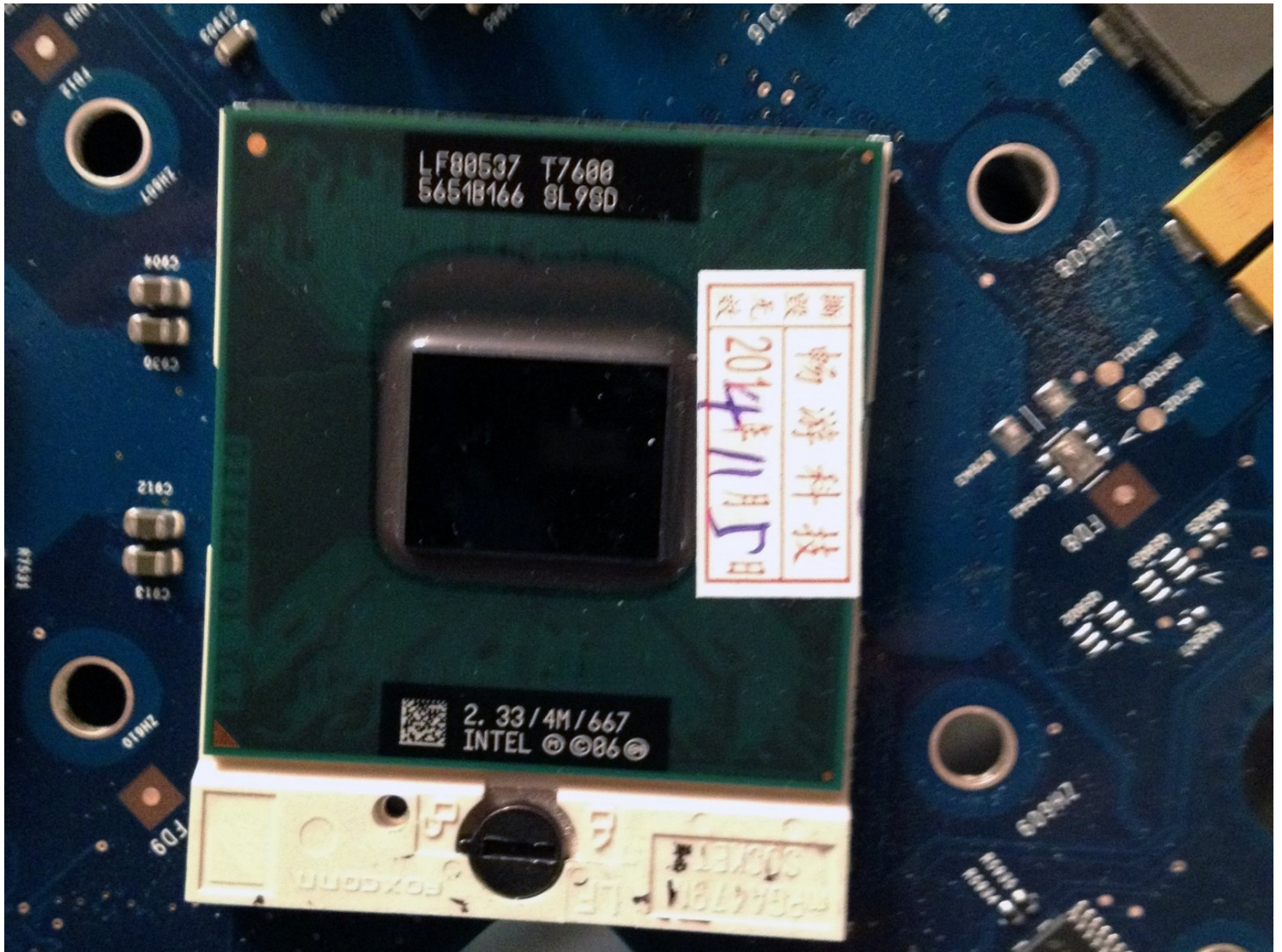# iMac Intel 20" EMC 2105 and 2118 CPU Replacement

Here are detailed instructions showing how to...

Written By: gordonhamachi

INTRODUCTION

Here are detailed instructions showing how to turn your iMac 4,1 into an iMac 5,1. I'm filling in some gaps in [this procedure for upgrading a 2006 iMac](#).

I replaced the Core Duo T2600 CPU in my iMac4,1 with a Core 2 Duo T7600, which is the fastest replacement CPU for this iMac. I bought the replacement CPU on eBay for $25.89 from an overseas seller. The price was right but it took almost a month for the CPU to show up in my mailbox.

After replacing the CPU and updating the firmware, the resulting computer is equivalent to an iMac 5,1. It is now possible to install 4 GB of RAM, though the computer can only address 3 GB.

The best reason for upgrading the CPU is to be able to install MacOS X 10.7 Lion. This is surprisingly tricky to do.

⚲ TOOLS:

[Thermal Paste](#) (1)
[Phillips #1 Screwdriver](#) (1)
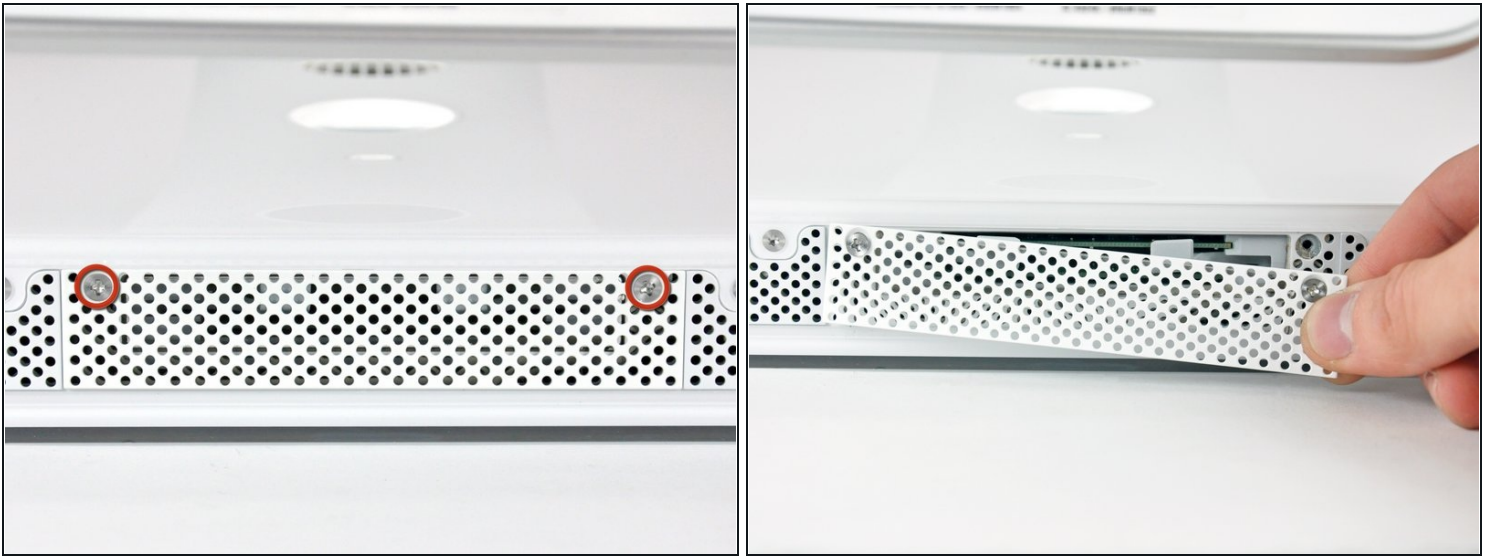[Plastic Cards](#) (1)
[Spudger](#) (1)
[TR10 Torx Security Screwdriver](#) (1)
[T6 Torx Screwdriver](#) (1)
[TR8 Torx Security Screwdriver](#) (1)

Step 1 — Access Door

- Loosen the two Phillips screws securing the access door to your iMac.

