



HP 540 Notebook PC  
HP 541 Notebook PC

Display Replacement Guide

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First Edition: September 2009

Document Part Number: 592192-001

## Safety warning notice

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- ⚠ **WARNING!** To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer 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 computer 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).
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# 1 Removal and replacement procedures

# Preliminary replacement requirements

## Tools required


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

- Flat-bladed screwdriver
- Magnetic screwdriver
- Phillips P0 and P1 screwdrivers
- Torx T8 screwdriver

## Service considerations

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

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 **NOTE:** As you remove each subassembly from the computer, place the subassembly (and all accompanying screws) away from the work area to prevent damage.

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## Plastic parts

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



## Cables and connectors

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

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- △ **CAUTION:** Drives are fragile components that must be handled with care. To prevent damage to the computer, damage to a drive, or loss of information, observe these precautions:
- 

Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.

Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

Before removing a diskette drive or optical drive, be sure that a diskette or disc is not in the drive and be sure that the optical drive tray is closed.

Handle drives on surfaces covered with at least one inch of shock-proof foam.

Avoid dropping drives from any height onto any surface.

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

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

Avoid exposing a drive to temperature extremes or liquids.

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

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## Grounding guidelines

### 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  $\pm 10\%$  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 strips 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 plastic    | Bags       | 1,500 V                  |
| Carbon-loaded plastic | Floor mats | 7,500 V                  |
| Metallized laminate   | Floor mats | 5,000 V                  |

# Component replacement procedures

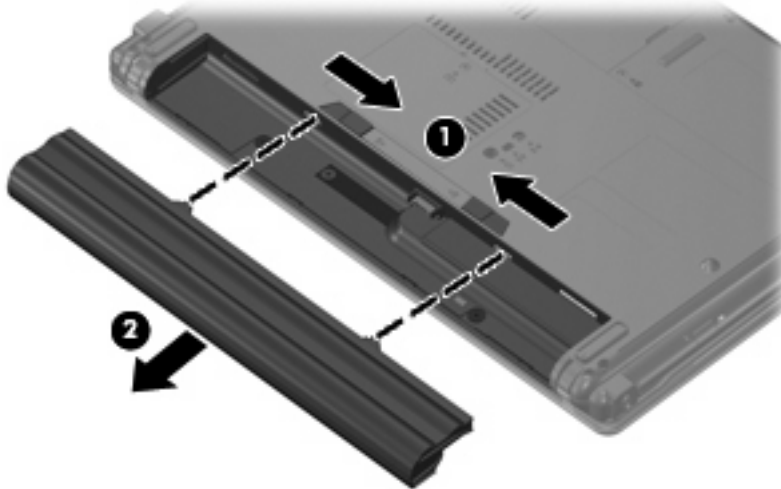
## Display assembly

 **NOTE:** All display assembly spare part kits include 2 WLAN antenna transceivers and cables.

| Description                                 | Spare part number |
|---|-------------------|
| 14.1-inch, WXGA BrightView display assembly | 500004-001        |

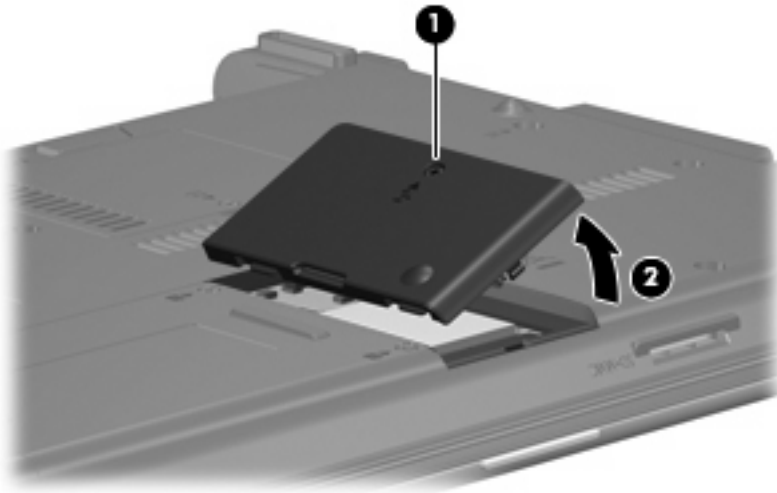
Remove the display assembly:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Turn the computer upside down on a flat surface, with the battery bay toward you.
5. Slide the battery release latches **(1)** to release the battery.
6. Remove the battery **(2)** from the computer.




7. Position the computer with the front toward you.
8. Loosen the Phillips PM2.0×5.0 captive screw **(1)** that secures the WLAN module compartment cover to the computer.


9. Lift the right side of the WLAN module compartment cover (2), swing it to left, and remove the cover. The WLAN module compartment cover is included in the Plastics Kit, spare part number 456614-001.

