



PowerBook G4 Aluminum 15" 1.5-1.67 GHz Heat Sink Replacement

Written By: iRobot



INTRODUCTION

The heat sink helps keep the processor cool and happy.

TOOLS:

- 4mm Nut Driver (1)
- Anti-Static Wrist Strap (1)
- Arctic Silver ArctiClean (1)
- Arctic Silver Thermal Paste (1)
- Coin (1)
- Phillips #00 Screwdriver (1)
- Spudger (1)
- T6 Torx Screwdriver (1)
- T8 Torx Screwdriver (1)

PARTS:

- [G4 Aluminum 15" 1.33/1.5/1.67 GHz Heat Sink \(1\)](#)

Step 1 — Battery



- Use a coin to turn the battery locking screw 90 degrees clockwise.
- Lift the battery out of the computer.

Step 2 — Upper Case



- Remove the four Phillips screws from the memory door.
- Slide the memory door away from the memory compartment.

Step 3



- Remove the following 8 screws:
 - Two 3 mm Phillips in the battery compartment, on either side of the battery contacts.
 - Two 12 mm Phillips on either side of the memory compartment.
 - Four 16 mm Phillips along the hinge.

Step 4



- Rotate the computer 90 degrees clockwise, so that the power receptacle faces you.
- Remove the three 3 mm Phillips screws.

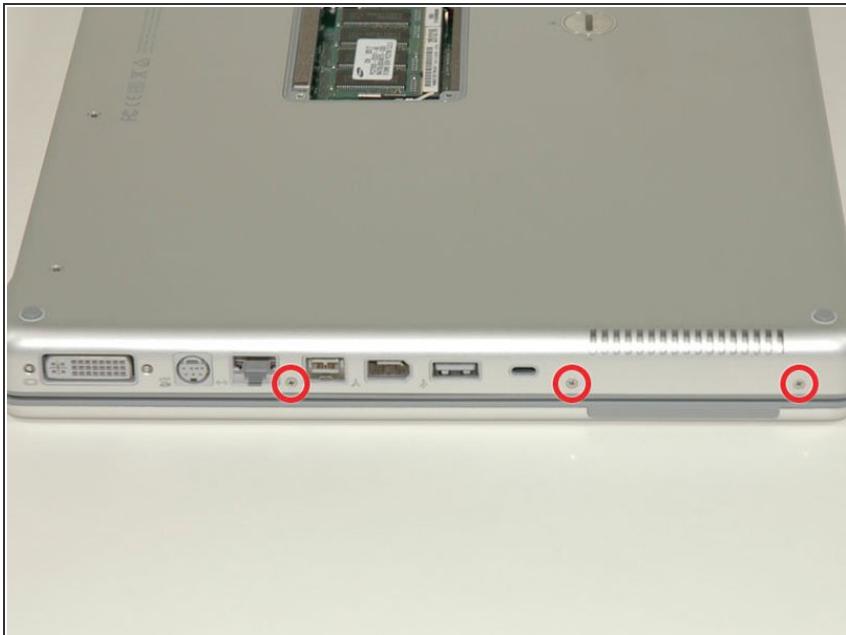
 When replacing these screws, you must place each screw in the correct order. Begin by installing the screw closest to the display hinge, and go out from there.

Step 5



- Turn the computer 90 degrees clockwise so that the hinge faces you.
- Remove the bottom 5 mm Phillips screw on either side of the hinge (two total).

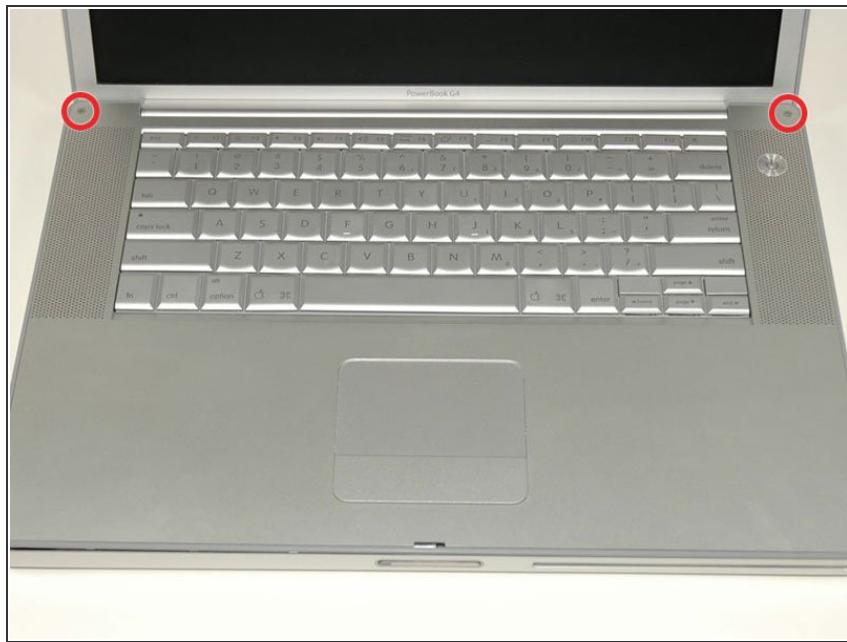
Step 6



- Rotate the computer 90 degrees clockwise, so that the ports face you.
- Remove the three 3 mm Phillips screws.

 When replacing these screws, you must place each screw in the correct order. Begin by installing the screw closest to the display hinge, and go out from there.

Step 7



- Turn the computer over and open the display.
- Remove the two 1.5 mm hex screws in either corner, next to the display (a T6 Torx driver will work, but repeated use will strip the screws).

