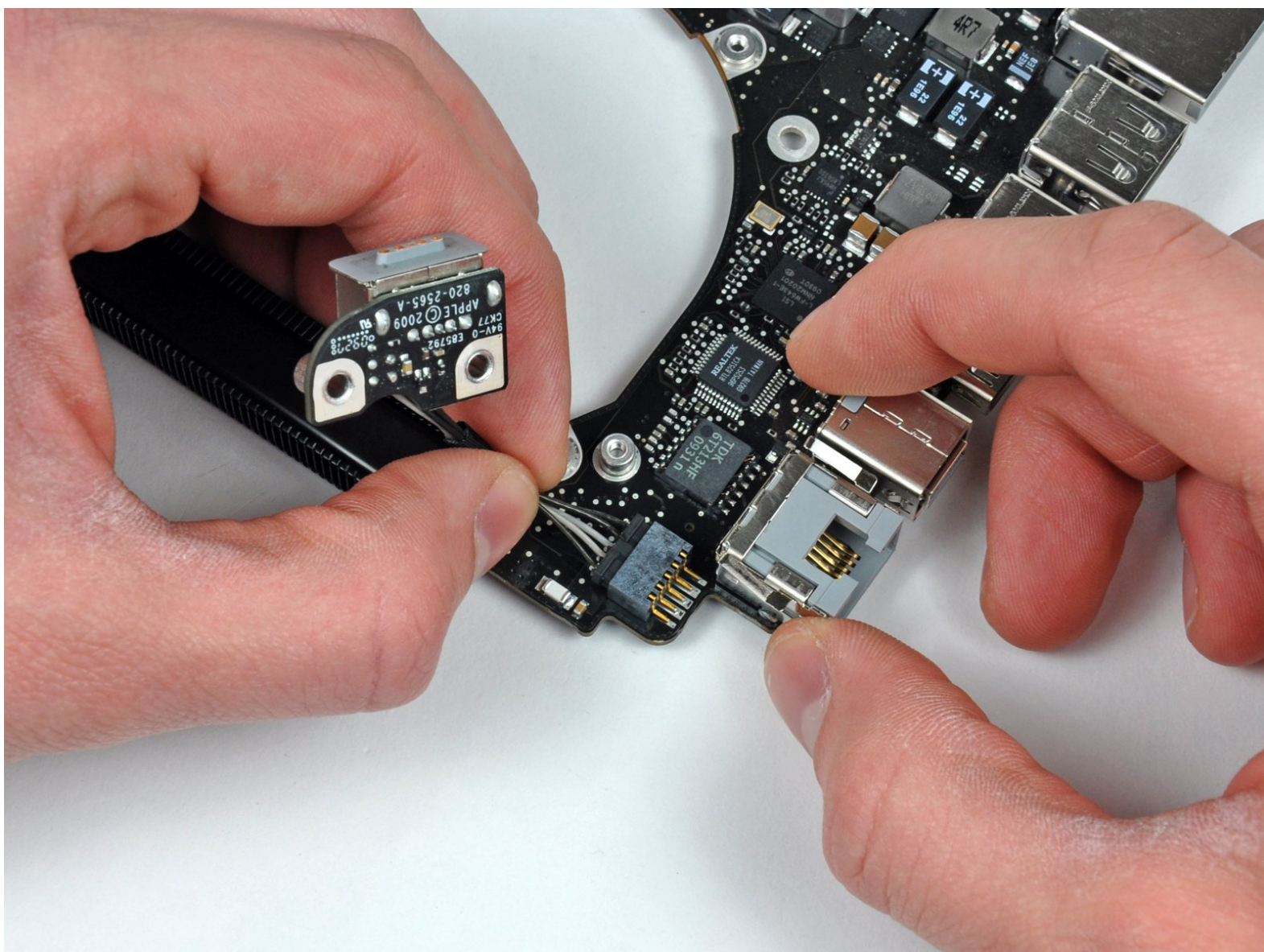




# MacBook Pro 15" Unibody Mid 2009 Logic Board Replacement

Replace the logic board in your MacBook Pro 15" Unibody Mid 2009.

Written By: Andrew Bookholt



# INTRODUCTION

Use this guide to replace your bare logic board.



## TOOLS:

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



## PARTS:

- [MacBook Pro 15" Unibody \(Mid 2009\) 2.66 GHz Logic Board](#) (1)
- [MacBook Pro 15" Unibody \(Mid 2009\) 2.8 GHz Logic Board](#) (1)
- [MacBook Pro 15" Unibody \(Mid 2009\) 3.06 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.

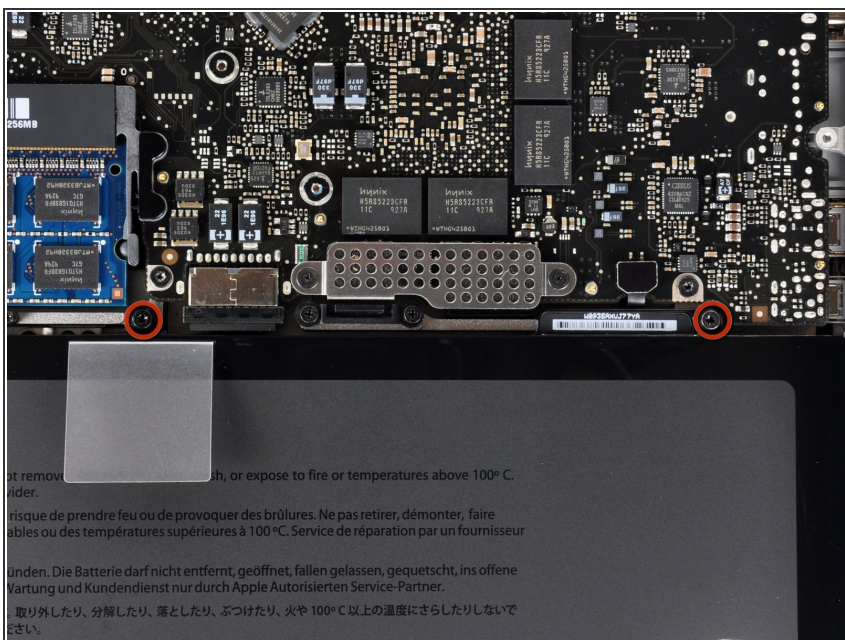
## Step 2



- 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



- Remove the two [5-Point Pentalobe](#) screws along the top edge of the battery.
- ⓘ You do not necessarily have to follow steps 3-6 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.

