



# MacBook Air 13" Retina Display 2019 Upper Case Replacement

Use this guide to replace the upper case of the...

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# INTRODUCTION

Use this guide to replace the upper case of the 2019 MacBook Air, including the keyboard. This involves removing all the parts in the MacBook and transferring them to a new upper case. Make sure to keep track of screws and small parts so that they can be easily reinstalled in the new upper case.

Due to overlapping prerequisite guides, there are some repeated steps and inconsistencies in the photos. These are expected and do not effect the procedure. If you notice a repeated step, skip it and continue with the procedure.

**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.

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## 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)  
[T5 Torx Screwdriver](#) (1)  
[TR9 Torx Security Screwdriver](#) (1)  
[P2 Pentalobe Screwdriver iPhone](#) (1)

## PARTS:

[MacBook Air 13" \(Late 2018-Mid 2019\) Upper Case with Keyboard](#) (1)

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## 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.

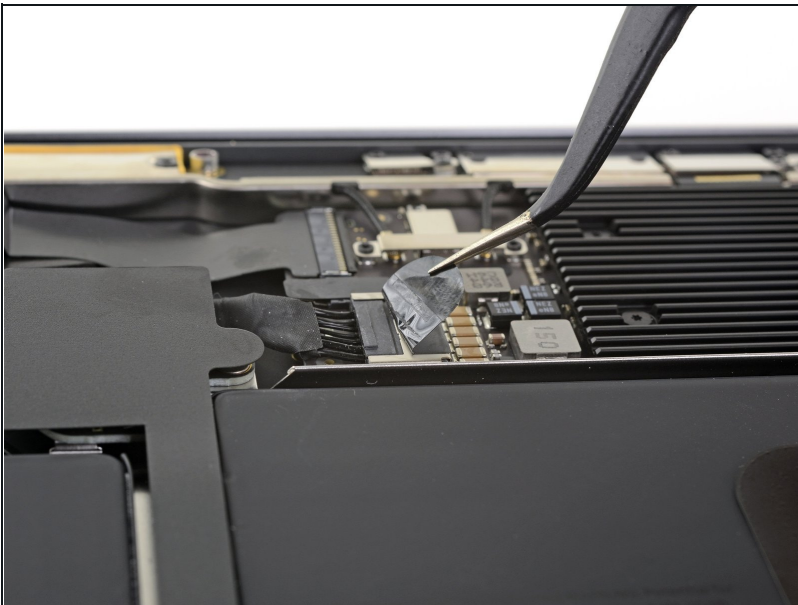
- Use a P5 driver to remove the following screws:
  - Two 7.9 mm screws
  - Two 7.1 mm screws
  - Six 2.6 mm screws

## Step 2 — Remove the lower case



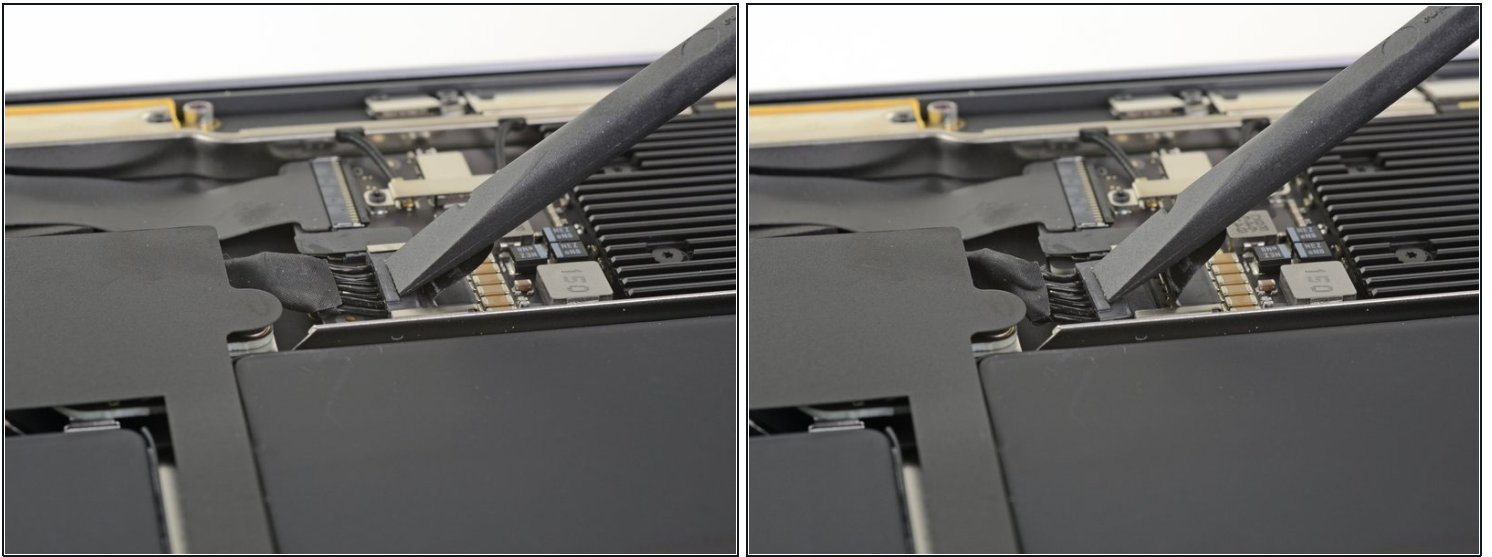
- Wedge your fingers between the display and the lower case and pull upward to pop the lower case off the Air.
- Remove the lower case.
- ★ After reassembly, your MacBook might not turn on until it's connected to a power source (a low power phone charger may work). To test your repair, plug in your charger,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



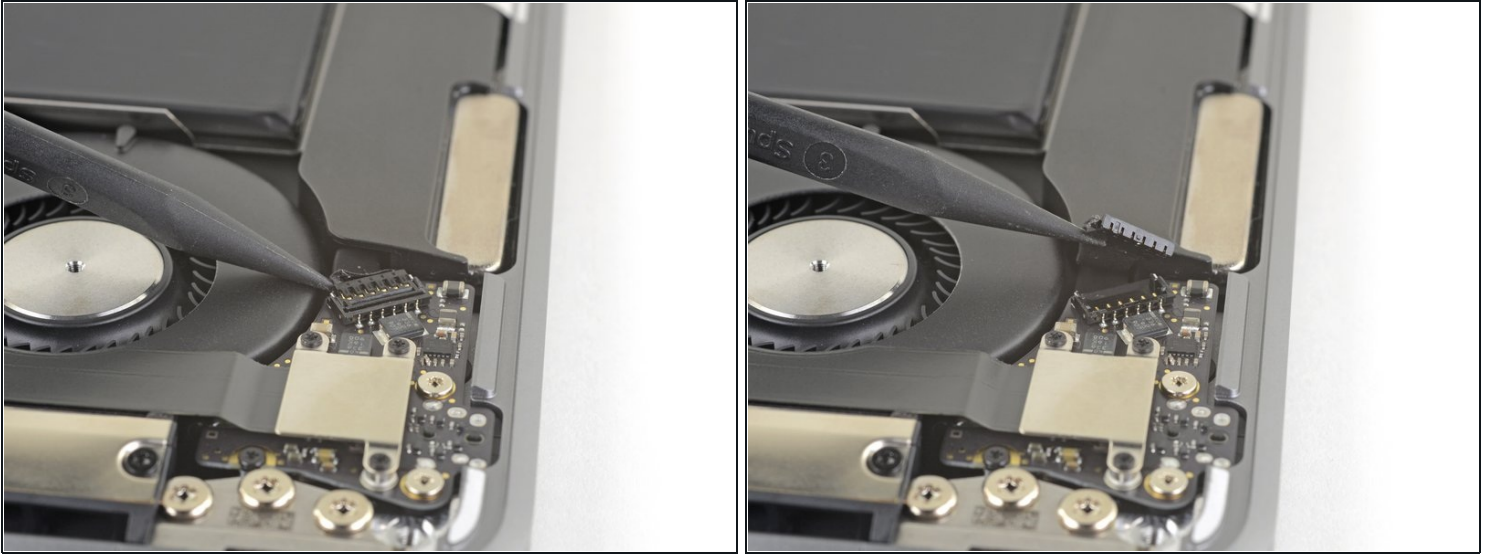
- Use a spudger to slide the battery connector parallel to the logic board and out of its socket on the logic board.

## Step 5 — Remove the right speaker adhesive



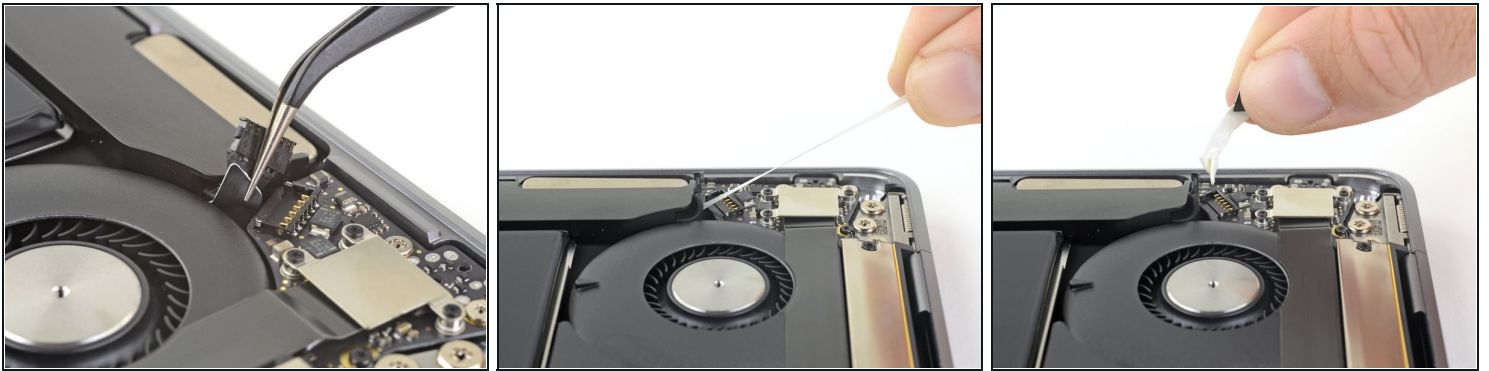
- Use a pair of tweezers to lift up the black adhesive pull tab at the bottom of the right speaker, enough so you can grab it with your fingers.
- Grab the adhesive strip pull tab and slowly and carefully pull the adhesive strip out from under the speaker.
  - ① Keep the angle of the adhesive strip as 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.
  - ⓘ 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 8 — Remove the right speaker



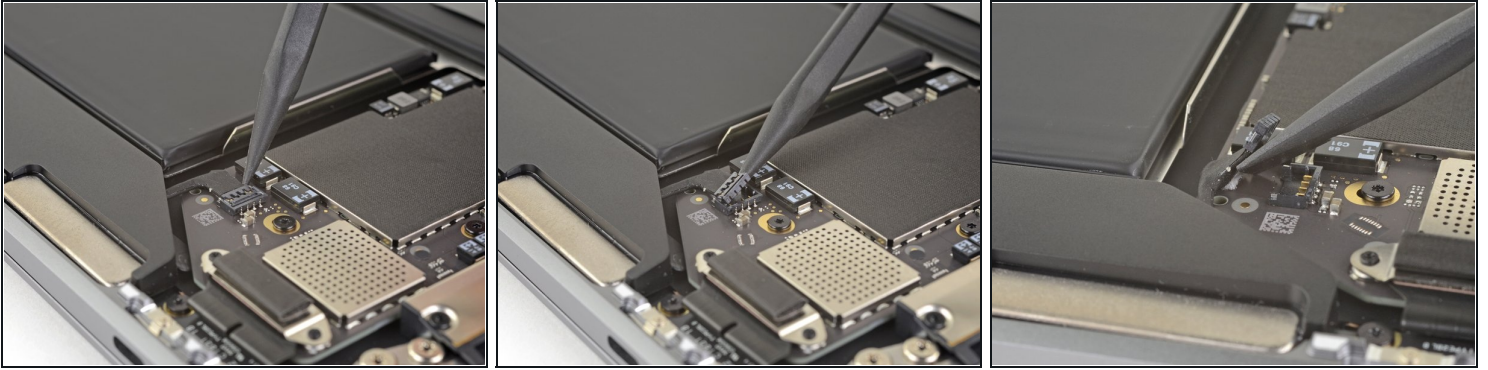
- Lift the right speaker straight up from the bottom and remove it.

