MacBook Pro 15" Unibody 2.53 GHz Mid 2009 Logic Board Replacement

Use this guide to replace a faulty logic board.

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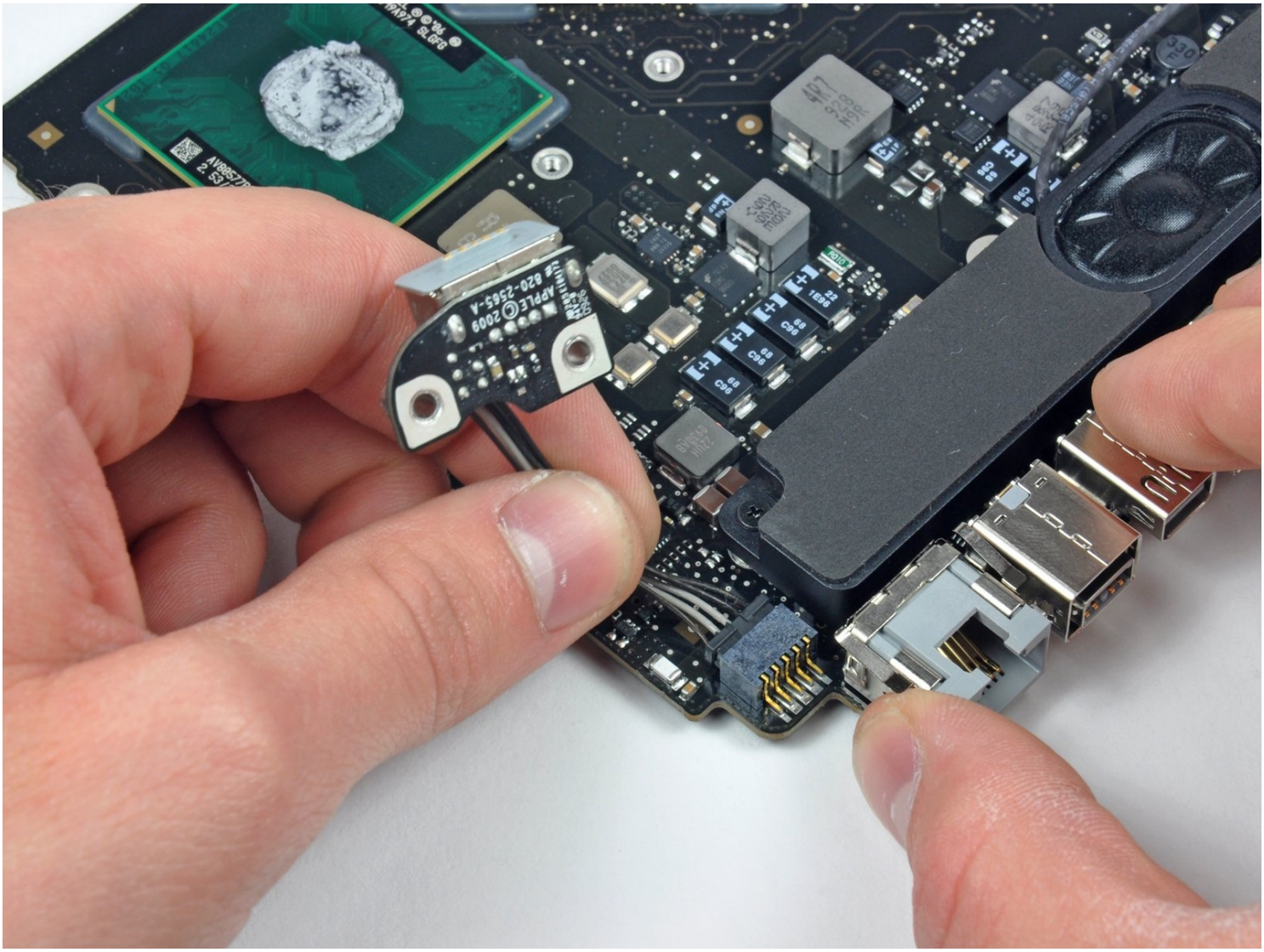


INTRODUCTION

Use this guide to replace a faulty logic board.

TOOLS:

- P6 Pentalobe Screwdriver 2009 MacBook Pro Battery (1)
- Arctic Silver ArctiClean (1)
- Arctic Silver Thermal Paste (1)
- Phillips #00 Screwdriver (1)
- Spudger (1)
- T6 Torx Screwdriver (1)

PARTS:

- MacBook Pro 15" Unibody (Mid 2009) 2.53 GHz Logic Board (1)

Step 1 — Lower Case

- Remove the following ten screws securing the lower case to the upper case:
  - Seven 3 mm Phillips screws.
  - Three 13.5 mm Phillips screws.

Step 2

- Using both hands, lift the lower case near the vent to pop it off two clips securing it to the upper case.
- Remove the lower case and set it aside.

Step 3 — Battery

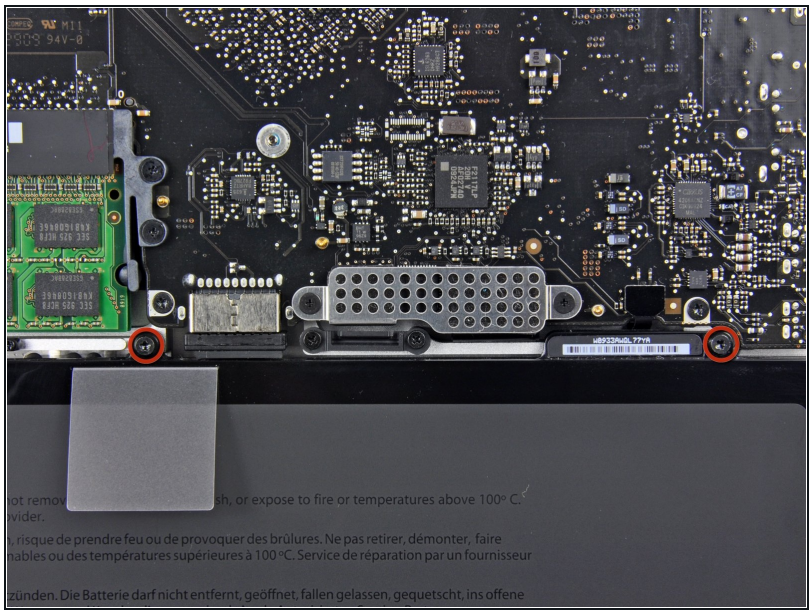
- Three Pentalobe screws secure the battery to the upper case. They can be removed with this special driver.

ⓘ If you don't have a Pentalobe driver, a 1.5 mm flathead screwdriver can be used in a pinch. Be sure the head of your flathead screwdriver fits snugly across two of the five "points" of the screw head before trying to break the screw free, as a loose fit will easily strip the screw head.

ⓘ If the head of your screwdriver fits too loosely, find a bigger bit and file it down until it fits snugly before proceeding.

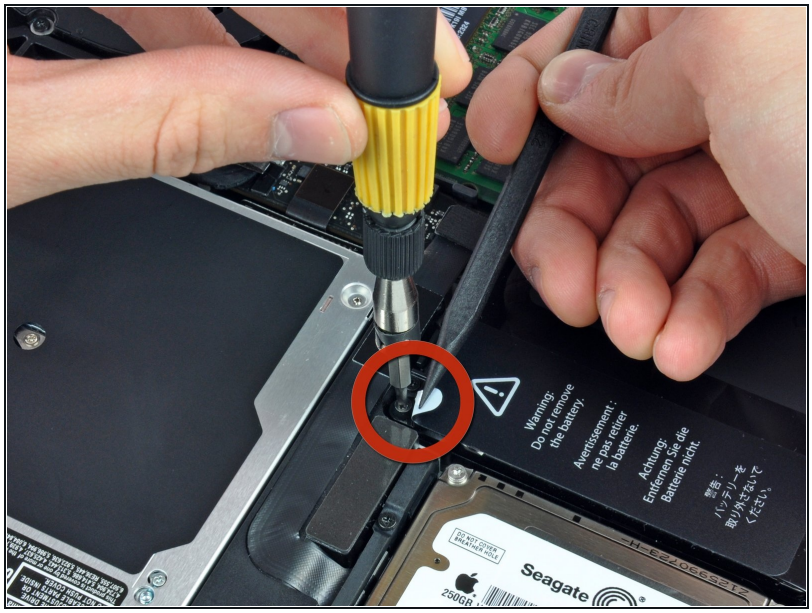
ⓘ You do not necessarily have to follow steps 3-7 to remove the battery in order to replace the hard drive. However, it is recommended to remove all power sources from electronics before working on them.