- ⓘ Both screws remain captive within the access door.

- Remove the access door.

⚠ **Before beginning the repair, unplug the computer and press and hold the power switch for 20-30 seconds, to discharge internal capacitors.**

Step 2 — Front Bezel

- Remove the following screws along the lower edge of your iMac:
  - Three 6 mm T8 Torx screws

  - One 8 mm T8 Torx screw (Right side of the RAM slot on 2105)

Step 3

ⓘ Re-orient your iMac so it sits upright on the stand.

- Insert a plastic card up into the corner of the air vent slot near the top of the rear case.

- Push the card toward the top of the iMac to release the front bezel latch.

- Pull the front bezel away from the rear case.

- Repeat this process for the other side of the front bezel.

ⓘ It may be necessary to apply several layers of duct tape to the top of the access card to aid in releasing the latches. Or use two cards for the additional thickness.

- If the bezel refuses to release, try lifting the lower edge of the front bezel slightly away from the rear case (detailed in the next few steps) and repeat the latch release process.

Step 4

- Lay your iMac stand-side down on a flat surface.

- To lift the front bezel off the iMac, simultaneously:
  - Use your thumbs to press in the RAM arms and hold the iMac down.

  - Use your index fingers to pull the small bridge of material on the front bezel toward yourself.

  - Pull the front bezel up with your index fingers.

- Once the small bridge of material has cleared the RAM arms, lift the front bezel by its lower edge just enough to clear the bottom edge of the rear case.

Step 5

- Lift the front bezel off the rear case and rotate it away from the bottom edge of the iMac, minding the camera and microphone cables still attached to its upper edge.

Step 6
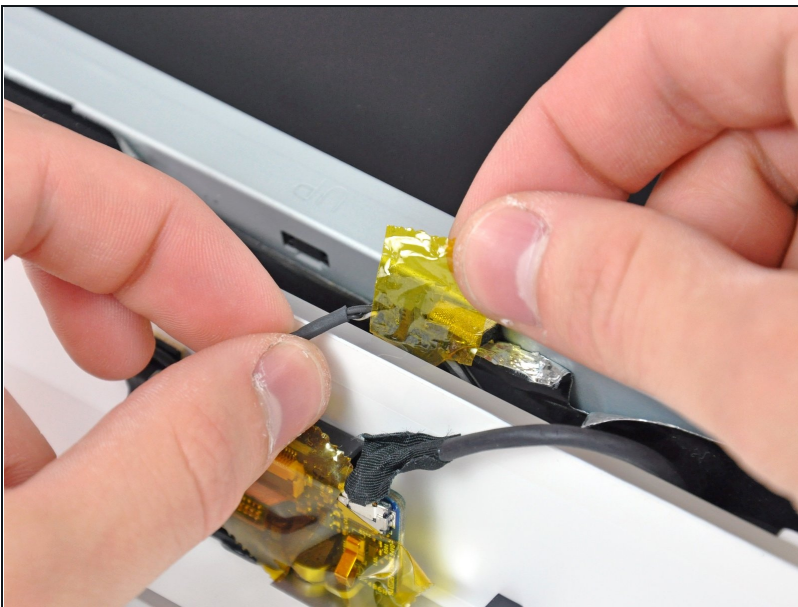
- ⓘ If necessary, remove the strip of tape covering the microphone cable connector.

- ⊡ The microphone connector is located near the inside of top edge of your iMac.

Step 7

- Disconnect the microphone cable.

- Disconnect the camera cable by pulling its connector away from the socket on the camera board.

⚠ The camera cable connector and socket are delicate and easily bent. Remove with caution.
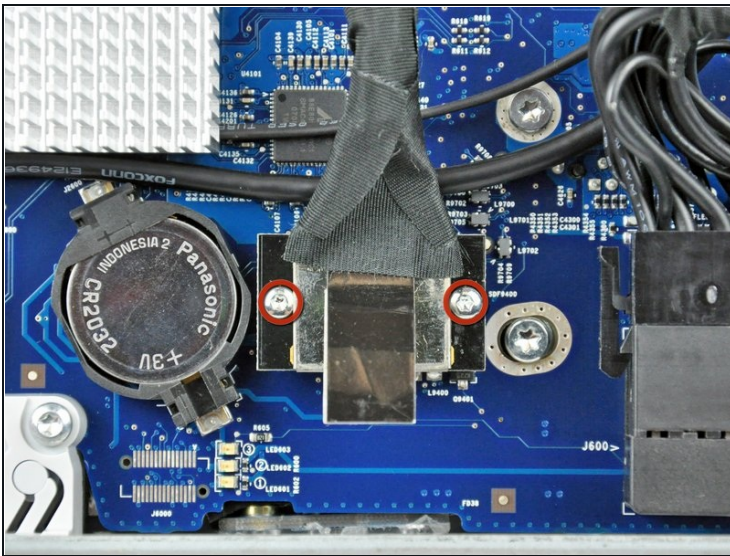
Step 8 — Lower EMI Shield

- Peel up the lower EMI shield from the rear case.

- ⓘ It is only necessary to peel the shield up from three sides. Leave it attached to the display.

- ⓘ If you happen to rip the EMI shield, use a piece of foil tape to cover the tear.

Step 9

- Tape the EMI shield to the face of the display to keep it out of the way.

Step 10 — Display
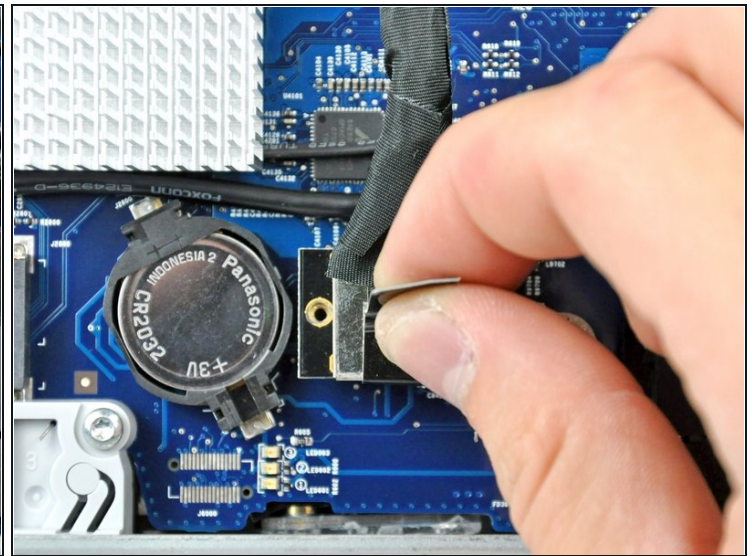
- Remove the two 5 mm T6 Torx screws securing the display data cable connector to the logic board.

- Pull the display data cable connector up off the logic board by its black pull tab.

Step 11

- Peel back the EMI tape from the two vertical edges of the display.

- ⬚ During reassembly, it is helpful to use several small strips of tape to hold the EMI shielding along the left and right edges of the display footprint out of the way before lowering the display into the rear case of your iMac.

Step 12

- Allow the lower EMI shield to hang down from the display.

- Remove the four 7.5 mm T10 Torx screws securing the display to the rear case.

