



iPad Air Wi-Fi Logic Board Replacement

Use this guide to replace a faulty logic board...

Written By: Sam Goldheart



INTRODUCTION

Use this guide to replace a faulty logic board in your iPad Air.

Be very careful when you isolate the battery using a battery blocker. The battery contacts are easily damaged, resulting in irreversible damage to the logic board. If you choose to complete the guide without isolating the battery, avoid using metal tools except when completely necessary (like when removing screws) to prevent shorting the battery and damaging sensitive circuit components.

TOOLS:

[Anti-Clamp](#) (1)
[Battery Blocker](#) (1)
[iFixit Opening Picks \(Set of 6\)](#) (1)
[iOpener](#) (1)
[Suction Handle](#) (1)
[Spudger](#) (1)
[Tweezers](#) (1)
[Phillips #00 Screwdriver](#) (1)
[iFixit Opening Tool](#) (1)

PARTS:

[iPad Air Wi-Fi Logic Board](#) (1)

Step 1 — iOpener Heating



- ① We recommend that you clean your microwave before proceeding, as any nasty gunk on the bottom may end up stuck to the iOpener.
- Place the iOpener in the center of the microwave.
- ⚠ For carousel microwaves: Make sure the plate spins freely. If your iOpener gets stuck, it may overheat and burn.

Step 2



- Heat the iOpener for **thirty seconds**.
- Throughout the repair procedure, as the iOpener cools, reheat it in the microwave for an additional thirty seconds at a time.

⚠ Be careful not to overheat the iOpener during the repair. Overheating may cause the iOpener to burst. Do not attempt to heat over 100°C (212°F).

⚠ Never touch the iOpener if it appears swollen.

⚠ If the iOpener is still too hot in the middle to touch, continue using it while waiting for it to cool down some more before reheating. A properly heated iOpener should stay warm for up to 10 minutes.

Step 3



- Remove the iOpener from the microwave, holding it by one of the two flat ends to avoid the hot center.

⚠ The iOpener will be very hot, so be careful when handling it. Use an oven mitt if necessary.

Step 4 — Alternate iOpener heating method



ⓘ If you don't have a microwave, follow this step to heat your iOpener in boiling water.

- Fill a pot or pan with enough water to fully submerge an iOpener.
 - Heat the water to a boil. **Turn off the heat.**
 - Place an iOpener into the hot water for 2-3 minutes. Make sure the iOpener is fully submerged in the water.
 - Use tongs to extract the heated iOpener from the hot water.
 - Thoroughly dry the iOpener with a towel.
- ⚠ The iOpener will be very hot, so be careful to hold it only by the end tabs.
- Your iOpener is ready for use! If you need to reheat the iOpener, heat the water to a boil, turn off the heat, and place the iOpener in the water for 2-3 minutes.

Step 5 — Front Panel



- If your display glass is cracked, keep further breakage contained and prevent bodily harm during your repair by taping the glass.
- Lay overlapping strips of clear packing tape over the iPad's display until the whole face is covered.
 - ⓘ This will keep glass shards contained and provide structural integrity when prying and lifting the display.
- Do your best to follow the rest of the guide as described. However, once the glass is broken, it will likely continue to crack as you work, and you may need to use a metal prying tool to scoop the glass out.

⚠ Wear safety glasses to protect your eyes, and be careful not to damage the LCD screen.

Step 6



- Handling it by the tag, place the heated iOpener on the side of the iPad to the left of the home button assembly.
- Let the iOpener sit for at least a minute to soften the adhesive beneath the glass.

Step 7



- ⓘ While the iPad looks uniform from the outside, there are delicate components under the front glass. To avoid damage, **only** heat and pry in the areas described in each step.
- As you follow the directions, take special care to avoid prying in the following areas:
 - Front-facing camera
 - Antennas
 - Display cables

Step 8 — Anti-Clamp instructions



- ① The next three steps demonstrate the [Anti-Clamp](#), a tool we designed to make the opening procedure easier. **If you aren't using the Anti-Clamp, skip down three steps for an alternate method.**
- ① For complete instructions on how to use the Anti-Clamp, [check out this guide](#).
- Pull the blue handle backwards to unlock the Anti-Clamp's arms.
- Place an object under your iPad so it rests level between the suction cups.
- Position the suction cups near the middle of the left edge—one on the top, and one on the bottom.
- Hold the bottom of the Anti-Clamp steady and firmly press down on the top cup to apply suction.
- ① If you find that the surface of your iPad is too slippery for the Anti-Clamp to hold onto, [use tape](#) to create a grippier surface.

Step 9



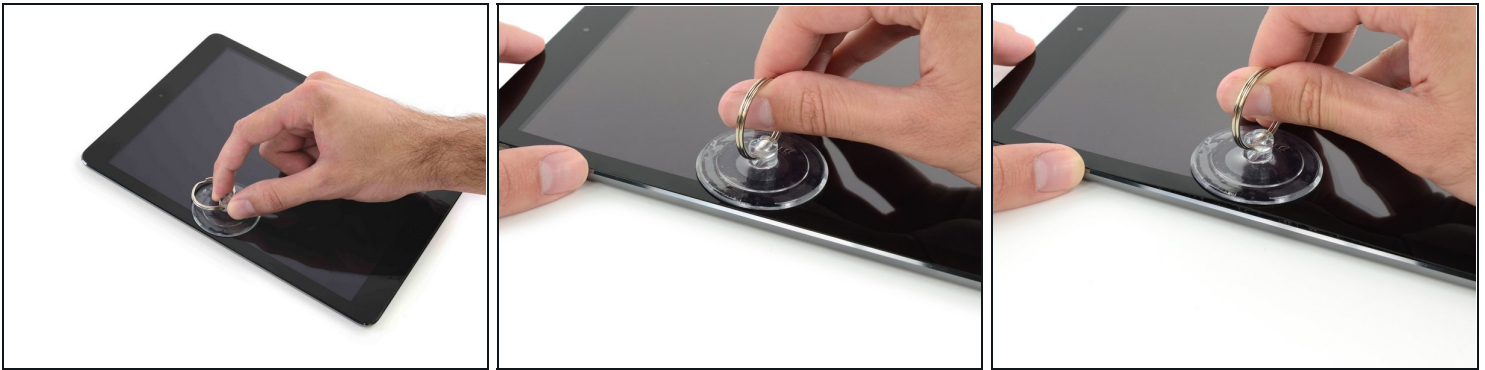
- Pull the blue handle forward to lock the arms.
- Turn the handle clockwise 360 degrees or until the cups start to stretch.
- Make sure the suction cups remain aligned with each other. If they begin to slip out of alignment, loosen the suction cups slightly and realign the arms.

Step 10



- Wait one minute to give the adhesive a chance to release and present an opening gap.
- If your screen isn't getting hot enough, you can use a hair dryer to heat along the left edge of the iPad.
 - ① For complete instructions on how to use a hair dryer, [check out this guide](#).
- Insert an opening pick under the screen when the Anti-Clamp creates a large enough gap.
 - ① If the Anti-Clamp doesn't create a sufficient gap, apply more heat to the area and rotate the handle clockwise half a turn.
- ⚠ Don't crank more than a half a turn at a time, and wait one minute between turns. Let the Anti-Clamp and time do the work for you.
- **Skip the next two steps.**

Step 11



- Carefully place a suction cup halfway up the heated side.
 - Be sure the cup is completely flat on the screen to get a tight seal.
- While holding the iPad down with one hand, pull up on the suction cup to slightly separate the front panel glass from the rear case.
- ❗ If your iPad's screen is badly cracked, covering it with a smooth layer of clear packing tape may help the suction cup adhere. Alternatively, use a strong piece of tape (such as duct tape) and [fold it into a handle](#).

Step 12



- Place an opening pick in the gap opened by the suction cup.
 - ⚠ Don't insert the opening pick any deeper than the black bezel on the side of the display. Inserting the pick too far may damage the LCD.
- Pull the suction cup's plastic nub to release the vacuum seal and remove the suction cup from the display assembly.

Step 13



- Reheat and replace the iOpener.

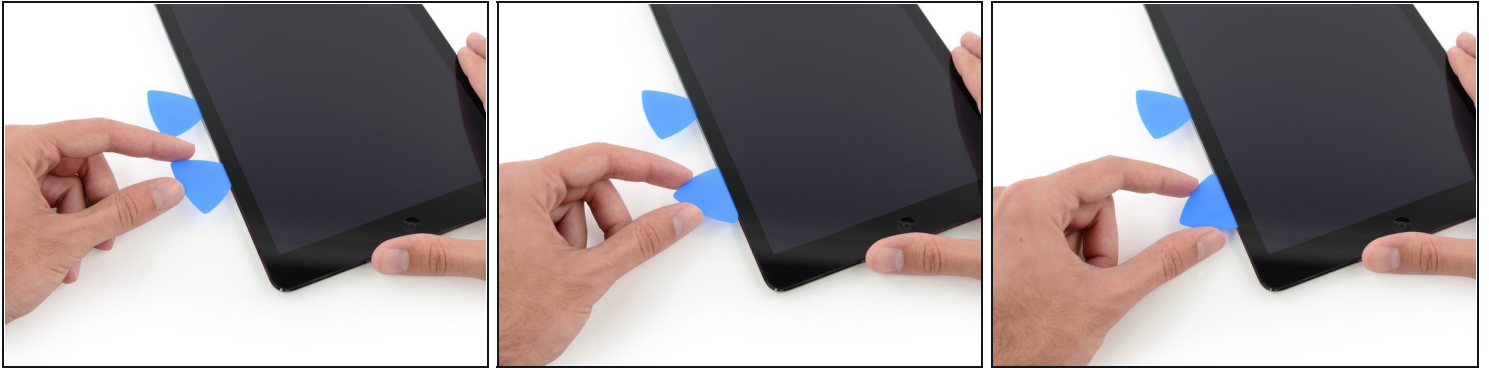
⚠ Be careful not to overheat the iOpener during the repair procedure. Always wait at least ten minutes before reheating the iOpener.

Step 14



- Place a second opening pick alongside the first and slide the pick down along the edge of the iPad, releasing the adhesive as you go.

Step 15



- Continue moving the opening pick down the side of the display to release the adhesive.
- If the opening pick gets stuck in the adhesive, "roll" the pick along the side of the iPad, continuing to release the adhesive.

Step 16



- Take the first pick you inserted and slide it up toward the top corner of the iPad.
- If you can see the tip of the opening pick through the front glass, don't panic—just pull the pick out just a little bit. Most likely, everything will be fine, but try to avoid this as it may deposit adhesive on the front of the LCD that is difficult to clean off.