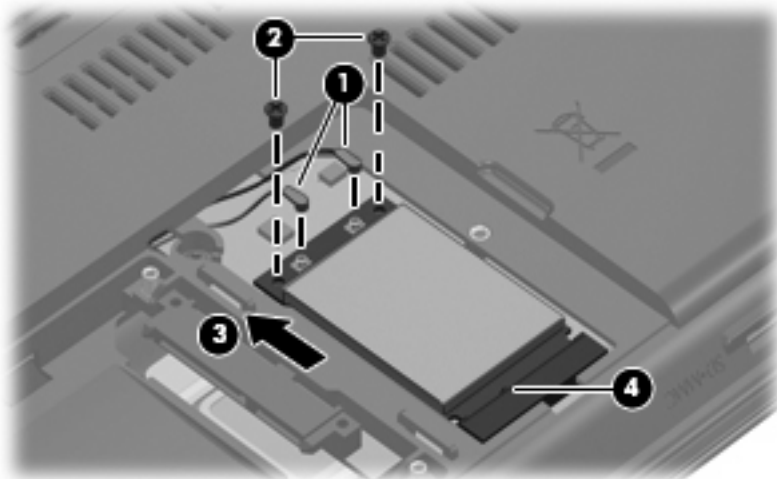


10. Disconnect the WLAN antenna cables (1) from the terminals on the WLAN module.

 **NOTE:** The black WLAN antenna cable is connected to the WLAN module “Main” terminal. The white WLAN antenna cable is connected to the WLAN module “Aux” terminal.

11. Remove the two Phillips PM2.5×4.0 screws (2) that secure the WLAN module to the computer. (The edge of the module opposite the slot rises away from the computer.)
12. Remove the WLAN module (3) by pulling the module away from the slot at an angle.

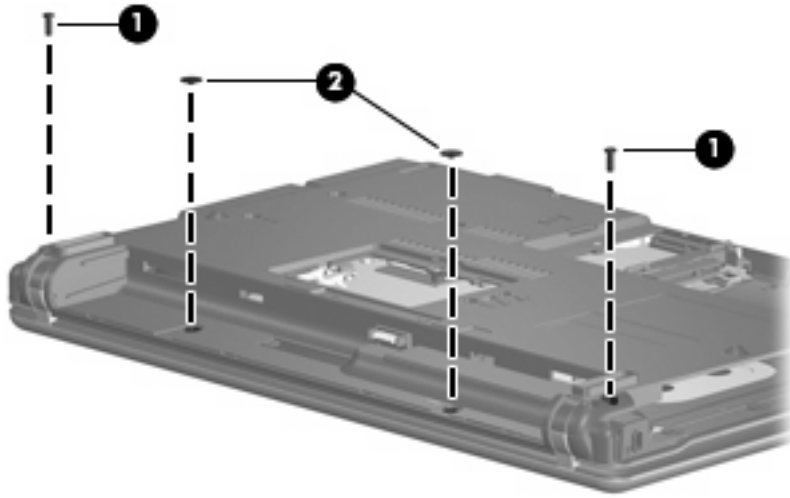
 **NOTE:** WLAN modules are designed with a notch (4) to prevent incorrect insertion.



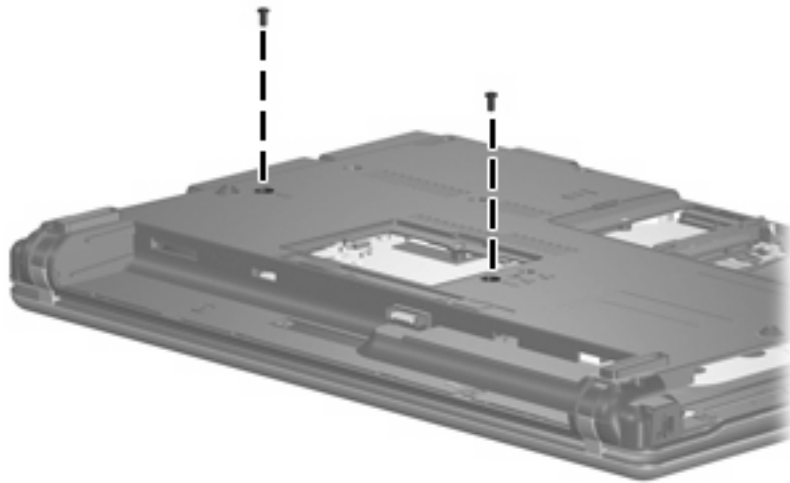
**13.** Remove the following screws:

(1) Two slotted Torx ST8M2.5×7.0 screws

(2) Two Torx T8M2.5×3.0 broad-head screws



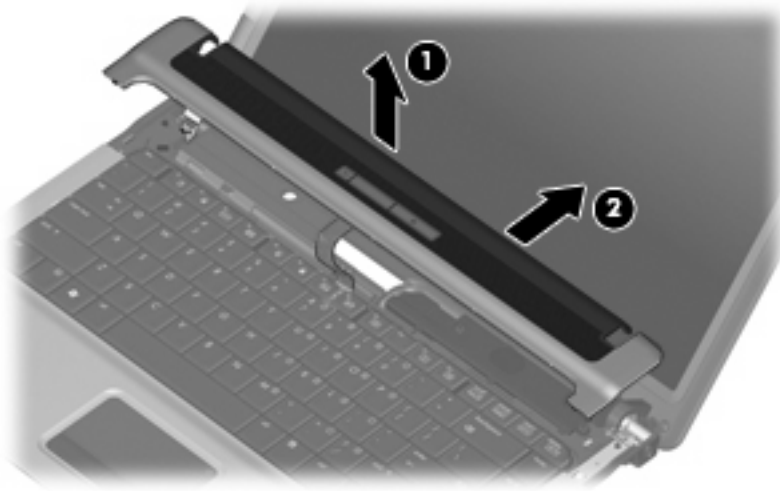
**14.** Remove the two slotted Torx ST8M2.5×7.0 screws that secure the keyboard to the computer.