- ⓘ The screws are recessed, so a thin magnetic screwdriver aids in removal. Most bit drivers are too short to reach these screws.

Step 13

- Lift the lower edge of the display and rotate it toward the top edge of your iMac.

- ⚠ Do not lift it too much, as the inverter cables are still attached.

Step 14

- Disconnect both inverter cables from the inverter board.

- ⓘ These connectors are seated very tightly in their sockets. It is helpful to use your fingernails or the tip of a spudger to push the ears on either side of the connectors to dislodge them from their sockets. A small pair of hemostats helps a lot.

Step 15

- Disconnect the two inverter cables at the top edge of the inverter using the method explained in the previous step.

Step 16
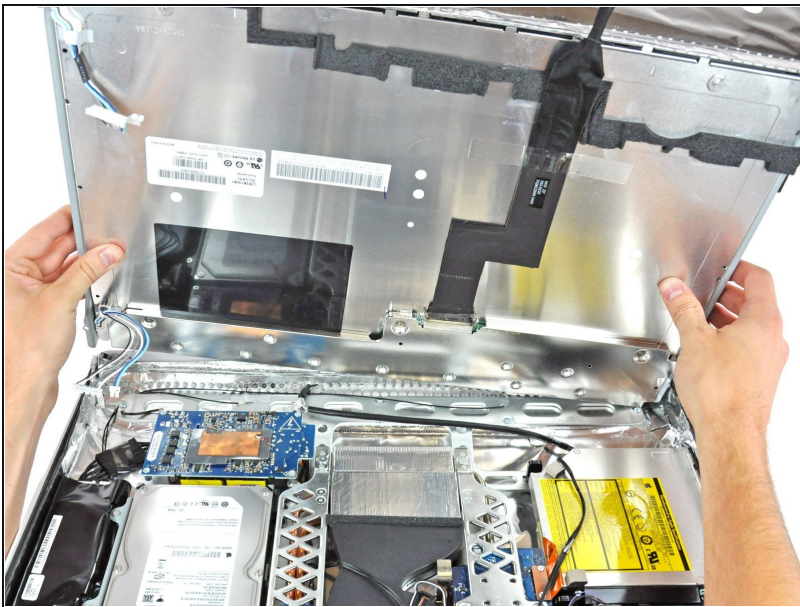
- Rotate the display until it is nearly perpendicular to the rear case and lift it up to peel it off the EMI shield stuck to its top edge.

Step 17 — Speakers

- Remove the single T10 Torx screw securing the left speaker to the rear case.

- Pull the left speaker out of the rear case.

- ⓘ The screw for the left speaker is longer than the screw for the right speaker.

Step 18
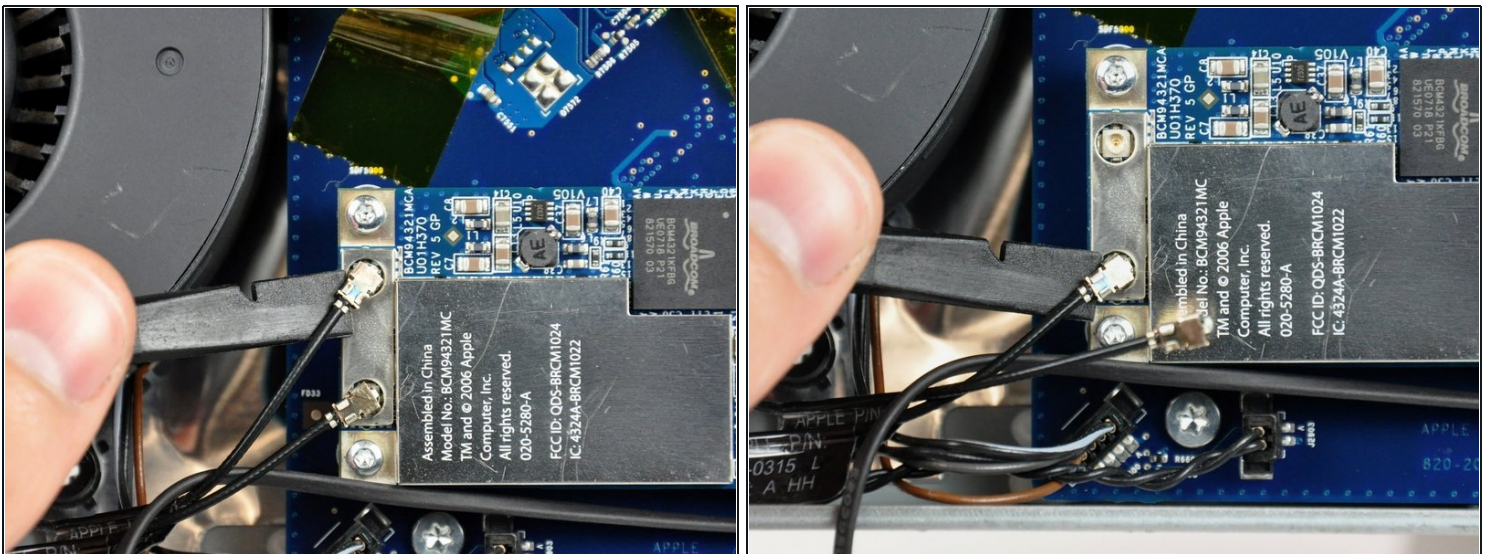
- Use the flat end of a spudger to pry both antenna connectors up off the AirPort Extreme card.
  - ⓘ Some models may have only one AirPort antenna wire.

Step 19
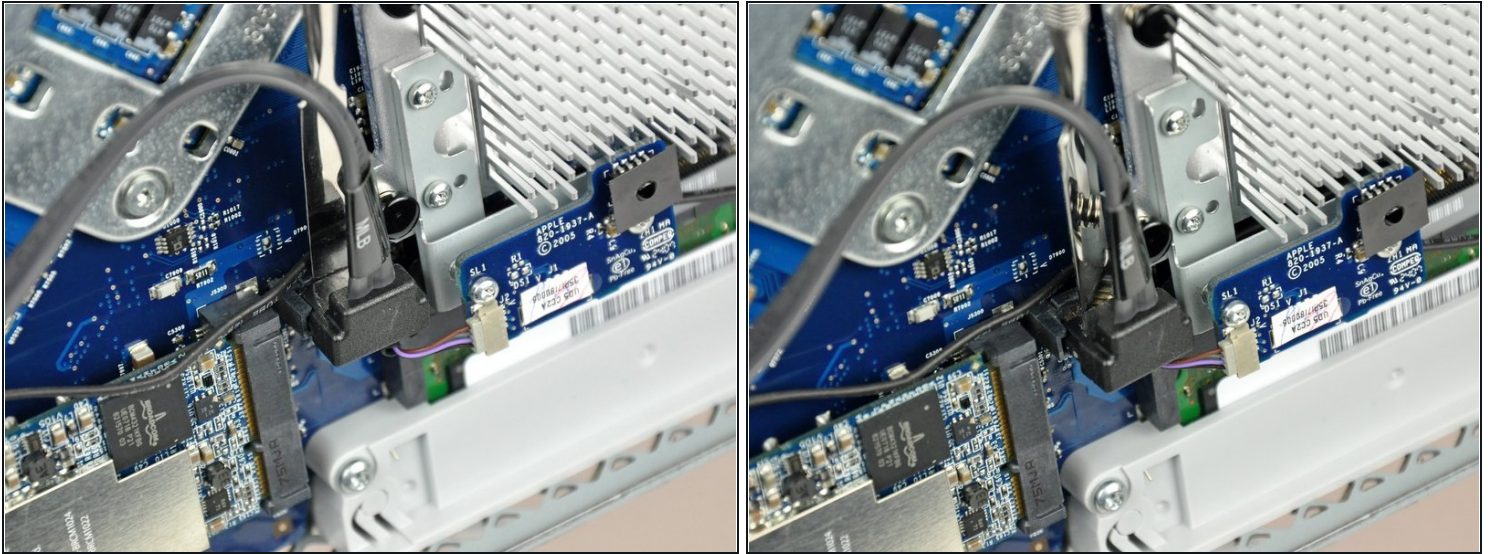
- Use a metal spudger to disconnect the SATA data cable up off the logic board.

