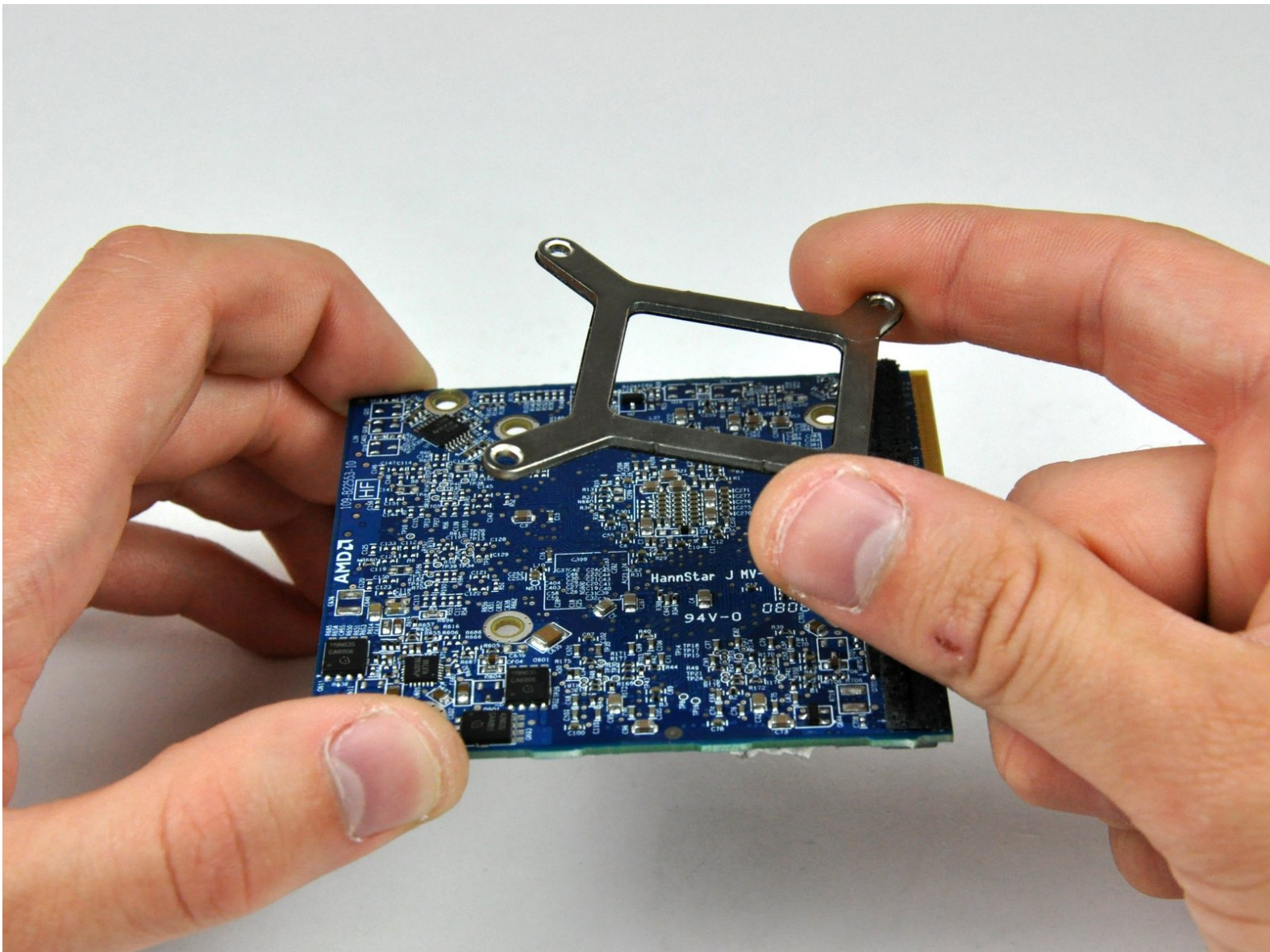




iMac Intel 20" EMC 2133 and 2210 Video Card Replacement

Written By: Walter Galan



INTRODUCTION

Replace a faulty video card to bring your iMac's graphics back up to speed.



TOOLS:

- [Arctic Silver ArctiClean](#) (1)
- [Arctic Silver Thermal Paste](#) (1)
- [Heavy-Duty Suction Cups \(Pair\)](#) (1)
- [Phillips #1 Screwdriver](#) (1)
- [Spudger](#) (1)
- [T10 Torx Screwdriver](#) (1)
- [T6 Torx Screwdriver](#) (1)
- [T8 Torx Screwdriver](#) (1)



PARTS:

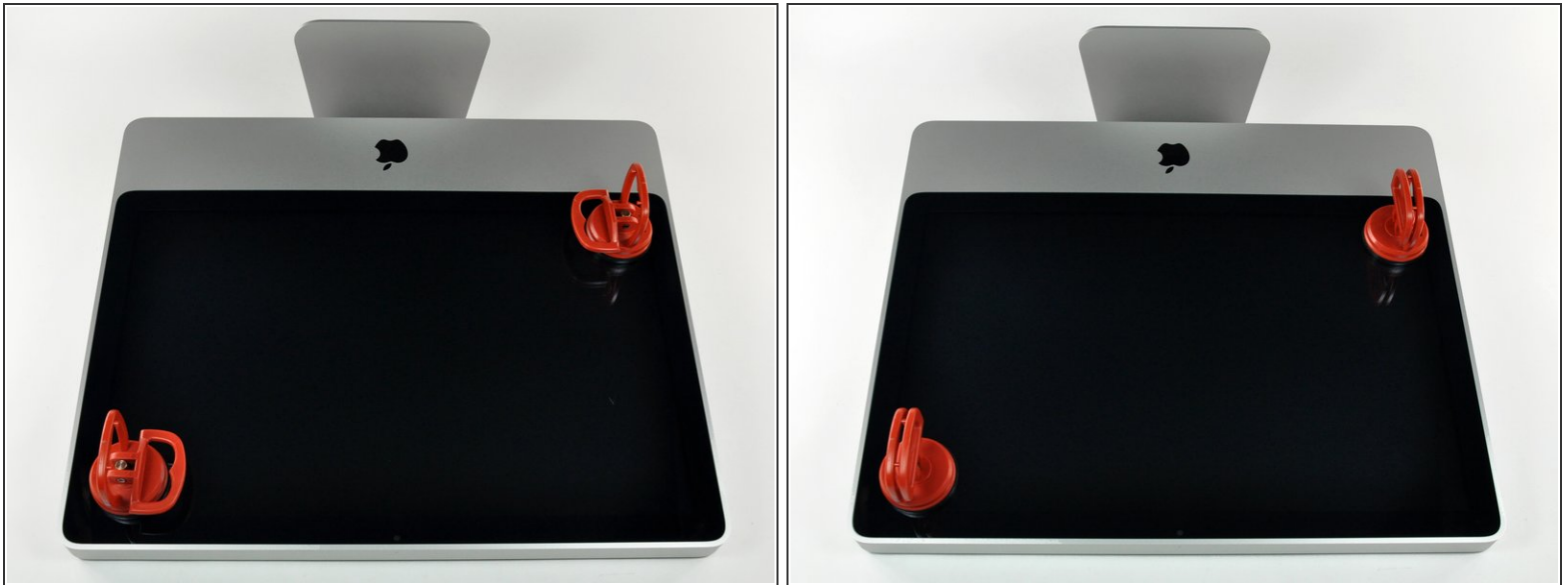
- [iMac Intel 20" \(EMC No. 2210 or 2133\) Graphics Card](#) (1)

Step 1 — Access Door



- Loosen the single Phillips screw in the center of the access door.
- ⓘ This screw is captive in the access door.
- Remove the access door from your iMac.

Step 2 — Glass Panel



- i** The glass panel is fixed onto the front bezel with fourteen magnets around its perimeter.

 - Stick two suction cups to opposing corners of the glass panel.
- i** To attach the [suction cups](#) we sell, first position the suction cup with the movable handle parallel to the face of the glass panel. While lightly holding the suction cup against the glass, raise the movable handle until it is parallel with the other handle.
- i** If your suction cups refuse to stick, try cleaning both the glass panel and the suction cup with a mild solvent such as Windex.

Step 3



- Gently pull the glass panel straight up off the iMac.
- ⚠ The glass panel has several positioning pins around its perimeter. To avoid shearing these pins off the glass panel, be sure to only pull straight up during removal.
- ★ Be meticulous about cleaning the LCD and the inside face of the glass panel before reinstallation, as any fingerprints or dust trapped inside will be annoyingly visible when the display is on. Placing the glass flat, inside face down, on a fresh aluminum-foil surface is a good way to keep it clean.

Step 4 — Front Bezel



- Remove the following 12 screws securing the front bezel to the rear case:
 - Eight 13 mm T8 Torx.
 - Four 25 mm T8 Torx.

Step 5



- Place your hands at the top corners of the bezel (to the side) and lift the bezel 2-3cm from the body by working from the top. After this you can also disengage the bottom of the bezel (the memory modules will prevent the bottom of the bezel to detach first). When reassembling, start with the bottom of the bezel.

 The top of the bezel hosts a microphone attached to the logic board. Gently lift the bezel to not damage the microphone wiring or connector by accidentally pulling the cable.

 At this point, you can either detach the microphone cable and remove the bezel, or keep the microphone cable attached and rest the bezel on your work surface or the chassis of the Mac.

- **To fully detach the bezel:**
disconnect the microphone cable connector, removing tape as necessary.
- **To keep it attached,** leave the microphone cable attached to the logic board, and place the bezel 'above' the chassis, with the microphone cable forming a hinge.

⚠ If you keep the microphone attached to the chassis, make sure you don't accidentally damage the microphone or logic board by bumping into the loose bezel.

