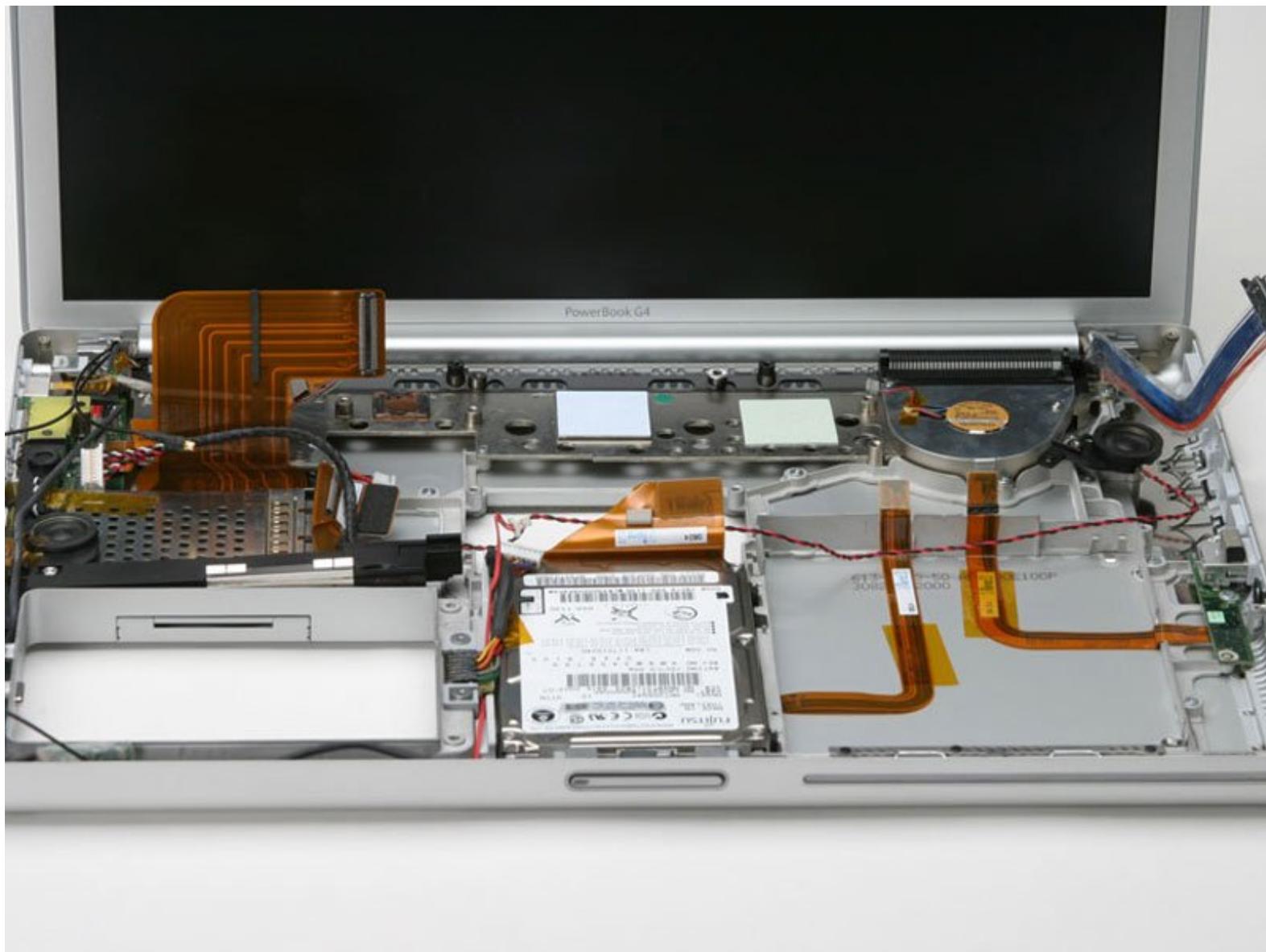




PowerBook G4 Aluminum 15" 1-1.5 GHz Right USB Board Replacement

Written By: iRobot



INTRODUCTION

USB on the right side not working? Replace it!

