HP Slate 500

Maintenance and Service Guide

First Edition: September 2010

Document Part Number: 633016-001

Safety warning notice

⚠ **WARNING!** To reduce the possibility of heat-related injuries or of overheating the device, do not place the device directly on your lap or obstruct the device air vents. Use the device only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to contact the skin or a soft surface, such as pillows or rugs or clothing, during operation. The device and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950).

Table of contents

1 Product description

Category	Description
Product Name	HP Slate 500
Processor	Intel® Atom Menlow Z540 1.86-GHz processor 512-KB L2 cache, 533-MHz front side bus (FSB)
Chipset	Intel Poulsbo system controller hub (SCH) US15W
Graphics	Intel high-definition Broadcom video decoder (on system board) with 64 MB buffer memory (32MB×16 DDR2×1 piece, 1.8 V @ 400 MHz) and universal memory architecture (UMA) graphics memory subsystem
Panel	8.9-in, WSVGA (1024×600) wide-viewing angle, multitouch capacitive, Poly(methyl methacrylate, PMMA) AntiGlare type
Memory	DDR2 memory built into system board, not customer-accessible/upgradable
	Memory support: • DDR2 800 MHz (downgrade to 533 MHz due to chipset limitation) • DDR2 667 MHz (downgrade to 533 MHz due to chipset limitation) • DDR2 533 MHz single channel support
	Supports 2048-MB total system memory (2048 MB×1) on system board (8 components, 128 MB×16 chips) running at 533-MHz configuration
Primary storage	Supports 64-GB solid-state drive (SSD)
Optical drives	No support for internal or USB-powered optical drive
Audio and video	One digital microphone
	HD audio
	Two integrated 1.5-W, non-branded stereo speakers
	Two fixed integrated webcams: • User-facing webcam using OV-7740 sensor with 2-pixel, F2.4 fixed-focus low-light lens supporting 640×480 by 24 frames per second • Rear-facing webcam using OV-3642 sensor with 4-pixel, F2.8 fixed-focus lens supporting extended depth of field (EDoF) feature, 3-megapixel stills, and video up to 24 frames per second
Modem	No support for modem

Category	Description
Ethernet	No support for Ethernet
Wireless	Integrated wireless local area network (WLAN) option by way of Broadcom 4313 802.11b/g/n WiFi and 2070 Bluetooth 2.1+EDR Combo adapter (Bluetooth 3.0+HS ready)
	Two WLAN antennas built into HP Slate 500
External media card	Supports the following optional digital card formats: • Secure Digital High Capacity (SDHC) Memory Card (standard and large size) • xD-Picture card
Ports	• HP Slate 500 proprietary AC power • HP Slate 500 proprietary docking • Combination audio-in (mono microphone)/audio-out (stereo headphone) • USB 2.0
Docking	Supports HP Slate Dock (ports include two USB 2.0 ports, one HDMI-out port, one combination audio-in/audio-out jacks, and one power connector)
Keyboard/pointing devices	No integrated keyboard or TouchPad
	Supports USB- or Bluetooth-connected external keyboard and/or mouse
Power requirements	30-W AC adapter with localized cable plug support (AC adapter connects to the HP Slate 500 through the HP Slate Dock)
	Supports one 2-cell, 2.80-Ah (30-Wh) Lithium-polymer battery (non-replaceable)
Security	No support for security options
Operating system	**Preinstalled:** • Windows® 7 Professional 32 • FreeDOS
Serviceability	No support for end-user replaceable parts

2 External component identification

Identifying the hardware

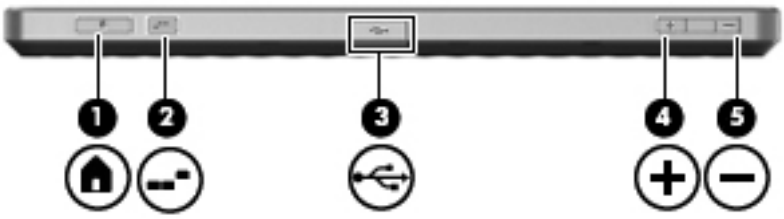
Components included with the Slate may vary by region and model. The illustrations in this chapter identify the standard features on most Slate models.

To see a list of hardware installed in the Slate:

1. Tap **Start > Control Panel**.
2. Tap **System and Security**, tap **System**, and then tap **Device Manager**.

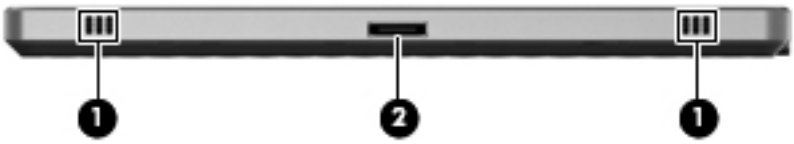
You can also add hardware or modify Slate configurations using Device Manager.

Top-edge components



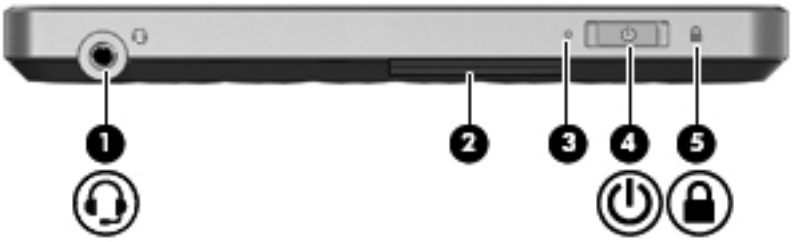
Component			Description
(1)		Home button	Minimizes all open applications and displays the Windows desktop.
(2)		Ctrl+alt+del button	Performs the same action as pressing ctrl+alt+del on a computer keyboard.
(3)		USB port	Connects optional USB devices. NOTE: To use an external optical disc drive connected to the Slate, you must connect AC power separately to the external drive.
(4)		Volume up button	Increases speaker volume.
(5)		Volume down button	Decreases speaker volume.

Bottom-edge components



Component		Description
(1)	Speakers (2)	Produce sound.
(2)	Power connector	Connects an AC adapter or an HP Slate Dock.