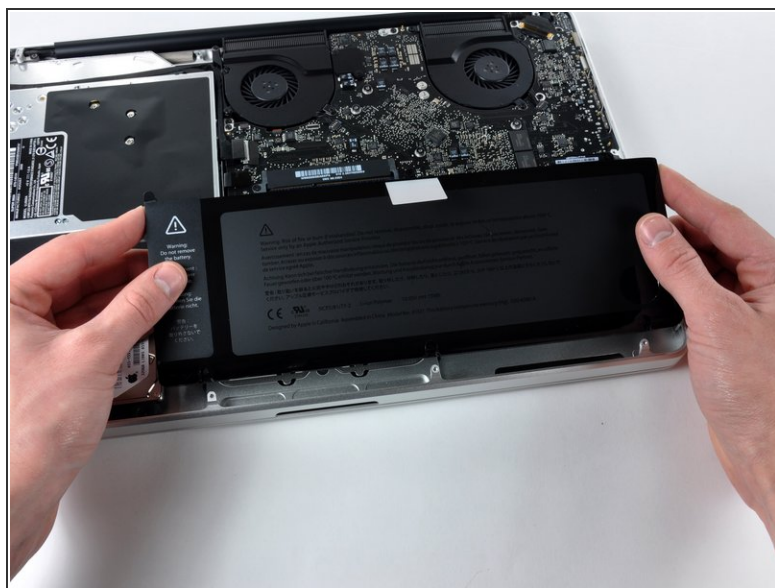


## Step 4



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

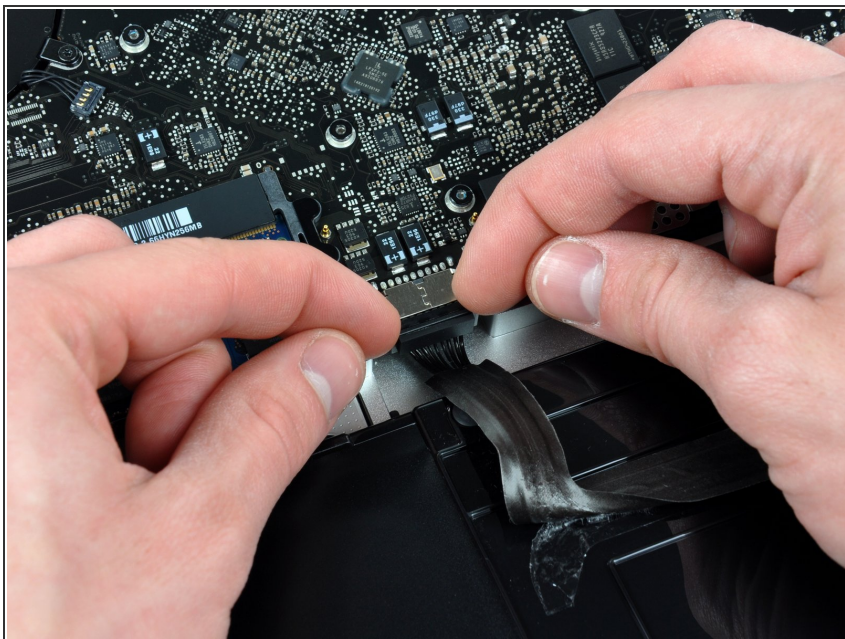
## Step 5



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

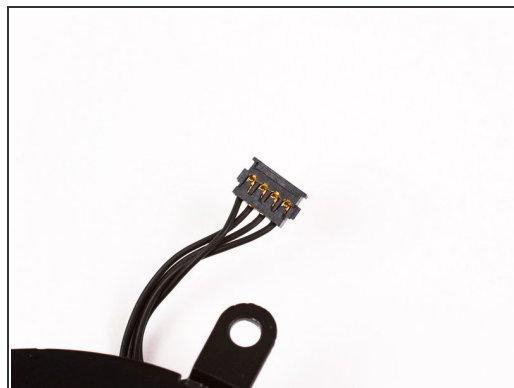
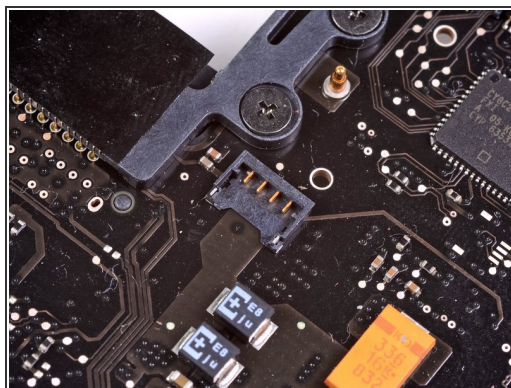
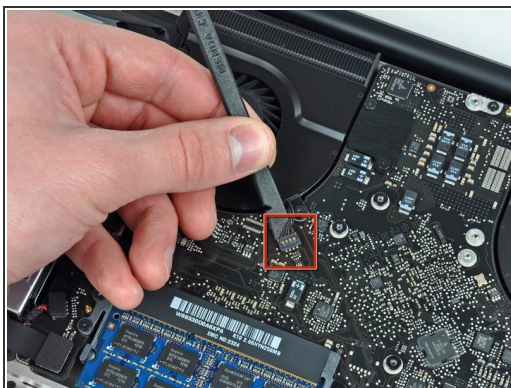
⚠ Do not try to completely remove the battery just yet.

## Step 6



- 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 after installation.

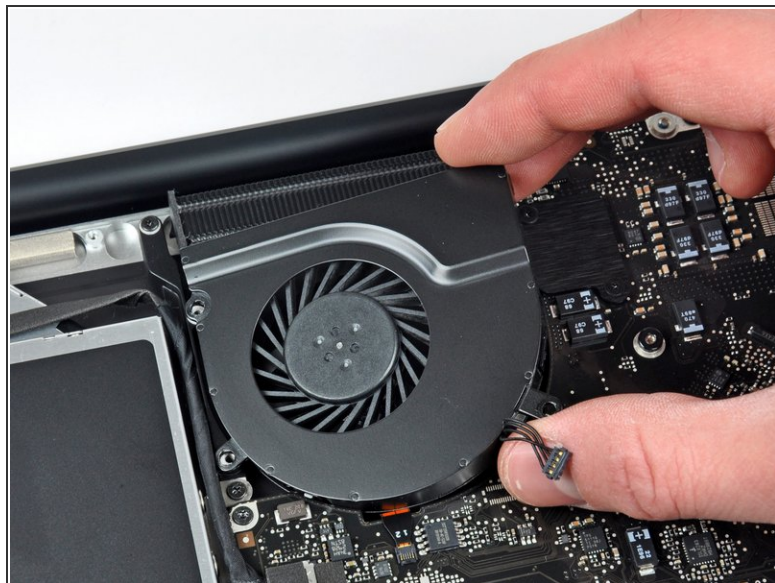
## Step 7 — Logic Board



- Use a spudger to pry the fan connector straight up off 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.

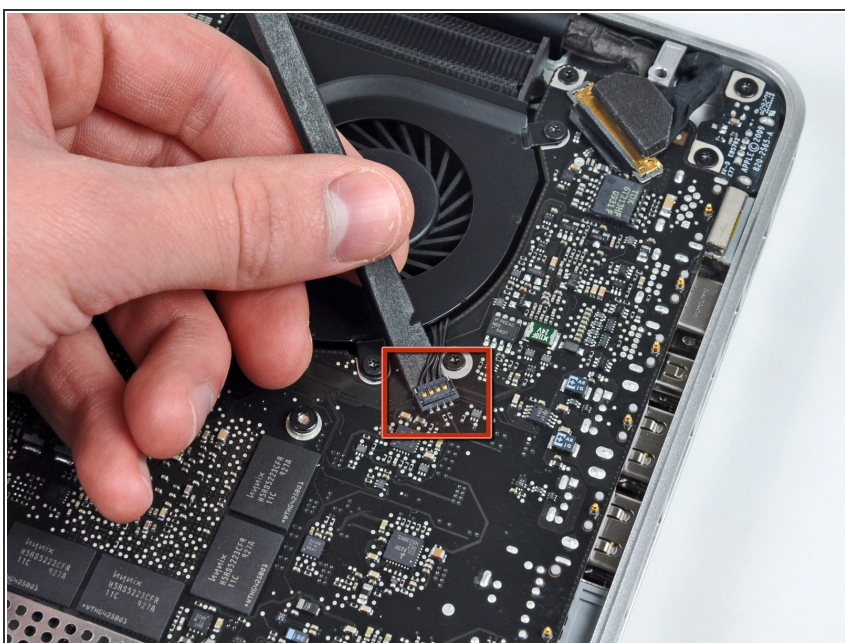


## Step 8



- Remove the three T6 Torx screws securing the left fan to the logic board.
- Lift the fan out of the upper case.

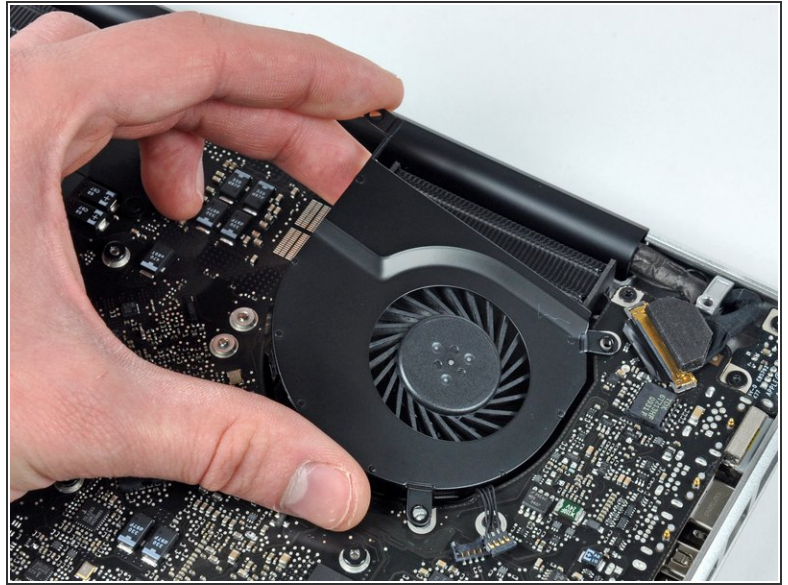
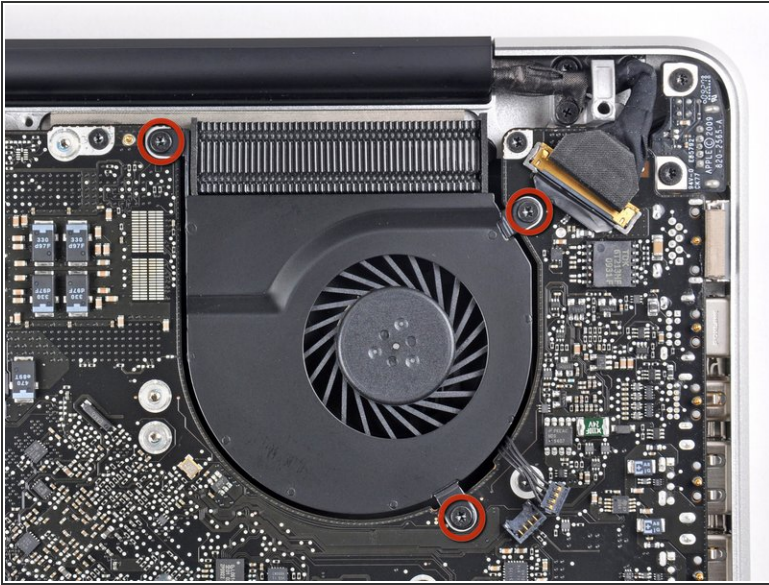
## Step 9