Step 8



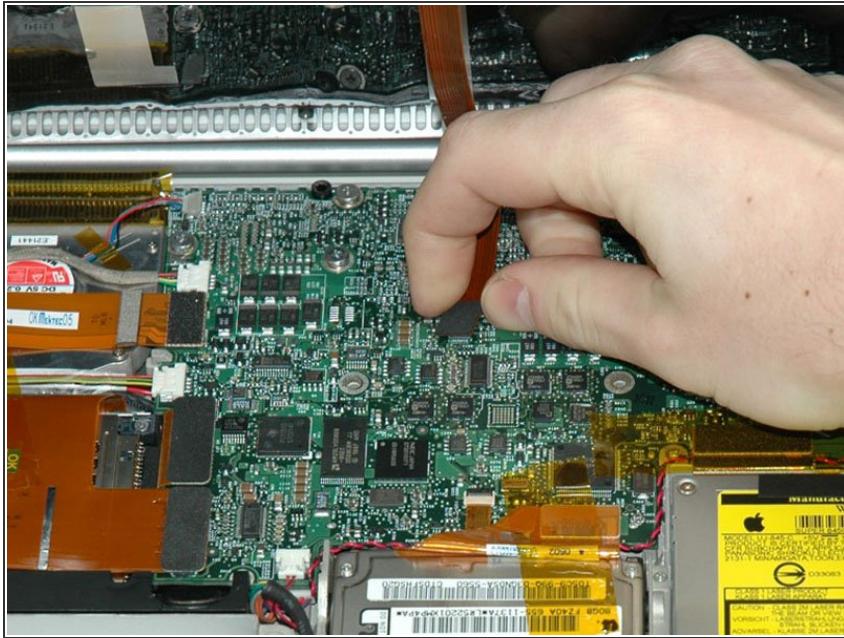
- Grasp the back corners of the upper case and pull up. Do not pull the upper case off yet; you still need to disconnect the keyboard and trackpad cable.
- Lift the back of the case up and work your fingers along the sides, freeing the case as you go. Once you have freed the sides, you may need to rock the case up and down to free the front of the upper case.

Step 9



- Rotate the upper case up and toward the screen, so that the upper case rests against it.

Step 10



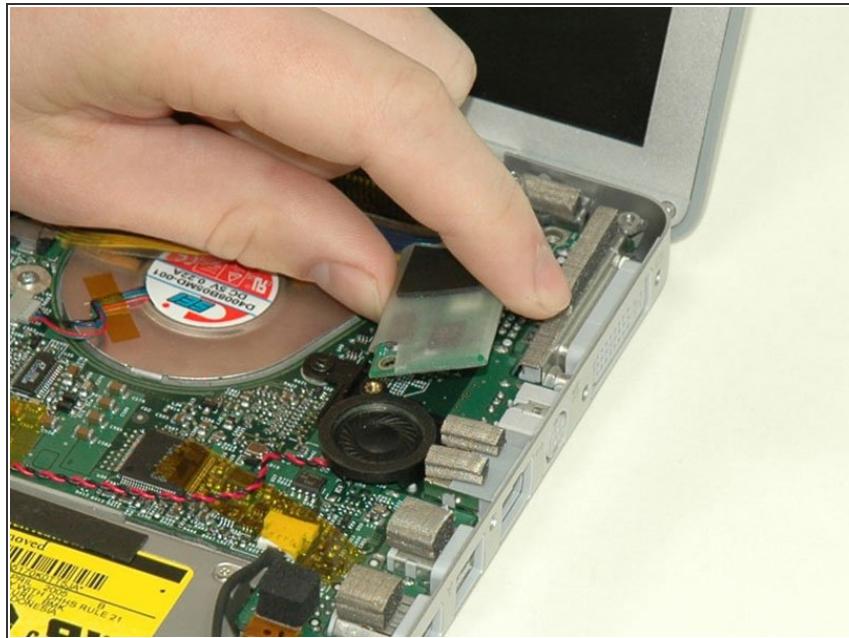
- Remove the orange tape securing the trackpad ribbon to the logic board.
- Disconnect the trackpad ribbon from the logic board.
- Remove the upper case from the computer.

Step 11 — Right Ambient Light Sensor



- Remove the 9.5 mm silver Phillips screw from the top of the right ambient light sensor board.
- Remove the small 3 mm black Phillips screw from the bottom of the board.

Step 12



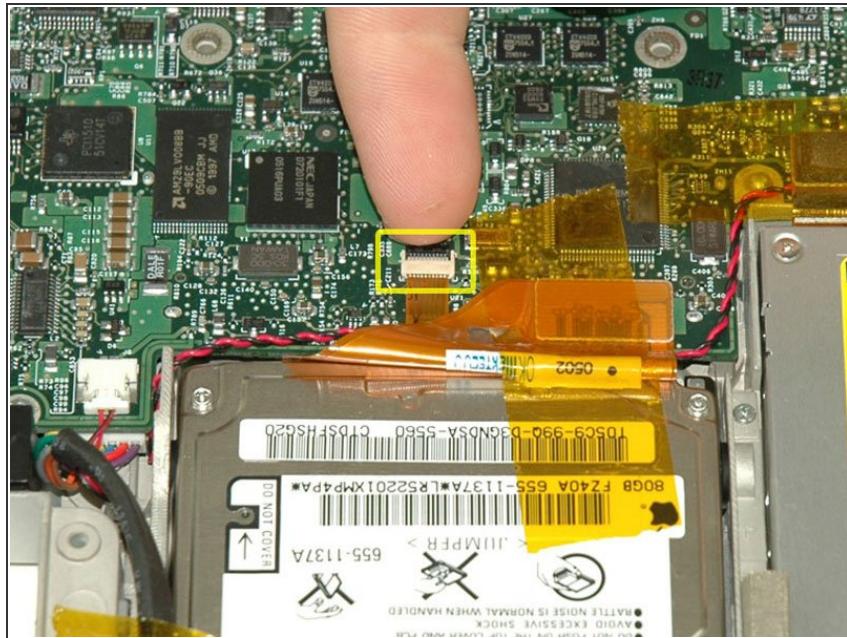
- Lift the right ambient light sensor board from the computer.