**15.** Turn the computer display-side up, with the front toward you.

**16.** Open the computer as far as possible.

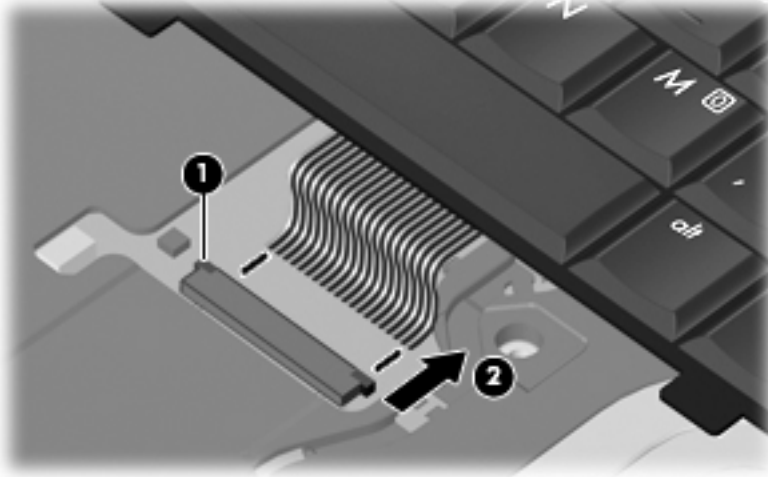
17. Lift the switch cover (1) straight up until it disengages from the computer, and slide it back (2) until it rests on the display assembly.



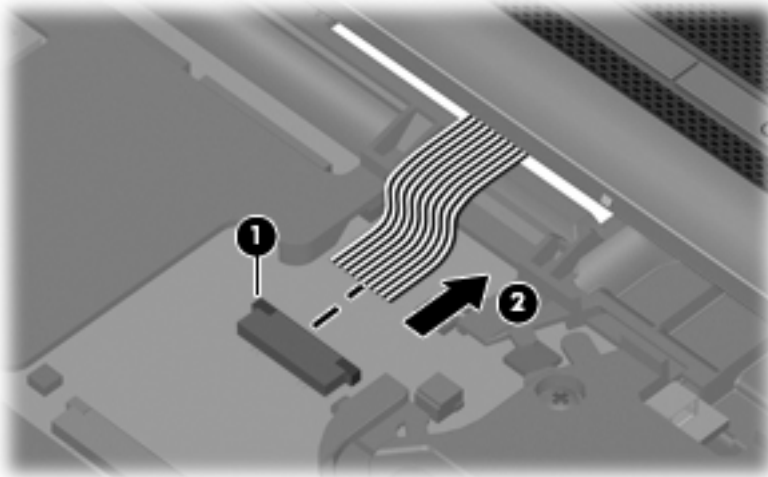
18. Lift the rear edge of the keyboard (1) until it rests at an angle, and slide it back (2) until it rests on the display assembly and switch cover.



19. Release the zero insertion force (ZIF) connector (1) to which the keyboard cable is attached, and disconnect the keyboard cable (2) from the system board.

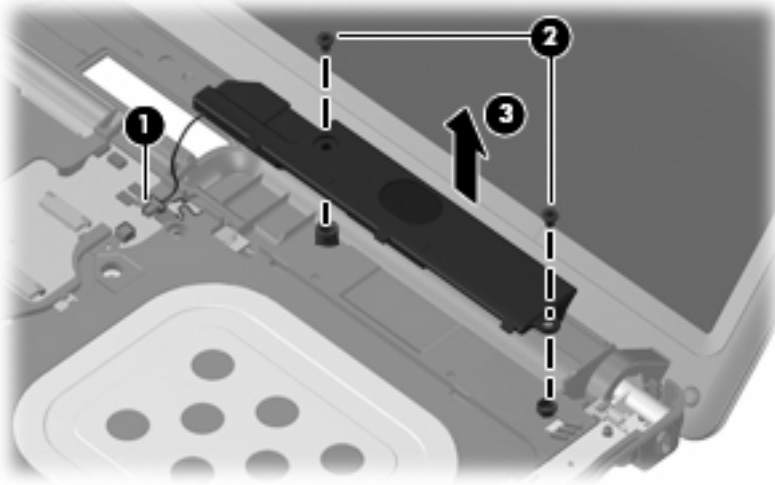


20. Remove the keyboard.
21. Release the ZIF connector (1) to which the button board cable is attached, and disconnect the button board cable (2) from the system board.

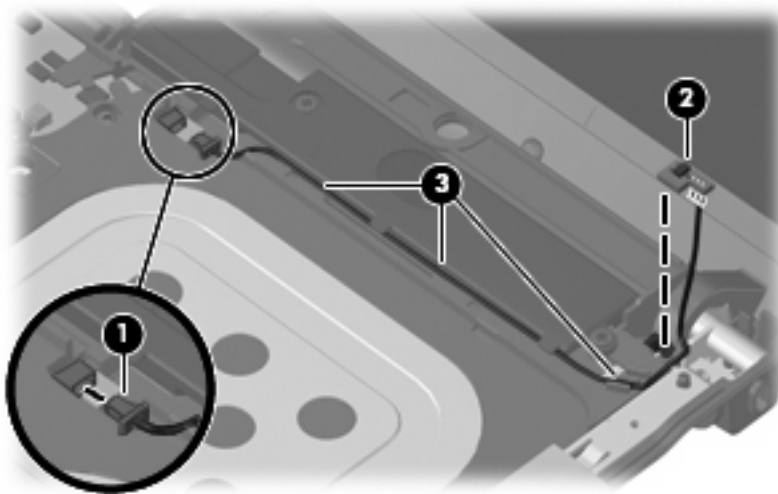


22. Remove the switch cover.
23. Disconnect the speaker cable (1) from the system board.
24. Remove the two Torx T8M2.5×4.0 screws (2) that secure the speaker to the top cover.