Right-edge components

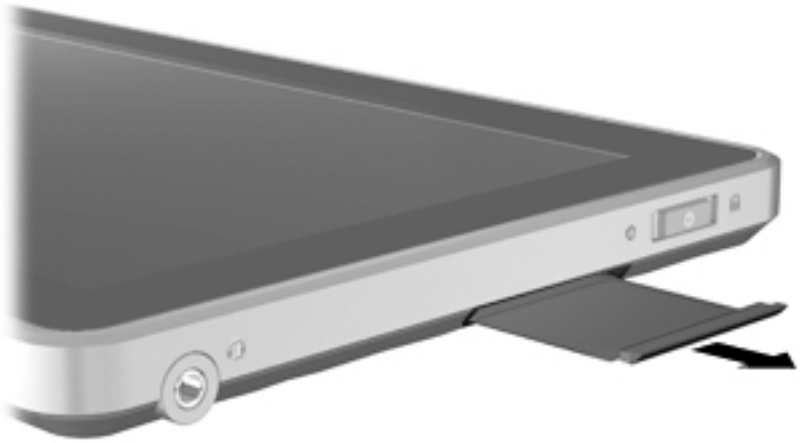


Component		Description
(1)	Audio-out (headphone)/Audio-in (microphone) combo jack	Produces sound when connected to optional powered stereo speakers, headphones, earbuds, a headset, or television audio. Also connects an optional headset microphone. **NOTE:** When an audio component is connected to the jack, the Slate's speakers are disabled. The audio component cable must have a 4-conductor connector.
(2)	Label tray	Holds the serial number label.
(3)	Power light	• White: The Slate is on. • Blinking: The Slate is in the Sleep state. • Off: The Slate is off or in Hibernation.

Component		Description
(4)	Power switch	• When the Slate is off,slide the switch down to turn on the Slate. • When the Slate is on, briefly slide the switch down to initiate Sleep. • When the Slate is in the Sleep state, briefly slide the switch down to exit Sleep. • When the Slate is in Hibernation, briefly slide the switch down to exit Hibernation. If the Slate has stopped responding and Windows shutdown procedures are ineffective, slide and hold the power switch down for at least five seconds to turn off the Slate. To learn more about your power settings, tap **Start > Control Panel > System and Security > Power Options**.
(5)	PowerLock icon	The PowerLock feature allows you to lock the screen to avoid accidental activation: • When the Slate is on, slide the power switch up to the lock position to lock the screen, buttons, and the auto-rotate feature.

Opening the label tray

Pull the tray out to view the serial number label.



Left-edge components

Component			Description
(1)		Internal microphone	Records sound.
(2)		Keyboard button	When the Slate is on, press the button to display the on-screen keyboard.
(3)	SD	SD Card Reader	Supports the following optional digital card formats: • Secure Digital High Capacity (SDHC) Memory Card (standard and large size) • xD-Picture card

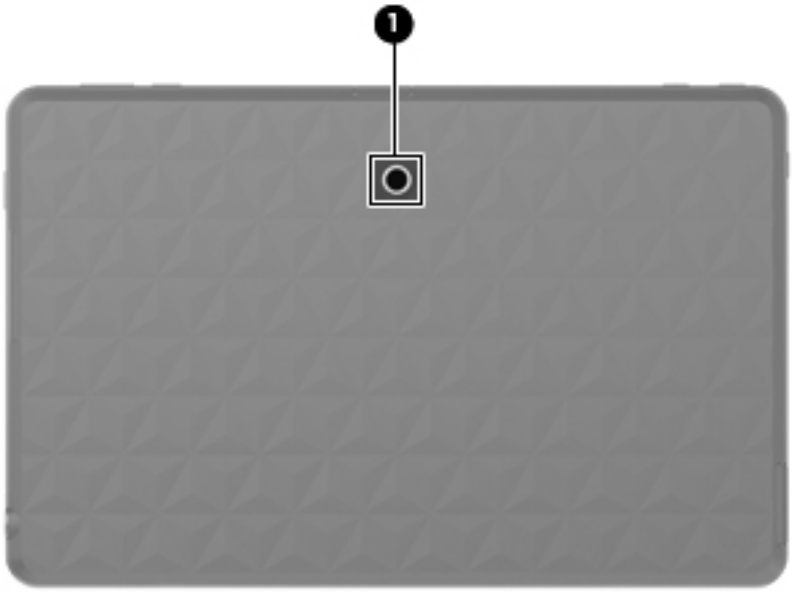
Buttons

Component			Description
(1)		Home button	When the Slate is on, press the button to minimize all open applications and display the Windows desktop.
(2)		Ctrl+alt+del button	Performs the same action as pressing ctrl+alt+del on a computer keyboard.
(3)		Volume up button	• Press + to increase speaker volume.
(3)		Volume down button	• Press - to decrease speaker volume.
(4)		Keyboard button	When the Slate is on, press the button to display the on-screen keyboard.

Display components

Component		Description
(1)	Inward camera	Records video and captures still photographs.

Rear components



Component		Description
(1)	Outward camera	Records video and captures still photographs.

Wireless antennas

Component	Description
WLAN antennas (2)*	Send and receive wireless signals to communicate with wireless local-area networks (WLANs).

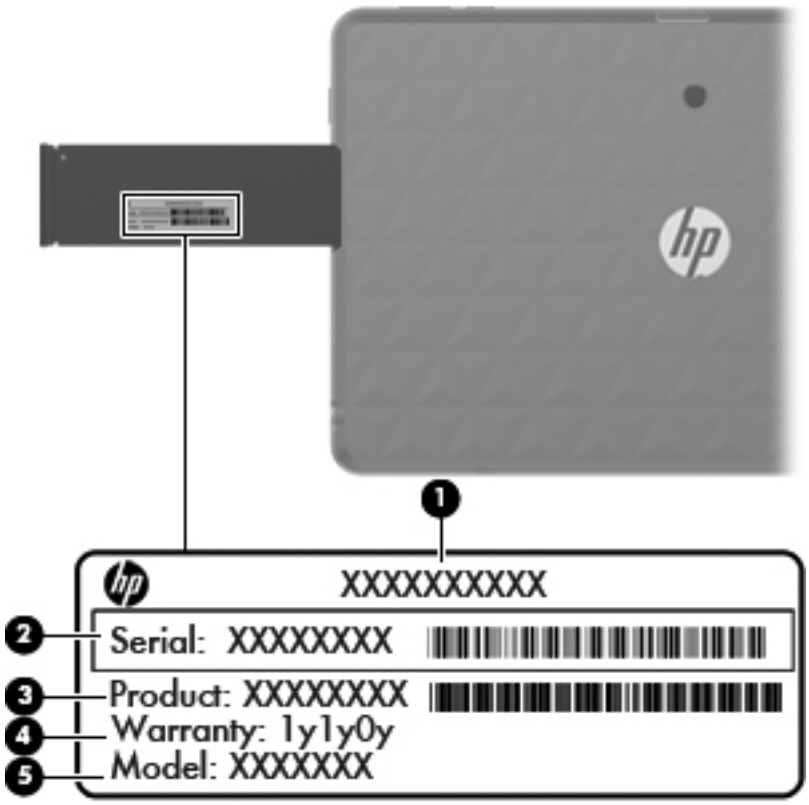
*The antennas are not visible from the outside of the Slate. For optimal transmission, keep the areas immediately around the antennas free from obstructions.

3 Illustrated parts catalog

Identifying the labels

The labels affixed to the label tray of the Slate provide information you may need when you troubleshoot system problems or travel internationally with the Slate.

