iPad 2 Wi-Fi EMC 2415 Speaker Assembly Replacement

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INTRODUCTION

Use this guide to replace a damaged speaker assembly.

TOOLS:

- Heat Gun (1)
- iFixit Opening Picks set of 6 (1)
- iOpener (1)
- Phillips #00 Screwdriver (1)
- Plastic Opening Tools (1)
- Spudger (1)

PARTS:

- iPad 2 Speaker Assembly (1)

Step 1 — iPad 2 Wi-Fi EMC 2415 Speaker Assembly Replacement

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.

⚠ 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.

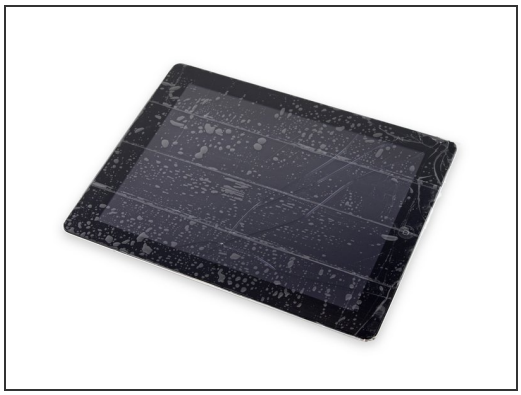
Step 3

- 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





- 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.

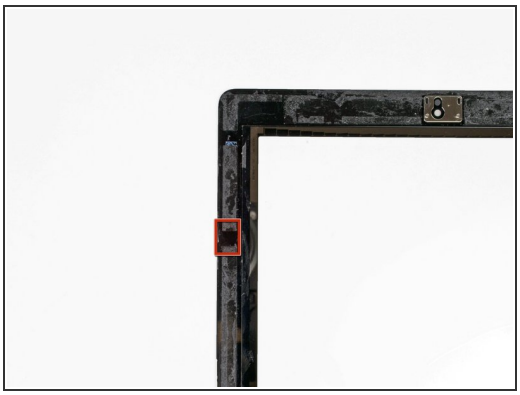
⚠ Wear safety glasses to protect your eyes, and be careful not to damage the LCD screen.

Step 5

Again, as you may find yourself working with broken glass during this procedure, we strongly recommend wearing for protection from flying shards.

- Lay the iOpener flat on the right edge of the iPad, smoothing it out so that there is good contact between the surface of the iPad and the iOpener.
- Let the bag sit on the iPad for approximately 90 seconds before attempting to open the front panel.

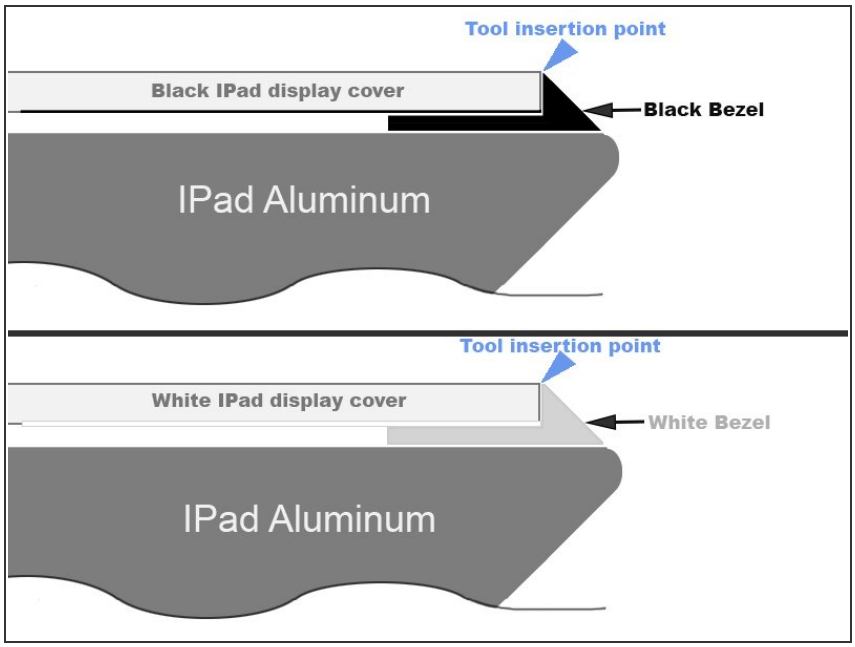
Step 6



- There is a small gap in the iPad's adhesive ring in the upper right corner of the iPad, approximately 2.0 inches (~5 cm) from the top of the iPad. You are going to exploit this weakness.
- Align the tool with the mute button. Insert the tip of a plastic opening tool into the gap between the front glass and the plastic bezel. Just insert the very tip of the opening tool, just enough to widen the crack.

It may require some force to get the wedged tip of the opening tool between the glass and plastic. Work patiently and carefully, wiggling the plastic opening tool back and forth as necessary.

Step 7



- Make sure you place the tool in the proper spot—between the plastic display bezel and the front panel glass.

Step 8

- Keeping the tip of the plastic opening tool wedged between the front glass and plastic bezel, slide a plastic opening pick in the gap, right next to the plastic opening tool.

Step 9

- Remove the plastic opening tool from the iPad, and push the opening pick further underneath the front glass to a depth of ~0.5 inches.

Step 10

- While you work on releasing the adhesive on the right side of the iPad, reheat the iOpener, and replace it on the bottom edge of the iPad.

Step 11

- While the bottom edge is being heated by the iOpener, begin releasing the adhesive from the right edge of the iPad.
- Slide the opening pick down along the edge of the iPad, releasing the adhesive as you go.

⚠ The adhesive is very strong, and some serious force may be required. Work carefully.

ⓘ If you can see the tip of the opening pick underneath the front glass, pull the pick out just a little bit. While using the opening pick this deep won't damage anything, it may get adhesive residue all over the LCD.

Step 12



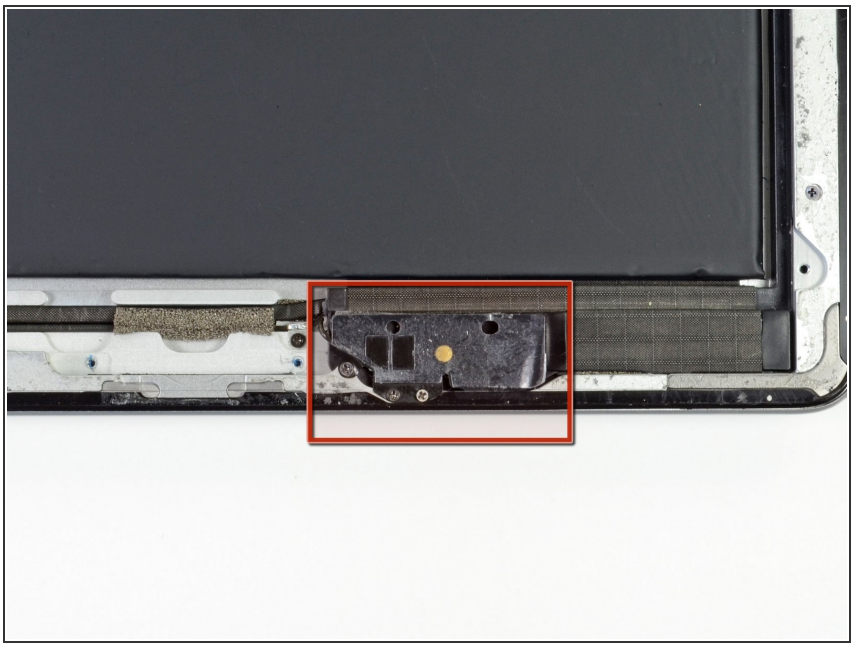
It may be necessary to move the heated iOpener back onto the right edge of the iPad as you release the adhesive. This depends on how long the iPad has been able to cool while you were working on it.