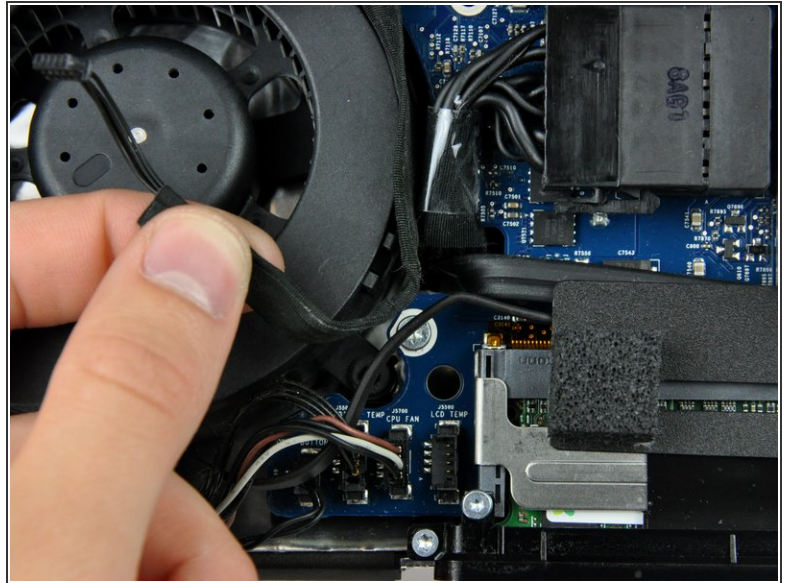
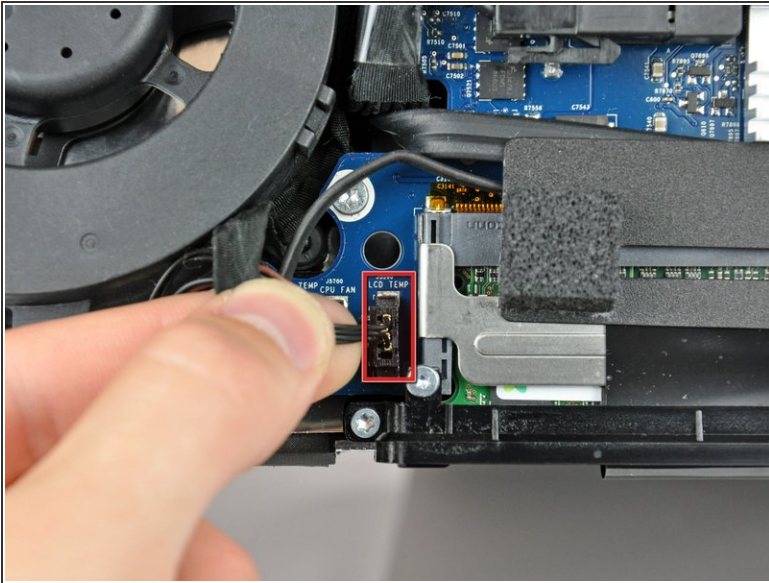
Step 6



When reassembling the bezel:

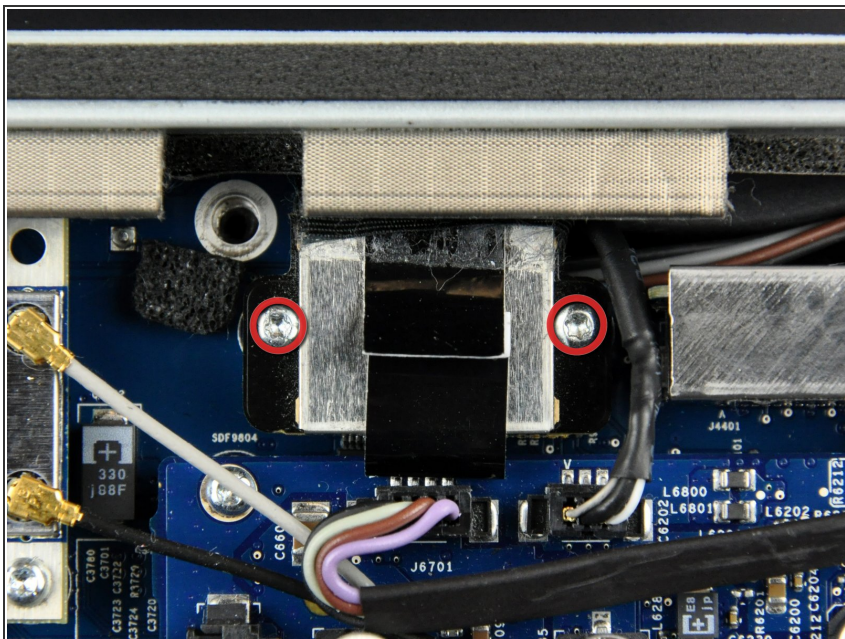
- be sure to tuck the microphone cable and connector into the void next to the camera board.
- Gently guide the microphone connector and cables through the ± 1 in long slot at the right of the iSight camera. Once the bezel is properly assembled, gently push the microphone connector and cable into the bezel through that slot.

Step 7 — Display Panel



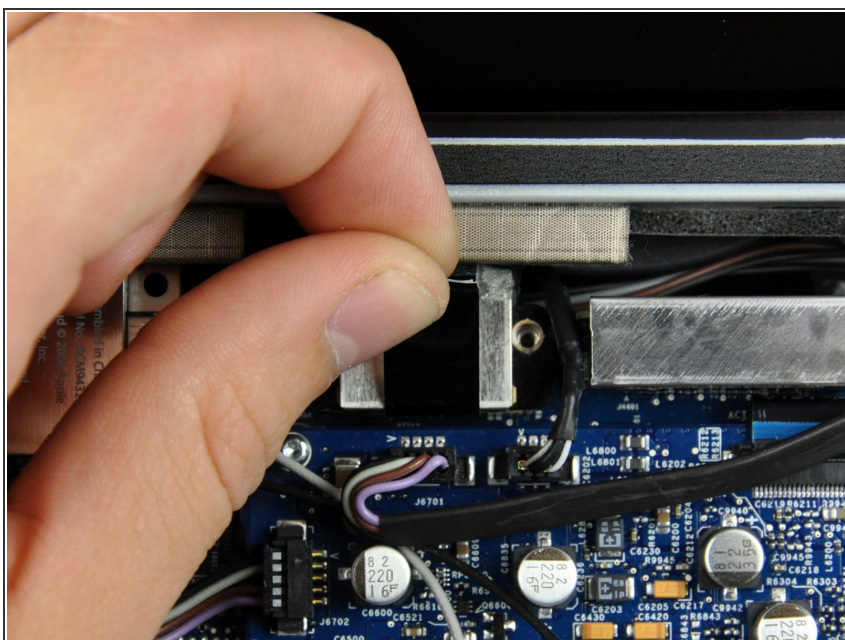
- Pull the LCD temperature sensor connector straight up out of its socket on the logic board.
 - If necessary, de-route the LCD temperature sensor cable from behind the logic board.
- i** When you remove the LCD, check the routing of the LCD temperature display cable. On reinstalling the display, be sure this cable does not block one of the bottom screws for the front bezel.

Step 8



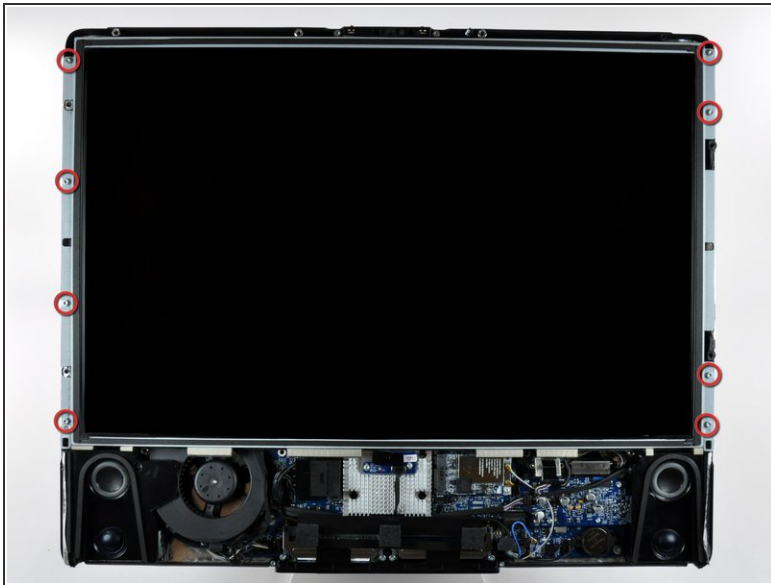
- Remove the two 5.3 mm T6 Torx screws securing the data display cable to the logic board.

Step 9



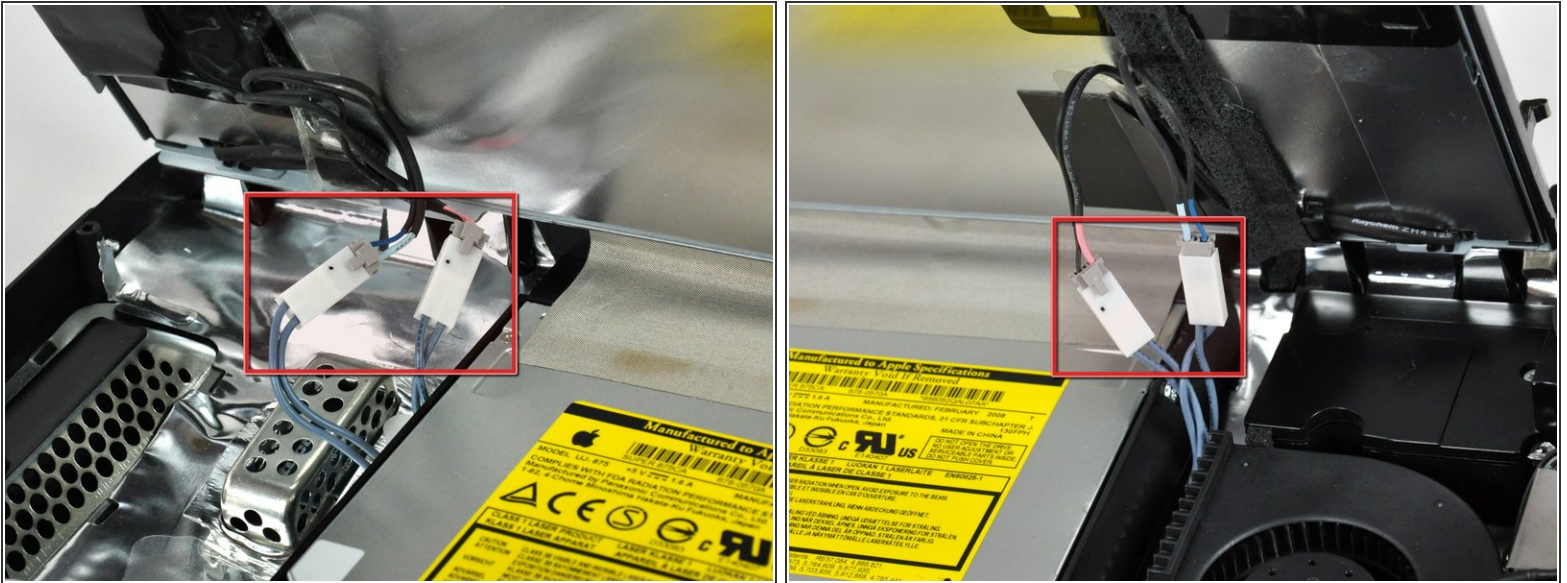
- Use the attached black tab to pull the data display cable connector away from the logic board.

