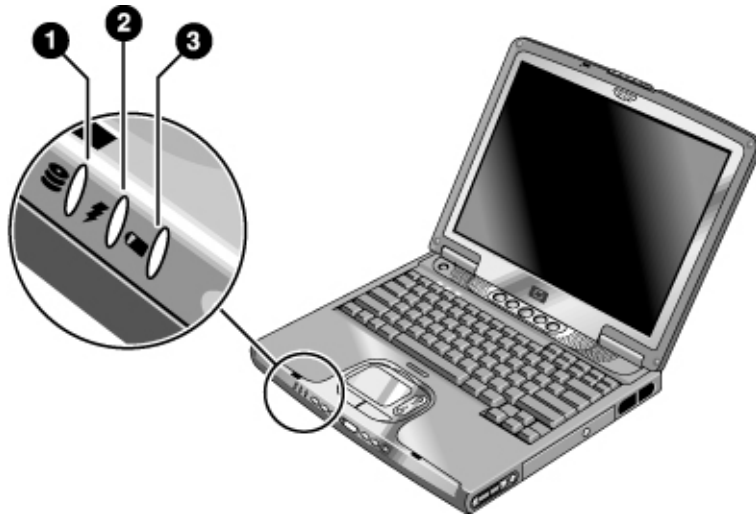
35. RAM cover.

36. Battery latch.

37. Docking port.

38. Mini-PCI cover (no user-replaceable parts inside).

39. Hard disk drive retaining screws.



**Figure 4. Main Status Lights**

**1. Hard disk drive activity.**

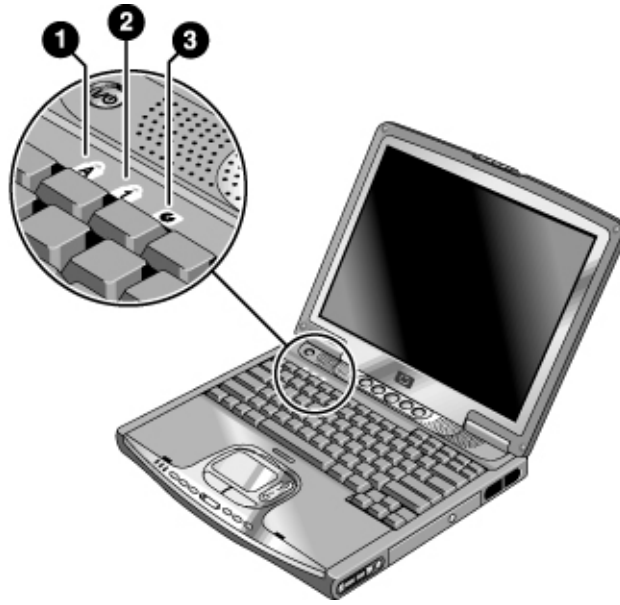
- On: the notebook is accessing the hard disk drive.

**2. Power mode.**

- Green: the notebook is on (even if the display is off).
- Amber: the notebook is on standby.
- Off: the notebook is off or in hibernation.

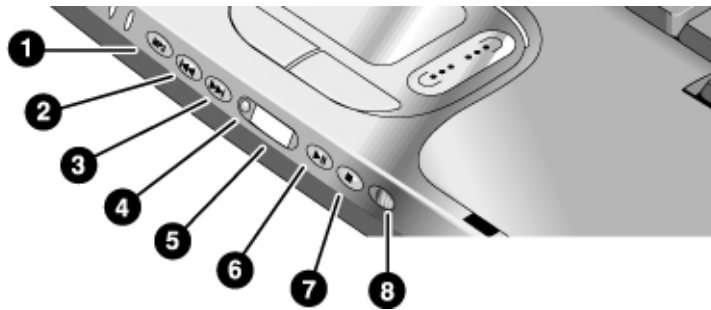
**3. Battery charge status.**

- Green: the AC adapter is connected and the battery is fully charged.
- Amber: the AC adapter is connected and the battery is charging.
- Red: the AC adapter is connected and the battery has a fault.
- Off: the AC adapter is not connected or the battery is missing.



**Figure 5. Keyboard Status Lights**

1. **Caps Lock.** Caps Lock is active.
2. **Num Lock.** Num Lock is active. (The Keypad Lock must also be on to use the embedded keypad.)
3. **CD/DVD drive activity.** The drive is active.



**Figure 6. Multimedia Buttons and Status Panel (selected models)**

- |                              |   |
|------------------------------|---|
| 1. MP3 player launch button. | 5. Status panel.                                |
| 2. Previous track button.    | 6. Play/Pause button.                           |
| 3. Next track button.        | 7. Stop button.                                 |
| 4. Status panel button.      | 8. Multimedia power switch and indicator light. |

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# Operating the Notebook

**Note**

This manual describes the notebook in its original factory configuration, with all settings at their default values.

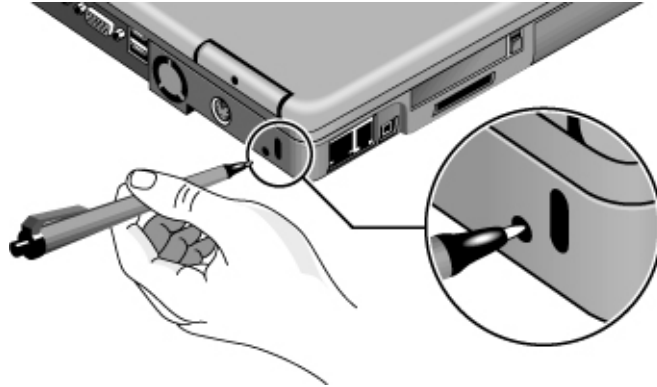
## Turning the Notebook On and Off

Power mode	To enter this mode	To turn on again
<b>On</b> Power mode status light is green.	Press the power button.	
<b>Standby</b> Maintains current session in RAM. Turns off the display and other components. Saves significant power. Restarts quickly. Restores network connections. Power mode status light is amber.	Click Start, Turn Off Computer, Stand By. –or– Press the power button. –or– Allow timeout.	Press the power button to quickly resume your session.
<b>Hibernation</b> Saves current session to disk, then turns off. Saves maximum power. Restores network connections. Power mode status light is off.	Click Start, Turn Off Computer, then press and hold Shift and click Hibernate. –or– Allow timeout.	Press the power button to resume your session.
<b>Turn off</b> Turns off without saving current session. Saves maximum power. At startup, resets everything, and starts a new session. Power mode status light is off.	Click Start, Turn Off Computer, Turn Off. –or– Press and hold the power button for four seconds (only if the Start menu procedure doesn't work).	Press the power button to start with a new session.

## Resetting the Notebook

If Windows or the notebook stops responding and you cannot turn the notebook off, try the following in the order listed. Press the power button to restart.

- Press Ctrl+Alt+Del, then click Shut Down, Turn Off.
- Press and hold the power button for about four seconds, until the display turns off.
- Use a pen or straightened paper clip to press the reset switch on the back of the notebook.



**Figure 7. Pressing the Reset Switch**

## Changing the Boot Device

The notebook normally boots from its internal hard disk. You can also boot the notebook from an external USB floppy disk drive (optional accessory), the CD/DVD drive, or a local area network (LAN).

1. Restart the notebook: click Start, Turn Off Computer, Restart.
2. When the HP logo appears, press Esc to display the Boot menu.
3. Use the arrow keys to select the boot device, and press Enter.

If you want to boot from a specific device whenever it is present, change the boot order using the BIOS configuration utility—see “Using the BIOS Configuration Utility” on page 32.

# Hardware Specifications

The specifications shown below are subject to change. For the latest specifications, see the HP Notebook Web site ([www.hp.com/notebooks](http://www.hp.com/notebooks)).

<b>Physical Attributes</b>	<b>Dimensions:</b> 14.1-in models: 330 x 278.3 mm (12.99 x 10.94 in). 15-in models: 330 x 278.3 mm (12.99 x 10.94 in). Thickness varies across unit. Weight varies with configuration, vendor components, and manufacturing options and processes. Minimum weight (14.1-in model): 2.7 kg (5.9 lb).
<b>Processor and Bus Architecture</b>	Intel Mobile Pentium 4 processor (1.7, 1.8, or higher MHz) with SpeedStep technology (selected models). Intel Pentium 4c processor (1.6 GHz) without SpeedStep technology (selected models). Intel Celeron processor (1.5GHz or higher) (on selected models).
<b>Graphics</b>	14.1/15-in XGA (1024x768) or 15-in SXGA+ (1400x1050) TFT LCD display. ATI Mobility Radeon graphics accelerator configurable for either 16- or 32-MB DDR graphics memory, 4x AGP graphics capability. Supports 16 million colors and OpenGL graphics. Supports hardware acceleration for MPEG. Display driver supports MPEG2 overlay. Supports LCD+CRT or LCD + TV operation (dual view). Separate video memory. Supports NTSC and PAL TV. Dual display for LCD and external monitor or TV. External color support: starting at 640 x 480, up to 1600 x 1200 x 32 bit display resolution.
<b>Power</b>	Rechargeable 8-cell Lilon battery: 14.8 V, 3900 mAH or 4200 mAH. Battery life: up to 2.5 hours (varies with model and usage). Battery recharge (100%): up to approx. 3 hours with system off (varies with model). Low-battery warning. Standby/hibernate and resume capability. Universal AC adapter: 100–240 Vac (50/60 Hz) input, 19 Vdc output, 75 W, 3.95-amp, 387.5g, 127.3 mm x 51.5 mm x 29.3 mm.
<b>Mass Storage</b>	20- to 60-GB removable IDE hard disk drive.
<b>CD/DVD drive</b>	8X DVD or 24X8X8X8X DVD/CD-RW (or higher) removable drive.
<b>RAM</b>	Two slots for DDR SDRAM expansion (PC-2100) up to 2x512 MB. 266-MHz RAM bus for MP chipset and 512 MB (2*256 MB) for MZ chipset.
<b>Audio System</b>	DirectSound. MIDI (playback) support. 16-bit, full duplex stereo sound through two built-in speakers with integrated acoustic chambers. 1.5 W per channel, 64 voices. Built-in microphone. Polk Audio certified on 15-in models (pavilion). Dedicated mute and volume controls (selected models). CD player (can play while notebook is on standby, in hibernation, or off). 3D-enhanced audio.
<b>Communications</b>	56 Kpbs Ambit modem. 10/100 LAN integrated.
<b>Keyboard and Pointing Devices</b>	87/88/91-key touch-type QWERTY keyboard with 101/102 key emulation. Embedded numeric keypad. 12 function (Fn) keys. 5 user-programmable One-Touch buttons. Touch pad with lock button and on-off indicator. Left and right click buttons, vertical scroll pad.