Step 17



- Reheat the iOpener and place it on the top edge of the iPad, over the front-facing camera.

⚠ Be careful not to overheat the iOpener during the repair procedure. Wait at least ten minutes before reheating the iOpener.

- ① If you have a flexible iOpener, you can bend it to heat both the upper left corner and the upper edge at the same time.

Step 18



- Slide the opening pick around the top left corner of the iPad to separate the adhesive.

Step 19



- Slide the opening pick along the top edge of the iPad, stopping just before you reach the camera.
- ① The third image shows where the front-facing camera and housing are in the iPad.
 - ⚠️ Avoid sliding the opening pick over the front facing camera, as you may smear adhesive onto the lens or damage the camera. The following steps will detail how to best avoid disturbing the front facing camera.

Step 20



- Pull the pick out slightly, and slide the very tip gently along the top of the front-facing camera section of the top edge.

Step 21



- Leave the opening pick in the iPad slightly past the front-facing camera.
- Take a second pick and insert it to the left of the camera, and then slide it to the corner of the iPad to finish cutting the adhesive on that edge.

Step 22



- Insert the previous pick deeper into the iPad and slide it away from the camera toward the corner.

Step 23



- Leave the three picks in the corners of the iPad to prevent re-adhering of the front panel adhesive.
- Reheat the iOpener and place it on the remaining side of the iPad—along the volume and lock buttons.

Step 24



- Slide the opening pick around the top right corner of the iPad, releasing the adhesive there.
- ① Leave this pick in place to keep the adhesive from re-sealing itself, and grab a new pick for the next step.

Step 25



- Insert a new opening pick and slide it to the middle of the right edge of the iPad, releasing the adhesive as you go.

⚠ The display cables are located approximately halfway from the bottom of the iPad. Stop sliding the pick when you get ~4.5" from the bottom of the iPad.

Step 26



- Leave the opening picks in place, and set the reheated iOpener on the home button end of the iPad.

Step 27



- Slide the lower left pick to the lower left corner to cut the adhesive on that corner.
- Leave the pick at the corner. Do not pry any farther, and do not remove the pick from the iPad.
- ① The third image shows the two antennas and the home button cavity in the lower case of the iPad.
 - The following steps will direct you where to pry to avoid damage to these components. Only apply heat and pry where directed.

Step 28



- ① Leave the pick from the last step in place to prevent the adhesive from re-sealing.
- With a new pick, slice gently over the left-hand antenna, stopping before the home button.
 - ⚠ Only slide the pick from the outer edge toward the center of the iPad. Do not move the pick back toward the outer edge, as moving in this direction may damage the antenna.
- ① If you need to slide the pick over the lower section more than once, remove it and re-insert at the outer edge, and slide inwards.
- Leave the pick in place before moving on.

Step 29



- Take a new pick and slip it in to the right of the previous pick.
- Slide across the home button and right-hand antenna using **only the very tip** to remove the adhesive.

Step 30



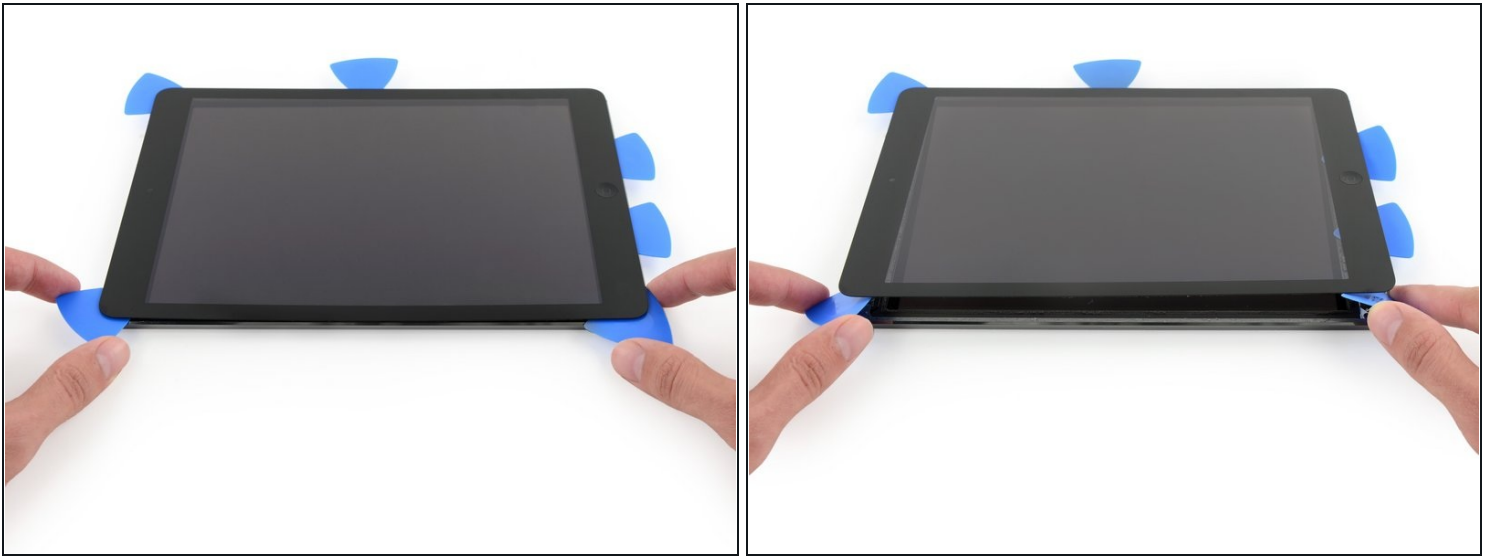
- With the adhesive loosened, you can now insert the pick near the right-hand corner. Slide the pick to the left, and stop just short of the Home button.
⚠ Just like with the left antenna, only slide from the outer edge toward the center. Reversing this direction may damage the antenna.

Step 31



- Reheat and reapply the iOpener to the volume control side of the iPad.

Step 32



⚠ Be very careful with this step. Take your time and ensure the adhesive is hot and soft, and that you've been through all of the adhesive with an opening pick. Don't be afraid to stop and reheat.

- On the side of the iPad opposite the volume controls, you should have a pick lodged into each corner. Twist the picks to lift the glass slightly, separating the last of the adhesive along the display cable edge.
- ① If you encounter a significant amount of resistance, leave the picks in place, reheat, and reapply the iOpener to the problem areas.

Step 33



- Lift slowly and gently to further detach the adhesive along the display cable edge.

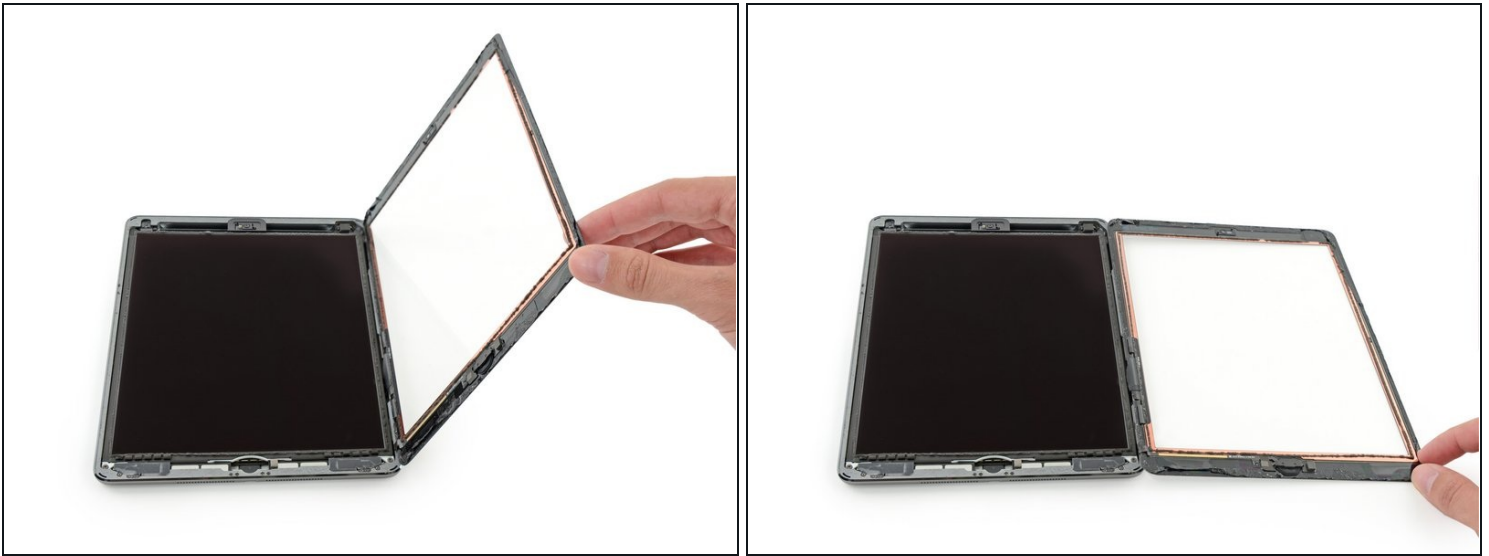
Step 34



- While supporting the front panel glass, use an opening pick to cut the last of the adhesive.

⚠ Be very careful not to cut or damage any of the display cables.

Step 35



- Once all of the adhesive has been separated, open the glass panel like a page in a book and rest it on your workspace.
- ☑ During reassembly, clean the remains of the adhesive from the case (and the front glass if you are re-using it) with isopropyl alcohol, and replace the adhesive using our [display adhesive application guide](#) and [pre-cut adhesive strips](#).
- ☑ It's easy to pinch a flex cable between the front glass and the iPad's frame during reassembly. Be mindful of the flex cables and make sure they gently fold and tuck under the frame. If the folds in a flex cable are pressed completely flat, it may be damaged beyond repair.

Step 36 — LCD



- Remove any tape obscuring the LCD screws.

Step 37



- Remove the following Phillips screws securing the LCD.
 - Three 4.0 mm screws
 - One 4.8 mm screw

Step 38



⚠ Do not attempt to fully remove the LCD. It is still connected to the iPad by several cables at the home button end. Lift only from the front-facing camera end.

- Use the flat end of a spudger to pry the LCD out of its recess just enough to grab it with your fingers.
- Flip the iPad LCD like a page in a book, lifting near the camera and turning it over the home button end of the rear case.

⚠ Be gentle and keep an eye on the LCD cables as you flip the display over.

