

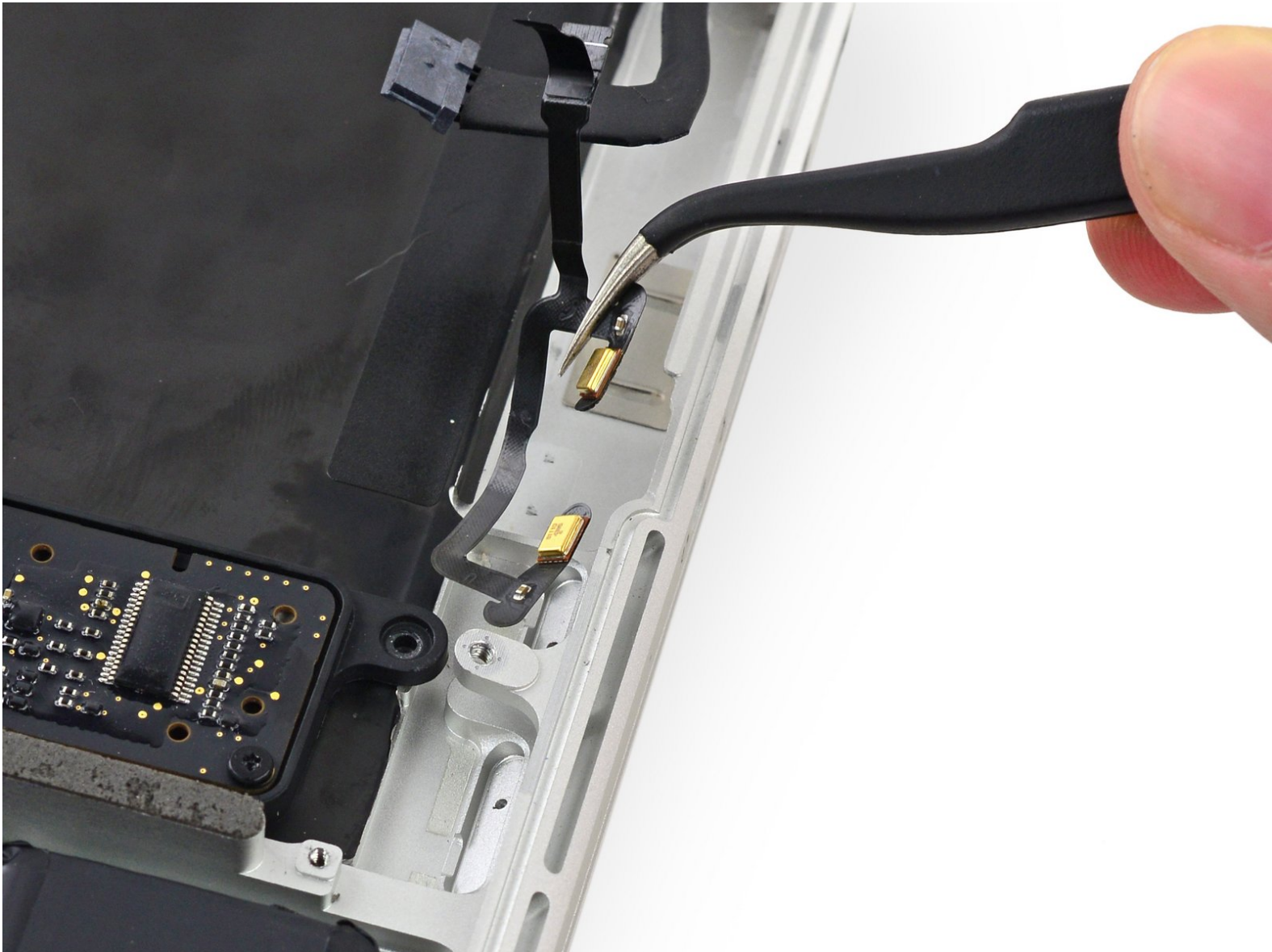


MacBook Pro 13" Retina Display Late 2013

Dual Microphone Assembly Replacement

Replace the Dual Microphone Assembly in your MacBook Pro 13" Retina Display Late 2013.

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INTRODUCTION

Use this guide to replace the microphone cable.

This guide requires the removal of the heat sink and logic board. Don't forget to follow our [thermal paste application guide](#) before you reinstall your heat sink.

TOOLS:

- [P5 Pentalobe Screwdriver Retina MacBook Pro and Air](#) (1)
 - [Spudger](#) (1)
 - [Arctic Silver ArctiClean](#) (1)
 - [Arctic Silver Thermal Paste](#) (1)
 - [Phillips #000 Screwdriver](#) (1)
 - [T5 Torx Screwdriver](#) (1)
 - [Tweezers](#) (1)
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Step 1 — Lower Case



- Remove the following ten screws securing the lower case to the upper case:
 - Two 2.3 mm P5 Pentalobe screws
 - Eight 3.0 mm P5 Pentalobe screws
- ☑ Throughout this repair, [keep track of each screw](#) and make sure it goes back exactly where it came from to avoid damaging your device.

Step 2



- Wedge your fingers between the upper case and the lower case.
- Gently pull the lower case away from the upper case to remove it.

Step 3



-  The lower case is connected to the upper case with two plastic clips near its center.
-  During reassembly, gently push down the center of the lower case to reattach the two plastic clips.

Step 4 — Battery Connector



-  If necessary, remove the plastic cover adhered to the battery contact board.

Step 5



- Use the flat end of a spudger to lift the battery connector straight up out of its socket on the logic board.

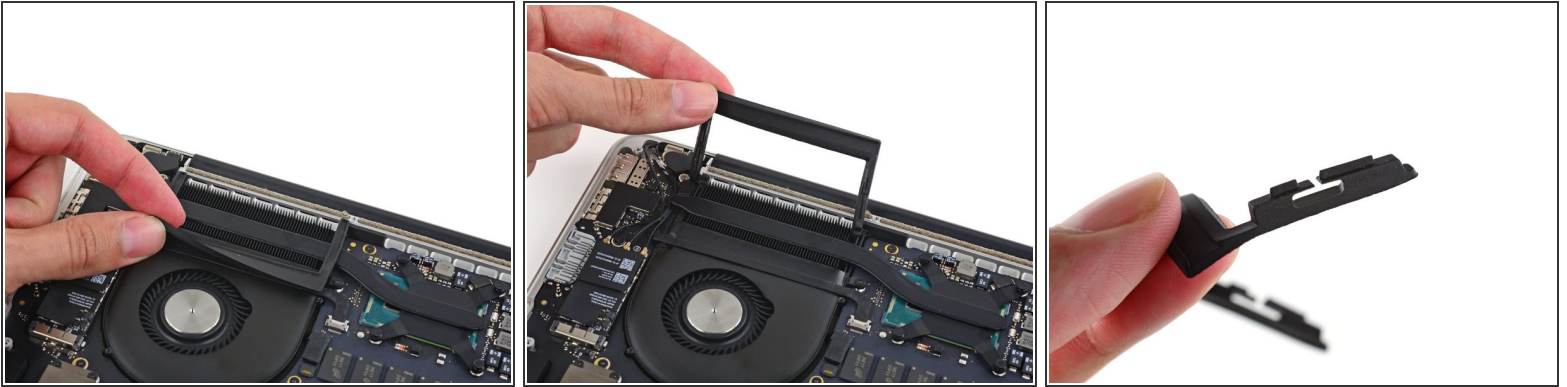
⚠ Be sure you lift up only on the connector itself, **not** the socket, or you risk permanent damage to the logic board.

Step 6



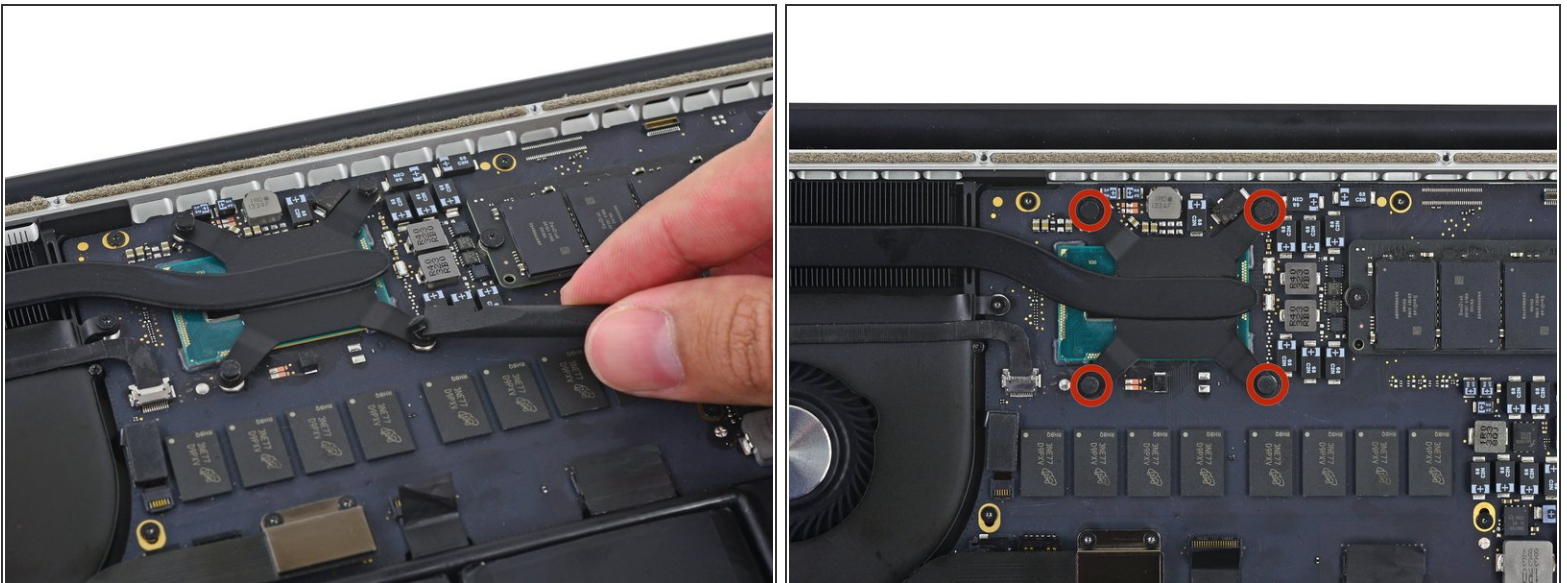
- ☑ Bend the battery connector up out of the way to prevent accidental contact with its socket during your repair.