Step 13 — Logic Board



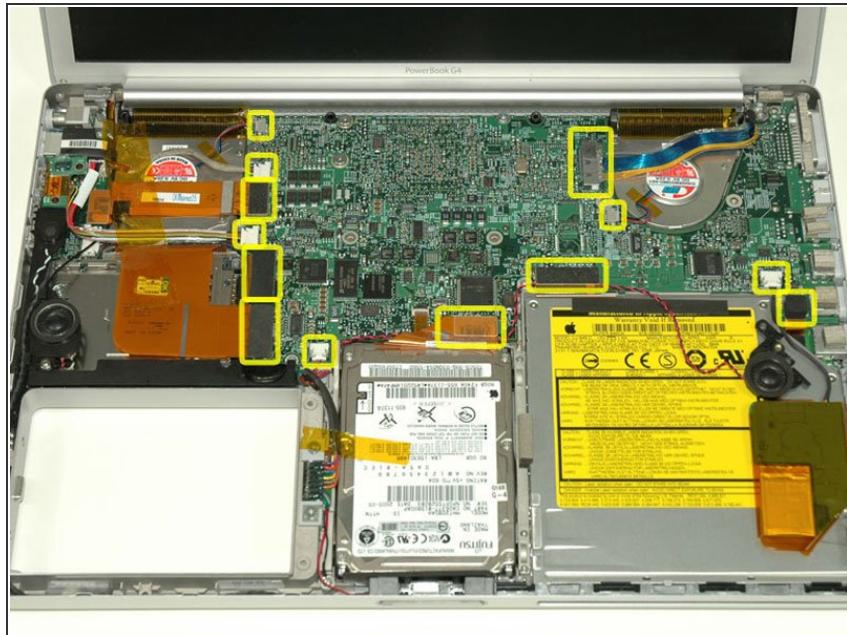
- Remove the two black Phillips screws from the right speaker.
- Lift the speaker away from the logic board and place it aside

Step 14



- Use your fingernail to flip up the black plastic flap locking the modem cable in place.
- Slide the modem cable from its connector.

Step 15



- Disconnect the 13 indicated cables, removing tape as necessary.
- *i* When re-installing the board, make sure the two small connectors at the right hand side are above the board before inserting the screws.

Step 16



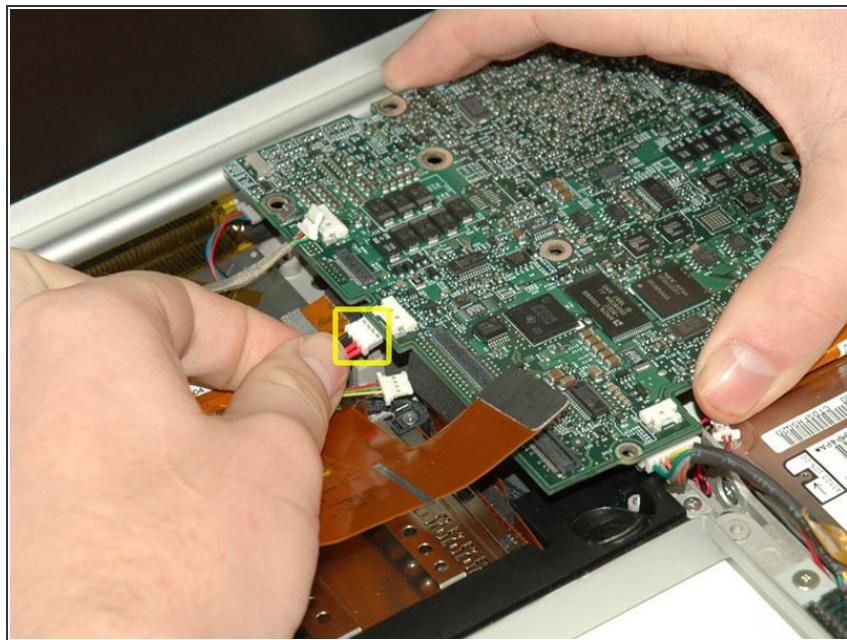
- Remove the following 8 Phillips screws from the logic board:
 - Three 6.5 mm in the upper left corner.
 - Five 4.5 mm around the edges.