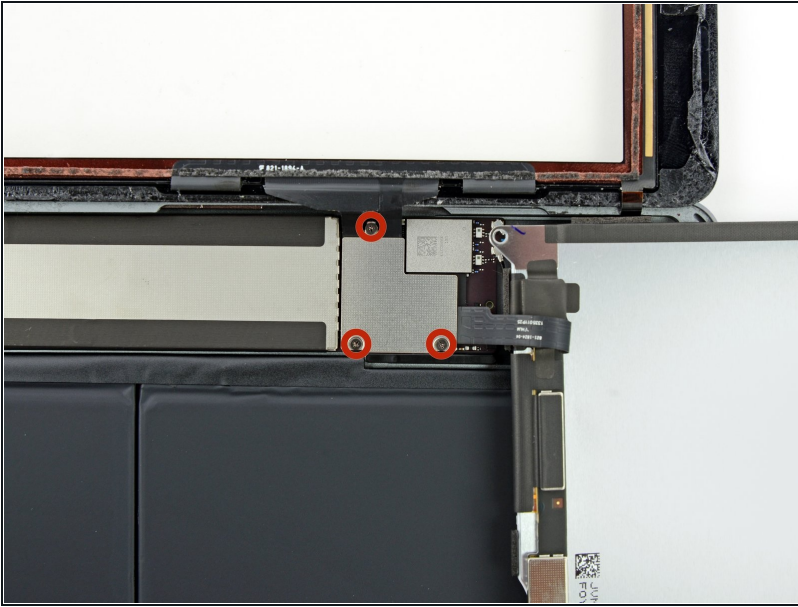
- Lay the LCD on its face to allow access to the display cables.
 - ⓘ Set the LCD down on a soft, clean, lint-free surface.

Step 39



- Remove the single 2.3 mm Phillips screw securing the battery connector to the logic board.
- ⓘ To reduce the risk of a short, you can insert a [battery blocker](#) or a modified opening pick to disconnect the battery.
- ⚠ Be very careful when you isolate the battery using a battery blocker. The battery contacts are easily damaged, resulting in irreversible damage.
 - Slide the battery blocker underneath the battery connector area of the logic board, and leave it in place while you work.
- ⓘ If you are having trouble fitting the battery blocker underneath the logic board, you can try [using a playing card](#) to disconnect the battery.

Step 40



- Remove the three 1.4 mm Phillips screws from the display cable bracket.

Step 41



- Use the flat end of a spudger to gently pry the display cable bracket straight up from the logic board.

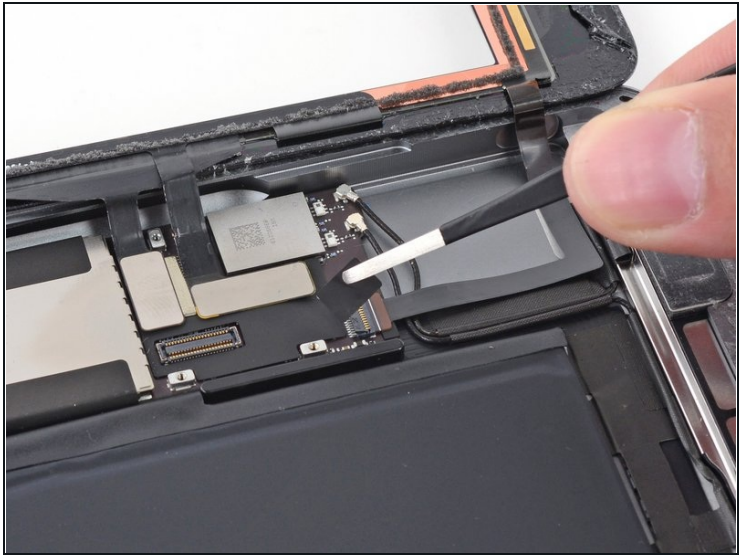
⚠ The display cable connector is adhered to the underside of the bracket, so don't push the spudger too far under the bracket, or you may damage the connector.

Step 42



- Remove the LCD.

Step 43 — Front Panel Assembly



- Remove any tape covering the home button ribbon cable connector.

Step 44



- Use the flat end of a spudger to flip the tab on the home button ribbon cable ZIF connector upward.
- Carefully pull the home button ribbon cable horizontally out of the ZIF connector.

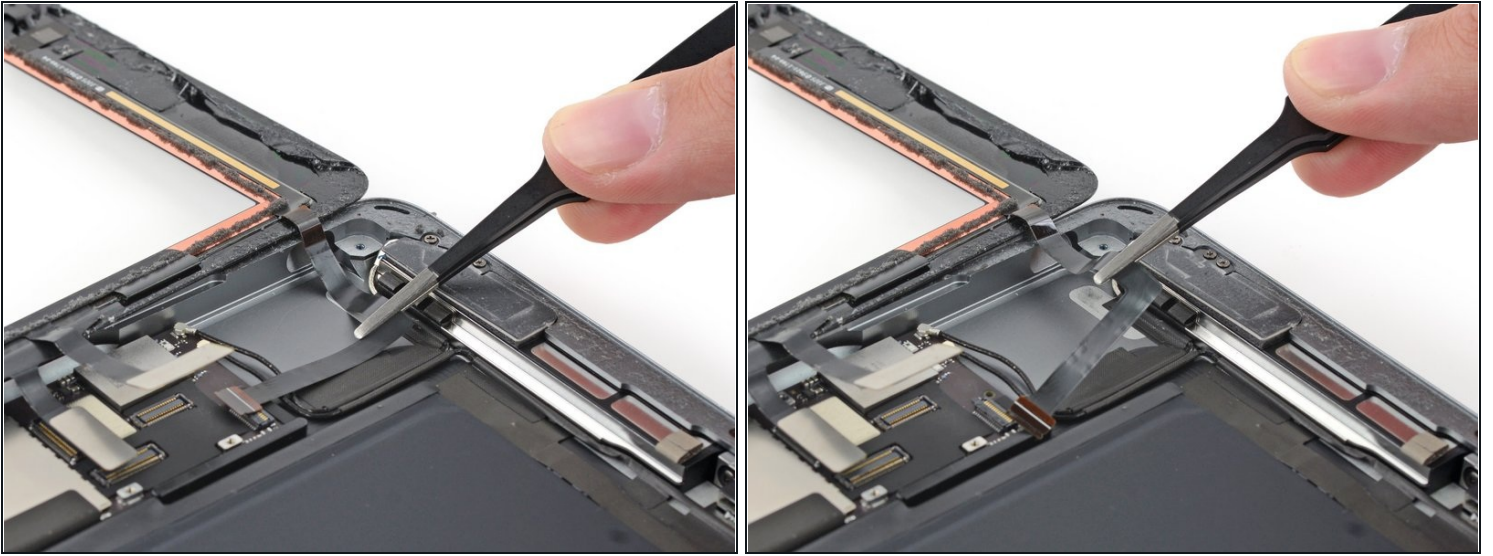
Step 45



- Use a the flat end of a spudger or a fingernail to carefully pop the two digitizer cable connectors straight up from their sockets.

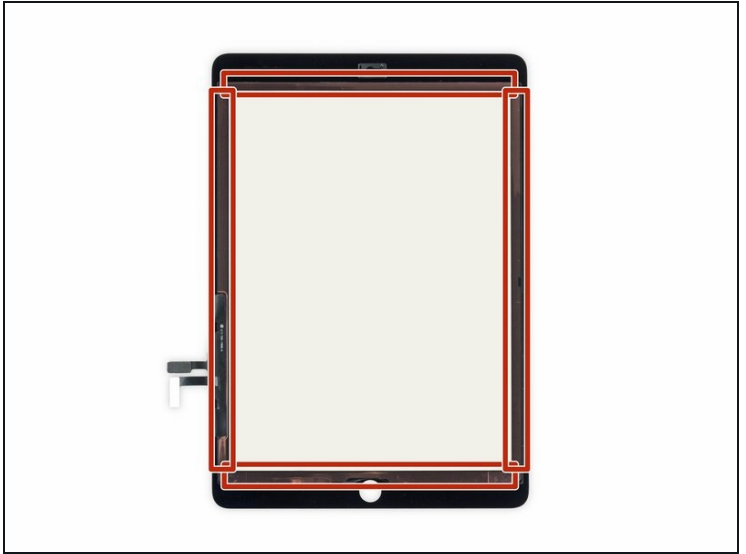
⚠ To avoid damaging your iPad, pry only on the connectors themselves, **not on the socket on the logic board.**

Step 46



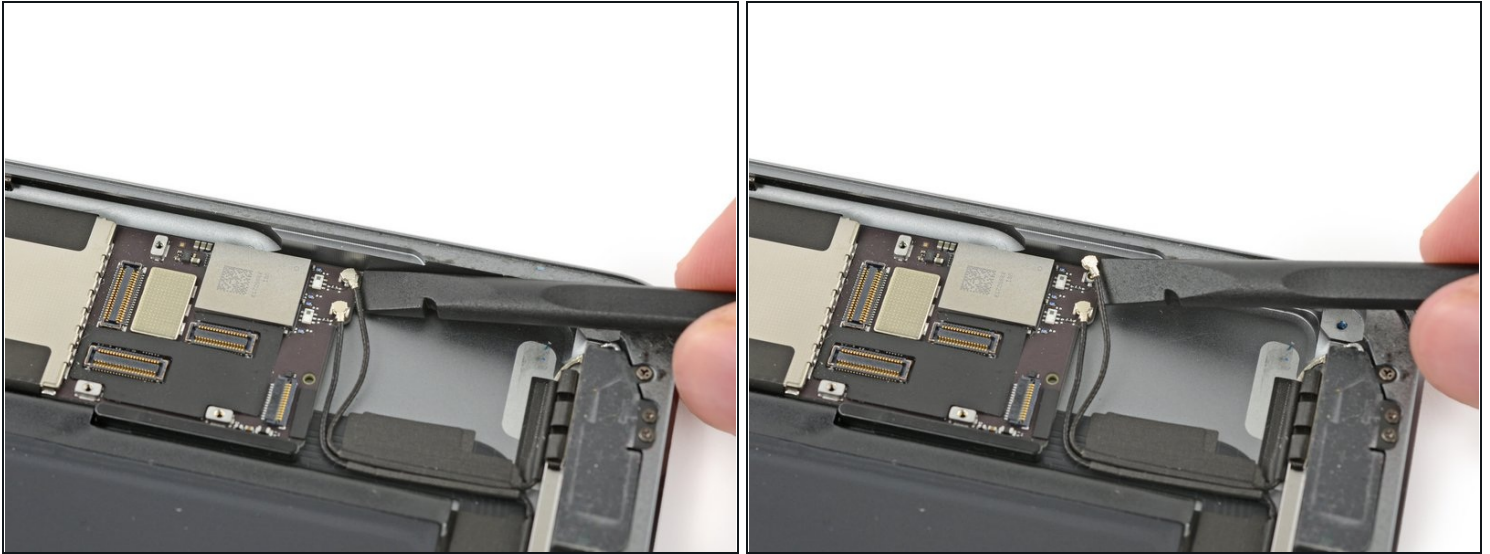
- Carefully peel the home button ribbon cable up off of the adhesive holding it to the rear case.

