



MacBook Air 13" Retina Display 2019 Microphone Assembly Replacement

Use this guide to replace the microphone...

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INTRODUCTION

Use this guide to replace the microphone assembly in a 2019 MacBook Air.

To minimize risk of damage, turn on your MacBook and allow the battery to fully discharge before starting this procedure. A charged lithium-ion battery can be very dangerous if accidentally punctured. [If your battery looks puffy or swollen, take extra precautions.](#)

Do not reuse the battery if it is swollen or was deformed in any way during the procedure. The battery is likely damaged and can be very dangerous to reuse—it should be replaced.

This guide involves removing the speakers and battery. You will need new adhesive to reinstall the speakers and battery.

TOOLS:

[P5 Pentalobe Screwdriver Retina MacBook Pro and Air](#) (1)

[Tweezers](#) (1)

[Spudger](#) (1)

[T3 Torx Screwdriver](#) (1)

[T4 Torx Screwdriver](#) (1)

[iFixit Opening Picks \(Set of 6\)](#) (1)

Step 1 — Remove the screws securing the lower case



i Before starting this procedure, you should disable your Mac's **Auto Boot** feature. Auto Boot powers on your Mac when you open the lid, and may be accidentally triggered during disassembly. [Use this guide](#) to disable Auto Boot.

- If your MacBook is running Big Sur v11.1 or later, disabling Auto Boot may not work. You can proceed normally, but make sure to disconnect the battery as soon as you're inside.

⚠ Completely power off and unplug your MacBook Air before you start. Close the display and flip the entire laptop upside-down.

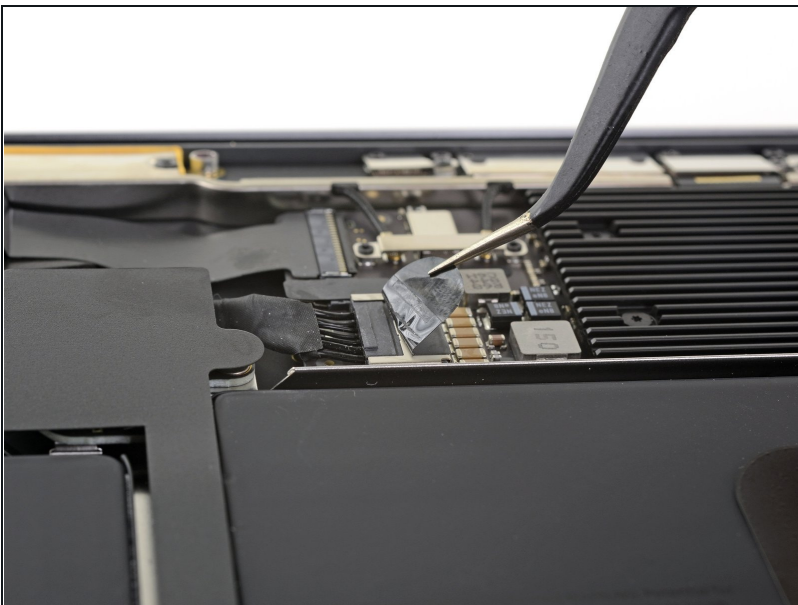
- Use a P5 driver to remove the following screws:
 - Two 7.9 mm screws
 - Two 7.1 mm screws
 - Six 2.6 mm screws

Step 2 — Remove the lower case



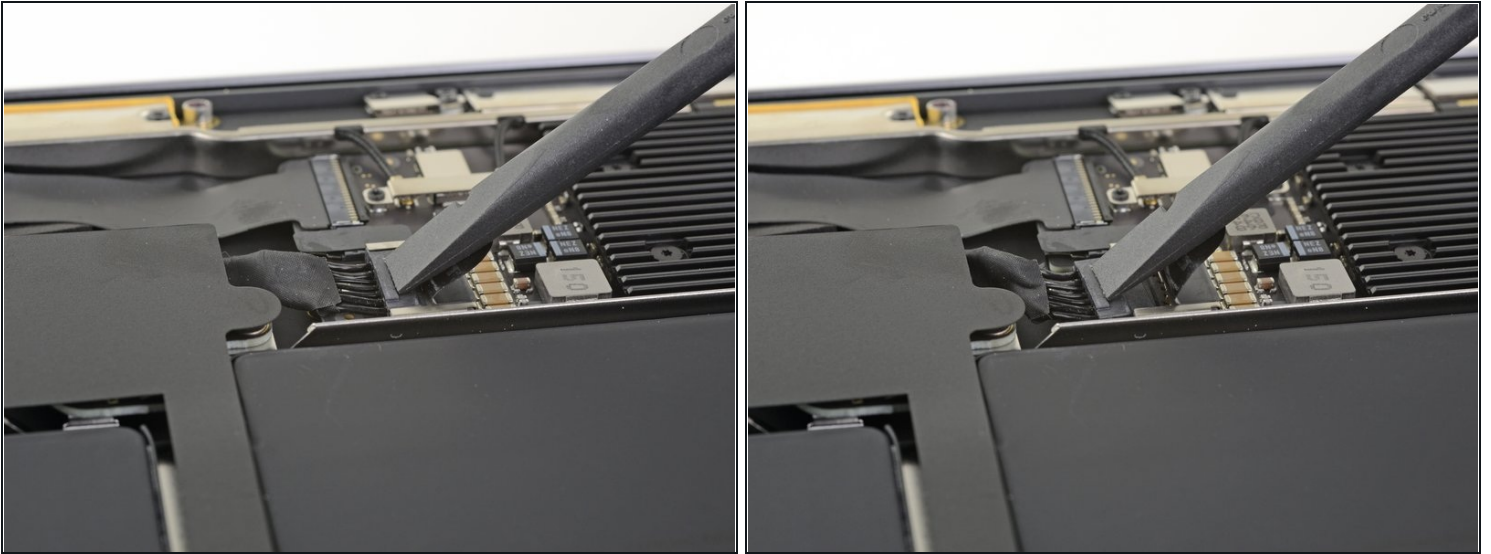
- Wedge your fingers between the display and the lower case and pull upward to pop the lower case off the Air.
- Remove the lower case.
- ★ After reassembly, your MacBook might not turn on until it's connected to a power source (a low power phone charger may work). To test your repair, plug in your charger, allow two minutes for your MacBook to turn on, and check that everything works as expected.