TOOLS:

- Anti-Static Wrist Strap (1)
- Arctic Silver ArctiClean (1)
- Arctic Silver Thermal Paste (1)
- Coin (1)
- Phillips #00 Screwdriver (1)
- Push Pin (1)
- Spudger (1)
- T6 Torx Screwdriver (1)

PARTS:

- G4 Aluminum 15" 1/1.25 GHz Right USB Board (1)
- G4 Aluminum 15" 1.33/1.5 GHz Right USB Board (1)
- G4 Aluminum 15" 1 1.25 1.33 1.5 GHz Right USB Cable (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 9 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 4.2 mm 1/16" H 1.5 hex screws in either corner, next to the display (a T6 Torx driver will also do the job nicely).

Step 8



- This step covers the hardest part to get inside this computer. Take a deep breath and think happy thoughts.
- Grasp the back corners of the upper case and pull up, disengaging hidden tabs on the sides. Do not pull the upper case off yet; you still need to free tabs in the front of the case.
- The seam is beneath the plastic molding on the upper case.

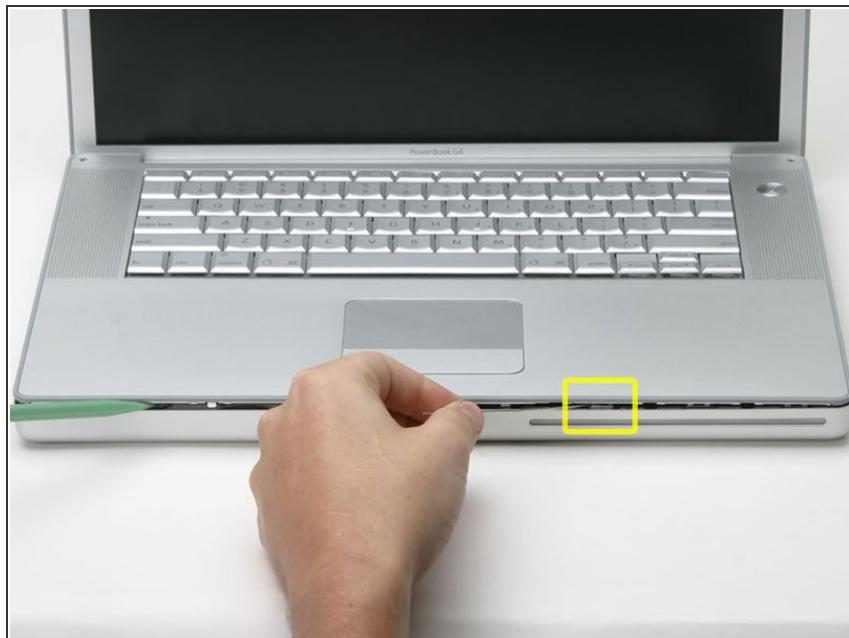
Step 9



i There is one latch that stops you from pulling the upper case right off, located on the left side of the optical drive slit. To free the upper case, you will be pulling a thin metal latch toward you, freeing it from the clasp holding it in place.