Step 47



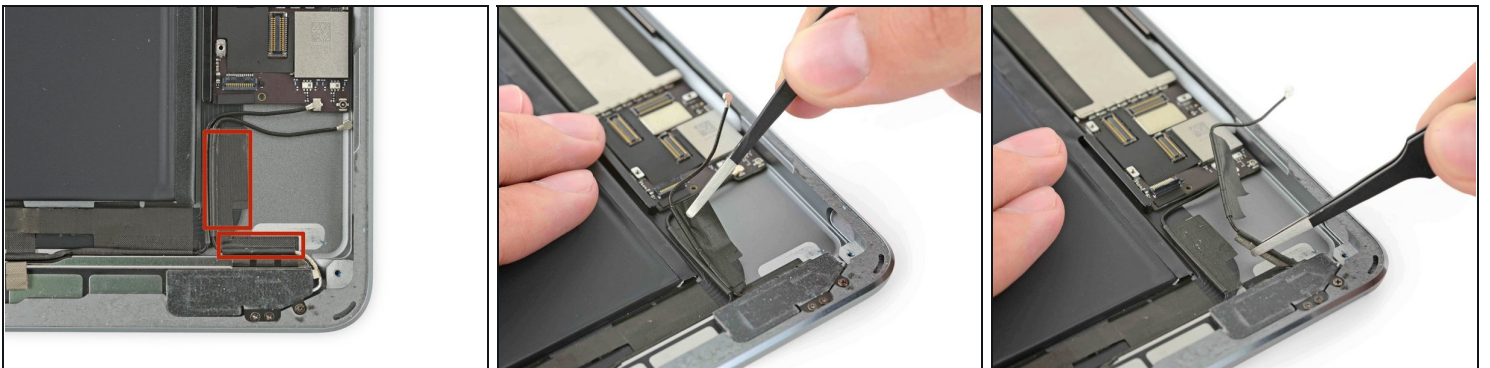
- Remove the front panel assembly.
- ☑ During reassembly, wipe any dust or fingerprints off of the inside of the front panel assembly to ensure a clean display.
- If you experience "ghost" or "phantom" touch input issues with your new display, this can be resolved by adding a layer of very thin insulating tape, such as [Kapton \(polyimide\) tape](#), to the highlighted areas on the back of the panel. **iFixit panels come with the proper insulation, and should not require the addition of any tape.**
- ☑ Without the proper insulation, these areas of the digitizer can ground out against other components, causing touch input malfunction.
- ⓘ The insulation is not visible to the naked eye, and is different from the foam dust barrier strips found on many iPads.

Step 48 — Right Antenna



- Insert a spudger under the antenna cable closest to the edge of the iPad and lift upward to disconnect the antenna cable connector.

Step 49



- There are two large pieces of tape wrapped around the right antenna cable, securing it to the rear case.
- Peel the tape up from the rear case.
 - ☑ While peeling the antenna tape up, leave it in place on the antenna cable to aid with reassembly.

Step 50



- ① The antenna cable is anchored to the speaker with a small metal bracket. The bracket is permanently crimped to the antenna and adhered to the speaker enclosure.
- Carefully insert an opening pick between the speaker enclosure and the antenna cable bracket.
- Slide the pick toward the home button to cut the adhesive.
- Push the bracket away from the speaker until it clears the tape underneath.

Step 51



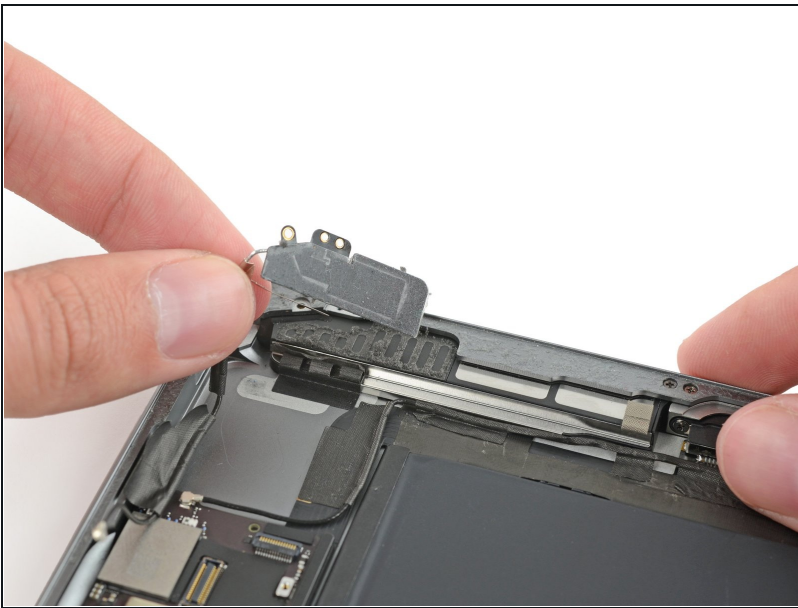
- Remove the following Phillips #000 screws securing the right antenna:
 - One 2.3 mm screw
 - Two 1.4 mm screws

Step 52



- Insert the flat end of a spudger between the antenna and the speaker assembly.
- Slide the spudger toward the home button to cut the foam adhesive securing the antenna.

Step 53



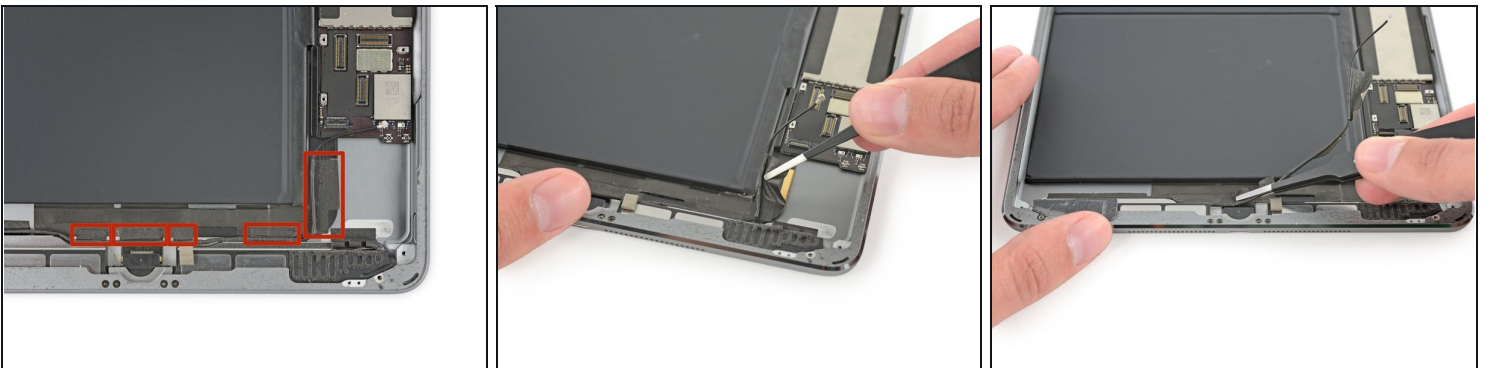
- Remove the right antenna from the iPad.

Step 54 — Right Speaker



- Insert a spudger under the left antenna cable and lift upward to disconnect the antenna cable connector.

Step 55



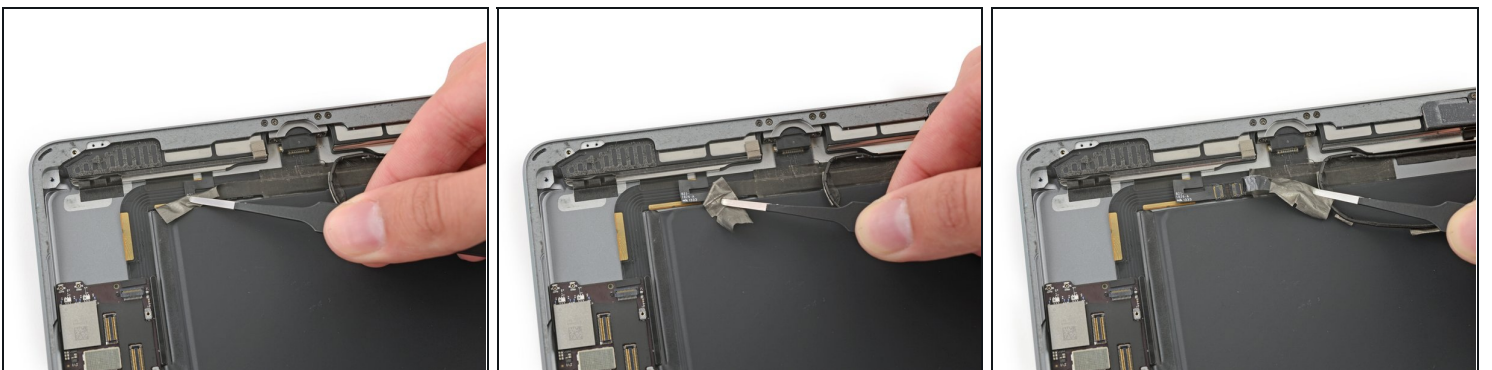
- There are five pieces of tape wrapped around the left antenna cable covering the right speaker cable connector.
- Peel the tape up from the rear case.
- Fold the antenna cable out of the way.