## Step 9 — Remove the left speaker adhesive



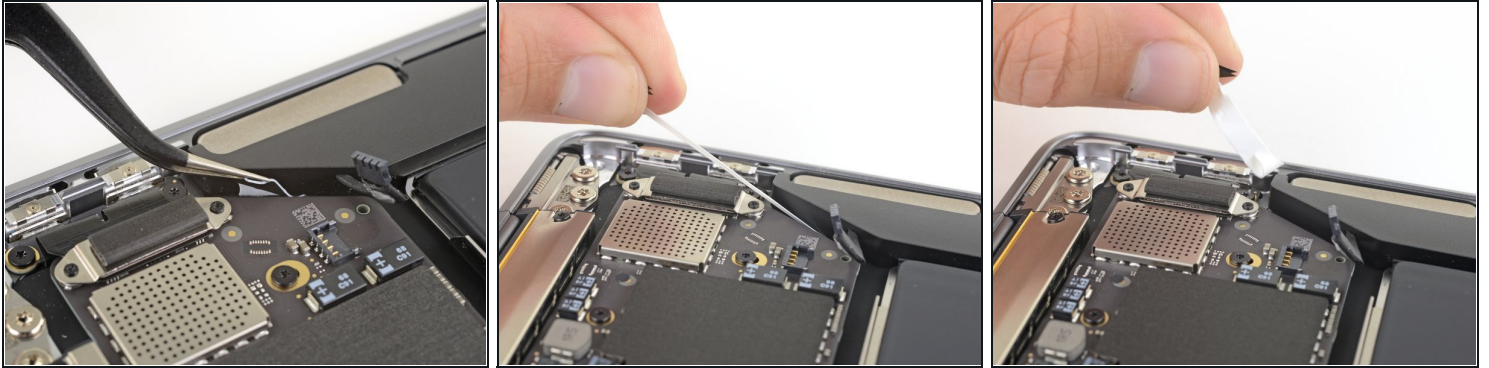
- Use a pair of tweezers to lift up the black adhesive pull tab at the bottom of the left speaker, enough so you can grab it with your fingers.
- Grab the adhesive strip pull tab and slowly and carefully pull the adhesive strip out from under the speaker.
  - ⓘ Keep the angle of the adhesive strip as 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



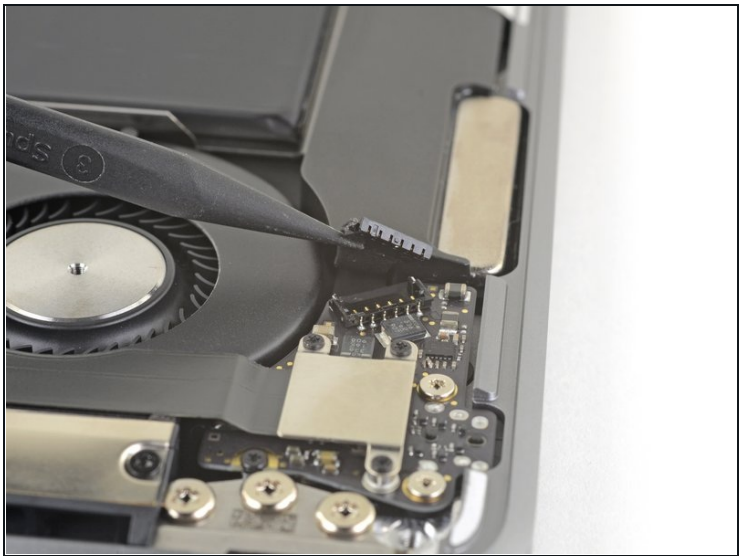
- Use tweezers to lift the adhesive pull tab at the top of the left speaker enough that you can grab it with your fingers.
- Grab the adhesive strip pull tab and slowly and carefully pull the adhesive strip out from under the speaker.
  - ① Keep the angle of the adhesive strip as parallel to the laptop 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 12 — Remove the left speaker



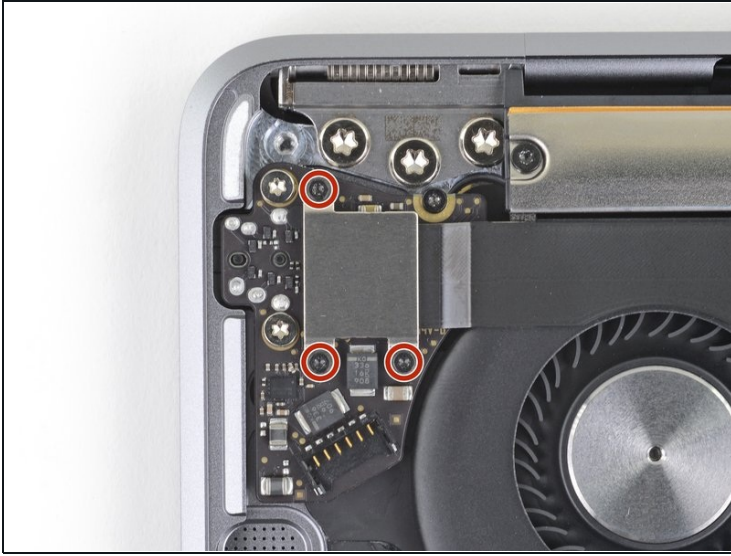
- Lift the left speaker straight up from the bottom and remove it.

## Step 13 — Disconnect the right speaker



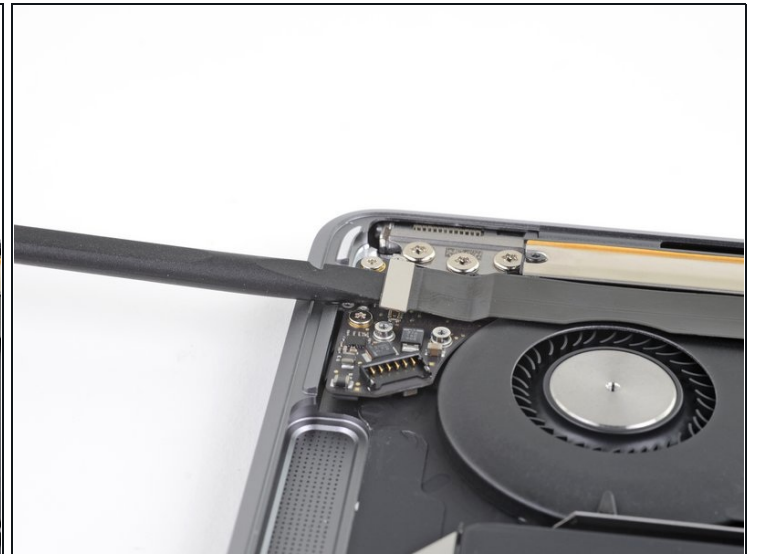
- Slide the tip of a spudger underneath the speaker cable and pry straight up to disconnect the speaker.

## Step 14 — Disconnect the audio board



- Use a T3 Torx driver to remove the three 1.4 mm screws securing the audio board cable bracket.
- Remove the cable bracket.

## Step 15



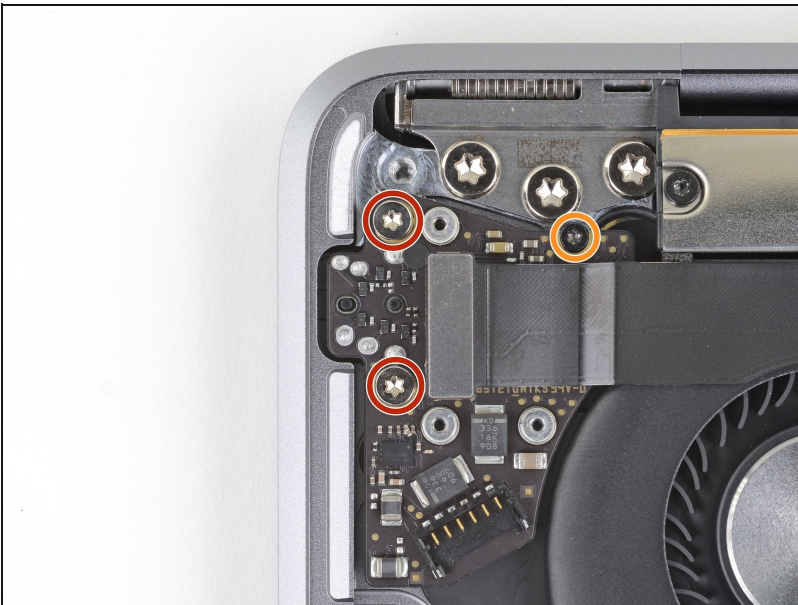
- Use the flat end of a spudger to pry the audio board connector straight up and disconnect it.

## Step 16



- Use the flat end of a spudger to pry the Touch ID sensor connector straight up and disconnect it.