Step 10



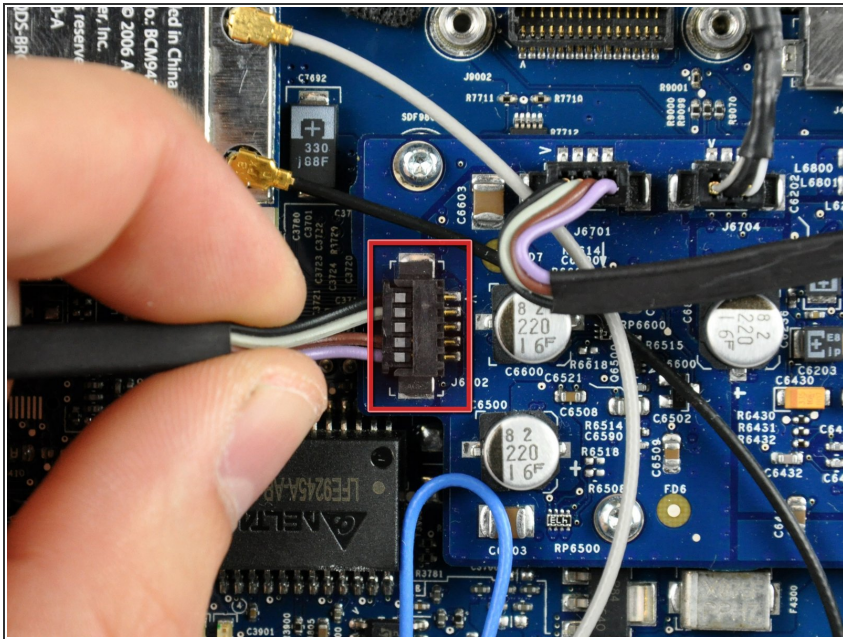
- Remove the eight 12 mm T8 Torx screws securing the display panel to the rear case.
- Lift the display panel from its left edge and rotate it toward the right edge of the iMac.

Step 11



- With the display panel still lifted, disconnect the four inverter cables.
- ✦ During reinstallation, place the four inverter cable connectors in voids between components attached to the rear panel so the display panel will sit flush.
- ⓘ During reassembly, the order of the inverter cables is interchangeable within each socket.
- If you are replacing a hard drive and have an extra set of hands, it is possible to reach in and remove the drive without disconnecting anything but the LCD temp and display connector in the previous step with the LCD in its propped position.

Step 12 — Left Speaker



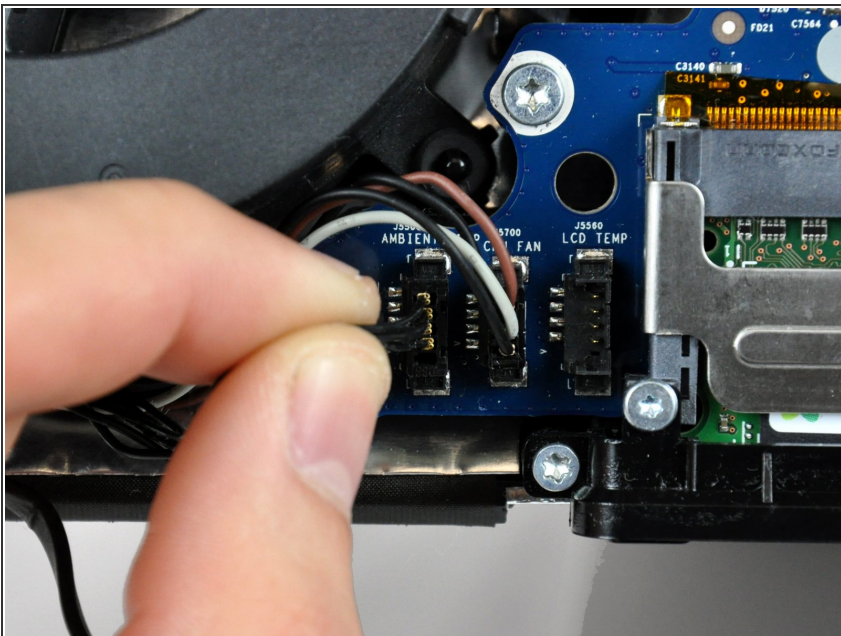
- Disconnect the left speaker cable connector from the audio board by pulling it straight away from its socket.
- ⓘ Pull the connector parallel to the face of the logic board.

Step 13



- De-route the left speaker cable from the channel in the CPU fan. Continue completely de-routing the cable through the undersides of the IR board and heat sink.

Step 14



- Disconnect the ambient temperature sensor cable by pulling its connector straight up off the logic board.

Step 15



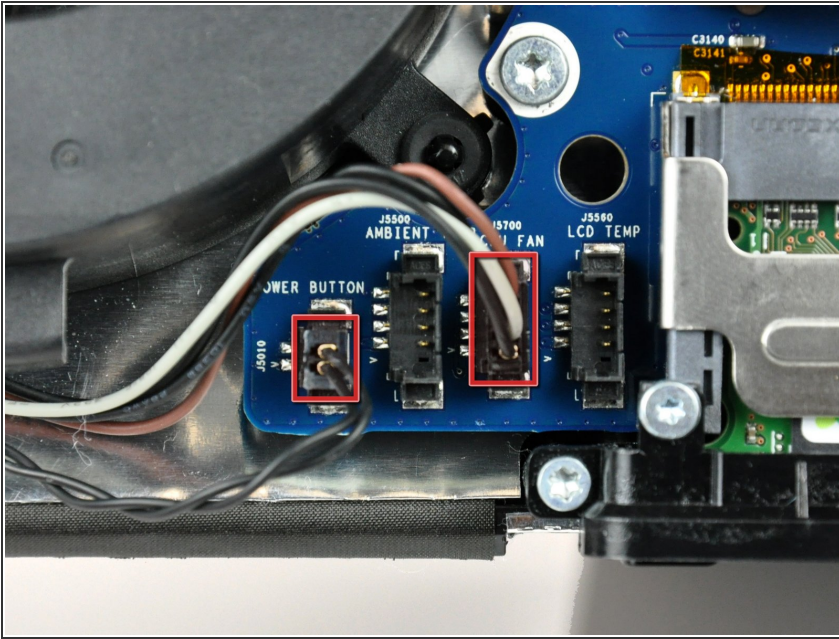
- If necessary, de-route the ambient temperature sensor cable from under the power button cables.

Step 16



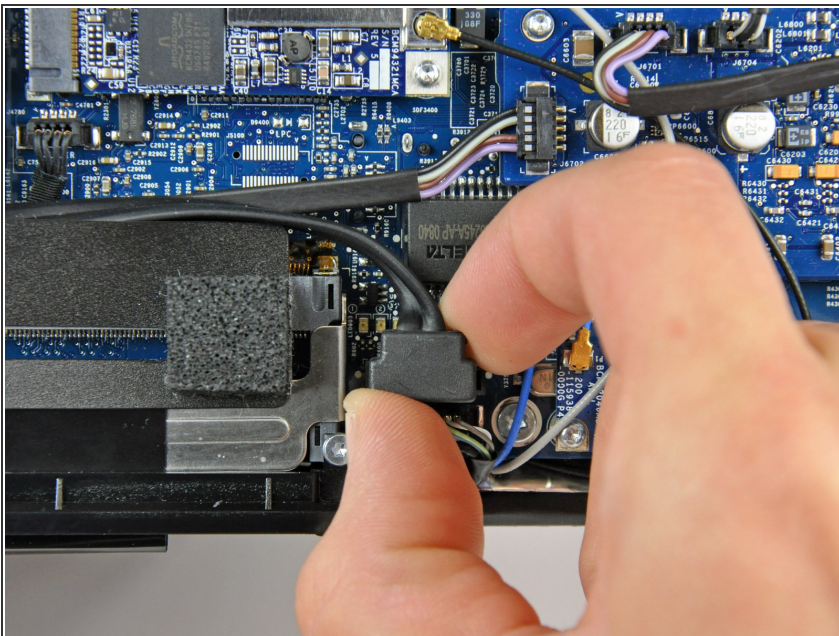
- Remove the single 28 mm T10 Torx screw securing the left speaker to the rear case.
- Lift the left speaker up and out of the rear case. Don't try to slide the speaker out, since there is a plastic mounting pin under the top end of the speaker housing that holds it in place.