Step 3 — Disconnect the battery



- Peel back the tape covering the battery connector enough to reveal the connector underneath.

Step 4



- Use a spudger to slide the battery connector parallel to the logic board and out of its socket on the logic board.

Step 5 — Remove the right speaker adhesive



- Use a pair of [tweezers](#) to lift up the black adhesive pull tab at the bottom of the right speaker, enough so you can grab it with your fingers.
- Grab the adhesive strip pull tab and slowly and carefully pull the adhesive strip out from under the speaker.
 - ① Keep the angle of the adhesive strip as parallel to the laptop as you can. Try to avoid dragging it across the inside of the case.
- If the adhesive strip breaks, leave it in and proceed to the next step.

Step 6



- Slide the tip of a spudger underneath the right speaker cable and pry straight up to disconnect the speaker.

Step 7



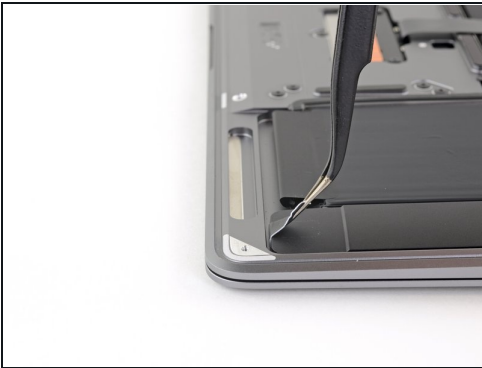
- Use tweezers to lift the adhesive pull tab at the top of the right speaker enough that you can grab it with your fingers.
- Grab the adhesive strip pull tab and slowly and carefully pull the adhesive strip out from under the speaker.
 - ① Keep the angle of the adhesive strip as parallel to the laptop as you can. Try to avoid dragging it across the inside of the case.
- ① If the adhesive strip breaks, or if the first adhesive strip broke, use a [heated iOpener](#) or heat gun to help remove the adhesive:
 - Apply heat to the speaker to soften the adhesive underneath.
 - Carefully slide a spudger or opening pick underneath the speaker to separate the adhesive.

Step 8 — Remove the right speaker



- Lift the right speaker straight up from the bottom and remove it.

Step 9 — Remove the left speaker adhesive



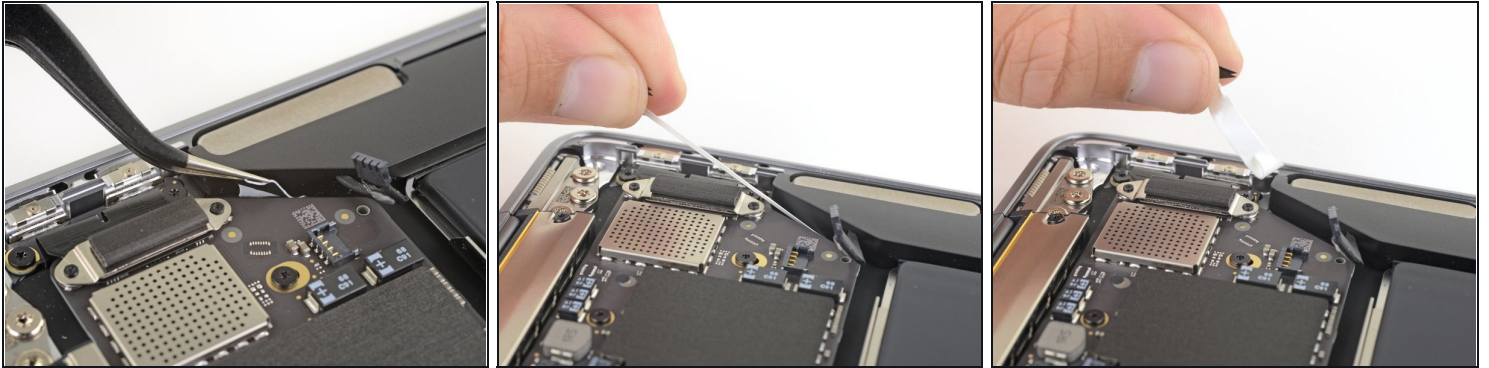
- Use a pair of [tweezers](#) to lift up the black adhesive pull tab at the bottom of the left speaker, enough so you can grab it with your fingers.
- Grab the adhesive strip pull tab and slowly and carefully pull the adhesive strip out from under the speaker.
 - ① Keep the angle of the adhesive strip as parallel to the laptop as you can. Try to avoid dragging it across the inside of the case.
- If the adhesive strip breaks, leave it in and proceed to the next step.

Step 10



- Slide the tip of a spudger underneath the left speaker cable and pry straight up to disconnect the speaker.
- With the connector disconnected, slide the flat end of a spudger under the cable to separate the adhesive securing the cable to the logic board.

