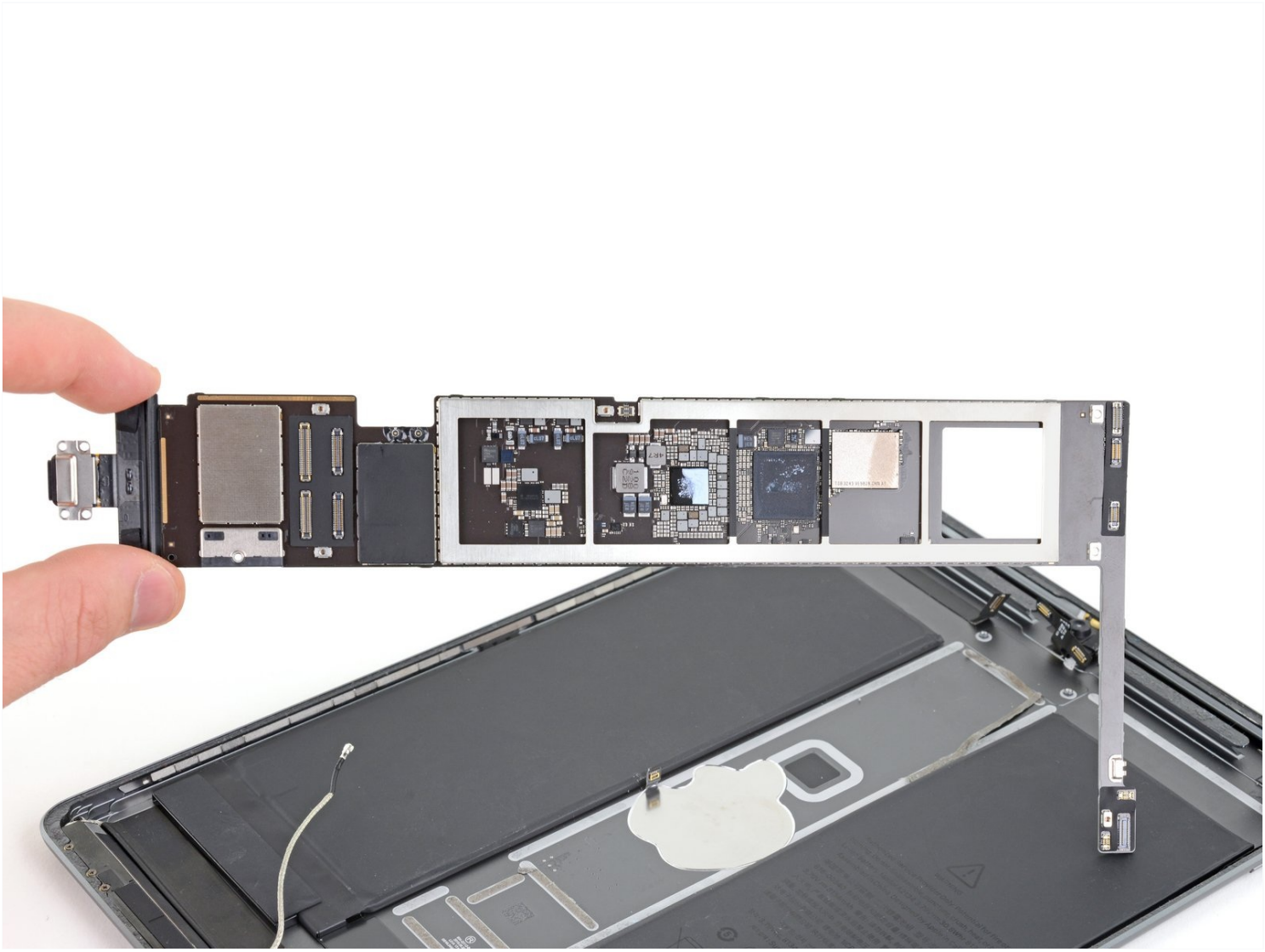
iPad Air 3 Logic Board Replacement

Follow this guide to remove or replace the...

Written By: Robert Boyd



INTRODUCTION

Follow this guide to remove or replace the logic board in a Wi-Fi only iPad Air 3. The cellular model will require disconnecting the upper cellular antennas.

For your safety, discharge the battery below 25% before disassembling your iPad. This reduces the risk of a dangerous thermal event if the battery is accidentally damaged during the repair. If your battery is swollen, take appropriate precautions.

The logic board is paired to the Touch ID fingerprint sensor. If you replace the logic board, your Touch ID sensor will no longer work as a fingerprint sensor. It will still work as a home button.

Some photos in this guide are from a different model and may contain slight visual discrepancies, but they won't affect the guide procedure.

TOOLS:

Anti-Clamp (1)
Suction Handle (1)
iFixit Opening Picks (Set of 6) (1)
Battery Blocker (1)
iOpener (1)
Tweezers (1)
Phillips #00 Screwdriver (1)
Spudger (1)
iFixit Opening Tool (1)
Isopropyl Alcohol (1)
Deck of Cards (1)
Safety Glasses (1)
Packing Tape (1)
Coffee Filters or a lint-free cloth (1)

PARTS:

iPad Air 3 Adhesive Strips (1)
Tesa 61395 Tape (1)

Step 1 — Prepare an iOpener

ⓘ Strong adhesive holds the screen in place. In order to separate it, you'll first need to heat and soften the adhesive using an iOpener, hair dryer, or heat gun.

- You may need to reapply heat repeatedly throughout this process to prevent the adhesive from cooling and hardening.

- Prepare an iOpener and place it on the bottom edge of the iPad's screen for about two minutes.

Step 2 — Create an opening gap

If your iPad's screen is badly cracked, wear skin and eye protection. Cover the screen with a smooth layer of clear packing tape to contain glass shards and help the suction cup adhere. Alternatively, use a strong piece of tape (such as duct tape) and fold it into a handle.

- Place a suction cup next to the iPad's home button and press down to create a seal.

  To get the most leverage, place the suction cup as close to the edge as possible without going past the edge of the display.

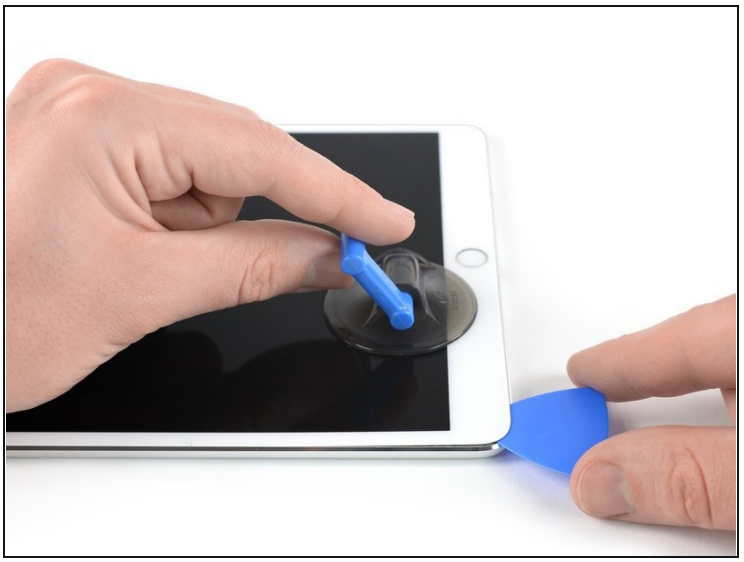
  If you want to use the **Anti-Clamp**, a tool we designed to make the opening procedure easier, follow this guide.

- Firmly pull up on the suction cup to create a small gap between the front panel and the rear case.

  Don't pull too hard, or you may shatter the glass. If necessary, apply more heat to further soften the adhesive.

- Once you've opened a sufficient gap, insert an opening pick into the gap.

Step 3 — Slice through the bottom adhesive



- Slice through the adhesive under the screen by sliding the pick along the edge of the display, towards the bottom left corner.
- Leave the pick in place temporarily to prevent the adhesive from re-sealing.

Step 4 — Slice through the left adhesive


- Apply heat to the left edge of the iPad for about two minutes, or until it's slightly too hot to touch comfortably.
  - If necessary, re-heat your iOpener for a few seconds or until it's a bit too hot to touch. Be careful not to overheat the iOpener, or it may burst.
- Insert a second opening pick at the bottom left corner of the iPad.
- Slide the second opening pick along the left side of the display to separate the adhesive underneath.
- Leave the opening pick inserted near the top left corner of the iPad to prevent the adhesive from re-sealing.

Step 5

- Apply heat to the top edge of the iPad for about two minutes, or until it's slightly too hot to touch comfortably.

Step 6

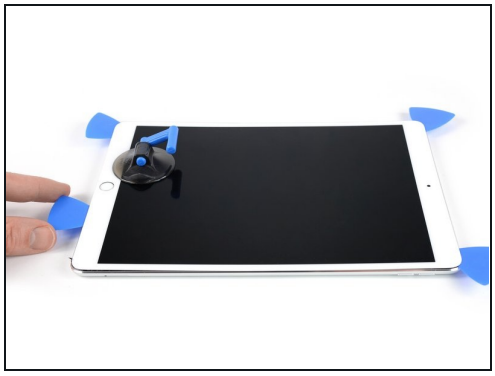


- Insert a third opening pick at the top left corner of the iPad.
- Use the opening pick to cut the adhesive under the top edge of the iPad by sliding it to the top right corner.

⚠ The front-facing camera is located right in the center of the iPad's top edge and can be damaged if the pick is inserted too far. Only insert the tip of the opening pick when cutting near the camera.