Step 17 — Logic Board



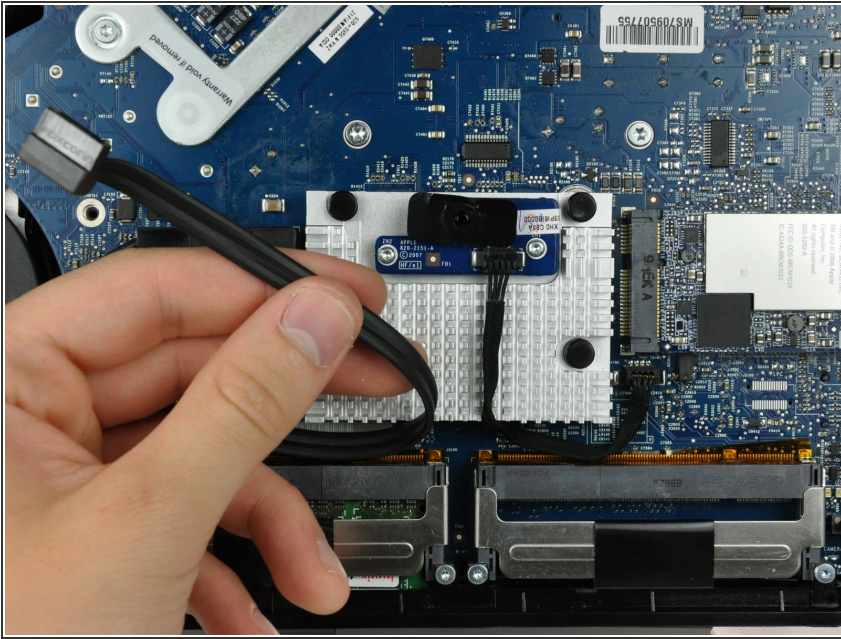
- Disconnect the power button and CPU fan by lifting their connectors straight up off the logic board.

Step 18



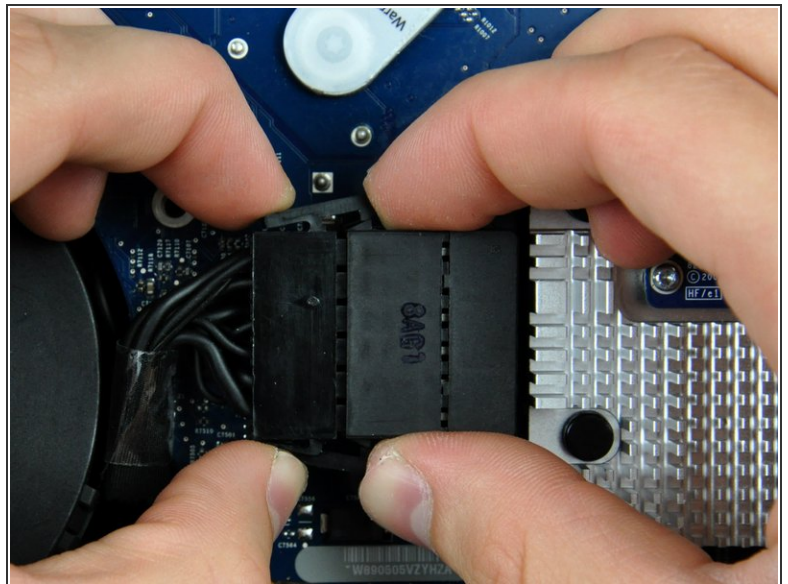
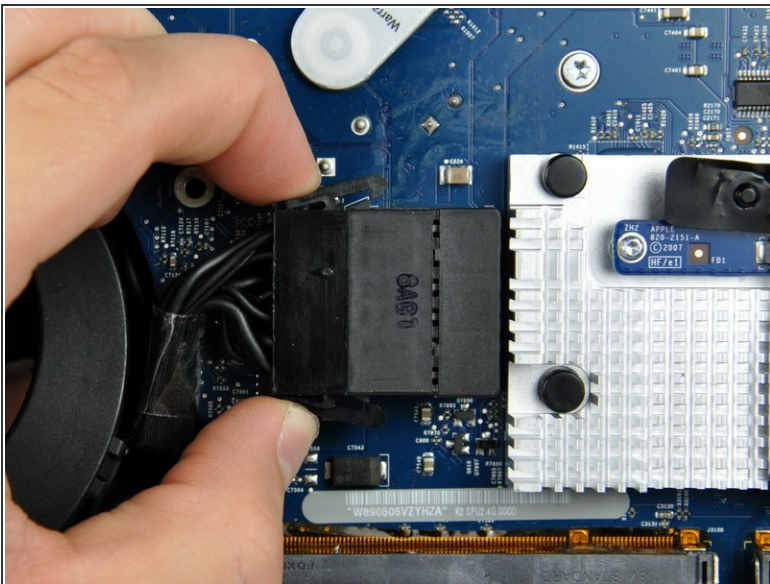
- Disconnect the SATA data cable from the logic board by carefully pulling it straight away from its socket.
- ⓘ The SATA connector on most iMacs tends to stick in its socket on the logic board. If you are having trouble disconnecting the SATA cable, insert a [metal spudger](#) or any other thin tool into the gap between the SATA connector and its socket and twist the spudger's shaft to safely separate the two pieces.

Step 19



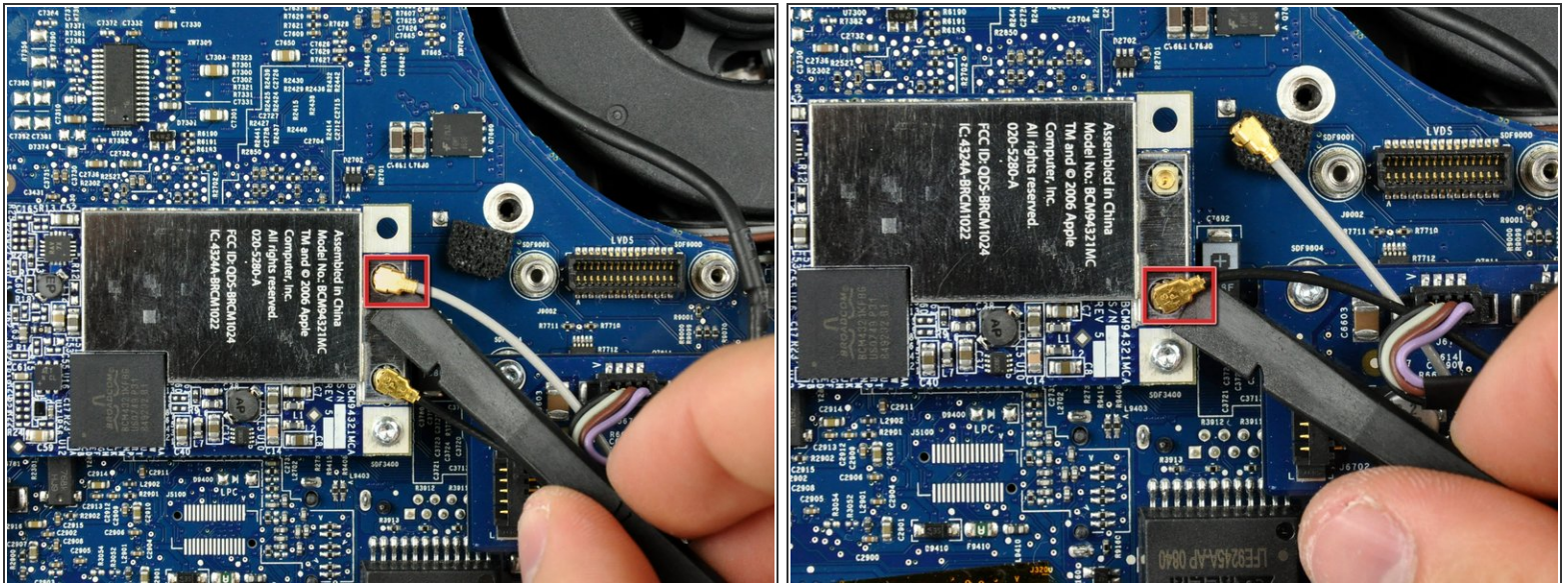
- Pull the SATA data cable out of its channel in the logic board and tuck it aside near the left edge of the rear case.

Step 20



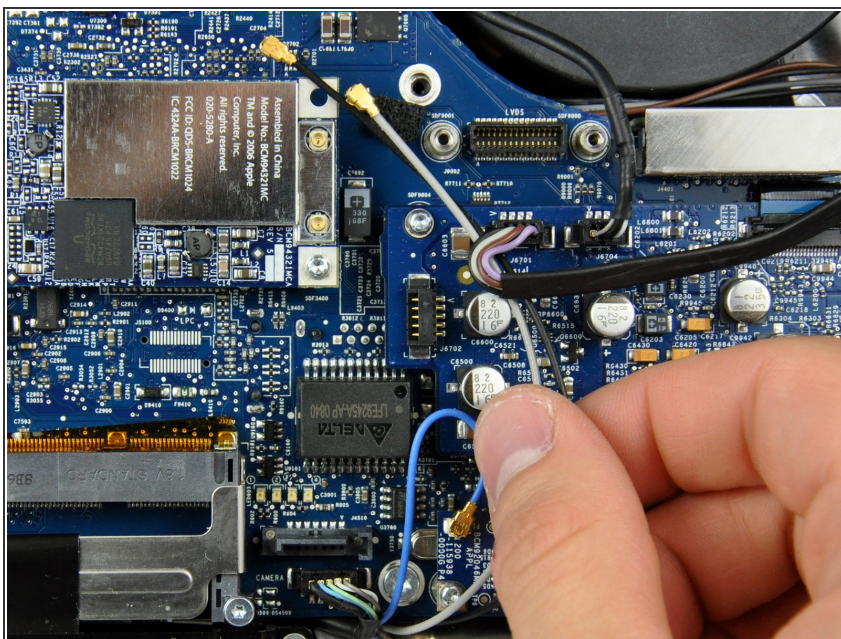
- Disconnect the DC-in cable by simultaneously depressing both locking arms and pulling its connector away from the socket on the logic board.
- ⓘ After both locking arms pass their retaining tabs, it is helpful to push them toward the left edge of your iMac with one hand while pulling on the body of the connector with your other hand.