## Step 17 — Remove the audio board



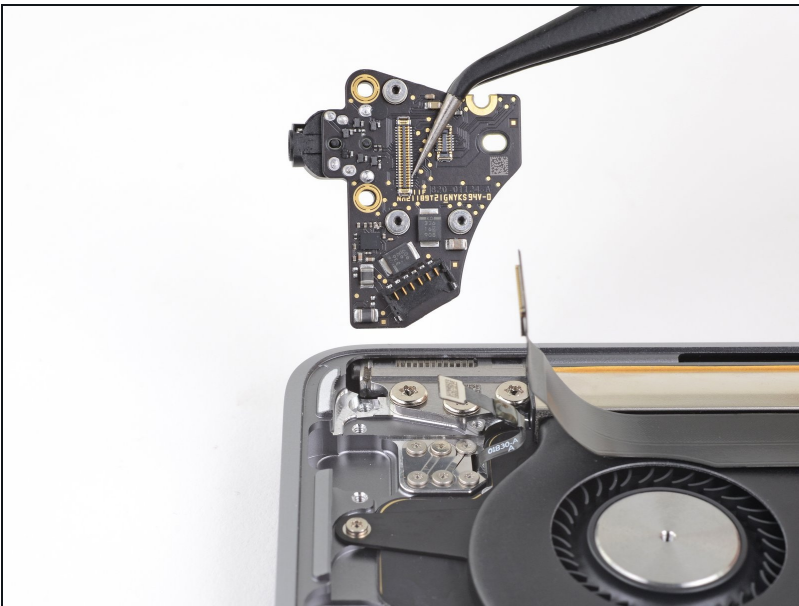
- Remove the following screws:
  - Two 4.3 mm, T5 Torx screws
  - One 2.4 mm, T3 Torx screw

## Step 18



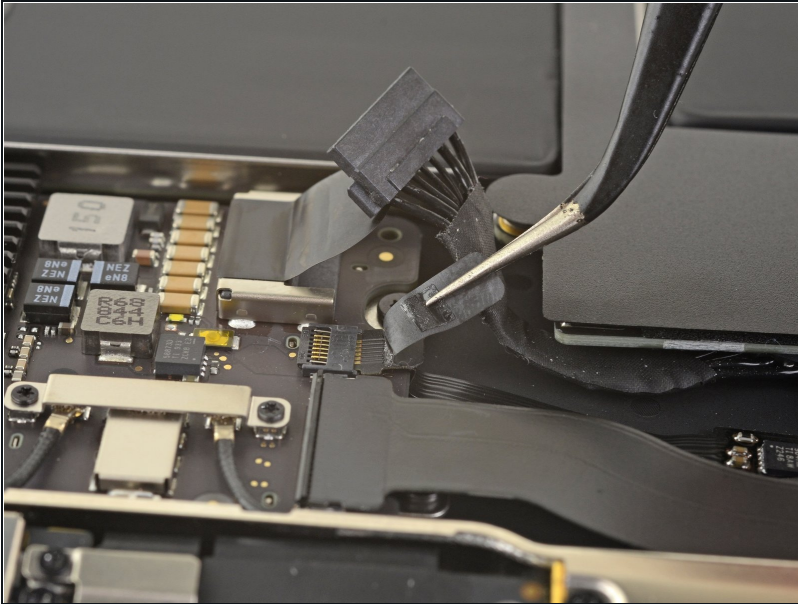
- Slide the flat end of a spudger underneath the Touch ID sensor cable to slice through the adhesive securing it to the audio board.

## Step 19



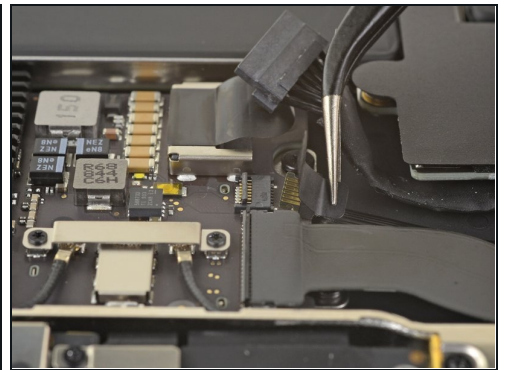
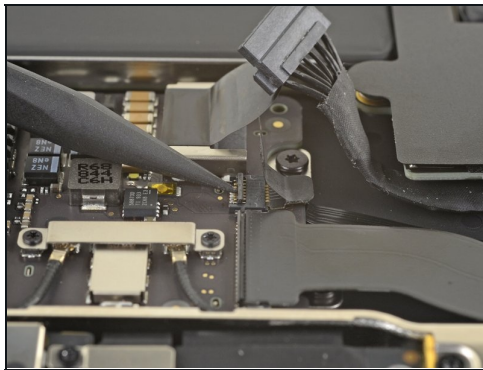
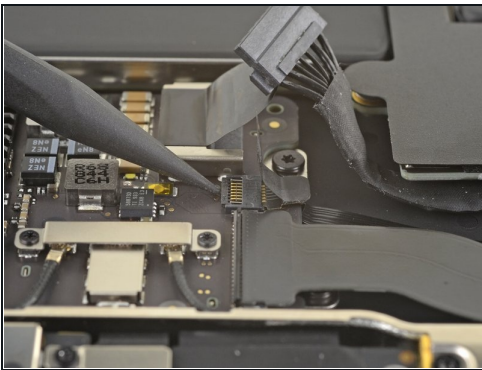
- Remove the audio board.

## Step 20 — Disconnect the fan



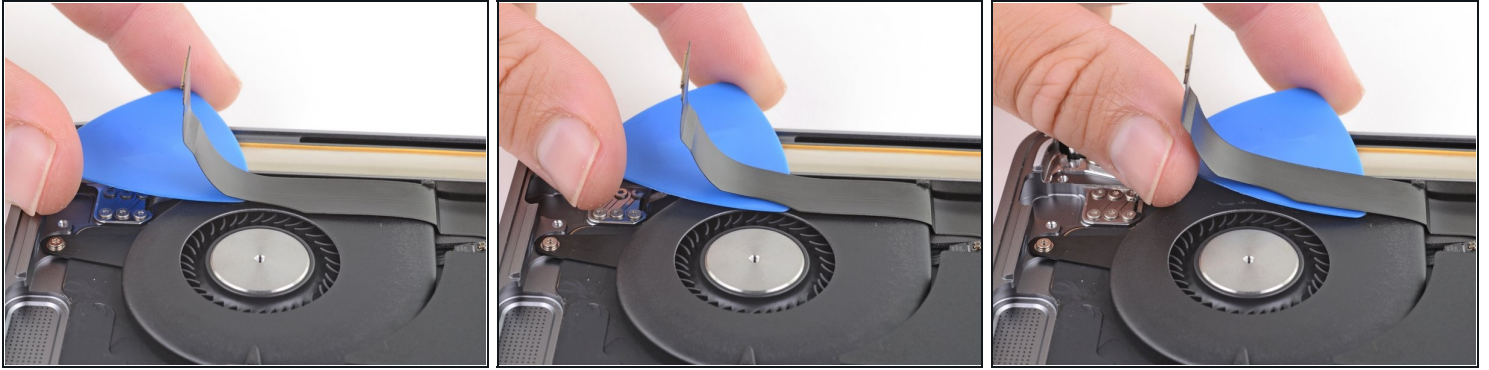
- Peel back the black tape covering the fan cable connector.

## Step 21



- 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 22 — Separate the audio board cable



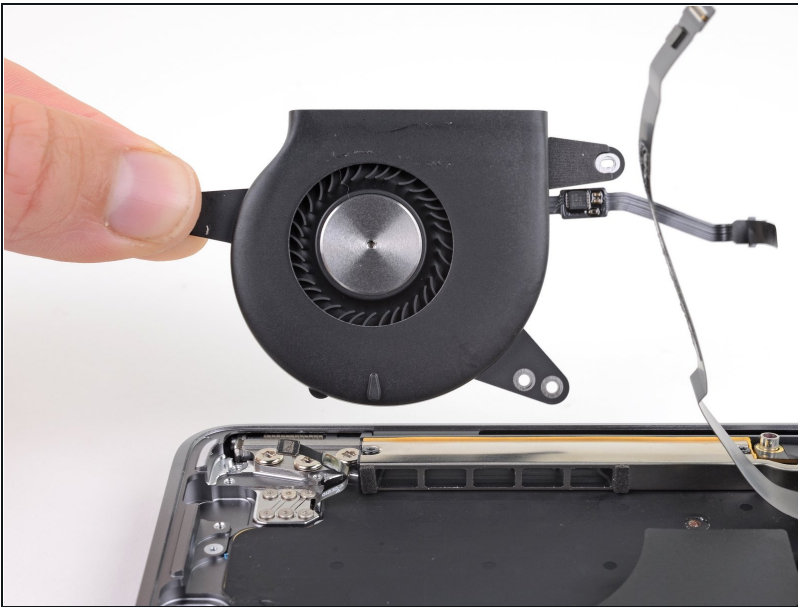
- Slide an opening pick under the audio board cable to slice through the adhesive securing it to the fan.

## Step 23 — Remove the fan



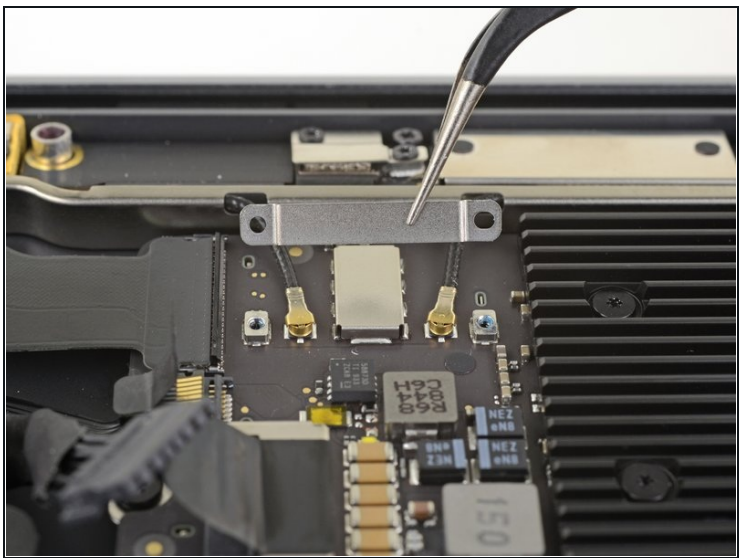
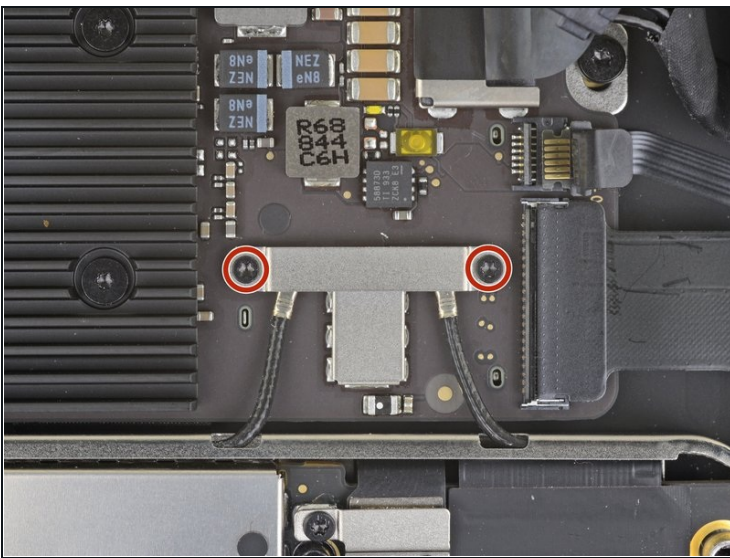
- Use a T5 Torx driver to remove the three 2.7 mm screws securing the fan.