Step 4



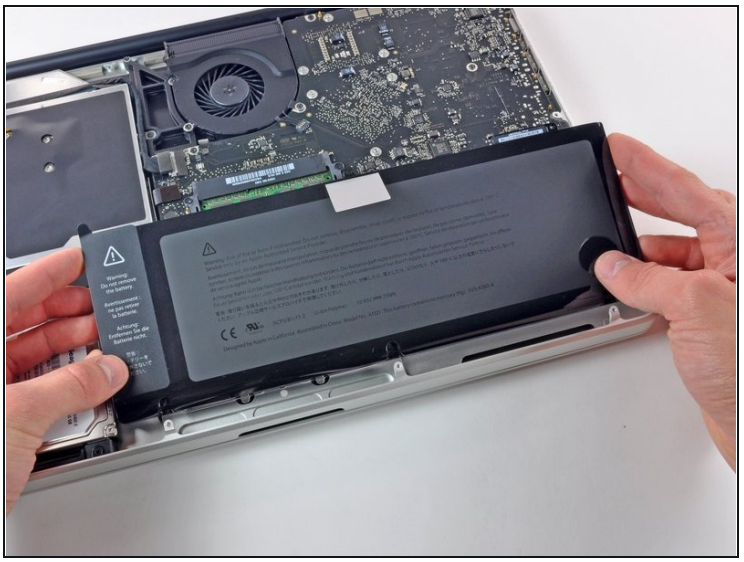
- Remove the two exposed five-point Pentalobe screws along the top edge of the battery.

Step 5



- Use the tip of a spudger to bend back the finger of the "Warning: Do not remove the battery" sticker while you remove the five-point Pentalobe screw hidden underneath.

Step 6



- Lift the battery by its plastic pull tab and slide it away from the long edge of the upper case.

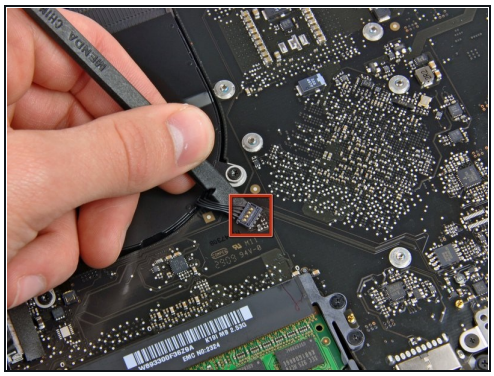
⚠ Do not try to completely remove the battery just yet.

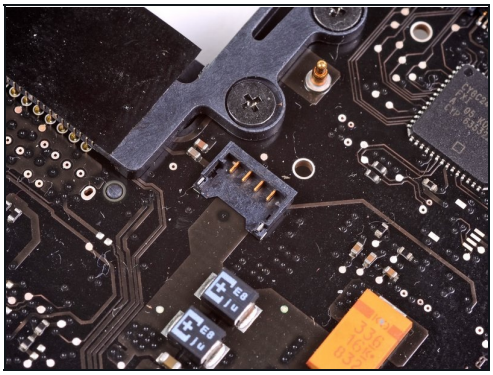
Step 7

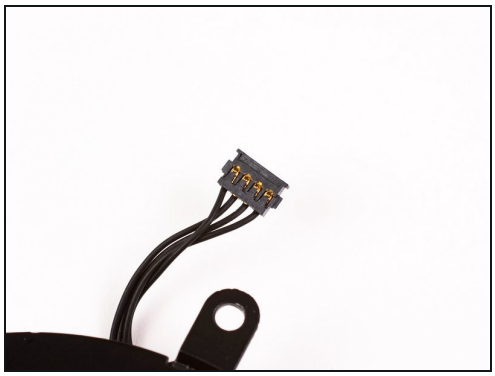
- Tilt the battery back enough to access the battery cable connector.
- Pull the battery cable connector away from its socket on the logic board and remove the battery from the upper case.

  If you're installing a new battery, you should calibrate it as soon as possible.

Step 8 — Fan







- Use the flat end of a spudger to pry the fan cable connector up off its socket on the logic board.

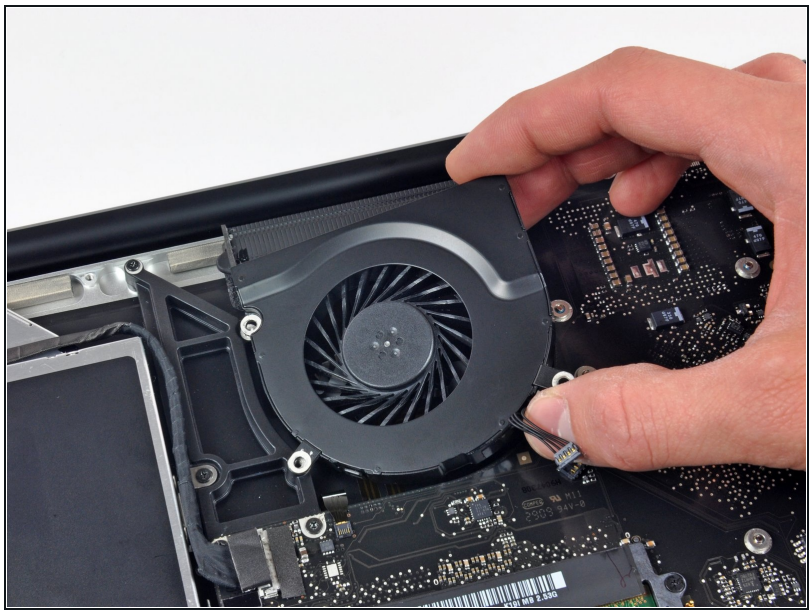
ⓘ It is useful to twist the spudger axially from beneath the fan cable wires to release the connector.

⚠ The fan socket and the fan connector can be seen in the second and third pictures. Be careful not to break the plastic fan socket off the logic board as you use your spudger to lift the fan connector straight up and out of its socket. The layout of the logic board shown in the second picture may look slightly different than your machine but the fan socket is the same.

Step 9

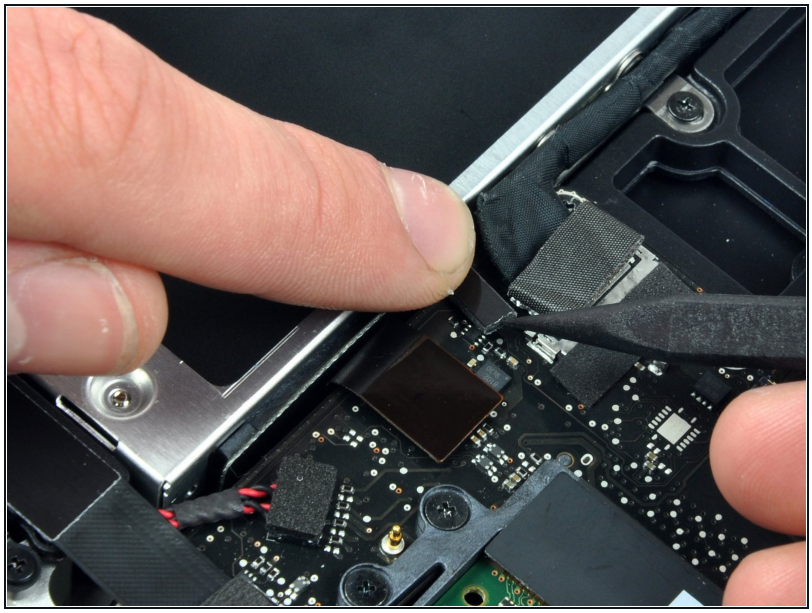
- Remove the three identical T6 Torx screws securing the fan to the upper case.