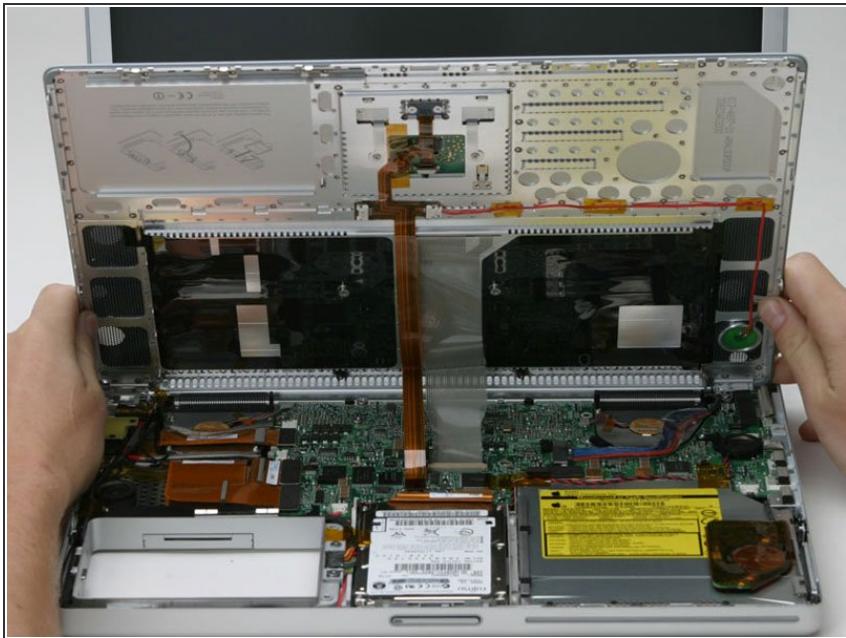
- Pry up the left side of the upper case slightly with your hand and wedge a spudger into the seam between the upper case and lower case.
- Leave the tool in place applying pressure to the upper case for the next step.

Step 10



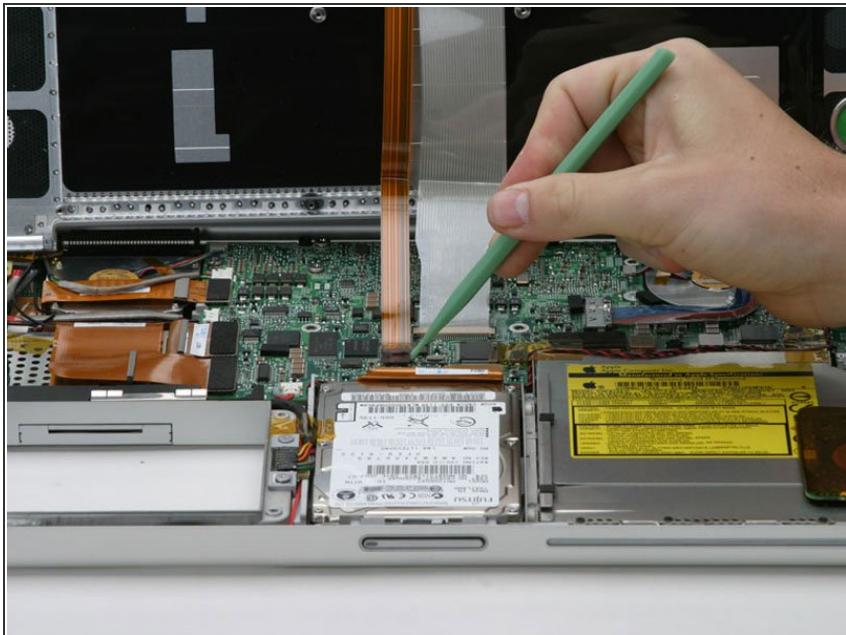
- Place enough pressure on the upper case to allow you to slide a tool just within the seam between upper case and lower case as shown in the picture. A dentist's hook, push pin, or similar tool will work.
- **i** Do not yank the upper case off as soon as you free the clasp. The case is attached to the logic board via two ribbon cables.
- Delicately slip the tip of your tool behind the silver metal latch and pull it forward while pulling up on the case. This may take some effort.
- Alternatively, you can free the clasp with a small flathead screwdriver through the CD slot. The clasp is 1-3/16 in (3cm) from the left side of the slot. Use the screwdriver to lift out (or press back) the felt lining; then use the screwdriver to pull the clasp (shiny metal) forward to free it from the catch behind it (dull metal).