- Serial number label (part of the Master Regulatory label)—Provides important information including the following:



  - Product name **(1)**. This is the product name affixed to the front of your Slate.
  - Serial number **(2)**. This is an alphanumeric identifier that is unique to each product.
  - Product number **(3)**. This is an alphanumeric identifier that provides specific information about the hardware components. The product number helps a service technician to determine what components and parts are needed.

- Warranty period **(4)**. This number describes the duration (in years) of the warranty period for this Slate.
- Model description (select models) **(5)**. This is an alphanumeric identifier that you use to locate documents, drivers, and support for your Slate.

  Have this information available when you contact technical support. The serial number label is located inside the label tray of your Slate.

- Microsoft Certificate of Authenticity—Contains the Windows Product Key. You may need the Product Key to update or troubleshoot the operating system. This certificate is located inside the label tray.
- Regulatory label—Provides regulatory information about the Slate. The regulatory marks are located on the top or the bottom of the label tray.
- Wireless certification label(s)—Provide certification information about wireless devices, such as a wireless local area network (WLAN) device or a Bluetooth device, and the approval markings of some of the countries or regions in which the devices have been approved for use. You may need this information when traveling internationally. Wireless certification labels are affixed inside the label tray.

HP Slate 500 component spare part numbers

Item	Description	Spare part number
(1)	**30-watt AC adapter**	594913-001
(2)	**Power cord for use in North America** (1.83-meter (6-foot), 3-pin)	490371-001
(3)	**Black folio case**	611362-001
(4)	**HP Slate Dock**	621229-001
(5)	**HP Slate digital pen**	611038-001
(6)	**RJ45-to-USB adapter cable**	539614-001
	HP Slate 500 (not illustrated, equipped with 2-GB of system memory and 64-GB solid-state drive for use only in Japan and Asia-Pacific countries and regions, not illustrated)	639693-001

4 Removal and replacement procedures

Preliminary replacement requirements

Service considerations

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

NOTE: As you remove each subassembly from the Slate, place the subassembly away from the work area to prevent damage.

Plastic parts

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

Cables and connectors

CAUTION: When servicing the Slate, be sure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the Slate.

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

Drive handling

△ **CAUTION:** The solid-state drive inside the Slate is a fragile component that must be handled with care. To prevent damage to the Slate, damage to the solid-state drive, or loss of information, observe these precautions:

Before handling the Slate, be sure that you are discharged of static electricity.

Avoid dropping the Slate from any height onto any surface.

Avoid exposing the Slate to temperature extremes or liquids.

If the Slate must be mailed, place it in a bubble pack mailer or other suitable form of protective packaging and label the package "FRAGILE."

Grounding guidelines

Electrostatic discharge damage

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

A discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Even if the spark is neither felt nor heard, damage may have occurred.

An electronic device exposed to ESD may not be affected at all and can work perfectly throughout a normal cycle. Or the device may function normally for a while, then degrade in the internal layers, reducing its life expectancy.

△ **CAUTION:** To prevent damage to the Slate when you are removing or installing internal components, observe these precautions:

Keep components in their electrostatic-safe containers until you are ready to install them.

Before touching an electronic component, discharge static electricity by using the guidelines described in this section.

Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.

If you remove a component, place it in an electrostatic-safe container.

The following table shows how humidity affects the electrostatic voltage levels generated by different activities.

△ **CAUTION:** A product can be degraded by as little as 700 V.

Typical electrostatic voltage levels

	Relative humidity		
Event	**10%**	**40%**	**55%**
Walking across carpet	35,000 V	15,000 V	7,500 V

Typical electrostatic voltage levels

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

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

- To avoid hand contact, transport products in static-safe tubes, bags, or boxes.
- Protect ESD-sensitive parts and assemblies with conductive or approved containers or packaging.
- Keep ESD-sensitive parts in their containers until the parts arrive at static-free workstations.
- Place items on a grounded surface before removing items from their containers.
- Always be properly grounded when touching a component or assembly.
- Store reusable ESD-sensitive parts from assemblies in protective packaging or nonconductive foam.
- Use transporters and conveyors made of antistatic belts and roller bushings. Be sure that mechanized equipment used for moving materials is wired to ground and that proper materials are selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screwdrivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.
- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

Equipment guidelines

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

- When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm ±10% resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.
- When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of one megohm resistance between the operator and ground. To be effective, the conductive must be worn in contact with the skin.

The following grounding equipment is recommended to prevent electrostatic damage:

- Antistatic tape
- Antistatic smocks, aprons, and sleeve protectors
- Conductive bins and other assembly or soldering aids
- Nonconductive foam
- Conductive tabletop workstations with ground cords of one megohm resistance
- Static-dissipative tables or floor mats with hard ties to the ground
- Field service kits
- Static awareness labels
- Material-handling packages
- Nonconductive plastic bags, tubes, or boxes
- Metal tote boxes
- Electrostatic voltage levels and protective materials

The following table lists the shielding protection provided by antistatic bags and floor mats.

Material	Use	Voltage protection level
Antistatic plastics	Bags	1,500 V
Carbon-loaded plastic	Floor mats	7,500 V
Metallized laminate	Floor mats	5,000 V

Component replacement procedures

Identifying the labels

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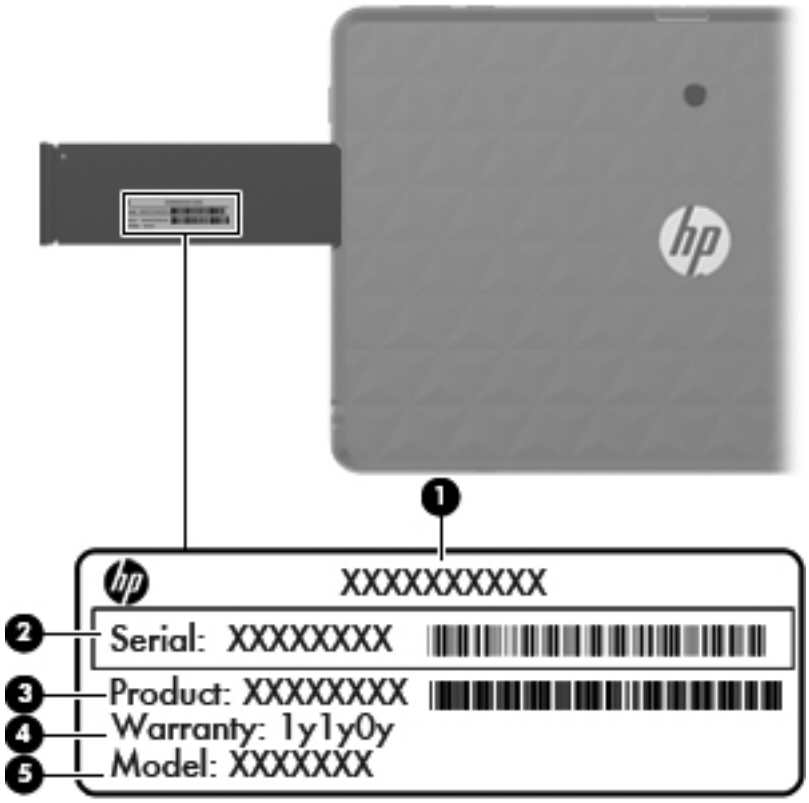

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  - Warranty period **(4)**. This number describes the duration (in years) of the warranty period for this Slate.
  - Model description (select models) **(5)**. This is an alphanumeric identifier that you use to locate documents, drivers, and support for your Slate.