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

Step 13


- Before removing the first opening pick from the bottom corner of the iPad, insert a second pick under the right edge of the front glass to keep the adhesive from re-adhering.
- Re-heat the iOpener, and move it to the top edge of the iPad.

Step 14



The next few steps require extreme caution.

The Wi-Fi antenna is attached to the bottom right edge of the rear case of the iPad via screws and a cable. Because of the orientation of the Wi-Fi antenna, it is imperative to proceed with caution otherwise irreversible damage to the Wi-Fi antenna may result.

- You will have to release the adhesive securing the antenna to the front panel without damaging the delicate parts attaching the antenna to the bottom of the iPad. Follow the next steps carefully.

Step 15

- Slide the opening pick around the bottom right corner of the iPad, releasing the adhesive there.

⚠ Do not slide the pick further than the bottom right corner. You may damage the Wi-Fi antenna by doing so.

Step 16

⚠ This step requires you to move the opening pick along the bottom right edge of the front panel. The Wi-Fi antenna is very close to the corner and is easily severed if the adhesive is released improperly.

ⓘ Do not completely remove the pick from under the front glass, but pull it out just a little bit so that ~1/8" of the tip is still under the front glass.

- Slide the tip of the opening pick along the bottom edge of the iPad, releasing the adhesive over the Wi-Fi antenna.

Step 17

- Once you have moved past the Wi-FI antenna (approximately 3" from the right edge, or right next to the home button) re-insert the opening pick to its full depth.
- Slide the pick to the right, releasing the adhesive securing the Wi-Fi antenna to the front glass.
  - The antenna is attached to the bottom of the iPad via screws and a cable. This step detaches the antenna from the front panel, ensuring that when you remove the panel, the antenna will not be damaged.

Step 18



- Continue releasing the adhesive along the bottom of the iPad, pulling the opening pick out far enough to go around the home button, and re-inserting it to a depth of 1/2 inch once the pick is past the home button.

If the adhesive has cooled too much along the bottom edge, reheat the iOpener to warm the adhesive where you are working.

Do not heat the iOpener more than a minute at a time, and always allow at least two minutes before reheating it.

Step 19

- Continue releasing the adhesive all the way along the bottom edge of the iPad.

  ⚠ On iPad 4 models, insert the pick to a maximum depth of 1/2 inch in this area, to avoid damaging the home button ribbon cable.

- Leave the opening pick wedged underneath the front glass near the home button.

Step 20

- Reheat the iOpener in the microwave and set it on the left edge of the iPad to start warming the adhesive in that section.

Step 21



- Slide the opening pick along the top edge of the iPad, pulling it out slightly to go around the front-facing camera bracket.
- The adhesive along this section is very thick, and a fair amount of force may be required. Work carefully and slowly, making sure to not slip and damage yourself or your iPad.

If the adhesive has cooled too much, replace the iOpener along the top edge and continue working. If the iOpener has cooled too much, reheat it.

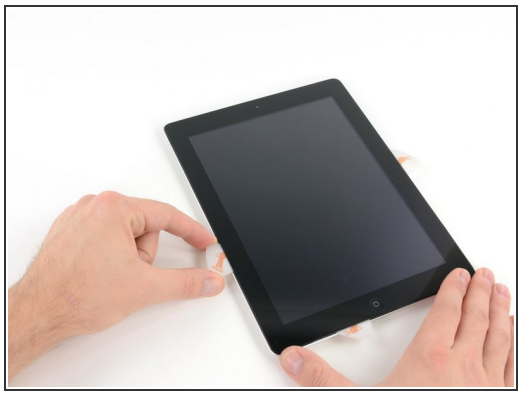
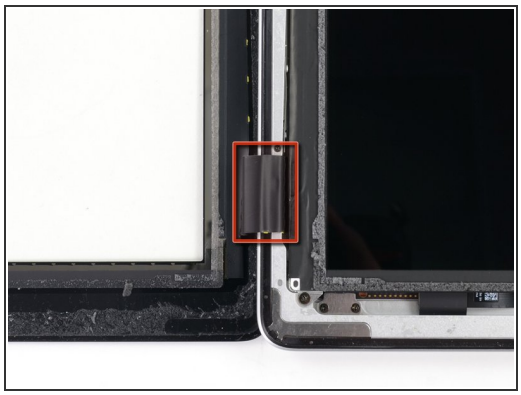
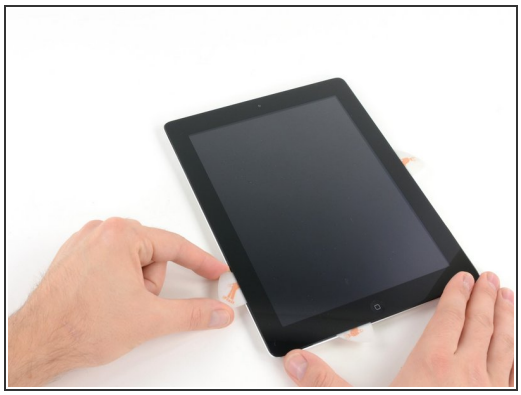
If the opening pick is getting stuck in the adhesive, "roll" the pick as shown in [invalid guide link].

Step 22

- Continue releasing the adhesive along the top edge of the iPad, and slide the opening pick around the top left corner.

If the adhesive is warm enough, remove the iOpener from the iPad for convenience. However, if the adhesive is still quite sticky, re-heat the iOpener and lay it on the left edge while you work.

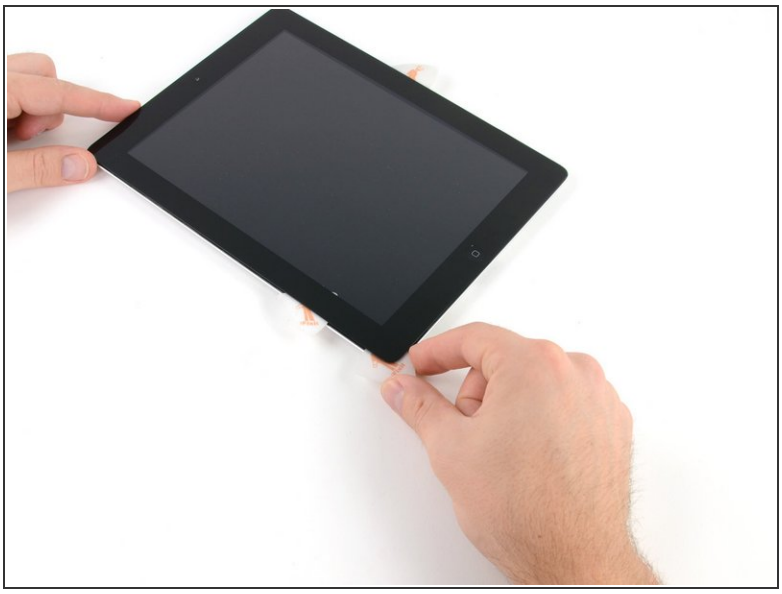
Step 23

- Slide the opening pick along the left edge of the iPad, releasing the adhesive as you go. The adhesive is thin here due to the digitizer along the whole left side. Make sure the pick is not too deep (max 1/2 inch) to prevent damaging the digitizer.