Step 11



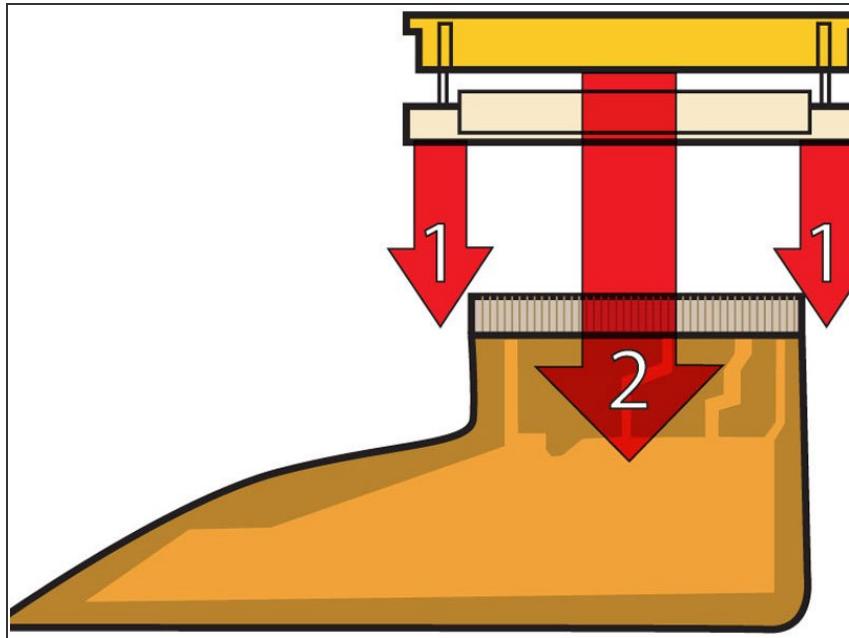
- Lift the back of the case up and work your fingers along the sides, freeing the case as you go. Once you have freed the sides, you may need to rock the case up and down to free the front of the upper case.
- Rotate the upper case up and toward the screen, so that the upper case rests against it.

Step 12



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

Step 13



(i) This is a diagram of the keyboard ribbon clamp connector you will disconnect in the next step.

- 1) With your fingernails, grasp the locking bar on either side and pull up a small amount (about 1/16" or 2 mm).
- 2) After disengaging the locking bar, slide the cable out of the connector.

Step 14



- Loosen the keyboard ribbon clamp by pushing the thin black piece toward the screen, using the tips of your fingers.

! The black piece is very fragile and easily broken. Use care when separating it from the main socket.

- Slide the grey keyboard ribbon out of the loosened connector.
- Remove the upper case from the computer.

Step 15 — Optical Drive



- Use a spudger to pry up the PRAM battery from the optical drive.

Step 16



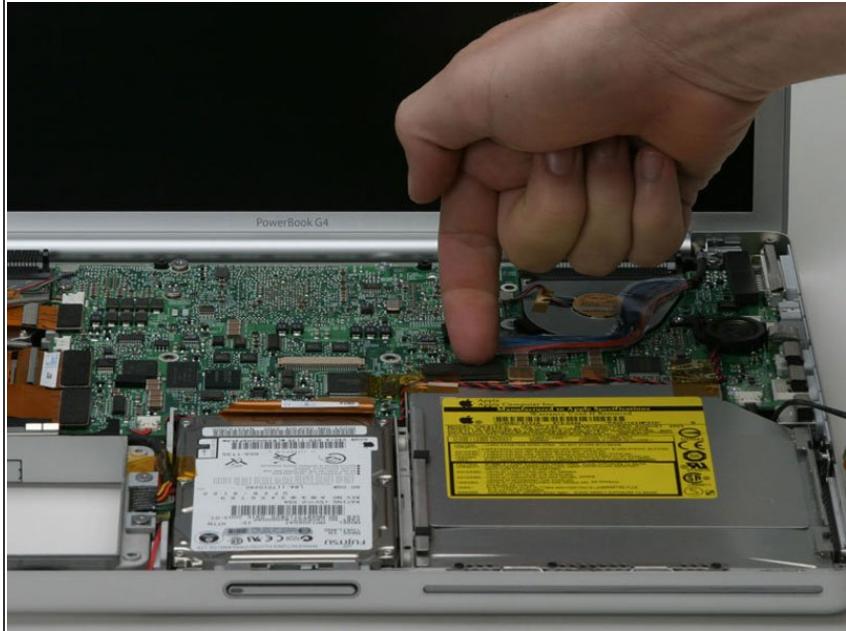
- Do not disconnect the PRAM battery from the logic board, but simply place it aside, allowing access to the optical drive.