- Use the flat end of a spudger to disconnect the left fan connector from the logic board.
- ☑ Pry up from beneath the wires.

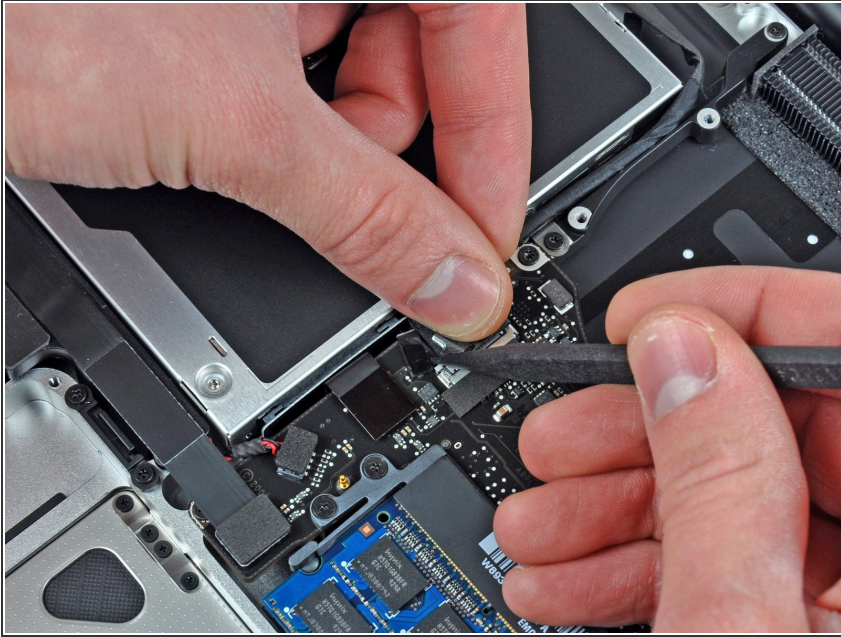


## Step 10



- Remove the three T6 Torx screws securing the left fan to the logic board.
- Lift the left fan out of the upper case.

## Step 11



**i** The camera cable connector is not secured by any locking or snapping mechanism. Hence, Apple sticks a small strip of black plastic with adhesive applied to the side facing the logic board behind the camera cable connector to keep it in its socket.

**!** When moving the strip (cable retainer) out of the way, be sure not to break any surface-mounted components off the logic board.

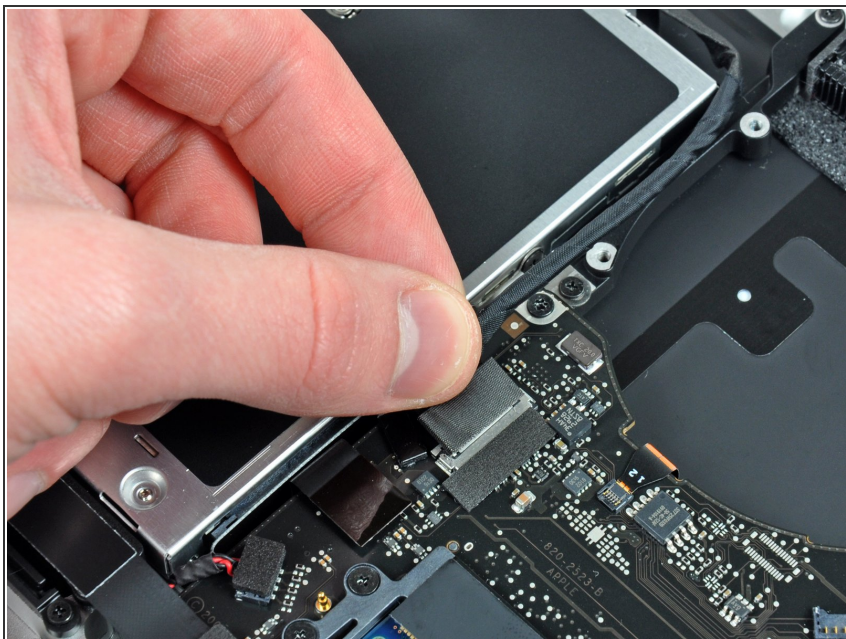
- Hold the end of the cable retainer down with one finger while you use the tip of a spudger to slightly lift the other end and rotate it away from the camera cable connector.

- 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 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.

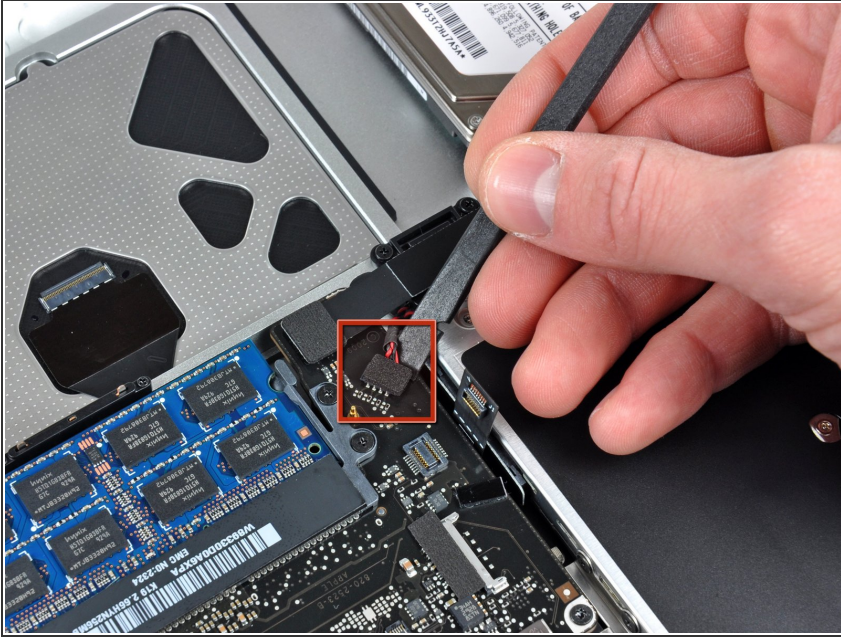
## Step 13



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



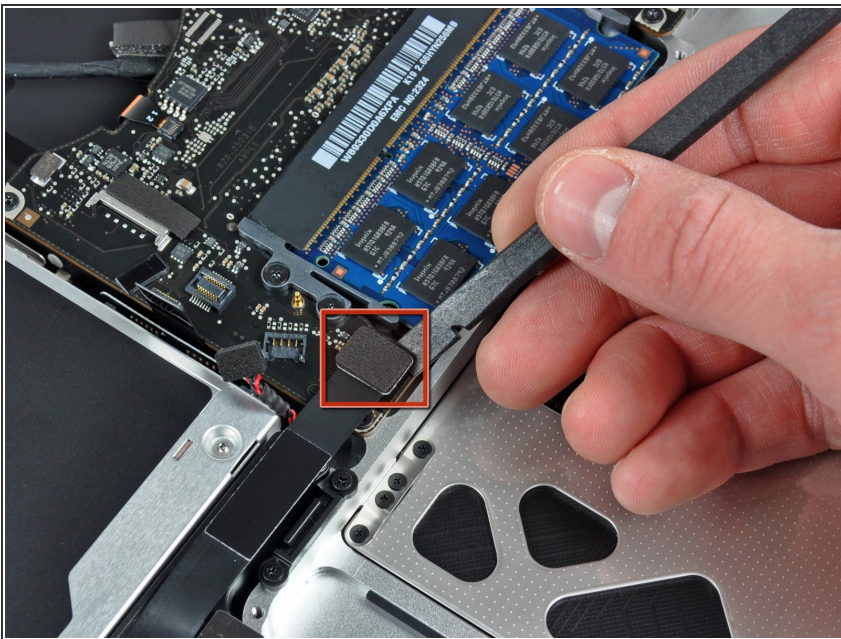
## Step 14



- Using the flat end of a spudger, pry the subwoofer connector straight up from the connector jack.