<b>Wireless LAN</b> (selected models)	Radio: IEEE 802.11b, WECA Wi-Fi compliant, direct-sequence spread-spectrum. Operating frequency: 2.5-GHz ISM band, exact frequencies and channels depend on country. Raw data rate: 1, 2, 5.5, or 11 Mbps. Transmitter output: 15 dBm typical (approx. 30 mW), 16 dBm max (approx. 40 mW). Receiver sensitivity: –84 dBm typical. Range: up to 100 m (300 ft) or more, depending on environment and conditions. On-off button and indicator. Mini-PCI interface.
<b>Input/Output</b>	2 universal serial bus (USB) ports. 15-pin VGA video-out (blue) with DDC support. (Resolution up to 1600 × 1200 × 64K or 16M colors. Refresh rate of 60 to 85 Hz, depending on resolution and color depth.) RJ-11 jack for Mini-PCI type modem (selected models). RJ-45 LAN jack. 25-pin bi-directional high-speed ECP/EPP parallel (burgundy). S-video TV out (yellow) (selected models). IEEE 1394 port (selected models). 4-Mbps IrDA-compliant infrared port (selected models). One DC-in jack. One microphone-in jack One headphone-out jack.
<b>Expandability</b>	One Type II 16-/32-bit PC Card slot (3.3- and 5-V support). CardBus enabled. One integrated Secure Digital Multi-Media Card slot. Optional simple port replicator (selected models).
<b>Security Features</b>	User and administrator passwords. DMI-accessible electronic serial number. Kensington MicroSaver lock slot.
<b>Environmental Limits</b>	Operating temperature: 0 to 40 °C (32 to 104 °F). Operating humidity: 10 to 90 percent RH (0 to 40 °C). Operating altitude: up to 10,000 ft (3000 m) at 25 °C (77 °F). Storage (non-operating) temperature: –20 to 65 °C (–4 to 149 °F).
<b>Major ICs</b>	CPU: Intel Mobile Pentium 4 processor. North Bridge: Intel 845MP or MZ. South Bridge: Intel ICH3. Display controller: ATI M7 with 32M DDR. Audio controller: Intel ICH3/Realtek ALC202 AC97 Codec. CD player controller: O2 OZ-163. LAN: Realtek RTL8100L. CardBus controller: ENE 1410 Keyboard/embedded controller: National NS87591. Super I/O: SSMC LPC47N227. SD/MMC controller: W83L518D IEEE 1394 controller: VIA VT6306

# Troubleshooting and Diagnostics

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This section contains solutions to several types of problems you may encounter when using the notebook. Try the solutions one at a time, in the order in which they are presented.

You can also find technical tips and software updates for the notebook at the HP Business Support Web site ([www.hp.com/go/bizsupport](http://www.hp.com/go/bizsupport)).

## Audio Problems

### If no sound is audible

- Press Fn+Page Up several times.
- If available, press the rear volume control several times.
- Click the speaker icon in the taskbar, and make sure Mute is not checked and the Volume slider is not set to the bottom.
- If available, press the mute button on the right side of the notebook once or twice until the indicator light goes off.

### If sound does not record

- Check the software controls for recording sound: click Start, All Programs, Accessories, Entertainment, Sound Recorder.
- In Volume Control, click Options, Properties, and make sure the microphone is enabled in the recording controls.
- Test the audio with the e-DiagTools diagnostics— see “Using the e-DiagTools Diagnostic Tests” on page 31.

### If you hear a loud high-pitched whine (feedback) from the speakers

- In Volume Control, try reducing the master volume.
- In Volume Control, click Options, Properties, and select the microphone option for the playback settings. Then in Volume Control, make sure the microphone is muted.
- Avoid using the built-in microphone and built-in speakers at the same time.



## CD and DVD Problems

### If you can't boot from a CD in the DVD/CD-RW drive

- Make sure the CD is bootable, such as the *Recovery CDs*.
- Make sure the DVD/CD-RW drive is selected as the boot device—see “Changing the Boot Device” on page 13.
- Restart the notebook.
- Test the DVD/CD-RW drive with the e-DiagTools diagnostics— see “Using the e-DiagTools Diagnostic Tests” on page 31.

### If a CD or DVD plays erratically

- Dirt or smudges can cause a disk to skip. Clean the disk with a soft cloth. If the disk is badly scratched, it will probably have to be replaced.
- Some DVDs include software called “PC Friendly.” You generally should not install this software, as it can cause errors or erratic play. If needed, uninstall it and restart your notebook.

### If a DVD movie stops playing in the middle

- You may have accidentally paused the DVD movie. Press the Play button to continue.
- The DVD may be double-sided. Open the DVD tray and read the text near the center hole of the disk. If it says Side A, flip the disk over, close the tray, and press the Play button to continue playing the movie.

### If you get a Region Code error when playing a DVD movie

- DVDs can have regional codes embedded in the disk data. These codes prevent DVD movies from being played outside the region of the world in which they are sold. If you get a Region Code error, you are trying to play a DVD intended for a different region.

**Important:** most DVD drives let you change the region code only a limited number of times (usually no more than four). When you reach this limit, your last change to the region code will be hard-coded on the DVD drive, and will be permanent. **Your HP warranty does *not* cover the expense of correcting this situation.**

Refer to the help for your DVD player software for details about setting region codes.

### If the notebook cannot read a CD or DVD

- For a single-sided CD or DVD, make sure the disk is placed in the drive with the label facing up.
- Clean the disk.
- Wait 5 to 10 seconds after closing the tray for the notebook to recognize the disk.
- Remove the disk from the drive, then restart the notebook.
- If you created the CD on a CD-RW drive module, try using a different media brand, such as the recommended HP C4403A (CD-R) or C4404A (CD-RW) media. Read and write quality may vary for other media.

### **If a DVD movie doesn't fill the screen**

- Each side of a double-sided DVD has a different format (standard or widescreen). In widescreen format, black bands appear at the top and bottom of the screen. To view the standard format, flip the disk over and play the other side.

### **If a DVD doesn't play with two displays**

- If both displays are active, press Fn+F5 to switch to one display.
- If you're using both displays, the DVD image will not appear on any display set up as "secondary." Click Start, Control Panel, Appearance and Themes, Display. Click Advanced on the Settings tab, then click the Displays tab and change settings.

## **Display Problems**

### **If the notebook does not recognize the display**

When the notebook starts up, it automatically re-activates the display that was in use when Windows was last shut down. If you dock to a simple port replicator or attach a monitor while the notebook is off, the notebook may not properly recognize the monitor. If this happens, choose the display that you want to use in either of these ways:

- Press Fn+F5. (Do this three times to return to the state you started from.)
- Click Start, Control Panel, Appearance and Themes, Display, Settings, and then click the Advanced button. On the Displays tab, select the Display Device you want, and then click OK.

### **If the notebook is on, but the screen is blank**

- Move the mouse or tap the touch pad or scroll pad. This will wake the display if it is off.
- Try pressing Fn+F2 to increase the display brightness.
- Press Fn+F5 in case the internal display was disabled. (Do this three times to return to the state you started from.)
- If the notebook is cold, allow it to warm up.

### **If the screen is difficult to read**

- Try setting the display resolution to its default of 1024×768: click Start, Control Panel, Appearance and Themes, Display, Settings.
- Try adjusting the size of the desktop icons and labels.

### **If part of the Windows desktop is not visible and you have to scroll down to see the taskbar, or if the desktop does not fill the entire display and has a black border**

- Your display resolution may be set incorrectly. Adjust the resolution as needed.

### **If an external display does not work**

- Check the connections.
- Press Fn+F5 in case the external monitor was disabled. (Do this three times to return to the state you started from.)
- If you're using a TV connected to the S-video port, you must activate the TV.

- Test the display with the e-DiagTools diagnostics— see “Using the e-DiagTools Diagnostic Tests” on page 31.

### **If one or more display pixels look bad**

TFT display manufacturing is a highly precise but imperfect technology, and manufacturers cannot produce displays that are cosmetically perfect. Most, if not all, TFT displays exhibit some level of cosmetic imperfection. These cosmetic imperfections may be visible under varying display conditions, and can appear as bright, dim, or dark spots. *This issue is common across all vendors supplying TFT displays in their products and is not specific to the HP notebook display.*

HP notebook TFT displays meet or exceed all HP standards for cosmetic quality of TFT displays. HP does not warrant that the displays will be free of cosmetic imperfections. *TFT displays can have a small number of cosmetic imperfections and still conform to HP’s cosmetic quality specifications, including the following:*

- No more than 6 pixels remain on (always one color, such as white, red, green, or blue dots).
- No more than 6 pixels remain off (always dark).
- No more than a total of 8 pixels stuck on or off.
- No other stuck pixel within 15 mm of a stuck pixel.

Contact HP Customer Care if you have a display quality problem and require a more comprehensive explanation of HP display quality. We expect that over time the industry will continue to produce displays with fewer inherent cosmetic imperfections, and we will adjust our HP guidelines as these improvements are implemented.

## **Floppy Disk Drive Problems**

### **If a floppy drive connected to the USB port doesn’t work**

- Make sure the drive is securely connected to the notebook.
- Restart the notebook: click Start, Turn Off Computer, Restart.

## **Hard Disk Drive Problems**

### **If the notebook’s hard drive doesn’t spin**

- Make sure the notebook has power. If necessary, connect the AC adapter, and make sure it is fully plugged into a power source and into the back of the notebook.
- Remove and reinsert the hard drive—see “Removing the Hard Disk Drive” on page 40.

### **If the hard disk makes a buzzing or whining noise**

- Back up the drive immediately.
- See whether the noise is coming from elsewhere, such as the fan or a PC Card drive.

### **If files are corrupted**

- Check the hard disk: open My Computer, select the disk you want to scan, click File, Properties, and use the Tools tab.
- Run the Norton AntiVirus program.

- Test the hard disk drive with the e-DiagTools diagnostics—see “Using the e-DiagTools Diagnostic Tests” on page 31.
- If necessary, format the hard disk and reinstall the original factory software—see “Recovering the Factory Software Installation” on page 35.

### **If the hard drive’s reported capacity is less than its actual size**

- The hard disk drive is preconfigured to allocate some space to diagnostic software, which is used for support and service of your notebook. This part of the hard drive is unavailable for other uses, and so is not included in the capacity of the hard drive as reported by Windows (My Computer, Properties).

## **Heat Problems**

Keep in mind that your notebook normally gets warm during routine operation. Charging the battery and running games and other programs that drive CPU usage toward 100% can further increase the notebook’s temperature.

### **If the notebook gets warmer than usual**

- Always set the notebook on a firm, flat surface, so that air can flow freely around and underneath it.
- Make sure the air vents on the right side and back of the notebook are clear.
- Make sure the fan is working properly. If needed, test the fan’s operation—see “Using the e-DiagTools Diagnostic Tests” on page 31.

## **Keyboard and Pointing Device Problems**

### **If the pointer is difficult to control**

- Adjust the pointer controls: click Start, Control Panel, Printers and Other Hardware, Mouse.