Step 17



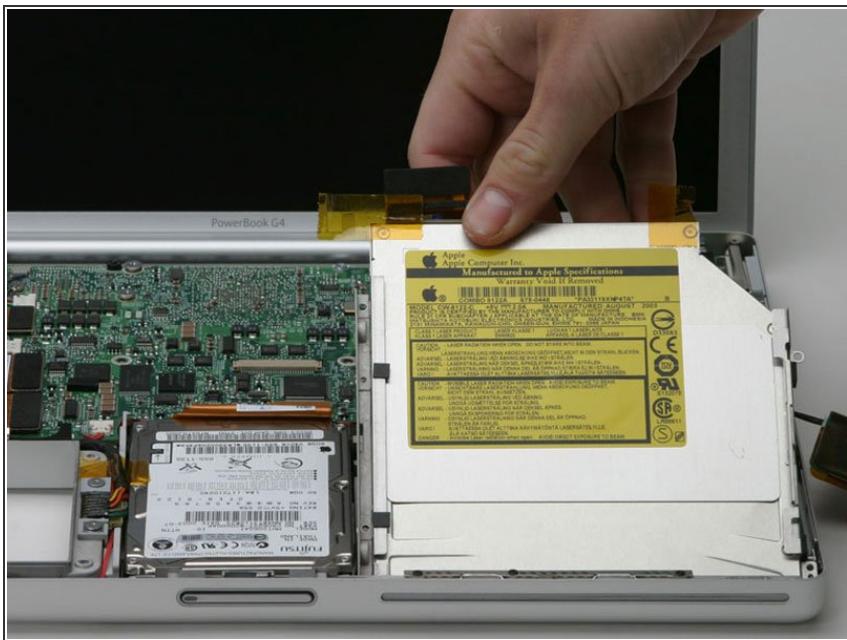
- Remove the two short black Phillips screws from the right side of the optical drive.
- Remove the two longer silver Phillips screws from the left side of the optical drive.
- Peel back the orange tape from the optical drive.

Step 18



- Disconnect the large black connector from the logic board and get out from under the red and black speaker cable.