- ⚠ Be careful to pry the connector, not the socket. It's possible to accidentally pry the socket up from the logic board.
- ⓘ Removing the foam applied to the top of the connector will make it easier to see and avoid prying up the socket.

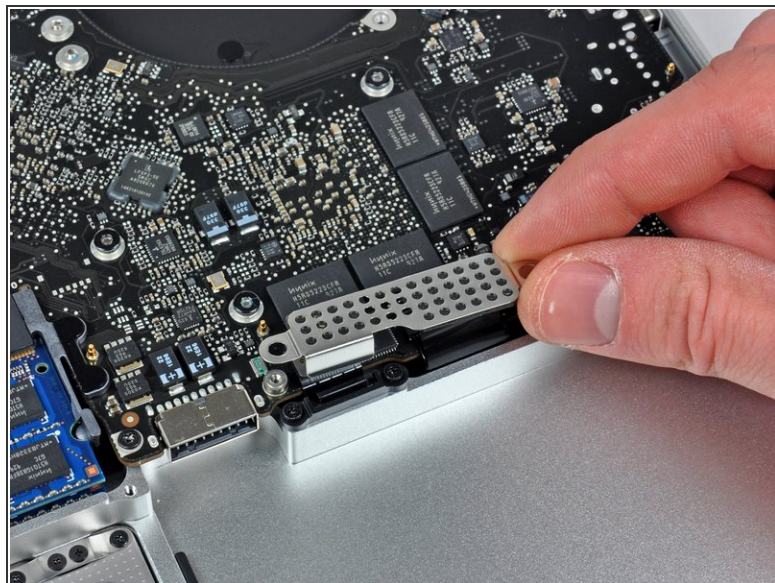
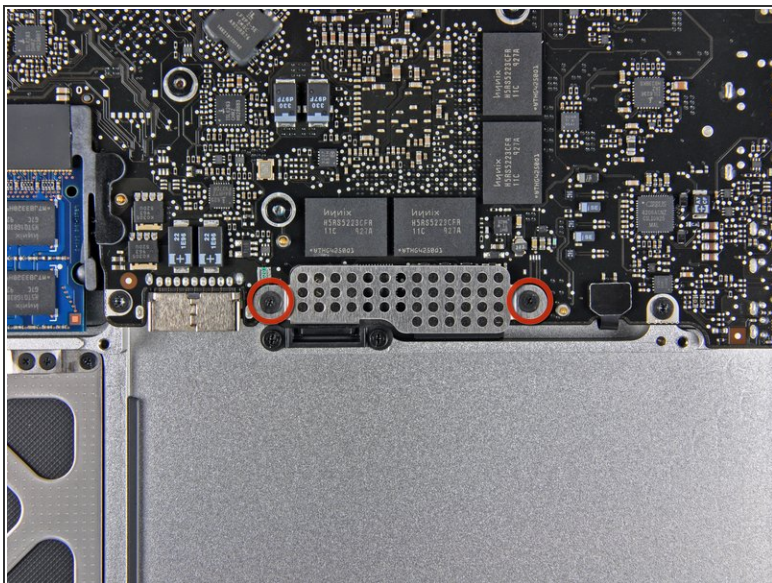
## Step 15



- 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.

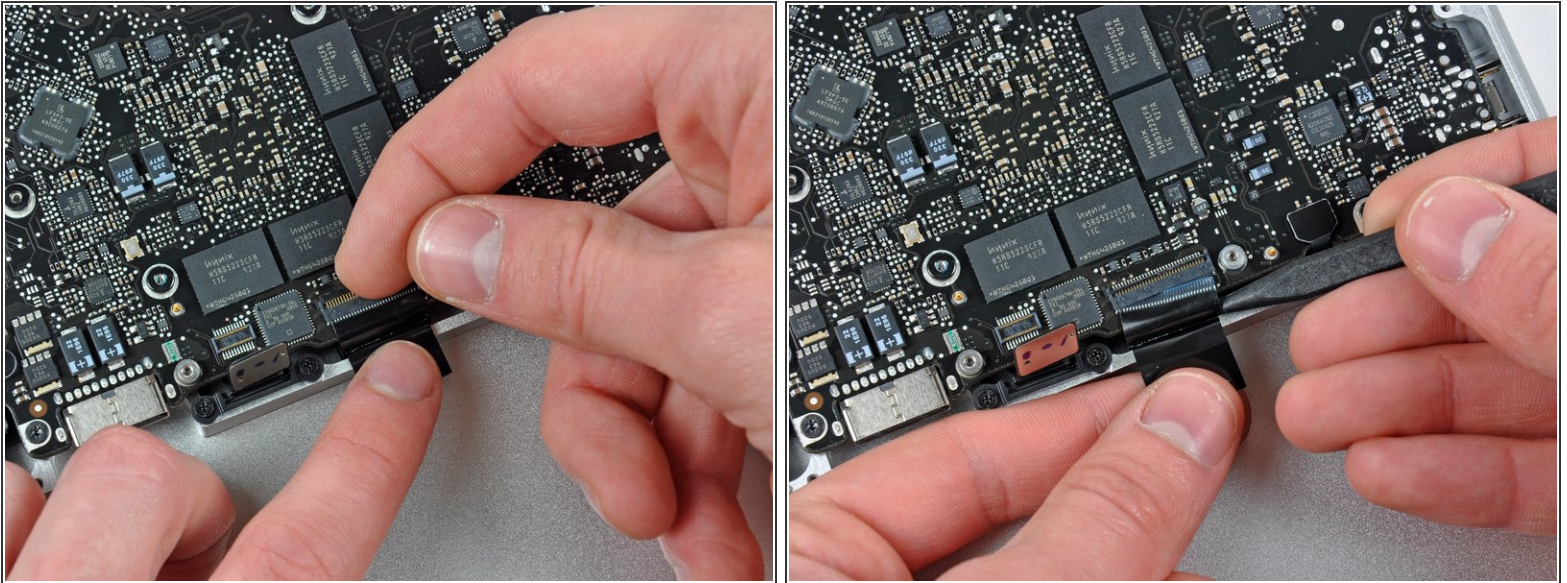
## Step 17



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



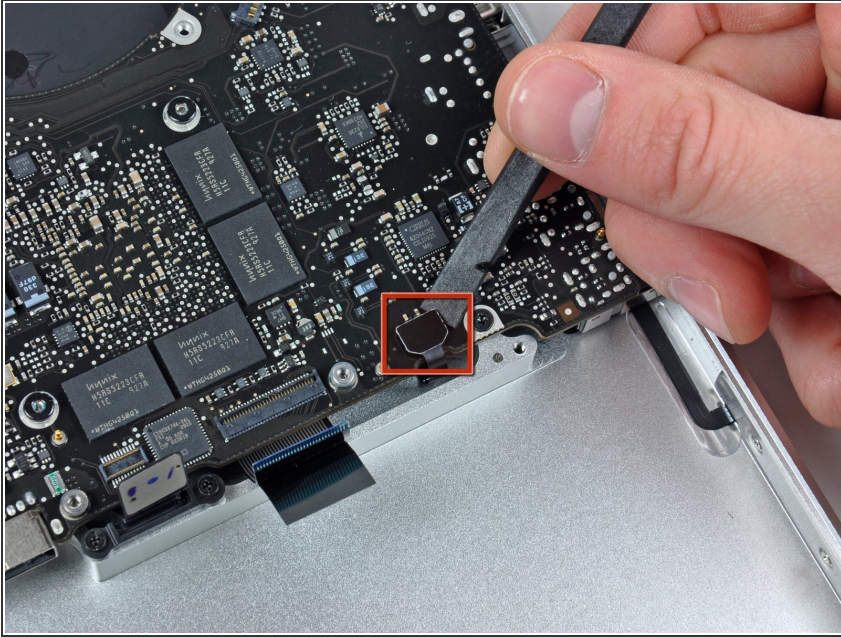
## Step 18



- Use your fingernail to flip up the locking flap on the ZIF socket for the keyboard ribbon cable. The locking flap is located at the opposite side of the socket compared to the keyboard ribbon cable. Hook your fingernail under it and carefully lift it up vertically.
- ⚠ Do not attempt to slide the keyboard ribbon cable out of its socket before you have unlocked the ZIF socket. Ribbon cables are fragile and excessive force will easily break them.
- Use the tip of a spudger to slide the keyboard ribbon cable out of its socket.