Step 56



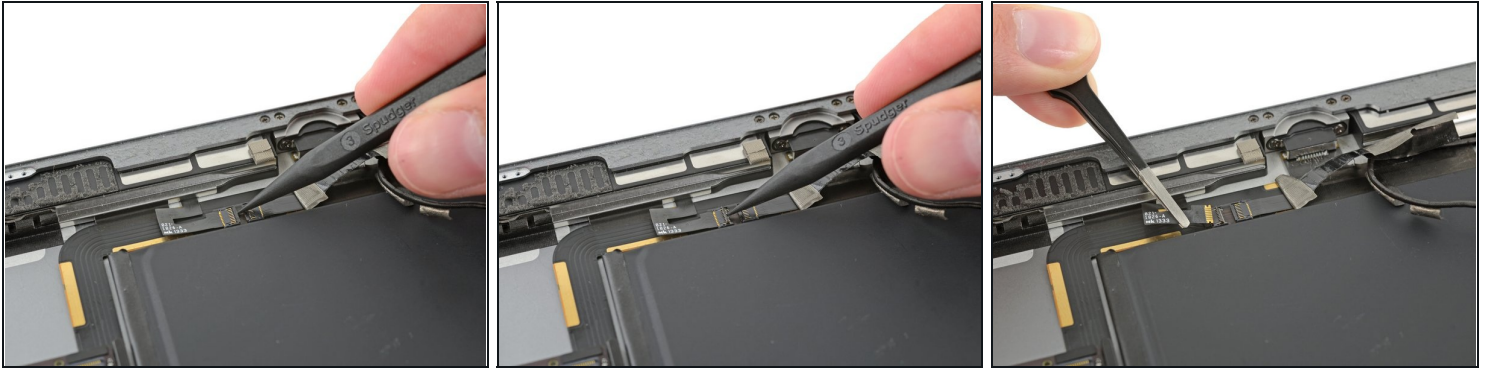
- ❗ A bend in the speaker cable makes it difficult to peel the tape up from the end.
- Instead, grip the tape just under the speaker and peel it down, away from the edge of the case.
 - ❗ Be careful with your tweezers—only grab and peel the tape, and not the cable beneath.

Step 57



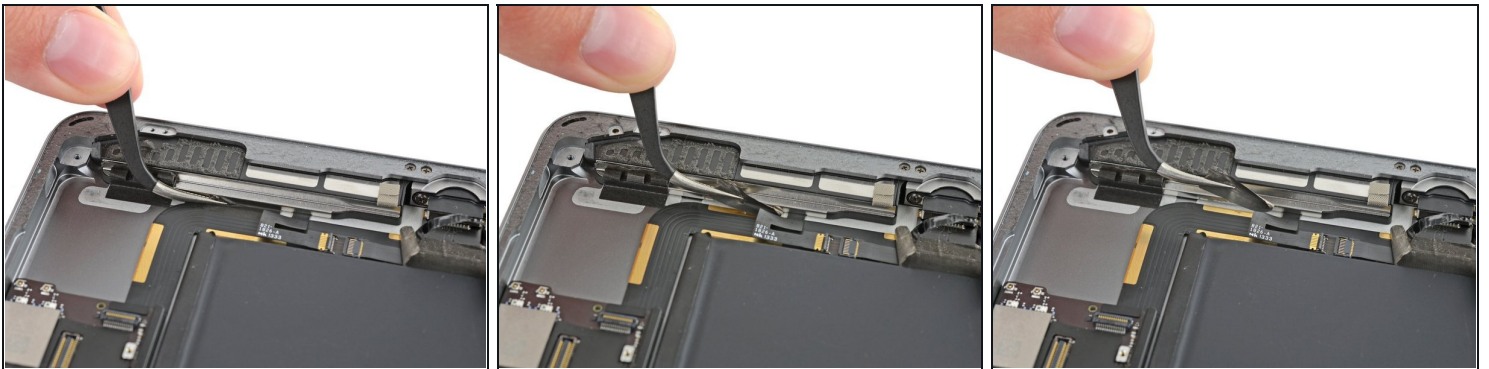
- Peel the tape toward the home button to uncover the speaker cable connector.

Step 58



- Use the pointed end of a spudger to flip up the retaining flap on the right speaker cable connector.
- Slide the speaker cable straight out of its ZIF connector.

Step 59



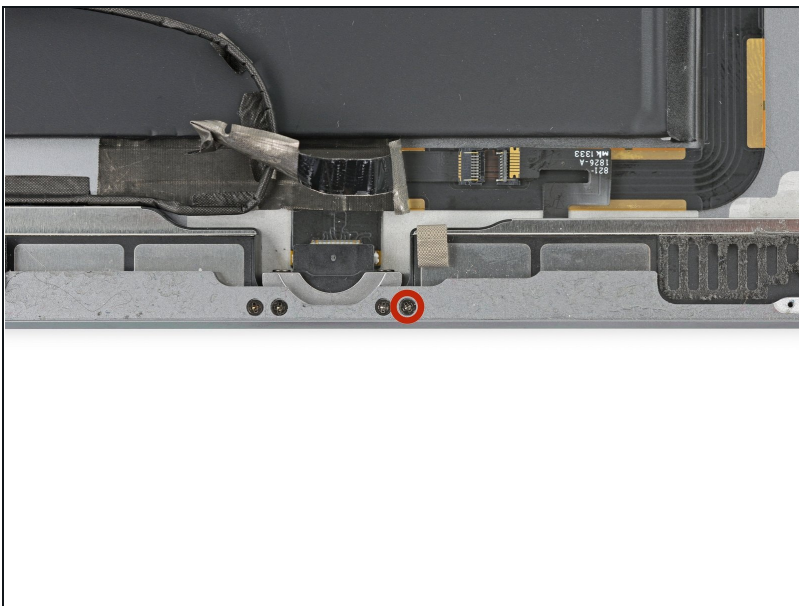
- Remove the tape holding the speaker to the rear case.

Step 60



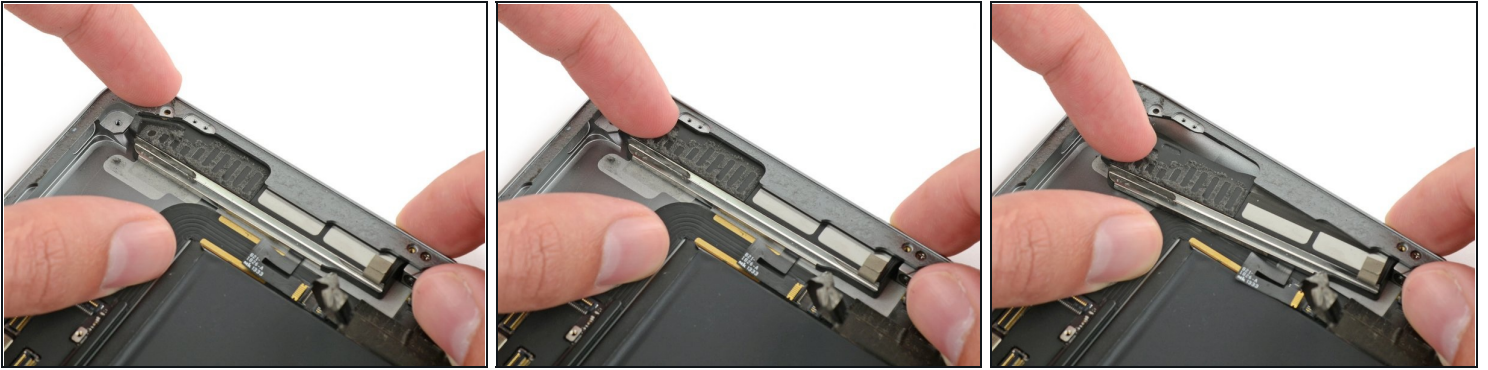
- Carefully peel the LCD buffer tape up off of the rear case.

Step 61



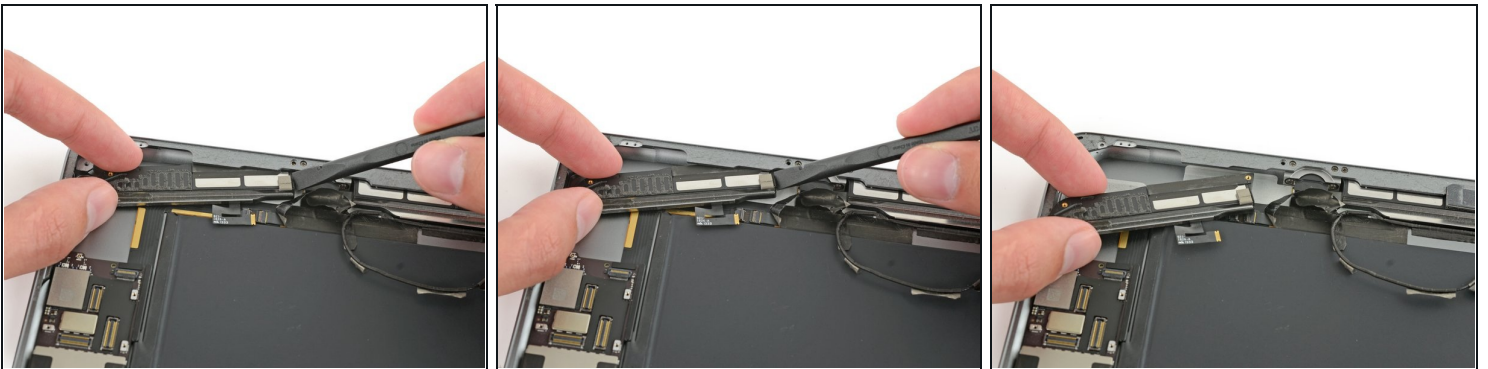
- Remove the 2.2 mm Phillips #000 screw securing the speaker to the rear case.

Step 62



- Insert a fingernail or the flat end of a spudger in the groove in the speaker housing, near the corner of the rear case.
- Pull the speaker down, away from the corner of the case.

Step 63



- Use a spudger to help pull the speaker out from under the edge of the rear case.
- Remove the right speaker from the iPad.

Step 64 — Upper Component Cable Bracket



- Remove the three 1.4 mm Phillips #000 screws securing the upper component cable bracket.

Step 65



- Remove the upper component cable bracket.

⚠ If you have the Wi-Fi/Cellular model, your iPad will look slightly different and will require the removal of two additional screws to access components covered by this bracket.

Step 66 — Logic Board



- There are two remaining pieces of tape securing the left antenna cable to the rear case.
- Peel the tape up from the rear case.

Step 67



- Carefully insert an opening pick between the speaker enclosure and the antenna cable bracket.
- Slide the pick toward the home button to cut the adhesive.
- Push the bracket away from the speaker until it is clear of the tape underneath.