### **If the touch pad or scroll pad doesn’t work**

- Don’t use the touch pad or scroll pad while the notebook is starting up or resuming. If this happens, try the following:
  - Press any key on the keyboard.
  - Put the notebook on standby, then resume operation.
- The touch pad and scroll pad are automatically disabled when the notebook is docked in a port replicator that has a PS/2 mouse connected.
- Restart the notebook: click Start, Turn Off Computer, Restart.
- Check settings: click Start, Control Pad, Printers and Other Hardware, Mouse, Scrolling.
- Test the keyboard and pointing devices with the e-DiagTools diagnostics— see “Using the e-DiagTools Diagnostic Tests” on page 31.

### **If the embedded numeric keypad doesn’t work**

- To type numbers, make sure Num Lock is on.

- Make sure the embedded Keypad Lock (Fn+F8) is on—or that you press and hold the Fn key to temporarily access the embedded keypad.

### **If you can't type the euro symbol**

- Hold Alt GR when you press the marked key.
- The euro symbol is not on the U.S. English keyboard. Make sure the embedded keypad is active (Fn+F8) and Num Lock is on, then hold Alt while typing 0128 on the numeric keypad.
- Support for the euro symbol requires software available from Microsoft. This software is installed in the factory software, but may not be included with retail Windows.

### **If a special feature on a USB mouse doesn't work**

- Make sure you installed any drivers included with the mouse.
- Restart the notebook, so that it will detect the mouse.

## **LAN Problems**

### **If the built-in network adapter doesn't connect to the LAN**

- Check all cables and connections. Try connecting at a different network station, if available.
- If the green light next to the LAN port does not light, the LAN cable may not be connected to the network or the network may be down. Try connecting a different notebook to the cable.
- Click Start, Control Panel, Network and Internet Connections, Network Connections. Make sure you have the correct clients and protocols installed.
- Make sure the LAN cable is Category 3, 4, or 5 for 10Base-T operation, or Category 5 for 100Base-TX operation. Maximum cable length is 100 meters (330 feet).
- Use the networking problems troubleshooter in Windows Help and Support.
- Click Start, Control Panel, Performance and Maintenance, System. On the Hardware tab, open the Device Manager. If the network interface is disabled, try to enable it. If it has a conflict, try disabling another device.

### **If you can't browse My Network Places**

- Click Start, Search to look for a computer.

### **If you can't log in to Netware servers**

- If a Netware server is using IPX/SPX protocol, you may need to force your frame type to match the server's frame type. Check with your network administrator.

### **If the notebook stops responding after booting**

- Check whether you have a TCP/IP network with no DHCP server. This can cause a long delay at startup because DHCP is enabled. Contact your network administrator to determine the proper TCP/IP configuration.

## Memory Problems

### If a message says you are out of memory

- Make sure drive C is not running low on free space.
- Use the memory troubleshooter in Windows Help and Support.
- If you are having memory problems while running MS-DOS programs, use the application and software problems troubleshooter in Windows Help and Support.
- Not all third-party memory cards have been tested for use with the notebook. Check the HP Notebook Web site ([www.hp.com/notebooks](http://www.hp.com/notebooks)) for a list of approved and tested memory cards.
- Test your notebook's memory with the e-DiagTools diagnostics— see “Using the e-DiagTools Diagnostic Tests” on page 31.

### If memory doesn't increase after adding RAM

- Make sure your notebook is using only DDR 266 RAM modules.

## Modem Problems

### If the modem seems slow

- Check for excess static or noise on the line, which reduces the overall transmission speed. If necessary, contact your telephone company about fixing this type of problem.
- If you're dialing internationally, line noise is often difficult or impossible to eliminate.
- If you have call-waiting, disable it—your telephone company can provide instructions.
- Eliminate extra connections in the line. If possible, connect directly to the wall jack.
- Try another telephone line, preferably one normally used for a fax machine or modem.

### If the modem doesn't dial or no dial tone is detected

- Check all cables and connections.
- Connect a standard telephone to the phone line and make sure the line is working.
- Make sure someone else isn't using the same phone line.
- Try another telephone line, preferably one normally used for a fax machine or modem.
- If you're in a foreign country/region, the dial tone may not be recognized by the modem. Click Start, Control Panel, Printers and Other Hardware, Phone and Modem Options. Select your modem on the Modems tab, then click Properties, Modem, and disable the option that waits for a dial tone.
- Many countries impose a blackout period after a modem repeatedly fails to connect to a service provider. The number of failed attempts and the period you must wait before trying again differ from country/region to country/region: check with your telephone company.

For example, if you are dialing from Italy and fail to connect to your server or cancel the connection, you must wait one minute before dialing that number again. If you dial before then, you will get an error message that says “delay.” After the fourth failed connection, you must wait one hour before trying the number again. If you dial before the hour is up, you will get a message that says “black list.”

### **If the modem dials incorrectly**

- Check the telephone number you entered, including any digits required for outside access or long distance.
- In Control Panel, open Phone and Modem Options, and check the dialing options—look for duplicate digits for outside access or long distance.
- Make sure the number you're calling isn't busy.
- If you're in a foreign country/region, the dial tone may not be recognized by the modem. Click Start, Control Panel, Printers and Other Hardware, Phone and Modem Options. Select your modem on the Modems tab, then click Properties, Modem, and disable the option that waits for a dial tone.
- If you have call-waiting, disable it—see Windows Help and Support, and contact your telephone company for information.

### **If the modem dials but doesn't connect**

- Make sure you're using an analog telephone line. You must not use a digital line. In a hotel, ask for a data line.
- Try another telephone line, preferably one normally used for a fax machine or modem.
- The modem at the other end may have a problem. Try dialing to a different modem.

### **If the modem will not connect at 56K speed**

- The host modem may not support a 56K (V.90) connection speed.
- Connection speed depends on several factors, such as the condition of the telephone line. Try connecting another time.

### **If the modem will not connect at any speed**

- Make sure you're using an analog telephone line. You must not use a digital line. In a hotel, ask for a data line.
- Make sure the telephone line goes directly from the notebook's modem phone jack to the telephone jack on the wall.
- If you have a single telephone line for voice and modem use, make sure no one else is using the line and that the phone is not off the hook.
- Try another telephone line, preferably one normally used for a fax machine or modem.
- Contact your Internet Service Provider (ISP). It's possible that service may be unavailable temporarily or that your settings are incorrect.
- Restart your notebook and attempt another connection.
- Download the latest modem driver from the technical support area of the HP notebook Web site ([www.hp.com/notebooks](http://www.hp.com/notebooks)).
- Run the modem diagnostics:
  1. Click Start, Control Panel, Printers and Other Hardware, Phone and Modem Options.
  2. Click the Modems tab, and select the modem you want to test.
  3. Click Properties, Diagnostics, Query Modem.

### **If the modem isn't detected**

- Check the modem setup. In Control Panel, open Phone and Modem Options.
- Click Start, Control Panel, Performance and Maintenance, System. On the Hardware tab, open the Device Manager. If the modem is disabled, try to enable it. If it has a conflict, try disabling another device.
- If you're running fax software using fax Class 2, try using Class 1.

### **If the modem dials but you can't hear it**

- If available, make sure the mute indicator is turned off. If it's on, press the mute button.
- Check the speaker volume setting and mute setting.
- In Control Panel, open Phone and Modem Options. Select the modem and click Properties, then check the volume setting on the Modem tab.

### **If the modem connects, but transferred data is bad**

- In Control Panel, open Phone and Modem Options. Make sure the hardware settings match on the sending and receiving modems.

### **If the modem causes an ERROR message**

- A string of AT commands may contain an incorrect command. If you entered commands as extra settings for the modem in Control Panel or in your communications software, check the commands.

### **If the modem doesn't fax**

- If you're using fax Class 2 in the fax software, try using Class 1.
- Close any other communications programs.
- If you're faxing by printing from an application, make sure you've selected the fax printer.
- Try turning off power management features temporarily.

### **If the modem clicks repeatedly but doesn't connect**

- Make sure you're using an analog telephone line. You must not use a digital line. In a hotel, ask for a data line.
- Check all cables and connections.

## **One-Touch Button Problems**

### **If One-Touch buttons are not working properly**

- Make sure the items associated with the buttons are the ones you want.

### **If the onscreen display does not appear when pressing a One-Touch button**

- Make sure the Onscreen Display is enabled.



## Parallel and USB Problems

### If a USB mouse doesn't work

- Make sure you followed the manufacturer's installation instructions completely and have installed the mouse properly. If not, repeat the procedure.
- Make sure the mouse is securely connected to the USB port.
- Put the notebook on standby, then resume.
- Restart the notebook.
- Check the mouse settings in Control Panel.
- Check the port settings in Control Panel: click Start, Control Panel, Performance and Maintenance, System. On the Hardware tab, open the Device Manager, and double-click Universal Serial Bus Controllers.

### If a USB modem doesn't work properly

- See "Modem Problems" on page 22.
- Make sure the modem is securely connected to the USB port.
- Use the modem troubleshooter (under Networking problems) in Windows Help and Support.
- Check the modem settings in Control Panel.
- Disable the internal modem:
  1. Click Start, Control Panel, Performance and Maintenance, System. On the Hardware tab, open the Device Manager.
  2. Double-click Modem to list the current modem devices.
  3. Double-click the internal modem, then select the option to disable the modem.
- Check the port settings in Control Panel: click Start, Control Panel, Performance and Maintenance, System. On the hardware tab, open the Device Manager, then double-click Universal Serial Bus controllers.

### If the parallel port is not working

- Make sure the port connection is secure.
- Check the port settings in Control Panel: click Start, Control Panel, Performance and Maintenance, System. On the Hardware tab, open the Device Manager, and double-click Ports (COM & LPT).
- Test the ports with the e-DiagTools diagnostics— see "Using the e-DiagTools Diagnostic Tests" on page 31.

### If the USB port is not working

- Contact the vendor of the peripheral device and check the HP Notebook Web site ([www.hp.com/notebooks](http://www.hp.com/notebooks)) for the latest versions of the USB drivers and the driver for the device.
- Check the port settings in Control Panel: click Start, Control Panel, Performance and Maintenance, System. On the Hardware tab, open the Device Manager, and double-click Universal Serial Bus controllers.
- Test the USB port with the e-DiagTools diagnostics— see "Using the e-DiagTools Diagnostic Tests" on page 31.

## PC Card (PCMCIA) Problems

### If the notebook doesn't recognize a PC Card

- Remove and reinsert the PC Card.
- Put the notebook on standby, then resume.
- Restart the notebook.
- If the card requires an IRQ, make sure one is available. If necessary, set the IRQ to an unused value: click Start, Control Panel, Performance and Maintenance, System. On the Hardware tab, open the Device Manager, then view resources by type.
- Check the HP Business Support Web site ([www.hp.com/go/bizsupport](http://www.hp.com/go/bizsupport)) for information about installing certain PC Cards.
- Make sure your notebook supports the problem PC Card: check the HP Notebook Web site ([www.hp.com/notebooks](http://www.hp.com/notebooks)) for a list of approved and tested PC Cards.
- Try the card in another computer to see whether the card functions properly.
- Test the PC Card with the e-DiagTools diagnostics— see “Using the e-DiagTools Diagnostic Tests” on page 31.