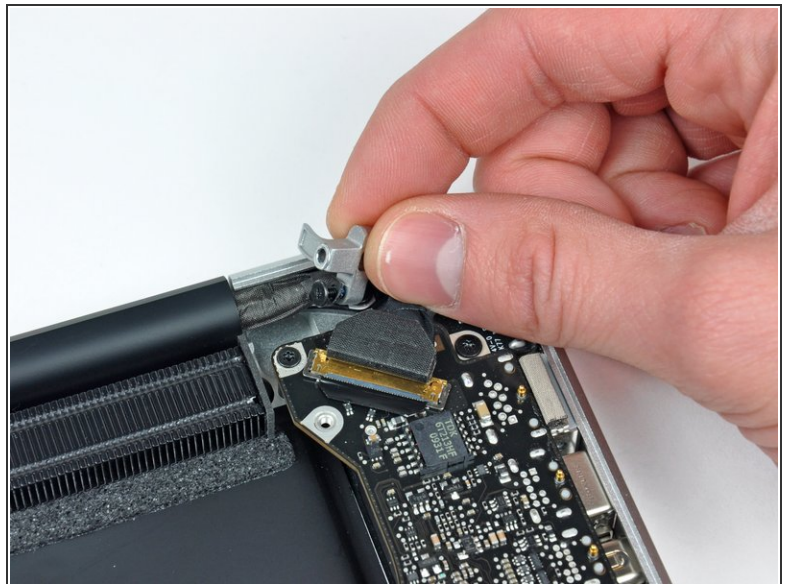


## Step 19



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

## Step 20

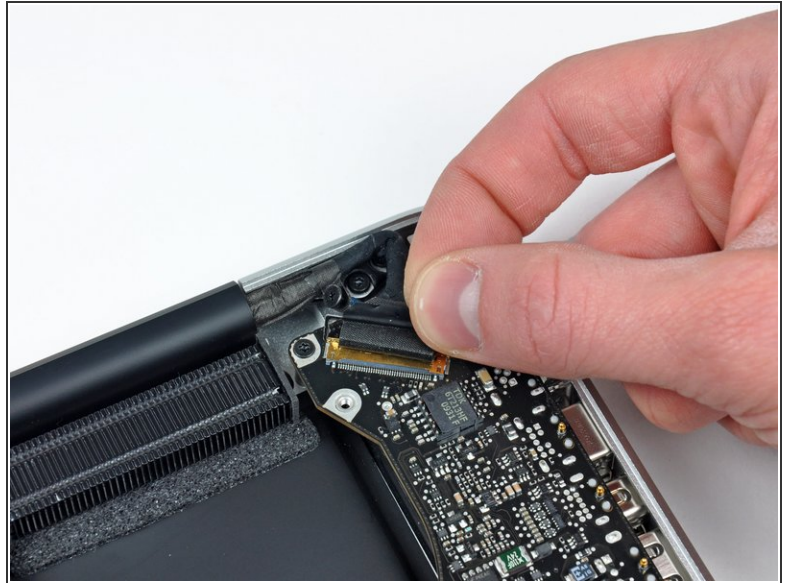
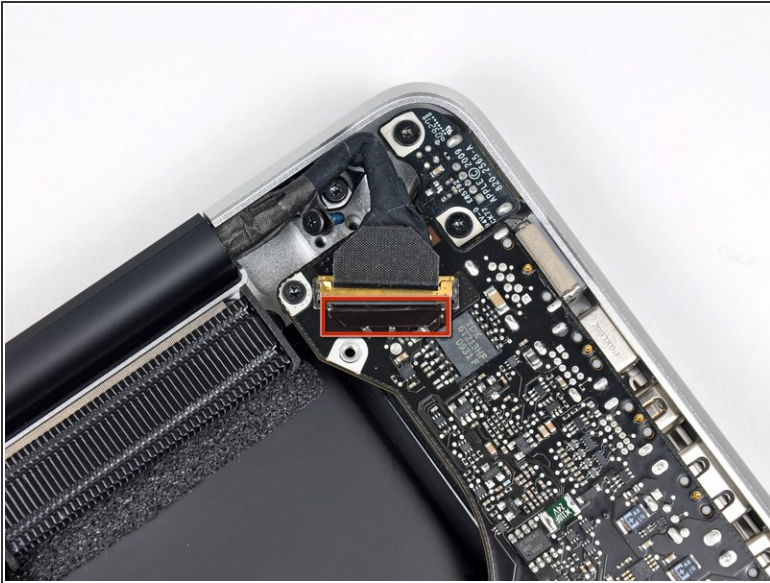


- Remove the single 7 mm Phillips screw securing the display data cable retainer to the upper case.
- ☞ This screw may remain captive in the display data cable ground loop. If replacing the display, be sure to transfer this screw to the new unit.
- Remove the display data cable retainer from the upper case.

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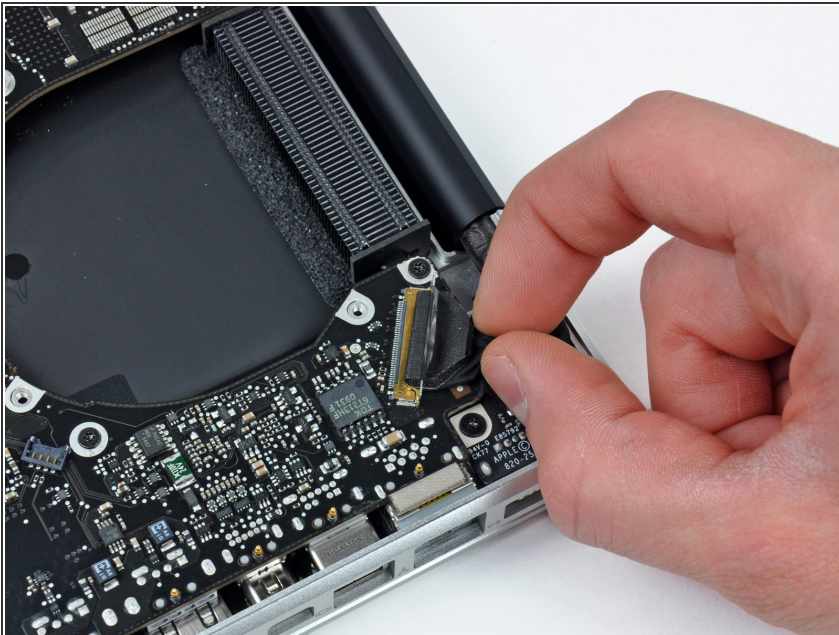


## Step 21



- Grab the plastic pull tab secured to the display data cable lock and rotate it toward the DC-in side of the computer.