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- Microsoft Certificate of Authenticity—Contains the Windows Product Key. You may need the Product Key to update or troubleshoot the operating system. This certificate is located inside the label tray.
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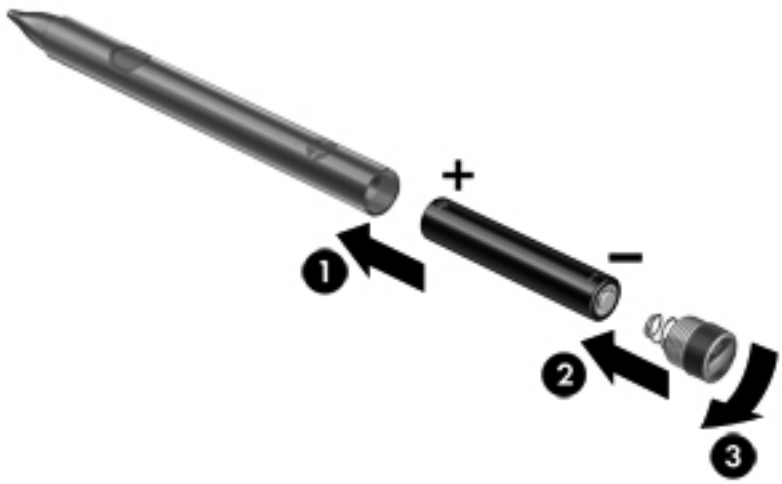
Digital pen

Description	Spare part number
Digital pen	611038-001

To insert the battery into the pen:

1. Unscrew the cap from the pen.
2. Insert the battery **(1)** in the pen.
3. Replace the cap **(2)** on the pen.
4. Turn the cap in a clockwise direction **(3)** to tighten it.



HP Slate Dock

Description	Spare part number
HP Slate Dock	621229-001

To dock the HP Slate to the HP Slate Dock:

1. Align the docking connector on the HP Slate Dock base with the power connector on the bottom edge of the HP Slate, and then lower the Slate onto the dock.

2. Plug the AC adapter into the power connector on the back of the HP Slate Dock.
3. Plug the power cord into the AC adapter.
4. Plug the other end of the power cord into an AC outlet.

Reverse this procedure to undock the HP Slate from the HP Slate Dock and disconnect the AC adapter and power cord.

5 BIOS Setup

Starting BIOS Setup

BIOS Setup is a ROM-based information and customization utility that can be used even when your Windows operating system is not working.

The utility reports information about the Slate and provides settings for startup, security, and other preferences.

To start BIOS Setup:

NOTE: An external keyboard may be connected to the USB port to perform these steps.

1. Open the Startup Menu by turning on or restarting the Slate, and then, while the hyphen is displayed in the upper-left corner of the screen, repeatedly pressing the Volume down button (-) on the Slate or f10 on an external keyboard.
2. Press the Volume down button (-) on the Slate to advance to BIOS Setup, and then select it by pressing the Home button on the Slate or enter on an external keyboard.

Using BIOS Setup

Changing the language of BIOS Setup

The following procedure explains how to change the language of BIOS Setup. If BIOS Setup is not already running, begin at step 1. If BIOS Setup is already running, begin at step 3.

NOTE: An external keyboard may be connected to the USB port to perform these steps.

1. Open the Startup Menu by turning on or restarting the Slate, and then, while the hyphen is displayed in the upper-left corner of the screen, repeatedly pressing the Volume down button (-) on the Slate or f10 on an external keyboard.
2. Press the Volume down button (-) on the Slate, or use the arrow keys on an external keyboard to advance to **BIOS Setup**, and then select it by pressing the Home button on the Slate or enter on an external keyboard.
3. Press the Volume up button (+) or the Volume down button (-) on the Slate, or use the arrow keys on an external keyboard to select **System Configuration > Language**, and then press the Home button on the Slate or enter on an external keyboard.

4. Press the Volume up button (+) or Volume down button (-) on the Slate or the arrow keys on an external keyboard to select a language, and then press the Home button on the Slate or enter on an external keyboard.

5. To save your changes and exit BIOS Setup, press the Ctrl+alt+del button on the top edge of the Slate, or use the arrow keys on an external keyboard to select **Exit > Exit Saving Changes**. Then press the Home button on the Slate or enter on an external keyboard.

Your change goes into effect immediately.

Navigating and selecting in BIOS Setup

Because BIOS Setup is not Windows based, it does not support the touch screen. Navigation and selection are by keystroke.

NOTE: An external keyboard may be connected to the USB port to perform these steps.

- To choose a menu or a menu item, press the Home button on the Slate, or use the arrow keys on an external keyboard.
- To navigate between menus in BIOS Setup, press the Home button and the Volume up (+) or Volume down (-) button simultaneously, or use the arrow keys on an external keyboard.
- To choose an item in a list or to toggle a field, for example an Enable/Disable field, use either the Home button, the Volume up button, or the Volume down button on the Slate, or the arrow keys on an external keyboard.
- To select an item, press the Home button on the Slate or the enter key on an external keyboard.
- To close a text box or return to the menu display, press the Ctrl+alt+del (Security) button on the top edge of the Slate or esc on an external keyboard.
- Information about navigation keys is displayed at the bottom of the screen. To display additional navigation and selection information while BIOS Setup is open, press f1 on an external keyboard.

Displaying system information

The following procedure explains how to display system information in BIOS Setup. If BIOS Setup is not open, begin at step 1. If BIOS Setup is open, begin at step 3.

NOTE: An external keyboard may be connected to the USB port to perform these steps.

1. Open the Startup Menu by turning on or restarting the Slate, and then, while the hyphen is displayed in the upper-left corner of the screen, repeatedly pressing the Volume down button (-) on the Slate or f10 on an external keyboard.

2. Press the Volume down button (-) on the Slate, or use the arrow keys on an external keyboard, to advance to **BIOS Setup**, and then select it by pressing the Home button on the Slate or enter on an external keyboard.

3. If BIOS Setup does not open with the system information displayed, press the Home button and the Volume up button (+) on the Slate simultaneously, or use the arrow keys on an external keyboard, to select the **Main** menu.

When the Main menu is selected, system information is displayed.

4. To exit BIOS Setup without changing any settings, press the Ctrl+alt+del (Security) button on the top edge of the Slate or the arrow keys on an external keyboard to select **Exit > Exit Discarding Changes**. Then press the Home button on the Slate or the enter key on an external keyboard.