⚠ The digitizer cable is located approximately 2" from the bottom of the iPad. Stop sliding the pick when you get ~2.25" from the bottom of the iPad.

Step 24



- Using the opening pick that is still underneath the bottom edge of the iPad, release the adhesive along the bottom left corner.

⚠ The bottom of the digitizer cable is only ~1" from the bottom of the iPad. Work carefully and slowly, making sure to not sever this cable.

Step 25

- Using one of the opening picks, pry up the bottom right corner of the iPad and grab it with your fingers.

Some of the adhesive along the perimeter of the iPad may have stuck back down again. If this is the case, slide a pick underneath the edge of the iPad where the front glass is still stuck and "cut" the adhesive.

Step 26

- Holding the iPad by the top and bottom right corners, rotate the front glass away from the iPad.

⚠ Be careful of any adhesive that may still be attached, and use an opening pick to cut any adhesive that may still be holding the front panel down.

Step 27

- Remove the four 2.0 mm Phillips screws securing the LCD to the rear case.

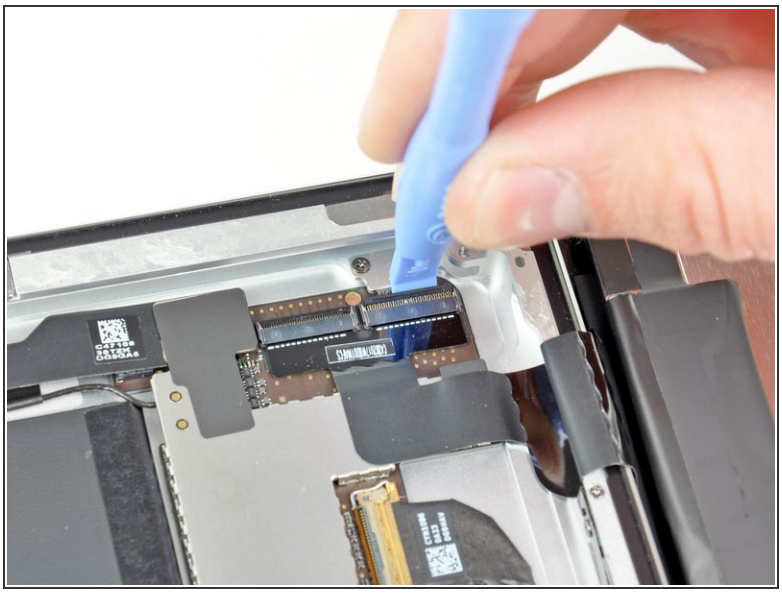
Step 28

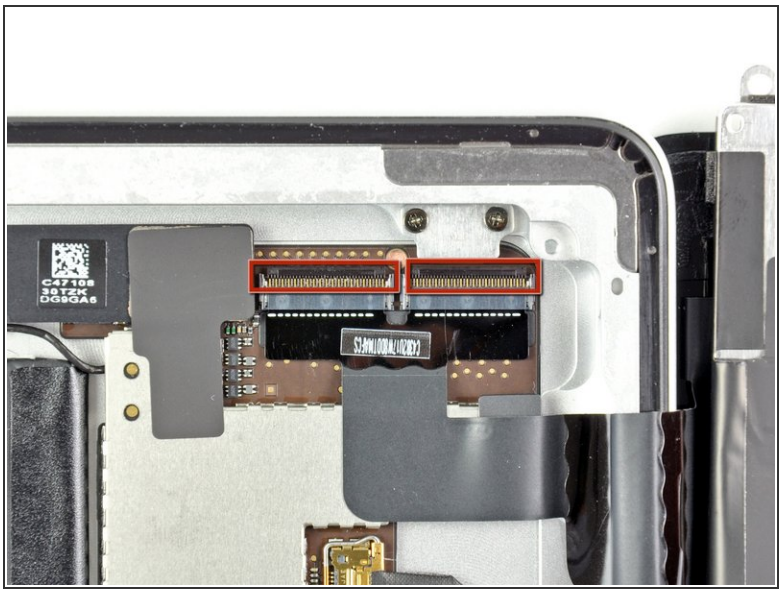
The front panel ribbon cables are connected beneath the LCD. To access them, you'll need to temporarily flip the LCD over and out of the way.

Be very careful when moving the LCD, and do not attempt to remove it from the iPad—its display data cable will remain connected while it is rotated over.

- Lift the LCD from its long edge closest to the volume buttons and gently flip it out of the rear case—like turning the page in a book.
- Set the LCD face down on the front panel.

Step 29



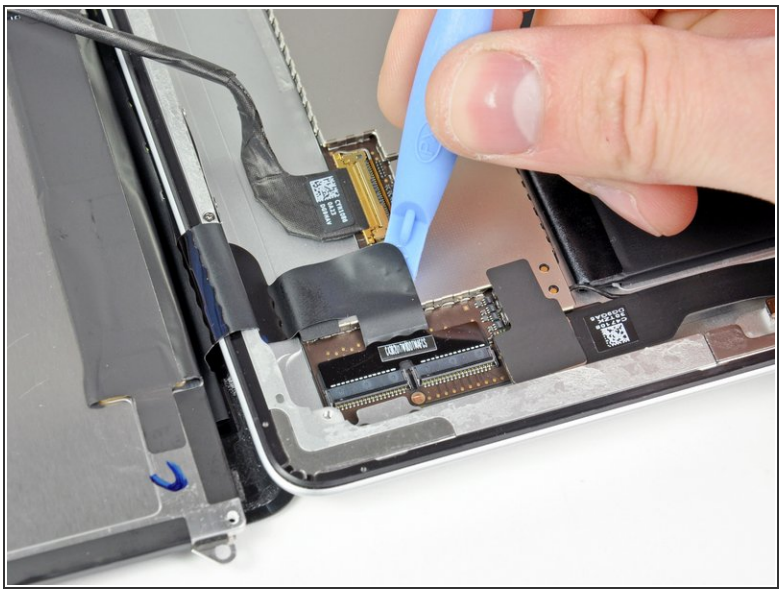


- Use the edge of a plastic opening tool to carefully flip up the retaining flaps on the two digitizer ribbon cable ZIF sockets.

⚠ Be sure you are prying up on the hinged retaining flaps, **not** the sockets themselves.

ⓘ The retaining flaps are highlighted in red in the second picture.