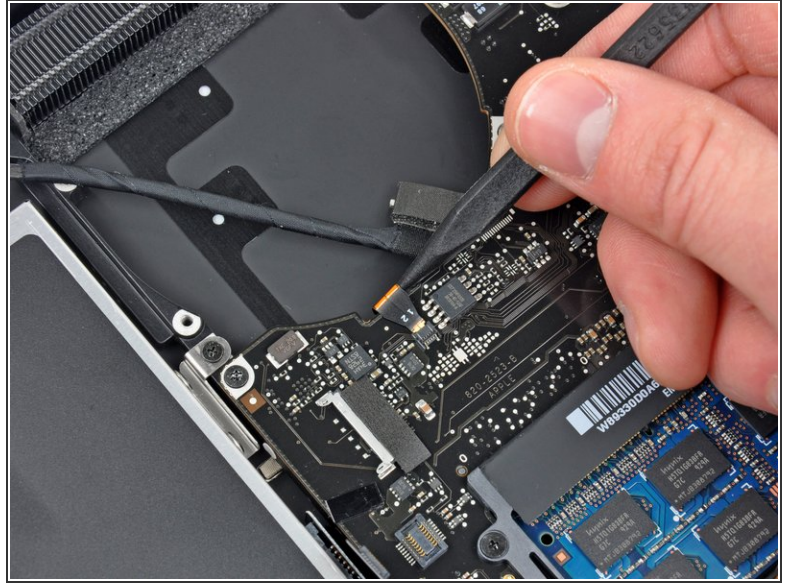
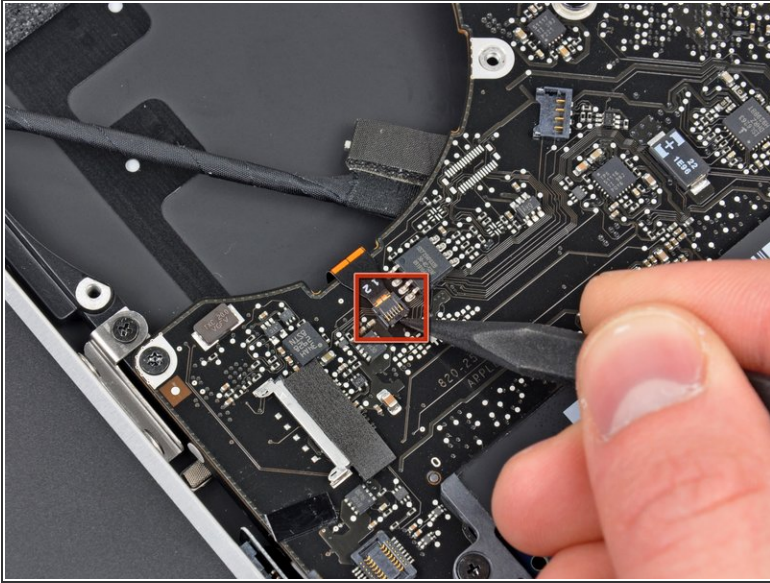
## Step 22



- 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.

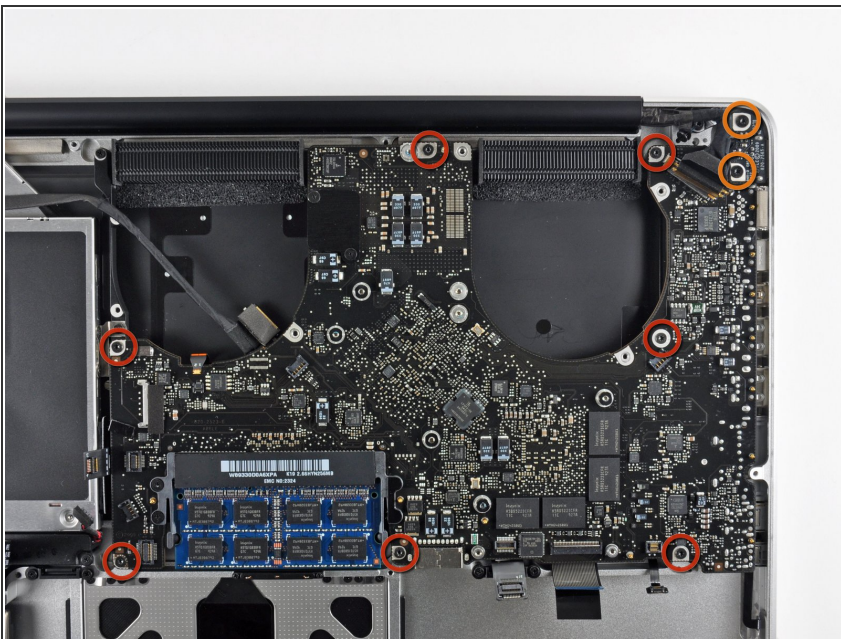


## Step 23




- 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 24



- Remove the following screws:
  - Seven 3.3 mm T6 Torx screws securing the logic board to the upper case.
  - Two 8 mm T6 Torx screws securing the DC-In board to the upper case.


 Do not remove the logic board yet! There are components on the underside of the logic board attached to the the upper case that must first be disconnected.



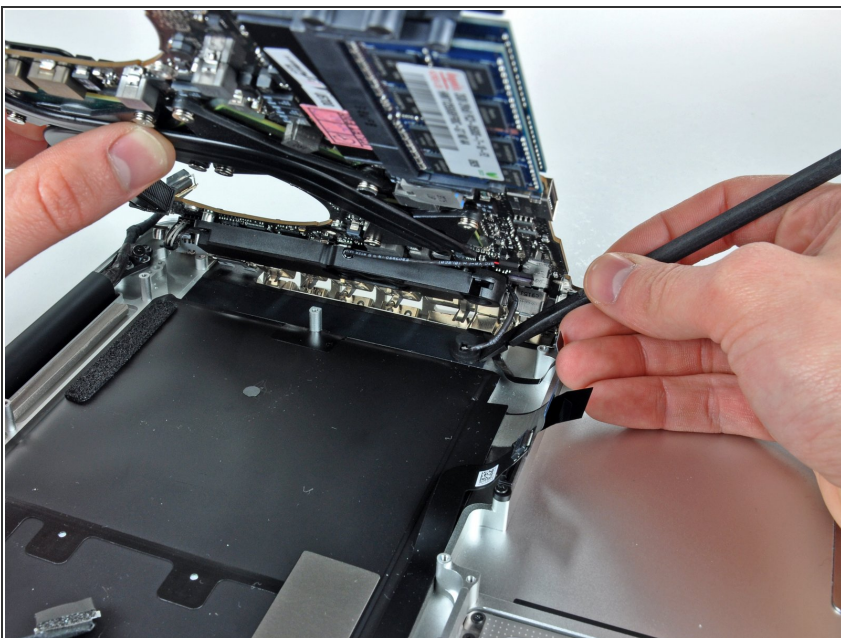
## Step 25




- 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!

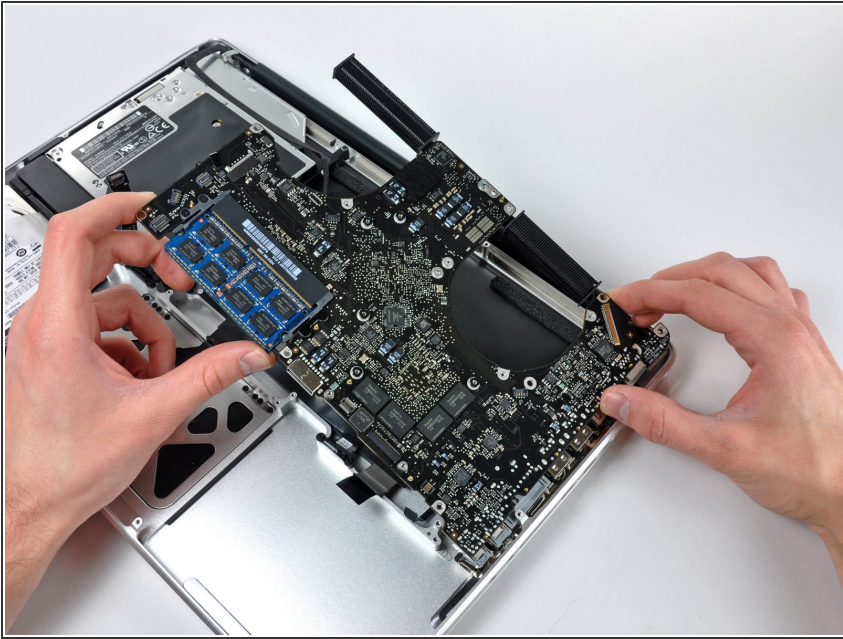
## Step 26



- 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.

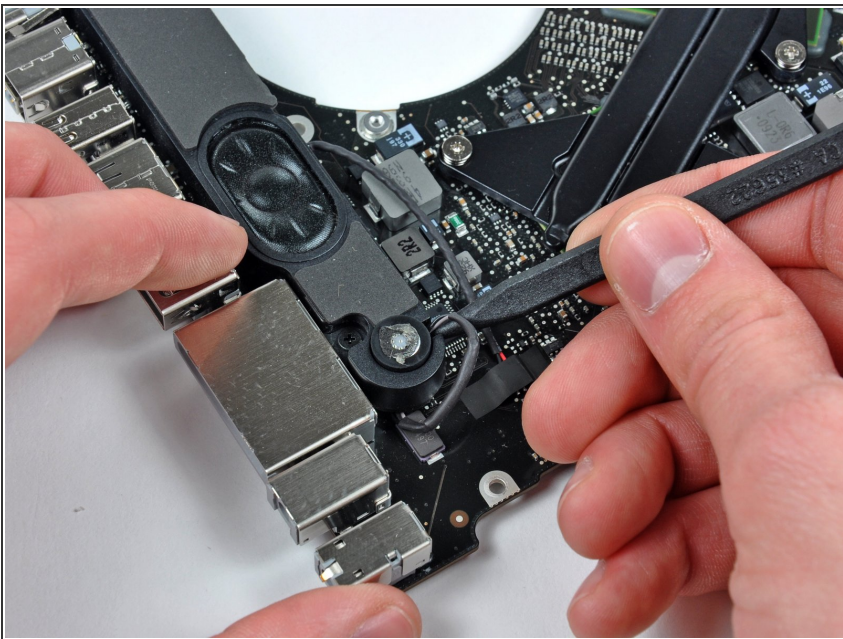
 Before reinstalling the logic board, it is easiest to press the microphone down into its housing in the left speaker to keep it in place.