## Step 24



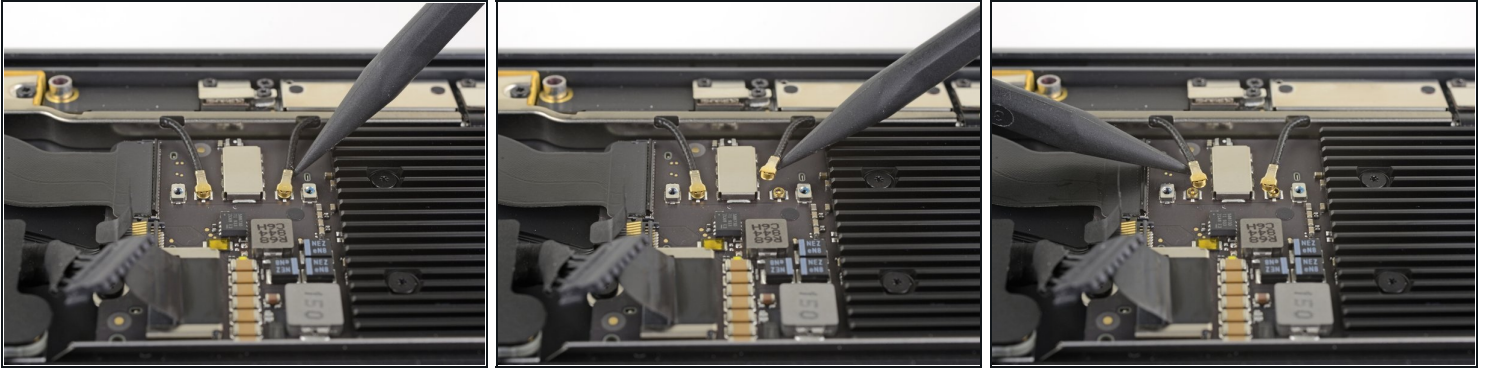
- Lift the fan out of the case and remove it.

## Step 25 — Disconnect the antenna bar



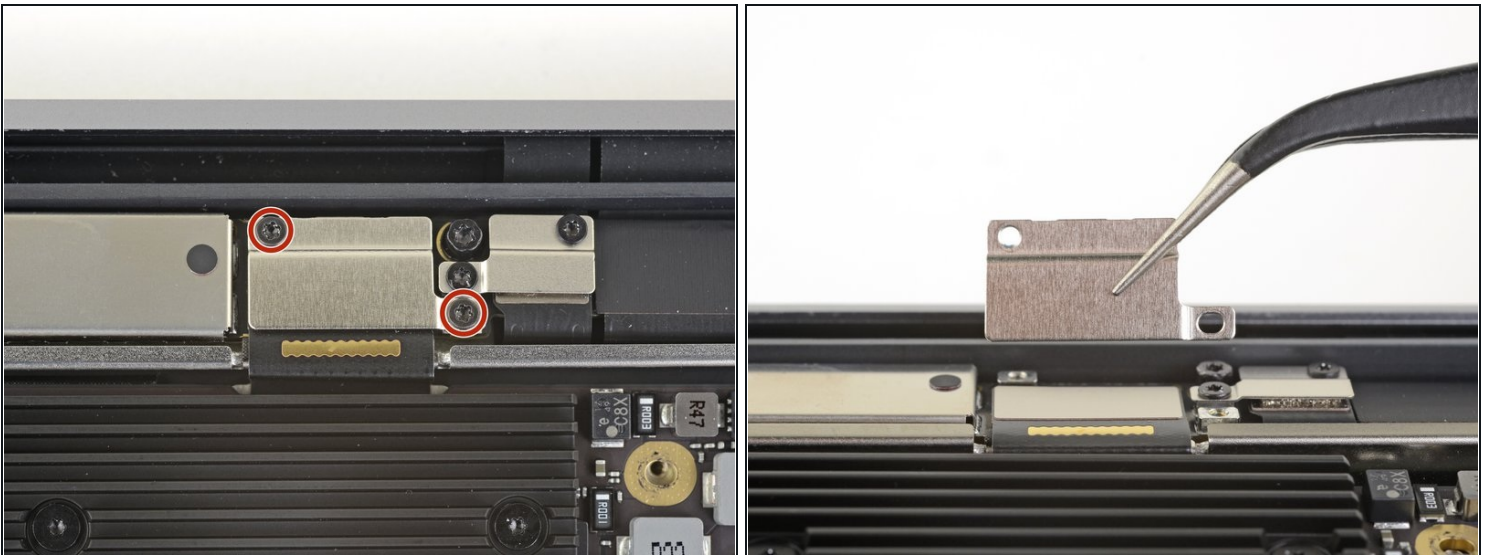
- Use a T3 Torx driver to remove the two 1.4 mm screws securing the antenna cable bracket.
- Remove the antenna cable bracket.

## Step 26



- 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 27



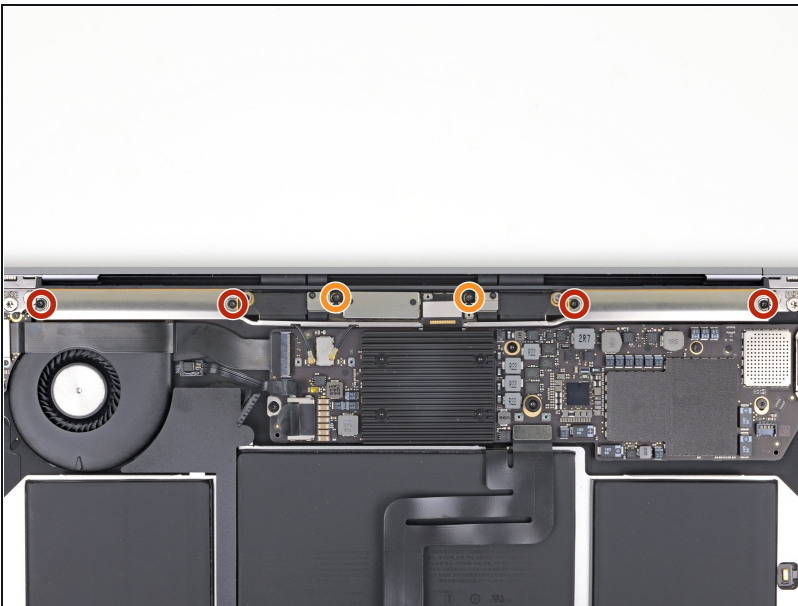
- Use a T3 Torx driver to remove the two 1.5 mm screws securing the display cable connector bracket.
- Remove the display cable connector bracket.

## Step 28



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

## Step 29



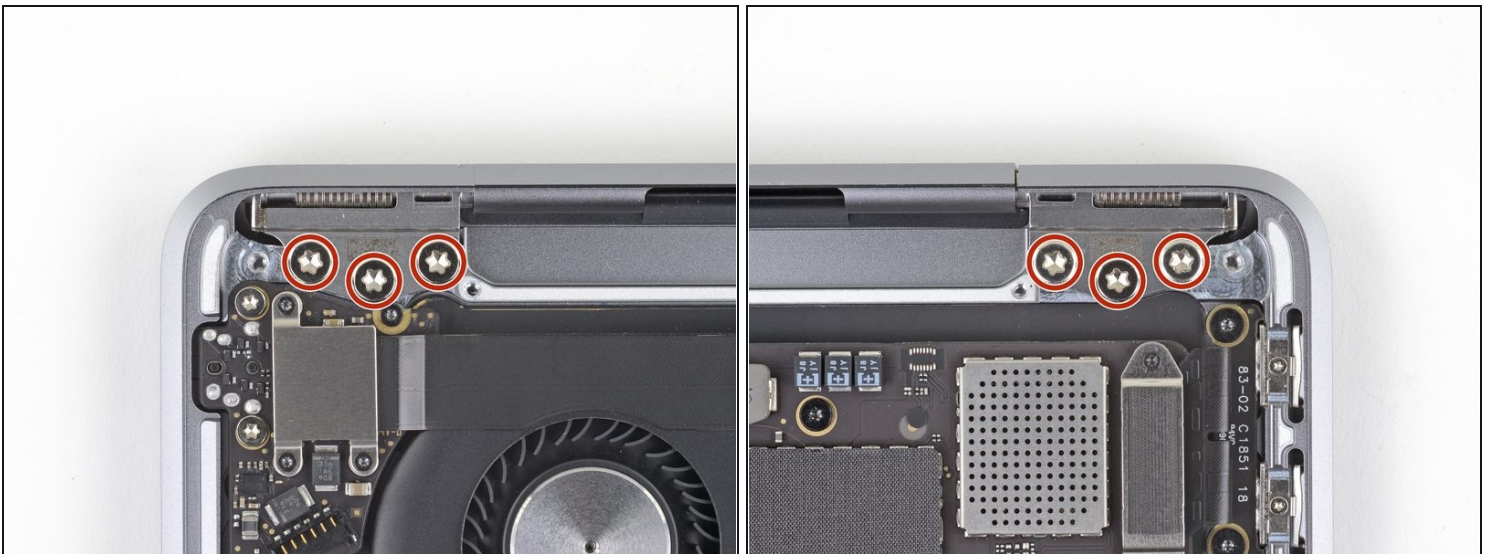
- Use a T5 Torx driver to remove the following screws:
  - Four 7.4 mm screws
  - Two 4.5 mm screws

## Step 30 — Remove the antenna bar



- Lift the antenna bar straight up and out of the case. Take care not to snag the antenna bar on any cables or connectors.
  - ⓘ You may encounter resistance from the clips in the middle of the antenna bar holding it in the case. You may pull hard without damaging anything as long as you pull straight up, perpendicular to the case.
- Remove the antenna bar.

## Step 31 — Remove the display



- Use a T9 Torx driver to remove the six 4.9 mm screws securing the display hinges to the upper case.

## Step 32



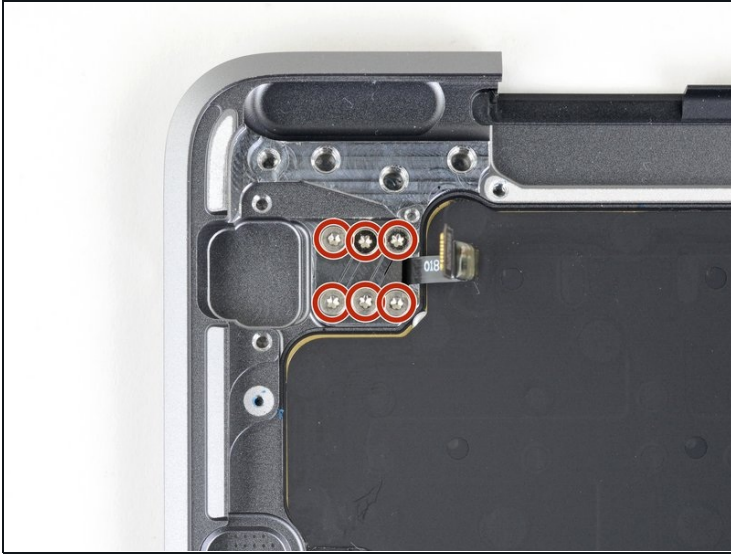
- With the MacBook still screen-side down, carefully lift the upper case to open the MacBook as far as possible.

## Step 33



- Lift the MacBook and carefully rotate the display to a 90 degree angle with the upper case.
  - ① The hinges should not move in relation to the display, and should rotate out of the case slightly.
- Keeping the display at a 90 degree angle with the case, move the display straight down while holding the case still, so that the hinges slide out the bottom of the case.