Step 68



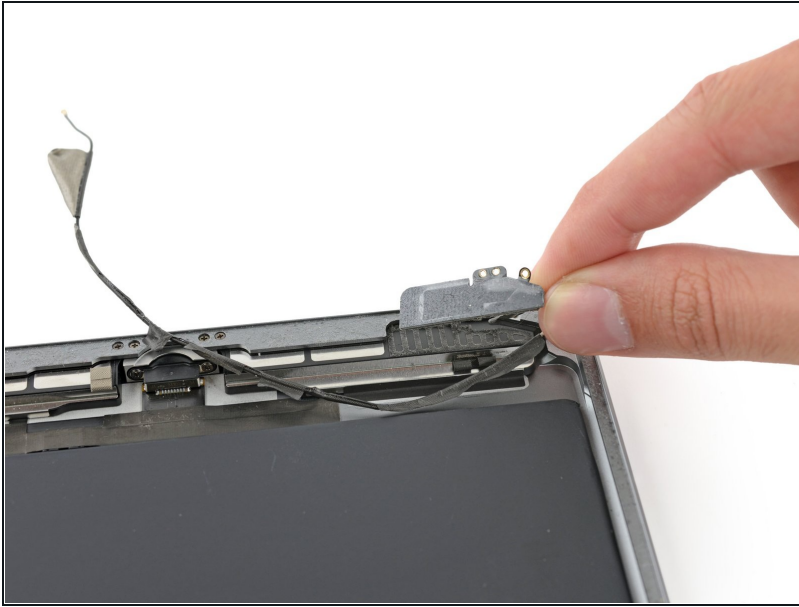
- Remove the following Phillips #000 screws:
 - Two 1.4 mm screws
 - One 2.3 mm screw

Step 69



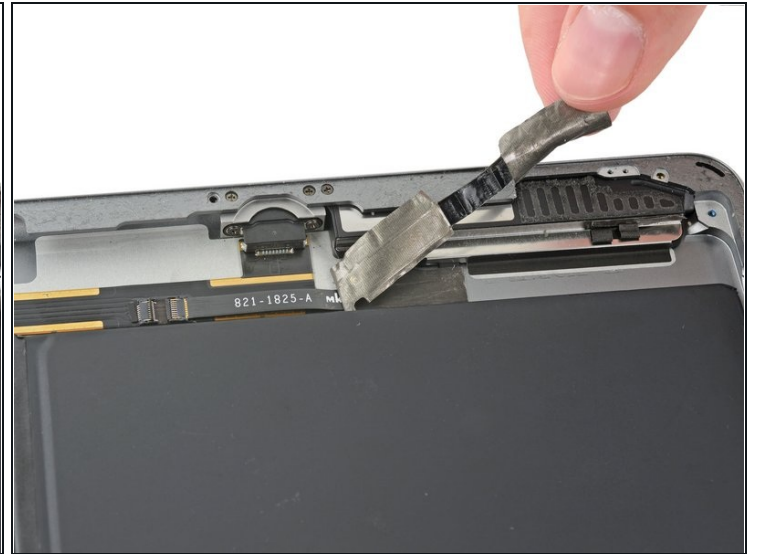
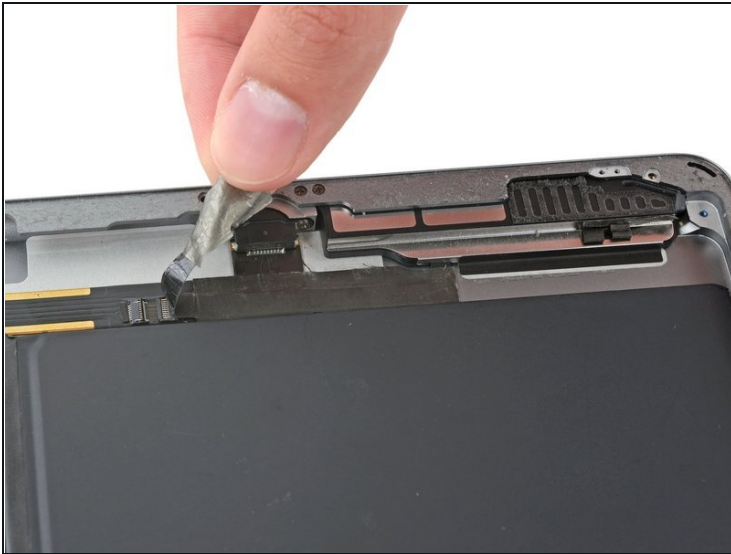
- Insert the flat end of a spudger between the antenna and the speaker assembly.
- Slide the spudger toward the home button to cut the foam adhesive securing the antenna.

Step 70



- Remove the left antenna from the iPad.

Step 71



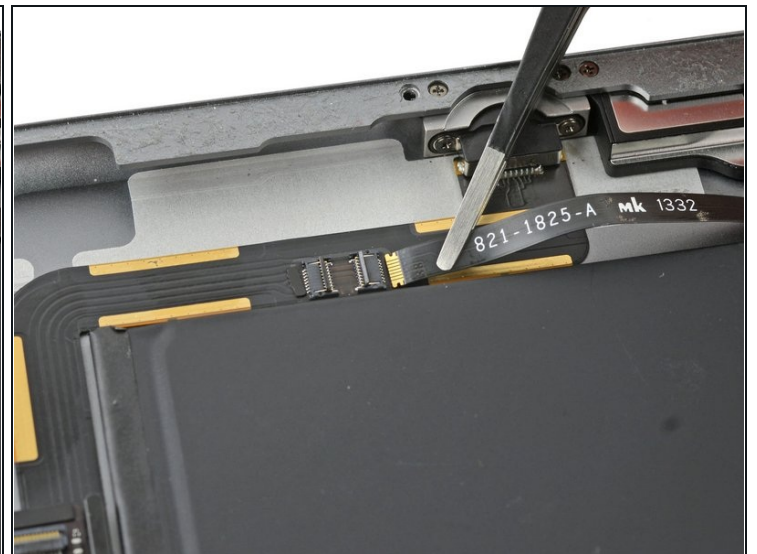
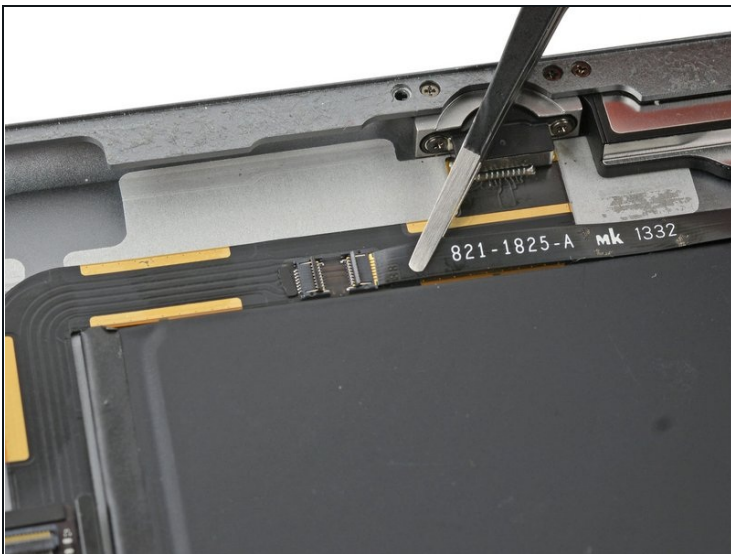
- Remove the tape covering the left speaker cable connector.

Step 72



- Use the pointed end of a spudger to flip up the retaining flap on the left speaker cable connector.

Step 73



- Slide the speaker cable straight out of its ZIF connector.

Step 74



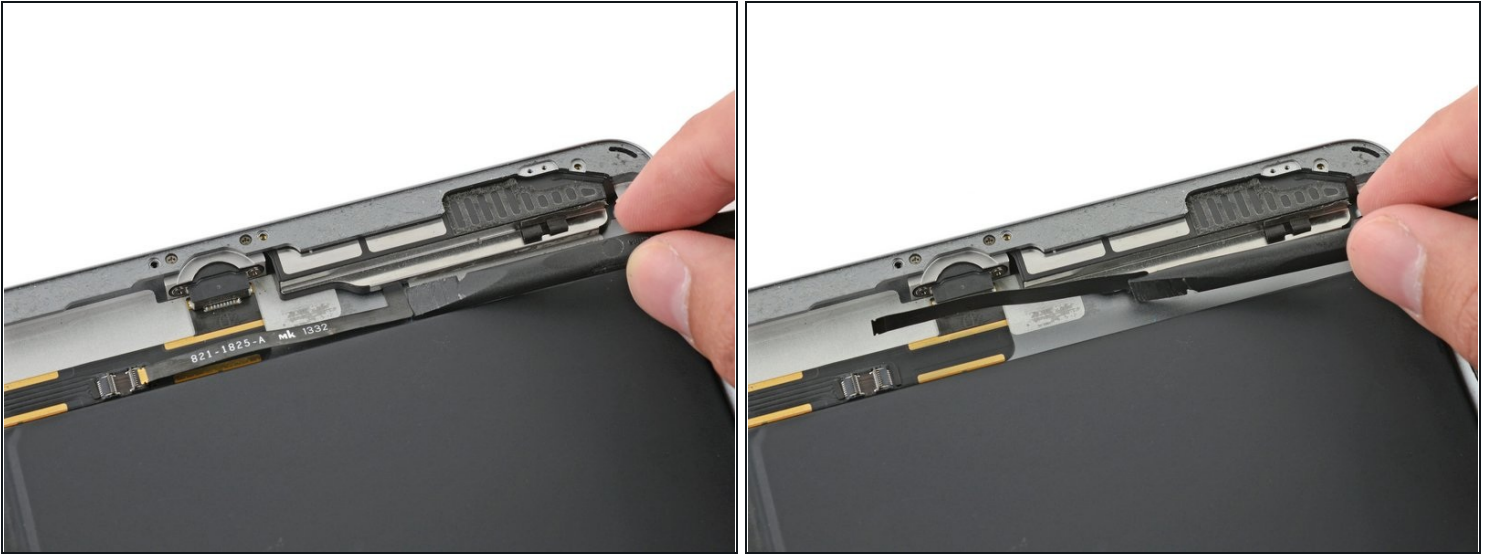
- Remove the tape holding the speaker to the rear case.

Step 75



- Remove the 2.2 mm Phillips #000 screw securing the speaker to the rear case.