### If an I/O card stops communicating properly

- The card may have been reset if your notebook went on standby or into hibernation, or turned off. Exit any applications, then remove and reinsert the card.

### If a PC Card modem is not working

- Disable the internal modem:
  1. Click Start, Control Panel, Performance and Maintenance, System. On the Hardware tab, open the Device Manager.
  2. Double-click Modem to list the current modem devices.
  3. Double-click the internal modem, then select the option to disable the modem.

## Performance Problems

For best performance with Windows XP, your notebook should have at least 128 MB of memory (RAM).

### If the notebook pauses or runs sluggishly

- This may be normal Windows behavior. Background processing can affect response time.
- Certain background operations (such as a virus-scanning program) can affect performance.
- Certain demanding graphic games can affect performance.
- Press Ctrl+Alt+Del to see if an application is not responding.
- Restart the notebook.
- Some file browsers respond slowly while processing graphics or waiting for broken network connections to time out.

- If the notebook's hard disk drive runs frequently (as indicated by the hard drive light on the front of the notebook) while the notebook appears to be paused or running slowly, Windows is likely spending excess time writing to its swap file on the notebook's hard disk. If this occurs frequently, consider installing additional memory.
- Check the amount of available free disk space. Delete temporary and unneeded files.

### **If the notebook stops responding**

- Press Ctrl+Alt+Del to end the application that is not responding.
- Press and hold the power button for at least four seconds to turn off and reset the notebook. Then press the power button again to turn the notebook back on.
- If nothing happens, use a pen or straightened paper clip to press the reset switch on the back of the notebook. Then press the power button to turn the notebook on.

## **Power and Battery Problems**

### **If the notebook turns off immediately after it turns on**

- Battery power is probably extremely low. Plug in the AC adapter or insert a charged battery.

### **If the notebook keeps beeping**

- The notebook beeps repeatedly when battery power is low (you can set this option in Power Options in Control Panel). Save your work, turn off the notebook immediately, and insert a charged battery or plug in the AC adapter.

### **If the battery doesn't charge**

- Make sure the AC adapter is fully plugged into the power source and the notebook, and that the light on the adapter is on.
- If you're using a power strip, remove the AC adapter from the power strip and plug it directly into a wall outlet.
- Make sure the battery is fully installed and locked in place.
- Move the notebook away from any nearby heat source. Unplug the AC adapter and allow the battery to cool down. If the battery gets too hot, it will not charge properly.
- If available, try another battery and AC adapter.

### **If the notebook has a short operating time**

- Try conserving power using any of the suggestions listed in the online *Reference Guide*.
- If you are running an application that has an automatic save feature (such as MS Word), disable this feature or increase the specified save time to reduce hard disk access.
- If the operating time has gradually become shorter and the battery is more than a year or two old, you may need to replace the battery.
- Heavy modem use can affect battery operating time.

- PC Card use can affect battery operating time.

#### **If the Time Remaining for the battery seems incorrect**

- The Time Remaining is an estimate based on the rate at which the notebook is using power at that instant. So, if you check the Time Remaining while the notebook is using a good deal of power (such as when reading from a CD or DVD), the value will likely show less time remaining than you really have, since you will probably later switch to tasks that require less power.

#### **If the notebook doesn't go on standby as expected**

- If you have a connection to another computer, the notebook won't go on standby if the connection is active.
- If the notebook is performing an operation, it normally waits for the operation to finish before going on standby.

#### **If the notebook doesn't automatically hibernate as expected**

- Make sure hibernate support is enabled: click Start, Control Panel, Performance and Maintenance, Power Options, then click the Hibernate tab.

Also, check the Power Schemes tab. Make sure the hibernation timeouts for AC power and battery power are not set to Never.

## **Printing Problems**

### **Hint**

You can solve most printing problems by using the printing troubleshooter in Windows Help and Support.

#### **If a printer doesn't print**

- Make sure the printer is on and has paper in it.
- Make sure you are using the correct printer cable or cable adapter, and that the cable is secure at both ends.
- Check for printer errors.

#### **If the left edge of the printed output is missing**

- Certain applications may not work properly with 600-dpi printers. If you're using such a printer, try selecting a compatible printer driver for a 300-dpi printer. For example, if you were using a 600-dpi HP LaserJet printer, you might try using the HP LaserJet IIIsi driver (300 dpi).

## **Startup Problems**

#### **If the notebook doesn't respond when you turn it on**

- Connect the AC adapter.
- Reset the notebook by using a pen or straightened paper clip to press the reset switch on the back of the notebook. Then press the power button to turn the notebook on.

- Don't use the touch pad while the notebook is starting up or resuming from standby or hibernation.
- If the notebook still doesn't respond, remove the battery and AC adapter, and remove any PC Card. Then reset the notebook using the reset switch on the back of the notebook, replace the battery and plug in the AC adapter, and turn on the notebook by pressing the power button.
- If the notebook still doesn't respond, call HP for assistance.

#### **If the notebook won't boot from battery power**

- Make sure the battery is properly inserted and fully charged. Check the battery's charge by clicking the power icon in the taskbar, or using Power Options in Control Panel.
- If available, try another battery.

#### **If the notebook won't boot from the floppy disk drive**

- Make sure the drive is connected correctly.
- Make sure the floppy disk drive is selected as the boot device—see “Changing the Boot Device” on page 13.

## **Standby and Resume Problems**

#### **If the notebook takes a long time to resume after being on standby**

- The notebook can take a minute or longer to resume if a network card is installed. A blinking cursor appears on the display while the system is loading and checking hardware and network connections. As soon as the hardware is reinitialized, the Windows desktop appears.

#### **If you have general problems resuming from standby or hibernation**

- Close all applications before going on standby or into hibernation.
- If the problems appeared after you installed new software (including drivers, such as printer drivers), uninstall the software. Contact the software application or device vendor for additional support.

## **Wireless Problems**

#### **If you have problems with wireless communication**

- Make sure the wireless indicator light is on.
- See “LAN Problems” on page 21.

#### **If you have trouble connecting to another computer in My Network Places**

- Wait a few minutes, then press F5 to refresh the list of computers on the network.
- Click Start, Search to locate the computer.

### **If you cannot connect to a particular computer on the network**

- Make sure the computer is properly connected to the network.
- Make sure your TCP/IP setup is correct for your network: click Start, Control Panel, Network and Internet Connections, Network Connections. Contact your system administrator for the correct settings.

### **If your 802.11b wireless connection is dropped**

- Press the blue LED button on the left side of your notebook, wait 5 seconds, and then press the button again to reconnect.
- Move closer to the access point (for an infrastructure connection) or other wireless computer (for an ad hoc connection).

### **If the wireless link icon in the taskbar is red**

- Make sure you are using the correct SSID and channel settings: click the wireless link icon in the taskbar and select Advanced Configuration. Contact your system administrator for the correct settings.
- Make sure you are in range of an access point (for an infrastructure connection) or other wireless computer (for an ad hoc connection).

### **If you can connect, but the network is slow**

- Check whether you might be in an area served by more than one wireless LAN. If so, the LANs could be interfering with each other.
- Move closer to the access point (for an infrastructure connection) or other wireless computer (for an ad hoc connection). You could be too far away for high-speed communication.
- Stop using any USB device that may be transferring large amounts of data, or adjust application settings to reduce the transfer rate.

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## Using the e-DiagTools Diagnostic Tests

The e-DiagTools hardware diagnostic program included with your notebook provides two levels of testing: automated testing using its basic hardware test, and advanced testing using individual hardware tests.

The tests are designed to run after the system reboots. This ensures that the notebook will be in a predictable state, so the diagnostic program can properly test the hardware components. The tests are non-destructive and are intended to preserve the state of the notebook. The notebook reboots when you exit the program so drivers can be loaded.

### Running basic tests and documenting the results

1. In Windows, click Start, All Programs, Hewlett-Packard, Notebook, HP e-DiagTools, e-DiagTools for Windows.
2. Click Support Ticket, and then click Update. e-DiagTools creates a new support ticket.
3. When e-DiagTools displays a dialog box about restarting the notebook, close all files and applications before clicking Yes.

### Viewing the support ticket

1. In Windows, click Start, All Programs, Hewlett-Packard, Notebook, HP e-DiagTools, e-DiagTools for Windows.
2. Click View to display the Support Ticket.
3. To add information about your problem, click Comments and type the information, then click OK.  
To save or print the Support Ticket, click Save As or Print.  
To e-mail the Support Ticket to your support agent, click e-Mail. The first time you make an e-mail connection from this program, click Change Settings in the Connect window and enter the settings recommended by your support agent.

### Running advanced tests on specific hardware

1. Restart the notebook: click Start, Turn Off Computer, Restart.
2. When the HP logo appears, press F10 to start the diagnostic test.
3. When the menu appears, press F2 to run e-DiagTools.  
The first time you run the program, you are prompted to select the language for the program.
4. When the Configuration Description appears, verify the list of detected hardware.
5. Run the basic test. Press F2 to start the basic hardware test. The results appear when the test is complete.
6. Press F2 to open the advanced test screen.
7. Use the arrow keys and ENTER to select the tests that you want to run. Tests are listed only for detected hardware.
8. Press F2 to run the selected tests and add the results to the Support Ticket.
9. Press F12 to run the selected tests in a loop until you press ESC. When running advanced tests in a loop, ESC does not stop all tests immediately.

10. After each run, press F2 to go back to the advanced tests screen, press F4 to view the support ticket, or press F3 to exit.

e-DiagTools for Windows can also update the version of e-DiagTools on your notebook's hard disk. In e-DiagTools for Windows, use the e-DiagTools menu.

If you have trouble running e-DiagTools from the hard disk, you can also run it from the *Recovery CDs*. Boot from disk 1 and select the diagnostics option.

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## Using the BIOS Configuration Utility

The BIOS (Basic Input and Output System) configuration utility enables you to change the notebook's system configuration, and to tailor the operation of your notebook to your individual work needs.

1. Restart the notebook: click Start, Turn Off Computer, Restart.
2. When the HP logo appears, press F2 to enter the BIOS configuration utility.
3. The pointing devices are not active in the BIOS configuration utility, so you will need to use the keyboard to navigate:
  - Press the left and right arrow keys to move among menus.
  - Press the up and down arrow keys to move among parameters in a menu.
  - Press Enter to open the dialog for the current parameter, or to select the parameter.
  - Press Tab or the left and right arrow keys to move among selections in a dialog.
  - Press the up and down arrow keys to move through values for the setting.
  - Press Enter to close the dialog and accept the settings.
4. After you select the options you want, use the Exit menu to exit the BIOS configuration utility.

The following tables describe the settings for the notebook's initial BIOS release. If your notebook's BIOS version is different, some settings may differ from those shown, or may be absent.