Step 11



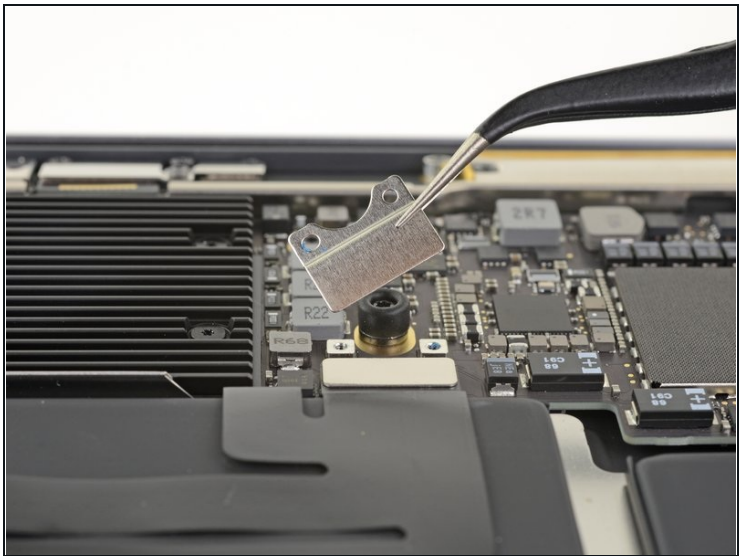
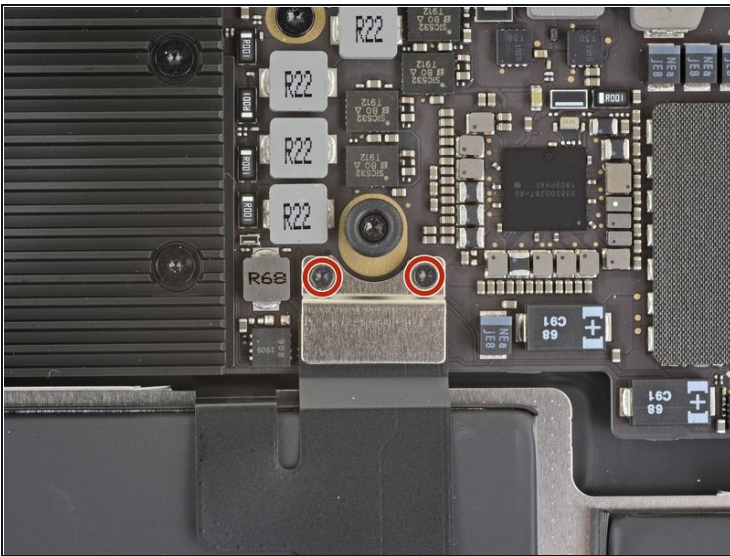
- Use tweezers to lift the adhesive pull tab at the top of the left speaker enough that you can grab it with your fingers.
- Grab the adhesive strip pull tab and slowly and carefully pull the adhesive strip out from under the speaker.
 - ⓘ Keep the angle of the adhesive strip as parallel to the laptop as you can. Try to avoid dragging it across the inside of the case.
- ⓘ If the adhesive strip breaks, or if the first adhesive strip broke, use a [heated iOpener](#) or heat gun to help remove the adhesive:
 - Apply heat to the speaker to soften the adhesive underneath.
 - Carefully slide a spudger or opening pick underneath the speaker to separate the adhesive.

Step 12 — Remove the left speaker



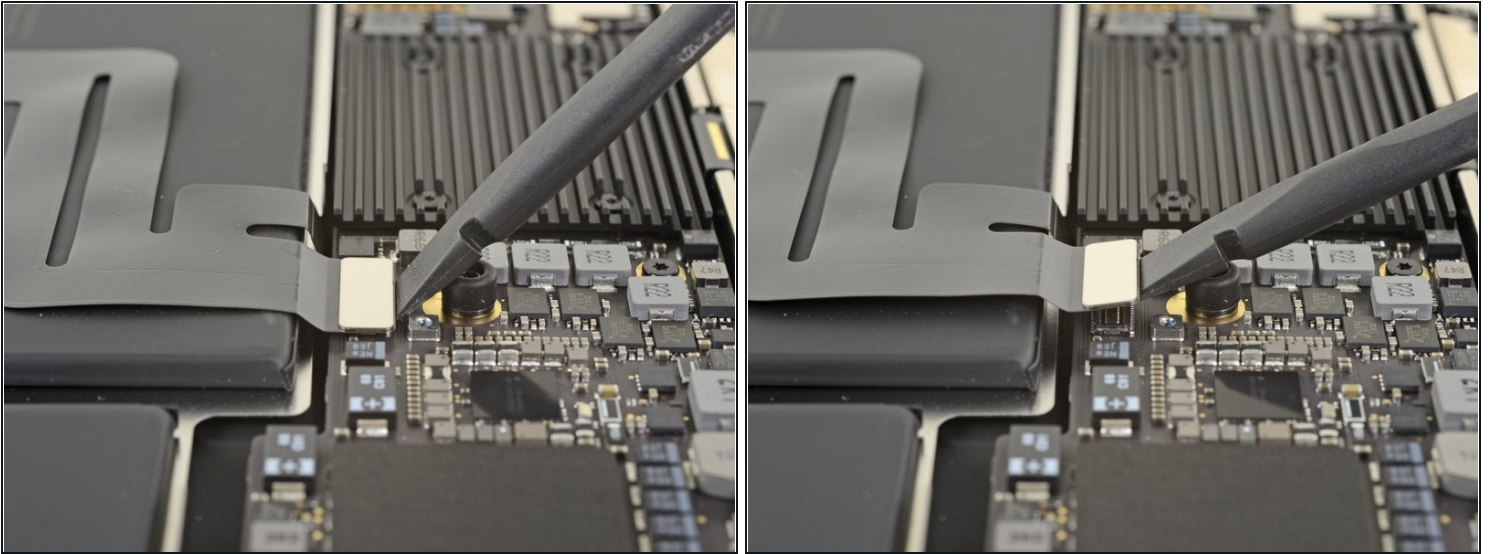
- Lift the left speaker straight up from the bottom and remove it.

Step 13 — Disconnect the logic board



- Use a T3 Torx driver to remove the two 1.4 mm screws securing the trackpad connector bracket.
 - ⓘ Depending on the condition of your bits, a T4 Torx driver may fit better.
- Remove the trackpad connector bracket.

Step 14



- Use the flat end of a spudger to pry the trackpad cable connector up and out of its socket.

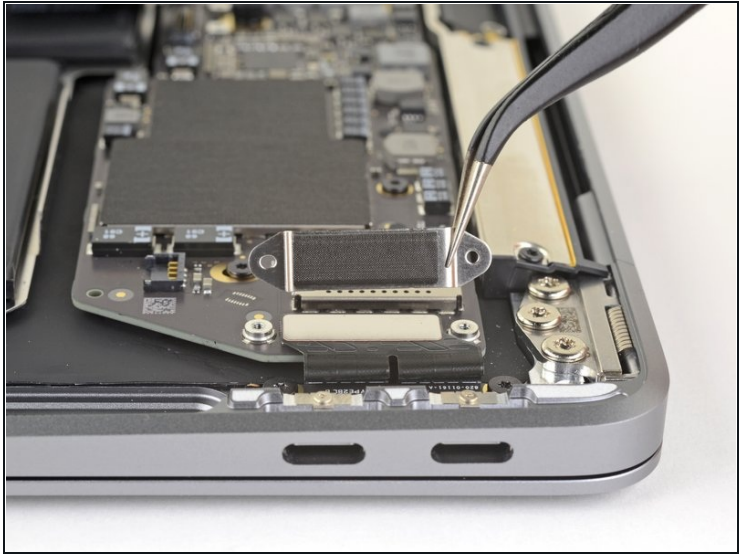
Step 15



ⓘ If the left speaker is already disconnected, skip this step.