- ⓘ 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 20
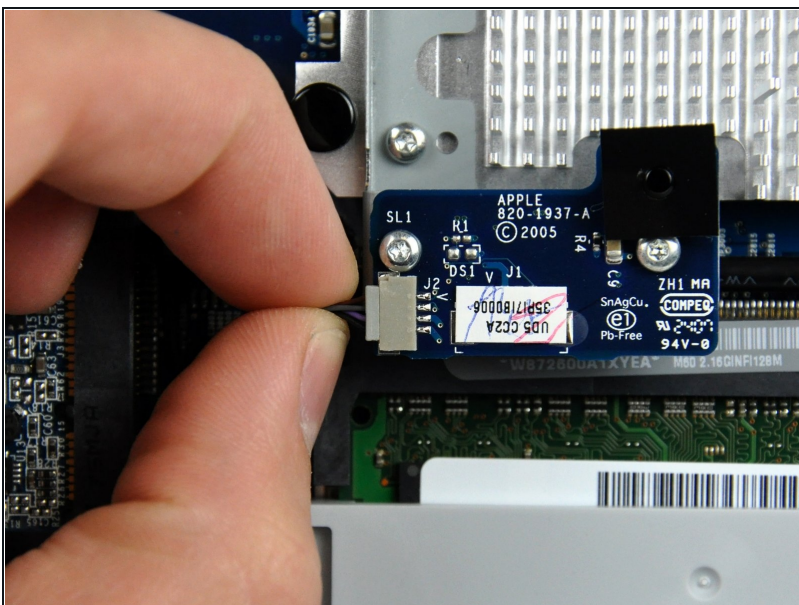
- Pull the IR board cable connector away from its socket on the IR board.

- ⓘ Pull the connector parallel to the face of the logic board.

Step 21
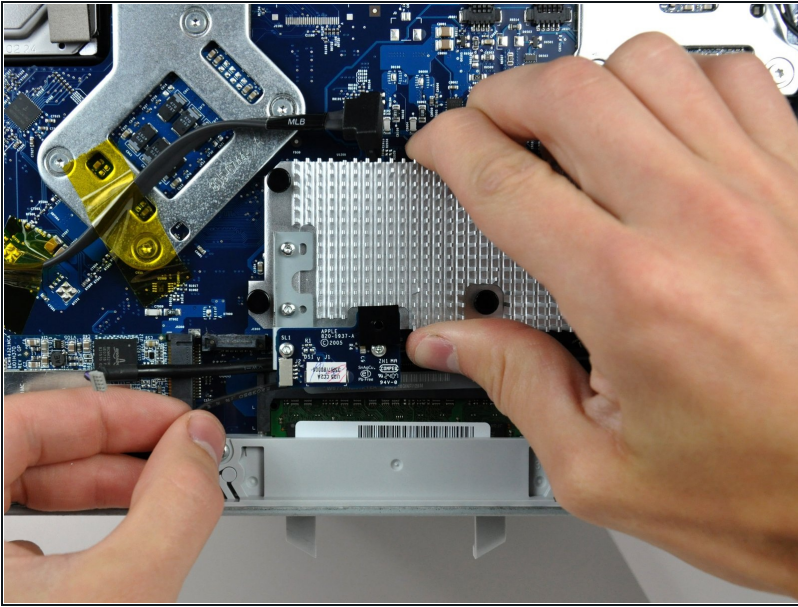
- De-route the speaker cables from beneath the IR Board and heatsink assembly.

Step 22

- Remove the single T10 Torx screw securing the right speaker to the logic board.

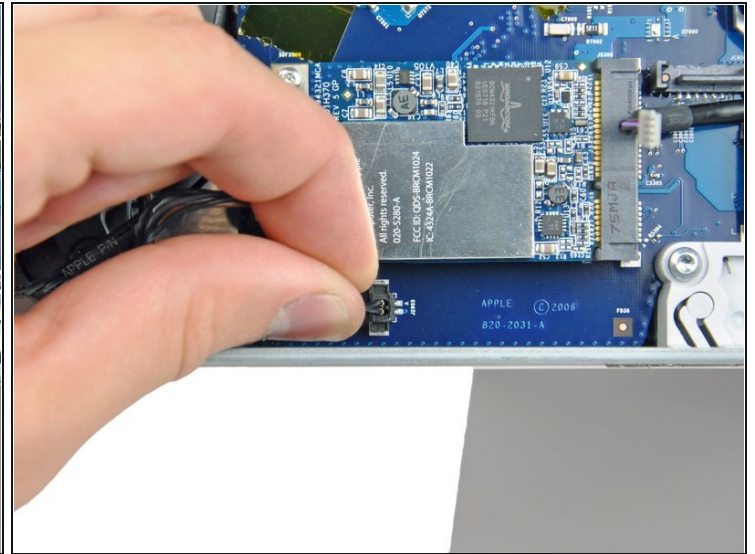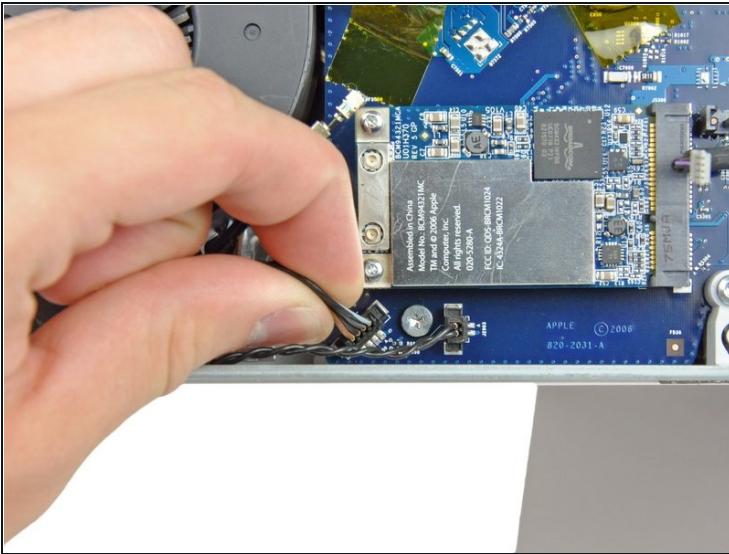- Lift the right speaker out of the rear case and move it out of the way.

⚠ Both speakers are still attached to the logic board by the speaker cable.