## Step 27



- 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

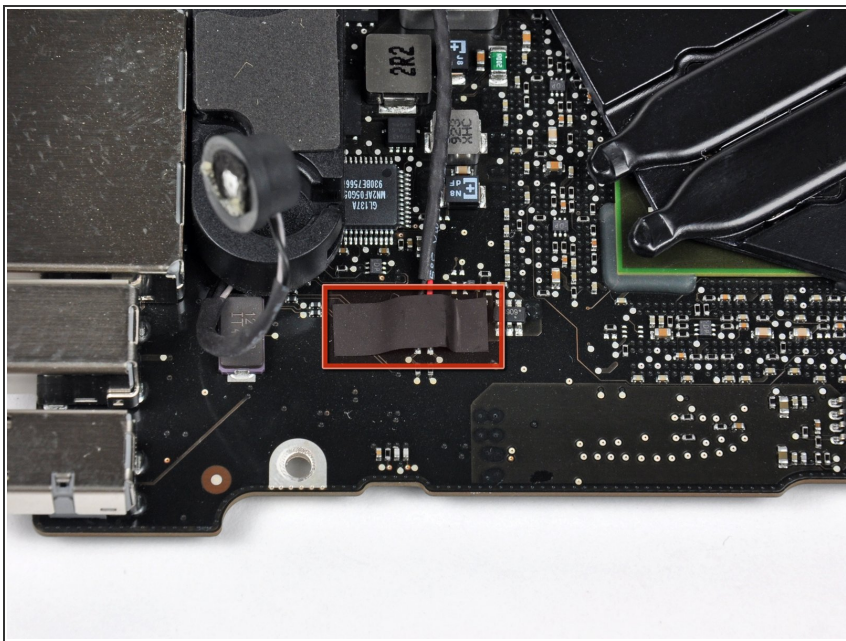
## Step 28 — Left Speaker



- ⓘ If your microphone is still inserted into its void in the left speaker housing, use the tip of a spudger to lift it out.

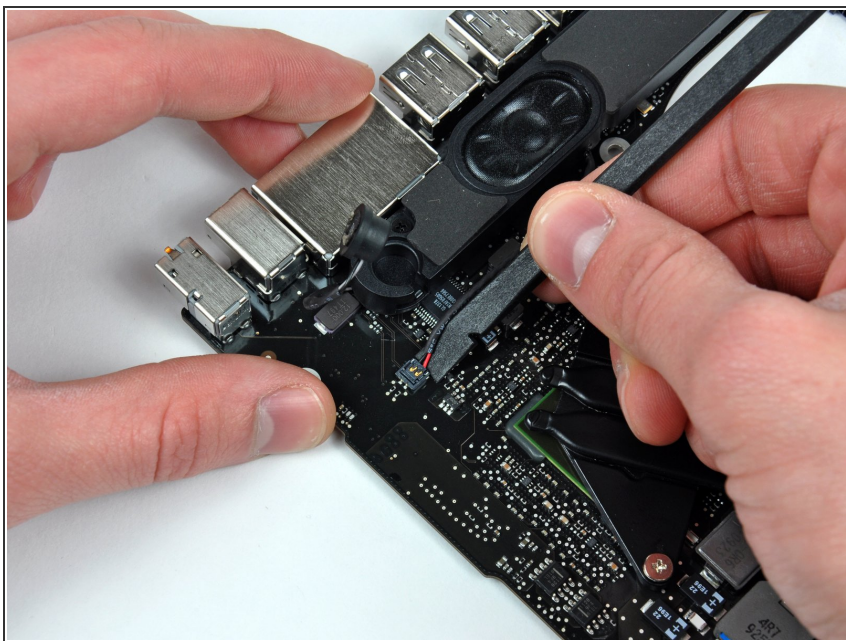


## Step 29



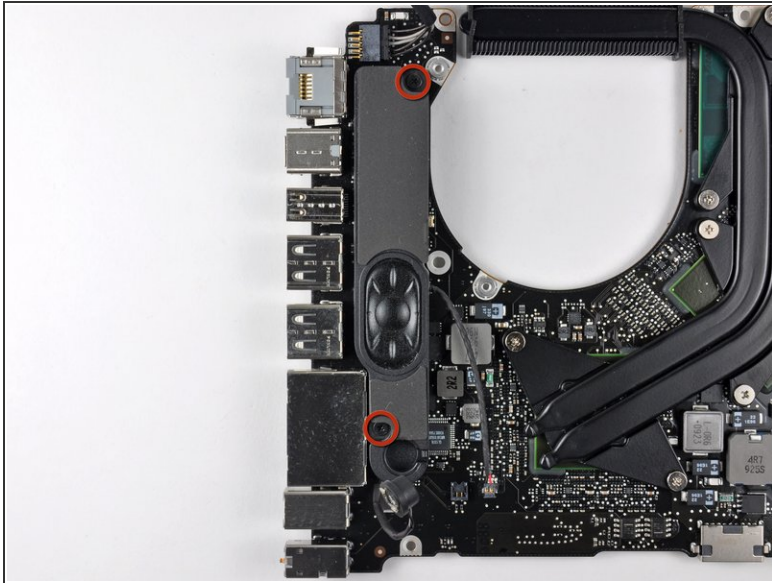
- Remove the small strip of tape covering the left speaker connector.

## Step 30



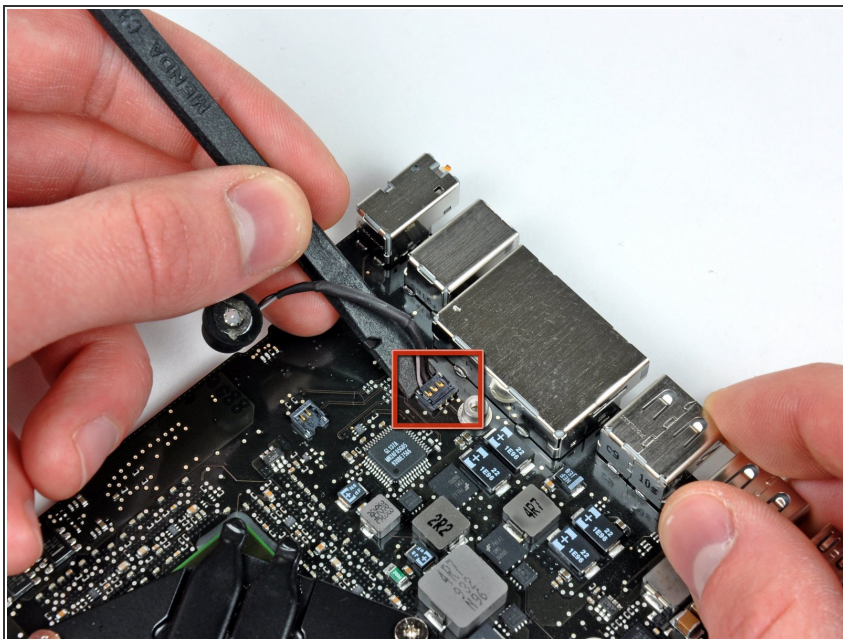
- Use the flat end of a spudger to pry the left speaker connector up off its socket on the logic board.
- ⓘ Pry up from beneath the wires.