Step 7 — Heat Sink



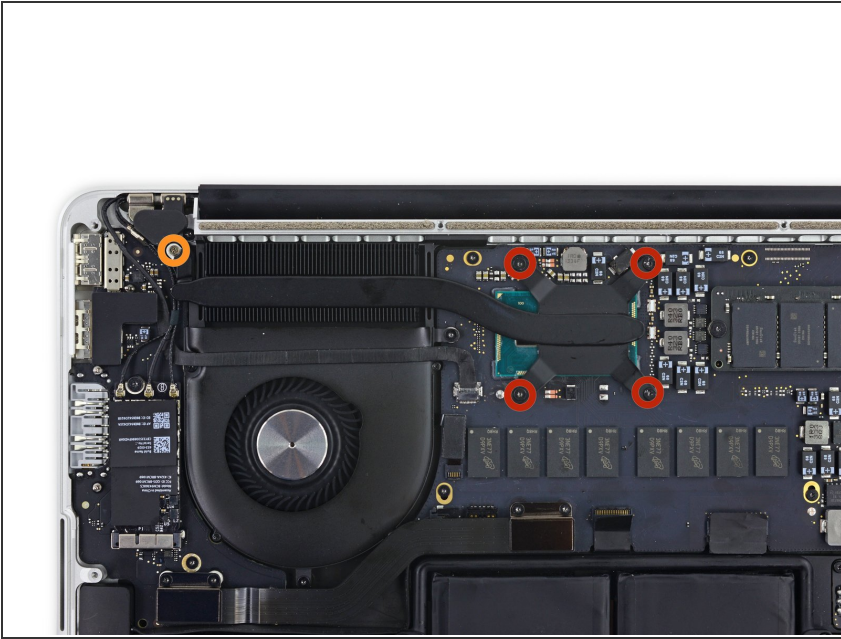
- Carefully remove the rubber fan bumper from the edge of the heat sink.
- ☑ The fan bumper wraps around the heat sink and fits into slots in the fan duct. During reassembly, be sure to fit the tabs into the notches in the fan duct.

Step 8



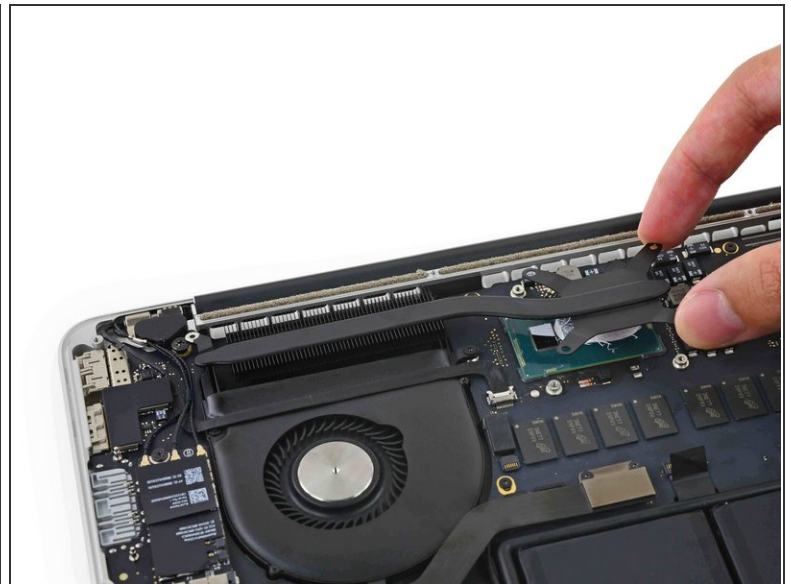
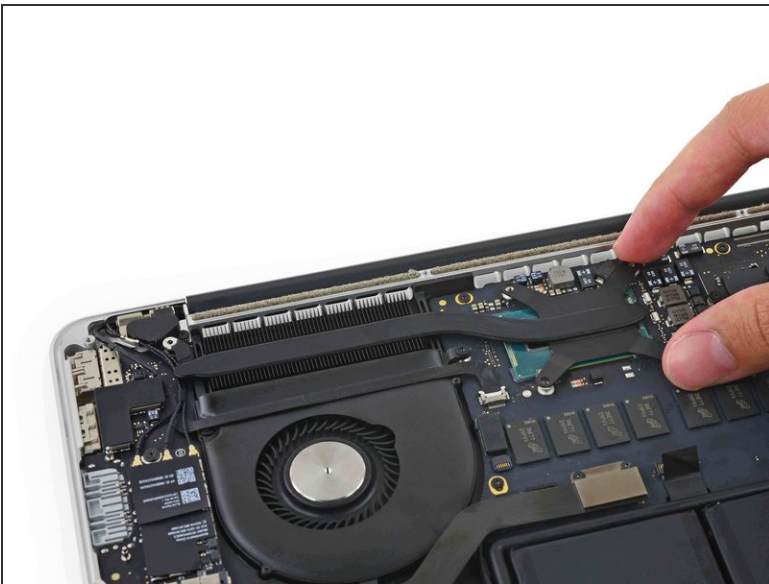
- Use the flat end of a spudger to peel the four foam stickers off of the heat sink screws.

Step 9



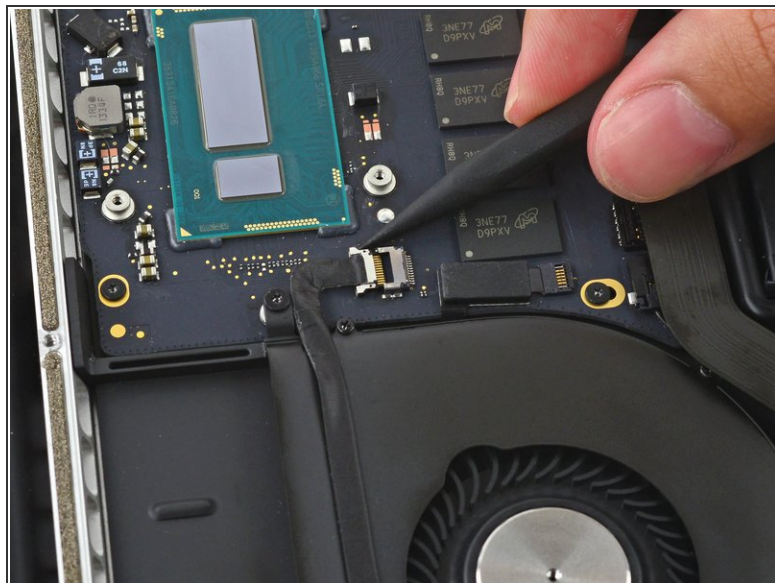
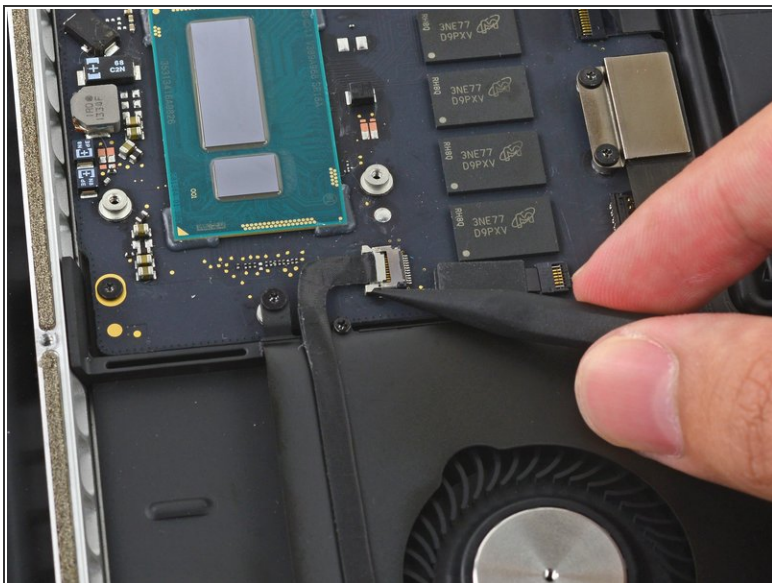
- Remove the following screws securing the heat sink to the logic board:
 - Four 2.6 mm T5 screws
 - One 2.4 mm Phillips #000 screw

Step 10



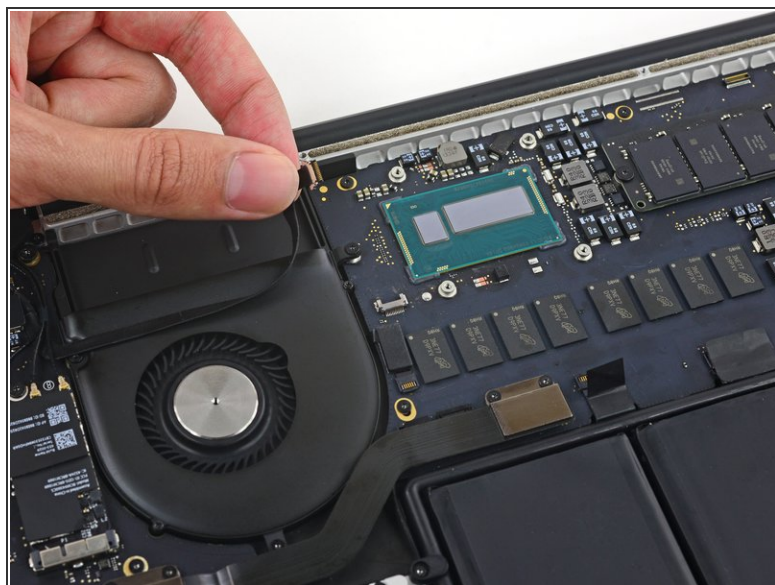
- Remove the heat sink from the laptop.
- ☞ When reassembling your computer, follow our [thermal paste application guide](#) to reapply the thermal paste.