Step 30



- Use the edge of a plastic opening tool to peel the digitizer cable off the shields on the logic board.
- Carefully pull the digitizer cable off the adhesive securing it to the side of the rear case.

Step 31

- Pull the digitizer ribbon cable straight out of its two sockets on the logic board.

Step 32

In order to remove the front panel assembly, the ribbon cable needs to slide out between the case and the LCD. You'll need to move the LCD to make some room.

Be very careful when moving the LCD, and do not attempt to remove it from the iPad—its cable will remain connected while it is rotated over.

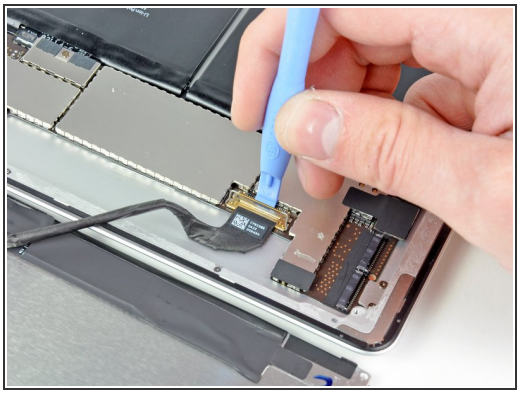
- Lift the LCD from its long edge farthest from the digitizer cable and gently flip it toward the rear case—like closing a book.
- While holding the LCD up, gently slide the front panel away from the iPad. Be careful not to snag the digitizer cable on the rear case or LCD.
  - Set the LCD back into the body for safekeeping.

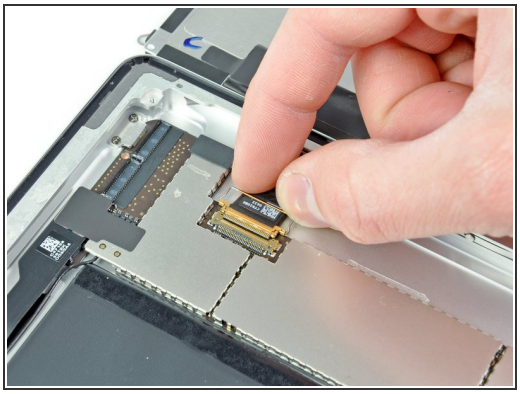
Step 33

In order to work on the iPad's innards, we need to flip the LCD back out of the case.

- Lift the LCD from its long edge closest to the volume buttons and gently flip it out of the rear case—like turning the page in a book.
- Set the LCD face down on a clean surface. You may want to rest it on a soft cloth to prevent scratches.

Step 34

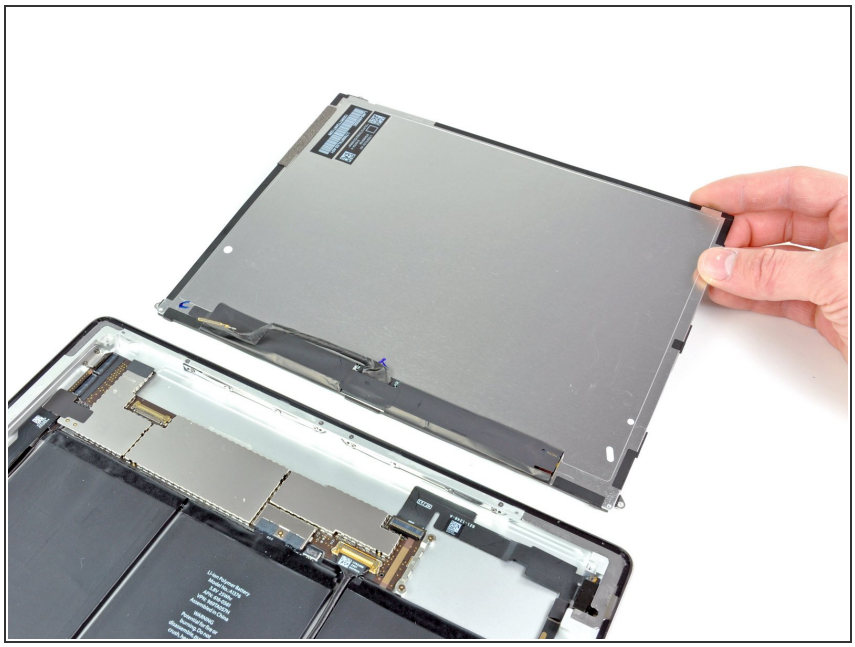




- Use a plastic opening tool to lift the display data cable lock upwards.
- Pull the display data cable out of its socket.

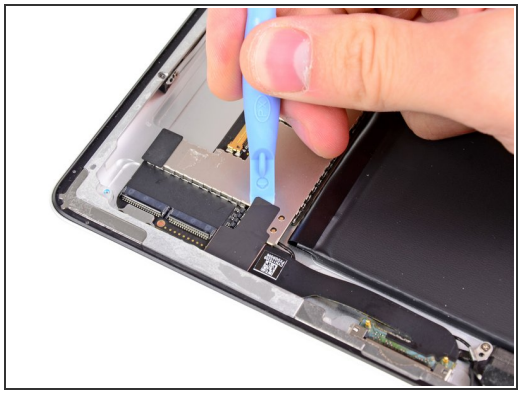
Be careful not pull the connector upward as you disconnect it from its socket.

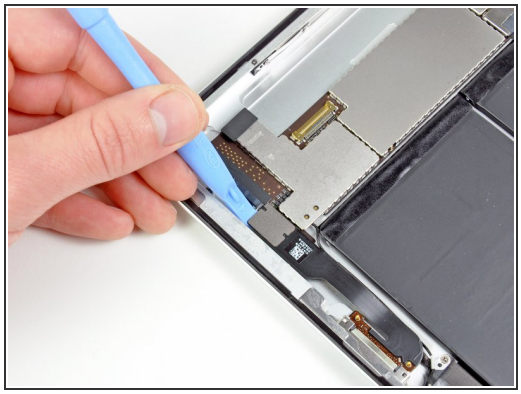
Step 35

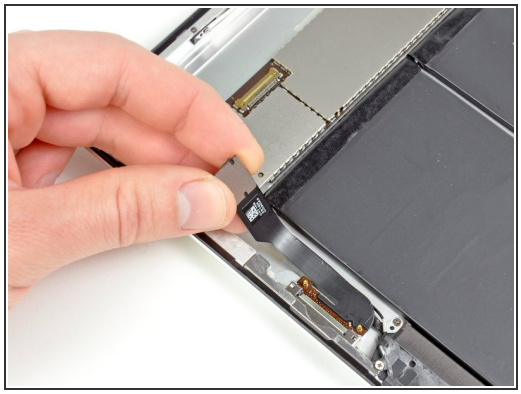


- Remove the LCD assembly from the rear panel assembly.