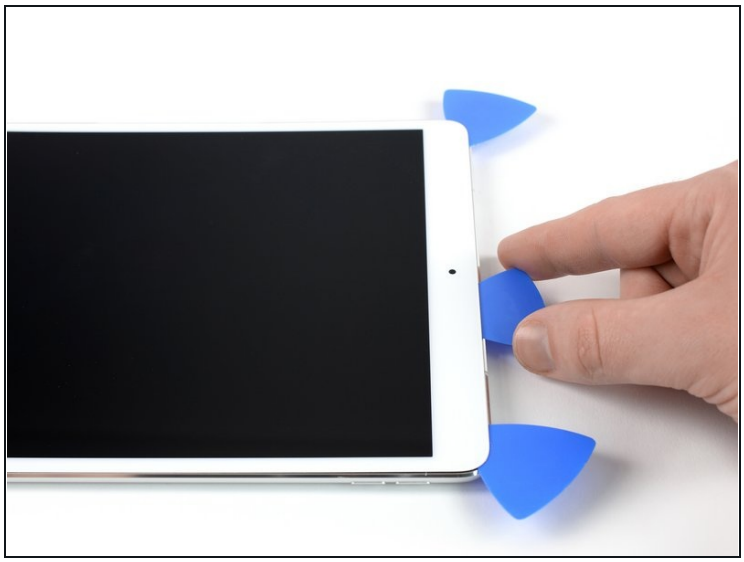
Step 7

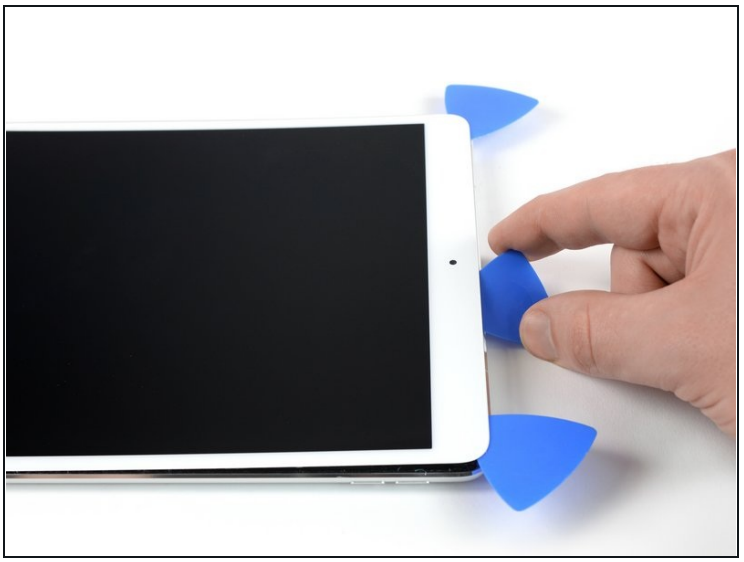




- Apply heat to the final, right edge of the iPad for about two minutes, or until it's slightly too hot to touch comfortably.
- Insert a fourth opening pick at the top right corner of the iPad.
- Slide the opening pick down to the bottom right corner to cut the adhesive.
- Slide the opening pick around the bottom right corner—pausing to apply more heat if needed—and cut the remaining adhesive on the bottom edge, but stop before you reach the home button.

Step 8



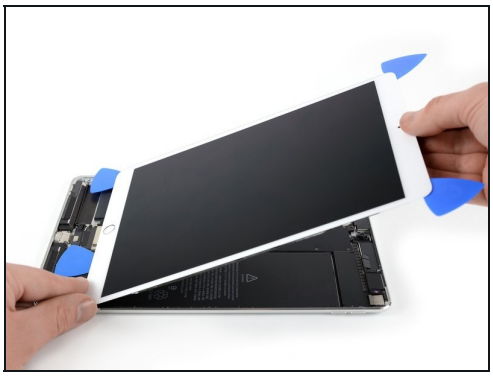
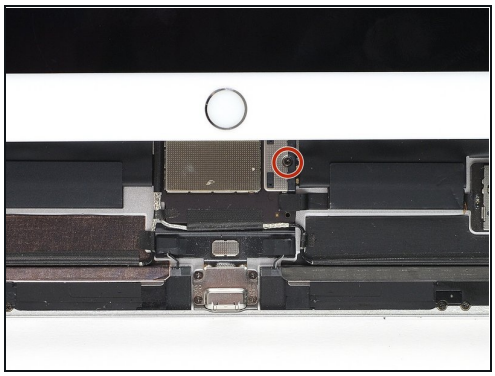


- Insert a fifth opening pick at the top of the iPad near (but not directly on) the front-facing camera.
- Gently twist the pick to separate the display assembly from the iPad.

⚠ Don't try to remove the display all the way yet! It is still connected to the iPad's motherboard.

- If needed, apply more heat and/or cut any remaining adhesive that prevents the display from separating.

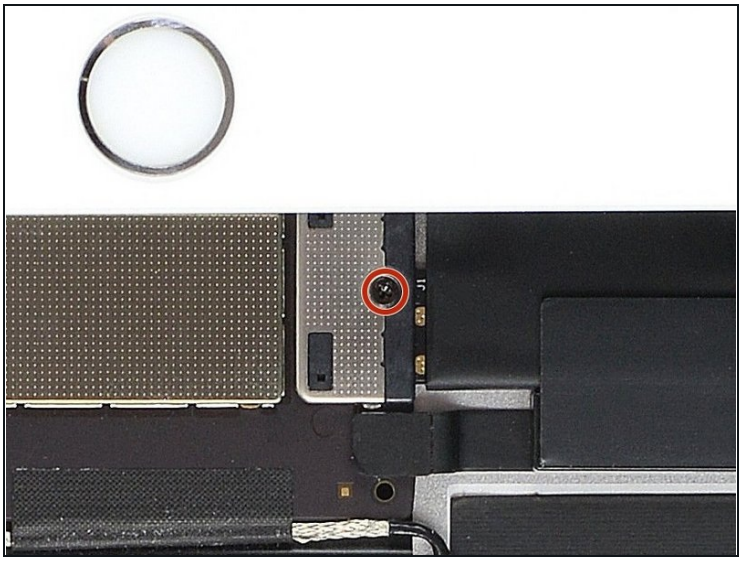
Step 9

- Lift the display assembly from its top edge and carefully slide it up (towards the front-facing camera and headphone jack), until the screw that secures the battery power connector is revealed at the bottom.

⚠ Don't lift the display more than 70° or you may damage the attached ribbon cables.

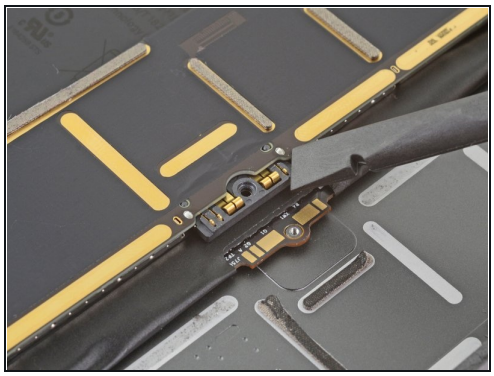
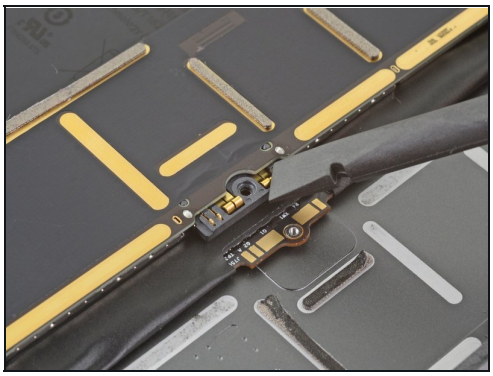
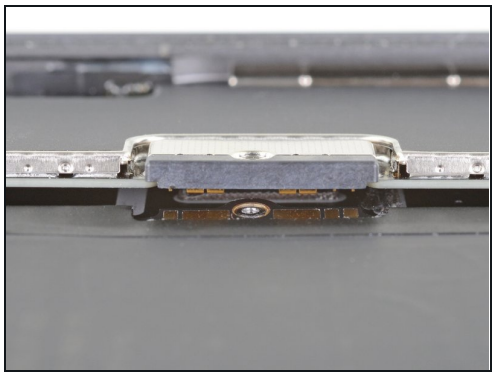
Step 10

- Remove the 1.9 mm Phillips screw that secures the battery power connector.

ⓘ 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 11 — Battery connector information

These photos show what the battery connector looks like underneath the logic board. Use these photos as a reference while you safely disconnect the battery.

Notice that the battery connector has cantilever springs on the logic board that press against the battery contact pads. Since both the logic board and battery are glued down, you'll need to slide something thin and flexible between the contact points to disconnect the battery.

Step 12 — Disconnect the battery

⚠ Be careful when you isolate the battery using a battery blocker. The battery contacts are easily bent or broken, resulting in irreversible damage.

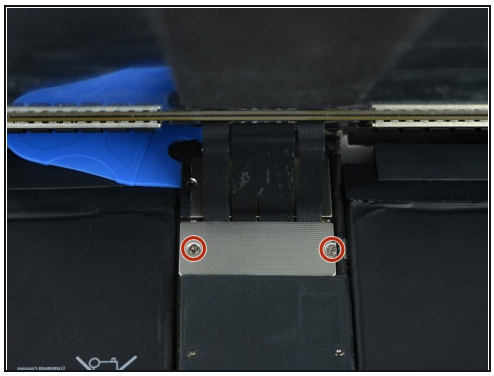
- To disconnect the battery, slide one prong of a battery blocker or the tip of an opening pick under the battery power connector to ensure the power circuit is interrupted.

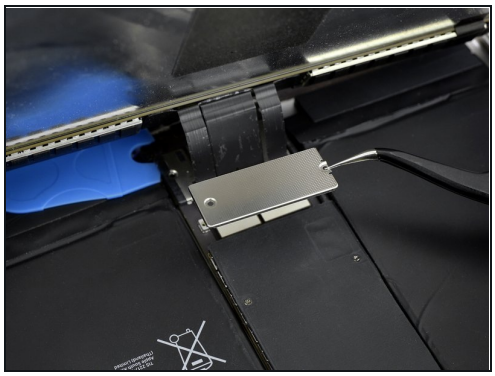
  ⓘ Don't push the battery blocker underneath the connector with excessive force. If you're having trouble fitting the battery blocker underneath the logic board, you can try using a playing card to disconnect the battery instead.

  ⓘ The battery blocker or playing card ideally should slide under the logic board without encountering any blockages.

- Leave the battery blocker in place as you work.

Step 13





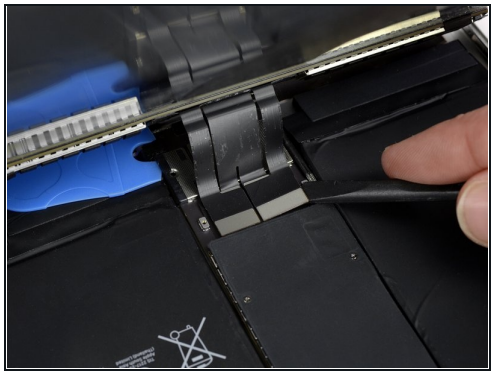
- Slowly lift the display from its top edge, being careful not to strain the attached ribbon cables.