Step 10



- Lift the fan out of the upper case.

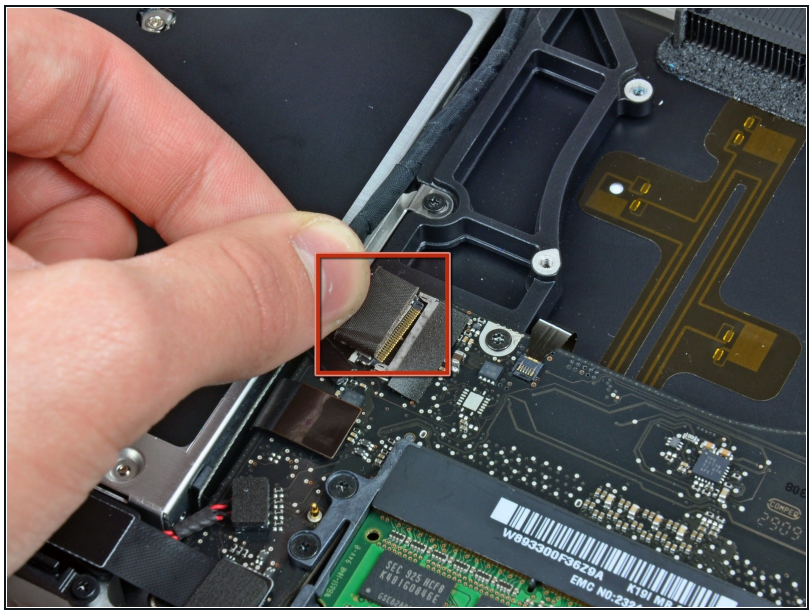
Step 11 — Logic Board



⚠ Apple sticks a small strip of clear plastic with adhesive applied to one side to the logic board behind the camera cable connector to keep it in its socket. When moving it out of the way, be sure not to break any surface-mount components off the logic board.

- Hold the end of the cable retainer down with one finger while you use the tip of a spudger to slightly lift the other end and rotate it away from the camera cable connector.

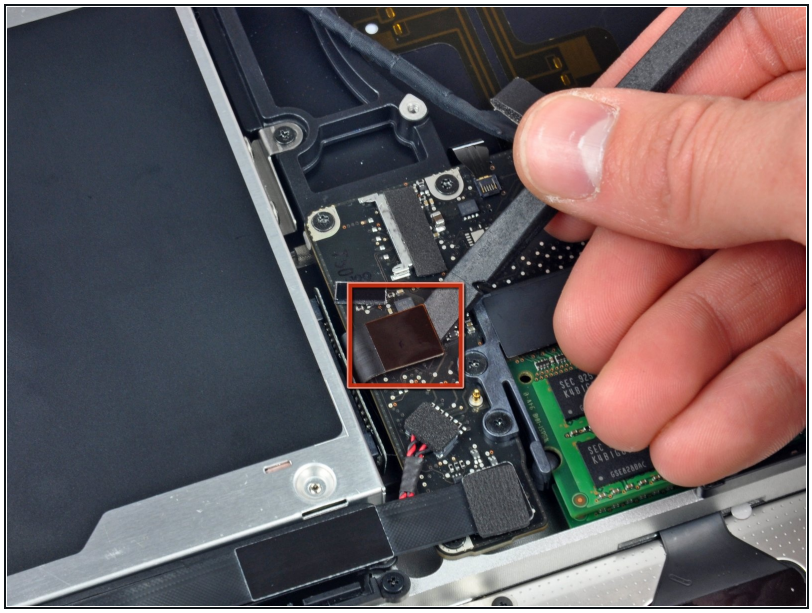
Step 12



- Disconnect the camera cable by pulling the male end straight away from its socket.

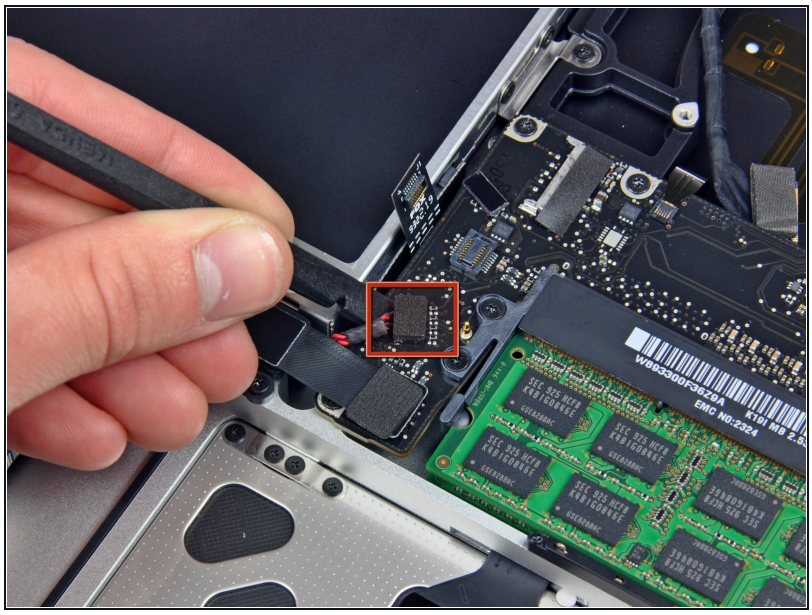
⚠ Pull the connector parallel to the face of the logic board, not straight up.

Step 13



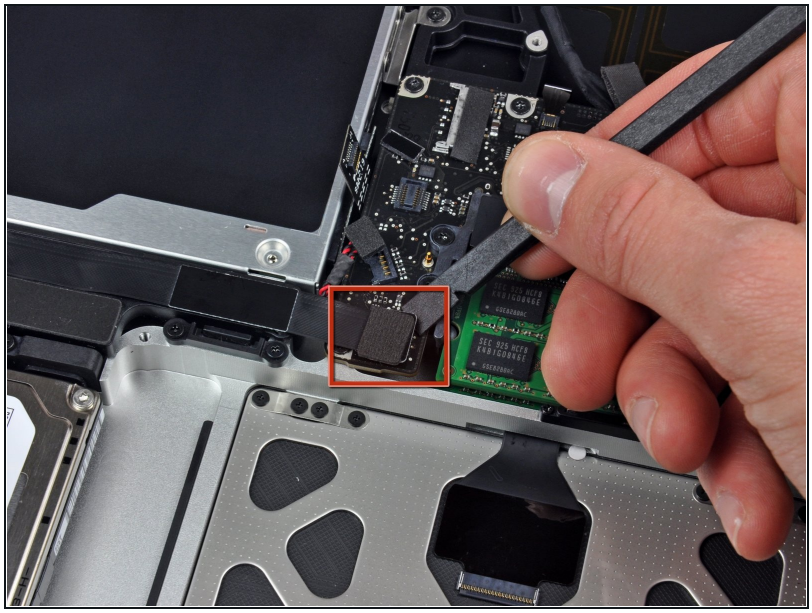
- Use the flat end of a spudger to pry the optical drive cable connector up off the logic board.