Step 23
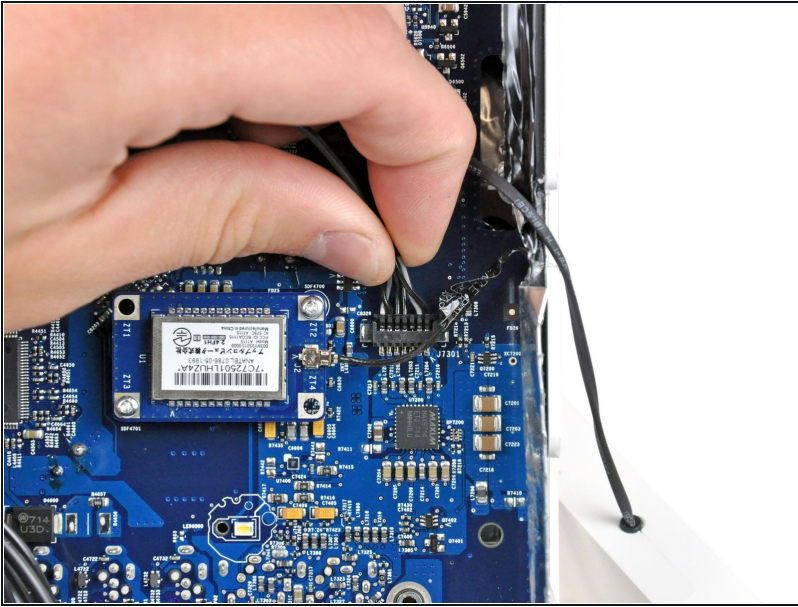
- Disconnect the speaker cable connector by lifting it straight up off its socket on the logic board.

- ⓘ Pull the connector parallel to the face of the logic board.
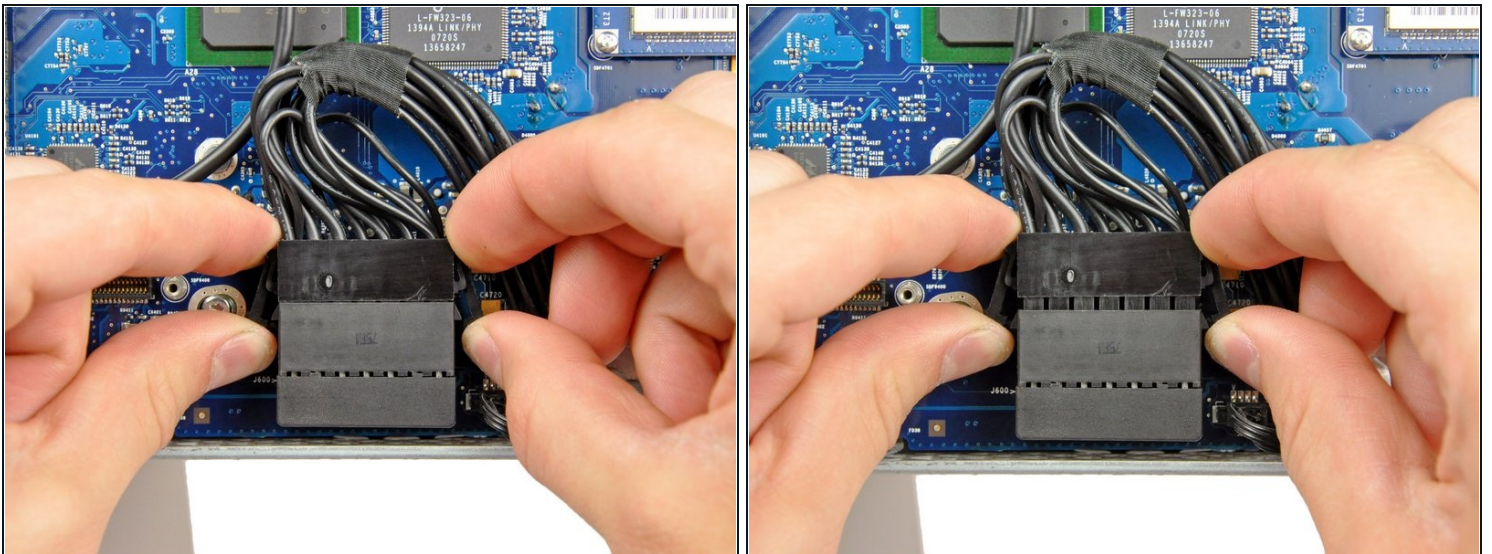
Step 24 — Logic Board

- Disconnect the HDD fan and power button from the logic board by pulling their connectors straight up off the sockets on the logic board.
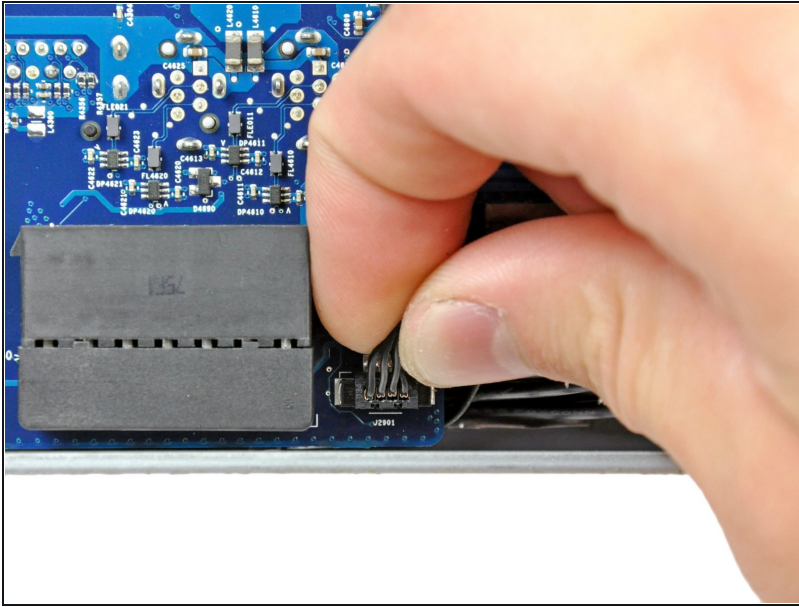
Step 25
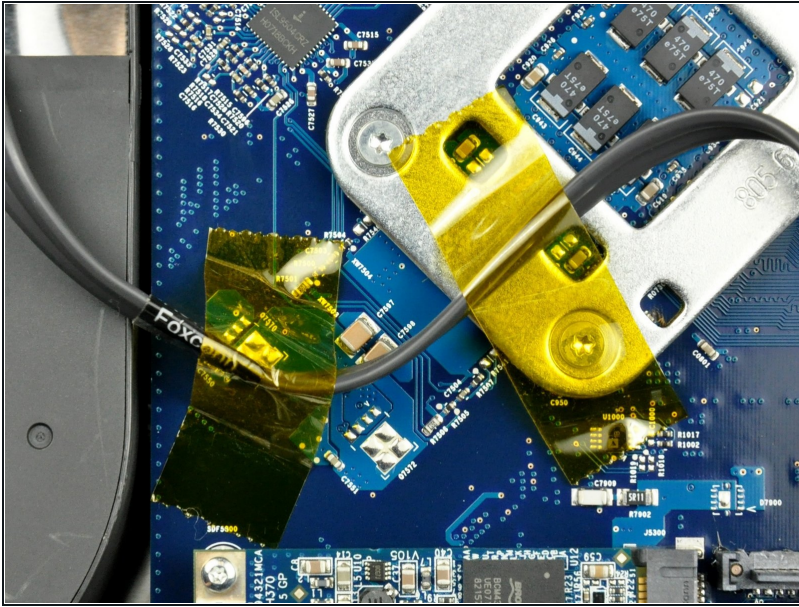
- If necessary, remove the pieces of tape holding the SATA data cable to the logic board.