Step 17



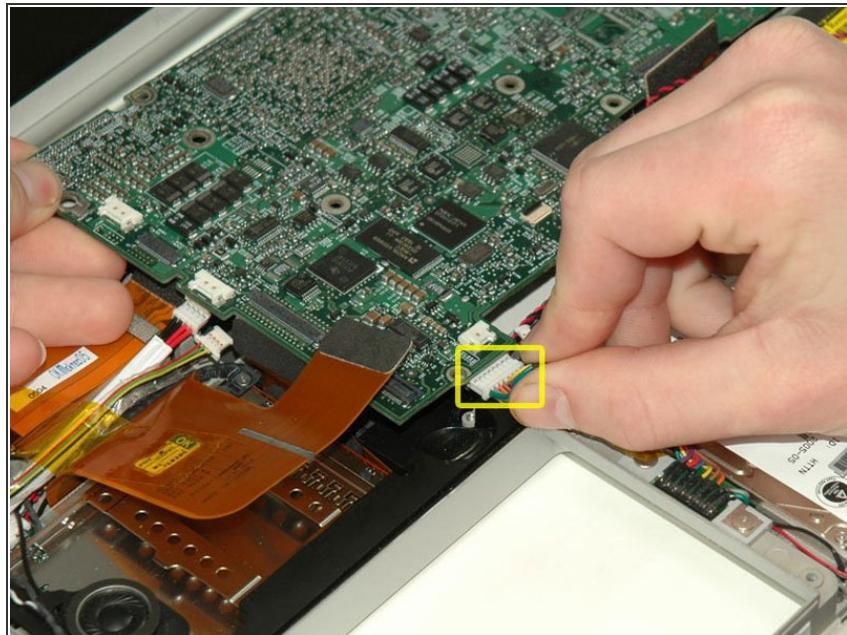
- ❶ Two cables still connect to the logic board and must be removed before pulling the board entirely out of the computer.
- Use a spudger to gently (very gently) pry up the left side of the logic board.
- ❷ If the logic board does not immediately come free, it may be necessary to soften the thermal paste between the logic board and heat sink. You can soften the thermal compound using a hairdryer. Move the hairdryer back and forth between the two fans about one inch above the logic board for one minute. At this point, the logic board should now come free easily.

Step 18



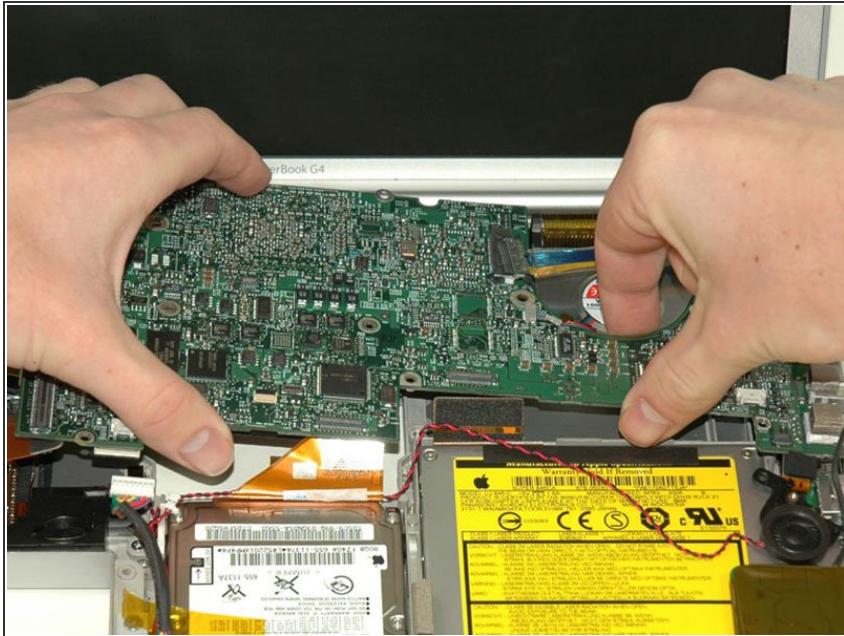
- Disconnect the DC-In connector from the left side of the logic board.

Step 19



- Disconnect the battery cable from the front, left corner of the logic board.

Step 20



- Grasp the logic board at the left edge with one hand and at the thinnest section with the other hand. Lift the left edge of the board up to approximately a 30 degree angle (if you don't have your protractor handy, just lift until the DVI port clears the right hinge).
- Once the logic board clears the ports, slide it out to the left.

Step 21

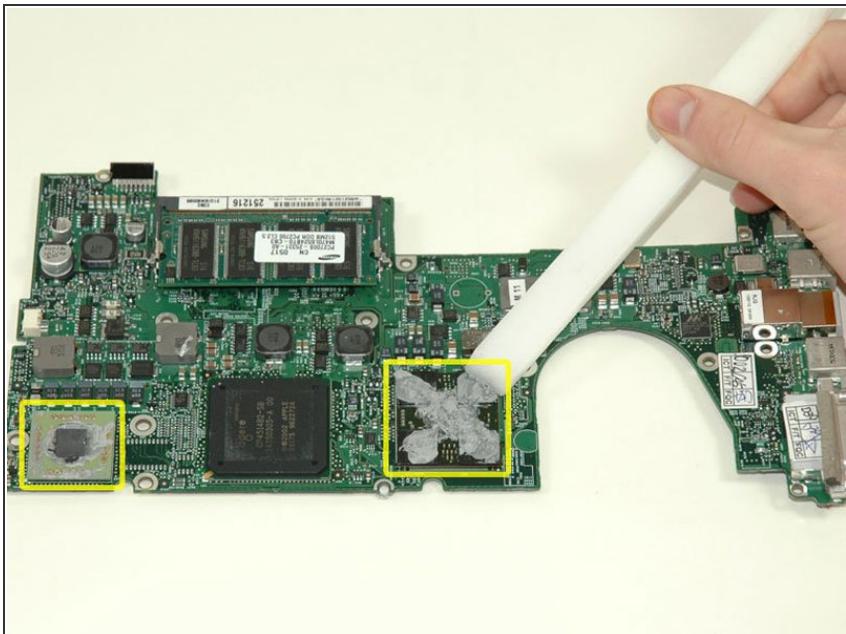


► **Important:** when you reinstall a logic board, you'll need to replace the thermal paste that goes between the processor on the logic board and the heat sink. Failure to remove the old paste and apply a new layer can cause the computer to overheat and sustain damage.