Step 11 — Fan



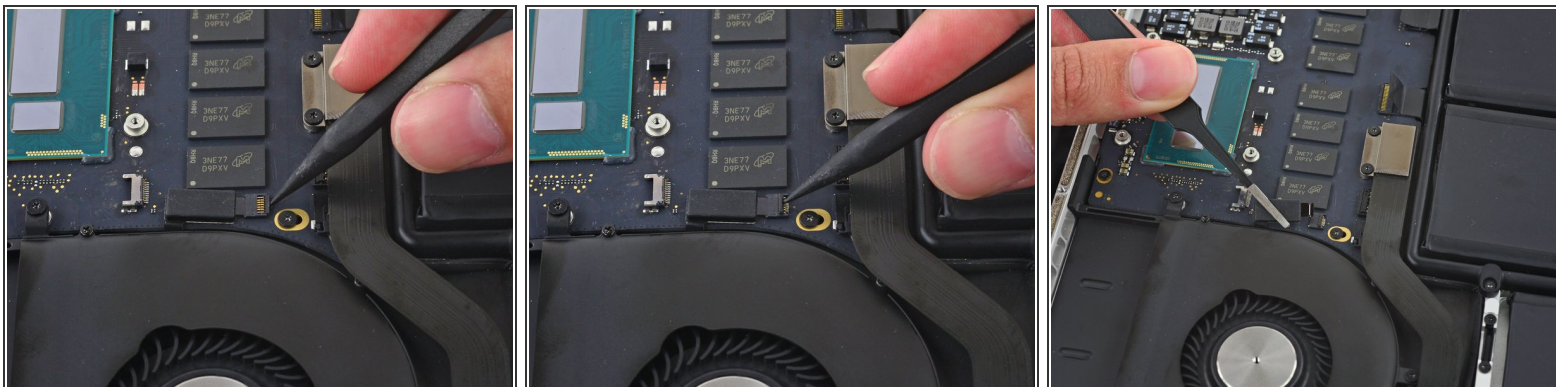
- Use the tip of a spudger to push on either side of the the iSight camera cable connector to *walk* it out of its socket on the logic board.

Step 12



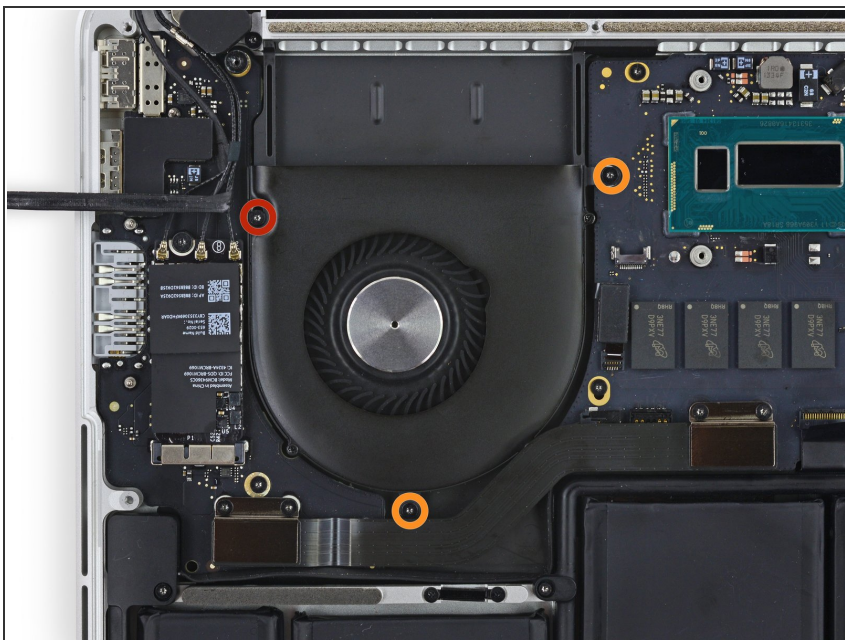
- Peel the iSight camera cable off the fan housing to fold it out of the way.

Step 13



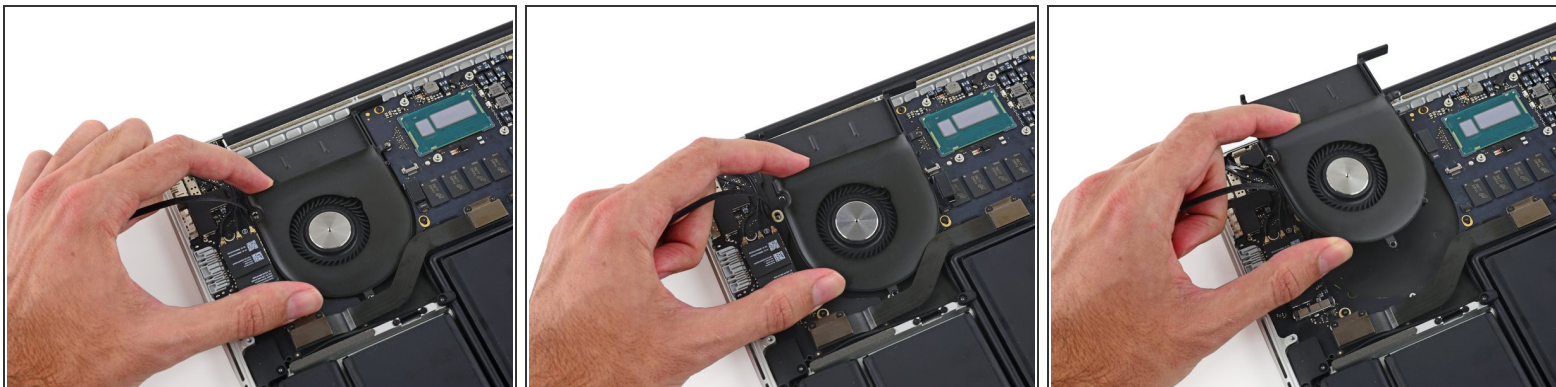
- Use the tip of a spudger to flip the tab on the fan's ZIF connector.
- Carefully pull the fan cable straight out of its socket.

Step 14



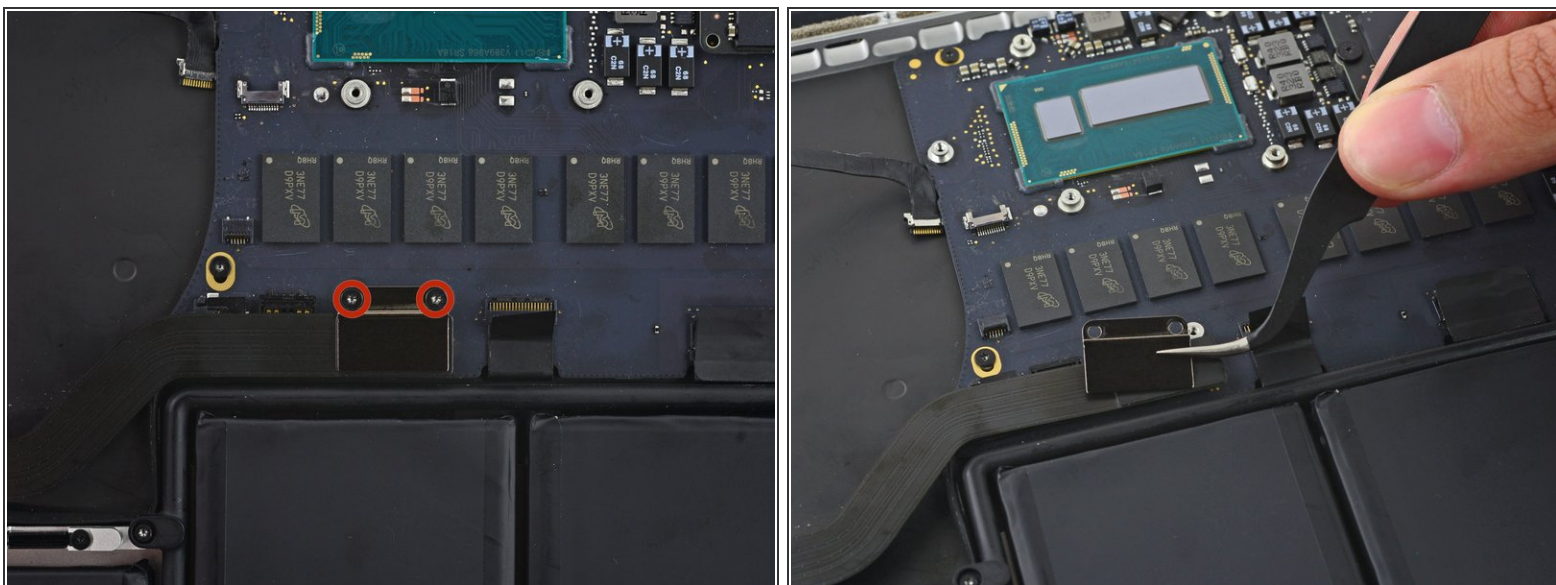
- Remove the following screws securing the fan to the upper case:
 - One 5.0 mm T5 Torx screw
 - Two 3.6 mm T5 Torx screws