Step 19

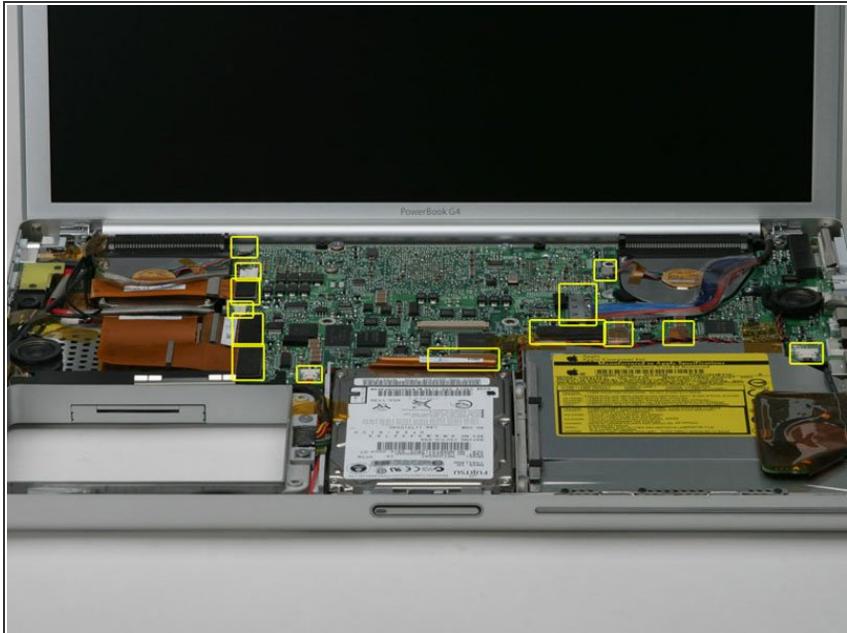


- Lift the optical drive out of the computer from the side with the connector on it (mind the small metal bracket that pops out with the drive, keep this with the optical drive).

☞ Don't forget the bracket when reassembling the computer.

ⓘ If you have a CD or any other object jammed in your optical drive, we have an [optical drive repair guide](#).

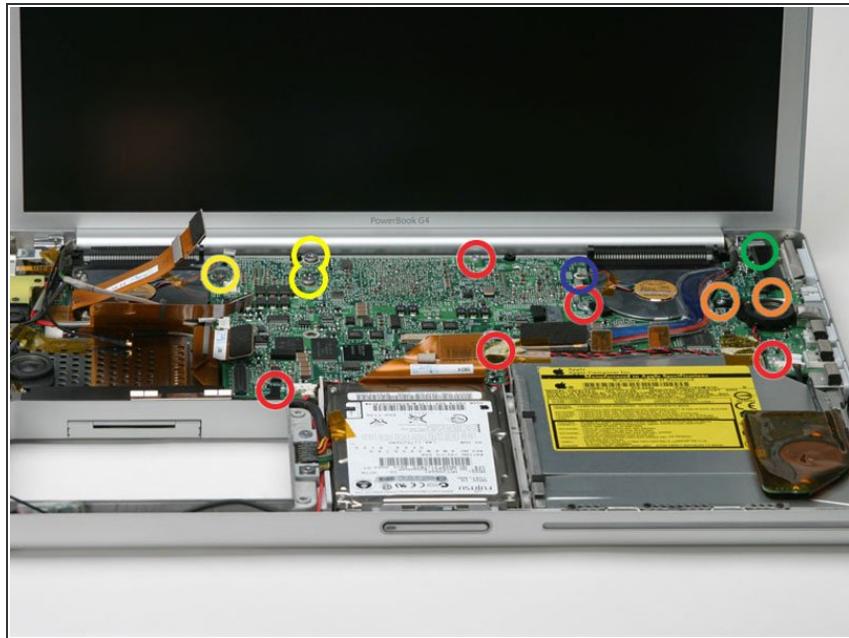
Step 20 — Logic Board



ⓘ If you have already removed the display or hard drive, you may have already removed some of the cables described in this step. You may also ignore their presence in the following images; they do not further affect the disassembly procedure.

- Disconnect the indicated 14 cables from the logic board, starting in one place and moving around the board.

Step 21



ⓘ There should be no cables connected to the top of the logic board at this point.

- Remove the following 12 Phillips screws from the logic board:
 - Six 4 mm around the edges of the logic board.
 - Two 5 mm securing the right speaker to the logic board (move the speaker off of the logic board).
 - Three 6 mm with wavy washers in the upper, left corner of the logic board.
 - One 4 mm underneath a black bumper in the back right corner of the logic board.
 - One 4 mm screw may not be present on some logic boards.

Step 22



i 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.