25. Remove the speaker (3) from the top cover.



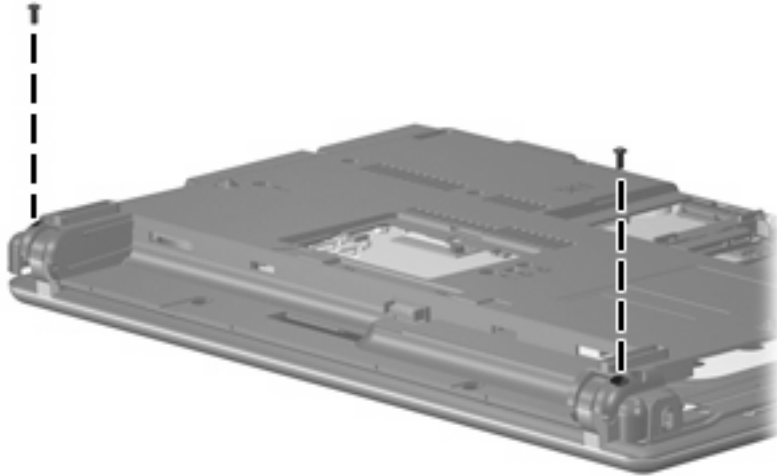
26. Disconnect the display lid switch module cable (1) from the system board.
27. Remove the display lid switch module (2) from the clip built into the top cover.
28. Remove the display lid switch module cable from the clips (3) built into the top cover.



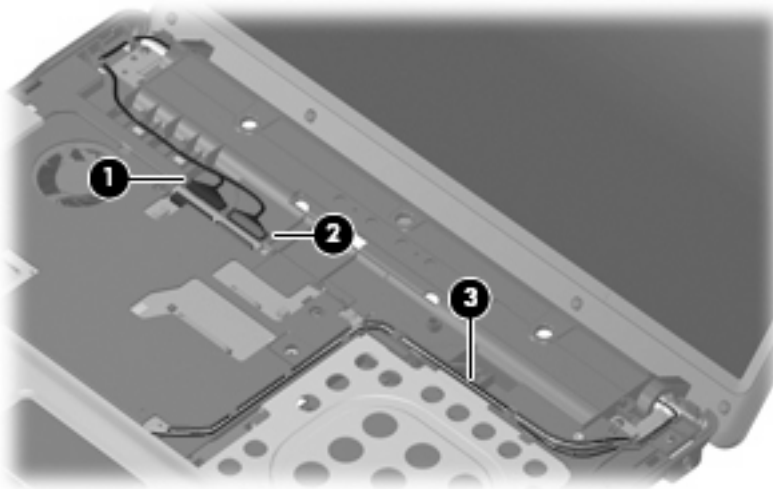
29. Close the computer and turn it upside down, with the rear panel toward you.



30. Remove the two slotted Torx ST8M2.5×7.0 screws that secure the display assembly to the computer.



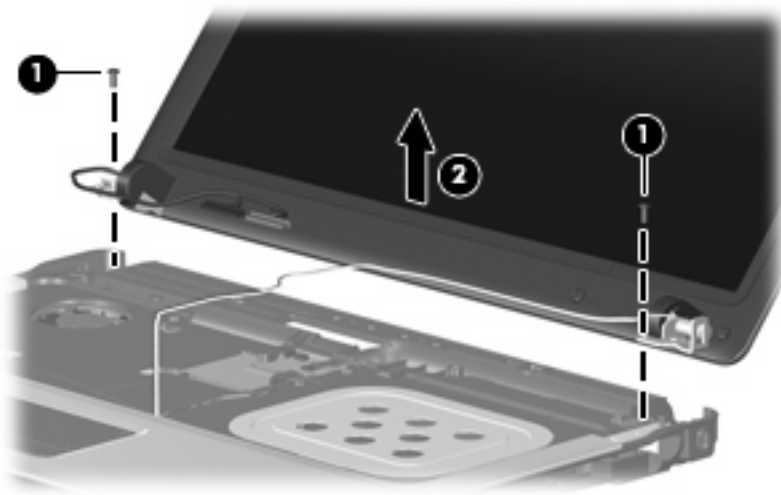
31. Turn the computer right-side up, with the front toward you.
32. Open the computer as far as possible.
33. Disconnect the display panel cables (1) and (2) from the system board.
34. Remove the wireless antenna cables (3) from the clips and routing channels built into the top cover.



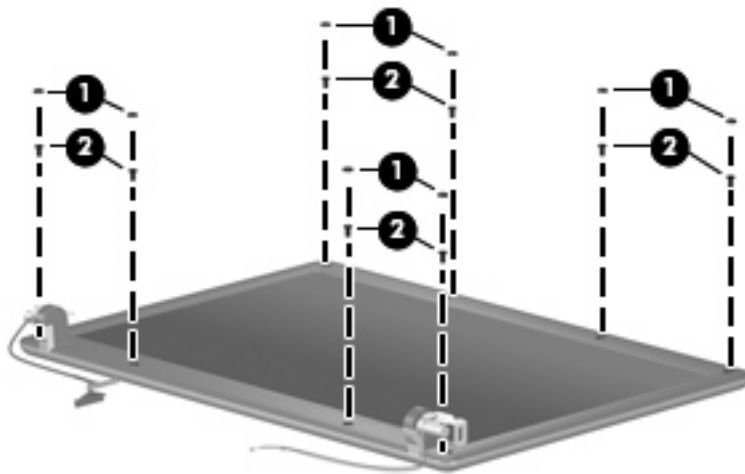
35. Remove the two T8M2.5×7.0 screws (1) that secure the display assembly to the computer.