## Step 34 — Remove the Touch ID sensor



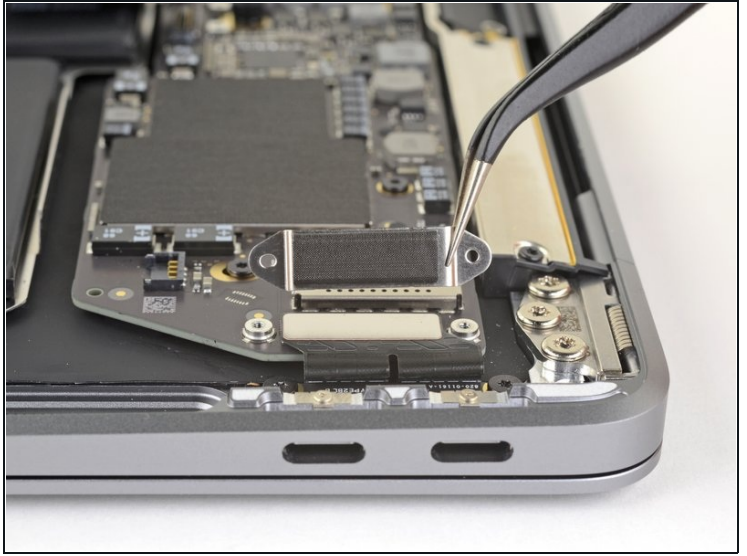
- Use a T3 Torx driver to remove the six 1.6 mm screws securing the Touch ID sensor and its bracket.
- Remove the Touch ID bracket.

## Step 35



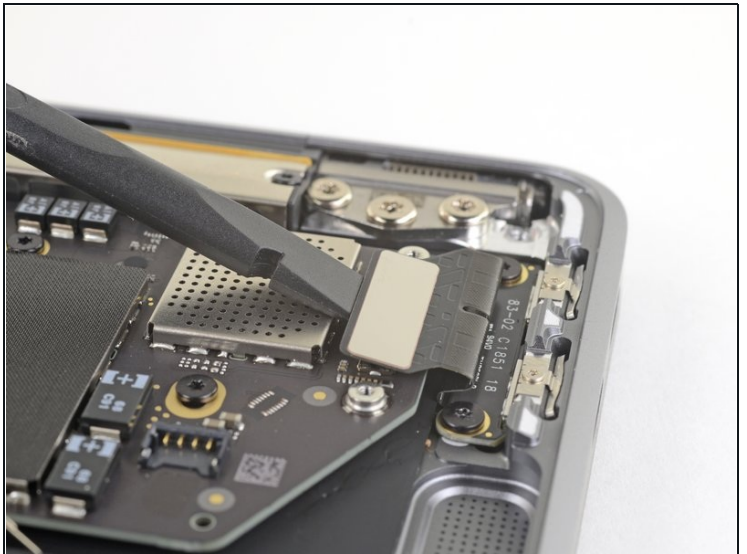
- Turn the MacBook right-side up and open the display.
- Lift the Touch ID sensor out of its recess and remove it.

## Step 36 — Remove the USB-C board



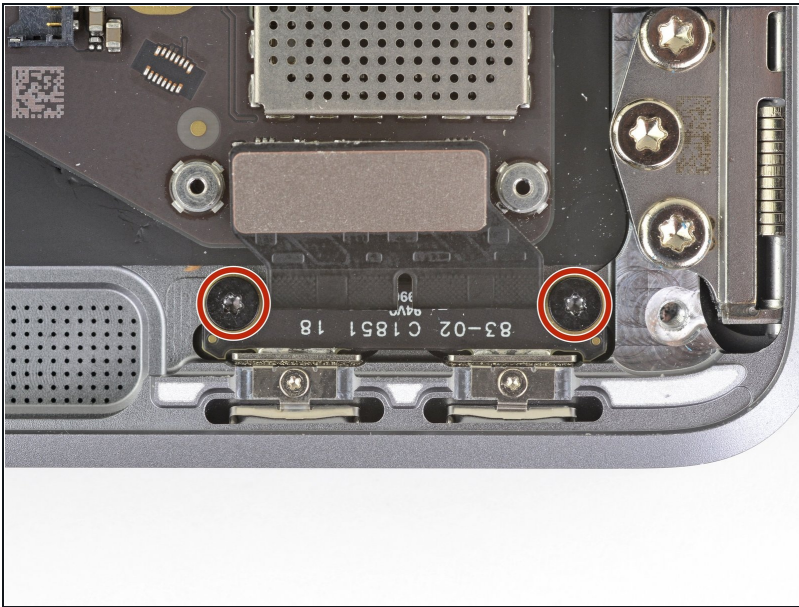
- Use a T3 Torx driver to remove the two 1.4 mm screws securing the USB-C connector bracket.
- Remove the USB-C connector bracket.

## Step 37



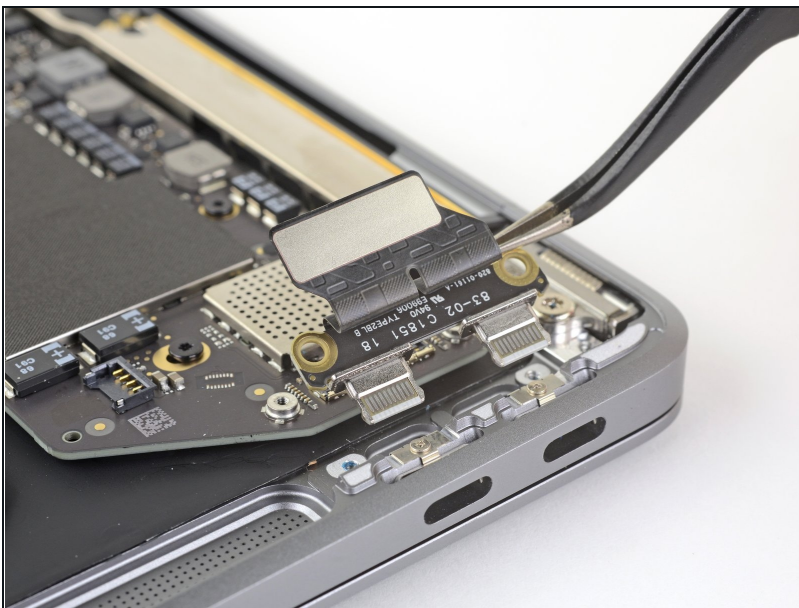
- Use the flat end of a spudger to pry the USB-C cable connector up and out of its socket on the logic board.

## Step 38



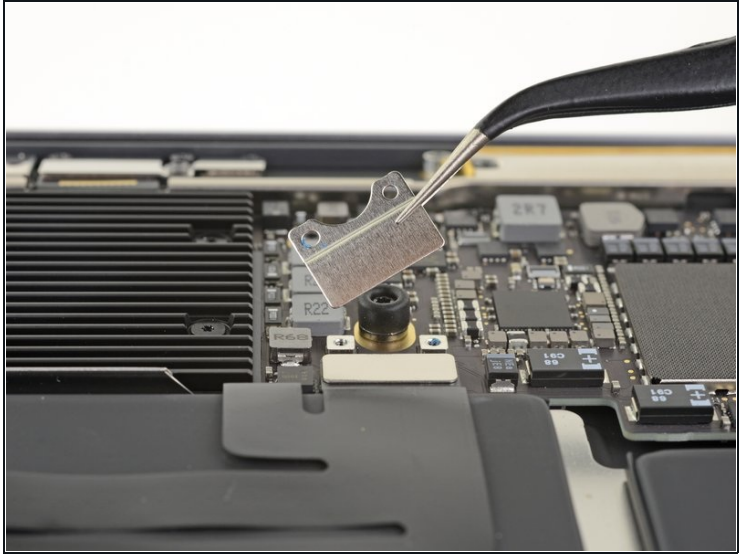
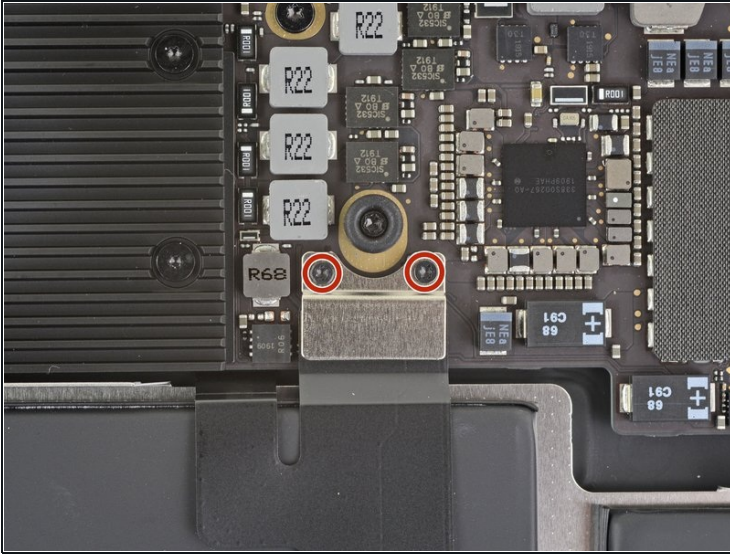
- Use a T4 Torx driver to remove the two 2.9 mm screws securing the USB-C board.

## Step 39



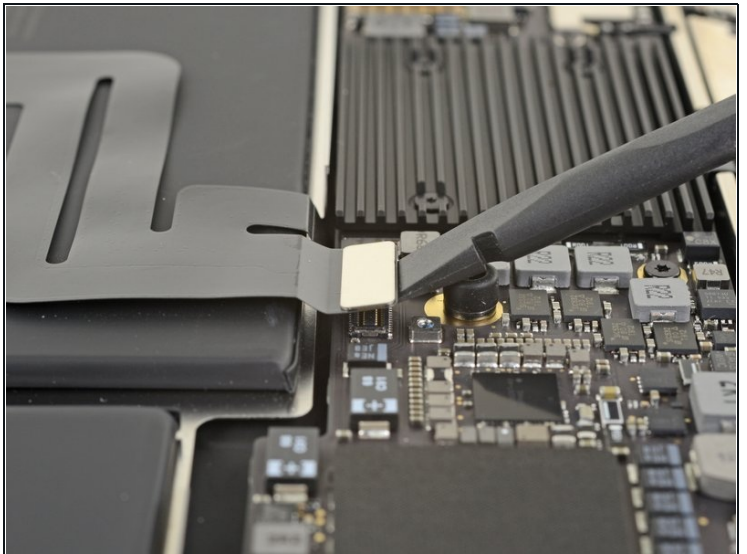
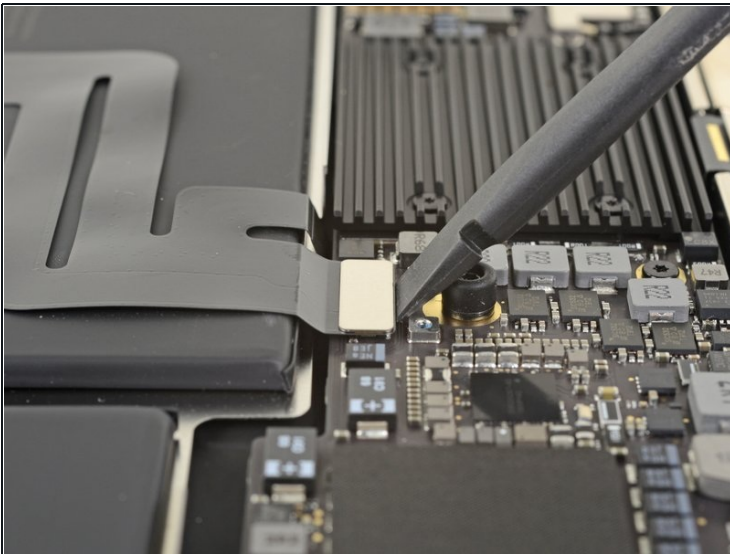
- Remove the USB-C board.