Restoring factory settings in BIOS Setup

The following procedure explains how to restore the BIOS Setup factory settings. If BIOS Setup is not already running, begin at step 1. If BIOS Setup is already running, begin at step 3.

NOTE: An external keyboard may be connected to the USB port to perform these steps.

1. Open the Startup Menu by turning on or restarting the Slate, and then, while the hyphen is displayed in the upper-left corner of the screen, repeatedly pressing the Volume down button (-) on the Slate or f10 on an external keyboard.
2. Press the Volume down button (-) on the Slate, or use the arrow keys on an external keyboard, to advance to **BIOS Setup**, and then select it by pressing the Home button on the Slate or enter on an external keyboard.
3. Press the Home button and the Volume up button (+) on the Slate simultaneously or the arrow keys on an external keyboard to select **Exit > Load Setup Defaults**. Then press the Home button on the Slate or the enter key on an external keyboard.
4. When the Setup Confirmation is displayed, press the Home button on the Slate or the enter key on an external keyboard.
5. To save your changes and exit BIOS Setup, press the Ctrl+alt+del (Security) button on the top edge of the Slate, or use the arrow keys on an external keyboard, to select **Exit > Exit Saving Changes**. Then press the Home button on the Slate or the enter key on an external keyboard.

The BIOS Setup factory settings go into effect when the Slate restarts.

NOTE: Your password, security, and language settings are not changed when you restore the factory default settings.

Exiting BIOS Setup

You can exit BIOS Setup with or without saving changes.

NOTE: An external keyboard may be connected to the USB port to perform these steps.

- To exit BIOS Setup and save your changes from the current session:

  Press the Ctrl+alt+del (Security) button on the top edge of the Slate, or use the arrow keys on an external keyboard, to select **Exit > Exit Saving Changes**. Then press the Home button on the Slate or the enter key on an external keyboard.

- To exit BIOS Setup without saving your changes from the current session:

Press the Ctrl+alt+del (Security) button on the top edge of the Slate, or use the arrow keys on an external keyboard, to select **Exit > Exit Discarding Changes**. Then press the Home button on the Slate or the enter key on an external keyboard.

After either choice, the Slate restarts in Windows.

Updating the BIOS

Updated versions of the software provided with your Slate may be available on the HP Web site.

Most BIOS updates on the HP Web site are packaged in compressed files called SoftPaqs.

Some download packages contain a file named Readme.txt, which contains information regarding installing and troubleshooting the file.

Determining the BIOS version

To determine whether available BIOS updates contain later BIOS versions than those currently installed on the Slate, you need to know the version of the system BIOS currently installed.

BIOS version information (also known as *ROM date* and *System BIOS*) can be displayed by opening BIOS Setup.

To display the BIOS information:

NOTE: An external keyboard may be connected to the USB port to perform these steps.

1. Open the Startup Menu by turning on or restarting the Slate, and then, while the hyphen is displayed in the upper-left corner of the screen, repeatedly pressing the Volume down button (-) on the Slate or f10 on an external keyboard.
2. Press the Volume down button (-) on the Slate, or use the arrow keys on an external keyboard, to advance to BIOS Setup, and then select it by pressing the Home button on the Slate or enter on an external keyboard.
3. If BIOS Setup does not open with the system information displayed, press the Home button and the Volume up button (+) on the Slate simultaneously, or use the arrow keys on an external keyboard, to select the **Main** menu.

   When the Main menu is selected, BIOS and other system information is displayed.
4. To exit BIOS Setup without saving your changes from the current session:

   Press the Ctrl+alt+del (Security) button on the top edge of the Slate, or use the arrow keys on an external keyboard, to select **Exit > Exit Discarding Changes**. Then press the Home button on the Slate or the enter key on an external keyboard.

Downloading a BIOS update

△ **CAUTION:** To reduce the risk of damage to the Slate or an unsuccessful installation, download and install a BIOS update only when the Slate is connected to reliable external power using the AC adapter. Do not download or install a BIOS update while the Slate is running on battery power, docked in an optional docking device, or connected to an optional power source. During the download and installation, follow these instructions:

Do not disconnect power from the Slate by unplugging the power cord from the AC outlet.

Do not shut down the Slate or initiate Sleep or Hibernation.

Do not insert, remove, connect, or disconnect any device, cable, or cord.

To download a BIOS update:

1. Access the updates on the HP Web site at http://www.hp.com.
2. Follow the on-screen instructions to identify your Slate and access the BIOS update you want to download.
3. At the download area, follow these steps:
   a. Identify the BIOS update that is later than the BIOS version currently installed on your Slate. Make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.
   b. Follow the instructions on the screen to download your selection to the hard drive.

      Make a note of the path to the location on your hard drive where the BIOS update is to be downloaded. You will need to access this path when you are ready to install the update.

NOTE: If you connect your Slate to a network, consult the network administrator before installing any software updates, especially system BIOS updates.

BIOS installation procedures vary. Follow any instructions that are displayed on the screen after the download is complete. If no instructions are displayed, follow these steps:

1. Open Windows Explorer by tapping **Start > Computer**.
2. Double-tap your hard drive designation. The hard drive designation is typically Local Disk (C:).
3. Using the hard drive path you recorded earlier, open the folder on your hard drive that contains the update.
4. Double-tap the file that has an .exe extension (for example, *filename*.exe).

   The BIOS installation begins.
5. Complete the installation by following the instructions on the screen.

NOTE: After a message on the screen reports a successful installation, you can delete the downloaded file from your hard drive.

BIOS Setup Menu

The tables in this section provide an overview of the BIOS Setup menu options.

NOTE: Some of the BIOS Setup menu items listed in this chapter may not be supported by your Slate

Main menu

Select	To do this
System information	• View and change the system time and date. • View identification information about the Slate. • View specification information about the processor, memory size, and system BIOS.

Diagnostics menu

Select	To do this
Primary Hard Disk Self Test	Run a quick or comprehensive self-test on the hard drive.
Memory Test	Run a diagnostic test on the system memory.

System Configuration menu

Select	To do this
Language	Change the display language for BIOS Setup.
Virtualization Technology	Enable or disable. HP recommends that this feature remain disabled unless specialized applications are being used.
USB Legacy	Enable or disable a USB keyboard, disk, or drive to be used in BIOS Setup.
Processor deeper power saving states	Enable or disable.
Boot Options	• POST HotKey Delay—Select 0, 5, 10, 15, or 20 seconds to allow more time to press a hotkey to enter BIOS Setup when the Slate restarts. • Boot Order options —Select the order in which the Slate searches for a boot disk.

6 Specifications

Operating environment

The operating environment information in the following table may be helpful if the Slate will be used in or transported to in extreme environments.