Step 36

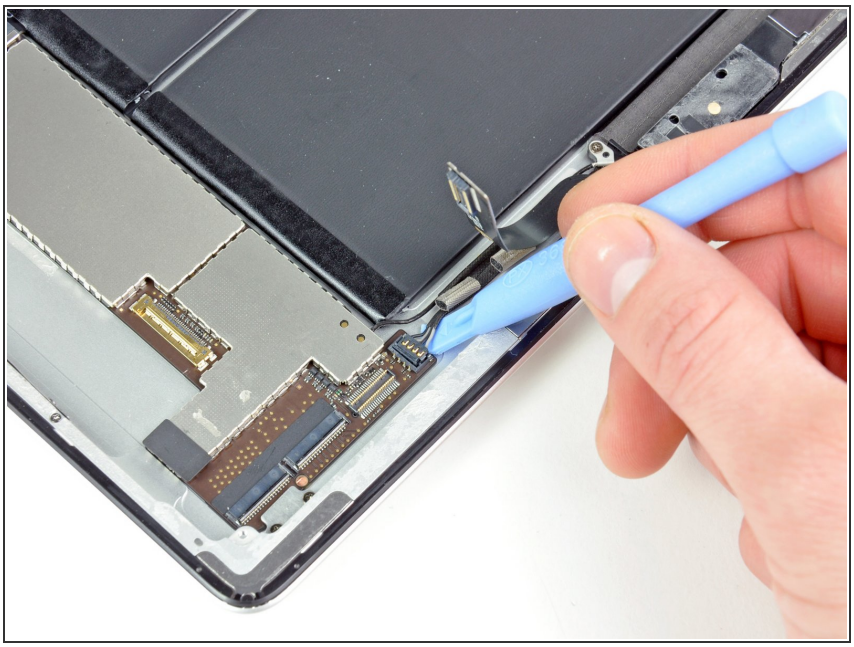






- If present, use a plastic opening tool to help remove the piece of tape covering the end of the dock connector cable.
- Use the edge of a plastic opening tool to carefully pry the dock connector cable's connector up from its socket on the logic board.
- Peel the dock connector ribbon cable off the rear panel.

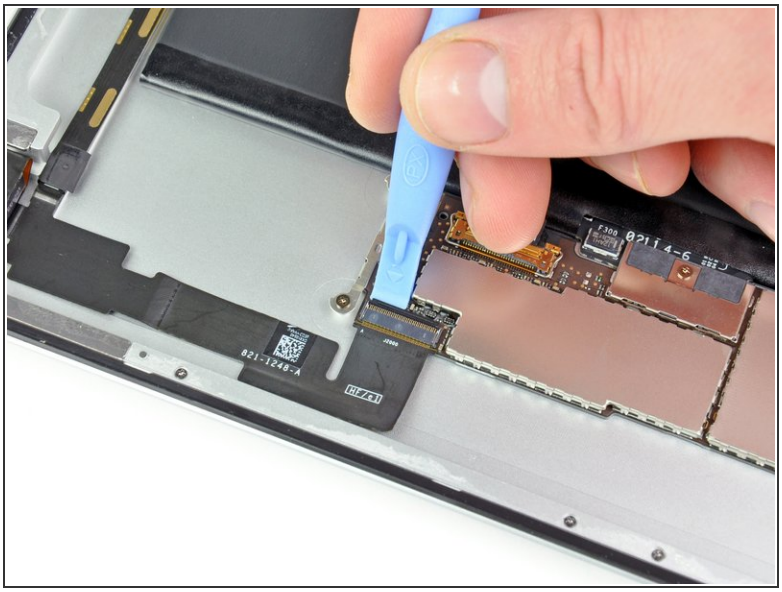
Step 37

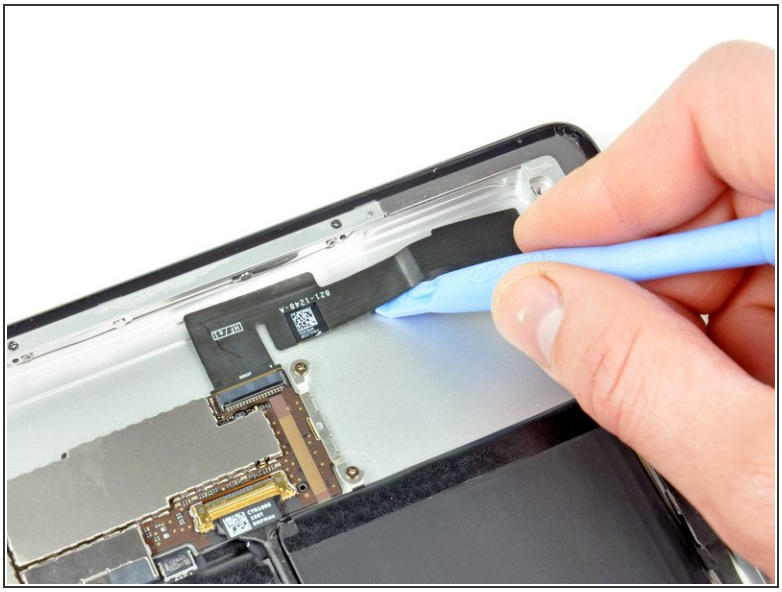


- Pry the speaker cable connector straight up from its socket on the logic board.

⚠ Be careful to pry only the connector, not the socket on the logic board, or you may destroy the socket.

Step 38





- Use the edge of a plastic opening tool to flip up the retaining flap on the headphone jack and front camera cable ZIF socket.

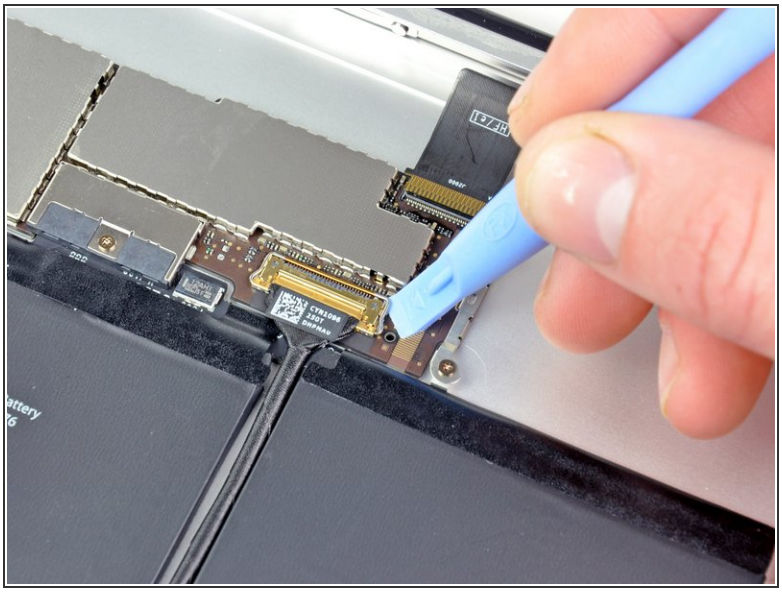
⚠ Be sure you are prying upward on the hinged retaining flap, **not** the socket itself.

- Peel the headphone jack and front camera cable off the rear case.

Step 39

- Pull the headphone jack and front camera ribbon cable straight out of its socket on the logic board.