△ **CAUTION:** Support the display assembly when removing the following screws. Failure to support the display assembly can result in damage to the display assembly and other computer components.

36. Lift the display assembly (2) straight up and remove it.

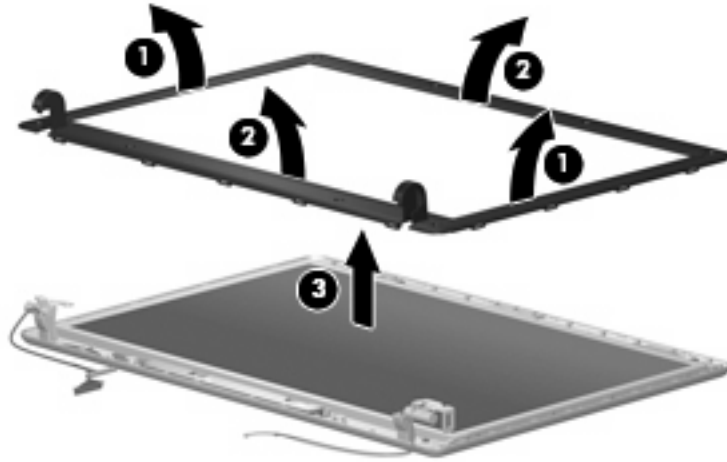


37. If it is necessary to replace the display bezel, display inverter, or display hinges, remove the eight rubber screw covers (1) and the eight Torx T8M2.5×6.0 screws (2) that secure the display bezel to the display assembly. The rubber screw covers are available in the Rubber Kit, spare part number 500132-001.

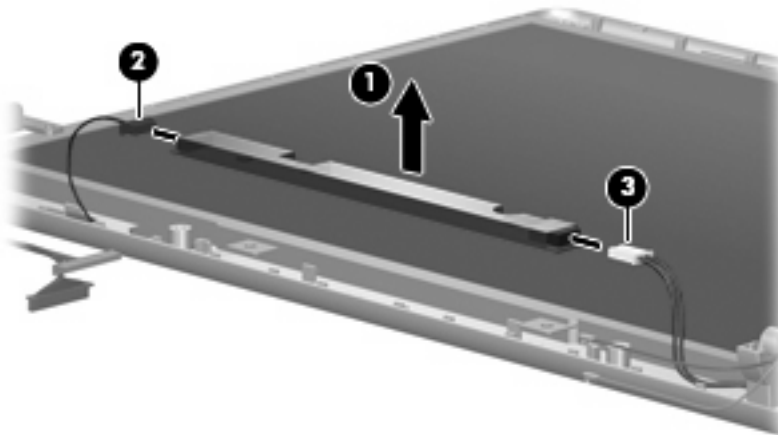


38. Flex the inside edges of the left and right sides (1) and the top and bottom sides (2) of the display bezel until the bezel disengages from the display enclosure.

39. Remove the display bezel (3). The display bezel is available using spare part number 500000-001.

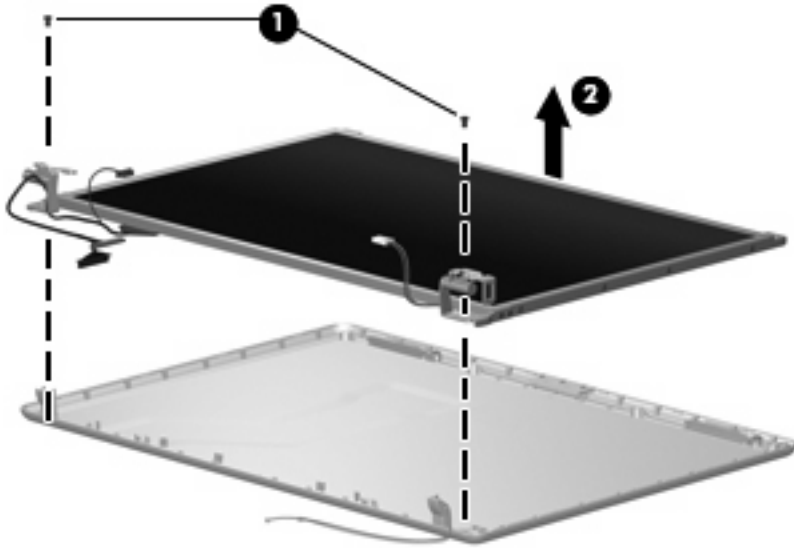


40. If it is necessary to replace the display inverter, remove the inverter (1) from the display enclosure as far as the display panel cable and the backlight cable will allow.
41. Disconnect the display panel cable (2) and the backlight cable (3) from the display inverter.