Step 21



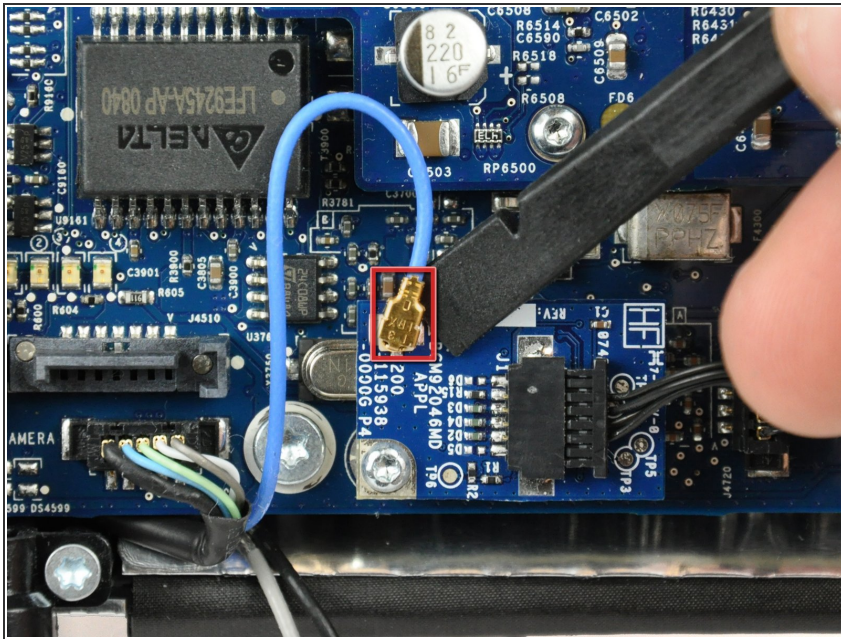
- Use the flat end of a spudger to pry both AirPort antenna connectors up off the AirPort card.

Step 22



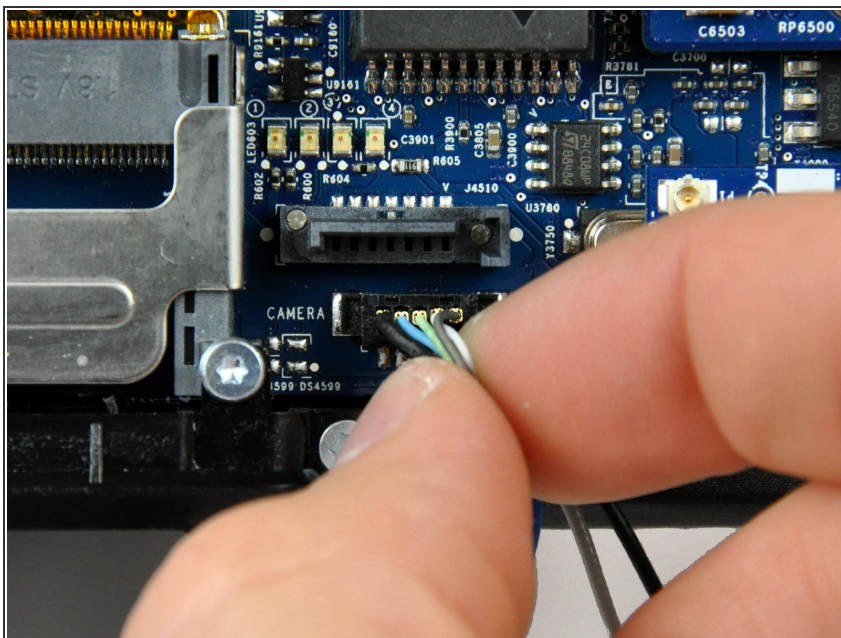
- Move both AirPort antennas toward the lower edge of your iMac, out of the way of the logic board.

Step 23



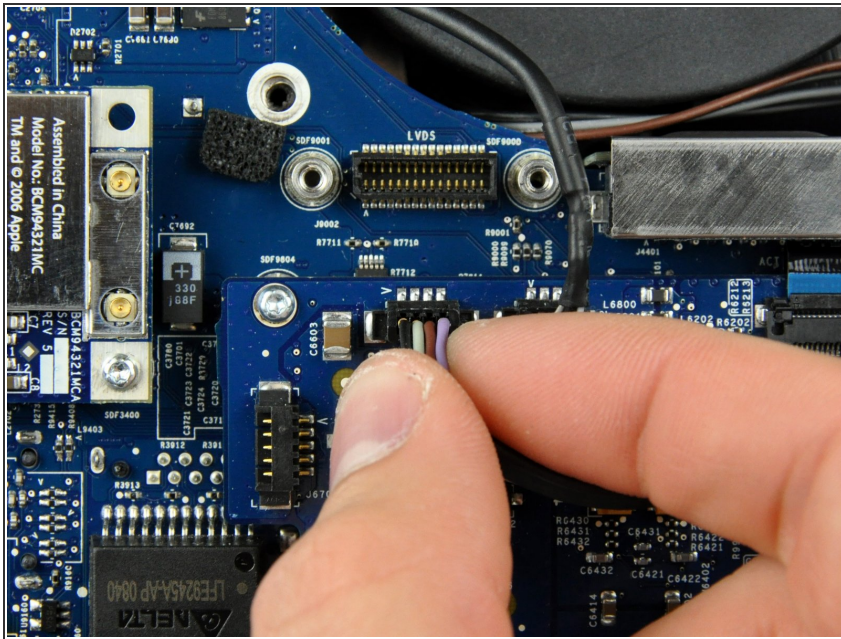
- Use the flat end of a spudger to pry the Bluetooth antenna connector up off the Bluetooth board.

Step 24



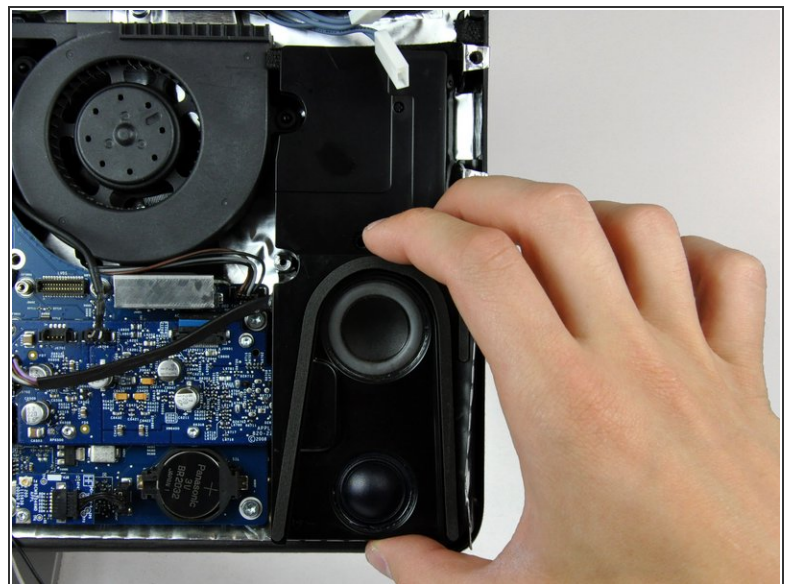
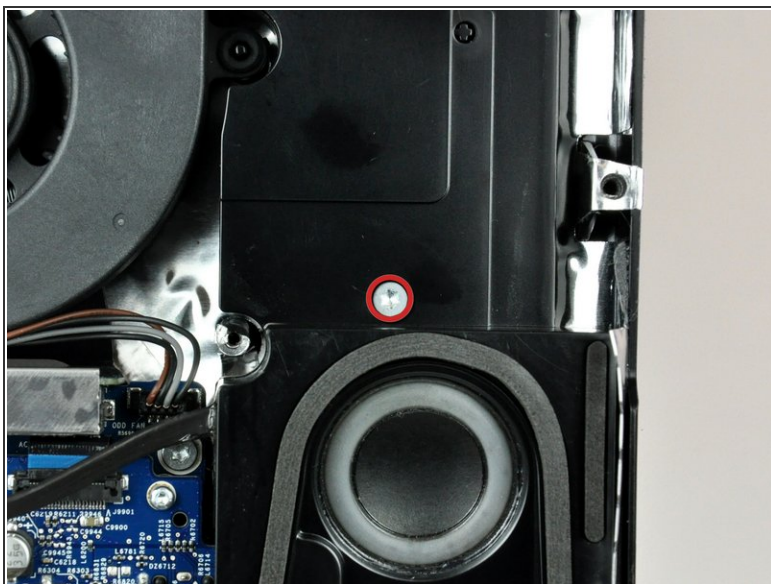
- Pull the camera cable connector straight up out of its socket on the logic board.

Step 25



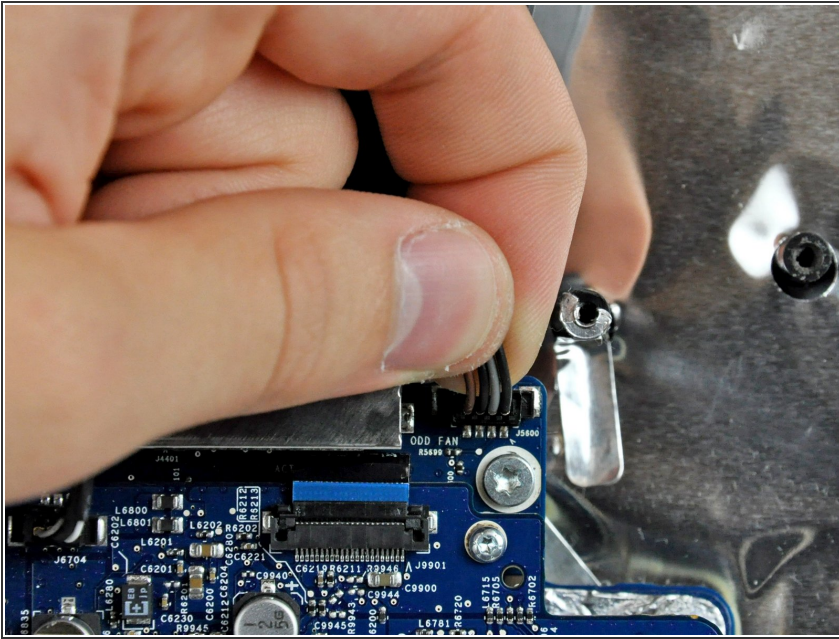
- Pull the right speaker cable connector straight up out of its socket on the audio board.