- To properly reassemble your PowerBook, you'll have to clean off and replace the old thermal

compound. Use our [Applying Thermal Paste Guide](#) to prepare the processor and heat sink surfaces.

Step 22



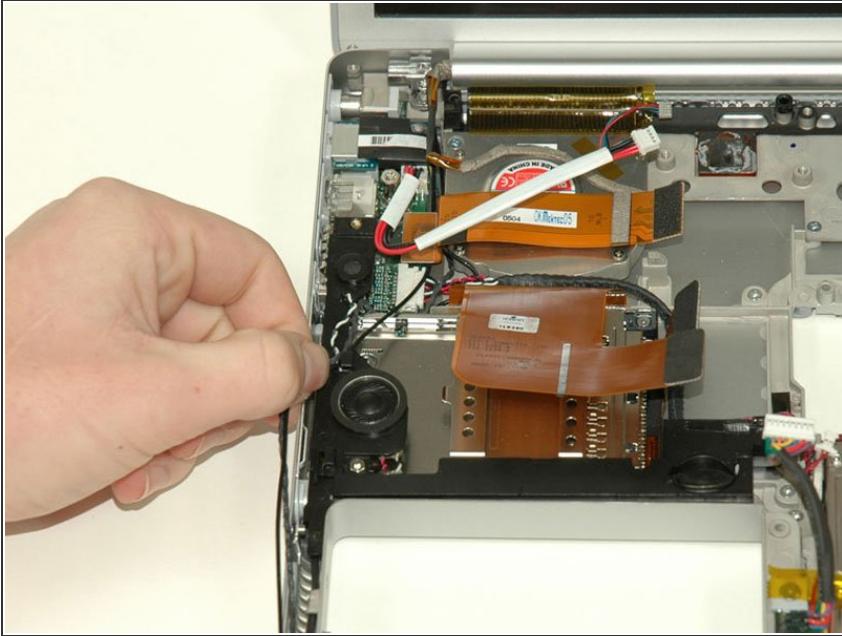
- Use a firm plastic edge to scrape the thermal material off the processor.
- ☒ When replacing the logic board, make sure all cables are routed around and above - not under - it, and to connect the two cables that do go beneath before pushing the board into place.
- ☒ Place the logic board back in the computer, trying not to move it around once the processor has come into contact with the newly-applied thermal paste.

Step 23 — Speakers



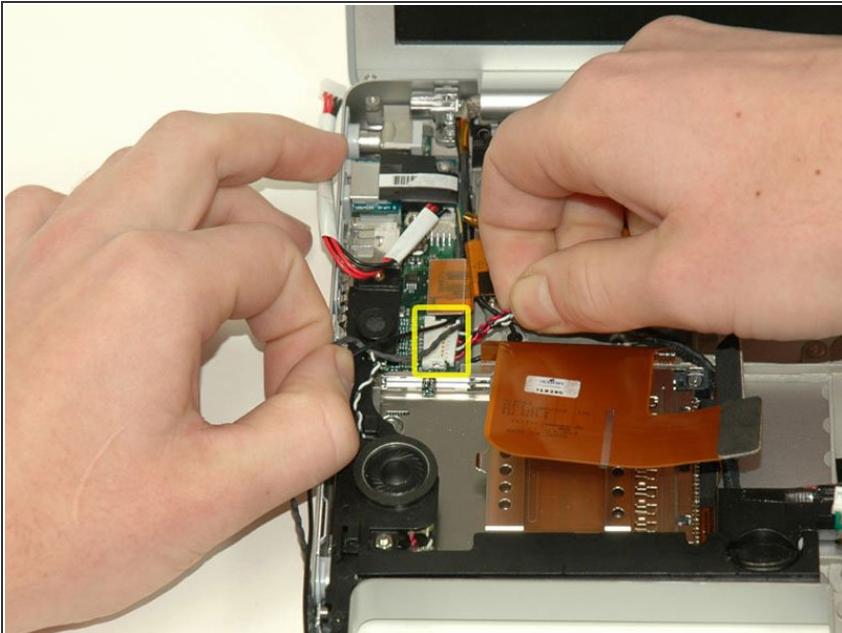
- Remove the two 3 mm black Phillips screws from the left ambient light sensor board.
- Lift the left ambient light sensor board out of the computer, removing tape as necessary.

Step 24



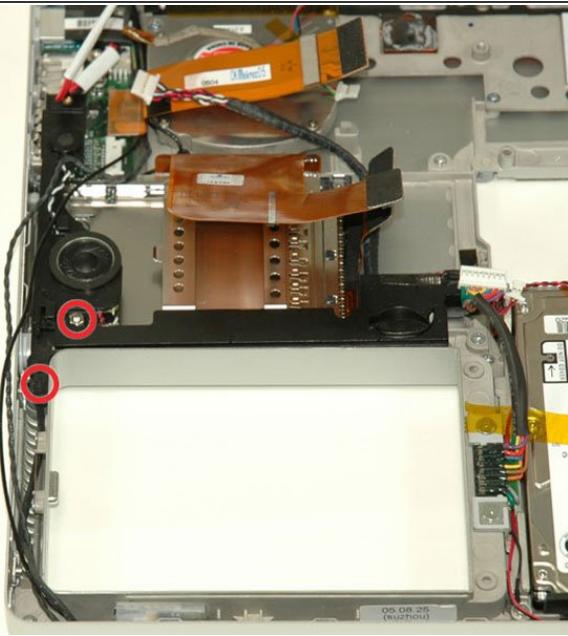
- Deroute the Bluetooth and RJ-11 cables from around the left side of the speaker.