Step 14



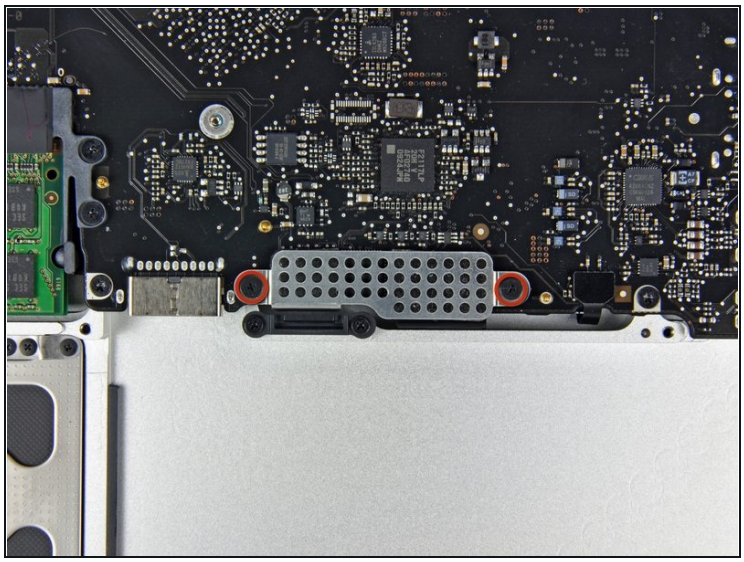
- Using the flat end of a spudger, pry the subwoofer connector straight up off the logic board.

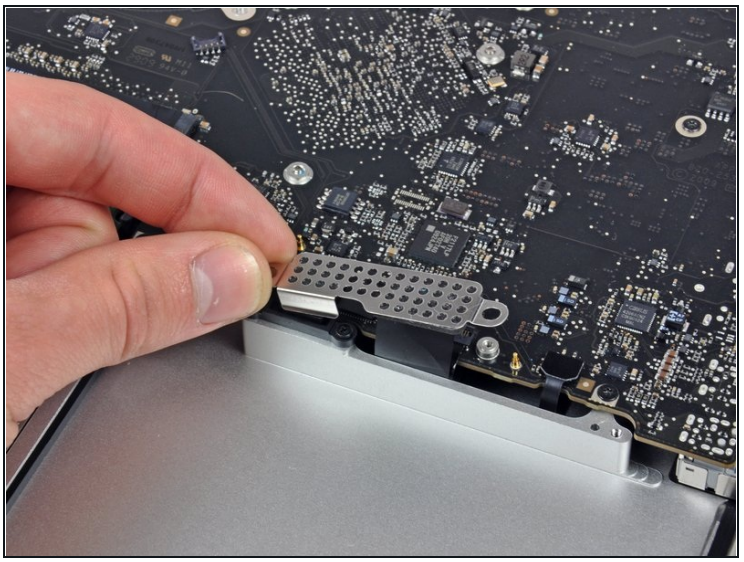
Step 15



- Use the flat end of a spudger to pry the hard drive/IR sensor cable connector up off the logic board.

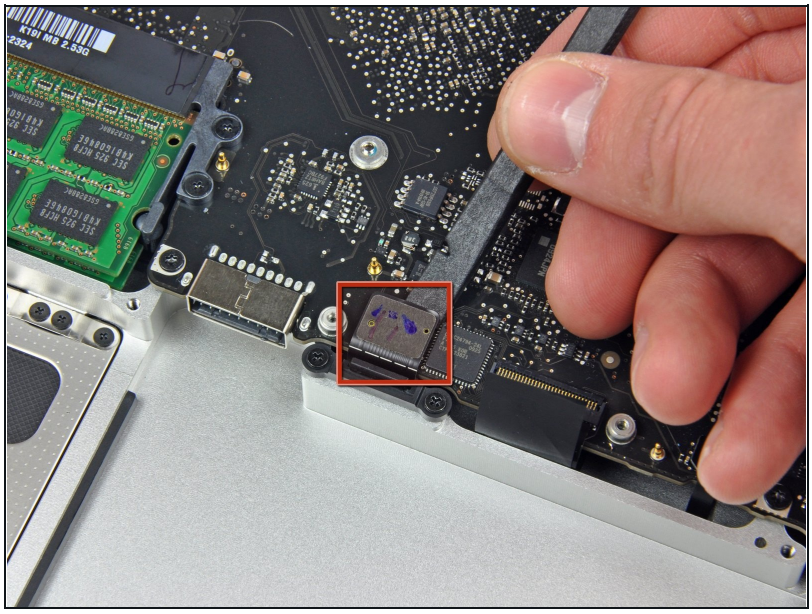
Step 16





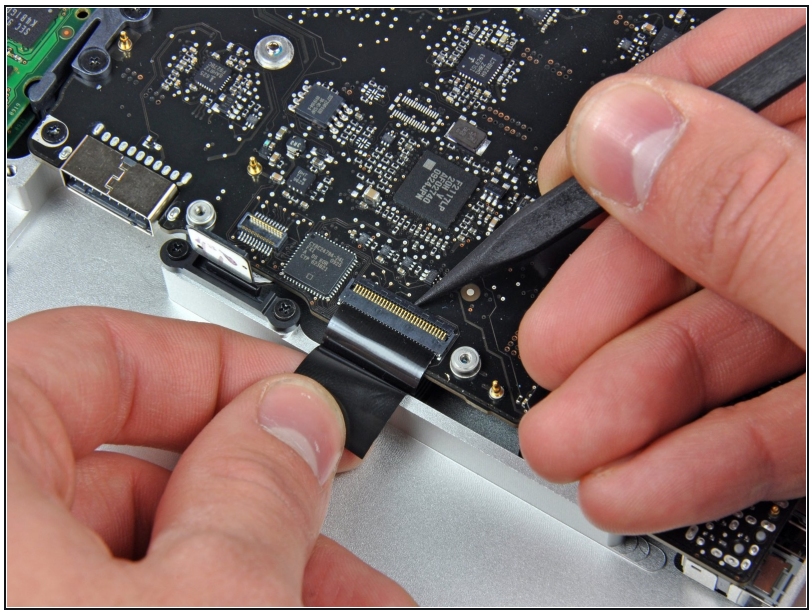
- Remove the two 1.5 mm Phillips screws securing the cable cover to the logic board.
- Lift the cable cover out of the upper case.

Step 17



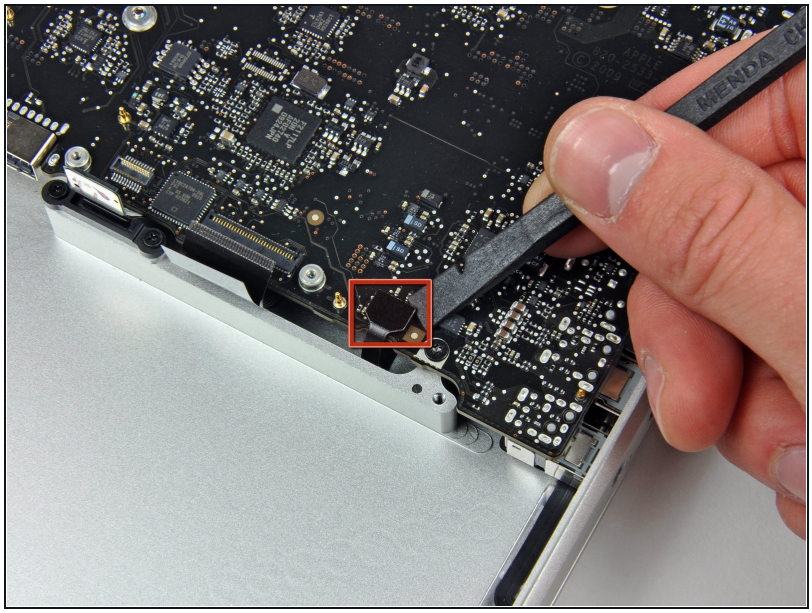
- Use a spudger to pry the trackpad flex ribbon cable connector up off the logic board.