### Main Menu

Setting	Description	Default
BIOS Revision	Shows the current BIOS version.	Detected automatically.
Service ID (Born On Date)	Displays an identifier used for repair service.	Detected automatically.
Serial Number	Displays the serial number as shown on the back of the unit.	Detected automatically.
UUID Number	Displays the value of the 16-byte UUID (Universally Unique ID) as 32 hex characters.	Detected automatically.
Platform Branding ID	Displays the product family.	Detected automatically.
System Time	Sets the time using 24-hour format. Values set take effect immediately.	
System Date	Sets the date using dd/mm/yy format (except English, which uses mm/dd/yy format).	
Internal Hard Disk	Sets the hard disk drive type and various parameters.	Detected automatically.



Extended Memory	Shows the extended memory size.	Detected automatically.
LCD Status Panel Display	Sets whether the status panel on the front of the notebook is enabled.	Enabled
LCD Status Panel Date Format	Sets the date format for the status panel.	mm/dd/yy
LCD Status Panel Time Format	Sets the time format for the status panel.	hh:mm AM/PM
Language	Sets the language for the BIOS menus.	English (US)

### Security Menu

Setting	Description	Default
User Password is	Shows if a user password is set.	Clear
Administrator Password is	Shows if an administrator password is set.	Clear
Set User Password	Press ENTER to set, change, or clear the user password. The password can have no more than 8 characters (0-9, A-Z), and cannot include special or accented characters.	Enter
Set Administrator Password	Press ENTER to set, change, or clear the administrator password, which protects BIOS Setup settings. The password can have no more than 8 characters (0-9, A-Z), and cannot include special or accented characters.	Enter
Password Required to Boot	Sets whether a user password is required when the computer boots. Requires the administrator password for changes.	Disabled

### Boot Menu

Setting	Description	
Hard Drive CD-ROM/DVD USB Floppy Network Boot	Shows the order of boot devices. Move the entries to change the order. Network Boot provides diskless boot from a network server.	1. Hard Drive 2. CD-ROM/DVD 3. USB Floppy 4. Built-in LAN

### Exit Menu

Setting	Description	
Save Changes and Exit	Saves Setup changes, and then exits and reboots.	
Discarding Changes	Discards any Setup changes made since last save, and then exits and reboots. Does not affect password, date, or time changes.	
Get Default Values	Restores default settings, and remains in Setup. Does not affect password, date, or time changes.	



# Reinstalling and Updating Software

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You can use the *Recovery CDs* or *DVDs* to recover the original factory software for your notebook.

The *Recovery CDs* or *DVDs* also provide Windows drivers specific to your notebook to configure a custom system. You can find drivers in these locations:

- On your notebook's hard drive under C:\hp\Drivers.
- On the *Recovery CD* or *DVD* under \hp\Drivers.
- On the HP Business Support Web site ([www.hp.com/go/bizsupport](http://www.hp.com/go/bizsupport)). This Web site contains the latest updates of software drivers for different operating systems.

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## Recovering the Factory Software Installation

You can use the *Recovery CDs* or *DVDs* to reinstall the original factory software on your notebook's hard disk. You can also use the same process to create a larger Utility partition on your hard disk, or to create a Utility partition on a new hard disk. The hidden Utility partition contains the e-DiagTools diagnostic tests and stores hibernation data for operating systems that don't provide hibernation.

### CAUTION

This procedure formats the notebook's hard disk drive and erases all data on the disk. After the hard disk is formatted, you'll need to reinstall your applications.

Do not interrupt the following process or unplug the AC adapter until the process is complete.

1. **Important:** back up all data from your hard disk. The following steps delete all data from the disk.
2. Connect the AC adapter to the notebook.
3. Insert the *Recovery CD* (disk 1) or *DVD* into the notebook's DVD/CD-RW drive. If the notebook is turned off, use a pin or straightened paper clip to press the release switch on the drive door to open it.
4. Turn on or restart the notebook. If the notebook is running, click Start, Turn Off Computer, Restart.
5. When the HP logo appears, press Esc to display the Boot menu.
6. Use the arrow keys to select the DVD/CD-RW drive as the boot device, and press Enter.
7. When the *Recovery CD* or *DVD* dialog box appears, follow the displayed instructions. If prompted, accept the recommended partition size. If you install the factory software, the recovery process can take up to 15 minutes.

If you want to create the Utility partition without installing the factory software, click Advanced and select not to install the operating system.

If your hard disk is partitioned into several drives, you can install the factory software on drive C without affecting other drives. Click Advanced and select to restore only the C partition.

8. **Important:** when prompted to reboot the notebook, press Ctrl+Alt+Del and follow any instructions that appear.

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## Updating the Notebook BIOS

Hewlett-Packard may provide updates to the notebook's BIOS to enhance the capabilities of your system. Check the HP Business Support Web site ([www.hp.com/go/bizsupport](http://www.hp.com/go/bizsupport)). Installation utilities and instructions will be provided with the updates.

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## Updating the Windows Drivers

From time to time, HP releases updated versions of the drivers for your notebook. These updates are intended to fix any problems that could be encountered in the drivers, and to keep your notebook running smoothly. In addition, HP normally provides drivers for other versions of Microsoft Windows, in case you decide to install a different version of Windows.

- Download the latest drivers for your notebook from the HP Business Support Web site ([www.hp.com/go/bizsupport](http://www.hp.com/go/bizsupport)). Follow the instructions included with the drivers.

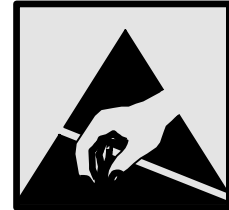
# Removing and Replacing Parts

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This chapter shows how to remove and replace the notebook's user-replaceable components.


## Caution

Always provide proper grounding when performing repairs. Without proper grounding, an electrostatic discharge can damage the notebook and its components.



## Notes

To reassemble a component, perform the removal procedure in reverse order. Any special notes required for reassembly are included at the end of each section.

 Symbols like this are used throughout this chapter to show approximate full-size screw outlines. Use these to verify the sizes of screws before you install them. Installing a wrong-size screw can damage the notebook. (The symbol shown represents an M2.5x5mm T-head screw.)

## Notes

Please refer to the “hp parts home” on the Web for the latest part numbers.  
[www.hp.com/hps/parts](http://www.hp.com/hps/parts)

---

# Removing the Battery

Table 1. Battery Replacement Part Numbers

Description	Part Number	Exchange Part Number
Battery, Lilon 8-cell	F3172-60901	

## Required Equipment

- None.

## Removal Procedure

- Slide the battery's release latch in the direction of the arrow on the latch, then lift the battery out of its compartment.

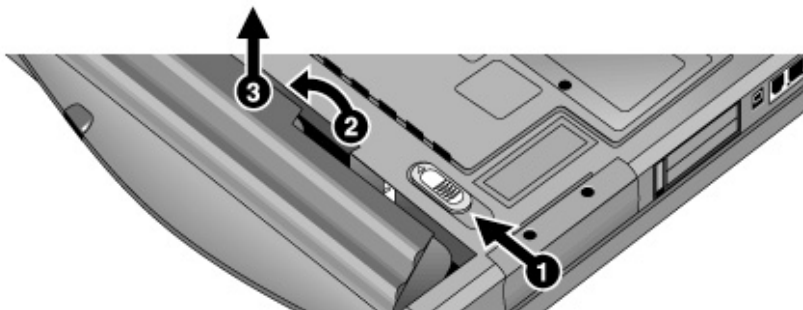


Figure 8. Removing the Battery

## Reassembly Notes

- Insert the front end of the battery into the battery compartment, then press the back end in until the battery clicks into place.

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## Removing the Optical Drive Module

Table 2. Optical Drive Module Replacement Part Numbers

Description	Part Number	Exchange Part Number
Drive, DVD module	F5535-60911	
Drive, DVD/CD-RW Combo module	F5535-60912	

### Required Equipment

- None.

### Removal Procedure

- Slide the module release latch in the direction shown by the arrow on the latch, and remove the module.

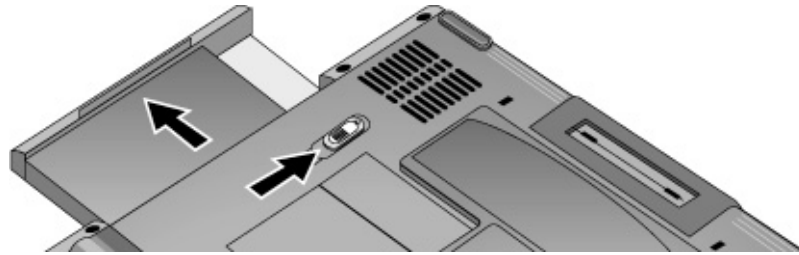


Figure 9. Releasing the Plug-in Module

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## Removing the Hard Disk Drive

**Table 3. Hard Disk Drive Replacement Part Numbers**

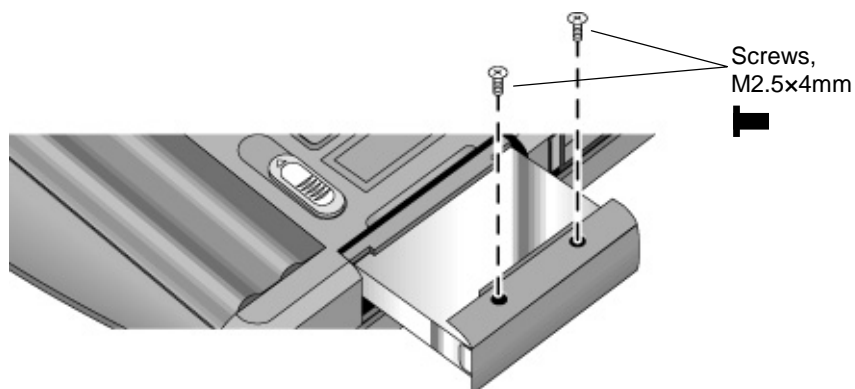
Description	Part Number	Exchange Part Number
HDD-20GB 9.5mm IBM ATA100 FDB	0950-4318	F3257-69501
HDD-20GB 9.5mm, TOSH ATA100 FDB	0950-4287	F3476-69002
HDD-30.0GB 9.5mm, IBM ATA100 FDB (Cascade)	0950-4319	F3414-69500
HDD-40GB 9.5mm, IBM ATA100 FDB	0950-4320	F3428-69500
HDD-40GB 9.5mm, Toshiba ATA100	0950-4288	F3378-69102
Tray, HDD	F3398-60914	

### Required Equipment

- #0 Phillips screwdriver.