- Slide the tip of a spudger underneath the left speaker cable and pry straight up to disconnect the speaker.
- With the connector disconnected, slide the flat end of a spudger under the cable to separate the adhesive securing the cable to the logic board.

Step 16



- Use a T3 Torx driver to remove the two 1.3 mm screws securing the USB-C port connector bracket.
- Remove the USB-C connector bracket.

Step 17



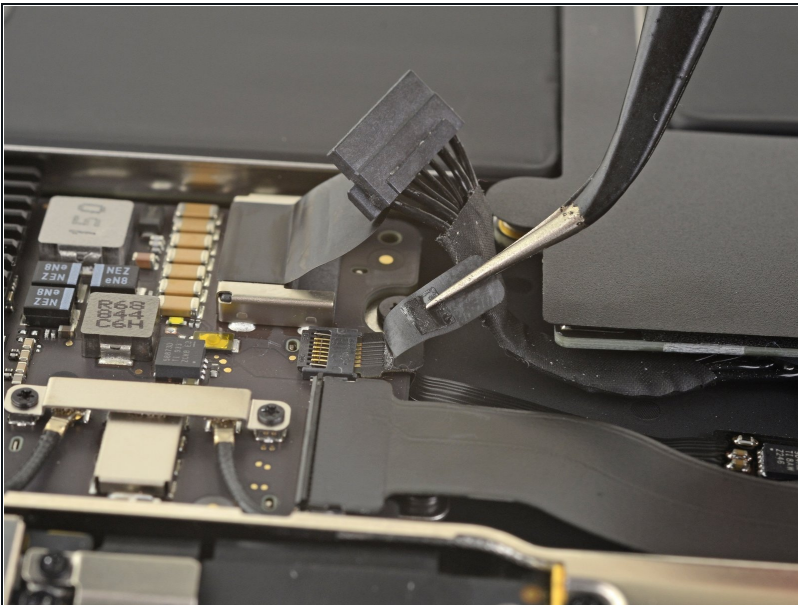
- Use the flat end of a spudger to pry the USB-C cable connector up and out of its socket on the logic board.

Step 18



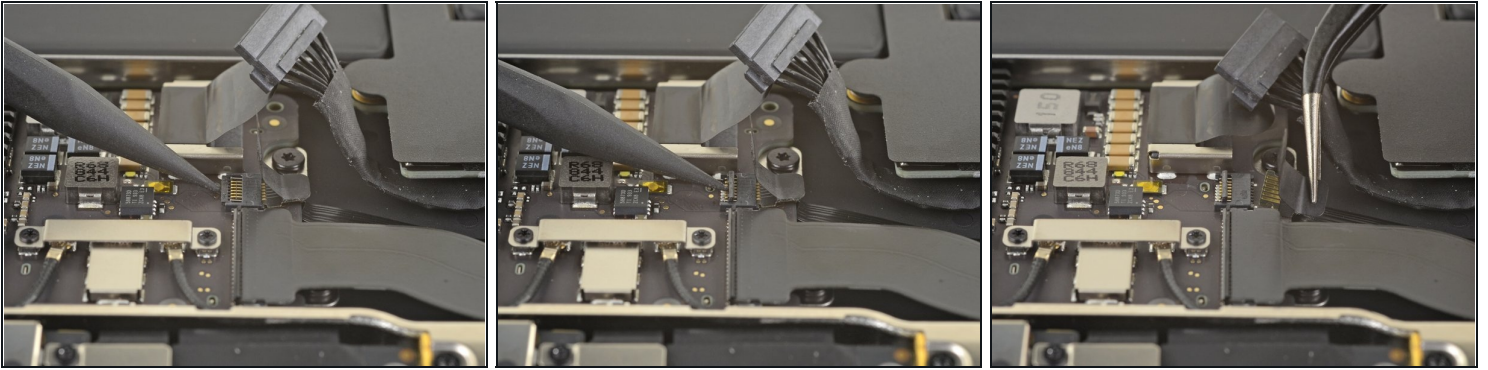
- Use a spudger to lift up the small locking flap on the sound board cable's [ZIF connector](#).
- Slide the sound board cable out of the ZIF connector.

Step 19



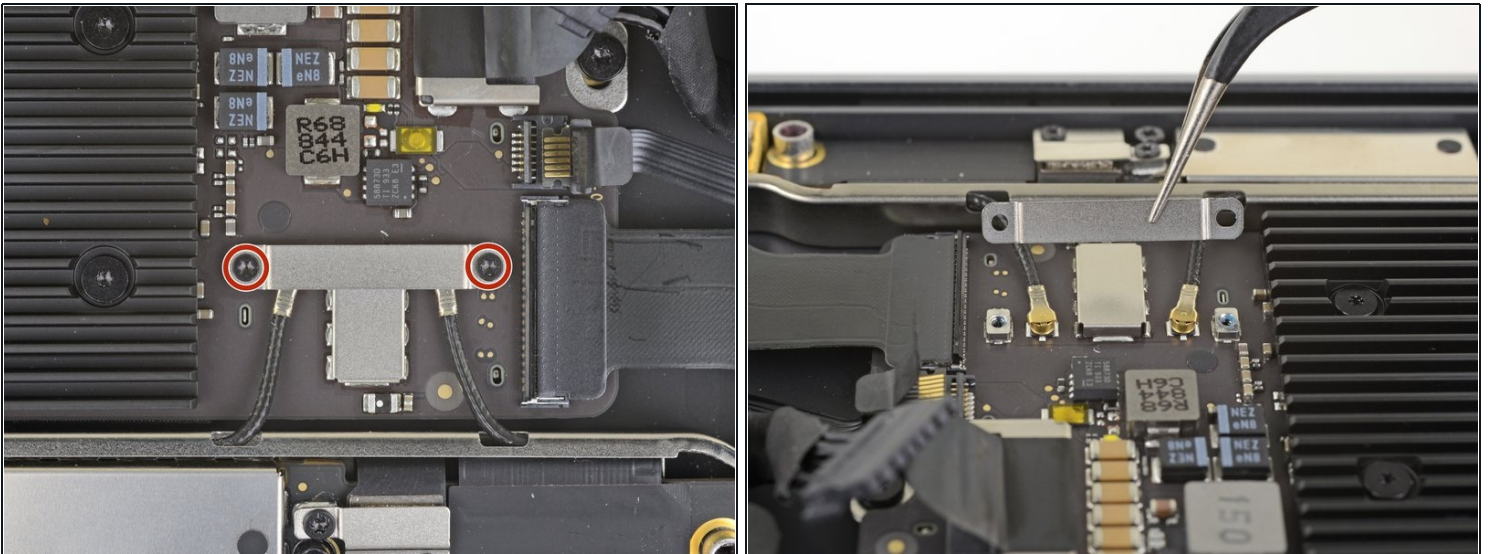
- Peel back the black tape covering the fan cable connector.