Step 26



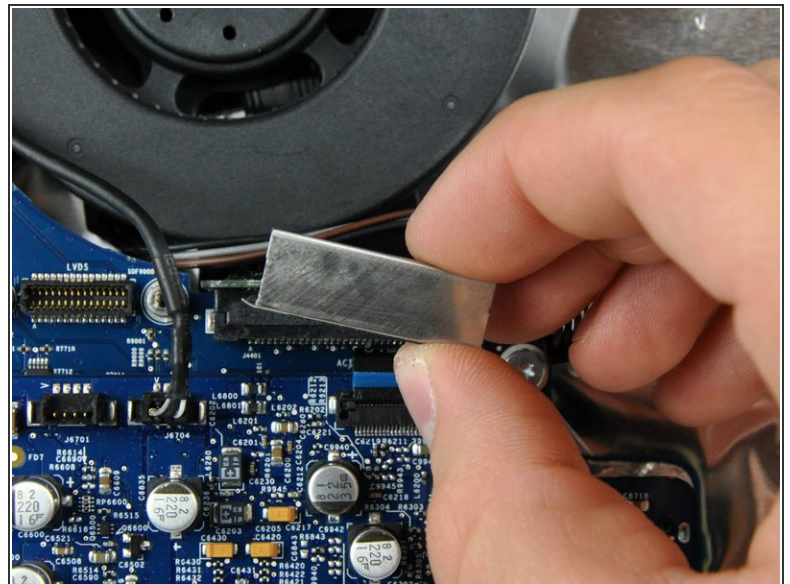
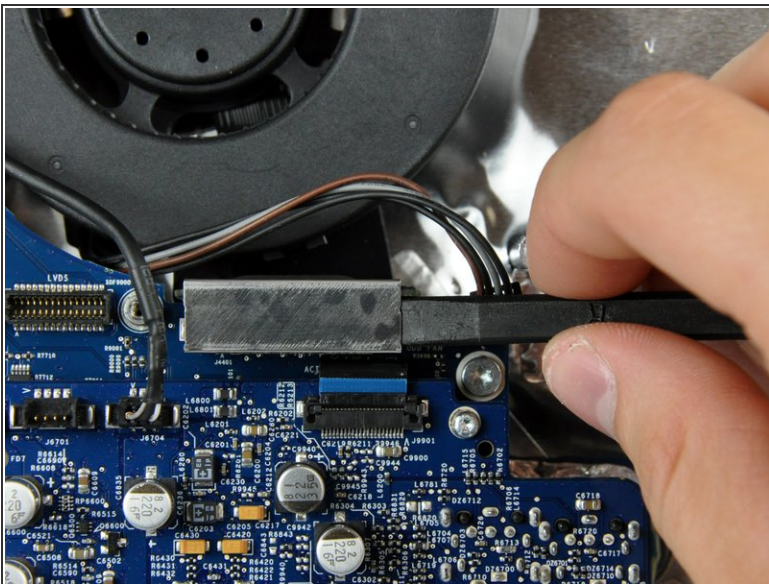
- Remove the single 12 mm T10 Torx screw securing the right speaker to the rear case.
- Lift the right speaker up and out of the rear case, to clear the plastic mounting pins underneath it.

Step 27



- Lift the optical drive fan connector straight up out of its socket on the logic board.

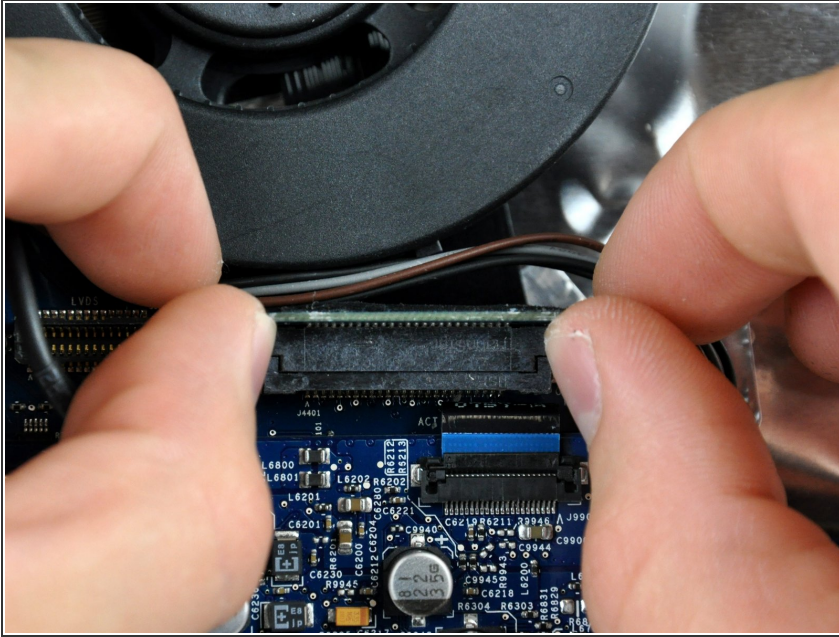
Step 28



- Use the flat end of a spudger to pry the optical drive cable clip up off the optical drive connector.
 - Lift the optical drive cable clip off the logic board.
- ⚠ During reinstallation, be sure the two raised bumps on the lower edge of the optical drive cable clip lock into the two voids on the underside of the optical drive socket.

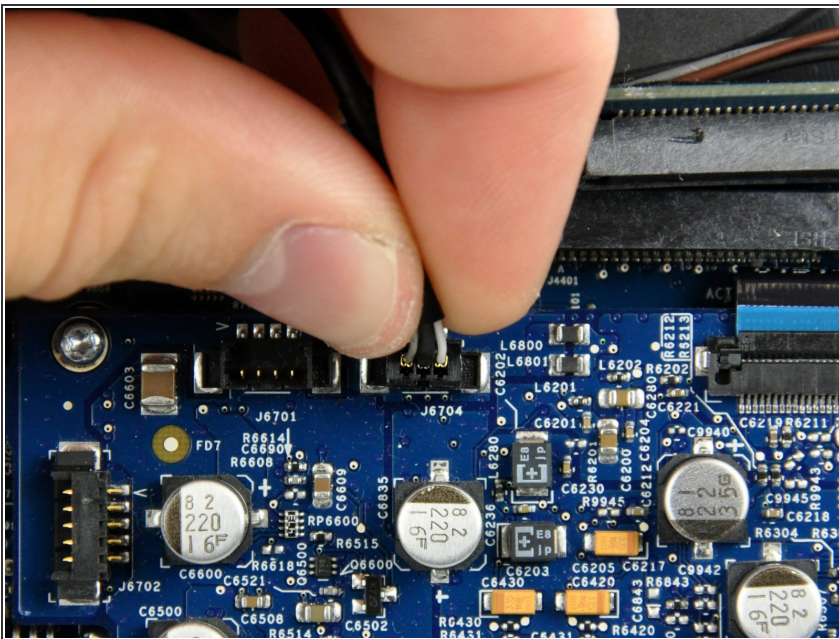
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Step 29



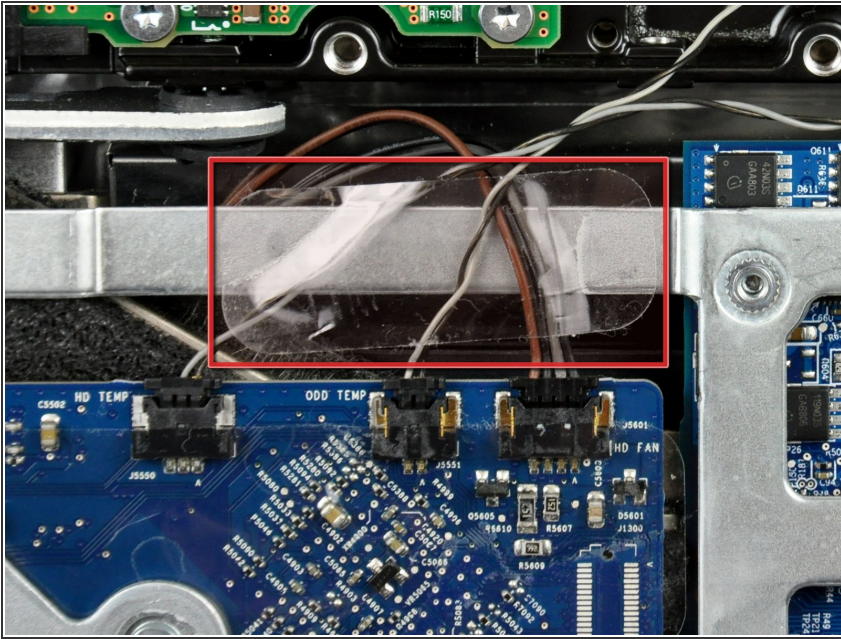
- Push the optical drive cable connector toward the top of your iMac to disconnect it from the logic board.

Step 30



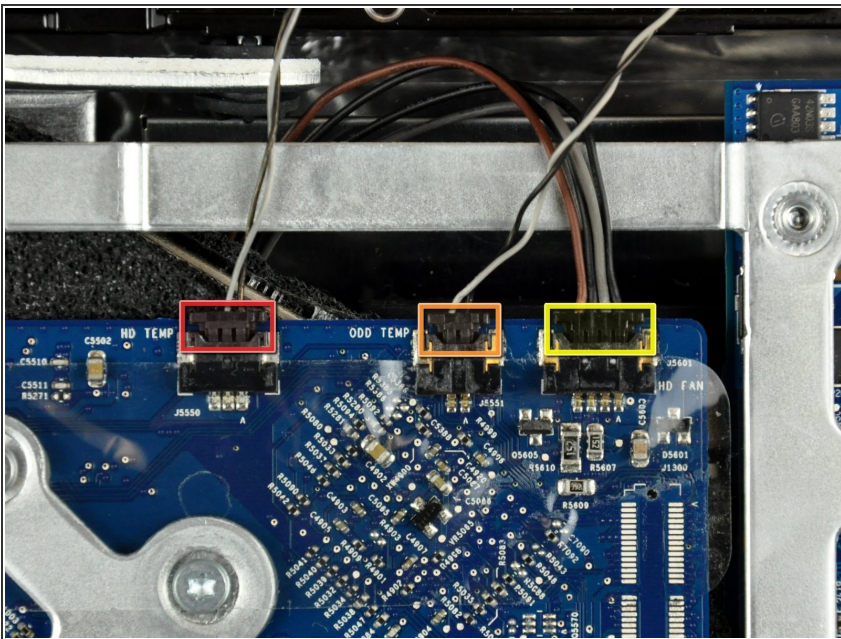
- Lift the microphone cable connector straight up out of its socket on the audio board.
- ⓘ During reinstallation, ensure that the mic cable runs between the ODD fan and the board support. If the cable runs on the wrong side of the support, the cable will be too short to plug in.