- Move the SATA data cable away from the face of the logic board.
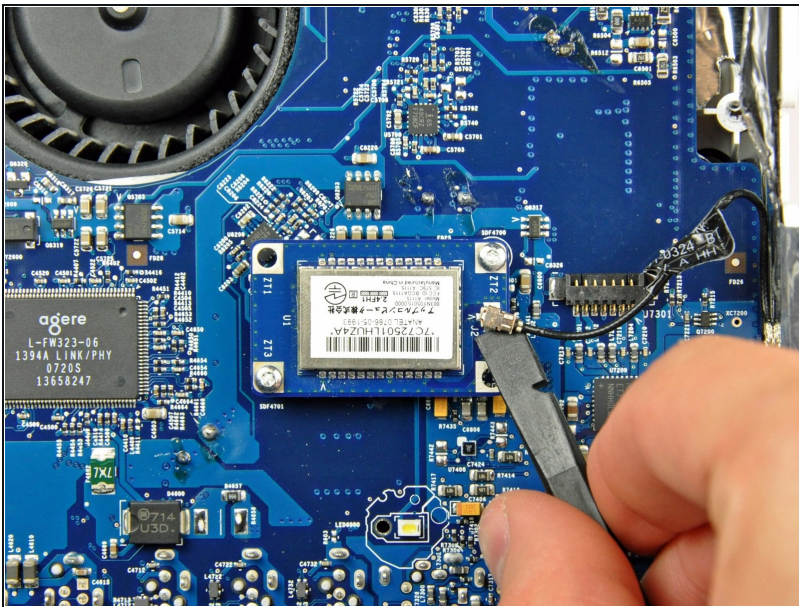
Step 26

- Disconnect the DC-In cable by simultaneously depressing both locking arms and pulling its connector away from the socket on the logic board toward the top of your iMac.

- ⓘ After both locking arms pass their retaining tabs, it is helpful to push the arms toward the top edge of your iMac while wiggling the connector.
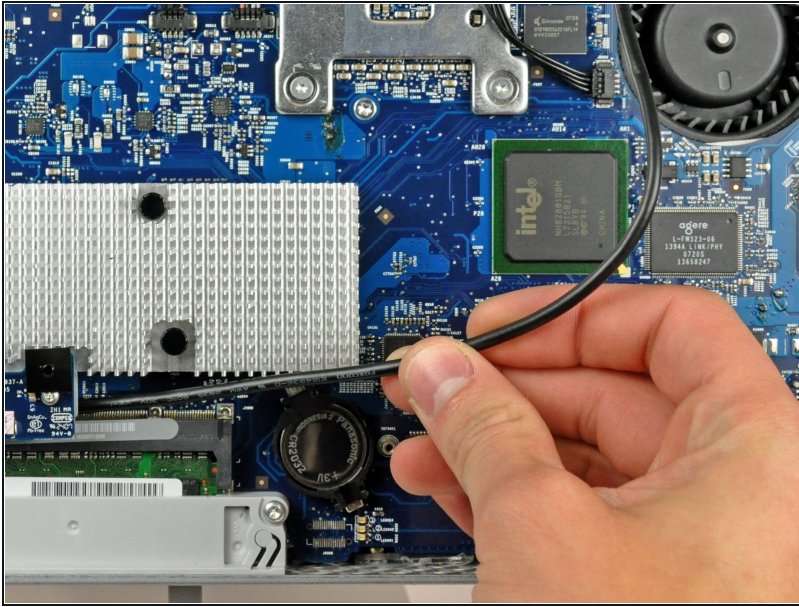
Step 27

- Pull the ambient light sensor cable connector up off the logic board.
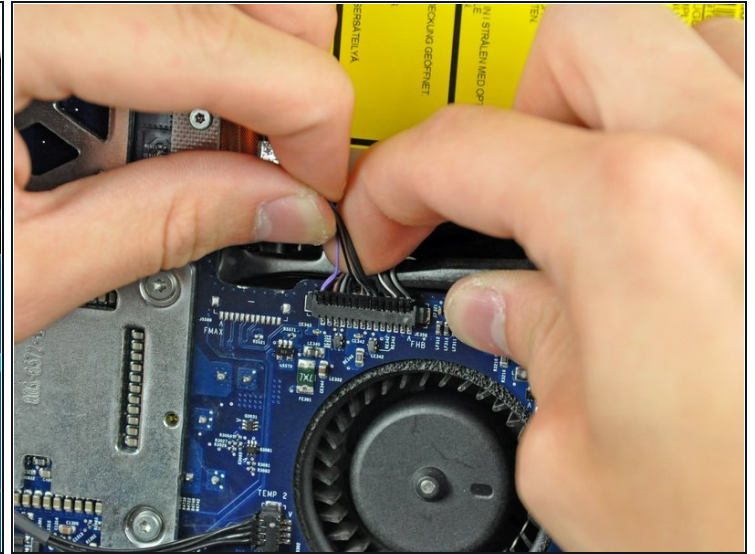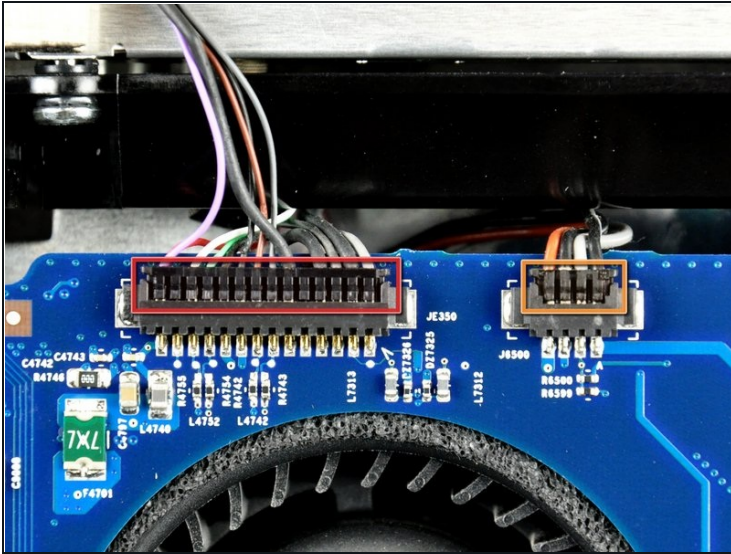
Step 28

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

Step 29

- Carefully de-route the IR board cable out from under the IR board and move it out of the way of the logic board.
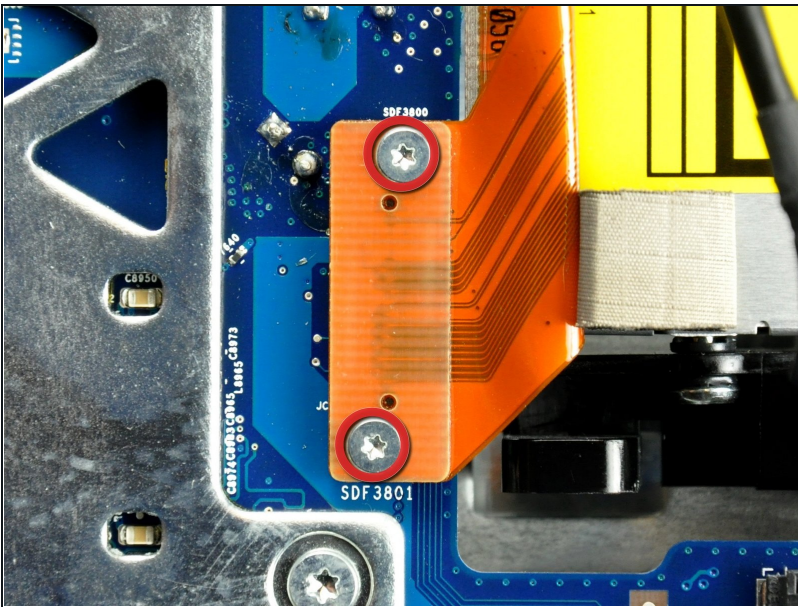
- Disconnect the following connectors from the logic board:
  - Camera/IR board cable.