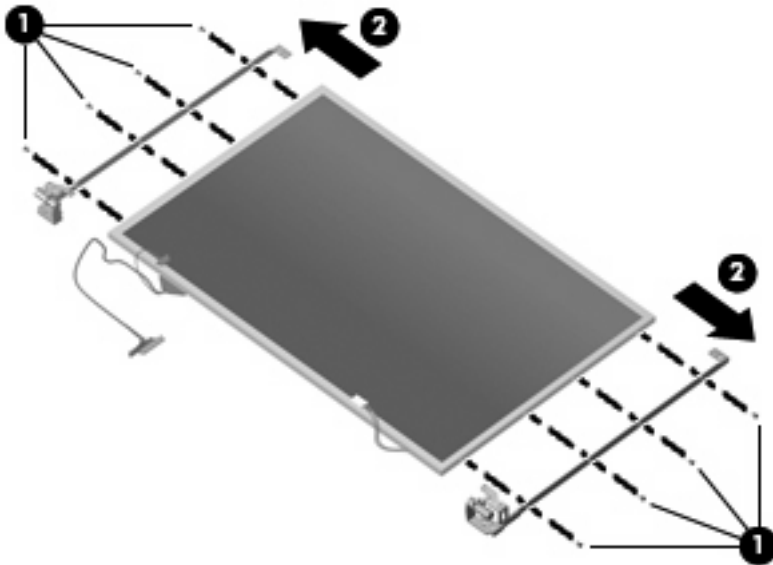
42. Remove the display inverter. The display inverter is available using spare part number 456618-001.
43. If it is necessary to replace the display hinges, remove the two Torx T8M2.5×6.0 screws (1) that secure the display panel to the display enclosure.

44. Remove the display panel (2).



45. Remove the four Phillips PM2.0×4.0 screws (1) that secure each display hinge to the display panel.

46. Remove the display hinges (2). The left and right display hinges are available using spare part number 456619-001.



Reverse this procedure to reassemble and install the display assembly.

---

## 2 Recycling

### 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 appendix can result in damage to display components. The only components intended for recycling purposes are the liquid crystal display (LCD) panel and the backlight. Careful handling must be exercised when removing these components.
- 📄 **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>.

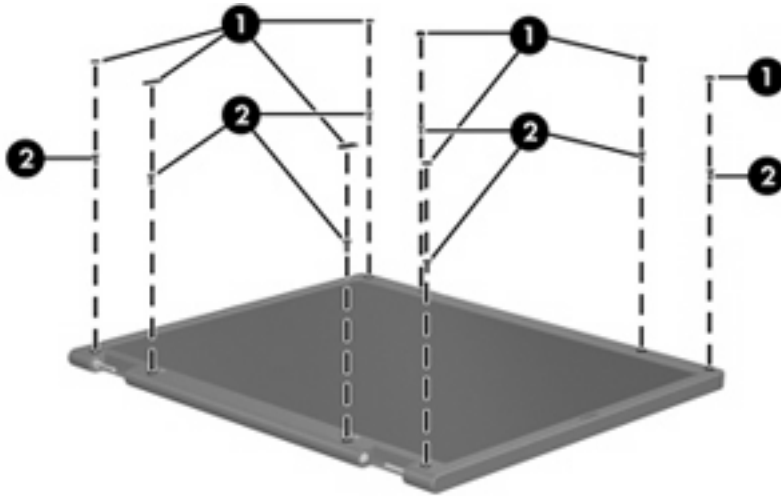
This section provides disassembly instructions for the display assembly. The display assembly must be disassembled to gain access to the backlight **(1)** and the liquid crystal display (LCD) panel **(2)**.



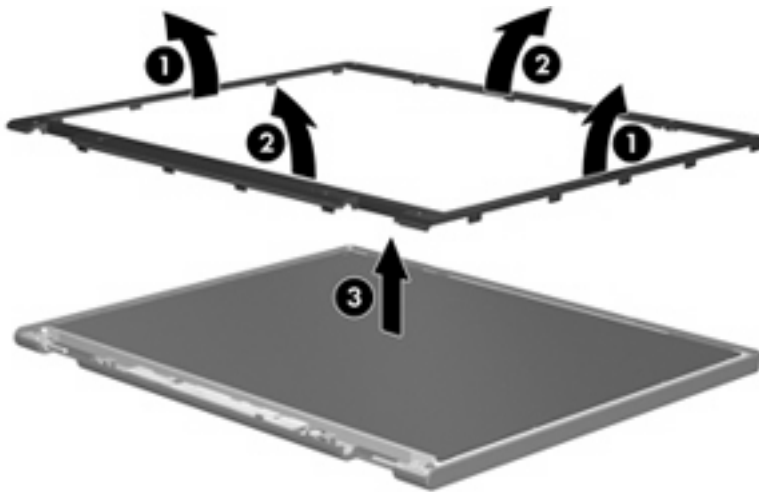
- 📄 **NOTE:** The procedures provided in this appendix are general disassembly instructions. Specific details, such as screw sizes, quantities, and locations, and component shapes and sizes, can vary from one computer model to another.

Perform the following steps to disassemble the display assembly:

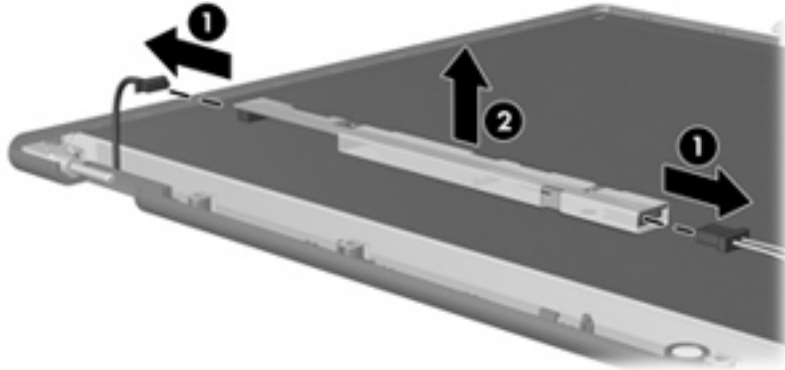
1. Remove all screw covers (1) and screws (2) that secure the display bezel to the display assembly.