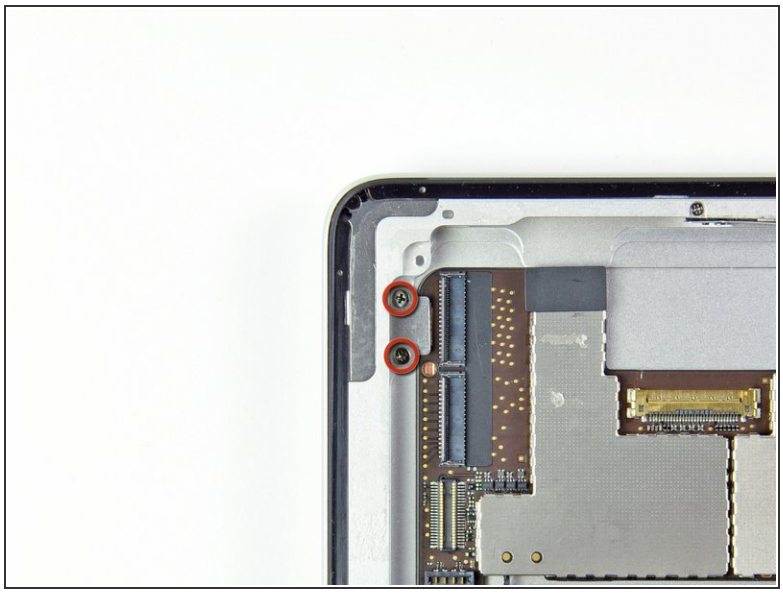
Step 40



- Use the edge of a plastic opening tool to flip up the retainer securing the control board cable connector to its socket on the logic board.
- Pull the connector away from its socket on the logic board.

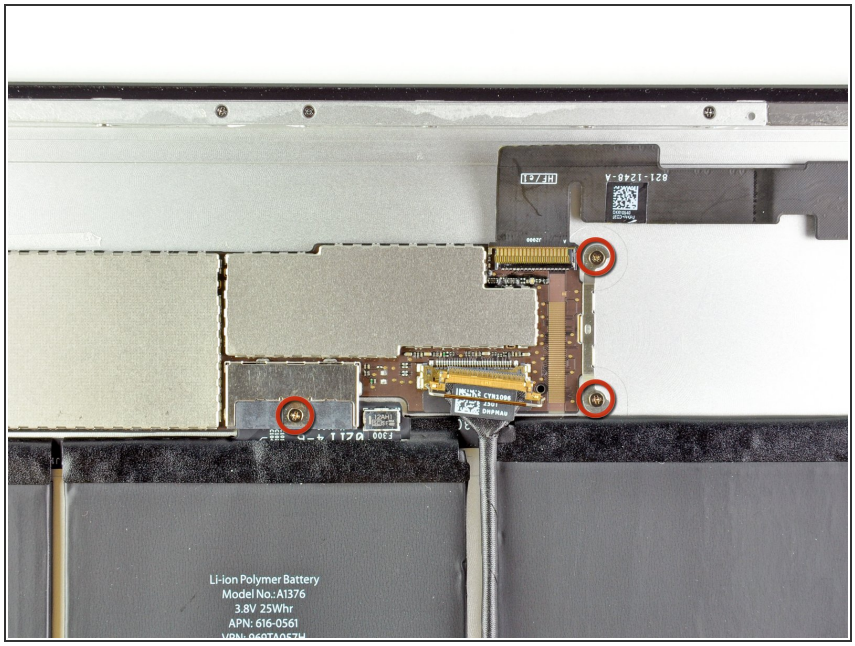
⚠ Do not lift the cable upward as you disconnect it.

Step 41



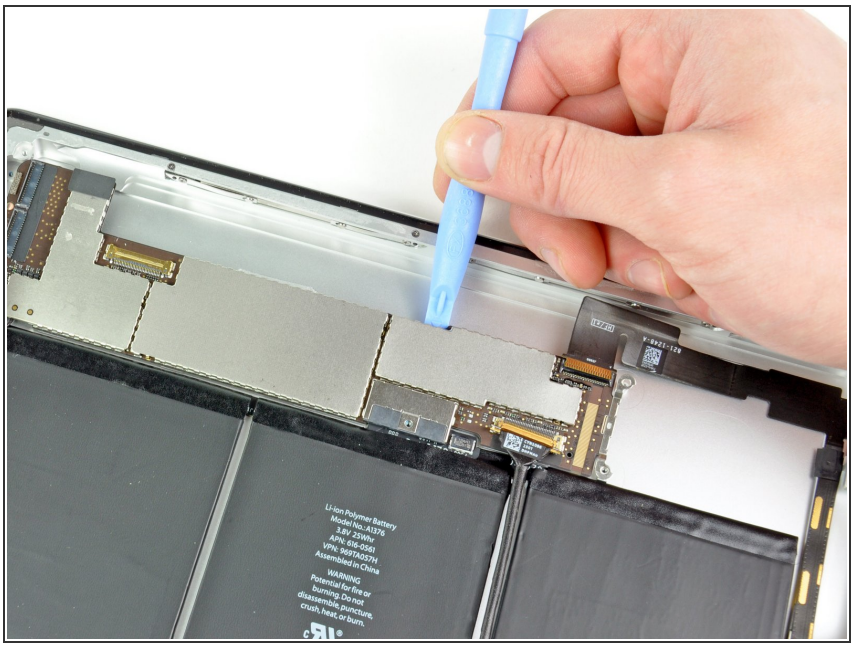
- Remove the two 2.1 mm Phillips screws securing the logic board bracket to the rear case near the digitizer cable socket.
- Remove the logic board bracket from the rear case.

Step 42



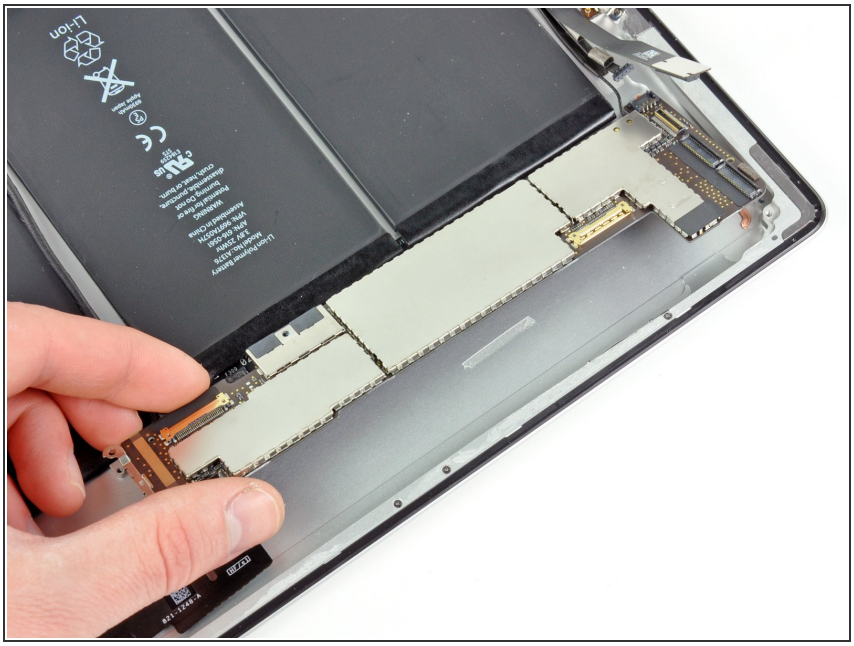
- Remove the remaining three 2.6 mm Phillips screws securing the logic board to the rear case.