Step 15



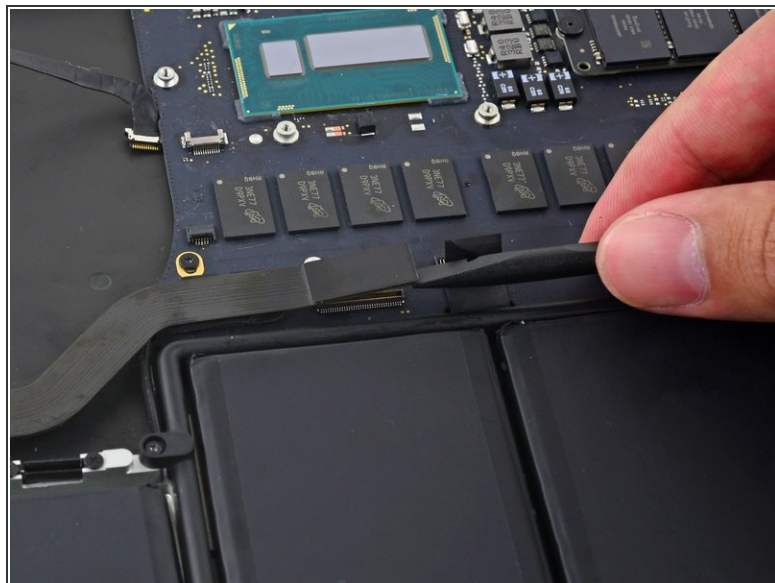
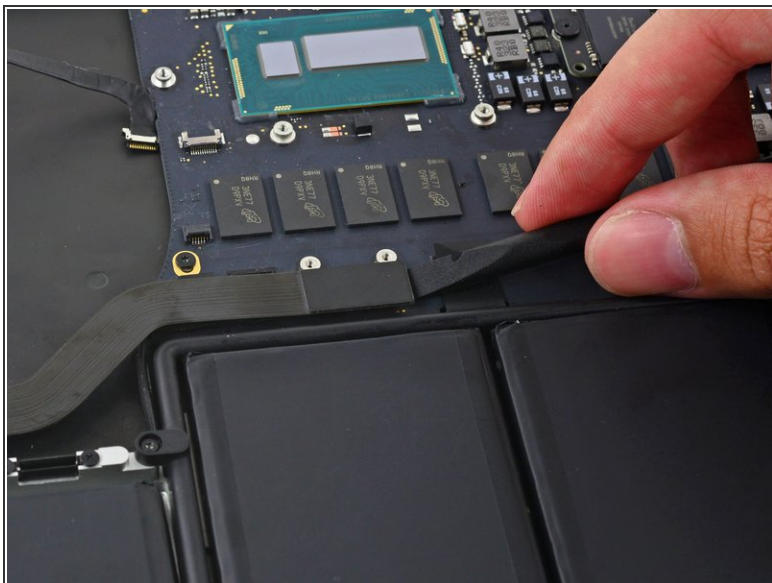
- Lift the end of the fan closest to the display hinge and remove the fan from the upper case.

Step 16 — Logic Board Assembly



- Remove the two 2.1 mm T5 Torx screws securing the I/O board cable bracket to the logic board.
- Remove the I/O board cable bracket.

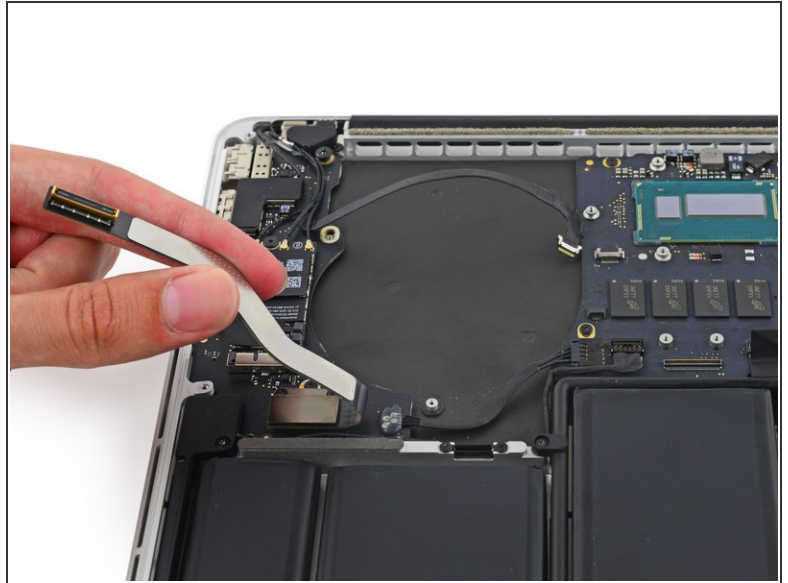
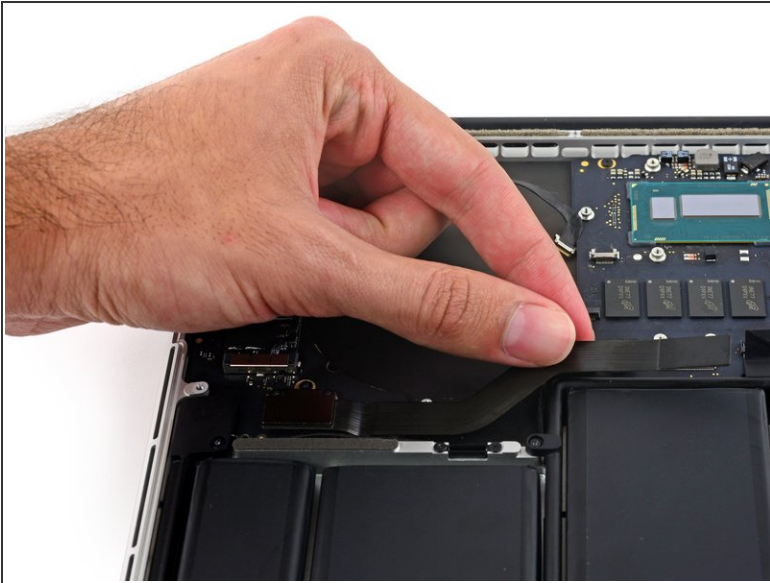
Step 17



- Use the flat end of a spudger to pop the I/O board connector straight up off its socket on the logic board.

⚠ Be careful to only pry up on the I/O board cable, **not** on the socket itself or you risk damaging your logic board.

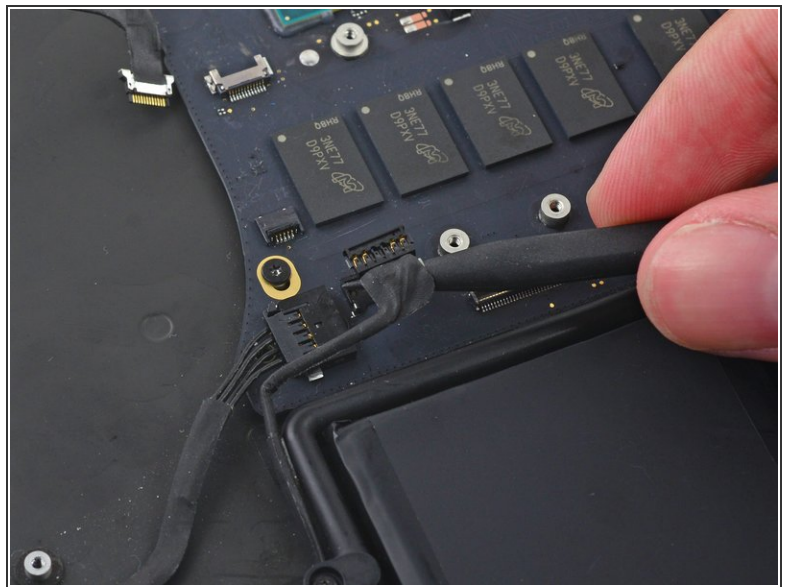
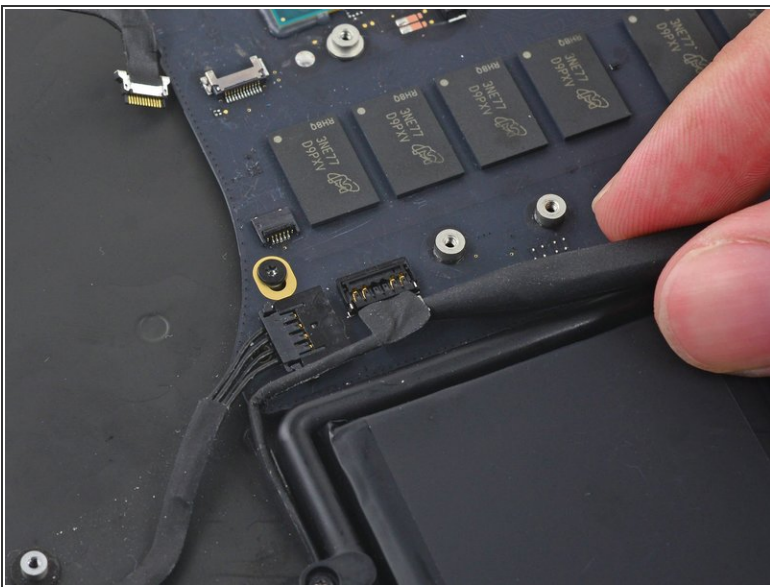
Step 18



- Lift the logic board end of the I/O board cable straight up to bend it out of the way.