Step 31



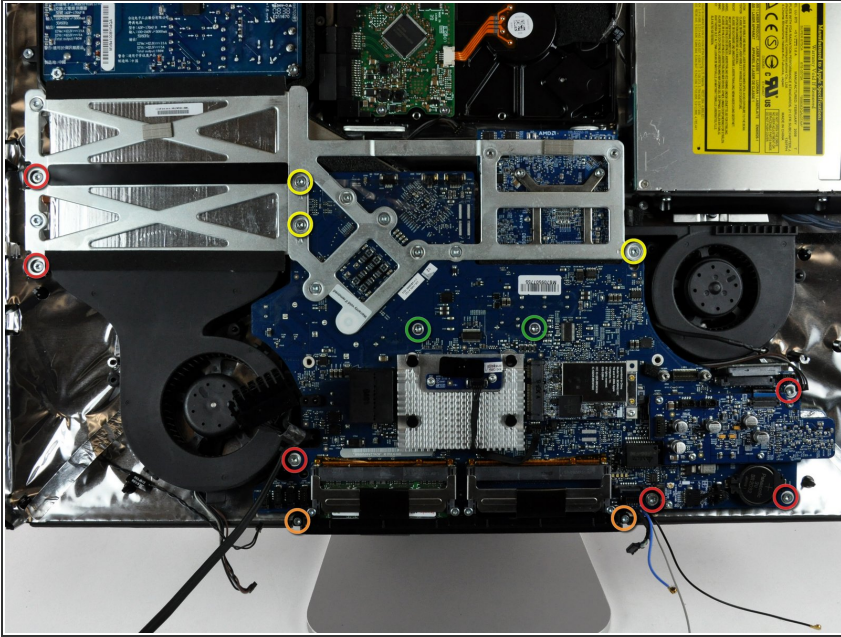
- If necessary, remove the piece of tape securing the thermal sensor and fan cables to the chassis.

Step 32



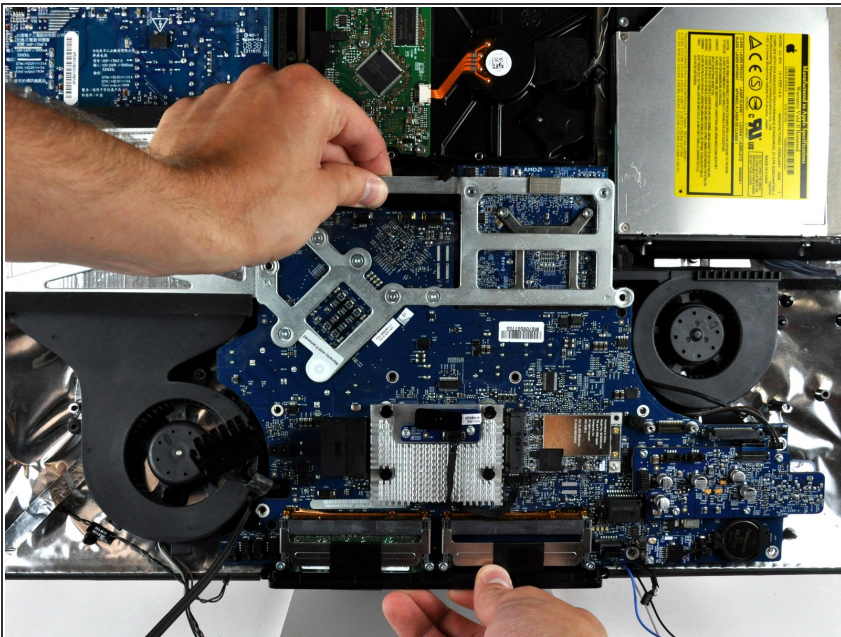
- Disconnect the following three cables from the logic board:
 - Hard drive thermal sensor.
 - Optical drive thermal sensor.
 - Hard drive fan.
- ⓘ When removing these connectors, it is helpful use your thumbnails to push the ears on either side of the connector toward the top of your iMac.

Step 33



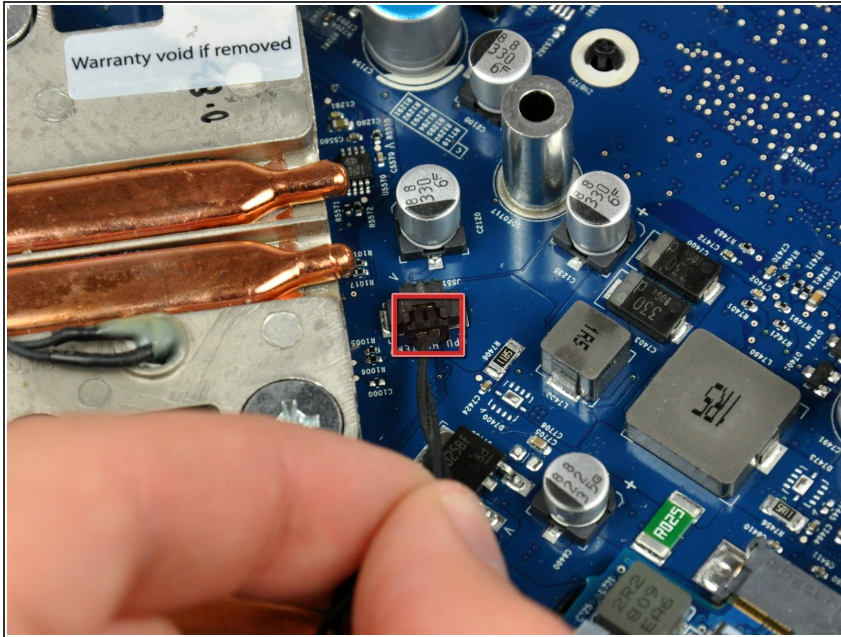
- Remove the following 13 screws securing the logic board to the rear case:
 - Six 7.2 mm coarse-thread T10 Torx.
 - Two 6.8 mm T8 Torx. When reinstalling these two screws, don't overtighten them, as the plastic tabs they hold down are thin and brittle, and can crack.
 - Three 7 mm fine-thread T10 Torx.
 - Two 24 mm T10 Torx.

Step 34



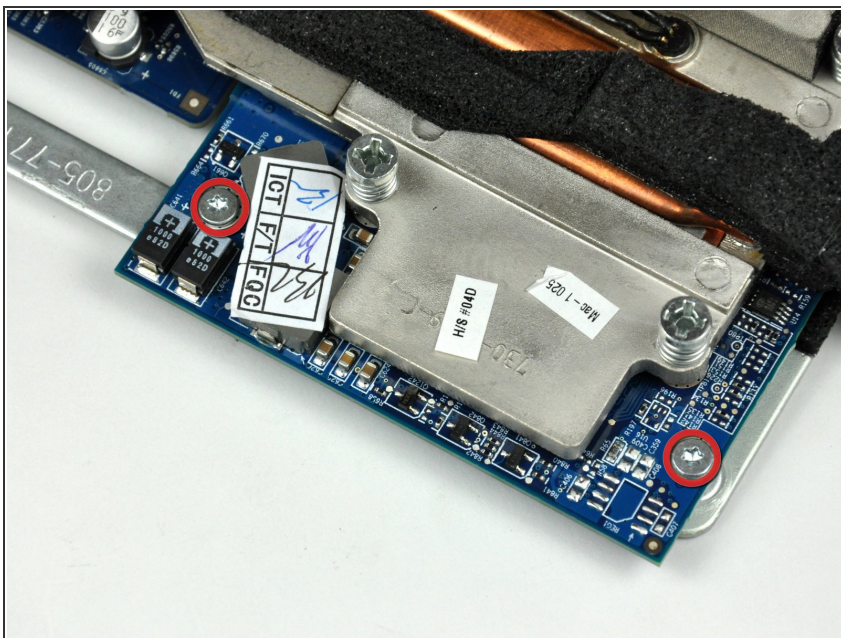
- Lift the logic board out of the rear case, minding any cables that may get caught.
- ⓘ If the front edge of the logic board, under the RAM sockets, won't pull up, it's sticking on the three plastic mounting pins in the rear housing under this edge. Use a spudger under the front edge of the RAM sockets to gently push up on this edge until it clears these mounting pins.

Step 35 — Video Card



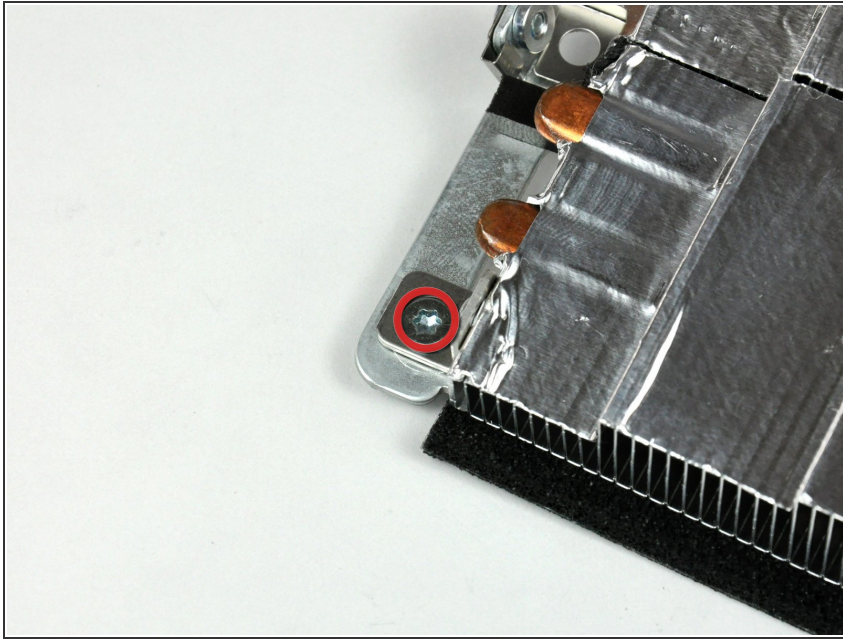
- Disconnect the video card thermal sensor by pulling its connector away from the socket on the logic board.
- ⓘ Pull the connector parallel to the face of the logic board.