Step 43



- Use the edge of a plastic opening tool to gently pry the logic board up from the adhesive securing it to the rear case.

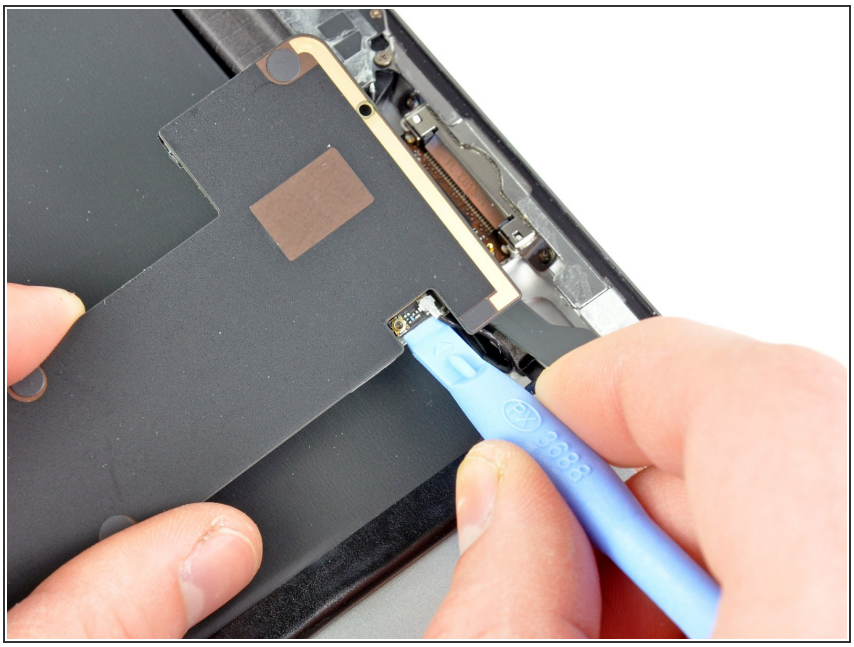
Step 44



- Lift the logic board out from the rear case and tilt it slightly toward the battery.

⚠ Do not try to completely remove it just yet. There is still an antenna cable attached to it.

Step 45



- Use the edge of a plastic opening tool to pry the Wi-Fi antenna connector up from its socket on the logic board.
- Remove the logic board from the iPad 2.

Step 46



- Reheat the iOpener in the microwave for **one minute**.

⚠ Remember to be careful not to overheat the iOpener during the repair procedure. Wait at least two minutes before reheating the iOpener, and never microwave it for more than one minute.

- Place the heated iOpener on the back of the iPad just right of center (the side opposite the rear facing camera). Let it sit there for 90 seconds to soften the battery adhesive.
- Move the iOpener to the center of the back of the iPad and let the iOpener sit for another 90 seconds.

ⓘ If the iOpener cools significantly between sittings, reheat it for another minute.

- Move the iOpener to the left edge (the side with the rear facing camera) of the back of the iPad and let the iOpener sit for another 90 seconds.

Step 47

- Starting with the battery cell closest to the dock connector, run a plastic opening tool underneath the edge of the battery closest to the logic board void to make enough room to insert the flat end of a spudger
- Run the flat end of a spudger along the two long sides of each battery cell to completely separate them from the adhesive securing them to the rear case.

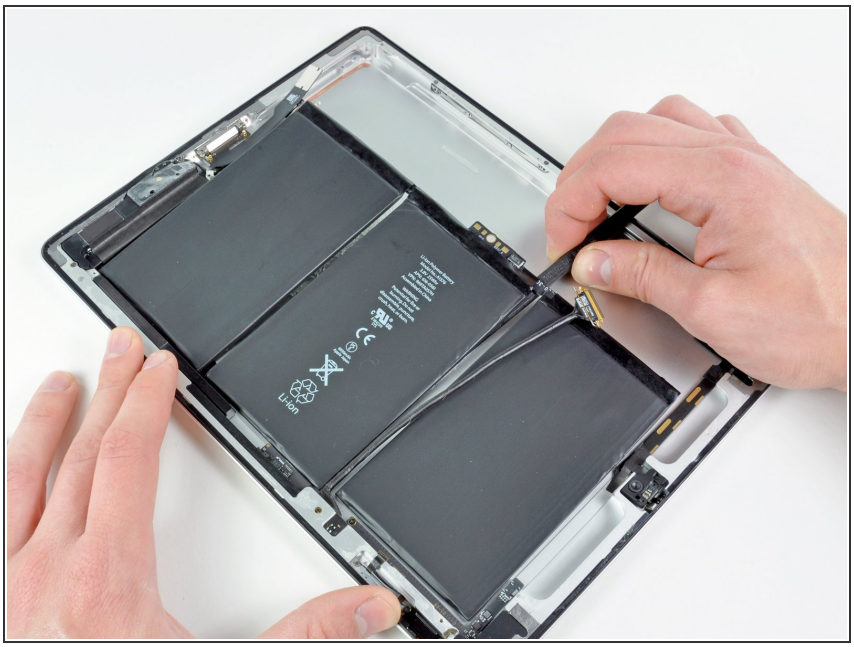
⚠ If the adhesive is very difficult to separate, reheat the rear panel and try again.

Step 48

- Before prying up the middle battery cell, use the edge of a plastic opening tool to lift the battery connector board away from the rear panel.

⚠ Do not excessively bend the battery connector board. Be especially careful when prying up around the screw post on the aluminum rear case.

Step 49

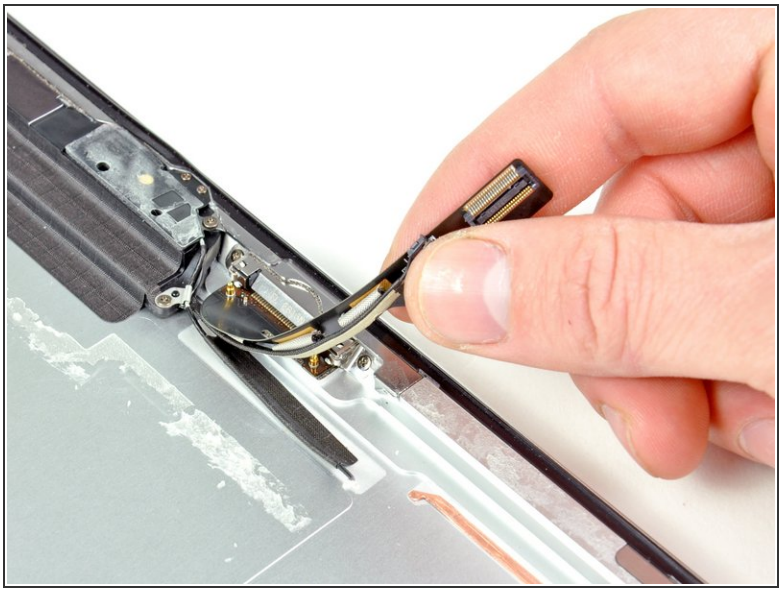


- Next use your spudger to separate the adhesive along the long sides of the middle battery cell.
- Repeat the process for the final battery cell, reheating the case if necessary.