### Removal Procedure

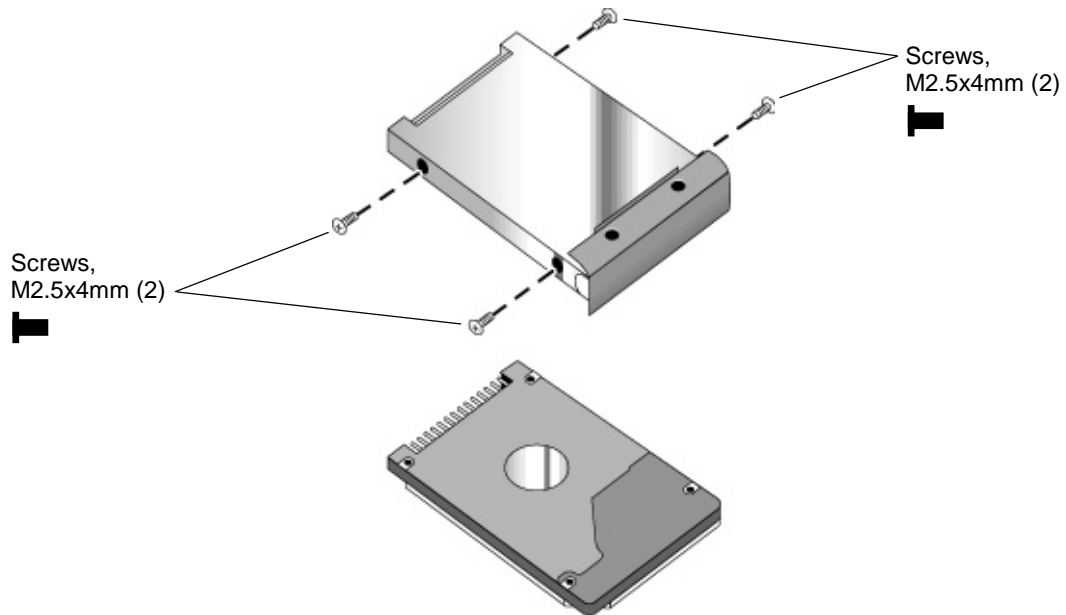
1. Unplug the AC adapter, if present, and remove the battery.
2. On the bottom of the unit, remove both hard drive retaining screws.



**Figure 10. Removing the Hard Disk Drive**

3. Carefully pull the hard drive out of the notebook.
4. Remove all four screws from the hard drive tray and drive case, then lift the drive out of the tray.





**Figure 11. Removing the Hard Disk Tray**

#### **Reassembly Notes**

- Insert the connector end of the drive through the opening in the tray, then lower the drive into place.
- Carefully slide the hard drive assembly into its compartment. Press firmly to make sure the connector seats properly.

#### **Important**

If you are installing a new hard disk drive, install the factory software and operating system on the drive before loading any additional software—see “Recovering the Factory Software Installation” on page 35.

---

## Removing the Mini-PCI Card

Certain notebook models include a mini-PCI card that contains either a modem or combined modem and 802.11 wireless.

**Table 4. Mini-PCI Card Replacement Part Numbers**

Description	Part Number	Exchange Part Number
PCA, mini-PCI (modem)	F3377-60950	
PCA, mini-PCI (modem/802.11)	F3377-60951	

### Caution

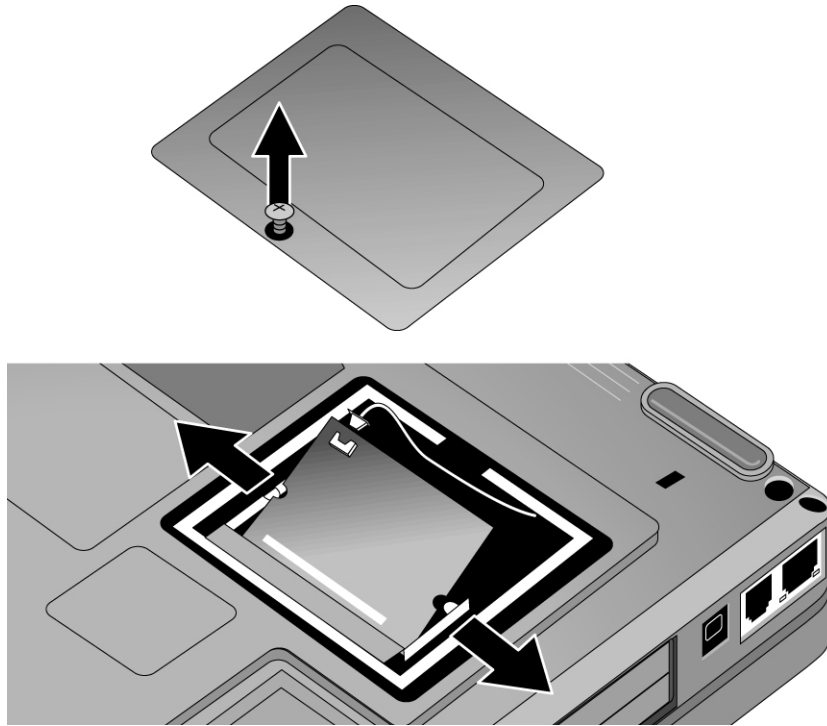
Provide proper grounding and handle the card only by its edges, or you could damage it through electrostatic discharge.

### Required Equipment

- #0 Phillips screwdriver.

### Removal Procedure

1. Unplug the AC adapter, if present, and remove the battery.
2. On the bottom of the notebook, loosen the screw holding the mini-PCI cover (the cover retains the screw), and remove the cover.
3. Press outward to release the latches at the sides of the card, and carefully lift its free edge up.
4. Disconnect the cable(s) from the card.
5. Gently pull the card out of its connector.



**Figure 12. Removing the Mini-PCI Card**

#### **Reassembly Notes**

- Reattach the cable(s) to the card, and tuck them into the compartment.
- Gently press the card into the connector at an angle of about 30°, until it is fully inserted. Then press down on both sides of the card until the latches snap closed.

---

# Removing the Keyboard Cover

**Table 5. Keyboard Cover Replacement Part Numbers**

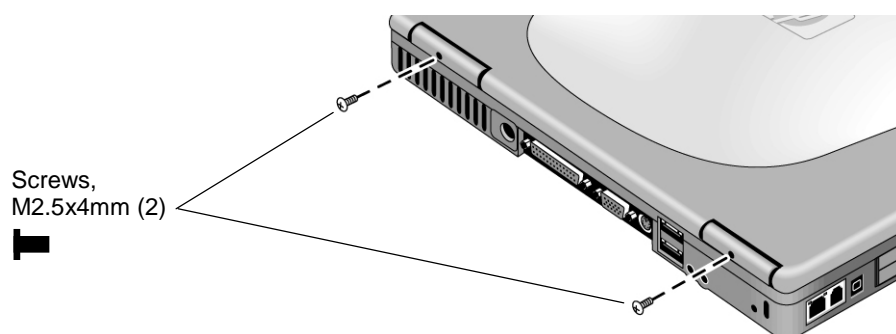
Description	Part Number	Exchange Part Number
Cover, keyboard (with LED lens)	F3398-60917	

## Required Equipment

- #0 Phillips screwdriver.
- Small flat-blade screwdriver.

## Removal Procedure

1. Unplug the AC adapter, if present, and remove the battery.
2. Close the notebook's display, and remove both screws from the backs of the hinge covers.



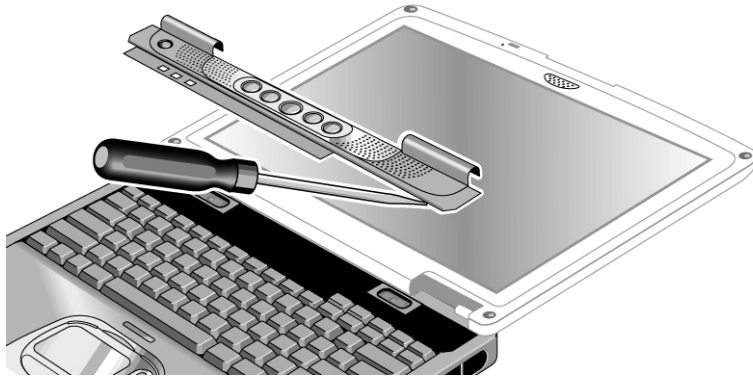
**Figure 13. Removing the Keyboard Cover Retaining Screws**

3. Open the display so that it lays flat.
4. Use the flat-blade screwdriver to carefully pry up the right end of the keyboard cover just above the Page Up key, then lift the end until the cover unsnaps.

### Caution

When removing the keyboard cover, be careful not to pull on the cable that connects the keyboard cover to the notebook.

5. Carefully lift the cover to unsnap the latches above the center One-Touch button and the F1 key, then lift the cover about an inch off of the notebook.
6. Disconnect the keyboard cover switch cable from the motherboard, and remove the cover from the notebook.



**Figure 14. Removing the Keyboard Cover**

### **Reassembly Notes**

- Make sure the keyboard cover switch cable is securely connected to the motherboard.
- Bend the center of the keyboard cover upward slightly, and insert the tabs on the ends of the cover into the slots in the notebook's case. Fit the hinge covers over the hinges, and gently press the cover into place.

# Removing the Keyboard

Table 6. Keyboard Replacement Part Numbers

Description	Part Number	Exchange Part Number
Keyboard, French (zt1100/xz200 series only)	F3428-60903	
Keyboard, French Canadian (zt1100/xz200 series only)	F3428-60909	
Keyboard, German (xt1500 series only) (Europe only)	F3428-60911	
Keyboard, International English (xt1500 series only) (Europe only)	F3428-60912	
Keyboard, Italian (xt1500 series only) (Europe only)	F3428-60904	
Keyboard, Spanish	F3428-60905	
Keyboard, Swiss (xt1500 series only) (Europe only)	F3428-60908	
Keyboard, UK English (zt1100/xz200 series only)	F3428-60902	
Keyboard, US English (zt1100/xz200 series only)	F3428-60901	

## Required Equipment

- #0 Phillips screwdriver.
- Small flat-head screwdriver.

## Removal Procedure

1. Unplug the AC adapter, if present, and remove the battery.
2. Remove the keyboard cover (page 42).
3. Loosen the three retaining screws along the top of the keyboard (the keyboard retains the screws).