Step 25



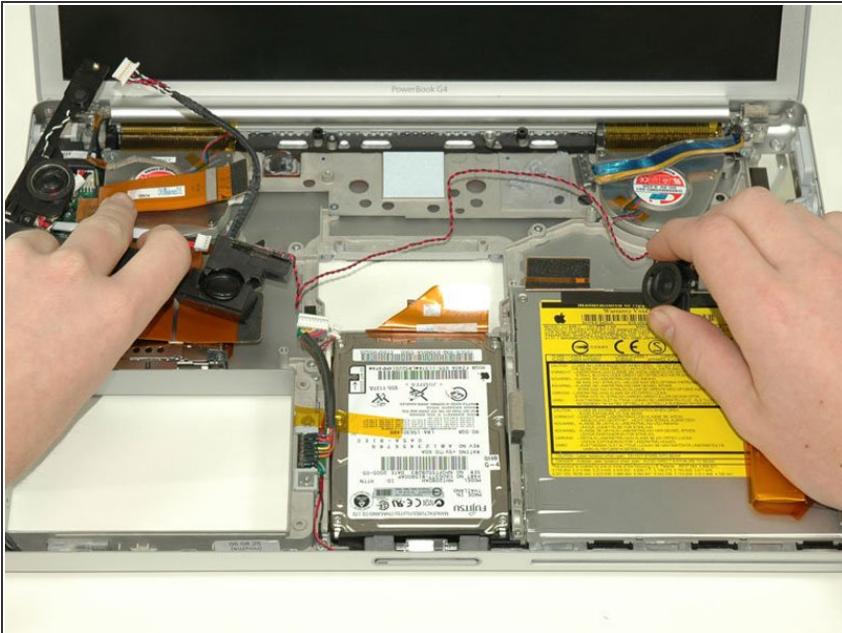
- Disconnect the speaker cable from the DC/Sound card.

Step 26



- Remove the 4 mm hex nut from below the left speaker.
- Remove the 3 mm black Phillips screw from bottom left corner of the speaker assembly, to the left of the battery compartment.

Step 27



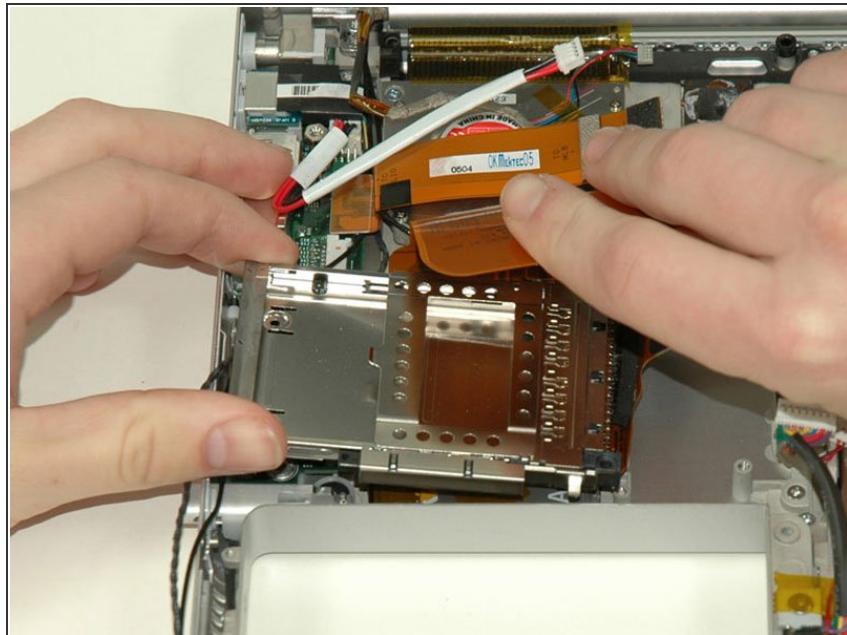
- Lift the speaker assembly (including the right speaker) out of the computer.

Step 28 — PC Card Cage



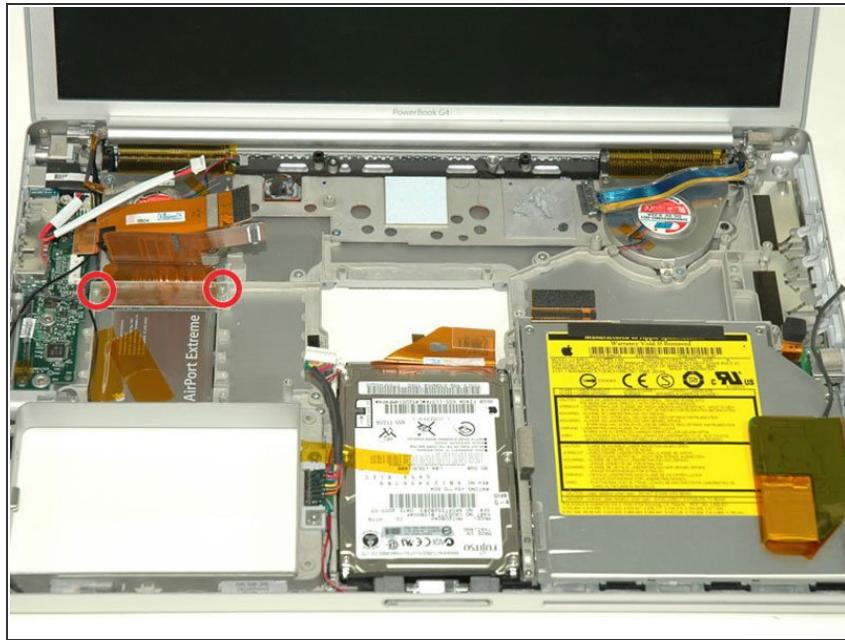
- Remove the two 4.2 mm silver Phillips screws from the left corners of the PC card cage.
- ➡ Next the two 6.8 mm shouldered screws go on the right side of the card cage.