Step 50

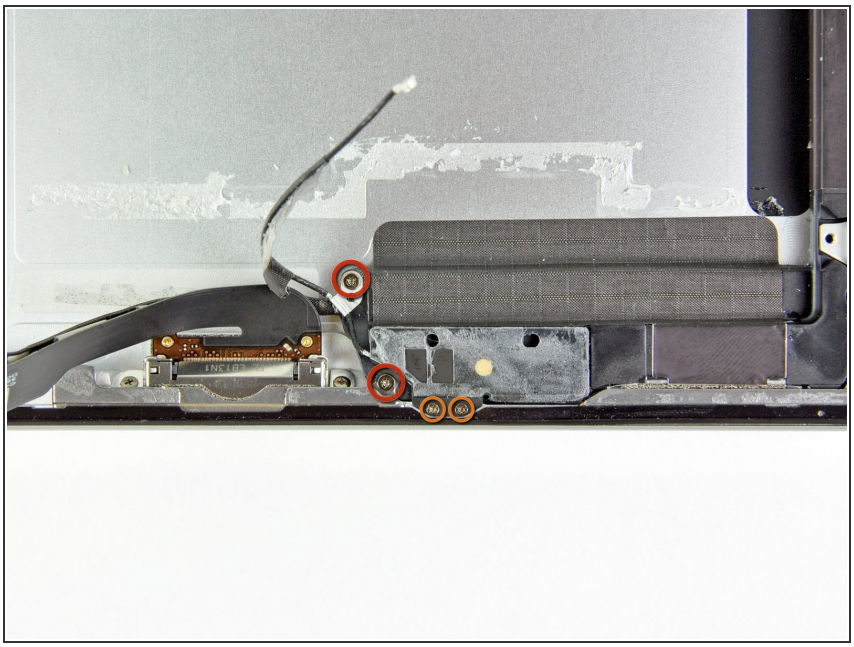
- Carefully lift the battery out of the rear panel and remove it from the iPad 2.

Step 51



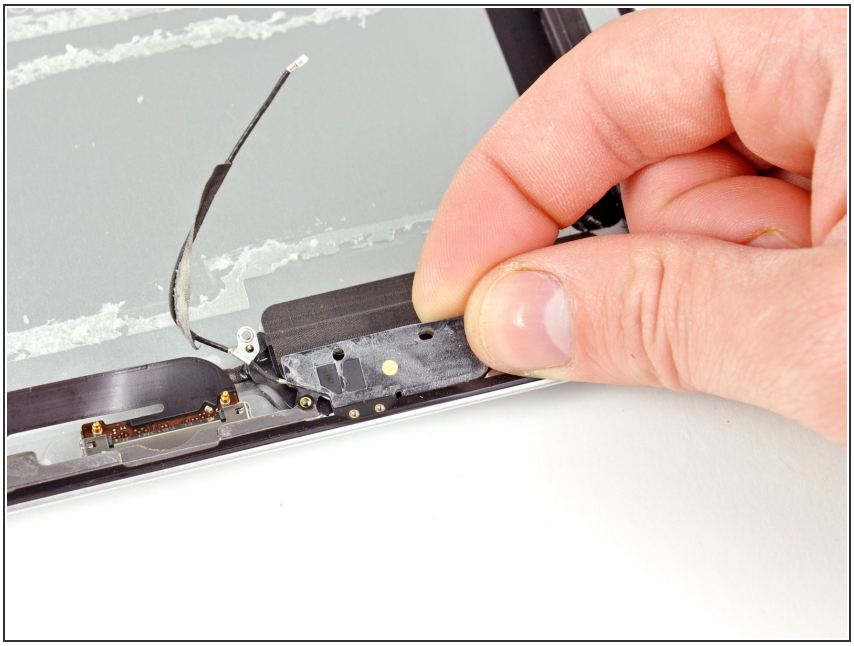
- Carefully peel up the dock connector and speaker cables to reveal the Wi-Fi antenna cable.
- Peel the Wi-Fi antenna cable off the rear panel.

Step 52



- Remove the following four screws:
  - Two 2.0 mm Phillips screws
  - Two 1.7 mm Phillips screws

Step 53



- Peel the Wi-Fi antenna off the speaker enclosure and remove it from the iPad 2.

Step 54

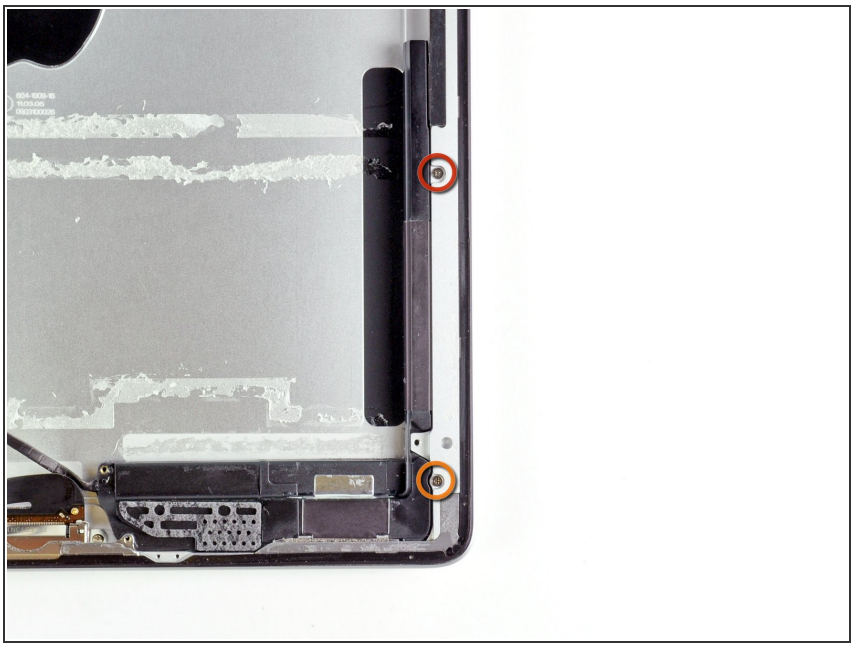
- Peel the dock connector cable off the speaker cable.

Be sure the small rings of EMI foam remain stuck to the dock connector cable.

Step 55

- Use the edge of a plastic opening tool to peel up the edge of the large strip of tape securing the speaker assembly to the rear panel.
- Use your fingers to peel the strip of tape off the speaker assembly.

Step 56



- Remove the following two screws:
  - One 3 mm Phillips screw
  - One 2.1 mm Phillips screw

Step 57

- Use the edge of a plastic opening tool to help push the speaker assembly out from under the right side of the rear panel.
- Remove the speaker assembly from the iPad 2.

To reassemble your device, follow these directions in reverse and use our [invalid guide link] guide to reattach the front panel.