⚠ To avoid damage to the cable, fold only at the bend in the I/O board end of the cable.

Step 19



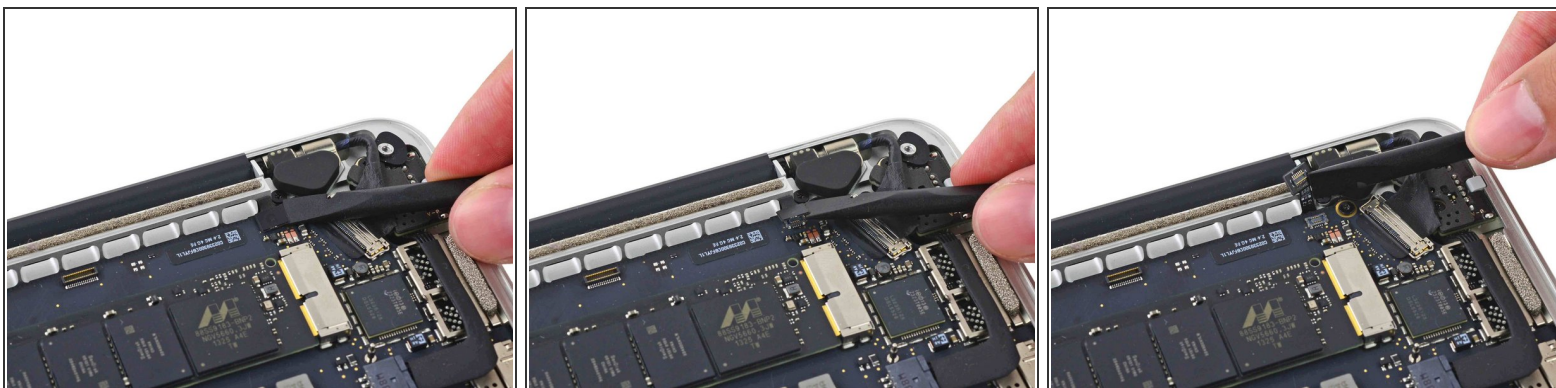
- Use the tip of a spudger to lift the right speaker connector straight up out of its socket on the logic board.

Step 20



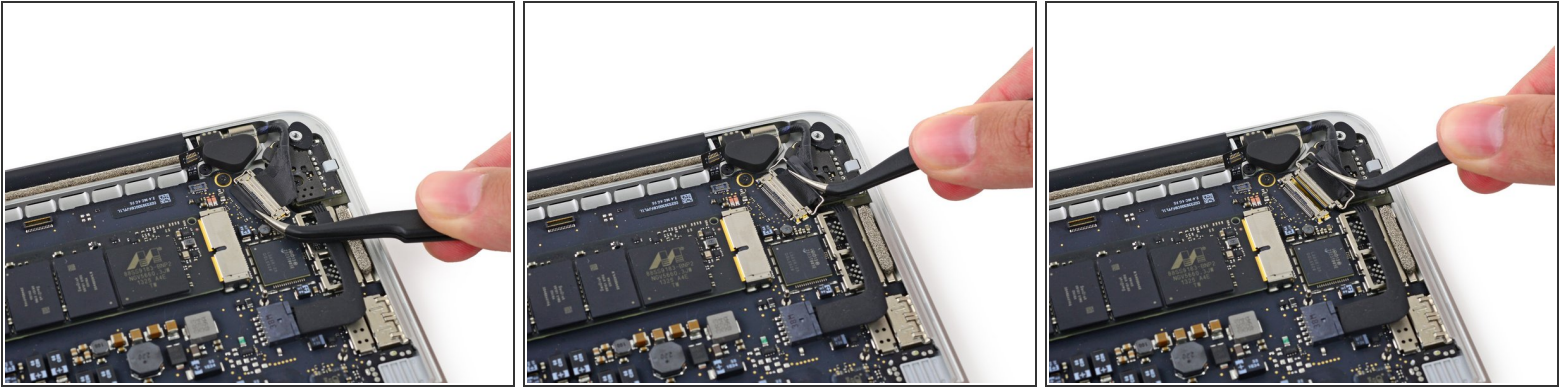
- With the tip of a spudger, push on either side of the I/O board connector to *walk* it out of its socket on the logic board.

Step 21



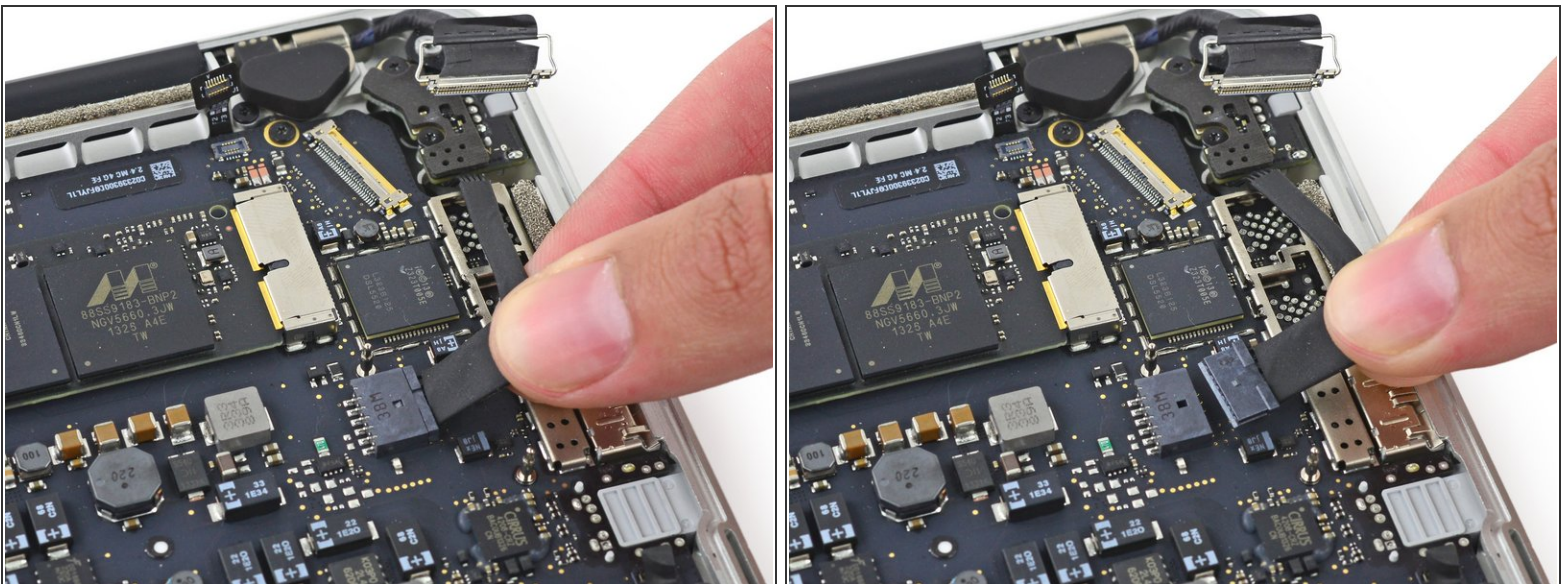
- Use the flat end of a spudger to disconnect the keyboard backlight cable and bend it up out of the way of the logic board.

Step 22



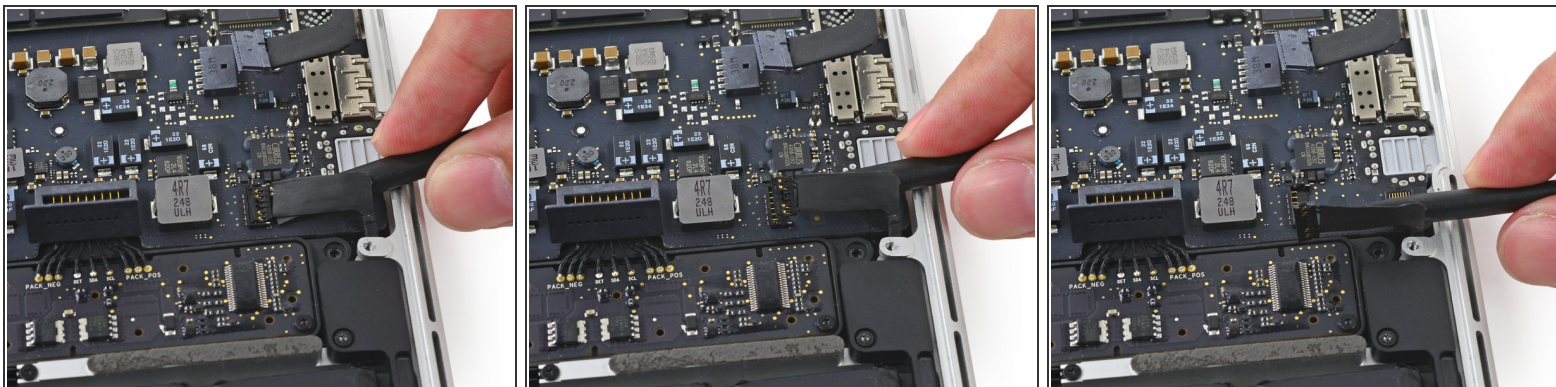
- Grab the black plastic tab to flip the display cable connector open and pull it straight out of its socket on the logic board.