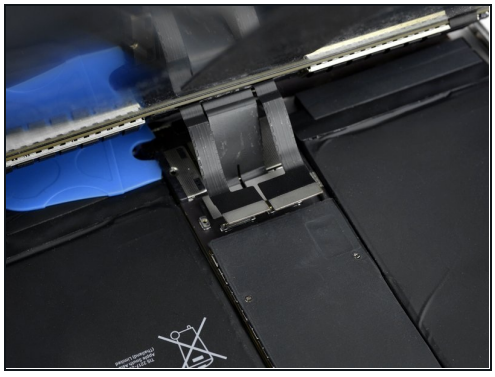
- Remove the two 1.3 mm Phillips screws securing the display connector cover bracket.

  ⓘ You may need to angle the driver slightly in order to avoid straining the ribbon cables.

- Remove the display connector cover bracket.

Step 14

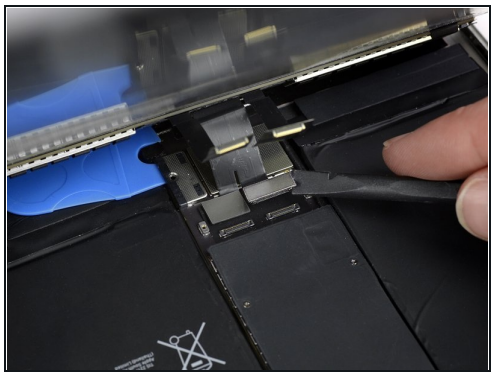


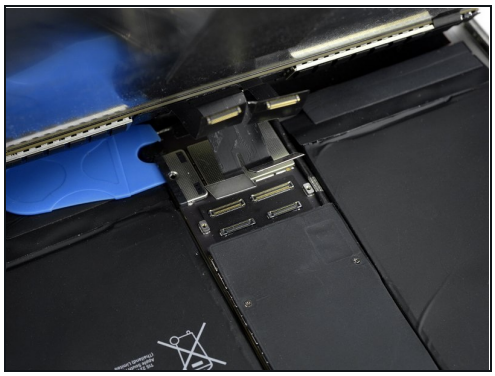


- Use a spudger to disconnect the two visible display flex connectors by gently prying them straight up from their sockets.

  ⓘ To re-attach press connectors like this one, carefully align and press down on one side until it clicks into place, then repeat on the other side. Do not press down on the middle. If the connector is misaligned, the pins can bend, causing permanent damage.

Step 15





Underneath, you'll find two additional display cable connectors.

- Use your spudger to gently pry them up and disconnect them.

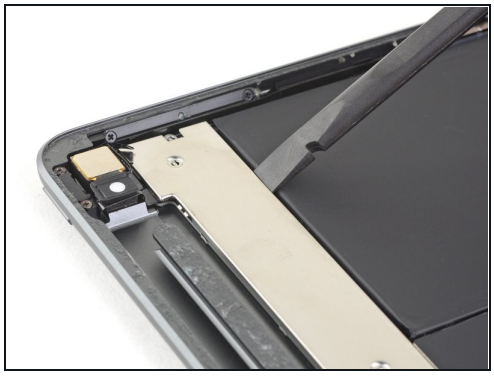
Step 16

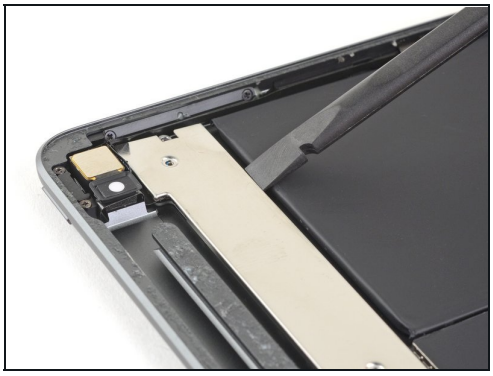
- Remove the display assembly.
  - During reassembly, before installing a display, remove any remaining adhesive from the iPad, and clean the glued areas with high concentration isopropyl alcohol (90% or greater) and a lint-free cloth. This helps prep the iPad for fresh adhesive and ensures that it will bond properly.
  - If you plan to reinstall your existing display, remove any remaining adhesive from the back and clean the adhered areas with isopropyl alcohol.
  - Test your iPad's functions and install pre-cut adhesive strips to the back of the display using our display adhesive application guide before sealing it up.

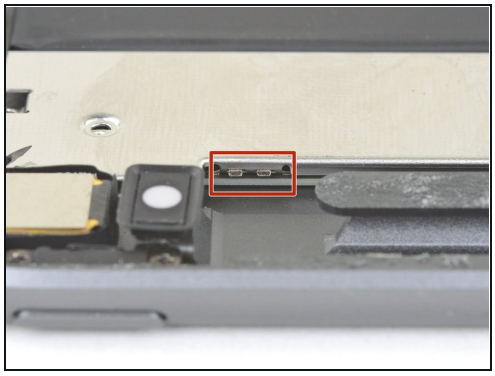
Step 17 — Remove the upper component bracket screws

- Use a Phillips screwdriver to remove the five screws securing the upper component bracket:
  - Three 1.4 mm-long screws
  - Two 2.4 mm-long screws

Step 18 — Free the upper component bracket

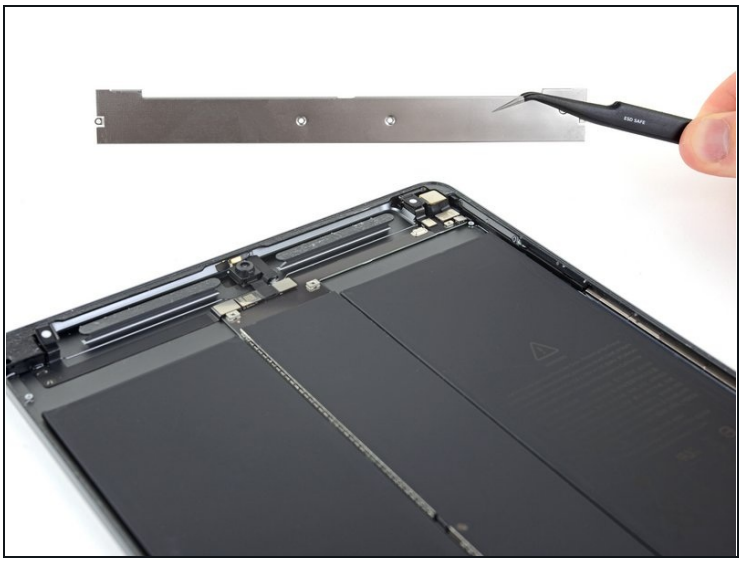






- Use a spudger to push the upper component bracket towards the upper edge and off of the clips located near the rear camera.

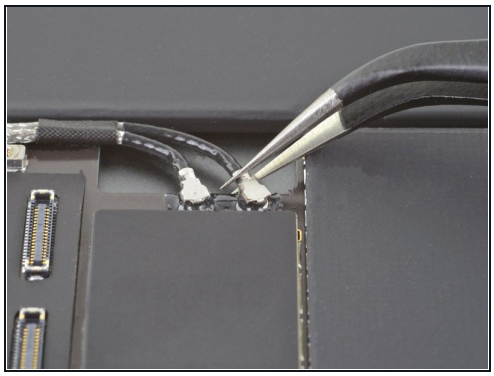
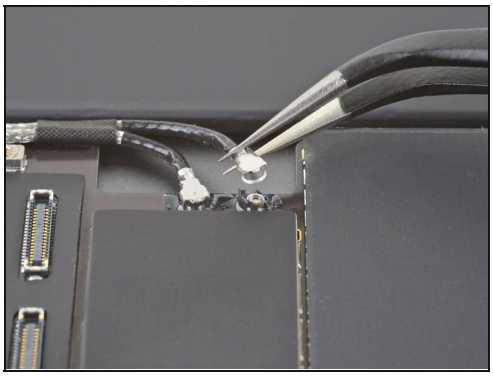
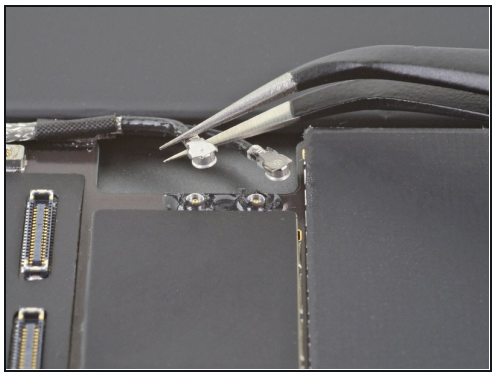
Step 19 — Remove the upper component bracket

- Remove the upper component bracket.

During reassembly, make sure that the upper component bracket slides under the clips near the rear camera.

Step 20 — Disconnect the antennas

- Use a pair of tweezers to disconnect a logic board antenna cable by lifting up on the cable as close to the connector as possible.

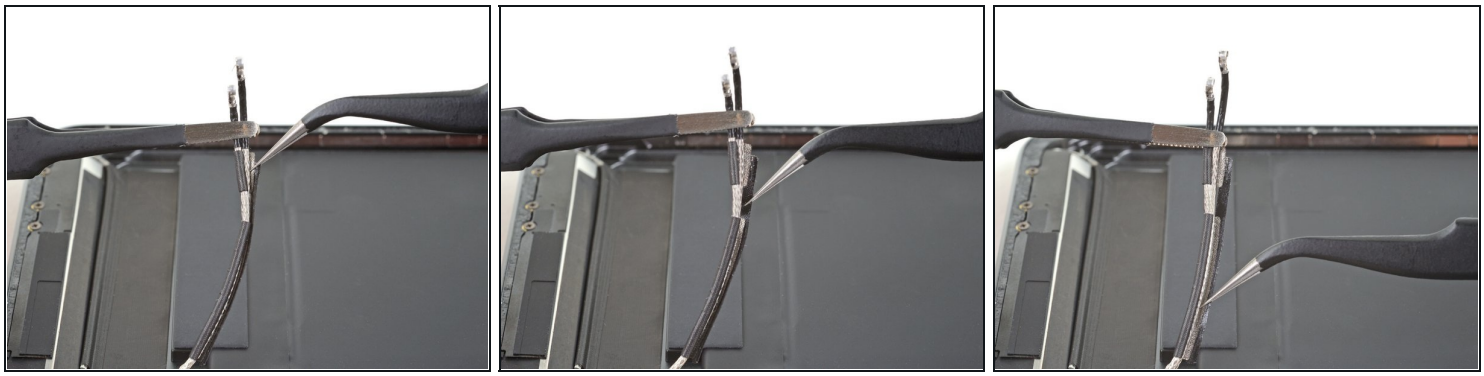
⚠ Take care not to puncture or bend the battery with your tool—a punctured or bent battery may leak dangerous chemicals or cause a thermal event.