## Step 40 — Disconnect the trackpad cable



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

## Step 41



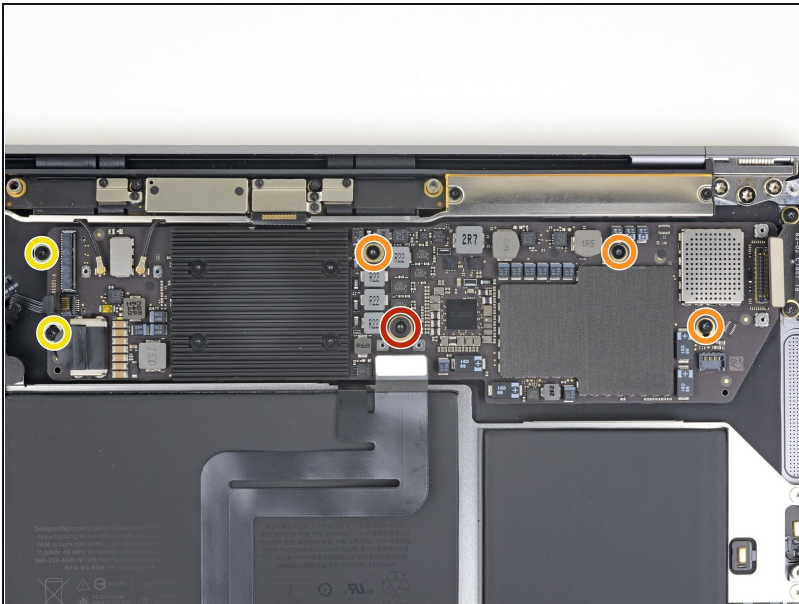
- Use the flat end of a spudger to pry the trackpad cable connector up and out of its socket.

## Step 42 — Disconnect the audio board cable



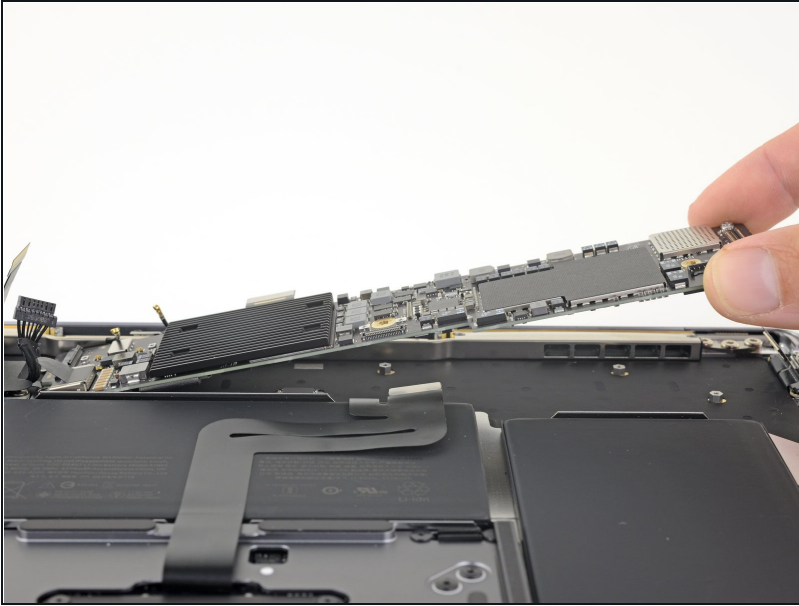
- Use a spudger to lift up the small locking flap on the sound board cable's [ZIF connector](#).
- Slide the sound board cable out of the ZIF connector.

## Step 43 — Unscrew the logic board



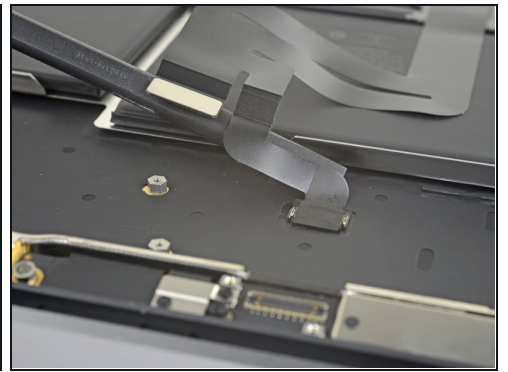
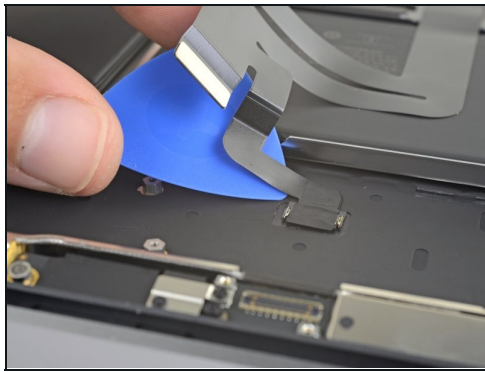
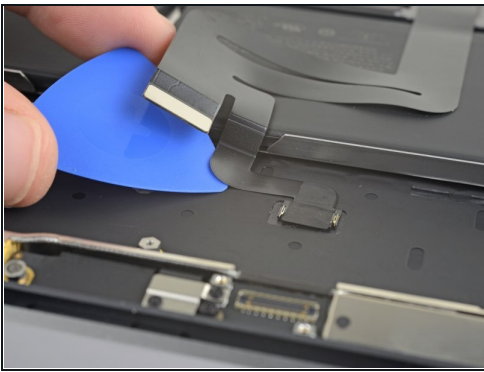
- Use a T5 Torx driver to remove the following screws:
  - One 5.5 mm screw
  - Three 2.6 mm screws
  - Two 1.9 mm screws

## Step 44 — Remove the logic board



- Remove the logic board.

## Step 45 — Separate the trackpad cable adhesive



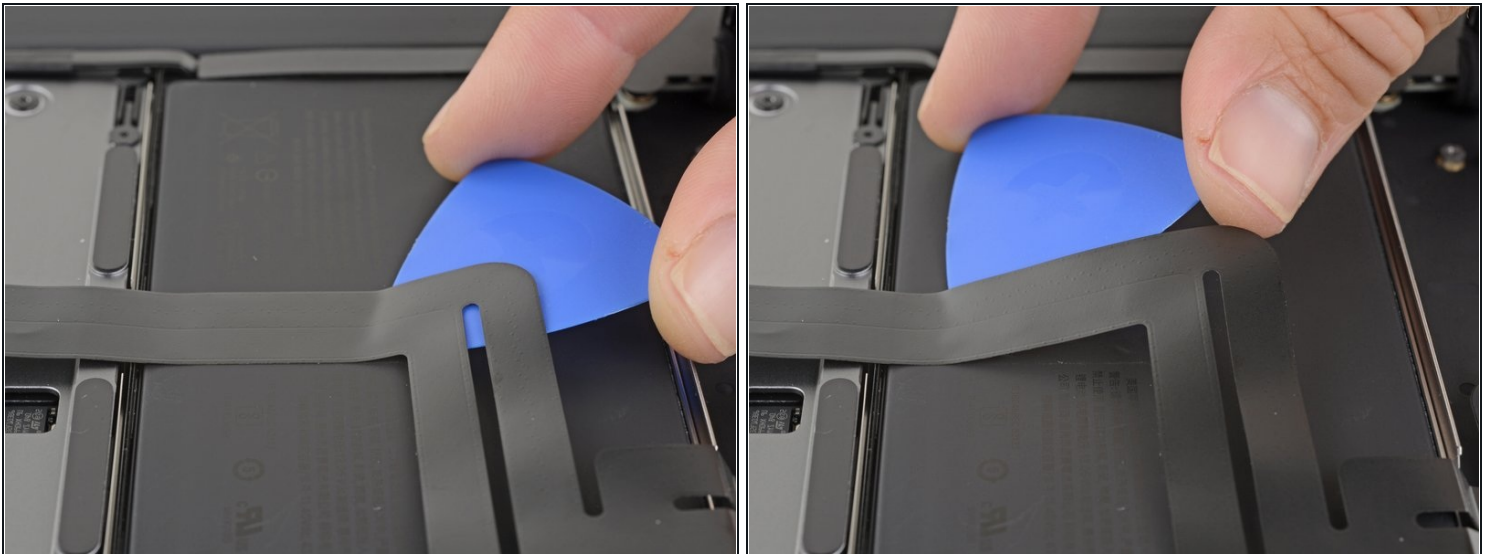
- Carefully slide an opening pick under the trackpad cable to separate the adhesive securing it to the upper case.
  - ① If you have difficulty separating the adhesive, heat it slightly with an iOpener or hair dryer to soften the adhesive.

## Step 46 — Disconnect the trackpad cable



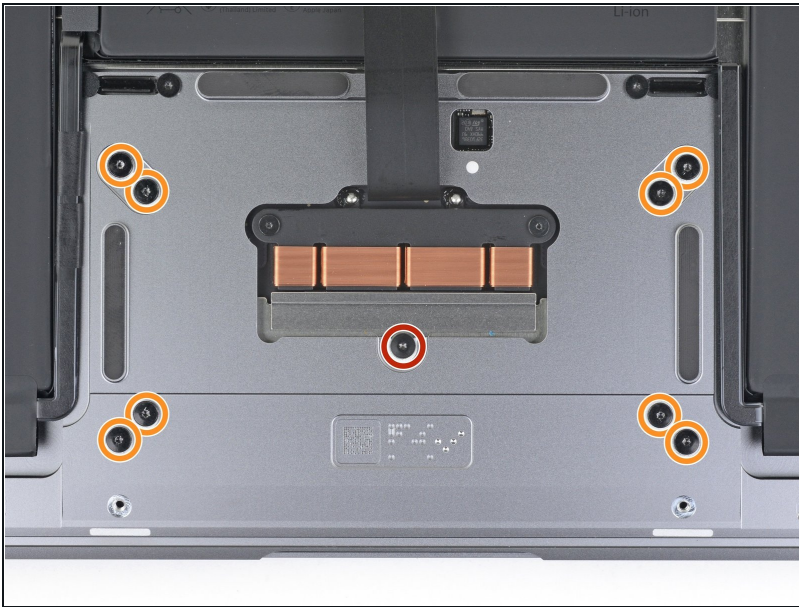
- Use the flat end of a spudger to lift the small locking flap on the trackpad ZIF connector.
- Slide the trackpad cable straight out of its connector.