	Metric	U.S.
Dimensions		
Depth	**23.39 cm**	9.21 in
Width	**14.98 cm**	5.90 in
Height	**1.47 cm**	0.58 in
Weight	**0.78 kg**	1.72 lbs
Temperature		
Operating	**5°C to 35°C**	41°F to 95°F
Nonoperating	**-20°C to 65°C**	-4°F to 149°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 90%	
Maximum altitude (unpressurized)		
Operating	**-15 m to 3,048 m**	-50 ft to 10,000 ft
Nonoperating	**-15 m to 12,192 m**	-50 ft to 40,000 ft

Input power

The power information in this section may be helpful if the Slate will be used internationally.

The Slate operates on DC power, which can be supplied by an AC or a DC power source.

The AC power source must be rated at 100–240 V, 50–60 Hz.

Although the Slate can be powered from a standalone DC power source, it should be powered only with an AC adapter or a DC power source supplied and approved by HP for use with this Slate.

The Slate is capable of accepting DC power within the following specifications.

Input power	Rating
Operating voltage and current	19 V dc @ 1.58 A - 30 W (Country- or region-specific AC power cords)

NOTE: This product is designed for IT power systems in Norway with phase-to-phase voltage not exceeding 240 V rms.

NOTE: The Slate operating voltage and current can be found on the system regulatory label, located inside the label tray on the right edge of the Slate.

7 Backup and recovery

To protect your information, back up your files and folders. In case of system failure, you can use the backup files to restore your Slate.

Using Windows Backup and Restore

To create a backup using Windows Backup and Restore, follow these steps:

NOTE: Be sure that the Slate is connected to AC power before you start the backup process.

NOTE: The backup process may take over an hour, depending on file size and the speed of the Slate.

1. Tap **Start**, tap **All Programs**, tap **Maintenance**, and then tap **Backup and Restore**.
2. Follow the on-screen instructions to set up and create a backup.

NOTE: Windows includes the User Account Control feature to improve the security of your Slate. You may be prompted for your permission or password for tasks such as installing software, running utilities, or changing Windows settings. Refer to Help and Support for more information.

Using system restore points

NOTE: "Hard drive" references in this chapter refer to the flash memory drive.

When you back up your system, you are creating a system restore point. A system restore point allows you to save and name a snapshot of your hard drive at a specific point in time. You can then revert back to that point if you want to reverse subsequent changes made to your system.

NOTE: Recovering to an earlier restore point does not affect data files saved or e-mails created since the last restore point.

You also can create additional restore points to provide increased protection for your system files and settings.

When to create restore points

- Before you add or extensively modify software or hardware.
- Periodically, whenever the system is performing optimally.

NOTE: If you revert to a restore point and then change your mind, you can reverse the restoration.

Creating a system restore point

1. Tap **Start**, tap **Control Panel**, tap **System and Security**, and then tap **System**.
2. In the left pane, tap **System protection**.
3. Tap the **System Protection** tab.
4. Under **Protection Settings**, select the disk for which you want to create a restore point.
5. Tap **Create**.
6. Follow the on-screen instructions.

Restoring to a previous date and time

To revert to a restore point (created at a previous date and time) when the Slate was functioning optimally, follow these steps:

1. Tap **Start**, tap **Control Panel**, tap **System and Security**, and then tap **System**.
2. In the left pane, tap **System protection**.
3. Tap the **System Protection** tab.
4. Tap **System Restore**.
5. Follow the on-screen instructions.

8 Power cord set requirements

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

The 3-conductor power cord set included with the computer meets the requirements for use in the country or region where the equipment is purchased.

Power cord sets for use in other countries and regions must meet the requirements of the country or region where the computer is used.

Requirements for all countries

The following requirements are applicable to all countries and regions:

- The length of the power cord set must be at least **1.5 m** (5.0 ft) and no more than **2.0 m** (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 amps and a nominal voltage rating of 125 or 250 V AC, as required by the power system of each country or region.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the computer.

Requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3
The Netherlands	KEMA	1
Norway	NEMKO	1
The People's Republic of China	COC	5
South Korea	EK	4
Sweden	SEMKO	1
Switzlerland	SEV	1
Taiwan	BSMI	4
The United Kingdom	BSI	1
The United States	UL	2

1. The flexible cord must be Type HO5VV-F, 3-conductor, 1.0-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00-mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
5. The flexible cord must be Type VCTF, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

9 Recycling

Battery

When a battery has reached the end of its useful life, do not dispose of the battery in general household waste. Follow the local laws and regulations in your area for computer battery disposal.

Display

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

⚠ **CAUTION:** The procedures in this chapter can result in damage to display components. The only components intended for recycling purposes are the liquid crystal display (LCD) panel and the backlight. When you remove these components, handle them carefully.

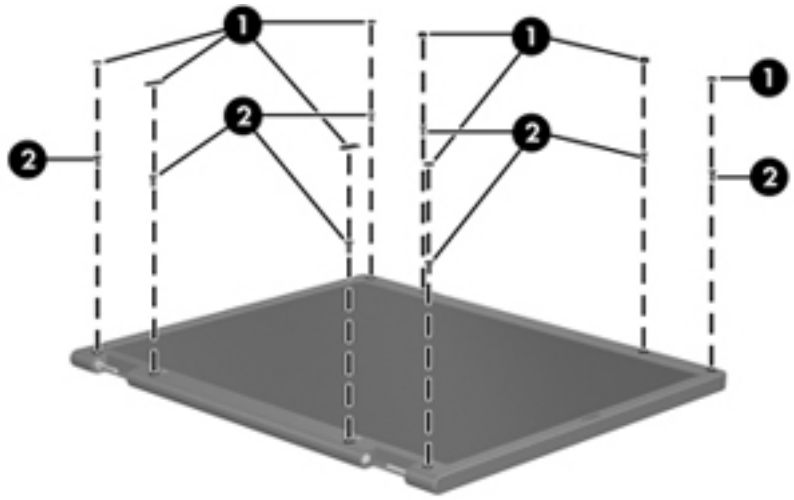
NOTE: **Materials Disposal**. This HP product contains mercury in the backlight in the display assembly that might require special handling at end-of-life. Disposal of mercury may be regulated because of environmental considerations. For disposal or recycling information, contact your local authorities, or see the Electronic Industries Alliance (EIA) Web site at http://www.eiae.org.

This section provides disassembly instructions for the display assembly. The display assembly must be disassembled to gain access to the backlight **(1)** and the liquid crystal display (LCD) panel **(2)**.