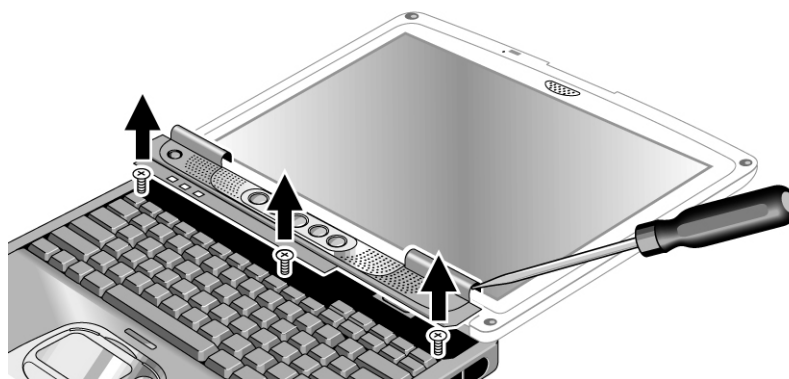


Figure 15. Loosening the Keyboard Retaining Screws

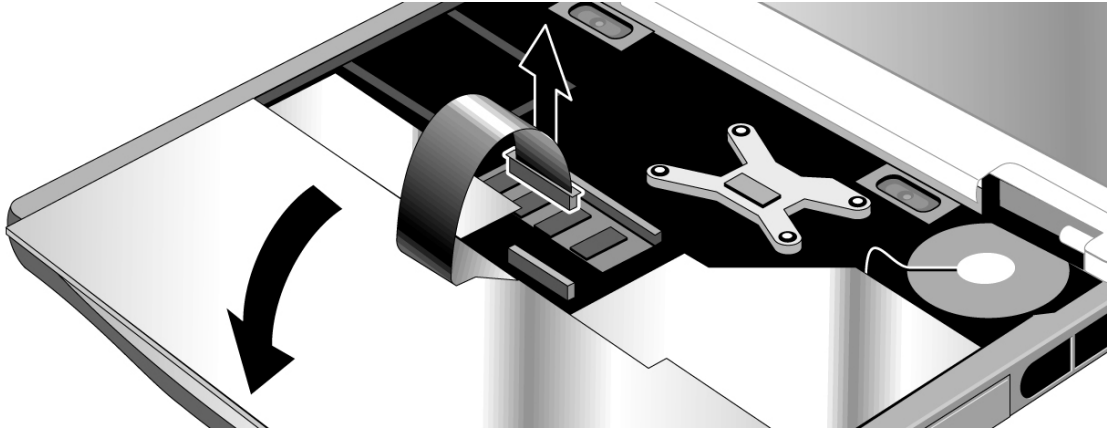
### Caution

When opening the keyboard, be careful not to pull on the ribbon cable that connects the keyboard to the notebook.

4. Raise the top of the keyboard, then lift the keyboard up and out of the notebook.
5. Lay the keyboard face down on the top case, forward of its normal position, and disconnect the ribbon cable from the motherboard.

**Warning**

Do not touch the metal surfaces inside the notebook until they have cooled off. They could be very hot if the notebook was running recently.



**Figure 16. Disconnecting the Keyboard**

**Reassembly Notes**

- Lay the keyboard face down on the top case, forward of its normal position, and reconnect the ribbon cable.
- Slip the metal tabs on the bottom of the keyboard into their slots in the top case, then lower the keyboard into place.

---

## Removing an SDRAM Module

The notebook has no SDRAM built into its motherboard, but has two slots for PC133 SDRAM modules: a system SDRAM slot beneath the keyboard (containing an SDRAM module installed at the factory), and an expansion slot on the bottom of the unit.

**Table 7. SDRAM Module Replacement Part Numbers**

Description	Part Number	Exchange Part Number
Module, SDRAM, 128 MB DDR, PC266 SODIMM	F4694-60901	
Module, SDRAM, 256 MB DDR, PC266 SODIMM	F4695-60901	
Module, SDRAM, 512 MB DDR, PC266 SODIMM	F4696-60901	

### Caution

Provide proper grounding and handle the SDRAM module only by its edges, or you could damage the module through electrostatic discharge.

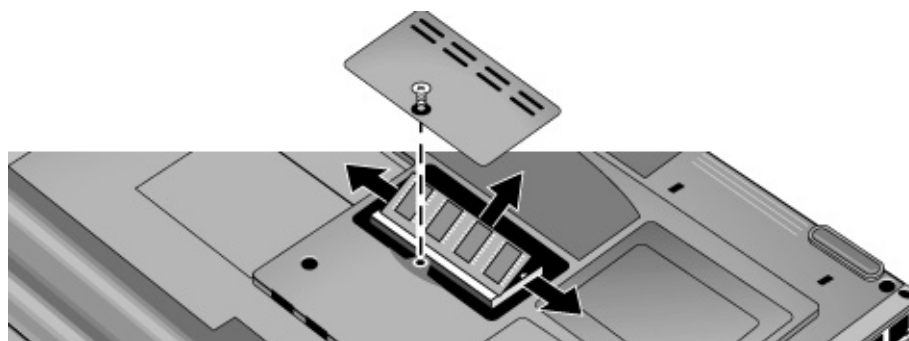
### Required Equipment

- #0 Phillips screwdriver.

## Removing an Expansion SDRAM Module

### Removal Procedure

1. Unplug the AC adapter, if present, and remove the battery.
2. On the bottom of the notebook, loosen the screw holding the SDRAM cover (the cover retains the screws), and remove the cover.
3. Press outward to release the latches at the sides of the SDRAM module (so that the free edge of the module pops up), then pull the module out of the connector.



**Figure 17. Removing an Expansion SDRAM Module**



## Reassembly Notes

- Carefully press the SDRAM module into the connector at an angle of about 30°, until it is fully inserted. Then press down on both sides of the module until the latches snap closed.

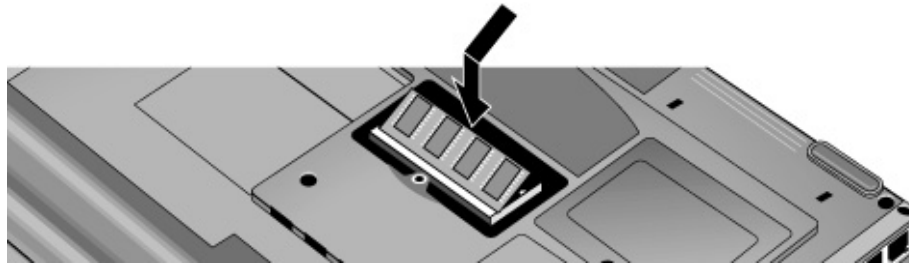


Figure 18. Installing an Expansion SDRAM Module

## Removing the System SDRAM Module

### Removal Procedure

1. Unplug the AC adapter, if present, and remove the battery.
2. Remove the keyboard cover (page 42).
3. Open the keyboard (page 46, steps 1 through 5). You don't need to disconnect the keyboard cable.
4. Press outward to release the latches at the sides of the SDRAM module (so that the free edge of the module pops up), then pull the module out of the connector.

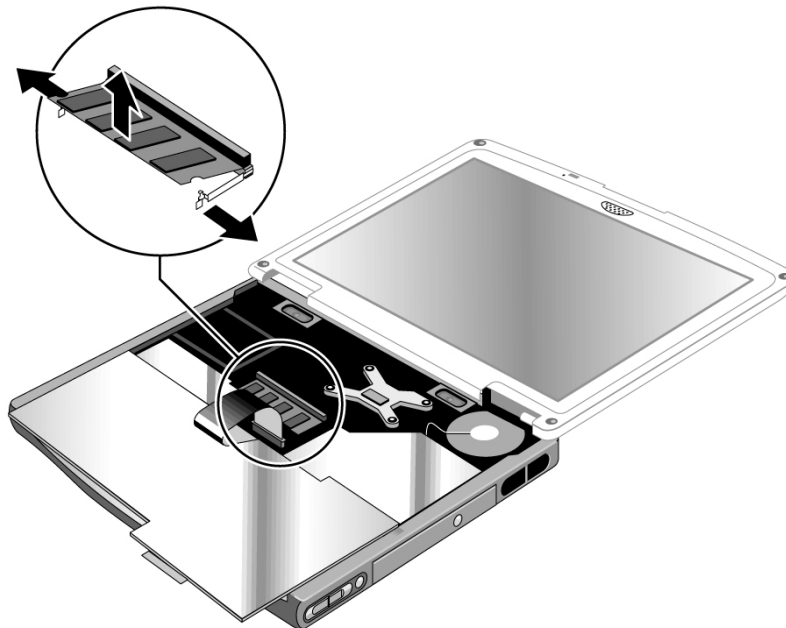


Figure 19. Removing the System SDRAM Module

## Reassembly Notes

- Carefully press the SDRAM module into the connector at an angle of about 30°, until it is fully inserted. Then press down on both sides of the module until the latches snap closed.

---

# Removing the Speakers

Table 8. Speaker Replacement Part Numbers

Description	Part Number	Exchange Part Number
Kit, speakers (L/R)	F5535-60921	

## Required Equipment

- #0 Phillips screwdriver.

## Removal Procedure

1. Unplug the AC adapter, if present, and remove the battery.
2. Remove these additional assemblies:
  - Keyboard cover (page 42).
  - Keyboard (page 46).
3. Remove the retaining screws from each speaker. Disconnect the speaker wires from the motherboard, and lift the speakers out of the notebook.