Step 76



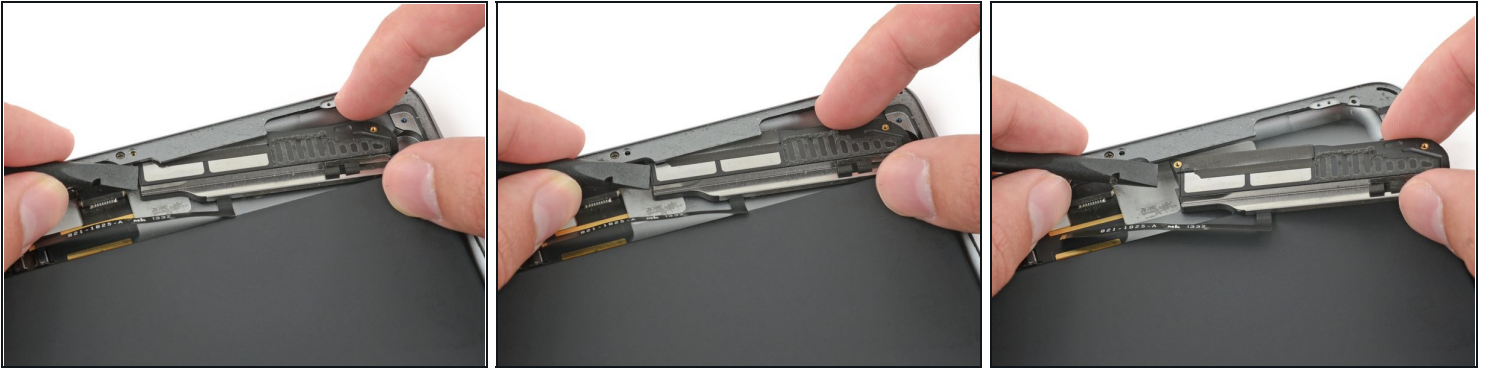
- Gently fold the left speaker ribbon cable up so that it will clear the battery when you slide the speaker enclosure out.

Step 77



- Insert a fingernail or the flat end of a spudger in the groove in the speaker housing, near the corner of the rear case.
- Pull the speaker down, away from the corner of the case.

Step 78



- Use a spudger to help pull the speaker out from under the edge of the rear case.
- Remove the left speaker from the iPad.

Step 79



- Use the flat end of a spudger to disconnect the front-facing camera connector from the logic board.
⚠️ Pry up only on the connector—not on the socket itself.
- Fold the front-facing camera cable out of the way.
 - ☑ There is a bit of conductive adhesive between the gold-colored cable contacts. Be sure to apply pressure to readhere these contacts during reassembly.

Step 80



- Use the flat end of a spudger to disconnect the rear-facing camera connector from the logic board.
⚠ Pry up only on the connector—**not** on the socket itself.
- Fold the rear-facing camera cable out of the way.

Step 81



- Use the flat end of a spudger to disconnect the headphone jack connector from the logic board.
⚠ Pry up only on the connector—**not** on the socket itself.
- ⓘ Newer iPad units have a loop of tape connecting this connector to its socket on the the logic board. This tape must be cut in order to disconnect the headphone jack.
- Fold the headphone jack cable out of the way.

Step 82



- Use the flat end of a spudger to disconnect the microphone cable connector from the logic board.

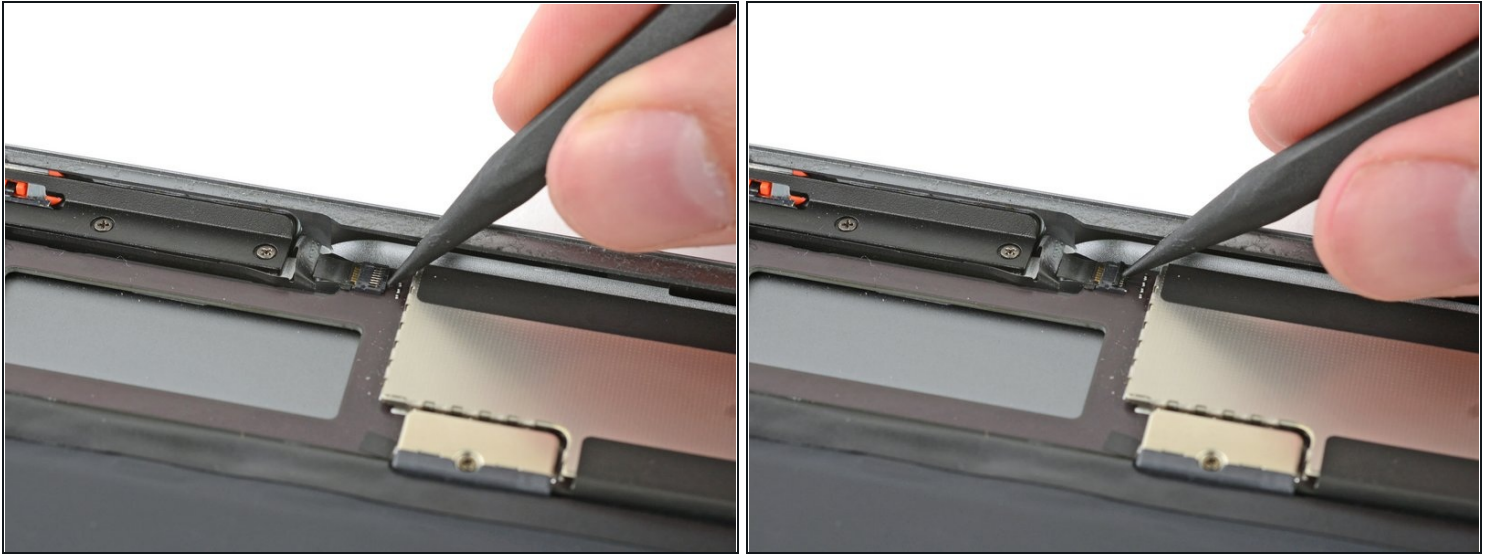
⚠ Pry up only on the connector—**not** on the socket itself.

Step 83



- Remove any tape covering the upper button assembly cable connector.

Step 84



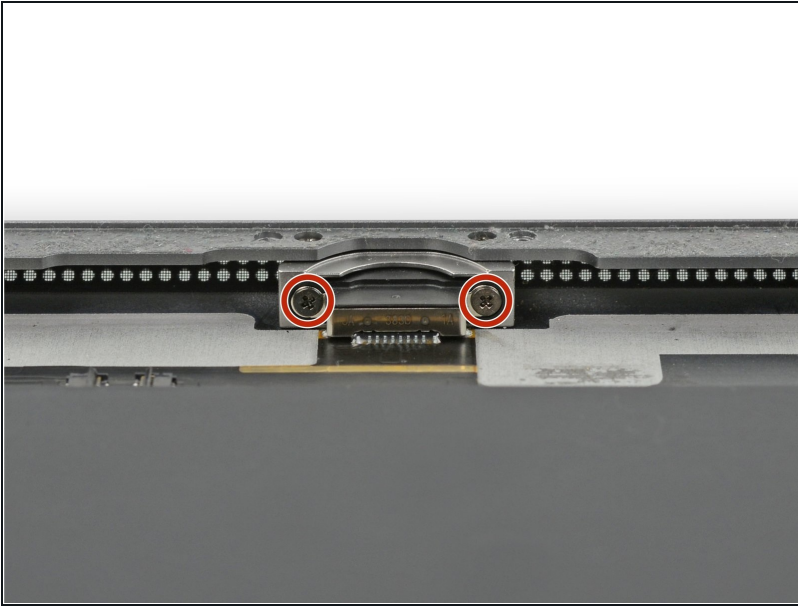
- Use the pointed end of a spudger to flip up the retaining flap on the upper button assembly cable connector.

Step 85



- Slide the upper button assembly cable straight out of its ZIF connector.

Step 86



- Remove the two 3.3 mm Phillips #000 screws securing the Lightning port.

ⓘ To find these screws, hold the iPad vertically and look down at the Lightning port.

Step 87



- ⓘ In the next steps, you will use an iOpener to apply heat to the rear case of the iPad to soften adhesive holding the logic board in place.
- ⓘ As you reheat and place the iOpener in each of the indicated locations, leave it in place for at least a minute to soften the adhesive through the rear case.
- The adhesive is in the form of six pieces of black foam tape—refer to this step as you work at heating and prying to keep track of where each piece is located.

Step 88



- Place a heated iOpener over the rear-facing camera end of the iPad, and let it sit for at least a minute to soften the adhesive through the rear case.
- ⓘ More time won't hurt, but you may need to reheat your iOpener and reapply it if you leave it on the rear case for too long.

Step 89



- ⓘ As you complete the next few steps, prying adhesive securing the logic board in place, always start by testing gently to see if the adhesive is softened. If not, reheat the iOpener and reapply it to the back of the rear case.
- Carefully insert an opening pick under the logic board, between the front-facing camera and the battery.
- Slide the pick toward the front-facing camera connector, and stop at the bend in the logic board.

Step 90



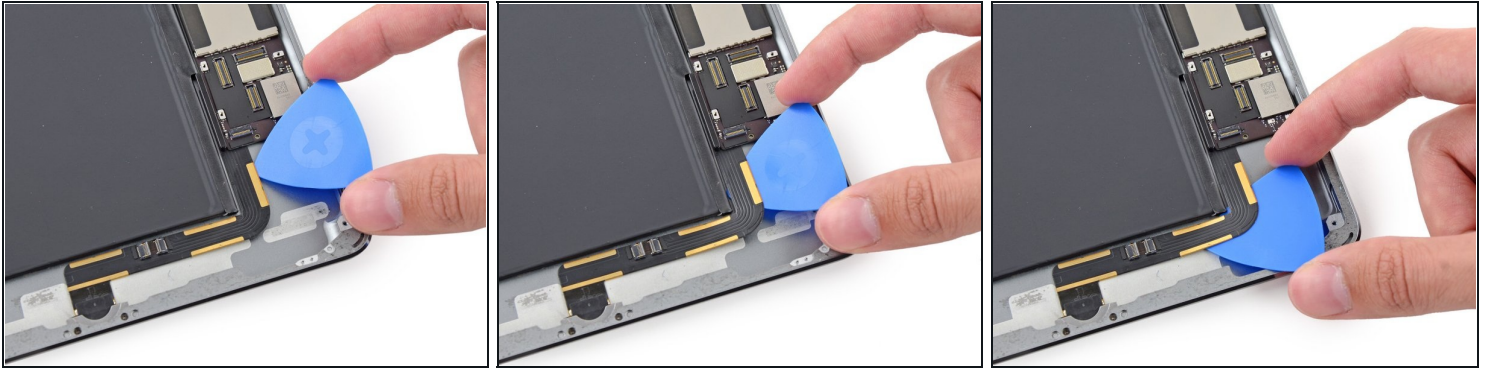
- Slide an opening pick under the logic board from the front-facing camera to the rear facing camera.

Step 91



- Place a heated iOpener along the bottom edge of the iPad.
 - ① Again, let the iOpener sit for at least a minute to soften the adhesive through the rear case.

Step 92



ⓘ The Lightning connector cable is stuck to the case with some adhesive. To detach the adhesive you will be sliding an opening pick between the cable and the case. **Be very careful** not to cut the Lightning connector cable itself.

- Insert an opening pick under the Lightning cable where it meets the logic board.
- Slide the pick down and around the bend in the cable.