Step 20



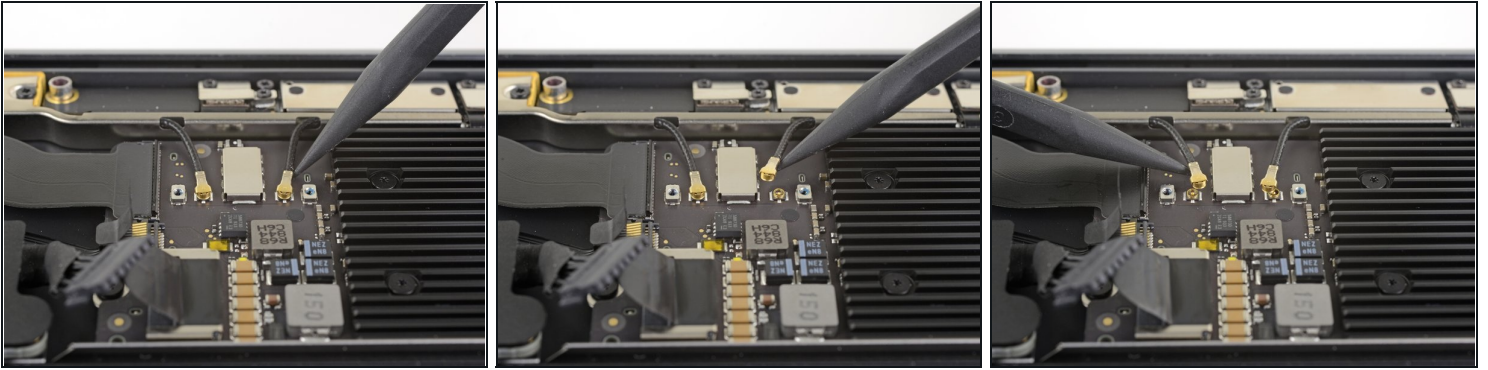
- Use the tip of a spudger to lift up the locking flap on the fan cable's ZIF connector.
- Slide the fan cable out of the ZIF connector.

Step 21



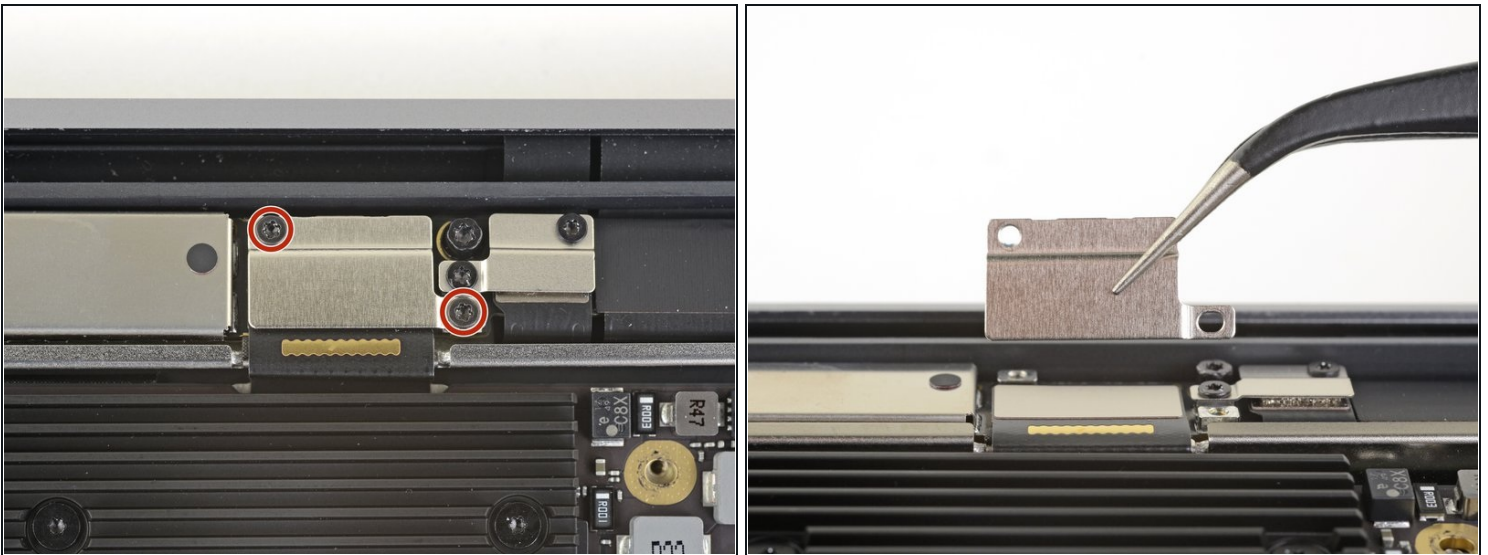
- Use a T3 Torx driver to remove the two 1.4 mm screws securing the antenna cable bracket.
- Remove the antenna cable bracket.

Step 22



- Insert the point of a spudger under one of the antenna cables close to the connector. Pry straight up to disconnect the cable.
- Repeat for the other antenna cable.