Step 29



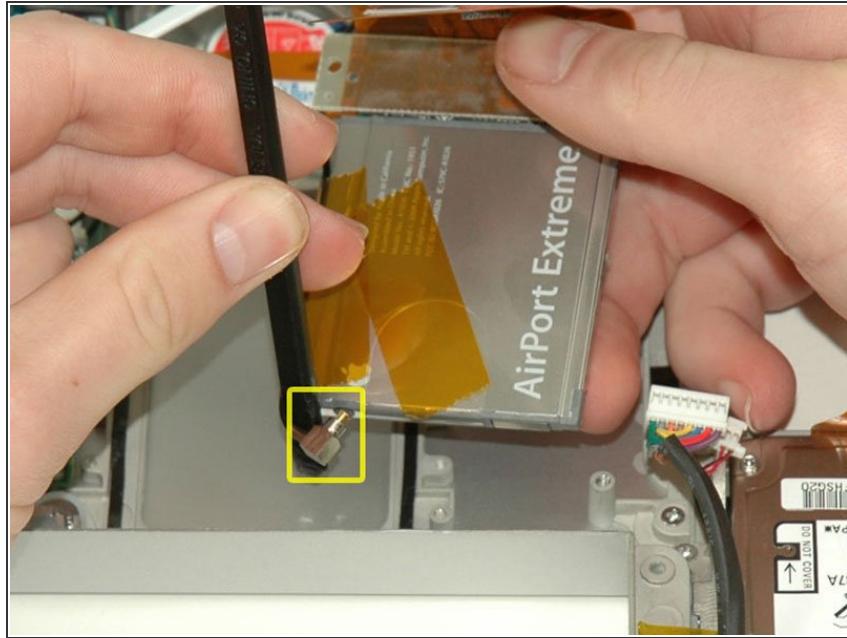
- Lift the PC card cage up and remove it from the computer.
- ➡ When replacing the PC card cage, make sure you attach it to the post on the metal eject button.

Step 30 — Display



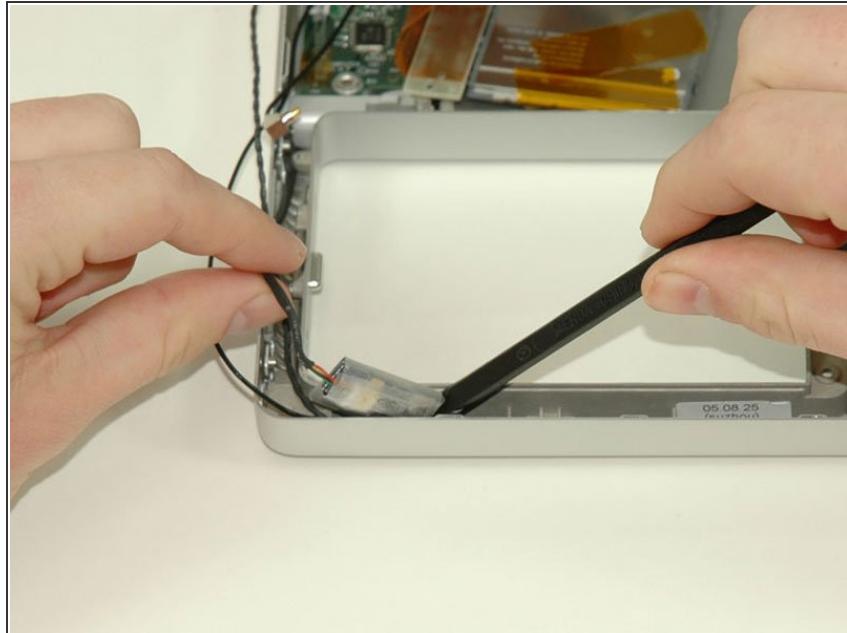
- Remove the two 4.2 mm silver Phillips screws from either side of the large orange Airport ribbon.

Step 31



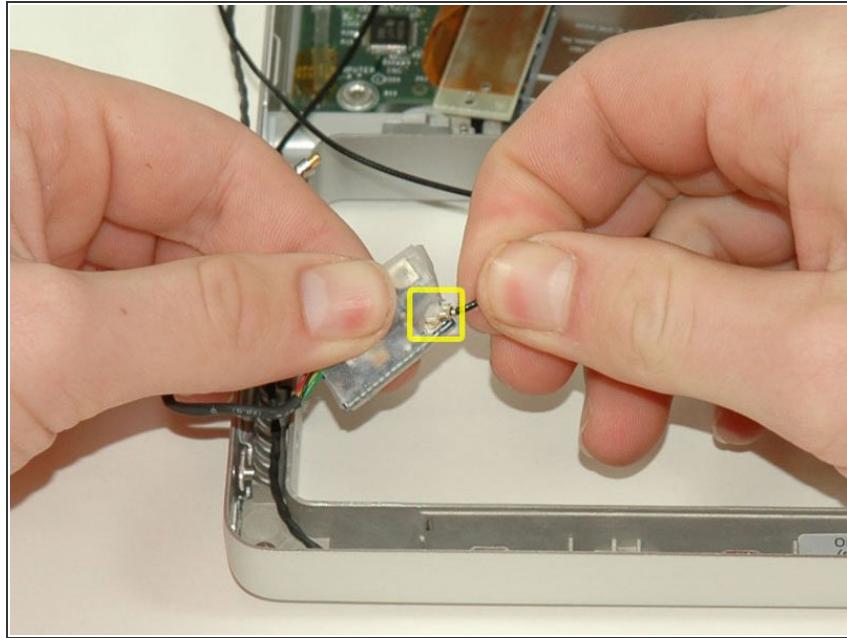
- Lift the Airport card out of the computer and slide a spudger between the card and the antenna connector to disconnect the cable from the card.
- Deroute the antenna cable from the side of the card, removing tape as necessary.
- You don't need to remove the Airport card entirely. We're just trying to free up the Airport antenna cable.