Step 18



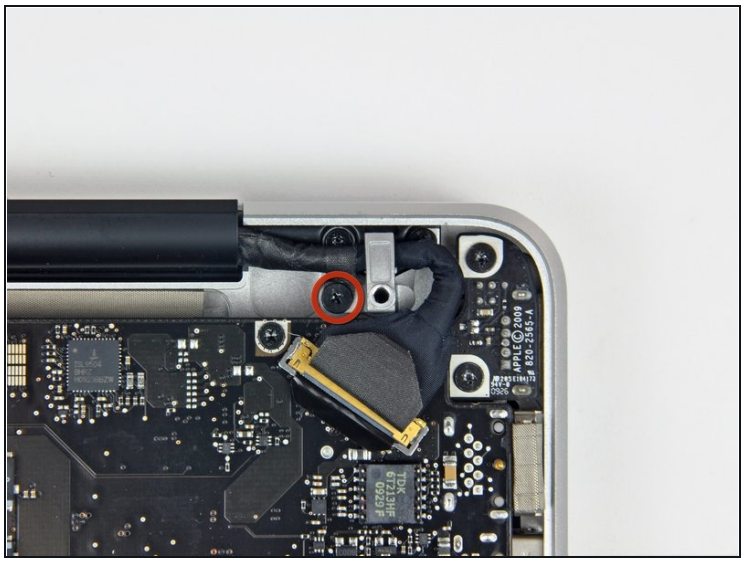
- Using the tip of a spudger, flip up the keyboard ribbon cable retaining flap.
- Pull the keyboard ribbon cable straight out of its socket.

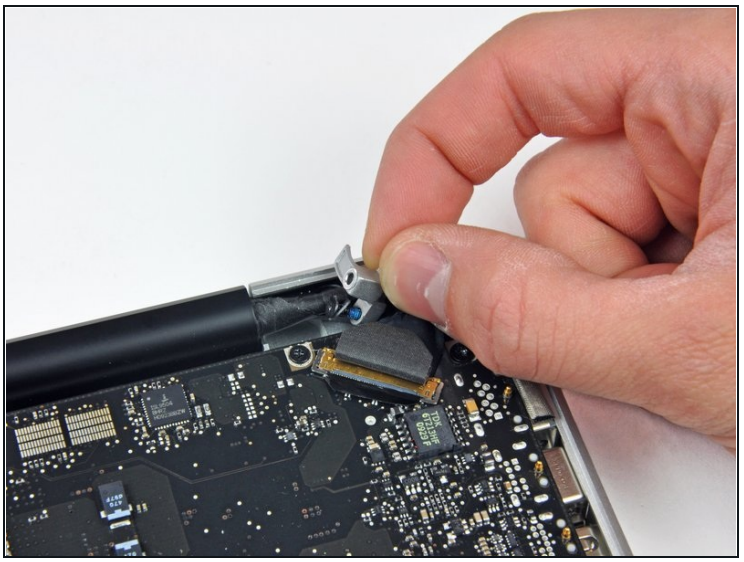
Step 19



- Use a spudger to pry the battery indicator ribbon cable connector up off the logic board.

Step 20



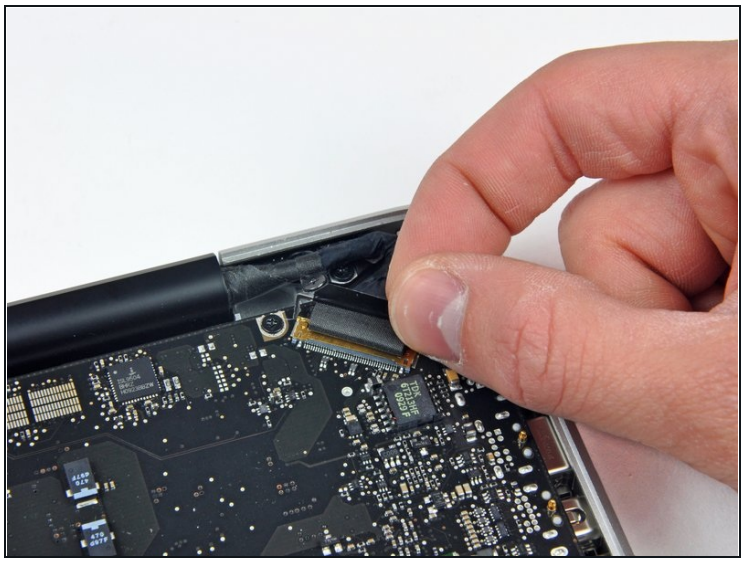


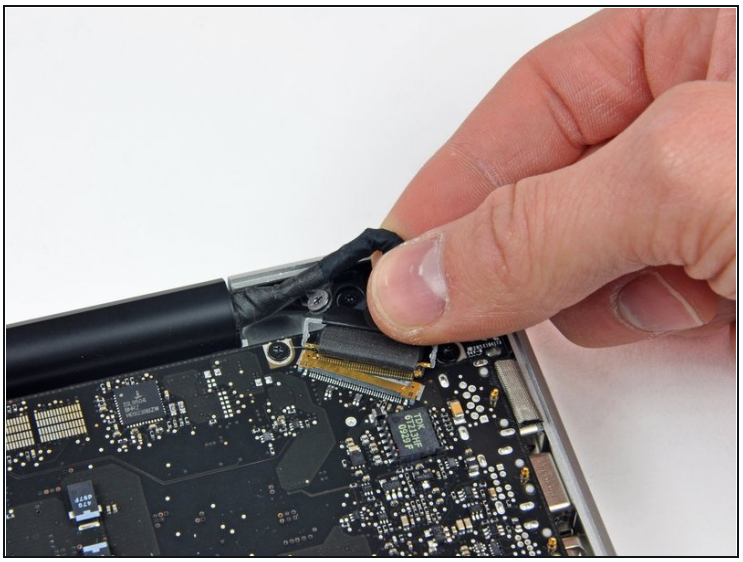
- Remove the single 7 mm Phillips screw securing the display data cable retainer to the upper case.

ⓘ This screw may remain captive in the display data cable ground loop. If replacing the display, be sure to transfer this screw to the new unit.

- Remove the display data cable retainer from the upper case.