## Step 31



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

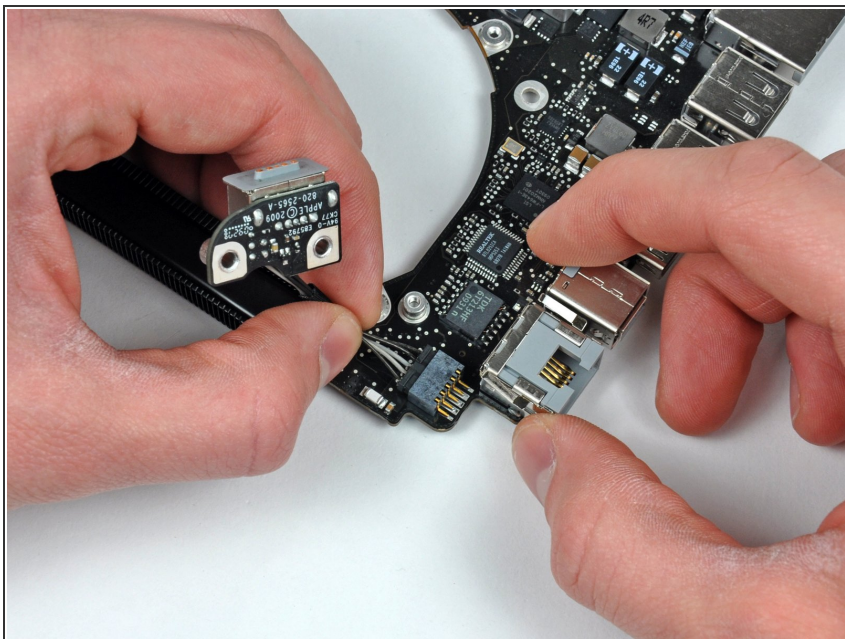
## Step 32 — Microphone



- Use the flat end of a spudger to pry the microphone cable connector up off its socket on the logic board.
- ⓘ Pry up from beneath the wires.

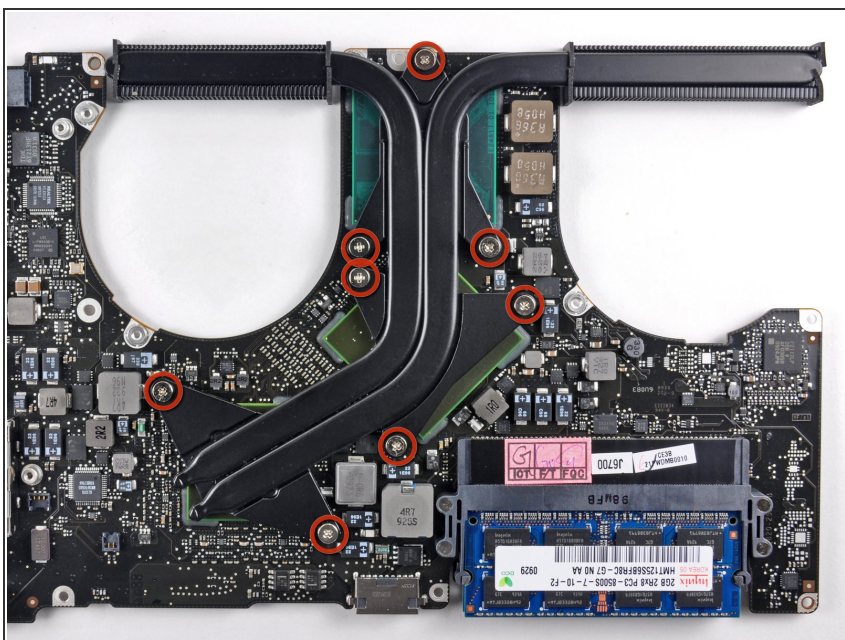


## Step 33 — Logic Board



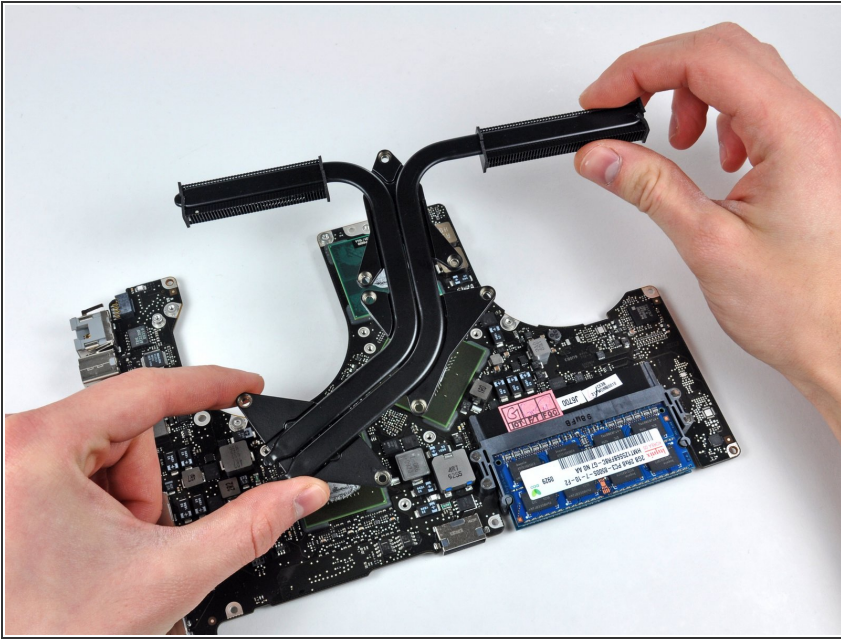
- Disconnect the DC-In Board connector from the logic board by pulling it straight away from its socket.

## Step 34



- Remove the eight Phillips screws securing the heat sink to the logic board.
- ⓘ Keep track of the springs under each of the screws as you remove them.
- ⚠ Do not press down on the screws excessively while breaking them free.

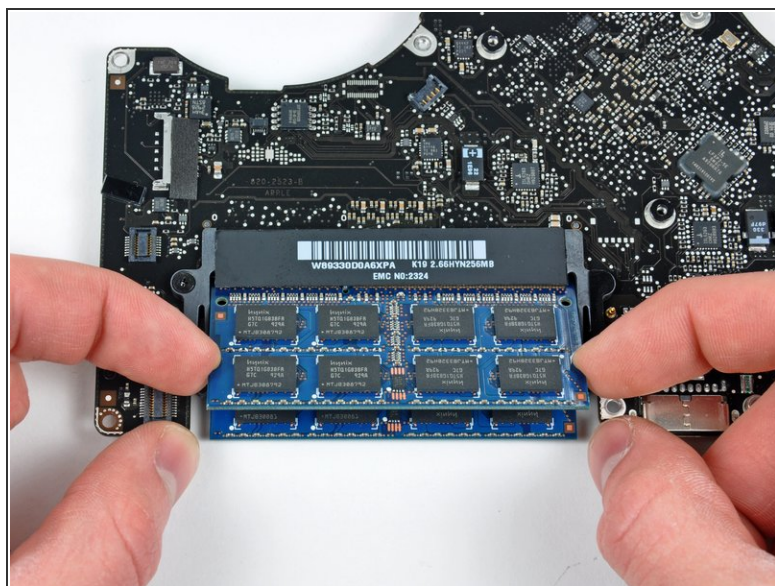
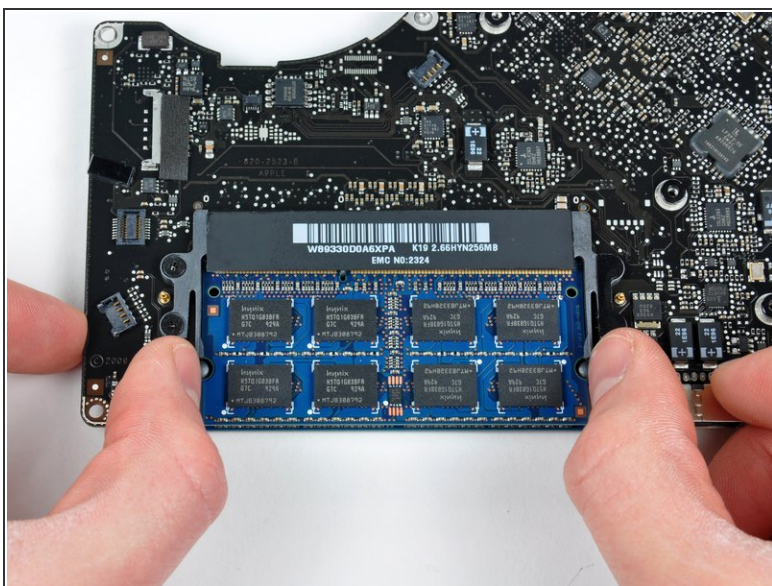
## Step 35



- Carefully lift the heat sink off the logic board.
- ⓘ If the heat sink appears to be stuck to the logic board after removing all eight screws, it may be helpful to use a spudger to separate the two components.
- ★ When reinstalling your logic board, don't forget to apply a new layer of [thermal paste](#) to the face of each processor.



## Step 36



- 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.

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