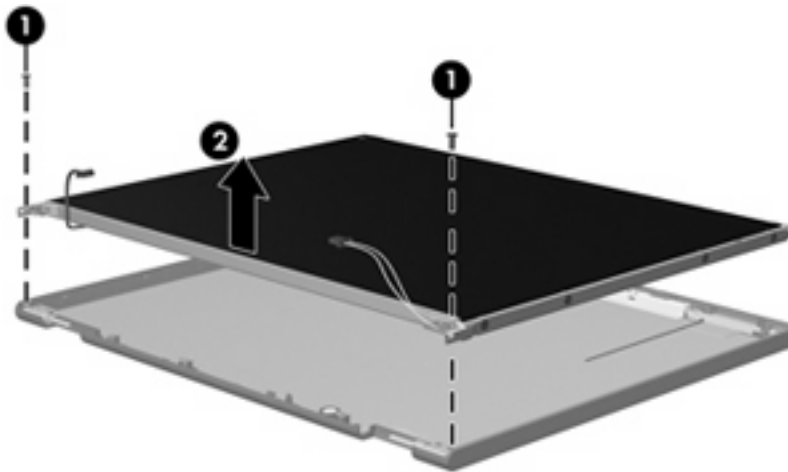
2. Lift up and out on the left and right inside edges (1) and the top and bottom inside edges (2) of the display bezel until the bezel disengages from the display assembly.
3. Remove the display bezel (3).



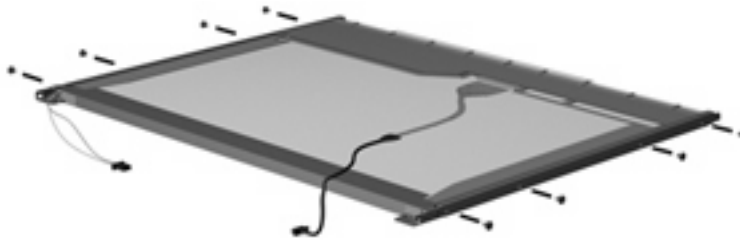
4. Disconnect all display panel cables (1) from the display inverter and remove the inverter (2).



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.

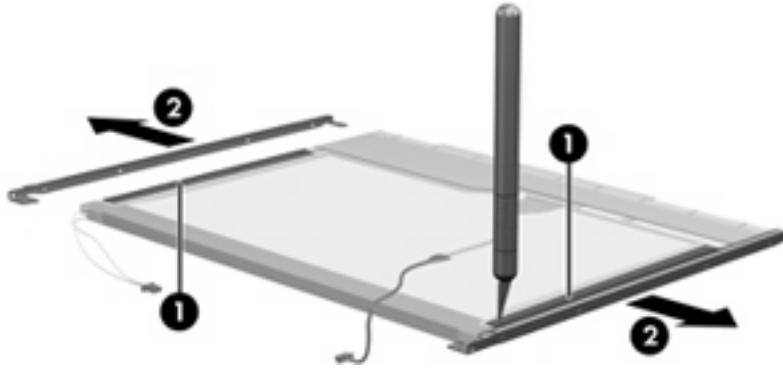


7. Turn the display panel assembly upside down.
8. Remove all screws that secure the display panel frame to the display panel.

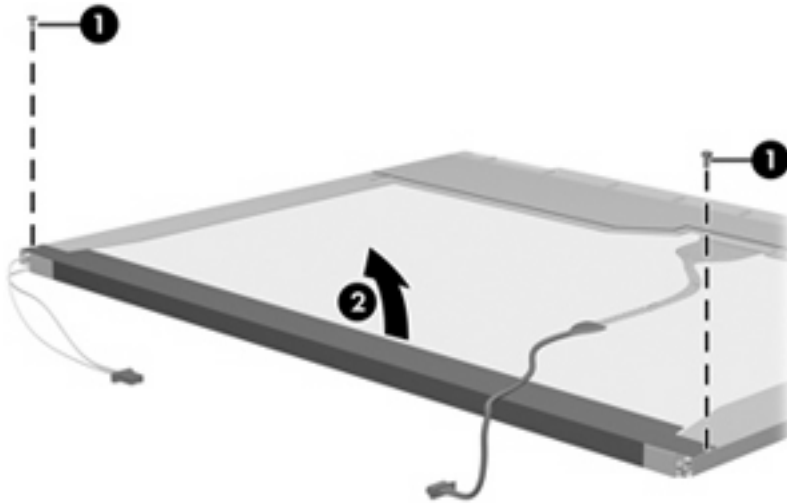


9. Use a sharp-edged tool to cut the tape (1) that secures the sides of the display panel to the display panel frame.

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



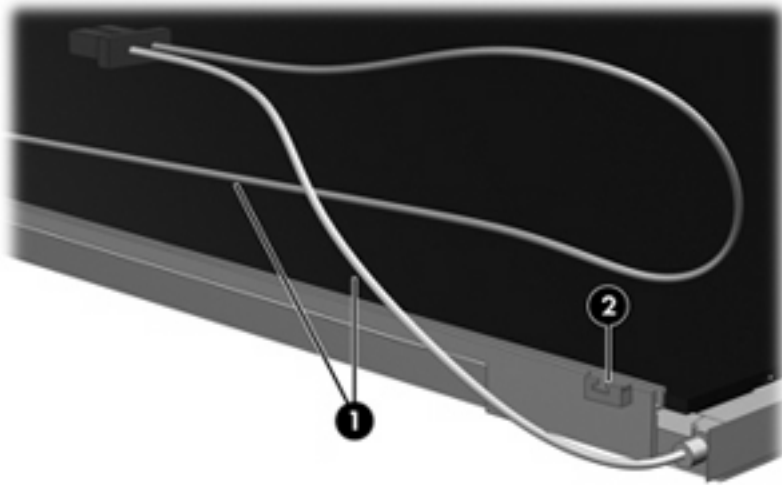
11. Remove the screws (1) that secure the backlight cover to the display panel.
12. Lift the top edge of the backlight cover (2) and swing it outward.