Step 32



- Using a spudger, pry up the Bluetooth board from the cavity in front of the battery compartment.

Step 33



- Disconnect the Bluetooth antenna cable from the Bluetooth board.

Step 34



- Close the display and turn the hinge side of the computer to face you.
- Remove the remaining Phillips screw on either side of the hinge (two screws total).

Step 35



- Open the display and turn the computer so the screen faces you.
- Remove the 10 mm T8 Torx screw closer to the display on either side of the hinge (two screws total).

 When replacing the display, make sure that the right screw pins down the ground loop from the display data cable.

Step 36



 Be sure to support the display with one hand while removing the final two screws.

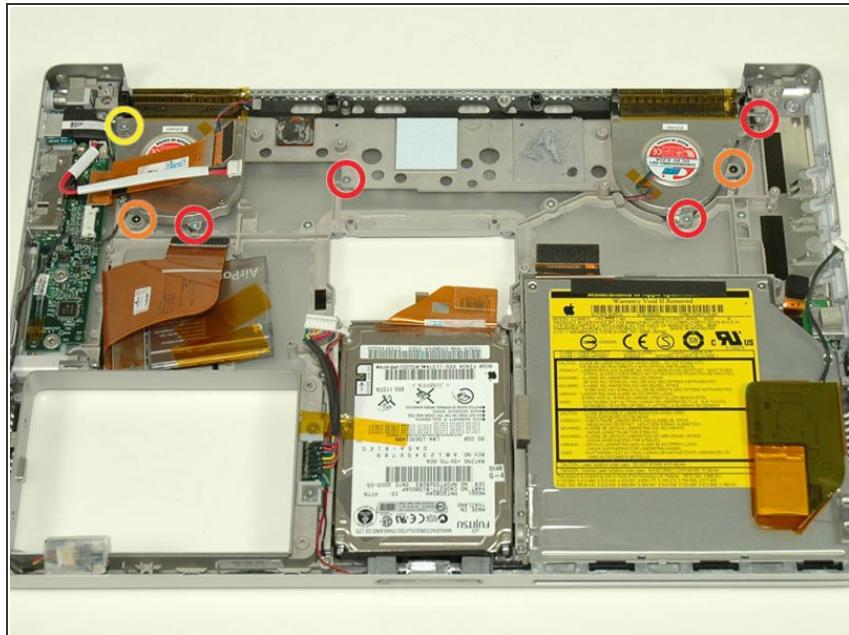
- Remove the longer 13 mm shouldered T8 Torx screw remaining on either hinge (two screws total).

Step 37



- Lift the display off.

Step 38 — Heat Sink



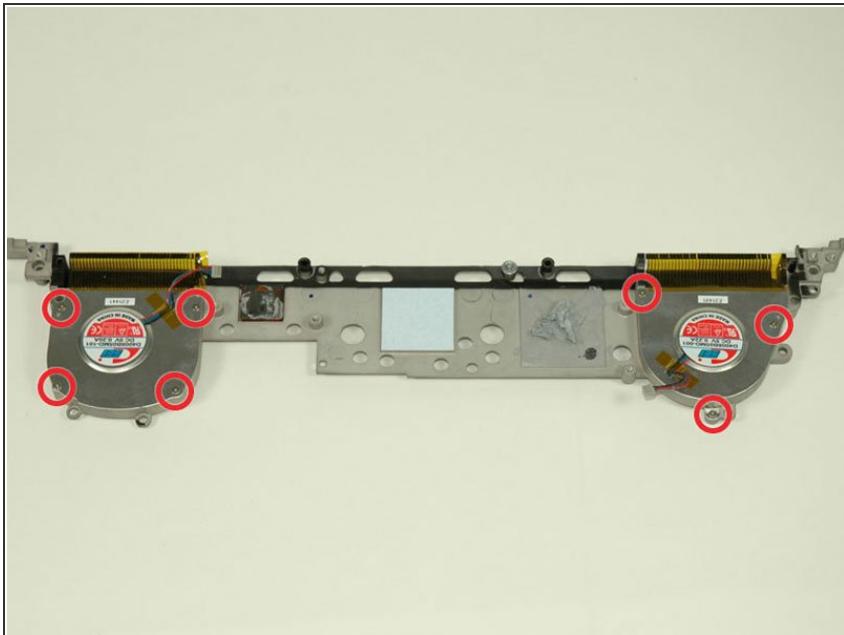
- Remove the following 7 Phillips screws from the heat sink:
 - Four 4 mm silver screws.
 - Two 5 mm black screws.
 - One 9 mm silver screw in the upper left corner of the left fan.

Step 39



- Remove the heat sink from the case, minding the left corner, as it tends to catch in the case (the fans will come out with the heat sink).

Step 40



- Remove the seven Phillips screws securing the fans to the heat sink.
- Lift the fans out of the heat sink.

To reassemble your device, follow these instructions in reverse order.