  - Optical drive fan.

ⓘ When removing the optical drive fan connector, it is helpful to use a spudger or your fingernails to push the ears on either side of the connector toward the top edge of the iMac.

⚠ To aid in removing the camera/IR board connector, it is helpful to use one hand to pinch the cables against a spudger and pull up toward the top edge of the iMac while pulling up gently on the cables with your other hand.
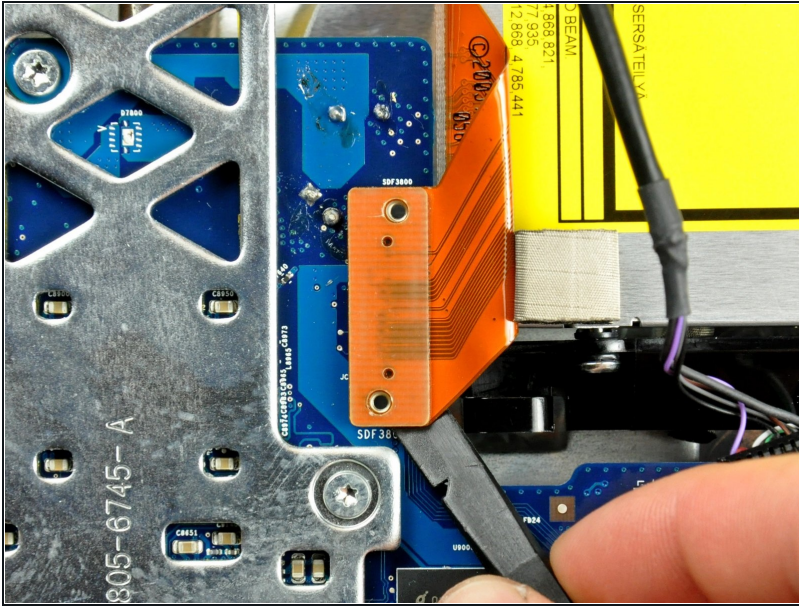
Step 31
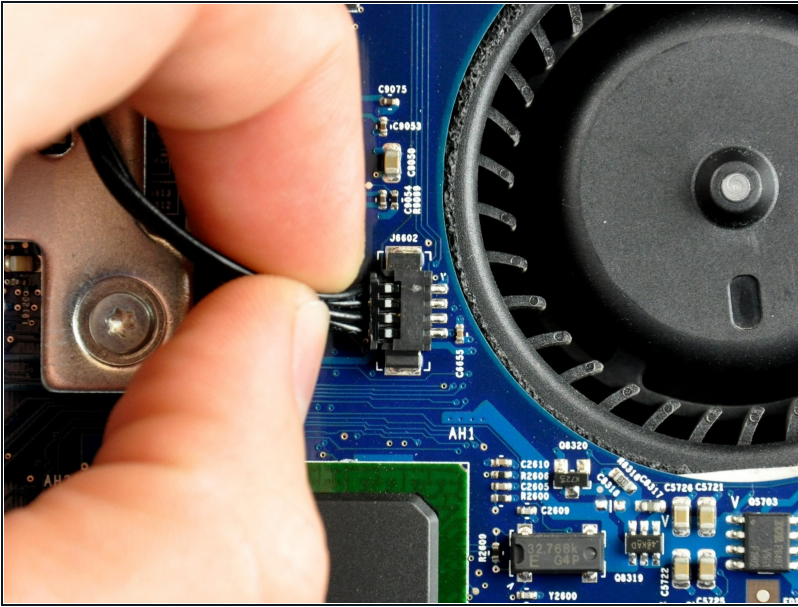
- Disconnect the optical drive thermal sensor cable from the logic board by pulling its connector away from the socket on the logic board.

- ⓘ Pull the connector parallel to the face of the logic board.

Step 32

- Remove the two T6 Torx screws securing the optical drive ribbon cable connector to the logic board.
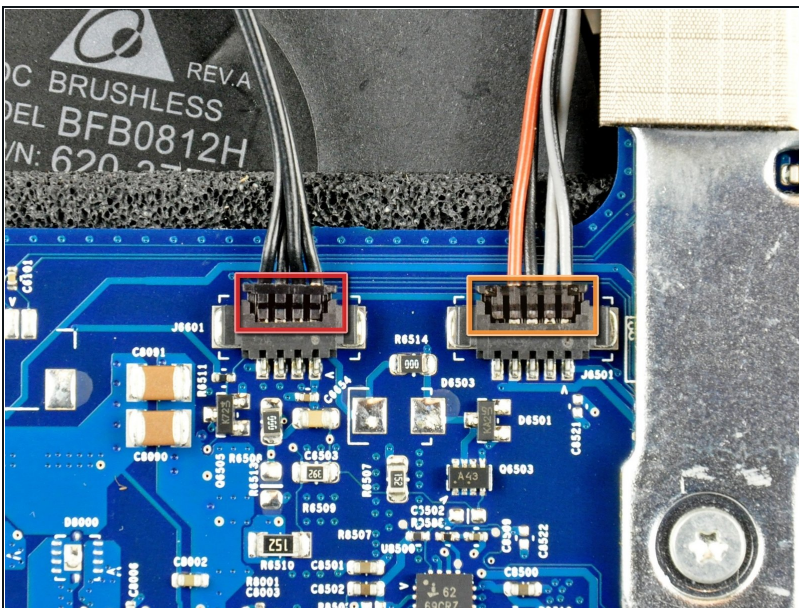
Step 33

- Use the flat end of a spudger to pry the optical drive ribbon cable connector up off the logic board.

- (i) The connector is most easily removed when prying from the top or bottom of the connector.

- Bend the optical drive ribbon cable back away from the logic board.

- ⚠ Be very careful when moving the optical drive ribbon cable as it is delicate and easily ripped.
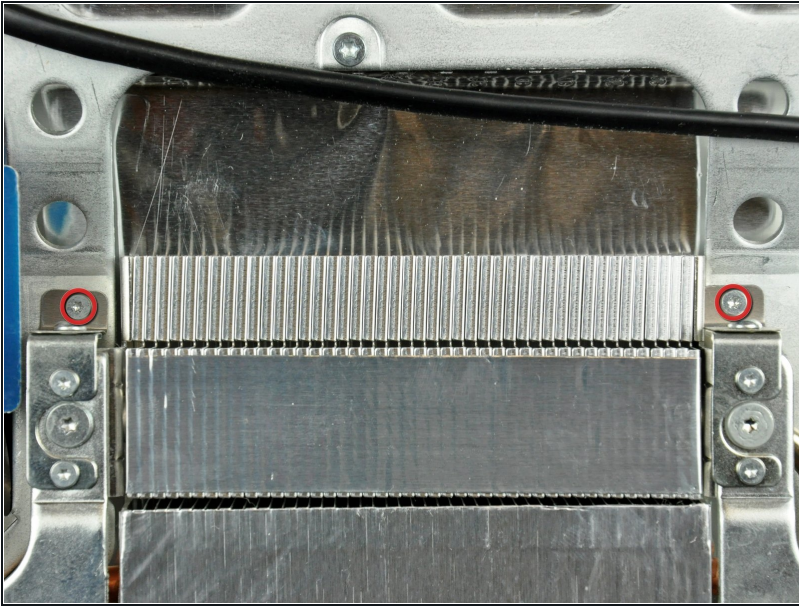
Step 34