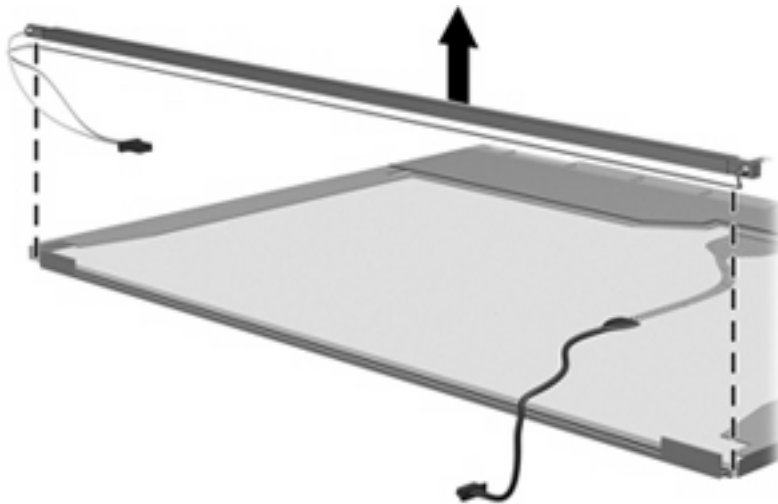
13. Remove the backlight cover.
14. Turn the display panel right-side up.



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

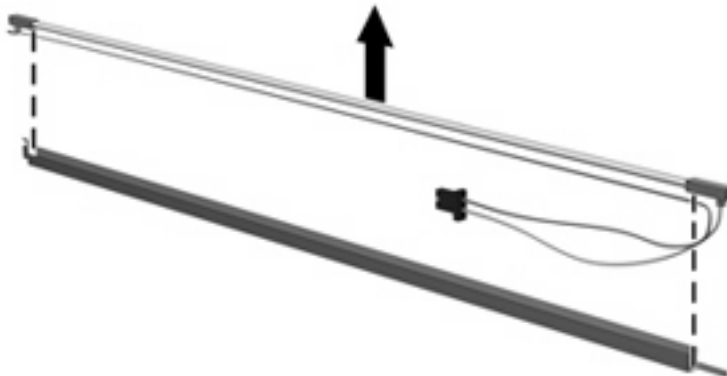


16. Turn the display panel upside down.
17. Remove the backlight frame from the display panel.

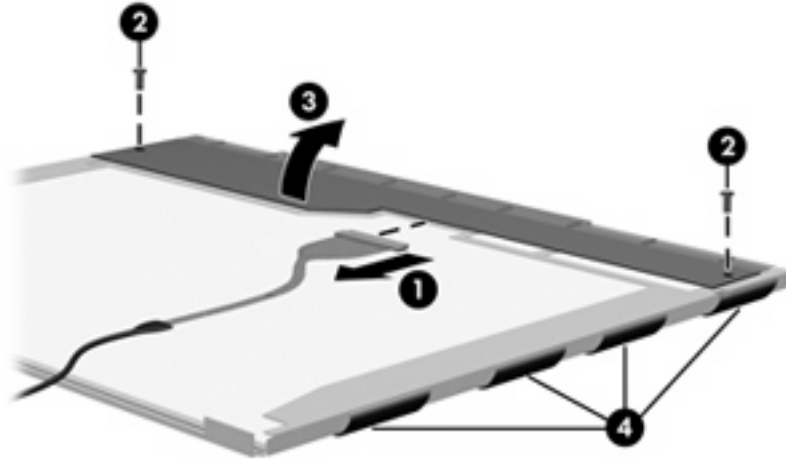


**⚠ WARNING!** The backlight contains mercury. Exercise caution when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.

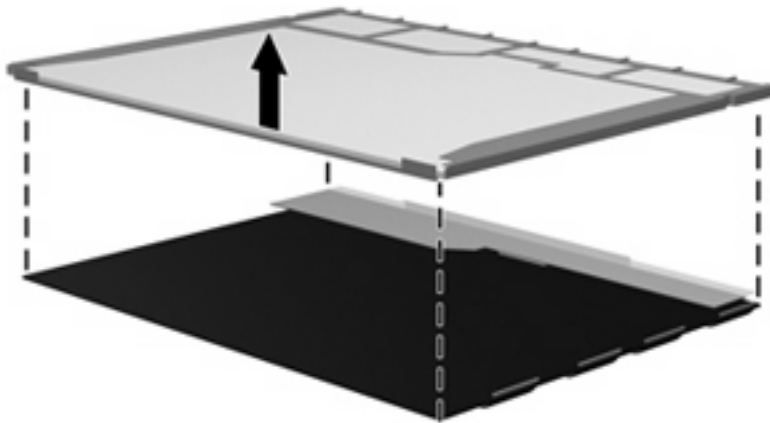
18. Remove the backlight from the backlight frame.



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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