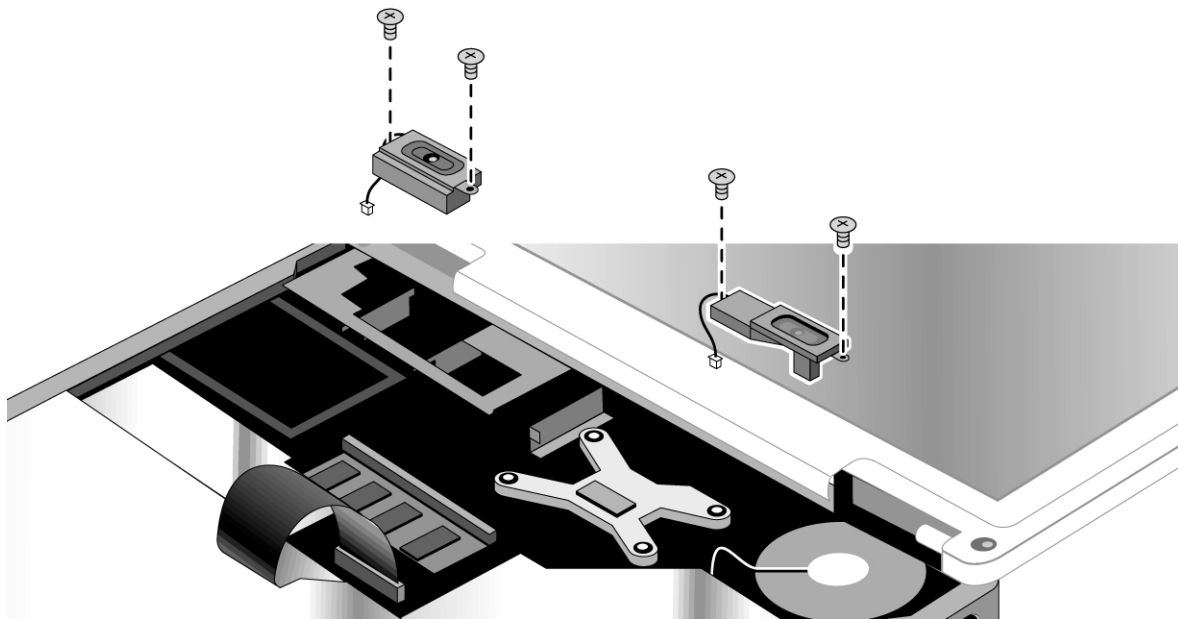


Figure 20. Removing the Speakers

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# Removing the Fan

**Table 9. Fan Replacement Part Numbers**

Description	Part Number	Exchange Part Number
Fan, heatsink	F3398-60935	

## Required Equipment

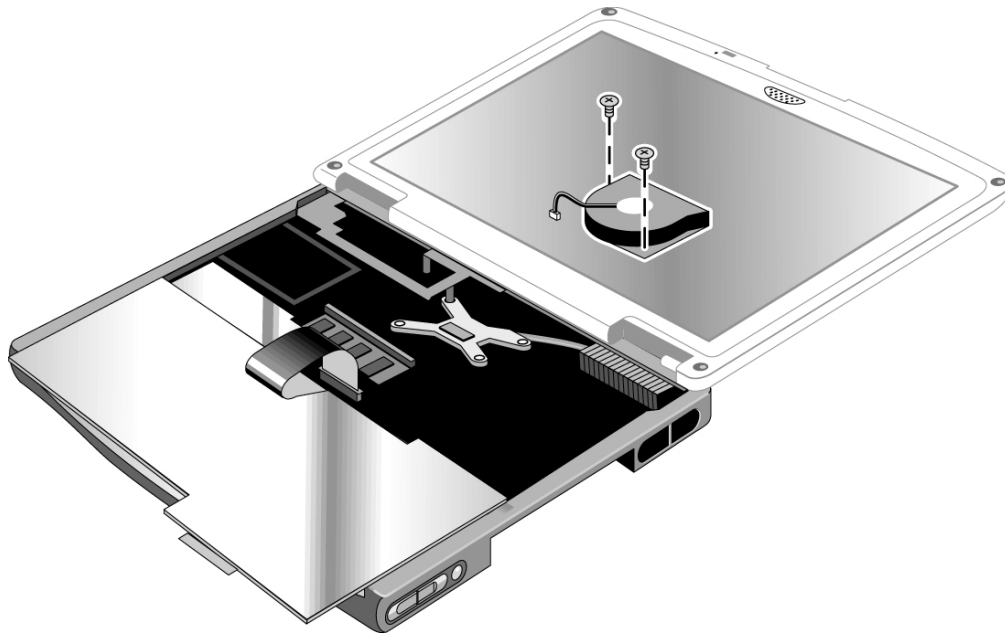
- #0 Phillips screwdriver.

## Removal Procedure

1. Unplug the AC adapter, if present, and remove the battery.
2. Remove these additional assemblies:
  - Keyboard cover (page 42).
  - Keyboard (page 46).
  - Right speaker (page 50).
3. Disconnect the fan wires from the motherboard.
4. Remove both retaining screws from the fan.
5. Lift the fan out of the notebook.

### **Caution**

Do not spin the fan blades with your finger, or you could damage the fan's bearings.



**Figure 21. Removing the Fan**

**Reassembly Notes**

- Make sure the fan wires are not pinned under the fan, and is securely plugged into its socket.
- If present, make sure the wireless cables are not trapped under or behind the fan.

## Replacing Small Parts and Accessories

The following small parts are user-replaceable.

**Table 10. Replacing Small Parts**

Part	Part Numbers	Replacement Procedure
<b>Cover, mini-PCI</b>	Included in door kit F3377-60933	On the bottom of the notebook, loosen the screw in the mini-PCI cover (the cover retains the screw) and remove the cover.
<b>Cover, expansion SDRAM</b>	Included in door kit F3377-60933	On the bottom of the notebook, loosen the screw in the SDRAM module cover (the cover retains the screw) and remove the cover.
<b>Covers, screw (on display bezel)</b>	Included in feet/cover kit F3377-60967	Insert a small flat-blade screwdriver under the cover and pry it loose. To replace, firmly press the adhesive side of the cover into the recess.
<b>Feet, rubber</b>	Included in feet/cover kit F3377-60967	Insert a small flat-blade screwdriver under the foot and pry it loose. To replace, firmly press the adhesive side of the foot into the recess.
<b>Cover, mini-PCI</b>	Included in door kit F3377-60933	On the bottom of the notebook, loosen the screw in the mini-PCI cover (the cover retains the screw) and remove the cover.
<b>Cover, expansion SDRAM</b>	Included in door kit F3377-60933	On the bottom of the notebook, loosen the screw in the SDRAM module cover (the cover retains the screw) and remove the cover.
<b>Covers, screw (on display bezel)</b>	Included in feet/cover kit F3377-60967	Insert a small flat-blade screwdriver under the cover and pry it loose. To replace, firmly press the adhesive side of the cover into the recess.
<b>Feet, rubber</b>	Included in feet/cover kit F3377-60967	Insert a small flat-blade screwdriver under the foot and pry it loose. To replace, firmly press the adhesive side of the foot into the recess.
<b>AC-Adapter-Ultrastim Delta 75W s/PFC</b>	F4600-60901	
<b>Cord, Pwr, Europe #ABB (2w)</b>	8120-6314	
<b>Cord, Pwr, UK &amp; Singapore #ARS (2w)</b>	8120-6315	
<b>Cord, Pwr, UK #ABA (2w)</b>	8120-6313	
<b>External Floppy Drive, USB</b>	D9510-63002	
<b>Label, OB xt1500</b>	F3444-60911	
<b>Label, Pav zt1000</b>	F3377-60983	
<b>Port Replicator Assy</b>	F3494-60902	

**Table 11. Pavilion zt1000/xz300 and Omnibook xt1500 Series Accessories**

<b>Accessory</b>	<b>Description</b>
<b>New Accessories</b>	
F3172B	HC Lilon Battery
F3494B	Simple Port Replicator
<b>Tested Cross-Platform Accessories</b>	
F5101A	MCD USB Floppy Disk Drive Module (N. America PL-KV only)
F1606A	Omnibook Ballistic Nylon Case
F1607A	Omnibook Leather Case
F1608A	Omnibook Executive Case
F1645A	Kensington Lock
F1747A	Defcon Lock
F1771A	Universal Carrying Case
F1778A	Promotional Carrying Case (NAM & AP)
F1778B	Standard Carrying Case (Europe Only)
F2020A	Executive Leather Case (Europe only)
F2100A/F4815A	USB Optical Mouse
F2135C	Wireless Comm Access Point
F2136B	Wireless PC Card (128 bits)
F2196A/F4862A	3Com Bluetooth PC Card
F2297A	Car Adapter, 24 V (EU only)
F4496A	512 MB PC2100 DDR SDRAM 266 MHZ
F3495A	128 MB PC2100 DDR SDRAM 266 MHZ
F3496A	256 MB PC2100 DDR SDRAM 266 MHZ
F4600A/F4814A	75W AC Adapter w/PFC
F4863A	Wireless Access Point for SMB
<b>Other Accessories</b>	
D9510B	USB Floppy

# Reference Information

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This section includes information on HP's password removal policy, and on notebook display quality.

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## Password Removal Policy

If the user forgets the system password, the user calls HP Customer Care to determine the proper password removal procedure. The user must provide proof of ownership, and the notebook must be operated during the procedure.

The password removal procedure is protected as HP Company Private information. There are a restricted number of locations that can perform password removal. The procedure may not be disclosed or distributed outside those locations.

Password removal is strictly controlled. Hewlett-Packard and authorized support providers must ensure with written evidence that the notebook being "cleansed" is actually in the possession of the notebook's actual and current owner. This requires a sales receipt showing the notebook serial number and owner's name, or a written statement from the owner attesting that he or she is the owner of the notebook. The statement can be a fax copy of the document. The fact that the notebook is in the hands of an HP representative on behalf of the customer is not evidence of ownership. In addition, HP will not remove the password of a notebook for any non-owner, even if it is requested by law enforcement agencies. If you receive such a request, you should notify management and HP Corporate Legal immediately. (These requests may require a court order prior to our participation.)

Further, the entity removing the password must log the name, serial number, and date of the removal, and file the written backup with the log. The log and backup are subject to standard record retention process and review.

The final issue relating to removal of passwords is that HP cannot provide information to users that would assist them in improperly removing a password and opening a notebook.

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## Hewlett-Packard Display Quality Statement

TFT display manufacturing is a highly precise but imperfect technology, and manufacturers cannot produce large displays that are cosmetically perfect. Most, if not all, TFT displays exhibit some level of cosmetic imperfection. These cosmetic imperfections may be visible to the customer under varying display conditions, and can appear as bright, dim, or dark spots. *This issue is common across all vendors supplying TFT displays in their products and is not specific to the HP notebook display.*

HP notebook TFT displays meet or exceed all HP standards for cosmetic quality of TFT displays. HP does not warrant that the displays will be free of cosmetic imperfections. *TFT displays can have a small number of cosmetic imperfections and still conform to HP's cosmetic quality specifications.*

Here are some guidelines for determining what action to take on customers' complaints of cosmetic imperfections in their TFT displays:

1. View the notebook under the customer's normal operating conditions.

This means that if the customer uses the notebook predominately in DOS, in Windows, or in some other application or combination of applications, you should make the determination under those same applications. Self test is not a normal operating condition and is not a sufficient tool for interpreting display quality.

2. Use the table below to determine whether the display should be considered for replacement. These are the only conditions in this guideline that may call for a replacement due to a defect in material or workmanship based on the HP Limited Warranty Statement.
3. If a display is considered for replacement, make sure the customer understands that cosmetic variations may also exist on the replacement display, and may require the customer to use a work-around to obscure the cosmetic imperfection.
4. Displays with cosmetic imperfections that do not conform to the above conditions and tests will not normally be considered for display replacement. The HP-responsible person working with the customer should identify work-arounds that are reasonable and appropriate for that customer. Customers who require a more perfect display solution should consider switching to a notebook with a DSTN display.

We expect that over time the industry will continue to produce displays with fewer inherent cosmetic imperfections, and we will adjust our HP guidelines as these improvements are implemented.

Type of Imperfection	Imperfections Not Allowed
<b>Electrical Imperfections:</b> Bright dots <sup>(a)</sup> Dark dots <sup>(a)</sup>	<ul style="list-style-type: none"> <li>• 7 or more single bright dots.</li> <li>• 7 or more single dark dots.</li> <li>• 9 or more total (bright and dark combined) defective dots.</li> <li>• Any occurrence of multiple defective dots within 15 mm.</li> </ul>
<b>Mechanical Imperfections:</b> Discoloration Polarizer bubbles, dents <sup>(b)</sup>	<ul style="list-style-type: none"> <li>• Any polarizer bubble, discoloration, or dent that is visible from at least 36 cm (14 in).</li> </ul>
Definitions of imperfections: <sup>a</sup> A bright or dark dot is a subpixel (red, green, or blue dot) that is stuck on or off. <sup>b</sup> A polarizer dent or bubble is a light spot with a darker border that appears on a lighted display and does not change size. In contrast, a polarizer scratch is a light line that is visible on a darker background and does not change size.	