- Repeat for the other logic board antenna cable.

Step 21 — Separate the antenna cables

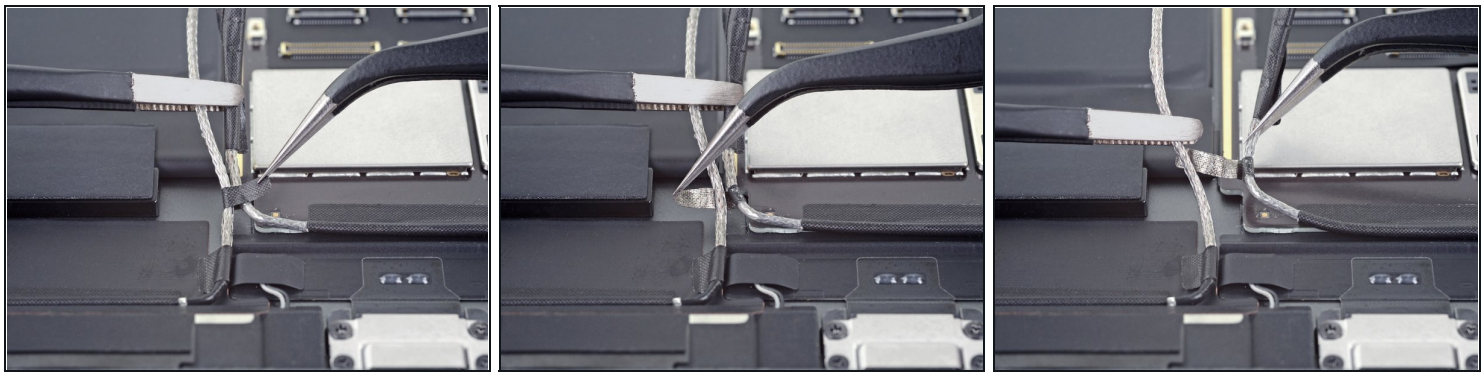
- Use a pair of tweezers to lift the antenna cables away from the logic board.

Step 22



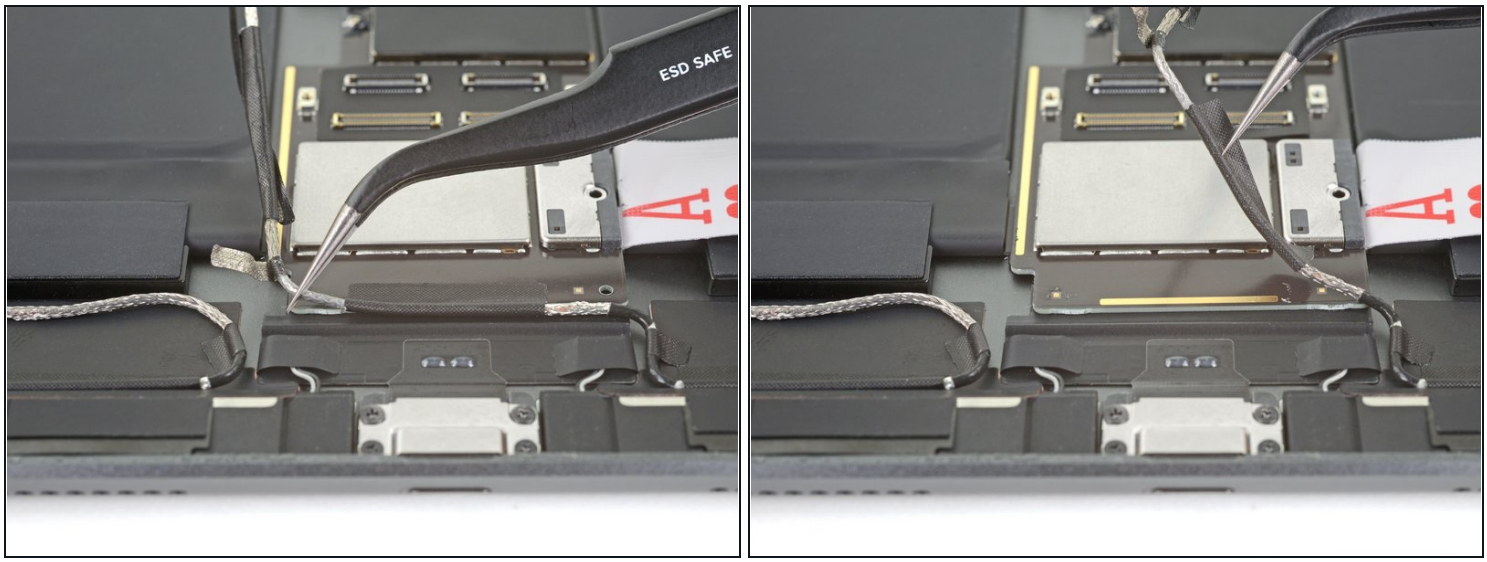
- Use a pair of tweezers to unwrap the tape securing the two antenna cables together.

Step 23



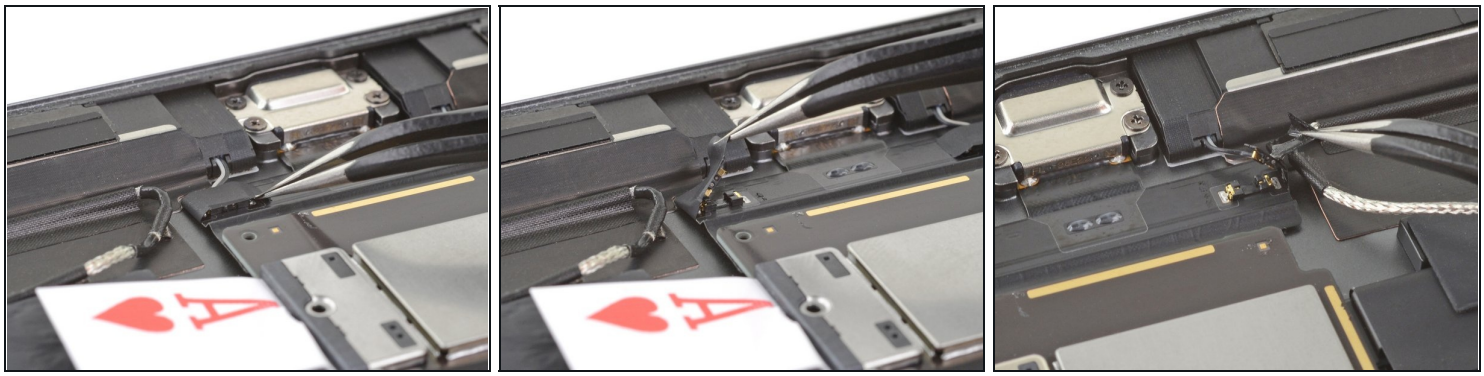
- Use a pair of tweezers to unwrap the lower tape strip securing the antenna cables together.
- Separate the two antenna cables.

Step 24 — Peel up the right antenna cable



- Use a pair of tweezers to peel the right antenna cable away from the logic board.
- Fold both the left and right antenna cables out of the way.

Step 25 — Disconnect the speakers



- Use a pair of tweezers to peel up the tape covering the right speaker connector.

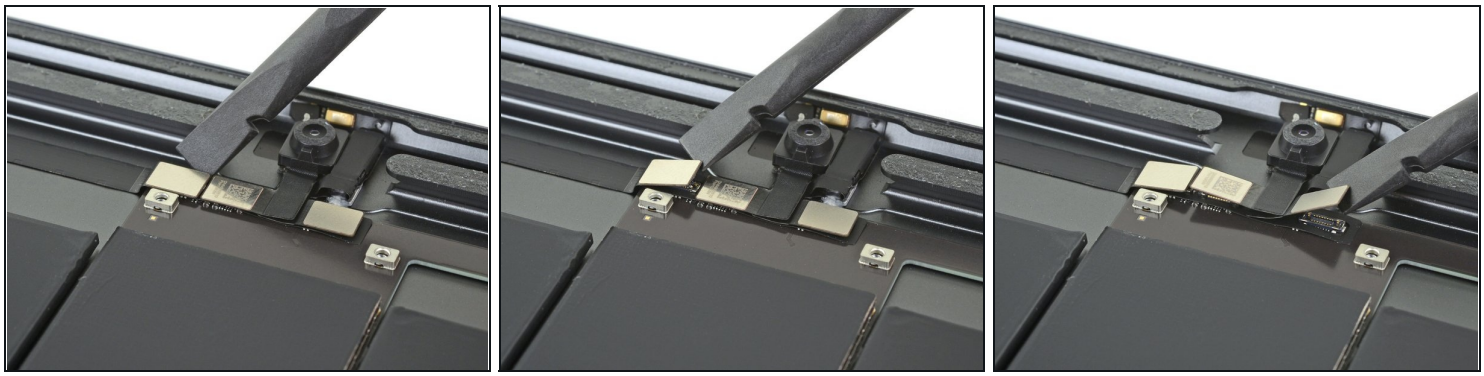
ⓘ The right speaker connector will disconnect when you pull up on the tape.

- Repeat for the left speaker connector.

Step 26 — Remove the tape from the speaker connectors

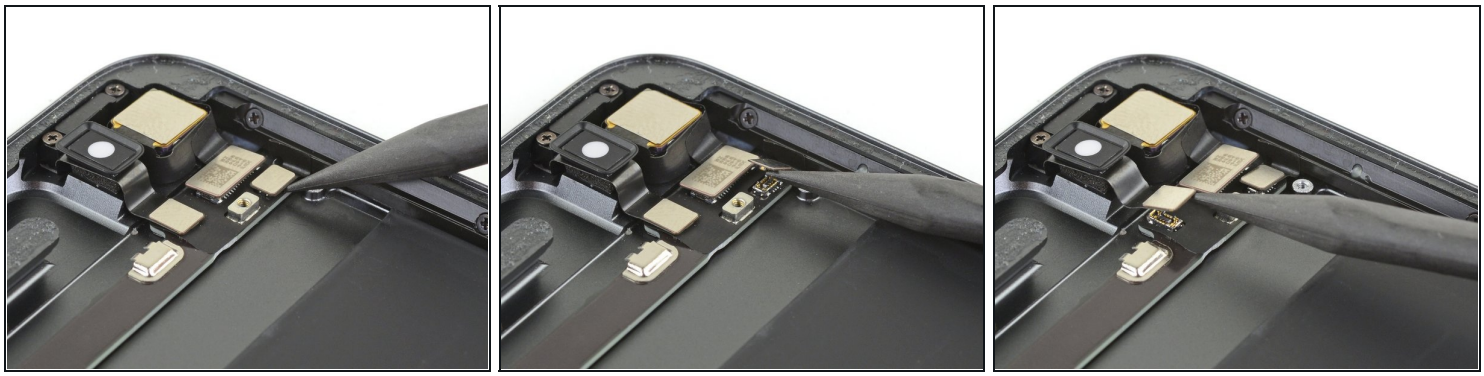
- Use a pair of tweezers to remove the tape from the back of both speaker connectors.