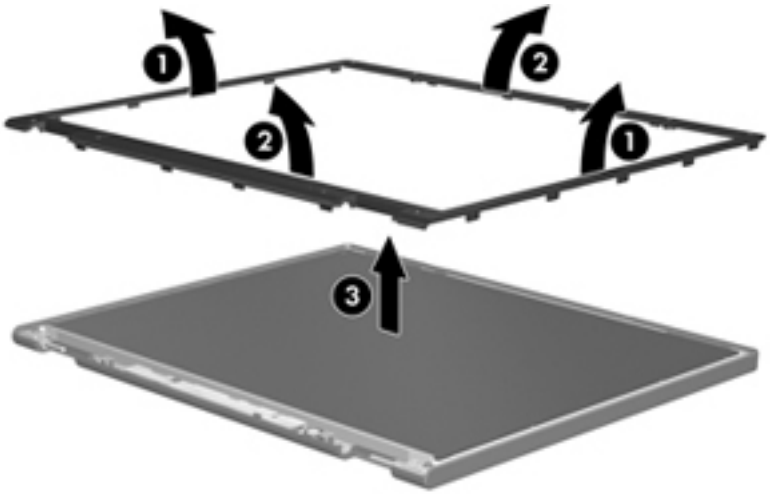
NOTE: The procedures provided in this chapter are general disassembly instructions for a notebook computer display panel and the requirements for proper handling of hazardous materials. Specific details, such as the type of panel, the enclosure, screw sizes, quantities, and locations, and component shapes and sizes, can vary from one computer model to another.

Perform the following steps to disassemble the display assembly:

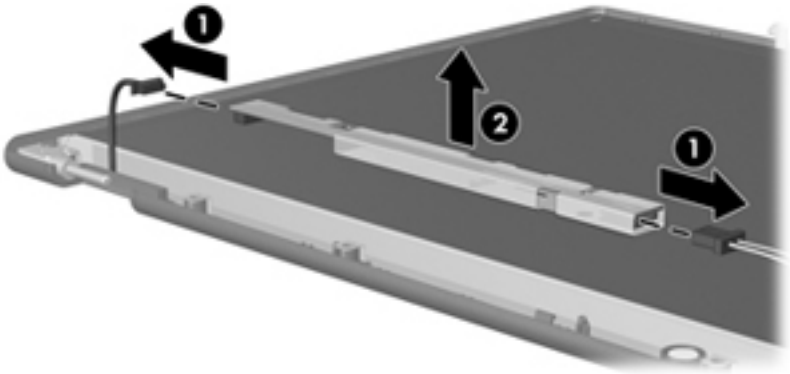
1. Remove all screw covers **(1)** and screws **(2)** that secure the display bezel to the display assembly.



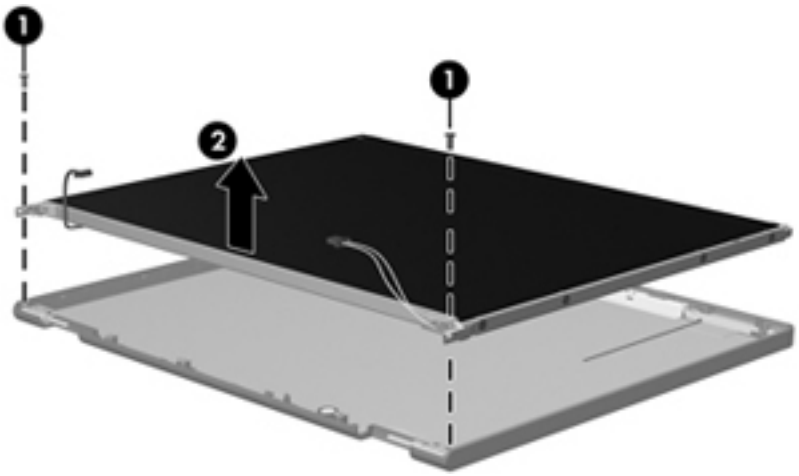
2. Lift up and out on the left and right inside edges **(1)** and the top and bottom inside edges **(2)** of the display bezel until the bezel disengages from the display assembly.
3. Remove the display bezel **(3)**.



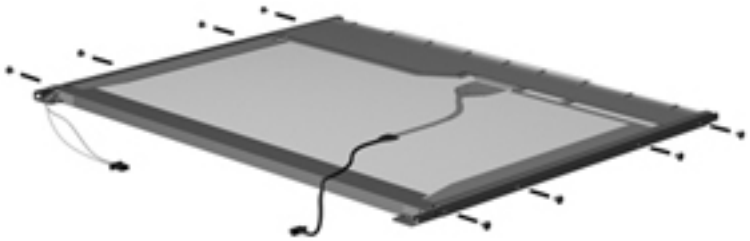
4. Disconnect all display panel cables **(1)** from the display inverter and remove the inverter **(2)**.



5. Remove all screws **(1)** that secure the display panel assembly to the display enclosure.
6. Remove the display panel assembly **(2)** from the display enclosure.

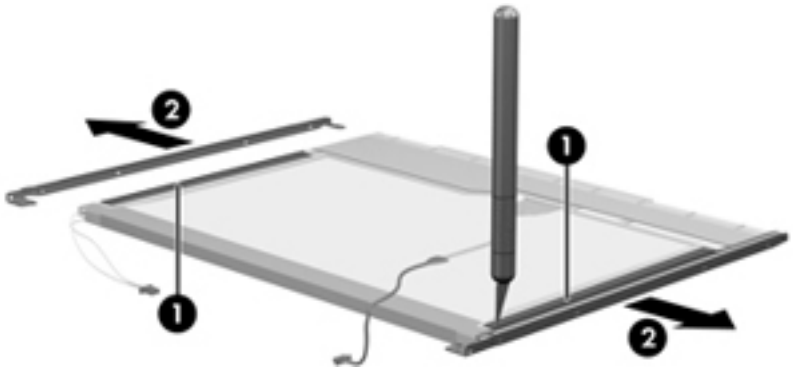


7. Turn the display panel assembly upside down.
8. Remove all screws that secure the display panel frame to the display panel.

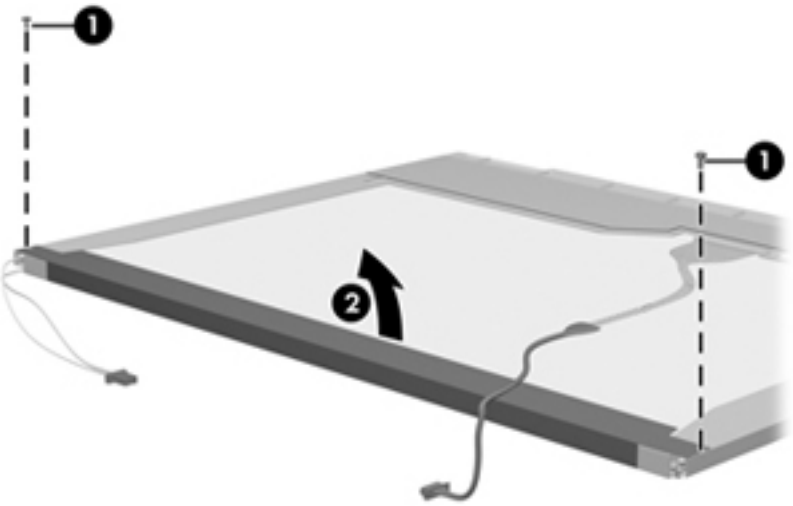


9. Use a sharp-edged tool to cut the tape **(1)** that secures the sides of the display panel to the display panel frame.