Step 21

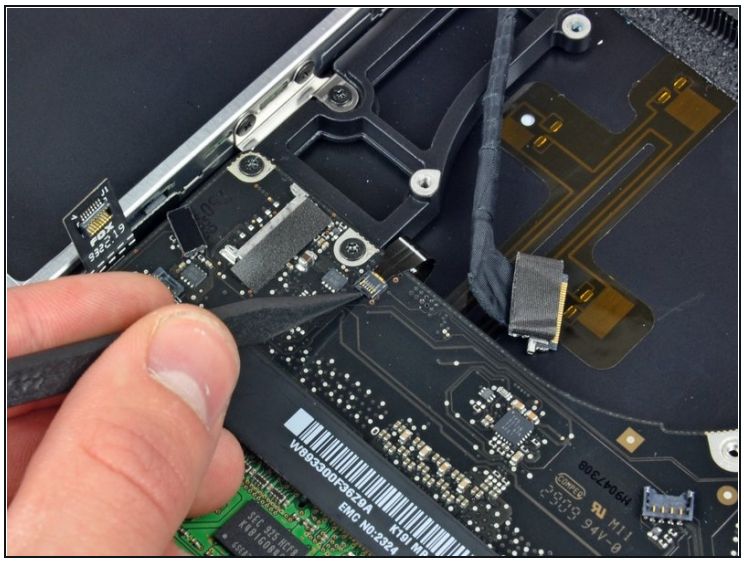


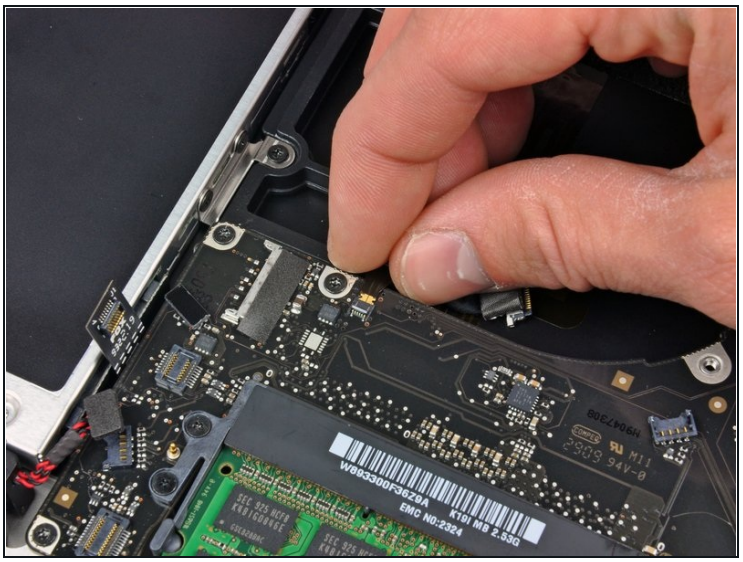


- Grab the plastic pull tab secured to the display data cable lock and rotate it toward the DC-in side of the computer.
- Pull the display data cable connector straight away from its socket.

⚠ Make sure to pull the connector parallel to the face of the logic board, not straight up from its socket.

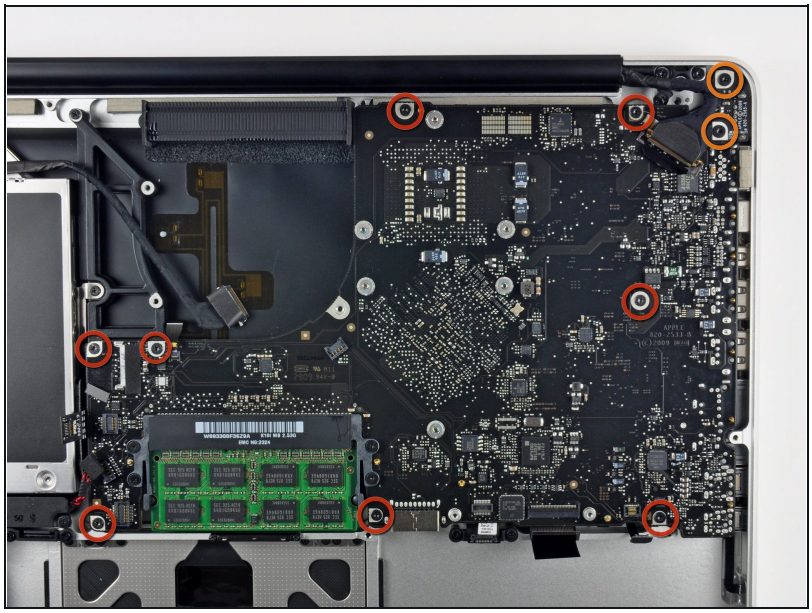
Step 22





- Using the tip of a spudger, flip up the keyboard backlight ribbon cable retaining flap.
- Pull the keyboard backlight ribbon cable straight out of its socket.

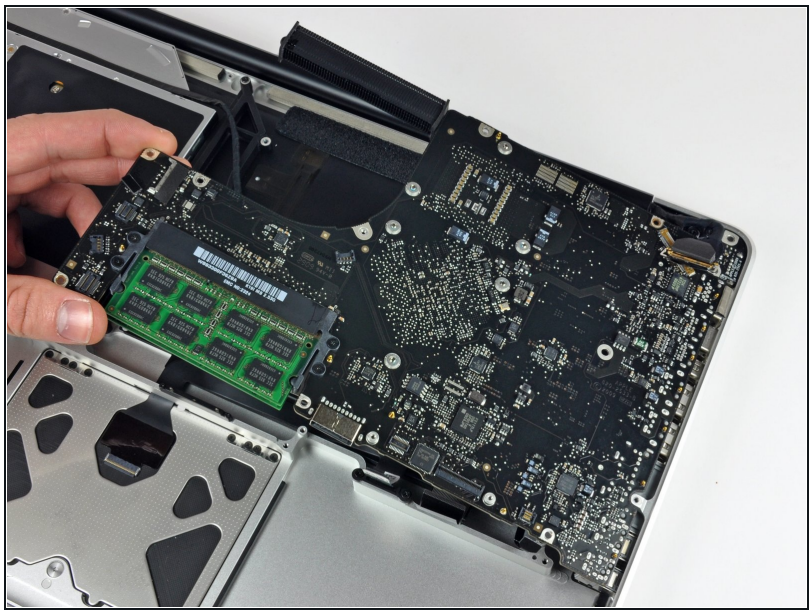
Step 23



- Remove the following screws:
  - Eight 3.5 mm T6 Torx screws securing the logic board to the upper case.
  - Two T6 Torx screws securing the DC-In board to the upper case.

⚠ Do not remove the logic board yet! There are connectors attached to the underside of the logic board that must first be disconnected.

Step 24

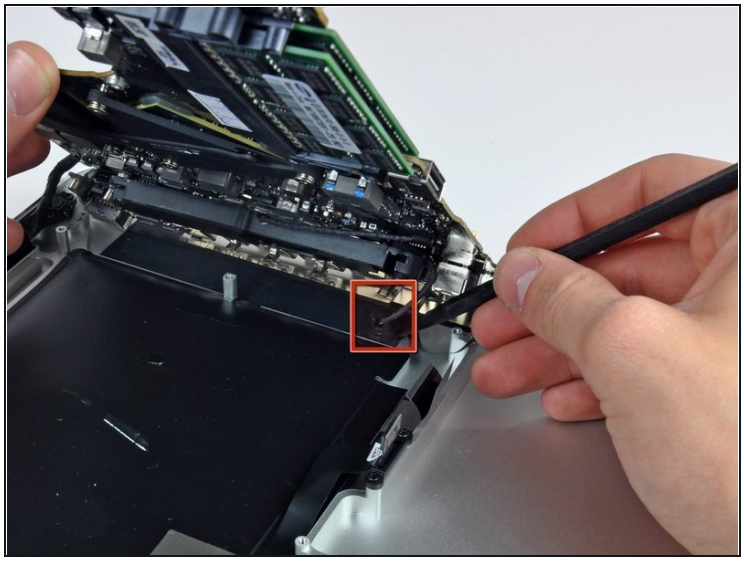


- Carefully lift the logic board assembly from the left side and work it out of the upper case, minding the port side that may get caught during removal.

⚠ Do not entirely remove the logic board yet!

ⓘ Ensure that the logic board is free from all connections to the upper case (except the battery connector) before proceeding.

Step 25

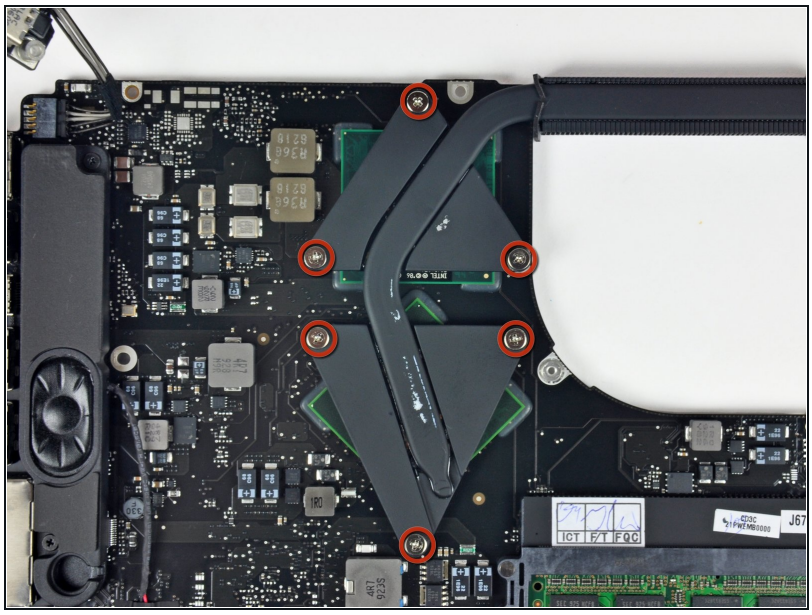


- Lift the logic board enough to gain clearance and use a spudger to pry the microphone up off the upper case.