Step 23



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

Step 24



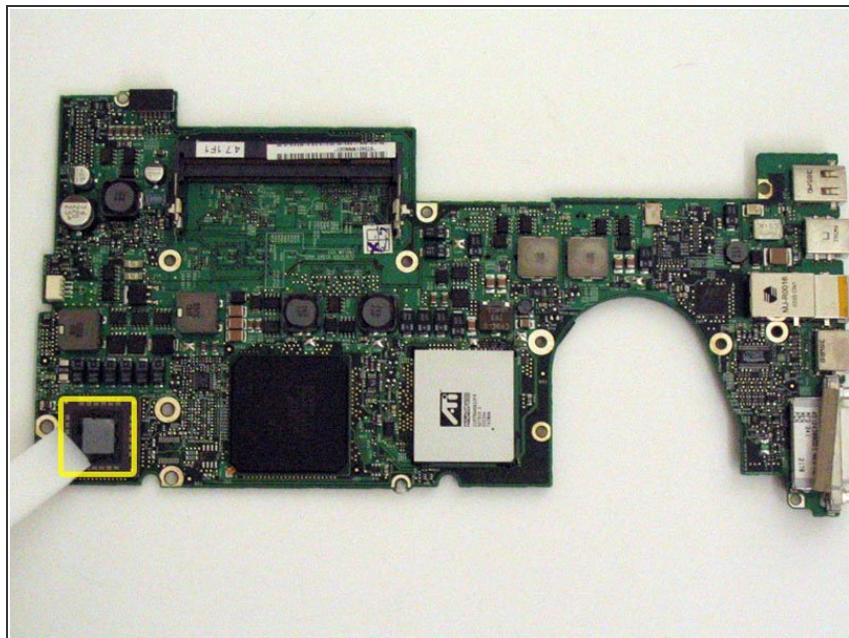
- Disconnect the battery cable from the front, left corner of the logic board.

Step 25



- 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.

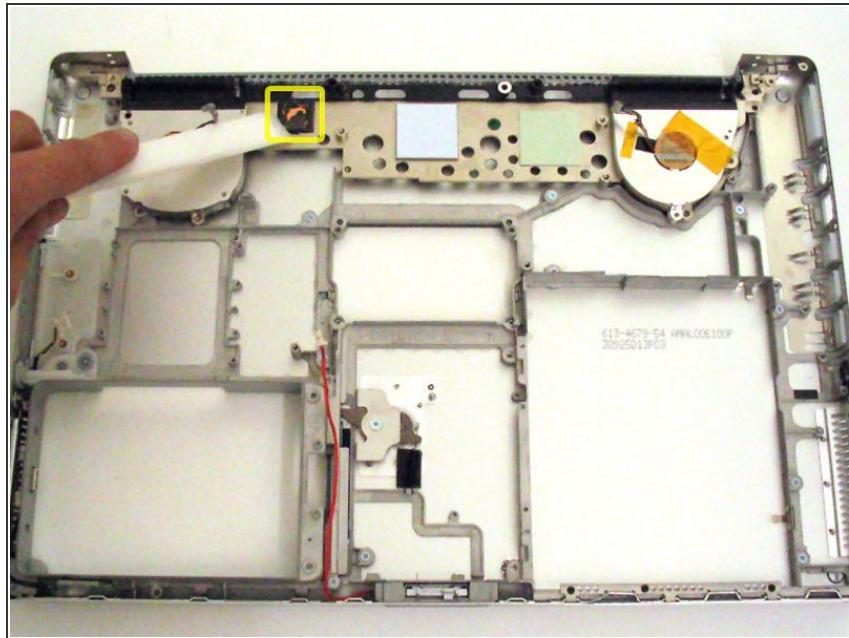
Step 26



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. The following steps refer to replacing the thermal paste between the processor and heat sink; follow these steps only when you are ready to place the logic board in the computer.