10. Remove the display panel frame **(2)** from the display panel.

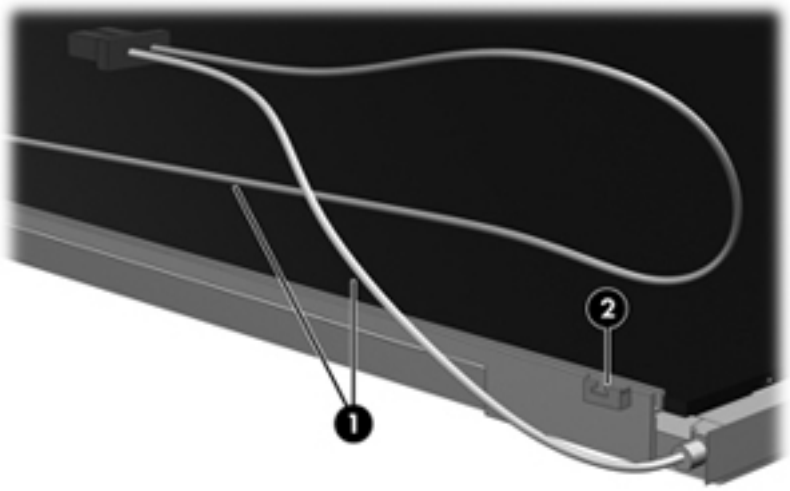


11. Remove the screws **(1)** that secure the backlight cover to the display panel.
12. Lift the top edge of the backlight cover **(2)** and swing it outward.



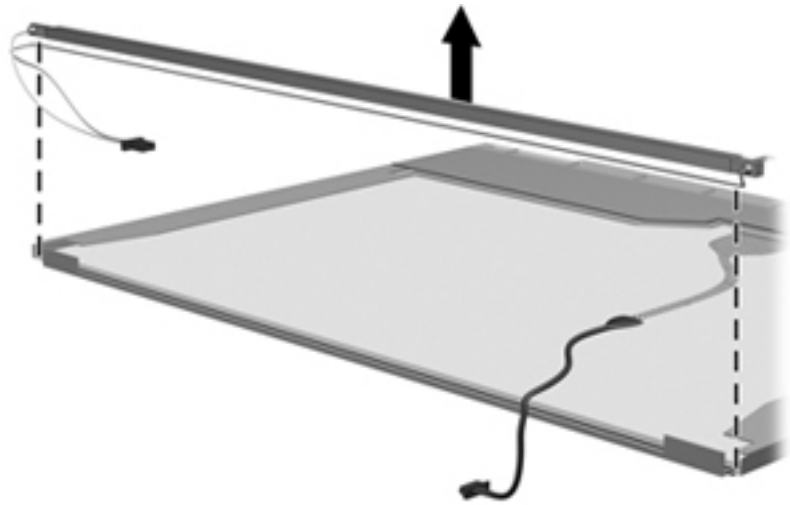
13. Remove the backlight cover.
14. Turn the display panel right-side up.

15. Remove the backlight cables **(1)** from the clip **(2)** in the display panel.



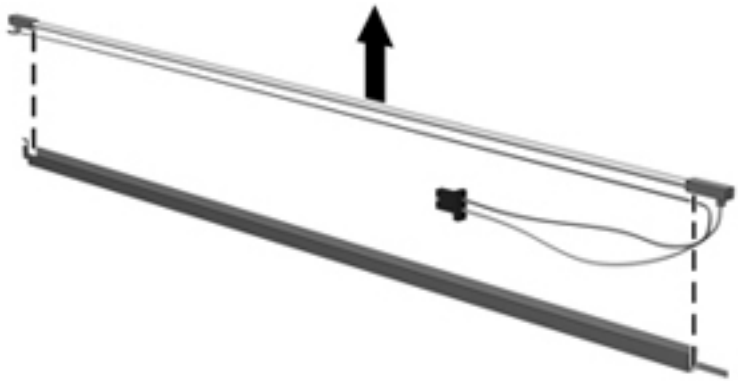
16. Turn the display panel upside down.

17. Remove the backlight frame from the display panel.

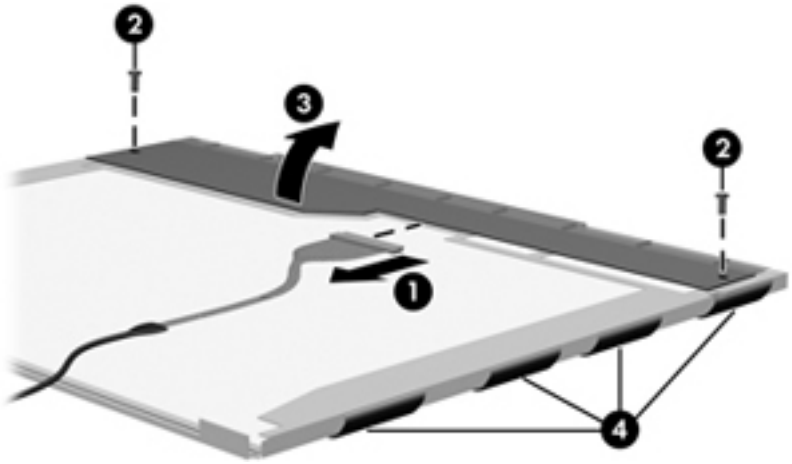


⚠ **WARNING!** The backlight contains mercury. Exercise caution when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.

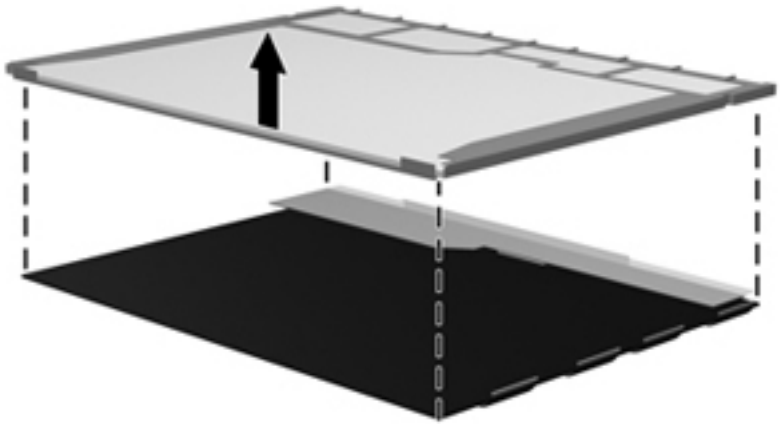
18. Remove the backlight from the backlight frame.



19. Disconnect the display cable **(1)** from the LCD panel.
20. Remove the screws **(2)** that secure the LCD panel to the display rear panel.
21. Release the LCD panel **(3)** from the display rear panel.
22. Release the tape **(4)** that secures the LCD panel to the display rear panel.



23. Remove the LCD panel.



24. Recycle the LCD panel and backlight.

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