Step 23



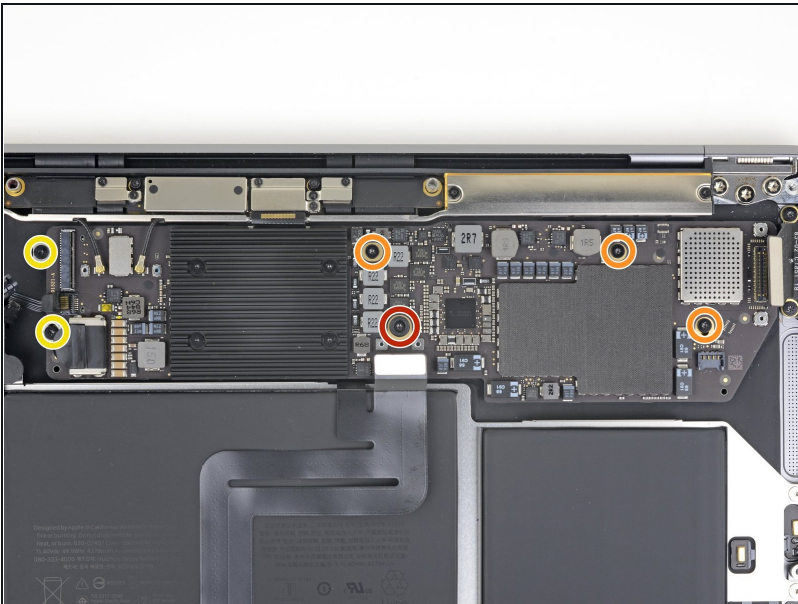
- Use a T3 Torx driver to remove the two 1.5 mm screws securing the display cable connector bracket.
- Remove the display cable connector bracket.

Step 24



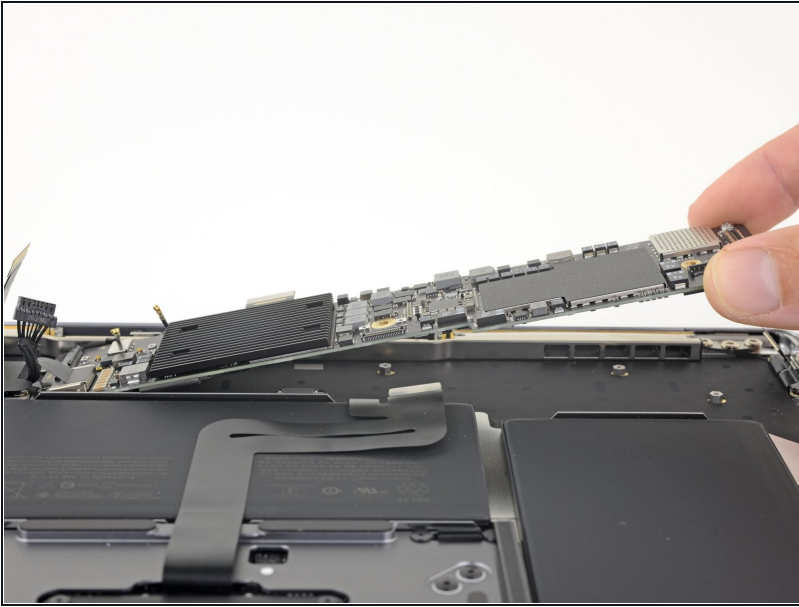
- Use the flat end of a spudger to pry up the display cable connector.

Step 25 — Unscrew the logic board



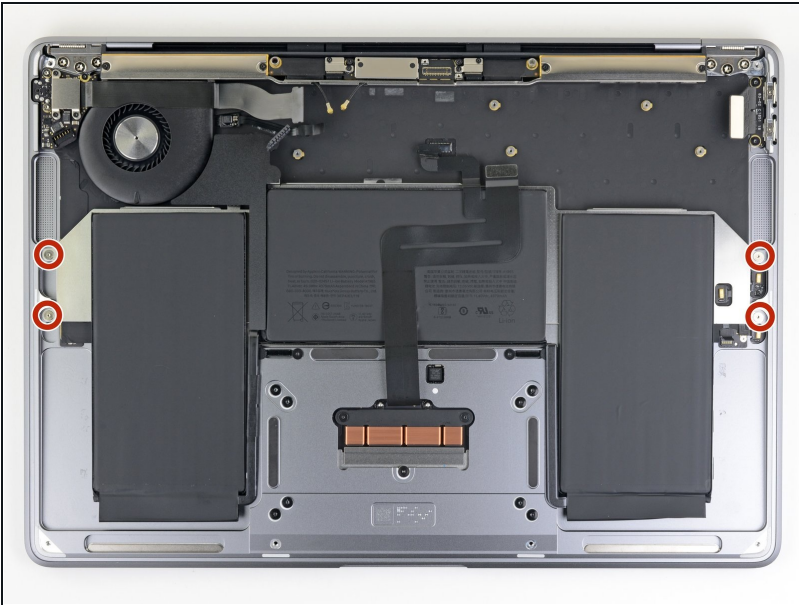
- Use a T5 Torx driver to remove the following screws:
 - One 5.5 mm screw
 - Three 2.6 mm screws
 - Two 1.9 mm screws

Step 26 — Remove the logic board



- Remove the logic board.