- Slide the logic board away from the port openings and lift the assembly out of the upper case.

Before reinstalling the logic board, it is easiest to press the microphone down into its housing in the left speaker to keep it in place.

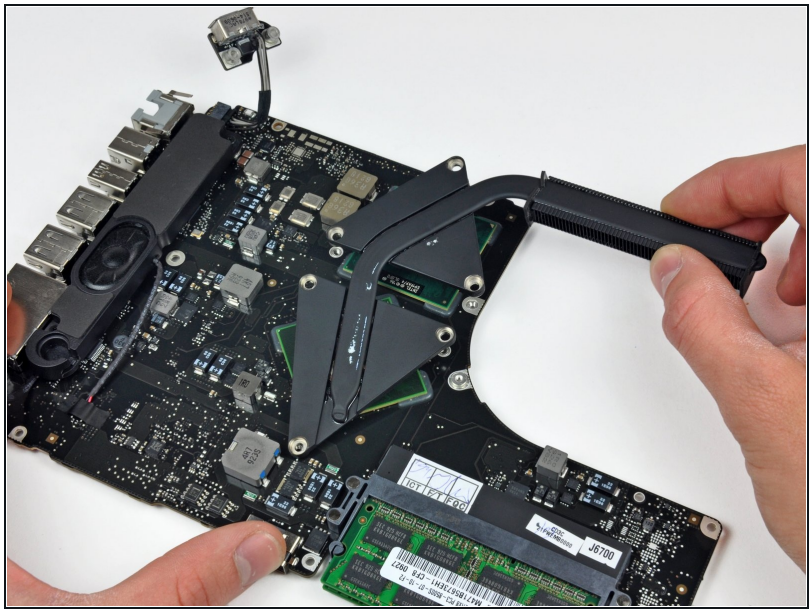
Step 26 — Heat Sink



- Remove six Phillips screws securing the heat sink to the logic board.

A spring is held under each of these screws.

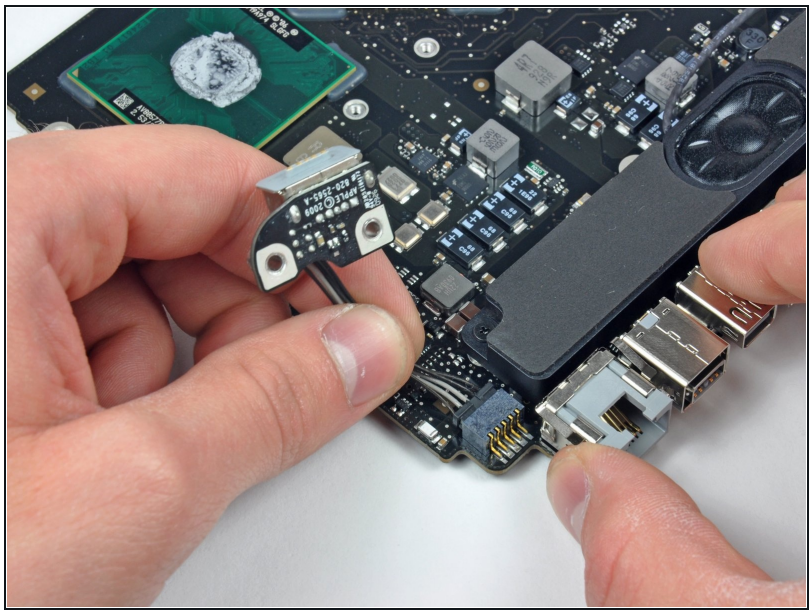
Step 27



- Gently lift the heat sink off the logic board.

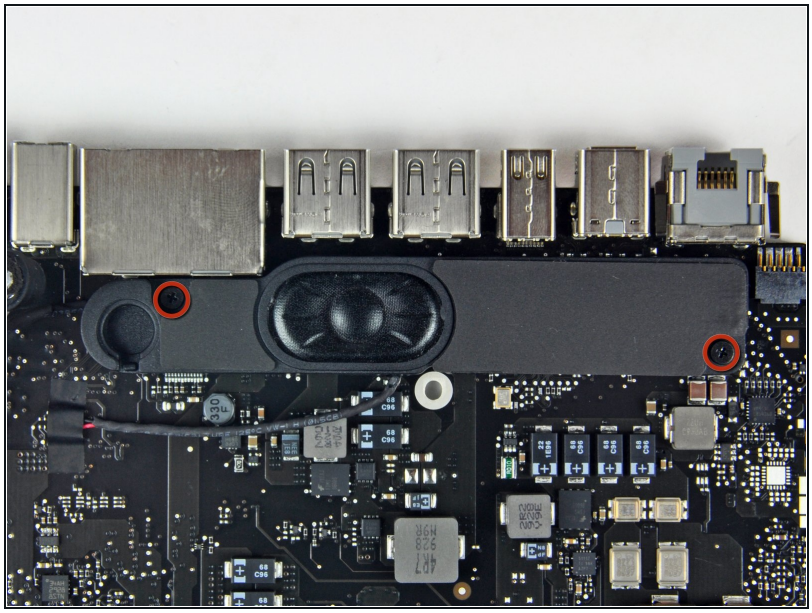
If you need to mount the heat sink back into the laptop, we have a thermal paste guide that makes replacing the thermal compound easy.

Step 28 — Logic Board



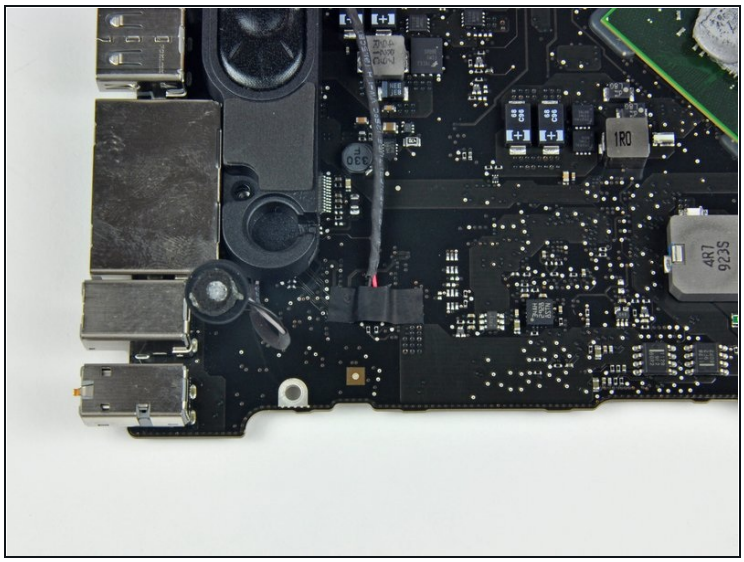
- Disconnect the DC-In Board connector from the logic board by pulling it straight away from its socket.