Step 36



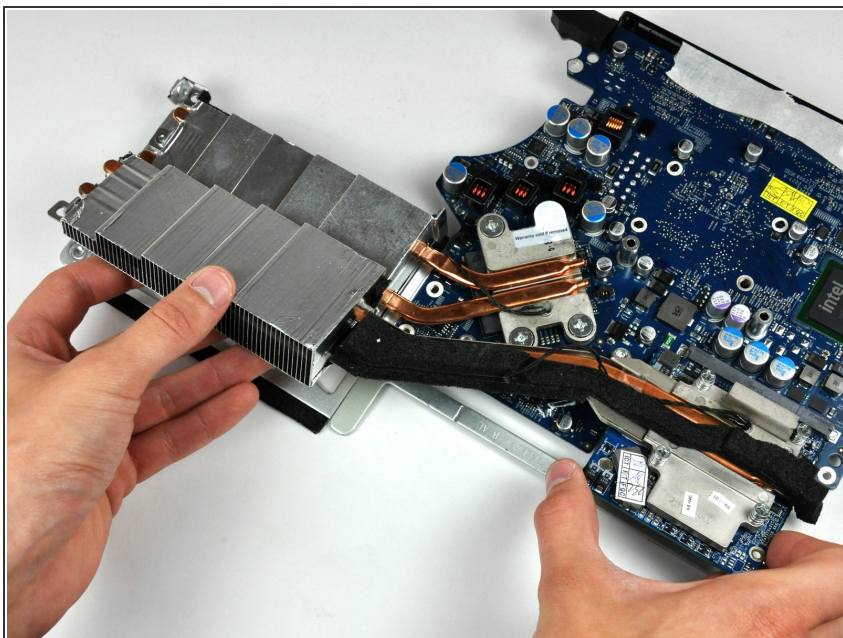
- Remove the two 5 mm T8 Torx screws securing the video card to the framework on the logic board.

Step 37



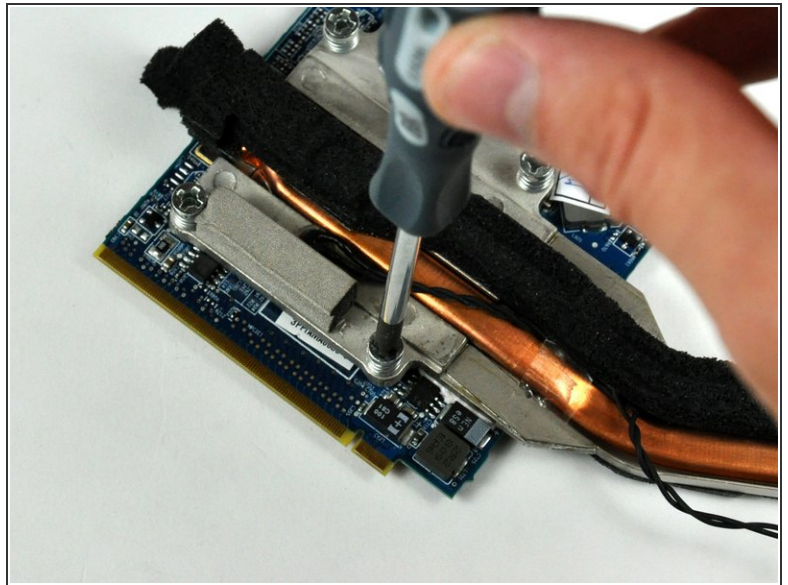
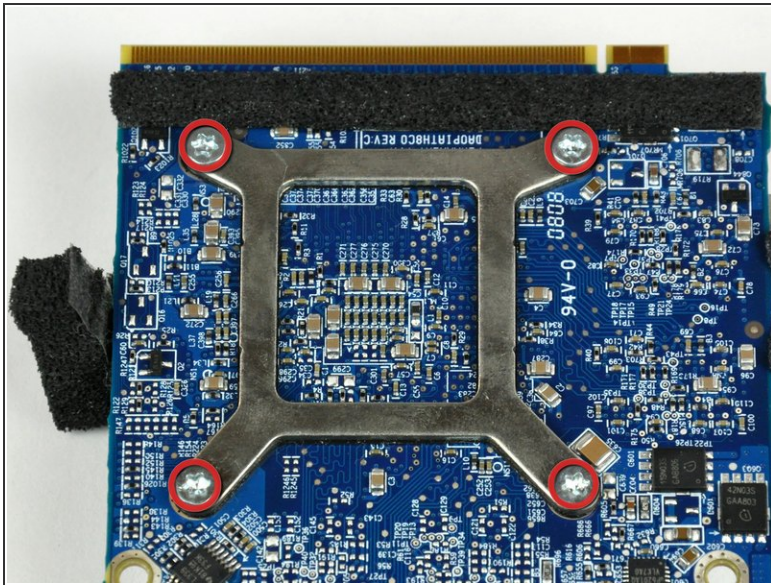
- Remove the 4.3 mm T8 Torx screw securing the video card heat sink to the framework attached to the logic board.

Step 38



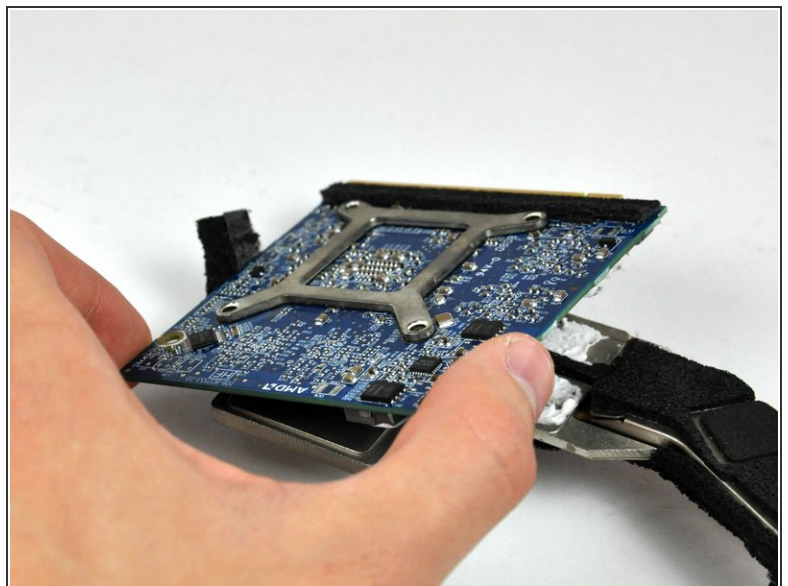
- Gently lift the video card assembly from its top edge and rotate it slightly toward the center of the logic board.
- ⓘ The left edge of the video card heat sink tends to get caught on the processor heat sink.
- Pull the video card away from its socket on the logic board.

Step 39



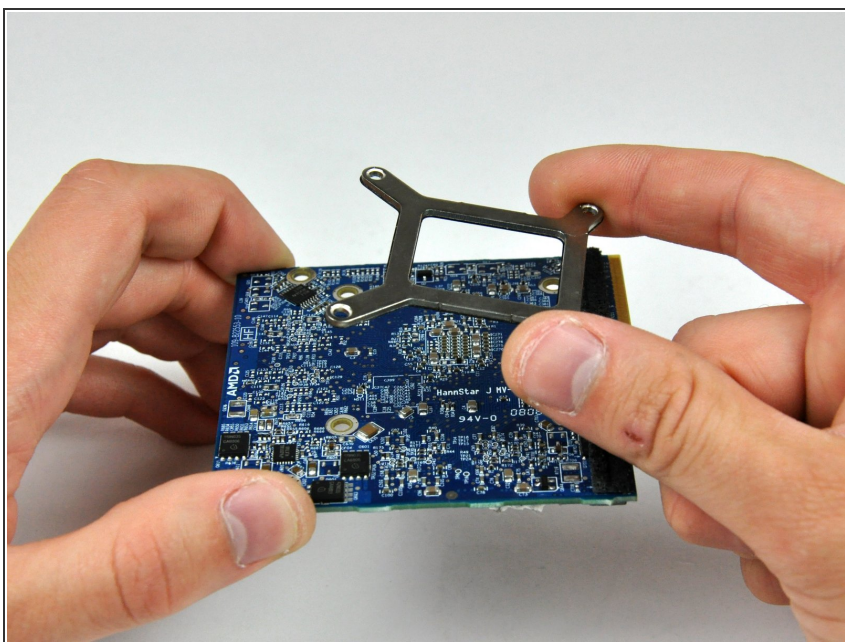
- Remove the four 7.5 mm T10 Torx screws securing the heat sink to the video card.
- ⓘ It may be helpful to hold the socket from the other side of the video card with a Phillips screwdriver if the screws will not come out.

Step 40



- Gently lift the video card off the video card heat sink.

Step 41



- Lift the metal heat sink bracket off the video card.

Step 42



- Video card remains.
- Be sure to apply a new layer of thermal paste to the face of the graphics processor (shown in red).
- i We have a [thermal paste guide](#) that makes reapplying thermal compound simple.
- ✦ Before reattaching your video card heat sink, use the flat end of a spudger to re-spread the thermal compound over the face of both video RAM chips (shown in green).

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