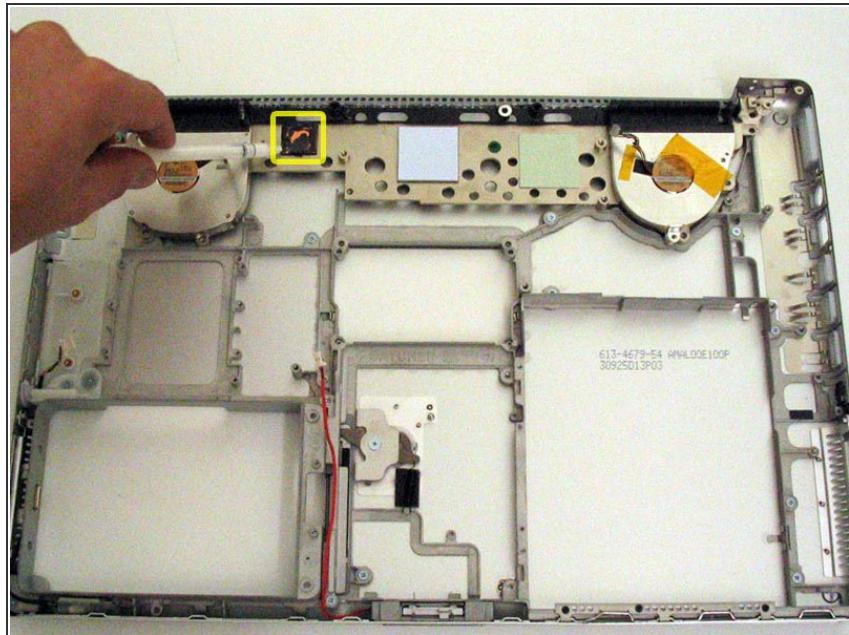
- Use a firm plastic edge to scrape the thermal material off the processor.
- For more advanced instructions on this procedure, see our [Applying Thermal Paste Guide](#).

Step 27



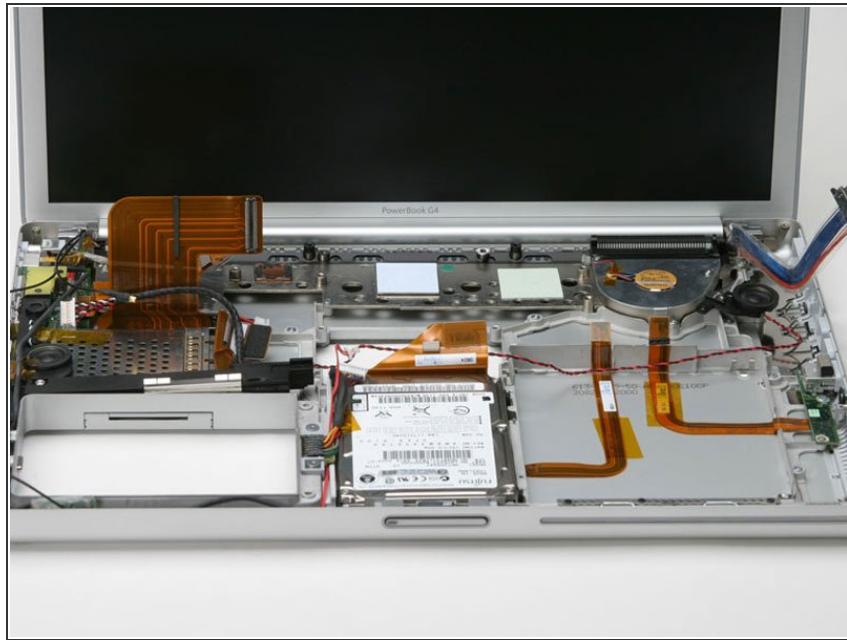
- Use a firm plastic edge to scrape the thermal material off the heat sink.

Step 28



- Apply a new layer of thermal paste to the copper heat conduit.
- 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 29 — Right USB Board



- Your laptop should look approximately like this.

Step 30



- Remove the two Phillips screws from the USB board.

Step 31



- Lift the USB board up and disconnect the orange ribbon cable from beneath it.

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