Step 23



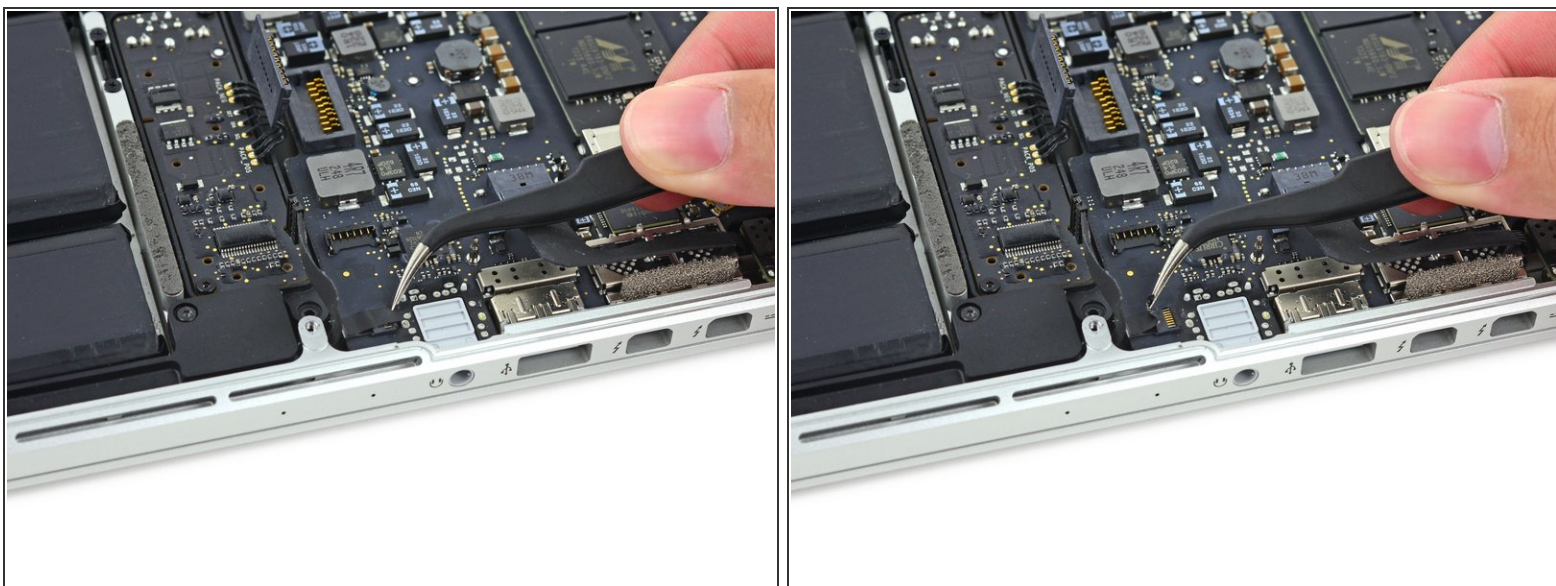
- Carefully pull the DC-In board connector straight out of its socket on the logic board.

Step 24



- Wedge the flat end of a spudger under the left speaker cable near the connector and lift it straight up out of its socket and fold it out of the way.

Step 25



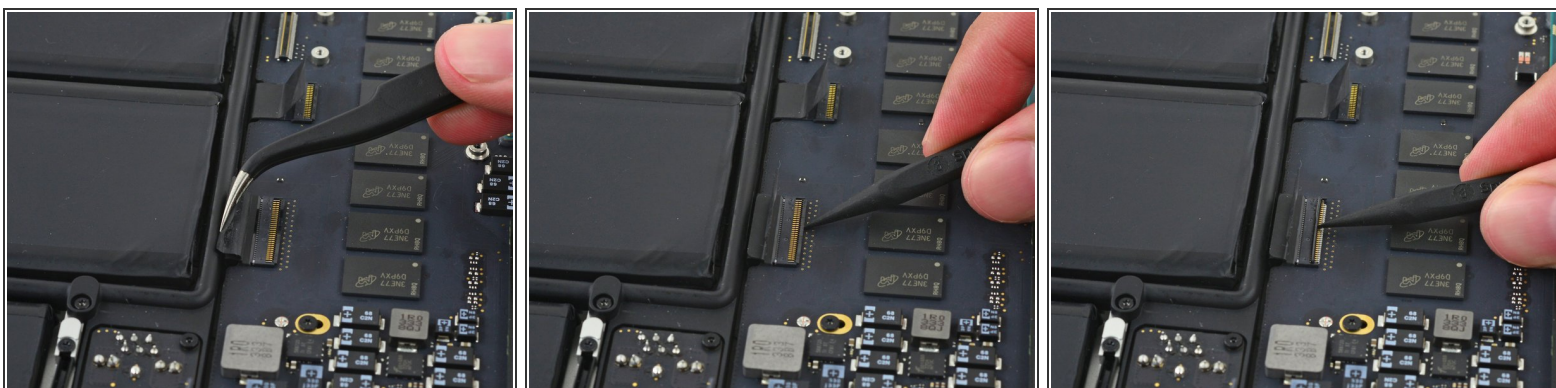
- ⓘ If necessary, peel back any tape covering the microphone cable ZIF connector.

Step 26



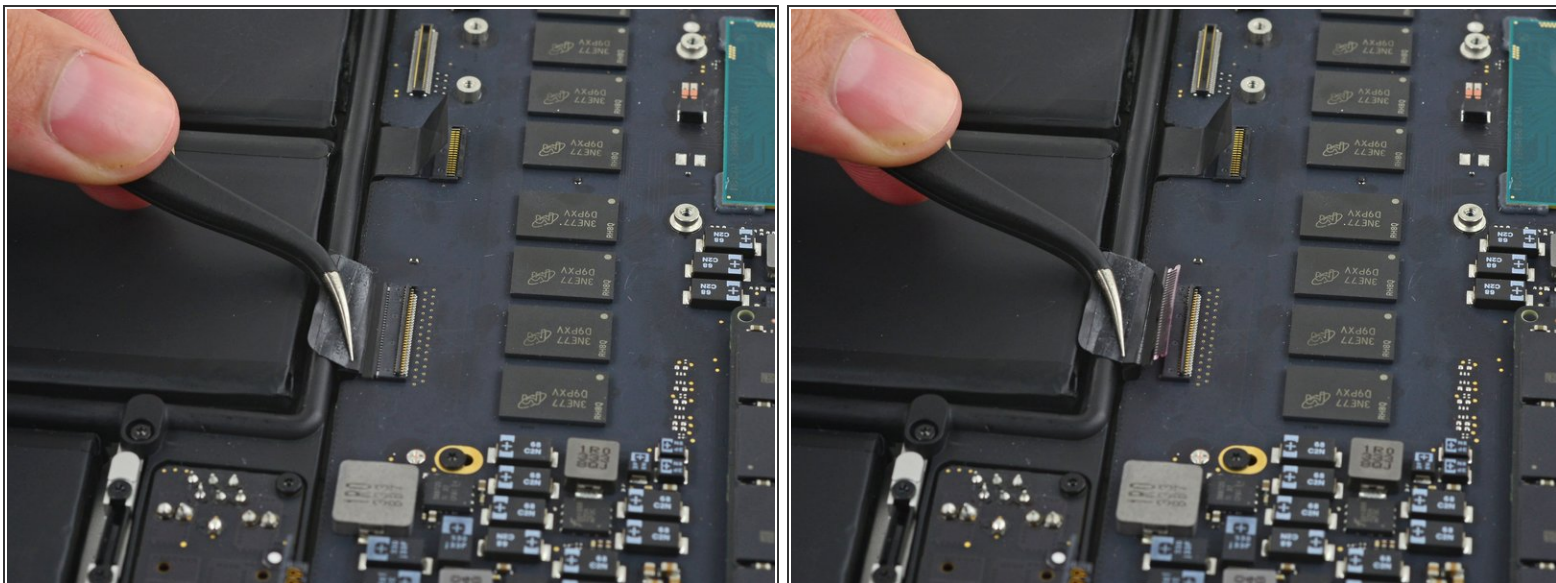
- Use the tip of a spudger to flip the retaining tab on the microphone cable ZIF connector.
- Pull the microphone cable out of its socket on the logic board.

Step 27



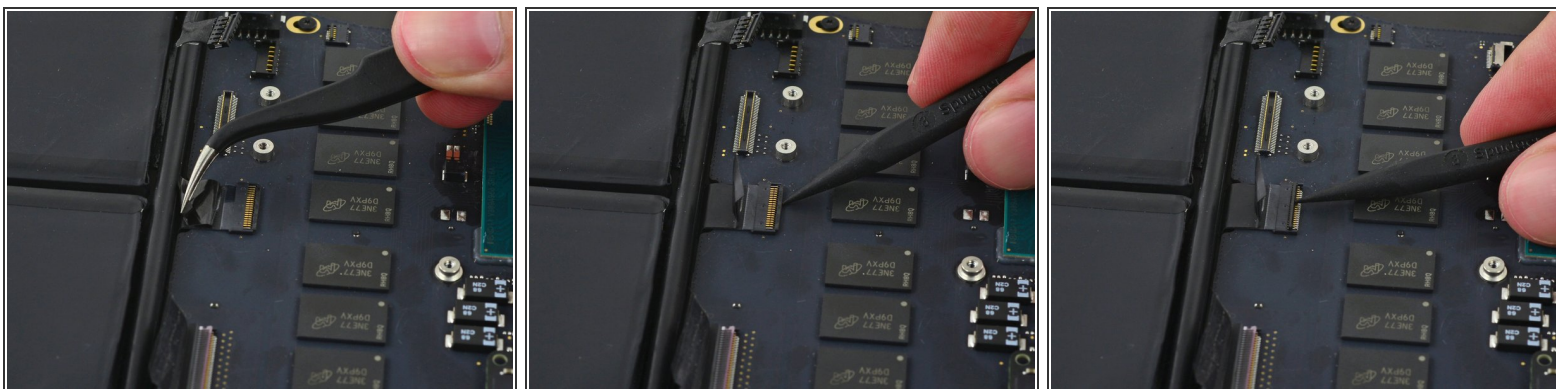
- ⓘ If necessary, peel back any tape covering the keyboard cable connector.
- Use the tip of a spudger to flip the retaining tab on the ZIF connector.