Step 27 — Unscrew the battery



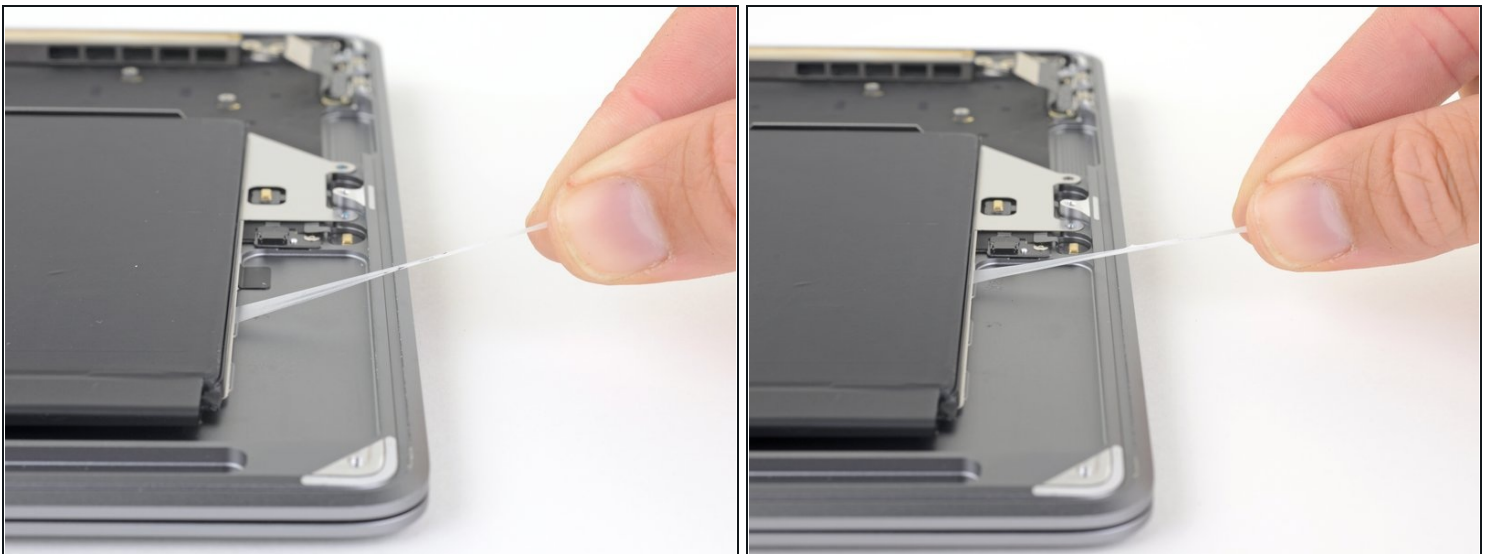
- Use a T3 Torx driver to remove four 2.5 mm screws securing the battery.

Step 28 — Remove the battery adhesive



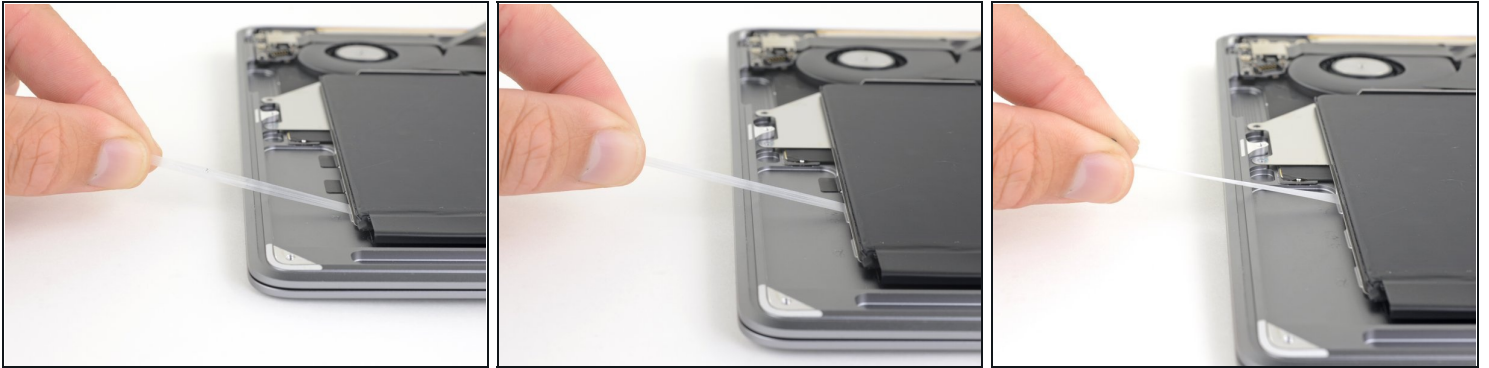
- Use a pair of [tweezers](#) to lift up the black adhesive pull tab on the side of the battery, enough so you can grab it with your fingers.
- Grab the adhesive strip pull tab and slowly and carefully pull the adhesive strip out from under the battery.
 - ⓘ Keep the angle of the adhesive strip as parallel to the laptop as you can. Try to avoid dragging it across the inside of the case.
- If the adhesive strip breaks, leave it in and proceed to the next step.

Step 29



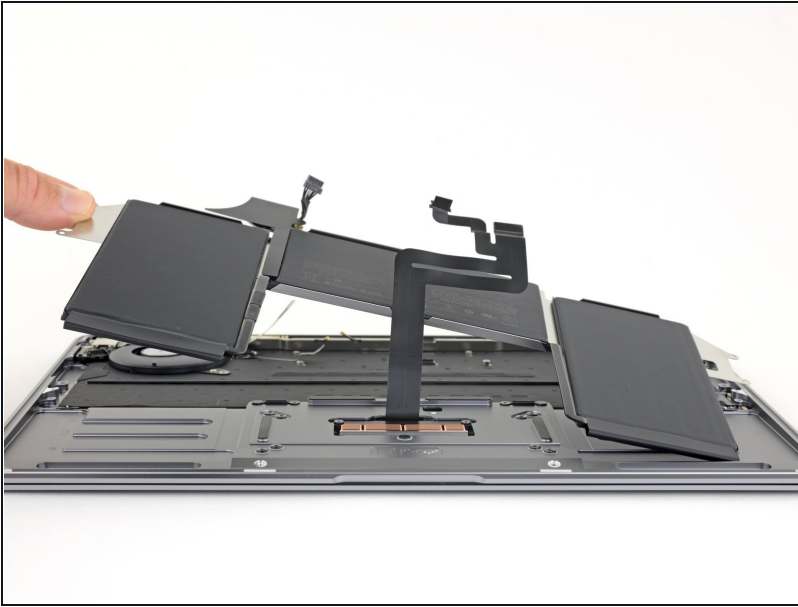
- Repeat the previous step to remove the next two adhesive strips on the same side of the battery.
- If any adhesive strips break, leave them in and proceed to the next step.

Step 30



- Repeat the previous two steps to remove the three adhesive strips on the other side of the battery.
- ① If any of the adhesive strips broke, you can use high-concentration (>90%) isopropyl alcohol to help remove them:
 - Carefully drip isopropyl alcohol along either edge of the battery, in the recessed part of the upper case, where the adhesive pull tabs were.
 - ⚠ Applying too much alcohol or applying it outside of the wells in the case where the adhesive sits risks damaging other components.
- Let the alcohol soak into the adhesive for a minute or two.
- Use opening picks to gently pry the battery away from the upper case.