Step 27 — Disconnect the upper components



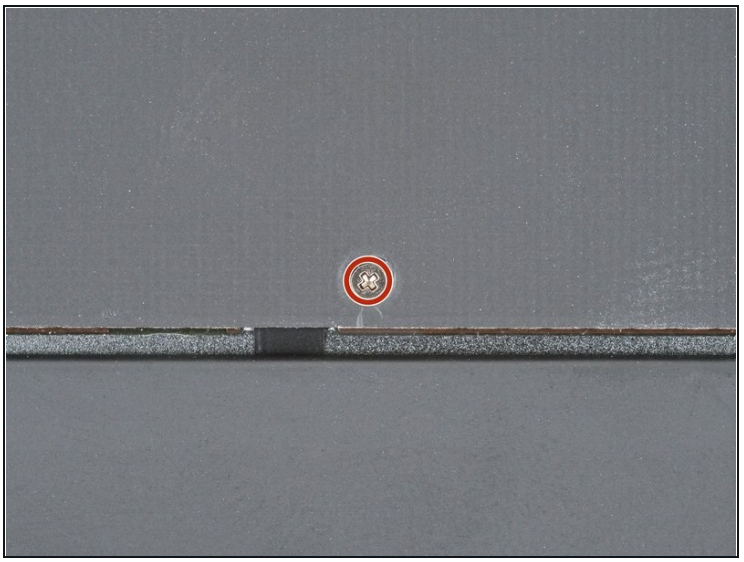
- Use the flat end of a spudger to disconnect the headphone jack cable by lifting straight up on the press connector.
- Repeat to disconnect the front camera and microphone assembly cables.

Step 28



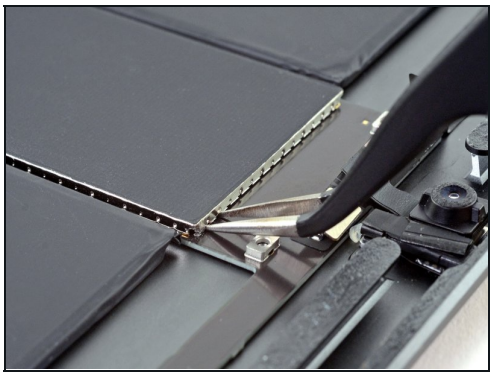
- Use the pointed end of a spudger to disconnect the volume button cable by lifting straight up on the press connector.
- Repeat to disconnect the rear camera and power button assembly cables.

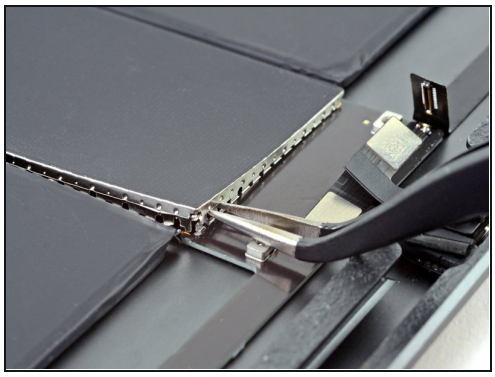
Step 29 — Remove the logic board shield screw



- Use a Phillips screwdriver to remove the 1.3 mm-long screw securing the logic board shield.

Step 30 — Pry up the logic board shield





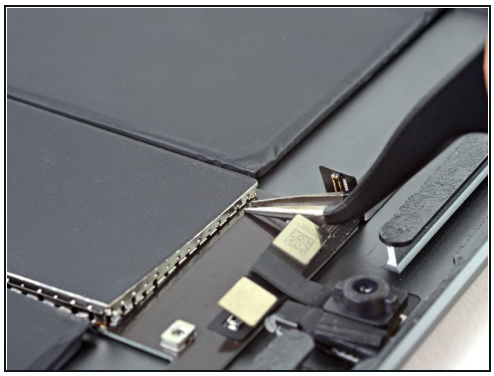
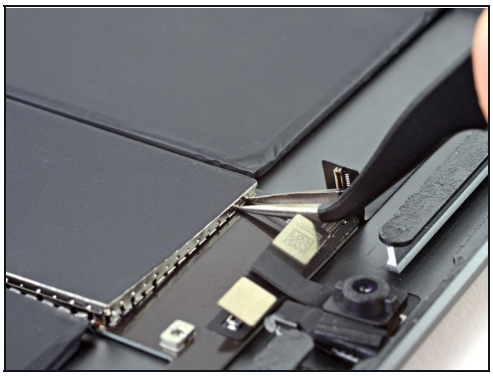
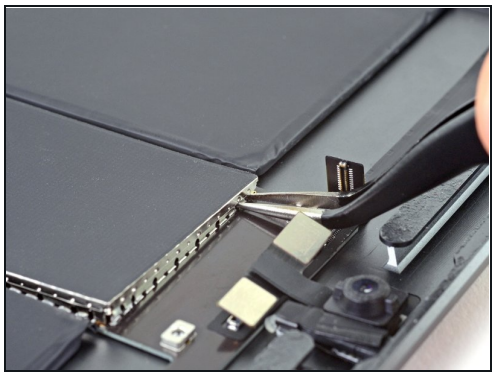
- Insert the tips of a pair of tweezers into the gaps under the the logic board shield on the upper right corner.

⚠ Take care not to puncture or bend the battery with your tool—a punctured or bent battery may leak dangerous chemicals or cause a thermal event.

- Pry up slightly to loosen the logic board shield.

ⓘ Pivot the tweezers on the screw boss to avoid damaging the press connectors.

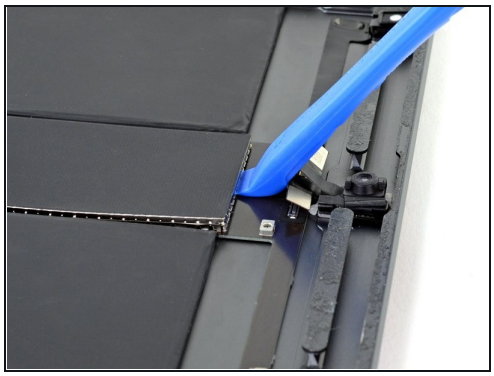
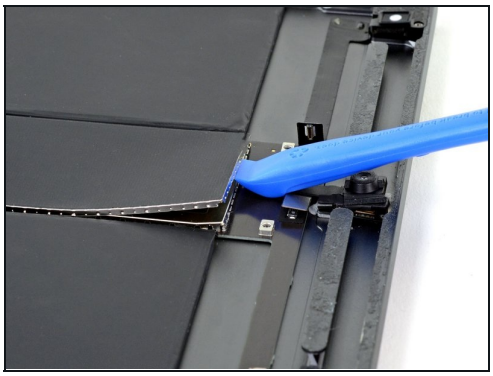
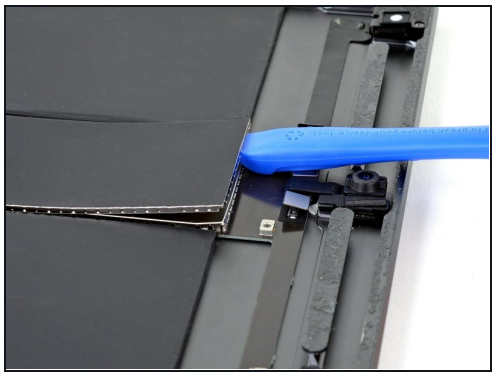
Step 31

- Insert the tips of a pair of tweezers into the gaps under the logic board shield on the upper left corner.
- Pry up slightly to loosen the logic board shield.

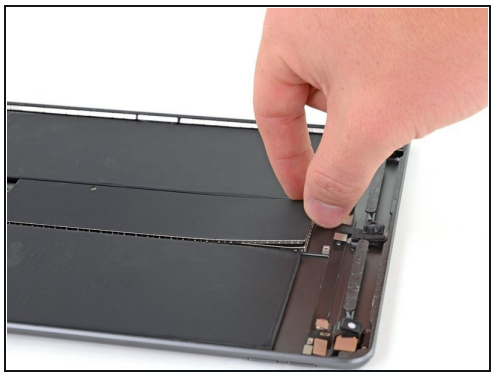
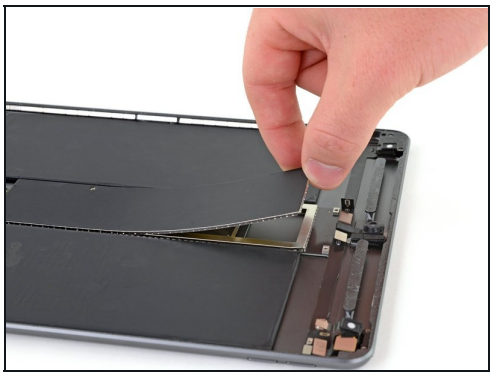
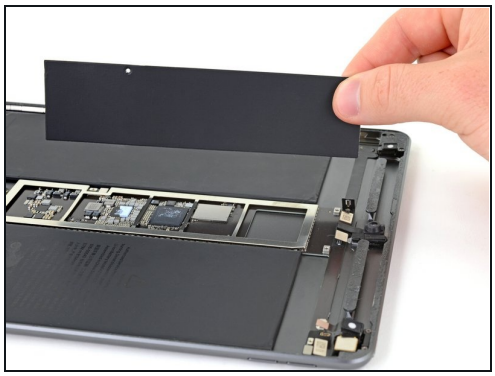
⚠ Pivot the tweezers on the screw boss to avoid damaging the press connectors.

Step 32

- Insert the edge of an opening tool under the top edge of the logic board shield.
- Pry up to loosen the shield.
- Continue prying until you've loosened the entire top edge of the shield.