Step 28



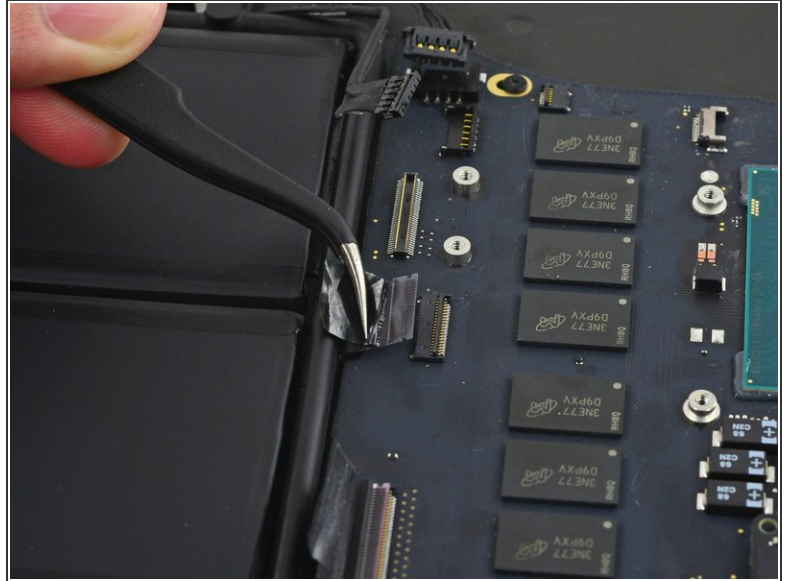
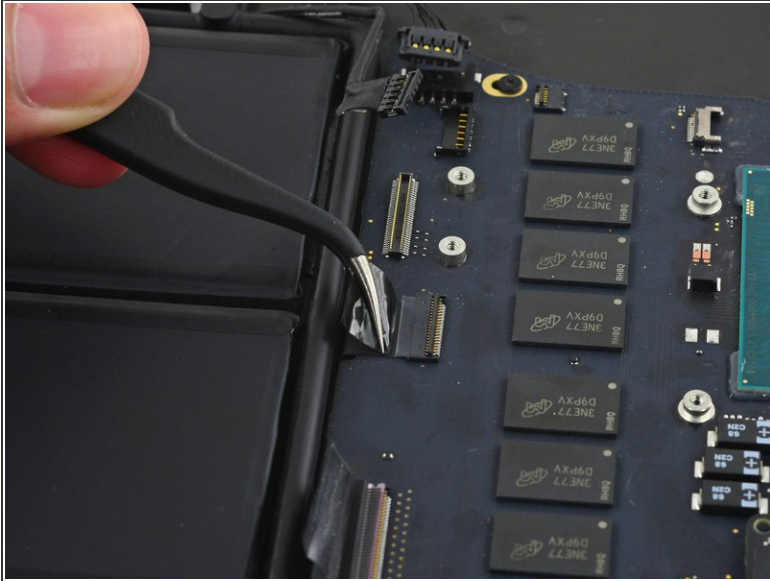
- Pull the keyboard cable straight out of its ZIF socket on the logic board.

Step 29



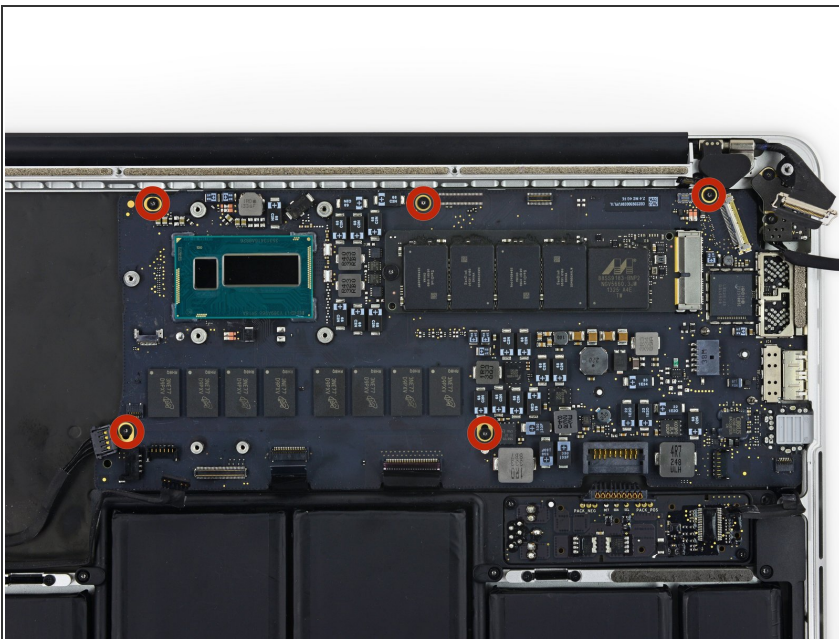
- ⓘ If necessary, peel back any tape covering the trackpad cable connector.
- Use the tip of a spudger to flip the retaining tab on the ZIF connector.

Step 30



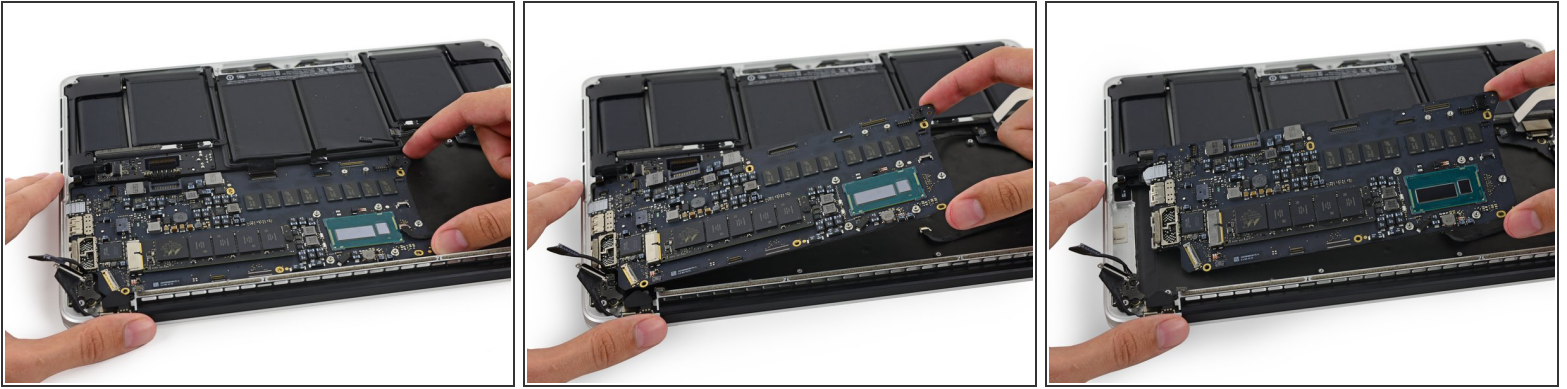
- Pull the trackpad ribbon cable straight out of its socket on the logic board.

Step 31



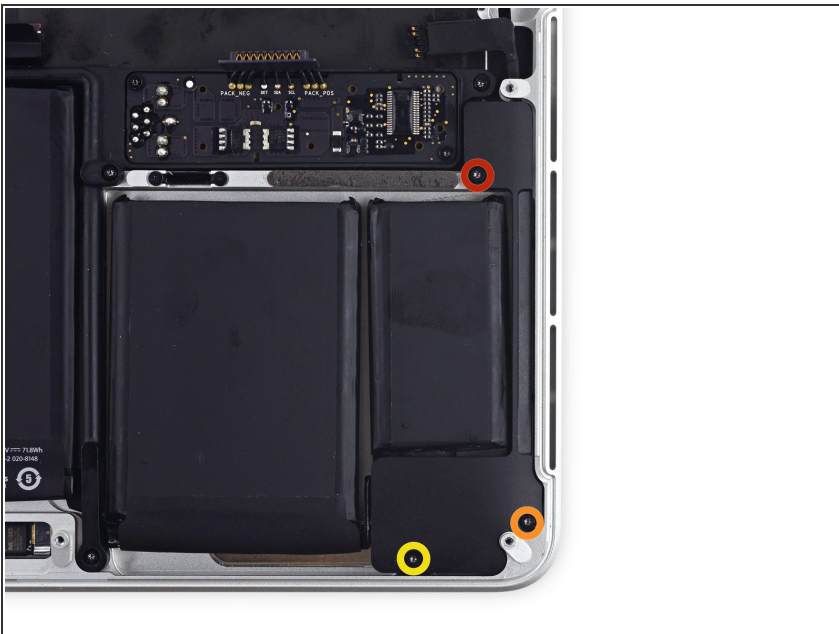
- Remove the five 3.5 mm T5 Torx screws securing the logic board to the upper case.
- ☑ When reassembling, install all five screws loosely, position the logic board, and then tighten evenly.