Step 31 — Remove the battery



- Remove the battery.
 - [Calibrate](#) your newly installed battery: charge it to 100%, and keep charging it for at least 2 more hours. Unplug and use it normally to drain the battery. When you see the low battery warning, save your work, and keep your laptop on until it goes to sleep due to low battery. Wait at least 5 hours, then charge your laptop uninterrupted to 100%.
- ⓘ If you notice any unusual behavior or problems after installing your new battery, you may need to [reset your MacBook's SMC](#).

Step 32 — Remove the microphone assembly

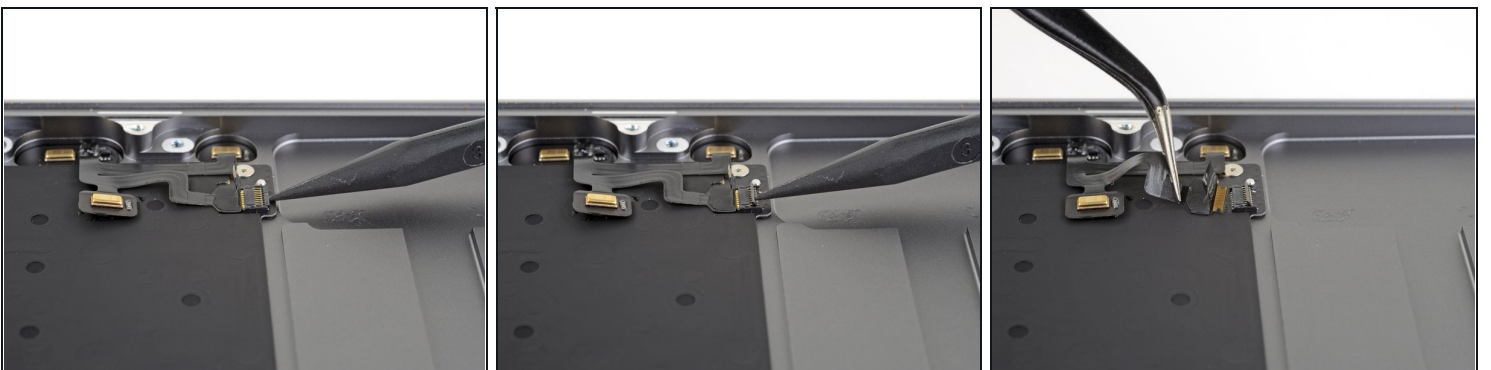


- Slide an opening pick under the microphone farthest away from the edge of the case to slice through the adhesive securing it to the upper case.

⚠ The microphone assembly is still connected to the case. Do not try to remove the microphone assembly or lift the cable.

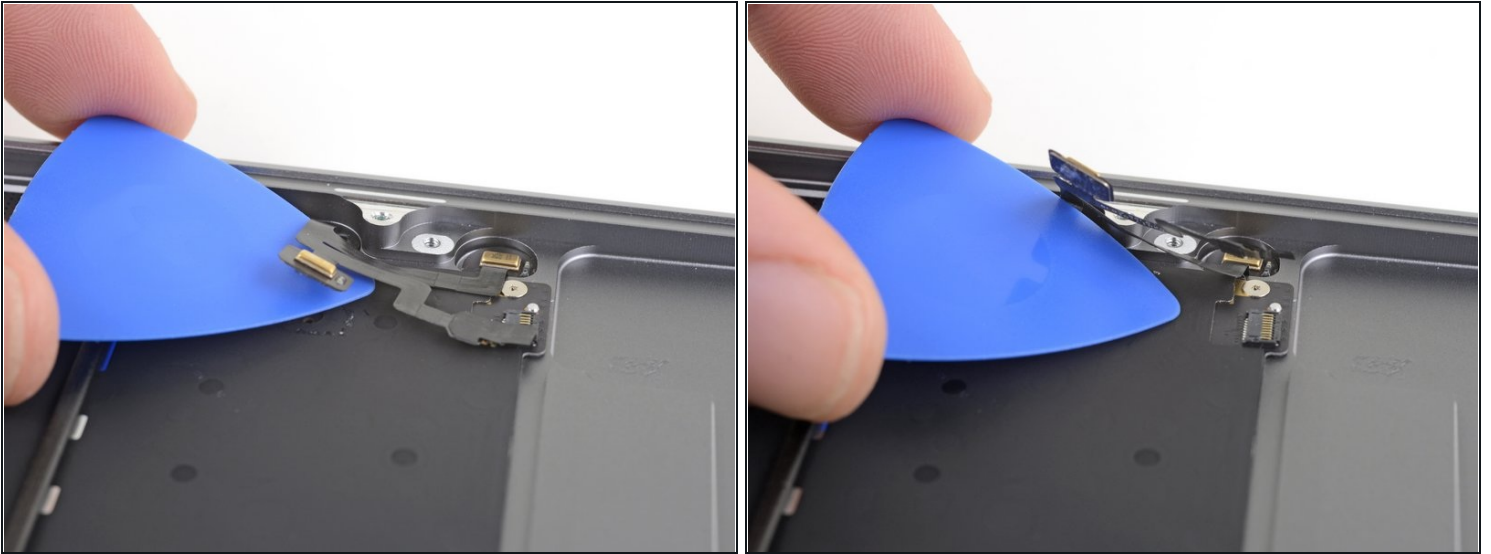
- ① If the adhesive is stubborn, do not force the pick. Heat the microphone assembly using an iOpener or a hair dryer to soften the adhesive.

Step 33



- Use the point of a spudger to lift the small locking flap on the microphone's ZIF connector.
- Slide the microphone cable straight out of the ZIF connector.

Step 34



- Slide an opening pick under the rest of the microphone assembly cable to separate it from the adhesive securing it to the upper case.

Step 35



- Use the point of a spudger to carefully pry one of the microphones out of its recess in the upper case.
 - ① If the adhesive is stubborn, it may be necessary to apply heat to the microphone or the case.

Step 36



- Use the point of a spudger to carefully pry the other microphone out of its recess in the upper case.
 - ① If the adhesive is stubborn, it may be necessary to apply heat to the microphone or the case.

Step 37



- Remove the microphone assembly.

Compare your new replacement part to the original part—you may need to transfer remaining components or remove adhesive backings from the new part before installing.

To reassemble your device, follow the above steps in reverse order.

Take your e-waste to an [R2 or e-Stewards certified recycler](#).

Repair didn't go as planned? Check out our [Answers community](#) for troubleshooting help.