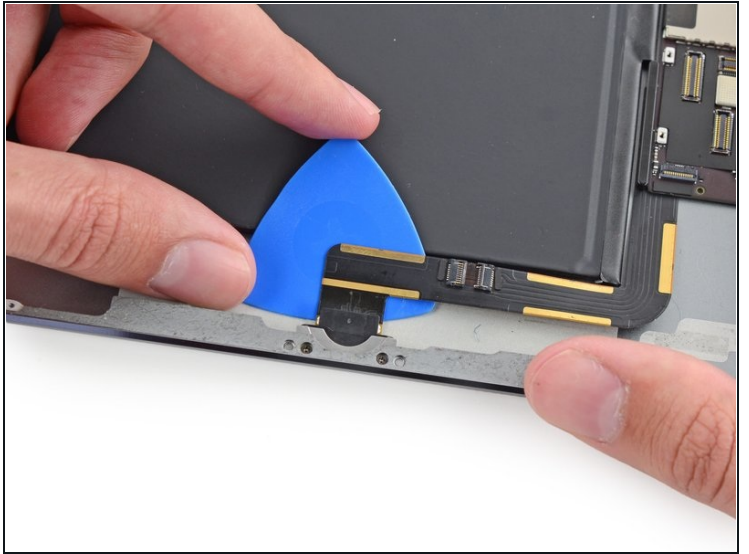
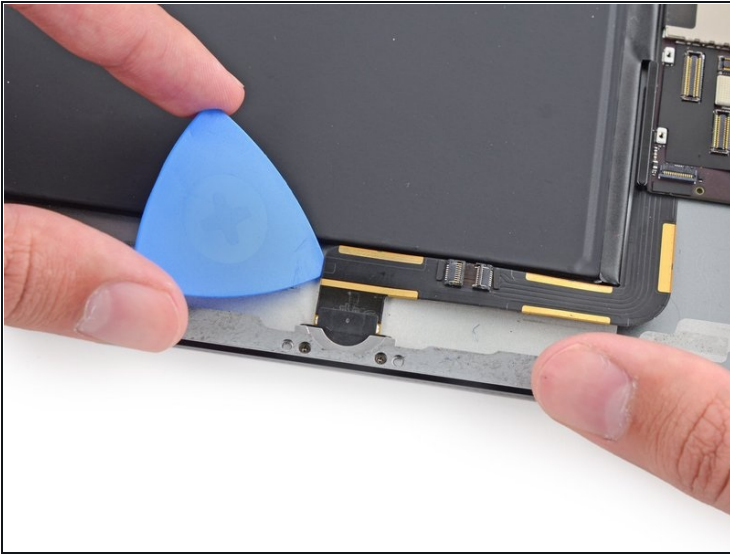
Step 93



- Continue to slide the opening pick under the cable, stopping before the cable bends to the Lightning connector.

⚠ Move slowly and carefully. If the opening pick does not slide easily, apply more heat and try again. If you use excessive force, you will likely slip and sever the Lightning connector cable.

Step 94



- Finally, slide the opening pick between the battery and the Lightning connector itself to separate the last of the adhesive underneath the cable.

Step 95



- Pull the Lightning connector straight out of its recess in the rear case.

Step 96



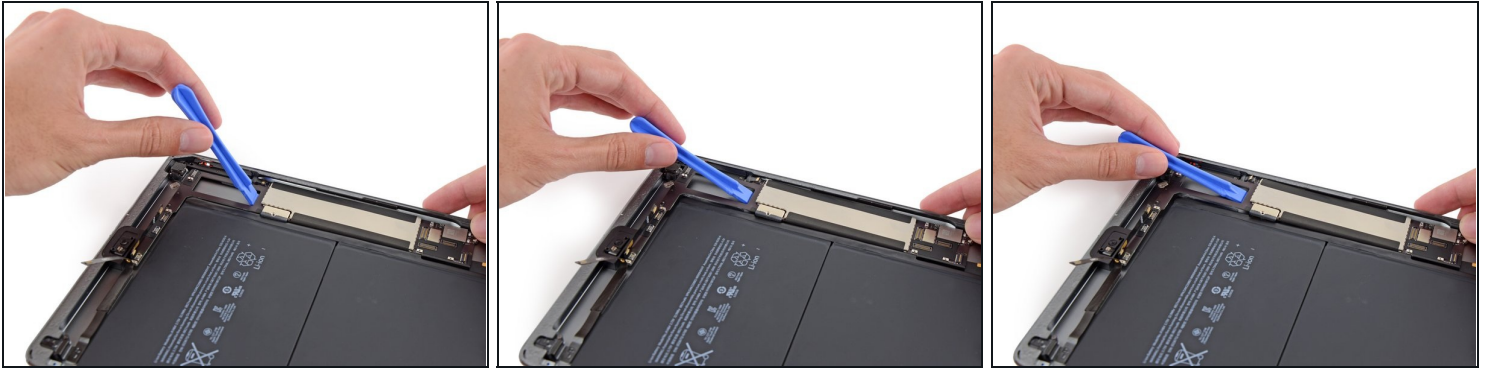
- Place a heated iOpener on the left side of the rear case, where the logic board is adhered.
- ⓘ Let the iOpener sit for at least a minute to soften the adhesive through the rear case.

Step 97



- Insert a plastic opening tool in the rectangular gap in the upper area of the logic board, and pry the logic board up from the rear case.
- While keeping the opening tool underneath the logic board, slide it down the length of the gap to free the upper end of the logic board from the adhesive.

Step 98



- Pry up the logic board at the lower edge of the rectangular gap, near the EMI shield.

⚠ Lift the end of the logic board slowly. If you encounter significant resistance, stop prying and reapply the iOpener.

Step 99



- Slide an opening pick under the logic board between it and the battery.
- Slide the pick from the base to the center of the logic board to cut the adhesive.

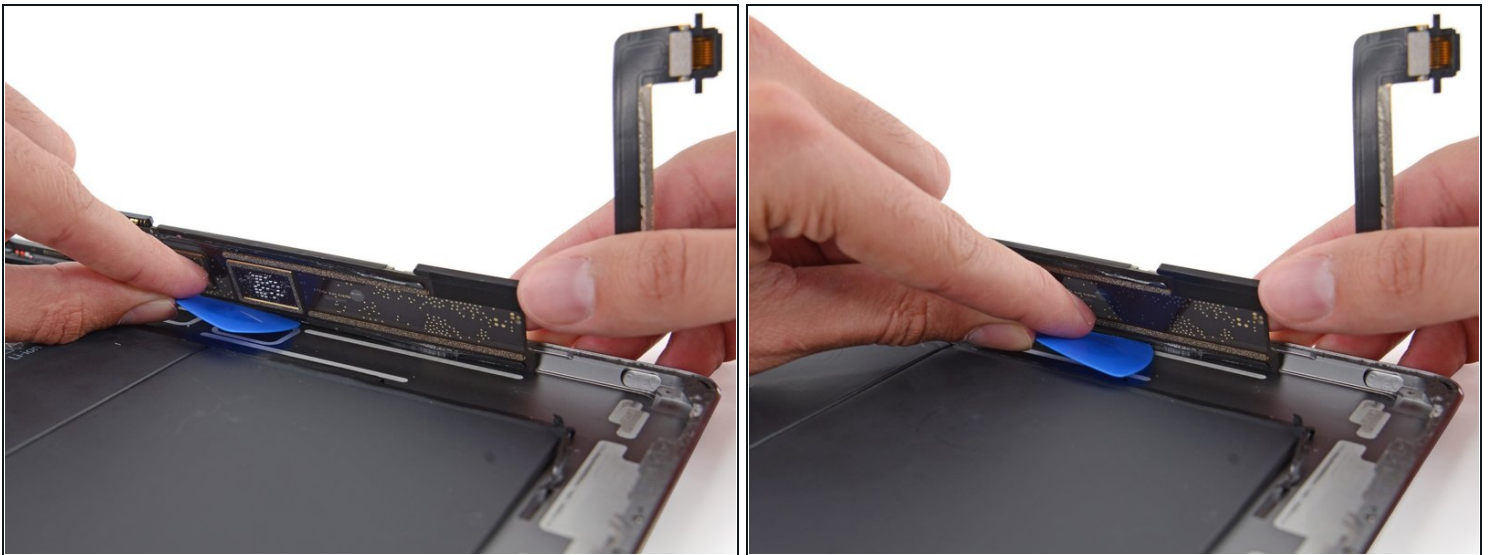
⚠ Take care not to cut the battery with the opening pick; a punctured battery can be very dangerous. If you encounter resistance, reheat and reapply the iOpener.

Step 100



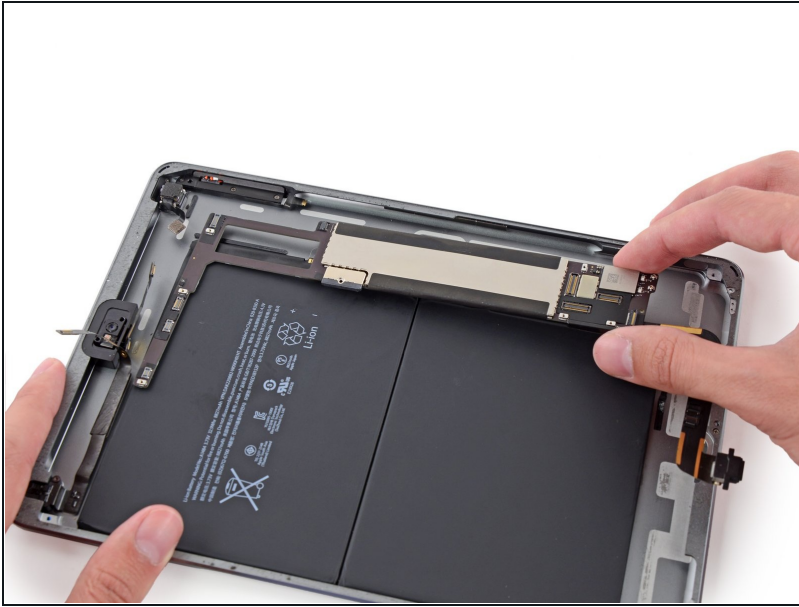
- Slide the pick up the length of the logic board.
- Once the adhesive has been cut, pry the battery side of the logic board upward off of the rear case.

Step 101



- Continue to lift the logic board along the edge nearest the battery, until you can get an opening pick against the far edge of the logic board.
- Cut any adhesive holding the outer edge of the logic board to the rear case.

Step 102



- Remove the logic board from the iPad.

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