## Step 47 — Separate the trackpad cable adhesive



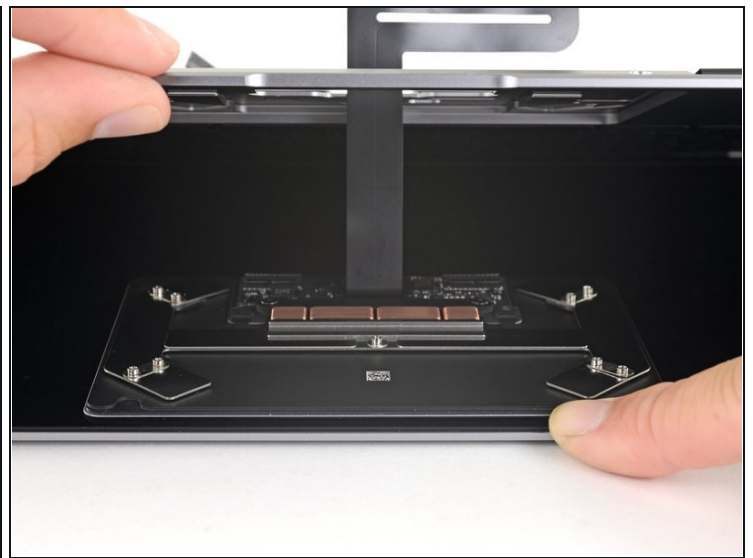
- Carefully slide an opening pick under the trackpad cable to separate the adhesive securing it to the battery.
  - ⓘ If you have difficulty separating the adhesive, heat it slightly with an iOpener or hair dryer. Be careful not to overheat the battery.

## Step 48 — Remove the trackpad



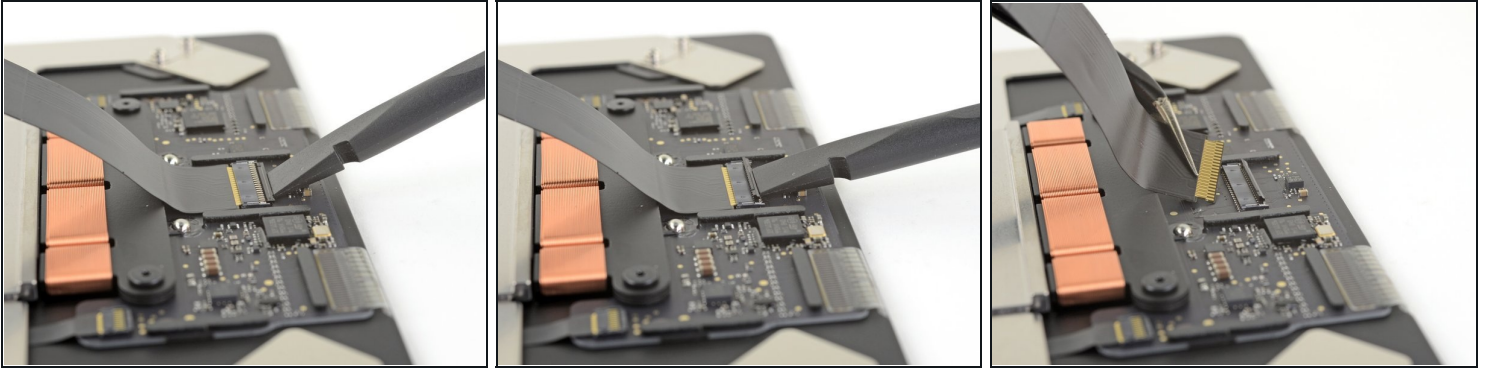
- Use a T5 Torx driver to remove the following screws securing the trackpad:
  - One 3.2 mm screw
  - Eight 3.1 mm screws

## Step 49



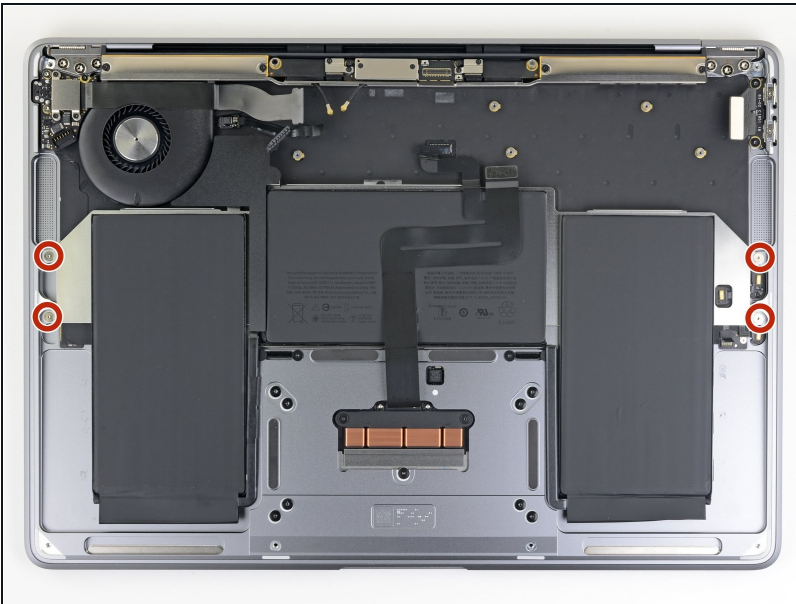
- With the laptop still lying screen-side down, carefully open the laptop. The trackpad will stay sitting on the display.
- Remove the trackpad from the MacBook. Take care not to scratch the display.

## Step 50 — Disconnect the trackpad cable



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

## Step 51 — Unscrew the battery



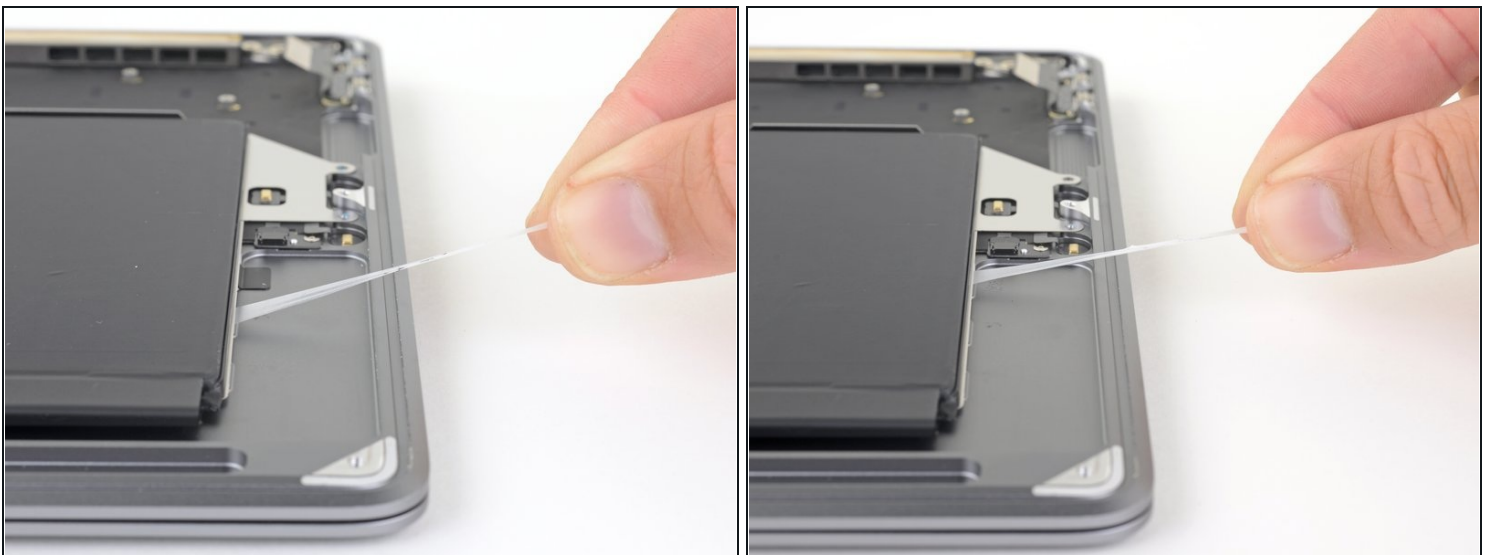
- Use a T3 Torx driver to remove four 2.5 mm screws securing the battery.

## Step 52 — Remove the battery adhesive



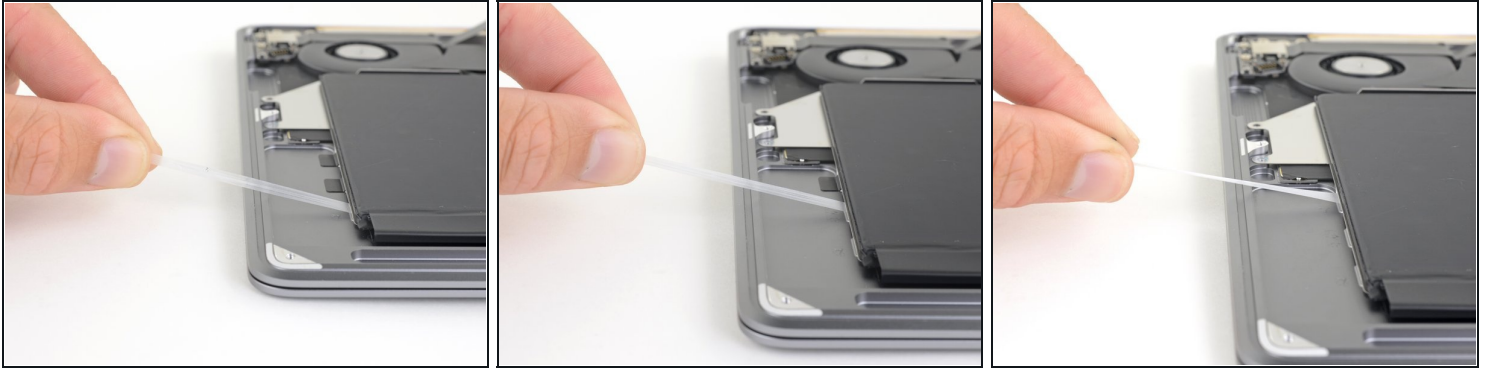
- Use a pair of tweezers to lift up the black adhesive pull tab on the side of the battery, enough so you can grab it with your fingers.
- Grab the adhesive strip pull tab and slowly and carefully pull the adhesive strip out from under the battery.
  - ① Keep the angle of the adhesive strip as parallel 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 53



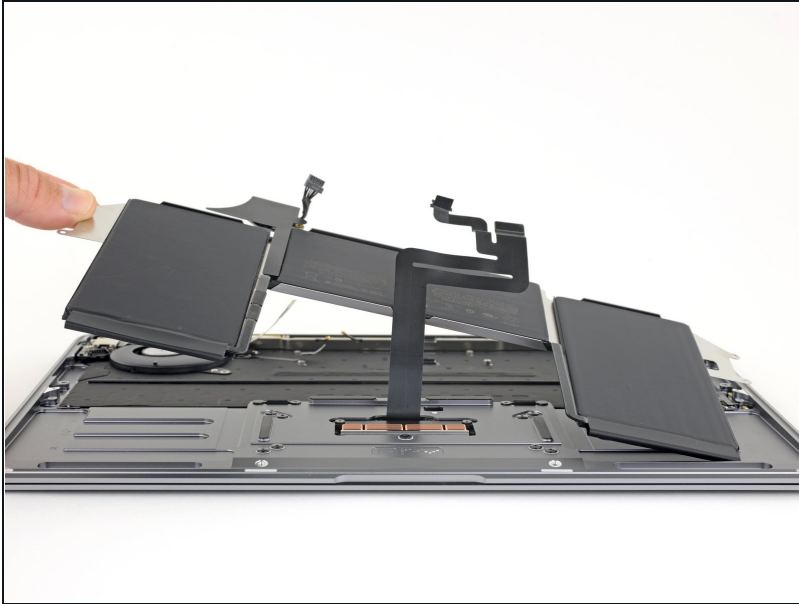
- Repeat the previous step to remove the next two adhesive strips on the same side of the battery.
- If any adhesive strips break, leave them in and proceed to the next step.