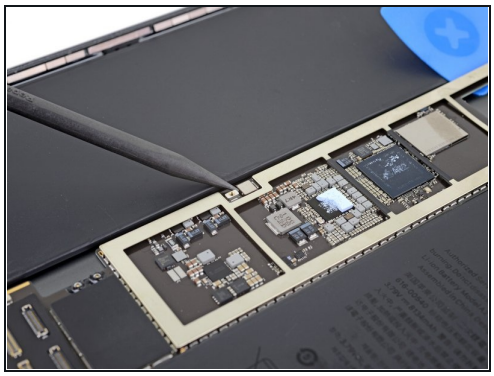
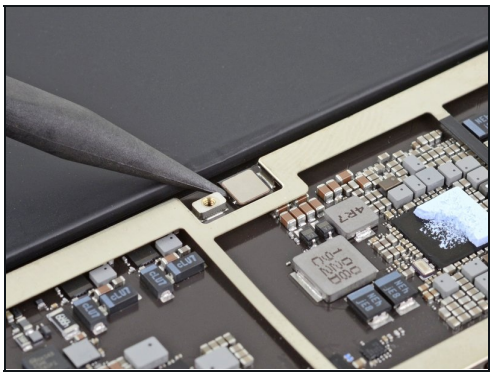
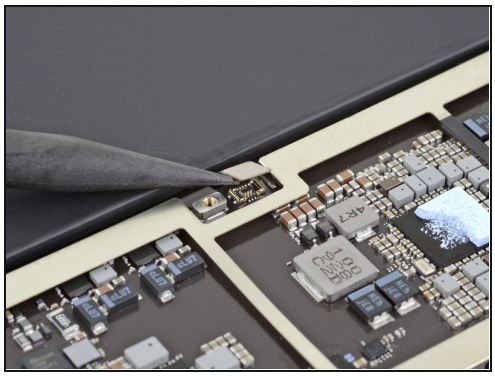
Step 33 — Remove the logic board shield

- Grip the logic board shield with your fingers.
- Slowly lift the shield up and remove it.

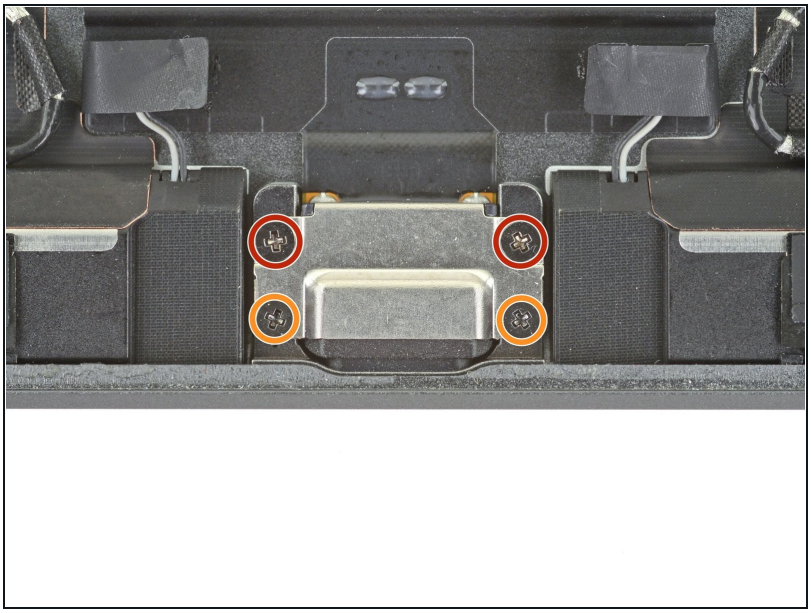
ⓘ Try to keep the logic board shield as straight as possible. You will be putting the shield back on later.

Step 34 — Disconnect the Smart Connector cable

- Use the pointed end of a spudger to disconnect the Smart Connector cable by lifting straight up on the press connector.

Step 35 — Remove the charging port screws

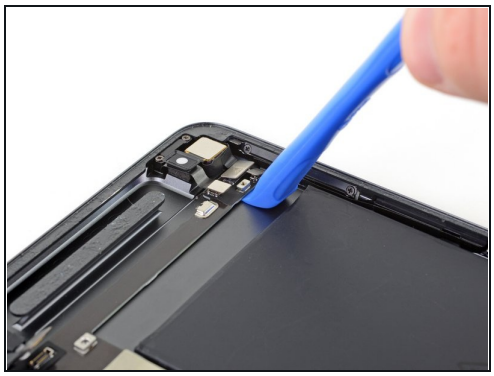
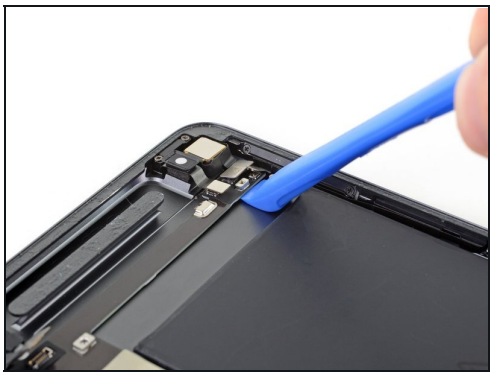
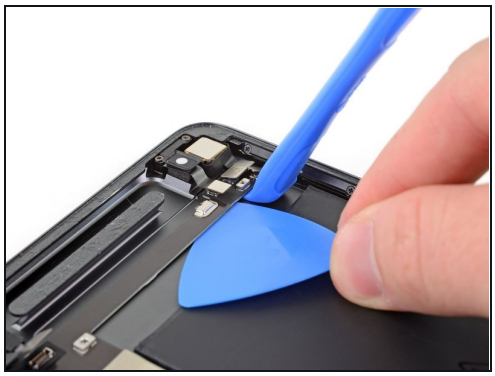


- Use a Phillips screwdriver to remove the four screws securing the charging port to the rear case:
  - Two 2.4 mm-long screws
  - Two 1.7 mm-long screws

Step 36 — Loosen the adhesive

- Apply a heated iOpener to the top edge of the rear case for a minute.

Step 37 — Pry up the logic board arm

- Insert an opening tool underneath the logic board arm near the rear camera.
- Pry up the arm until you can slide in an opening pick underneath it.

Step 38


- Push the opening pick up towards the rear camera to slice the adhesive under the logic board arm.

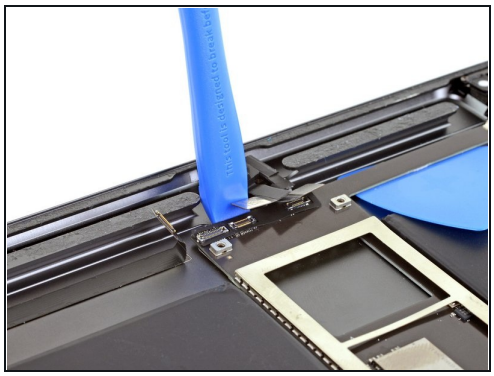
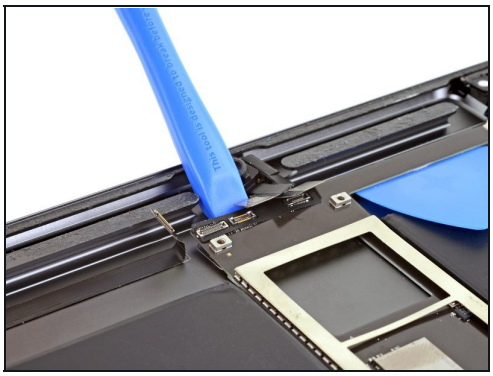
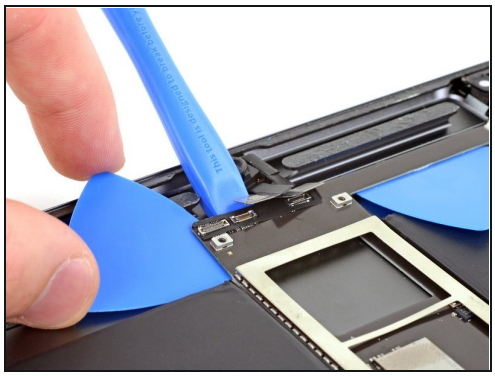
Step 39

- Insert another opening pick underneath the logic board arm.
- Slide the opening pick towards the front camera to slice the adhesive underneath the arm.

Step 40

- Apply a heated iOpener lengthwise down the center of the rear case to soften the logic board adhesive.

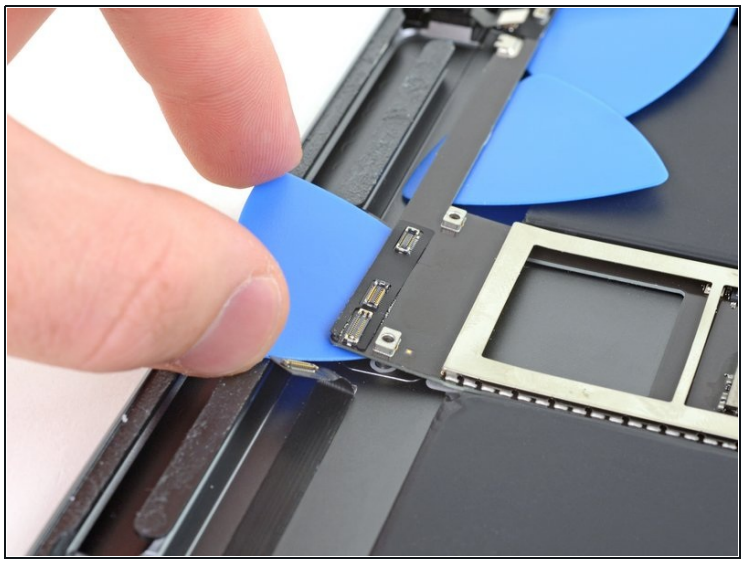
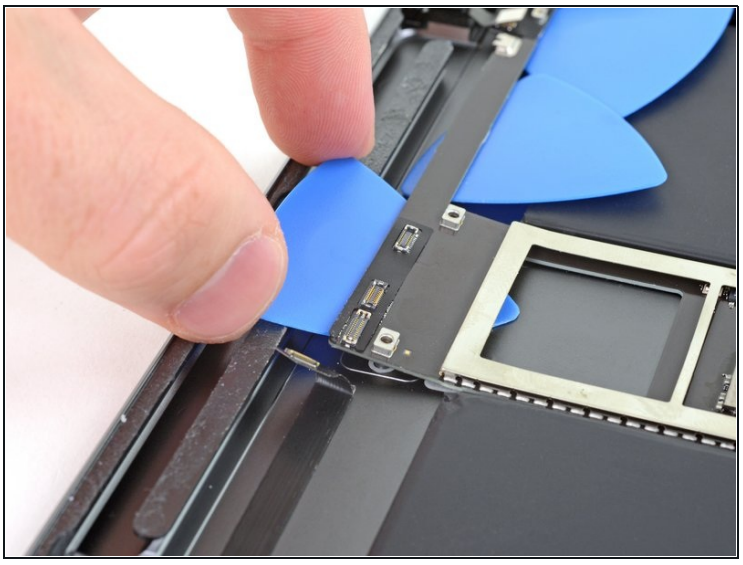
Step 41

- Insert an opening tool under the logic board next to the front camera.
- Pry up the logic board until you can slide an opening pick underneath the logic board.