Step 32



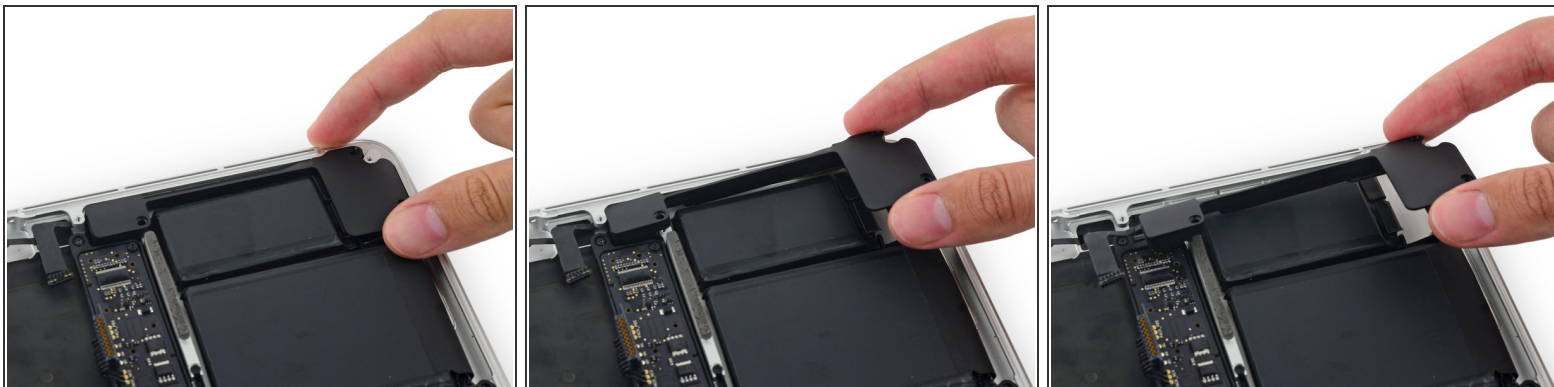
- Lift the processor end of the logic board up slightly and pull it toward the fan recess to free the ports from the edge of the upper case.
 - Remove the logic board.
- ☑ When reinstalling, make sure the keyboard, keyboard backlight, MagSafe, and microphone cables don't get trapped beneath the logic board.
- ☑ Also be sure to slide the ports' metal EMI fingers under the side of the case, not over.

Step 33 — Dual Microphone Assembly



- Remove the following screws securing the left speaker to the upper case:
 - One 5.7 mm T5 Torx screw
 - One 6.5 mm T5 Torx screw
 - One 3.8 mm T5 Torx screw

Step 34



- Lift the corner of the left speaker up and slide it toward the battery to remove it from the upper case.

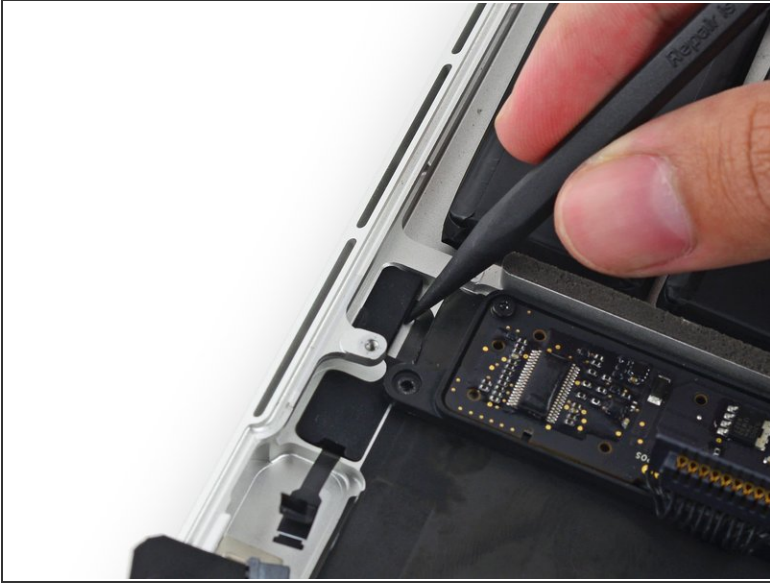
⚠ Be careful **not** to snag the speaker cable on the screw hole post in the side of the case.

Step 35



- Remove the single 3.7 mm T5 Torx screw securing the case-edge of the battery contact board.

Step 36



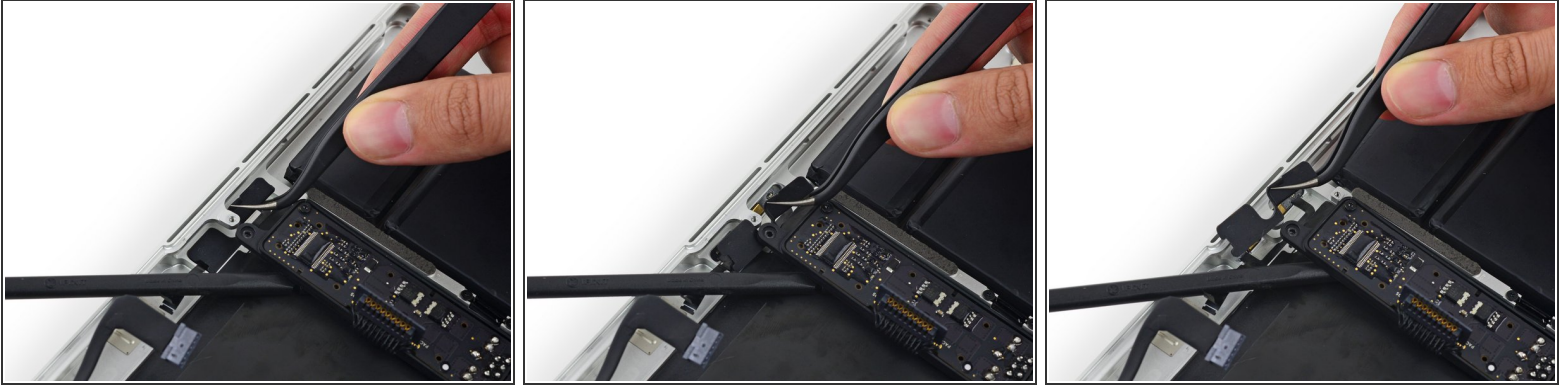
- Insert the tip of a spudger under the battery-side portion of the rubber microphone cable cover to detach the adhesive there.

Step 37



- Use the flat end of a spudger to wedge the battery contact board up slightly to allow room to extract the dual microphone assembly.

Step 38



- Remove the rubber microphone cover with a set of tweezers

⚠ Be careful **not** to snag the cover on the screw post in the case or on the battery contact board.

Step 39



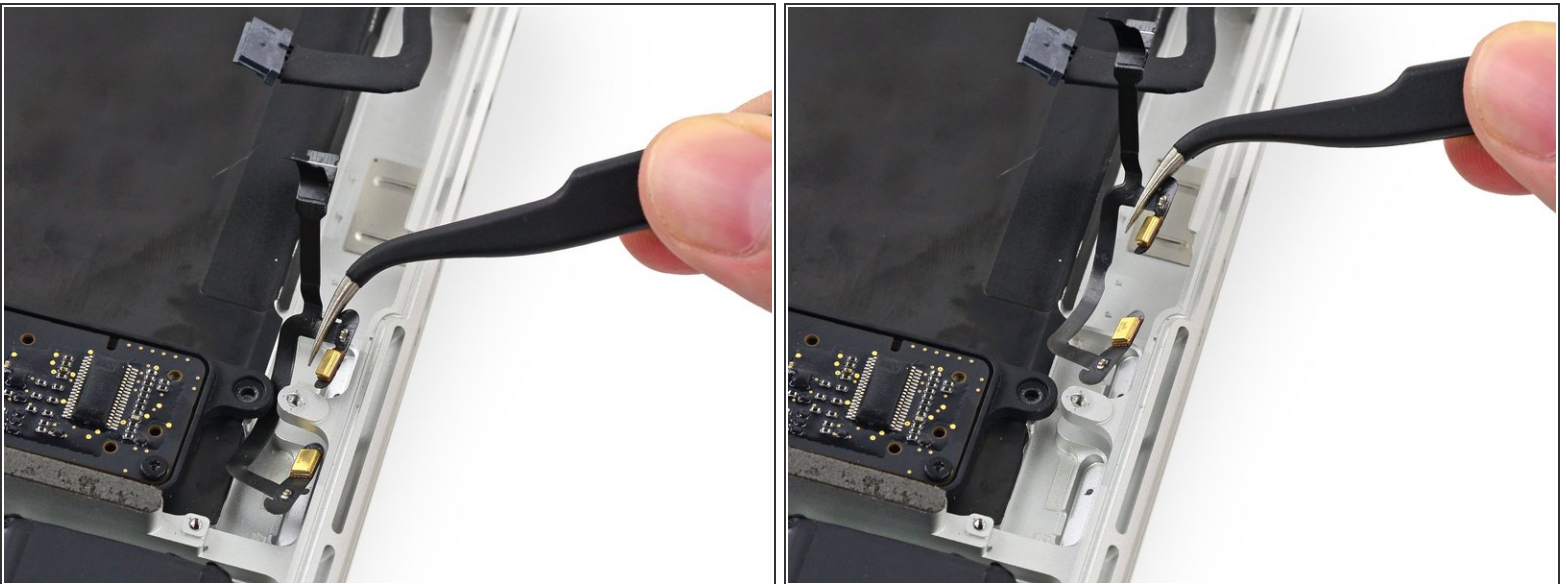
- Insert the tip of a spudger underneath the connector end of the microphone ribbon cable and slide it toward the screw post to free that half from the upper case.
- ⓘ If the microphone is very resistant to prying, try heating it with an iOpener. Heating it will soften the adhesive and minimize the risk of tearing the cable.

Step 40



- Insert the tip of a spudger under the battery-side portion of the microphone ribbon cable and slide it toward the screw post to free it from the upper case.

Step 41



- Pull the dual microphone cable assembly up and toward the logic board recess to remove it from the upper case.

⚠ Be very careful **not** to snag the cable on the screw post in the case or the battery contact board.

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