## Step 54



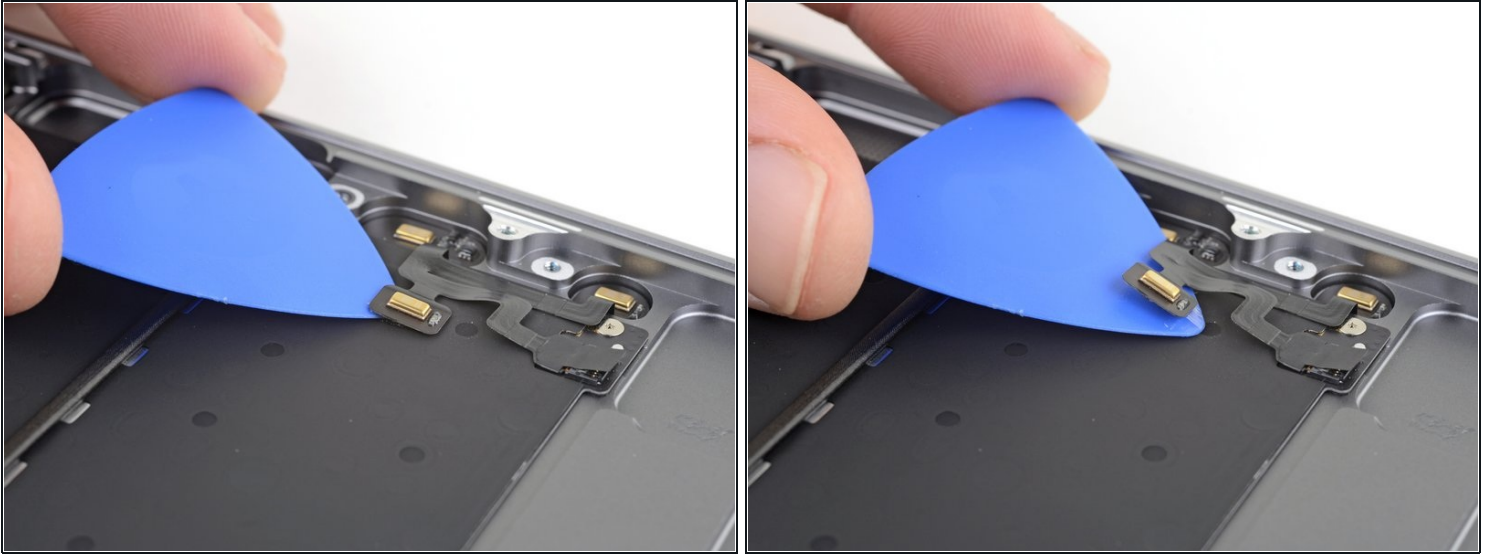
- Repeat the previous two steps to remove the three adhesive strips on the other side of the battery.
- ⓘ If any of the adhesive strips broke, you can use high-concentration (>90%) isopropyl alcohol to help remove them:
  - Carefully drip isopropyl alcohol along either edge of the battery, in the recessed 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 55 — 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 56 — Remove the microphone assembly

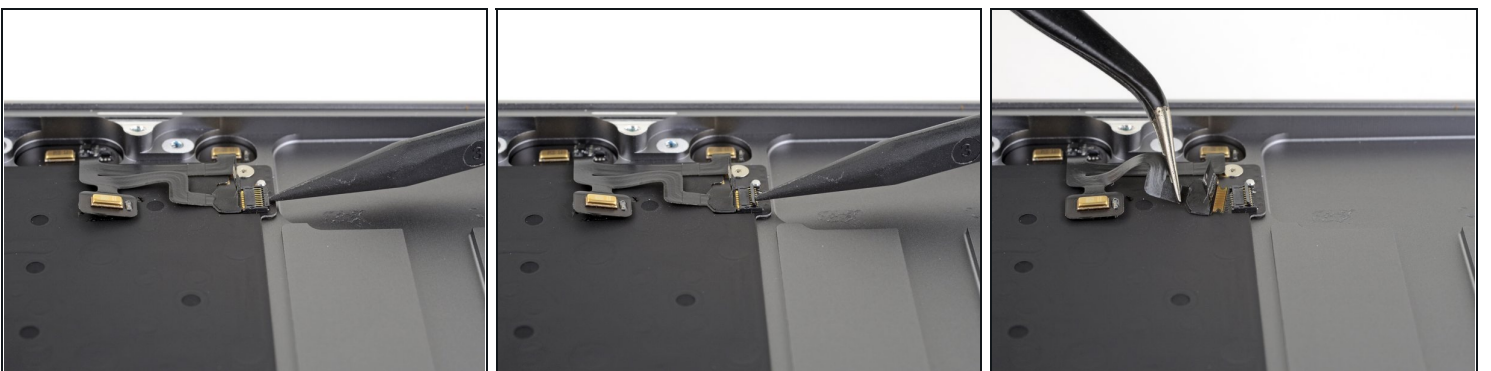


- Slide an opening pick under the microphone farthest away from the edge of the case to slice through the adhesive securing it to the upper case.

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

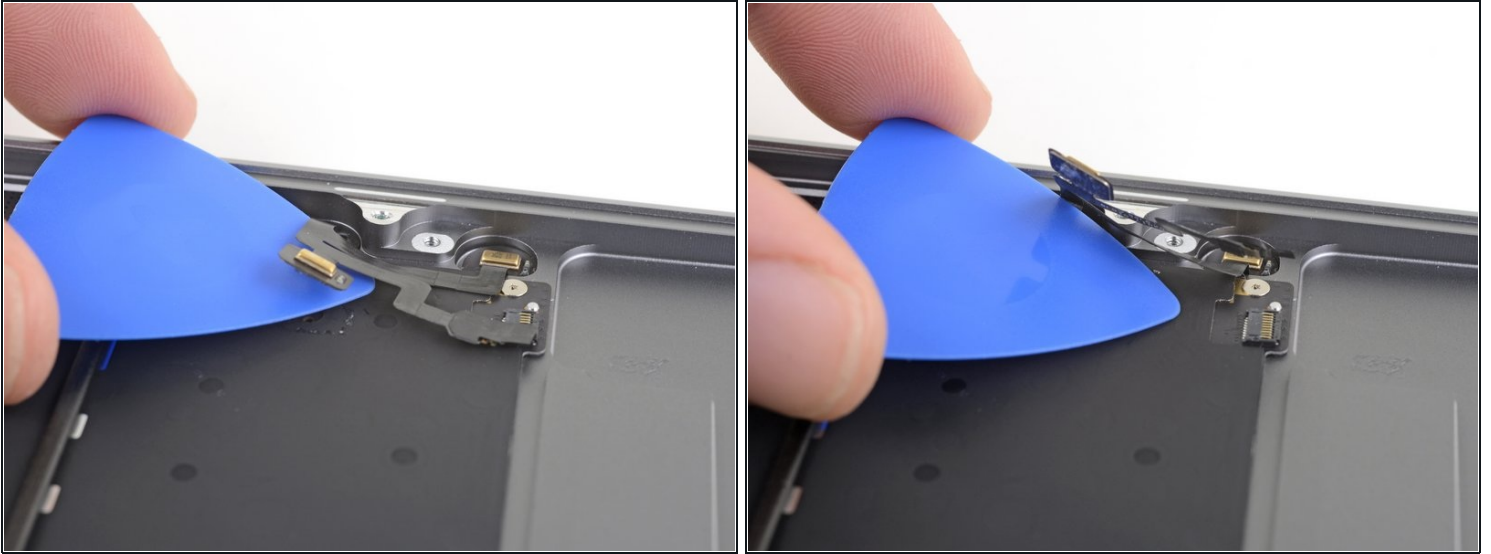
**ⓘ** If the adhesive is stubborn, do not force the pick. Heat the microphone assembly using an iOpener or a hair dryer to soften the adhesive.

## Step 57



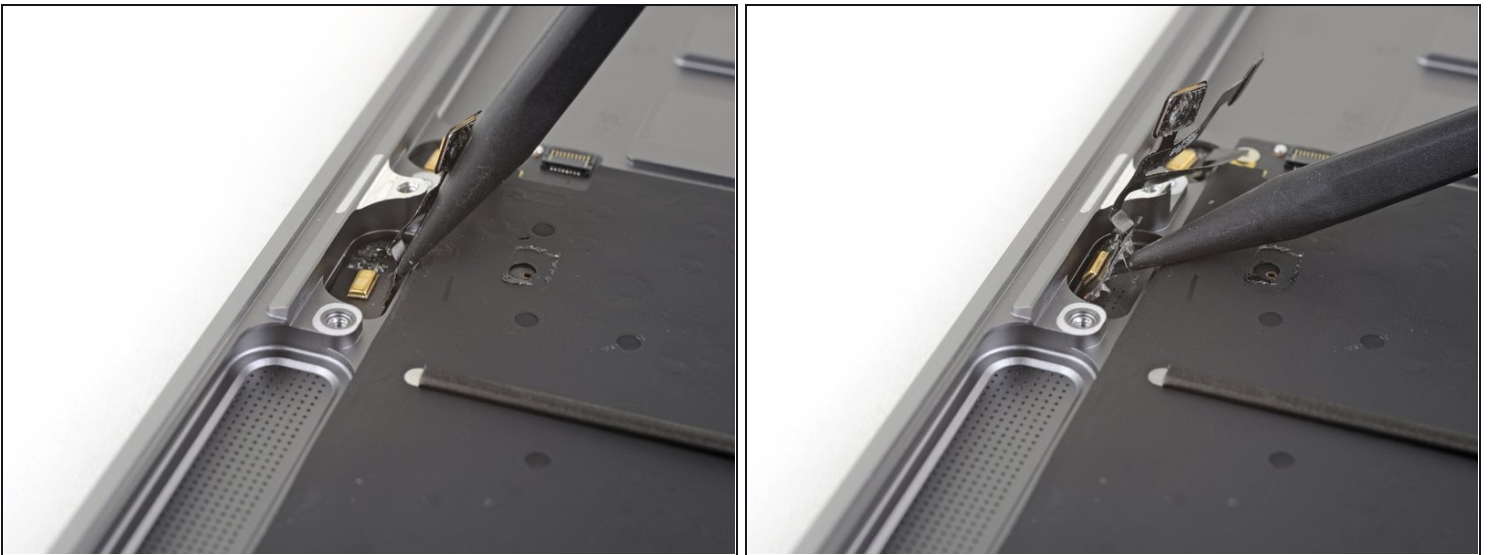
- Use the point of a spudger to lift the small locking flap on the microphone's ZIF connector.
- Slide the microphone cable straight out of the ZIF connector.

## Step 58



- 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 59



- 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 60



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

## Step 61



- Remove the microphone assembly.

## Step 62 — Remove the USB-C port brackets



- Use a P2 pentalobe driver to remove the two 1.1 mm screws securing the USB-C port brackets.

## Step 63



- Lift the USB-C port brackets out of their recesses in the upper case and remove them.
- Compare your new upper case to your old one and transfer over any remaining parts.

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**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.