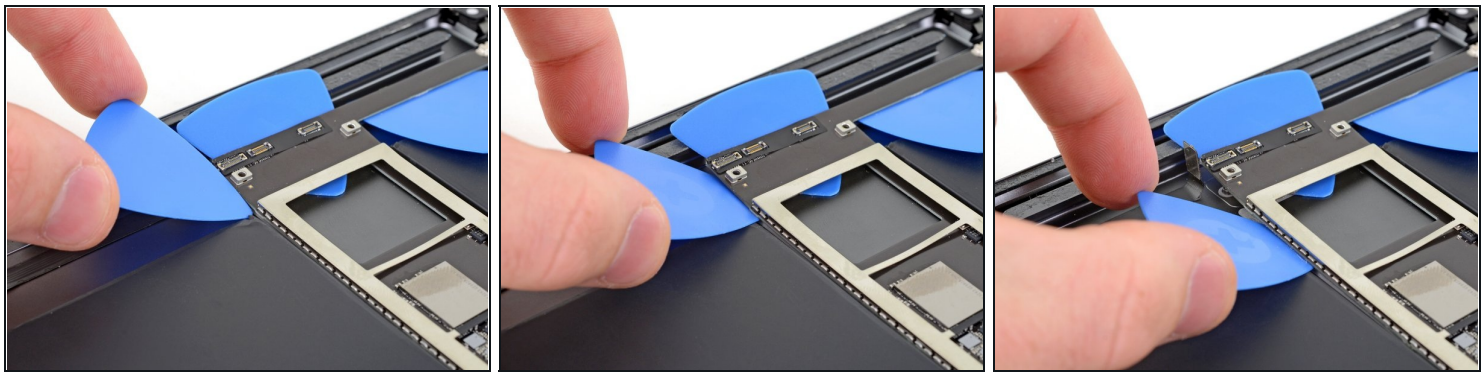
⚠ Take care to not slice the headphone jack cable.

Step 42 — Remove the logic board

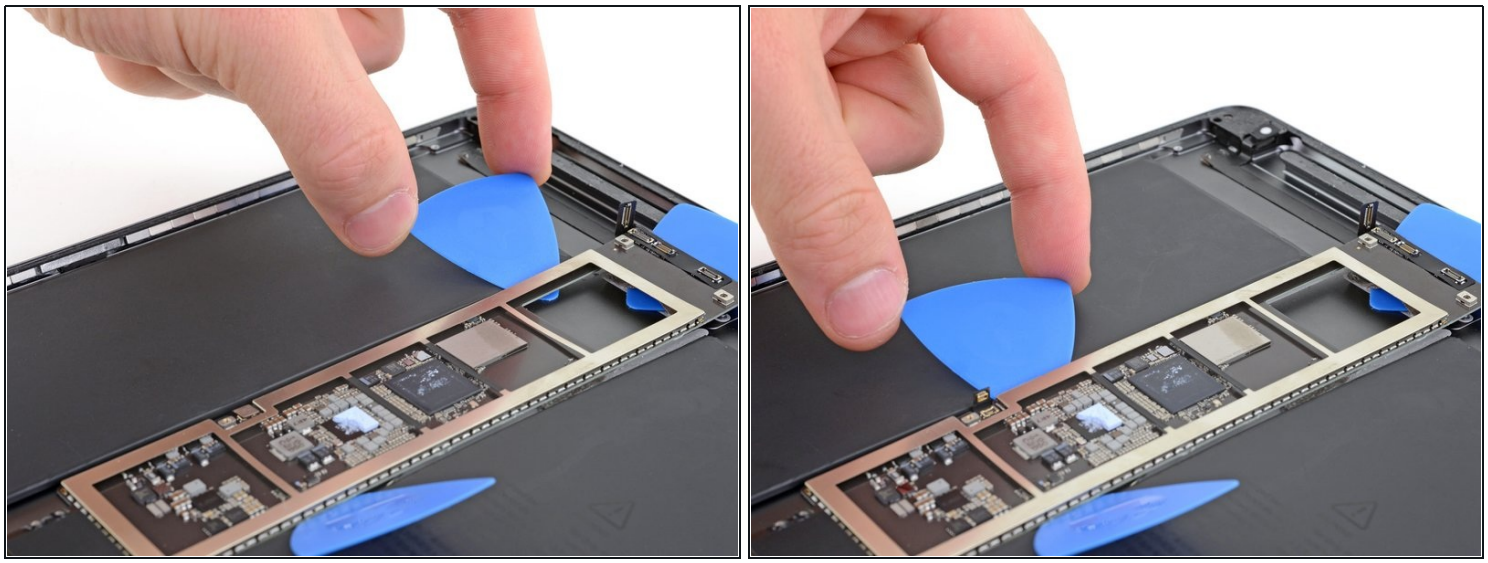
- Push the opening pick underneath the logic board to slice the adhesive.

Step 43



- Insert another opening pick under the upper left corner of the logic board.
- Slide the pick down towards the bottom of the iPad to slice the adhesive.

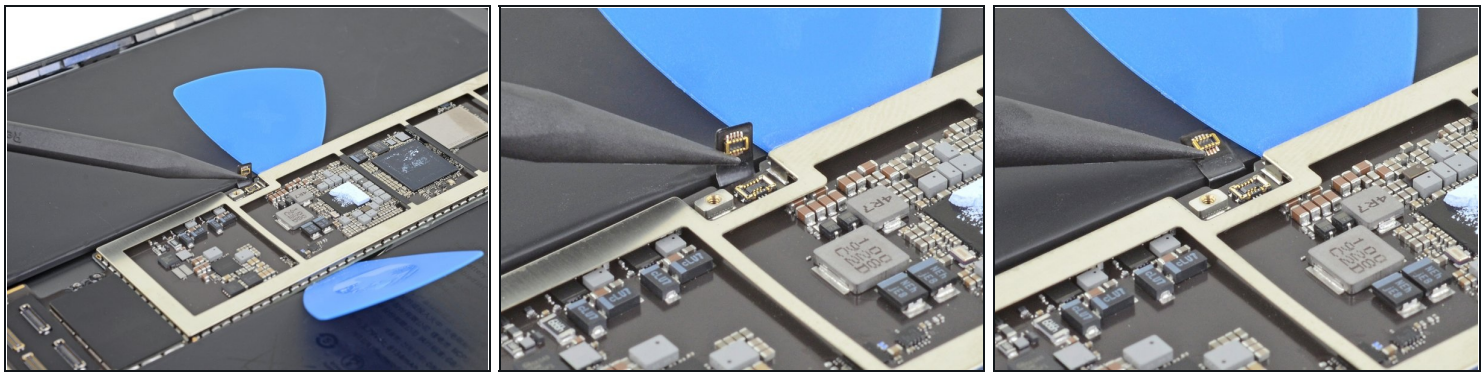
Step 44



- Slide the opening pick down the left edge of the logic board until you get near the Smart Connector cable.

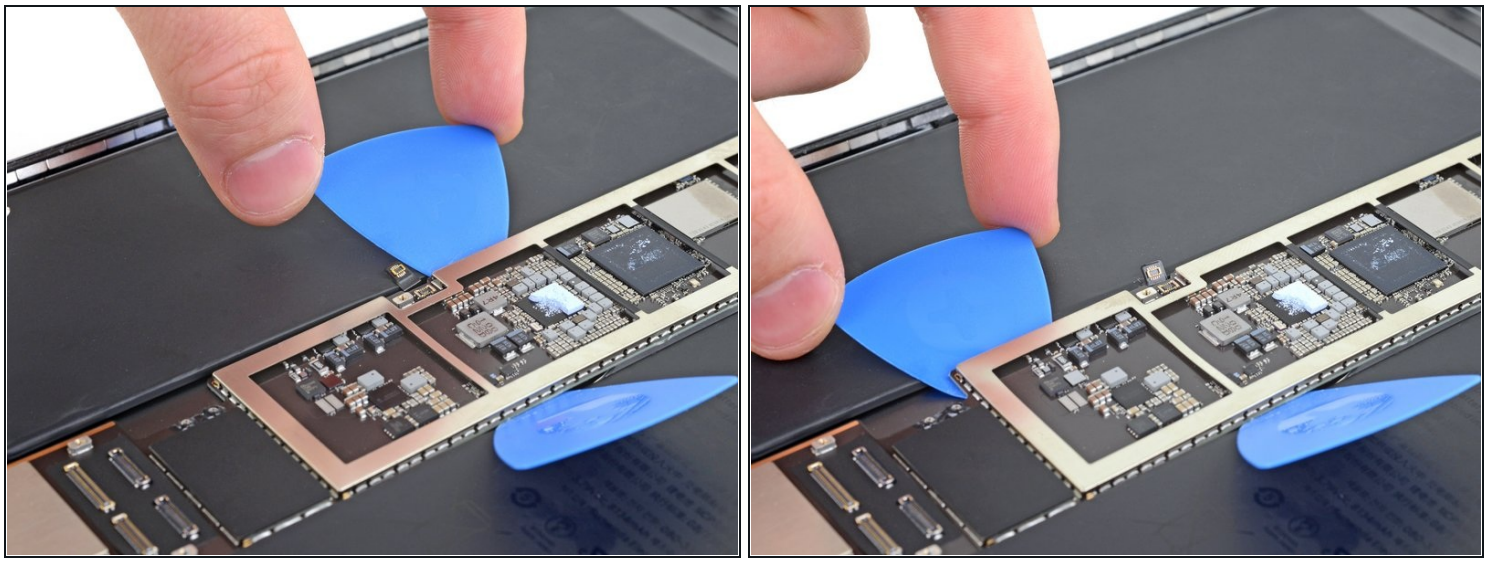
⚠ Take care not to slice through the Smart Connector cable.