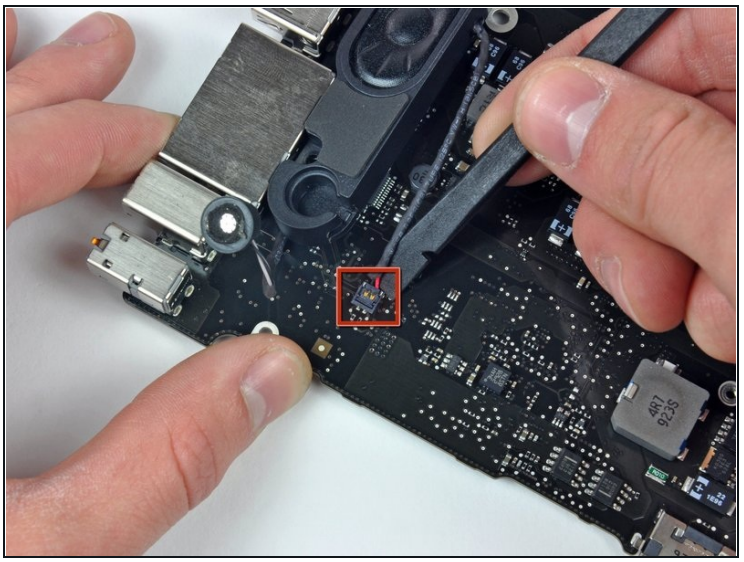
Step 29



- Remove the two 5 mm Phillips screws securing the left speaker to the logic board assembly.

Step 30

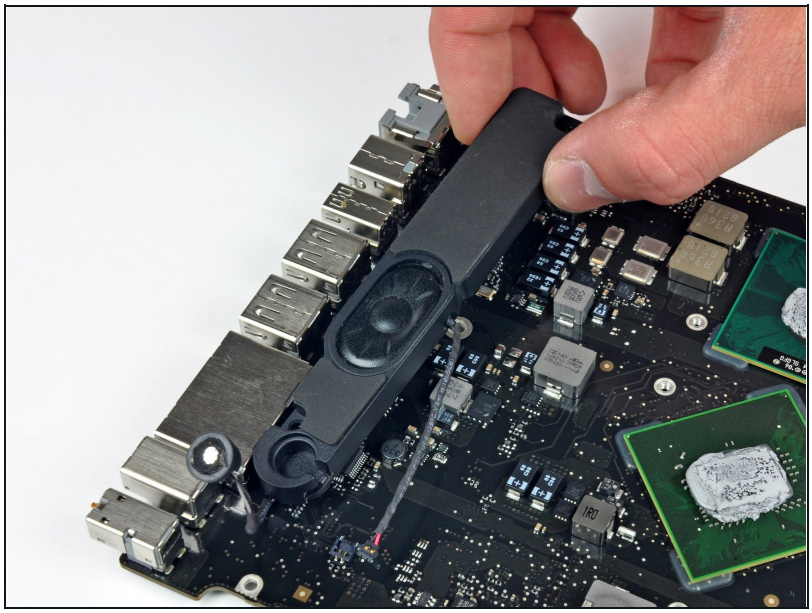




ⓘ If necessary, peel up the tape covering the left speaker connector.

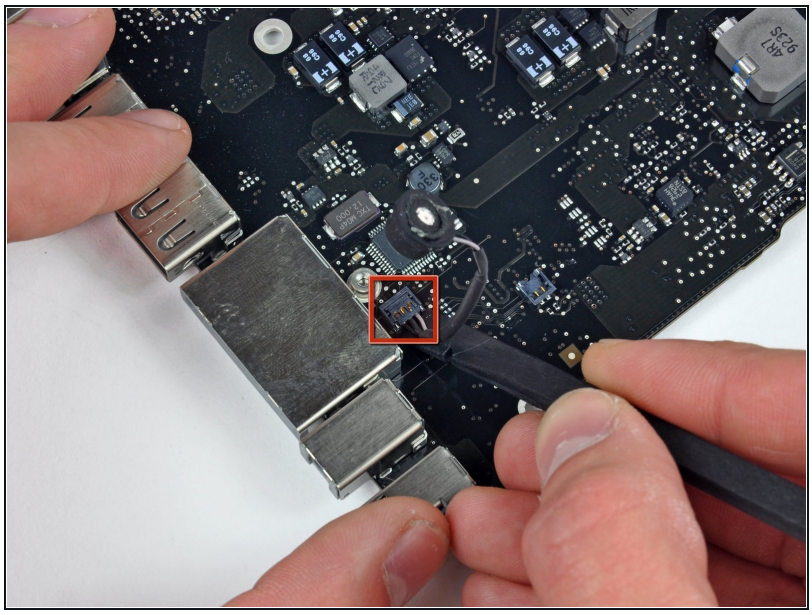
- Use the flat end of a spudger to pry the left speaker connector up off the logic board.

Step 31



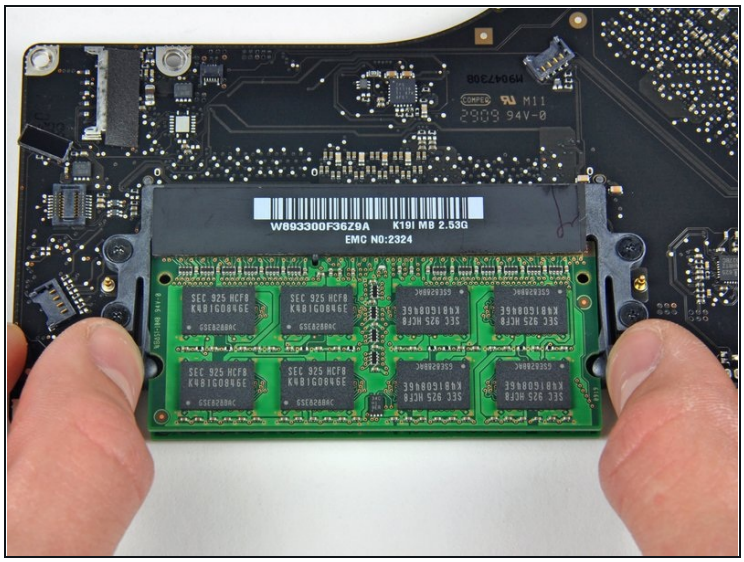
- Lift the left speaker assembly out of the logic board.

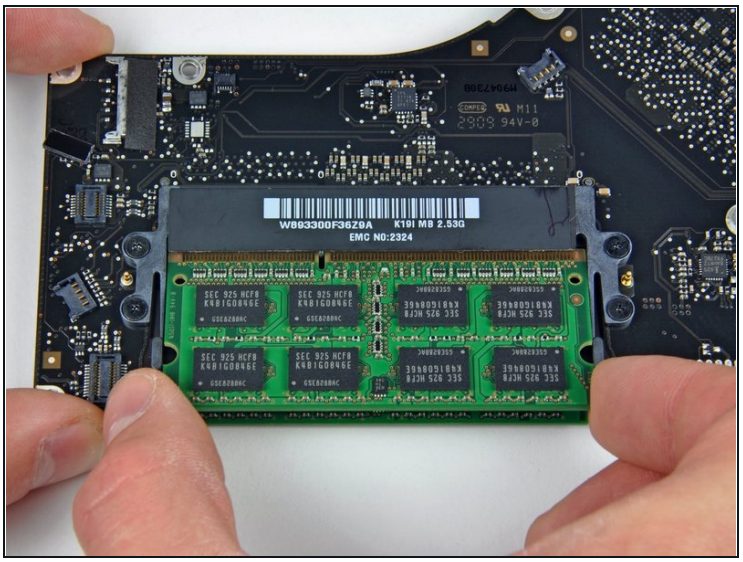
Step 32



- Use a spudger to pry the microphone cable connector up off the logic board.

Step 33





- Release the tabs on each side of the RAM chip by simultaneously pushing each tab away from the chip.

ⓘ These tabs lock the chip in place and releasing them will cause the chip to "pop" up.

- After the RAM chip has popped up, pull it straight out of its socket.

Repeat this process if a second RAM chip is installed.

When reinstalling your logic board, don't forget to apply a new layer of thermal paste.

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