Step 45 — Shift the Smart Connector cable



- Use a spudger to move the Smart Connector cable behind the opening pick.

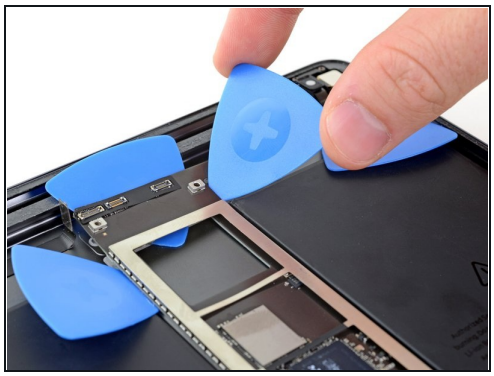
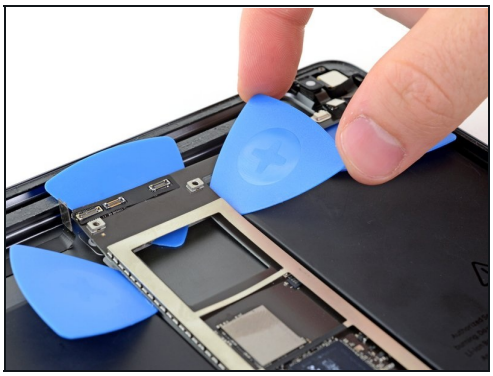
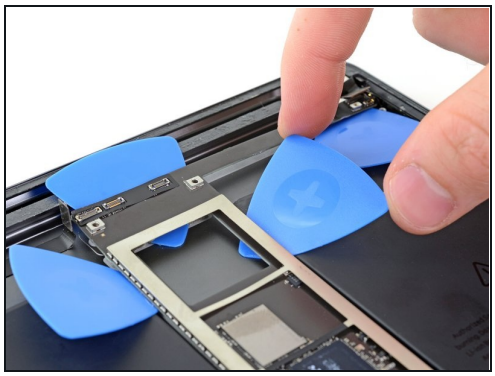
Step 46



- Slide the opening pick past the Smart Connector cable and down to the antenna connectors.

ⓘ If you have trouble, apply a few drops of isopropyl alcohol to the edge of the logic board, wait a minute, and try again.

Step 47

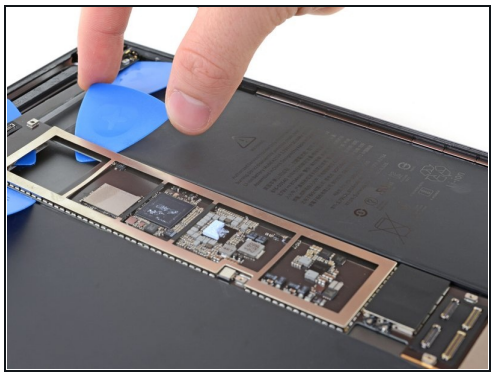
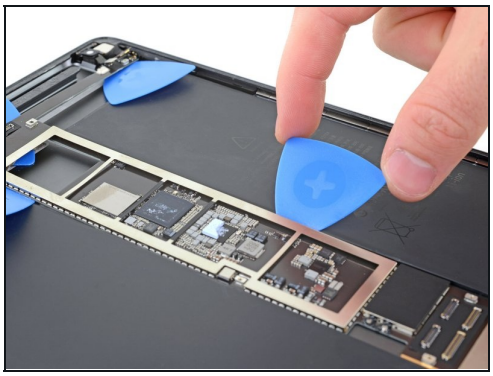
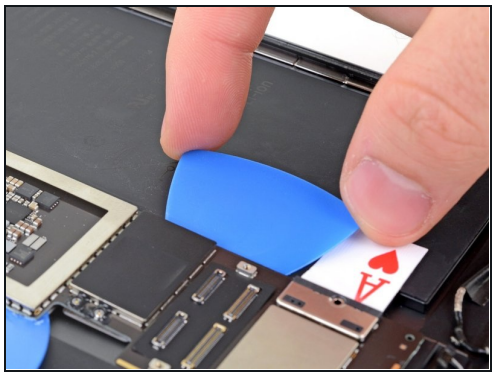




- Insert an opening pick under the upper right edge of the logic board.

  ⓘ If you have trouble, apply a few drops of isopropyl alcohol to the edge of the logic board, wait a minute, and try again.

- Slide the pick down towards the bottom of the iPad to slice the adhesive.

Step 48

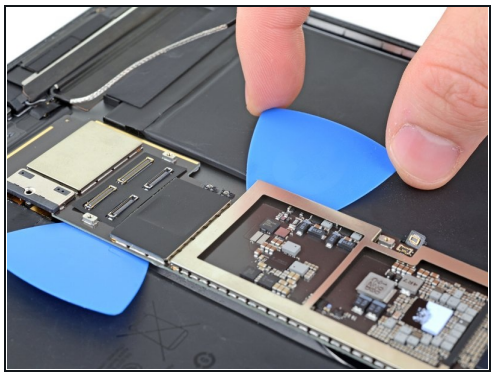
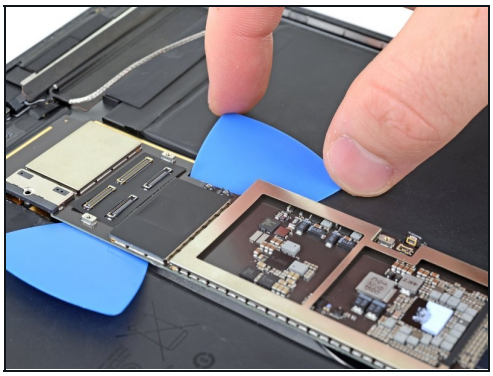
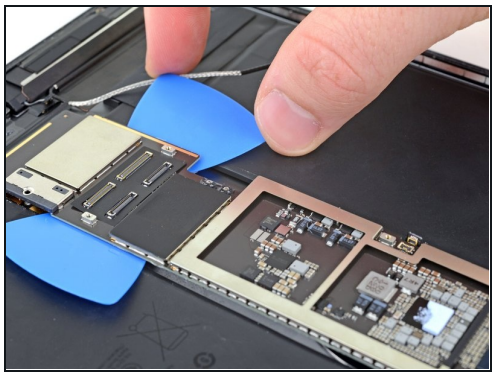




- Slide the opening pick down the right edge until you encounter the battery connector.

Step 49 — Remove the battery blocker

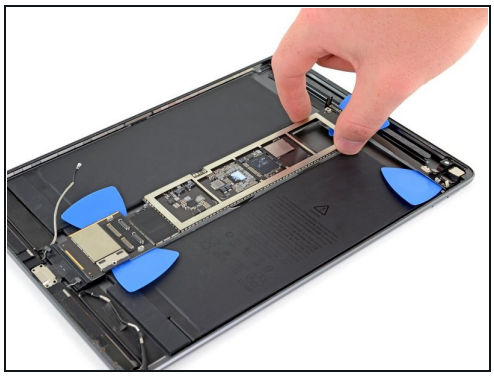
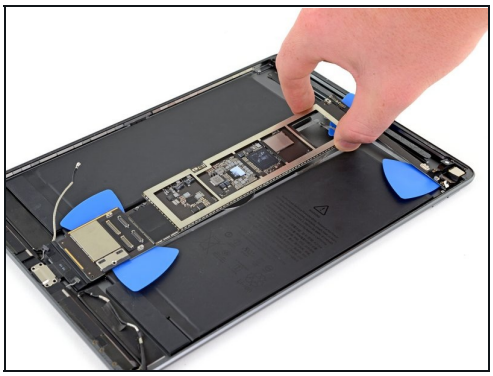
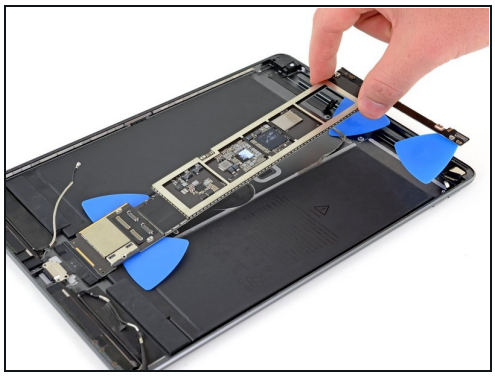

- Remove the battery blocker.

Step 50

- Slide the left opening pick down the left edge to the speaker connectors.

Step 51

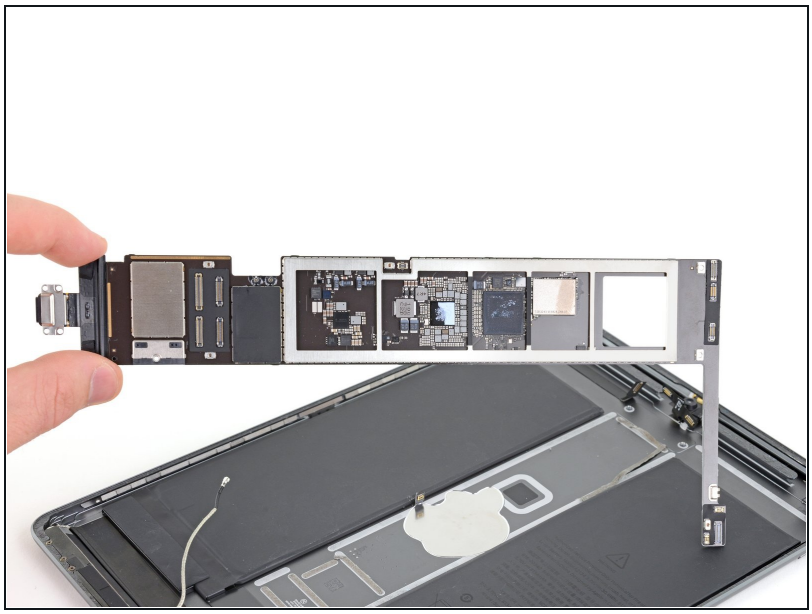




- Slowly lift the logic board up and pull the charging port out of its recess.

ⓘ If you can't lift up the logic board, identify where it is stuck and use an opening pick to slice the adhesive there.

ⓘ You can also apply a few drops of high concentration (90% or higher) isopropyl alcohol where it's extra stuck.

Step 52



- Remove the logic board.

During reassembly, follow this guide if you are using a pre-cut adhesive card to reattach the logic board to the rear case.

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 you install it.

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

Take your e-waste to an R2 or e-Stewards certified recycler.

Repair didn’t go as planned? Try some basic troubleshooting, or ask our iPad Air 3 Answers community for help.