- Disconnect the following connectors from the logic board:
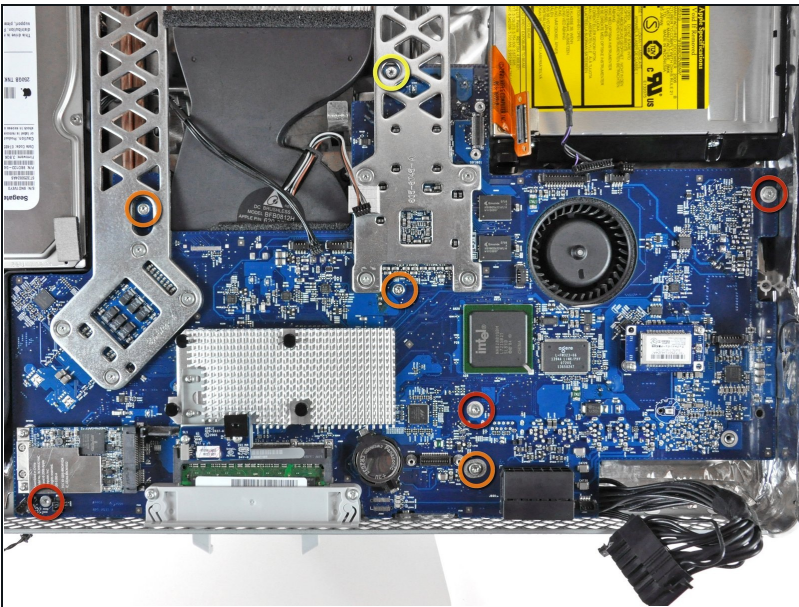 - Hard drive thermal sensor cable.

  - CPU fan cable.

- (i) When removing these connectors, it is helpful to push the ears on either side of the connector with your fingernails or the tip of a spudger toward the top edge of the iMac.
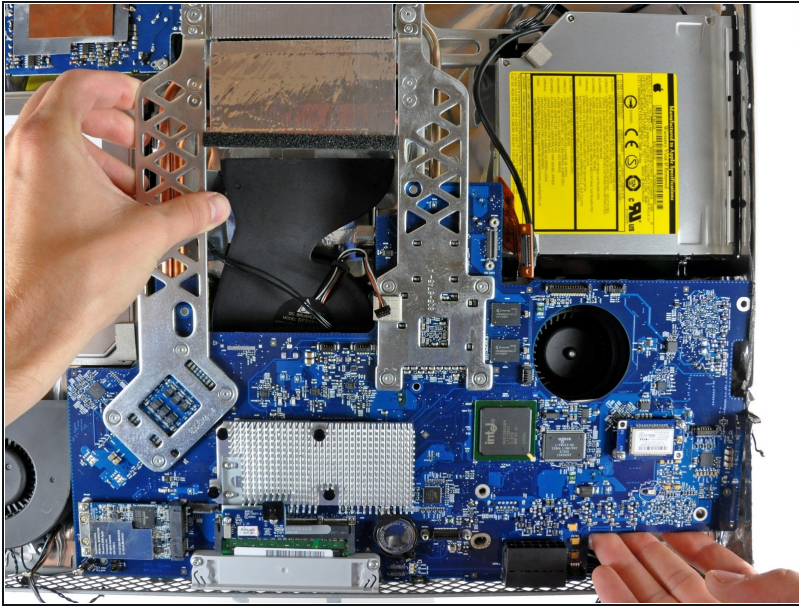
Step 35

- Remove the two T6 Torx screws securing the top of the heat sink framework to the chassis.
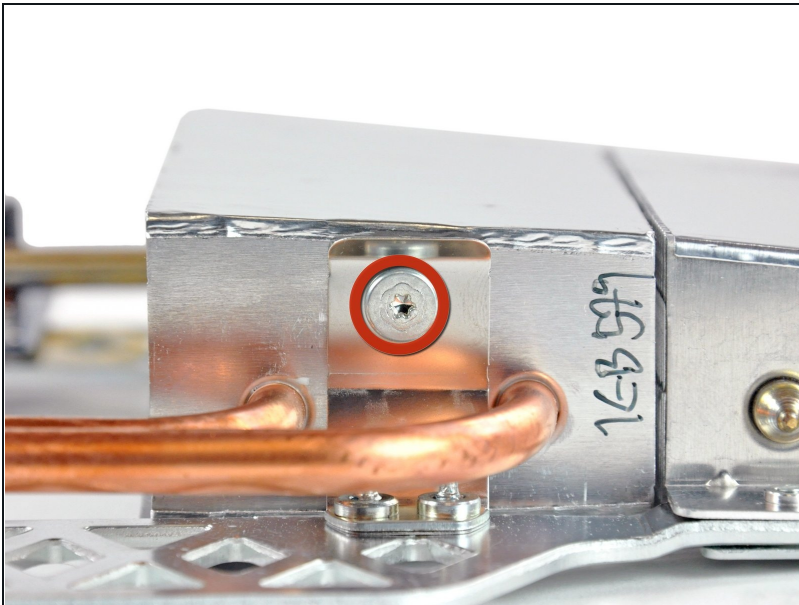
Step 36

- Remove the following seven screws securing the logic board to the rear case:
  - Three coarse-thread T10 Torx.
  - Three fine-thread T10 Torx.
 - One long coarse-thread T10 Torx.

Step 37

- Carefully rotate the top edge of the logic board out of the rear case and lift the board up out of the iMac, minding the RAM arms and any cables that may get caught.

- ⓘ Be especially careful with the hard drive thermal sensor cable that is routed underneath the heat sink framework.

- ⓘ Only handle the logic board by its edges.

Step 38 — Heat Sinks

- Remove the 6.1 mm T8 Torx screw from both sides of the heat sink nearest the logic board (two screws total).
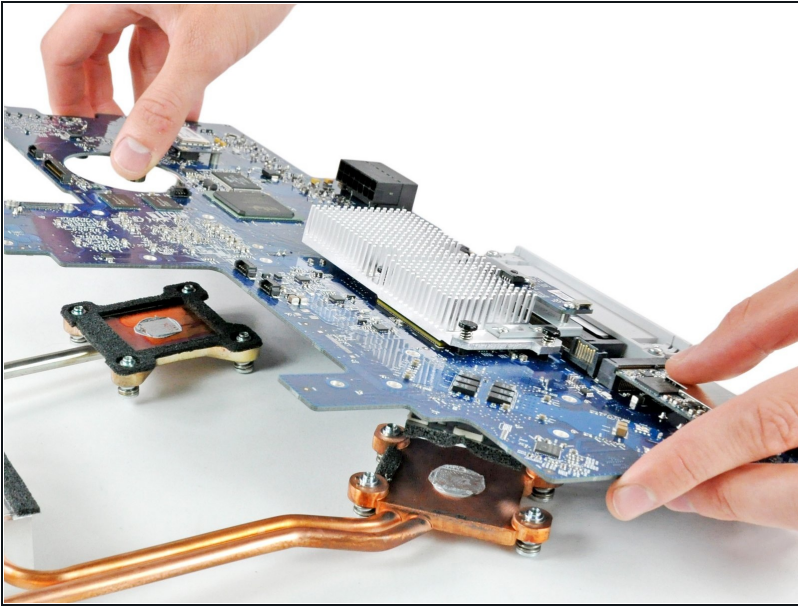
Step 39
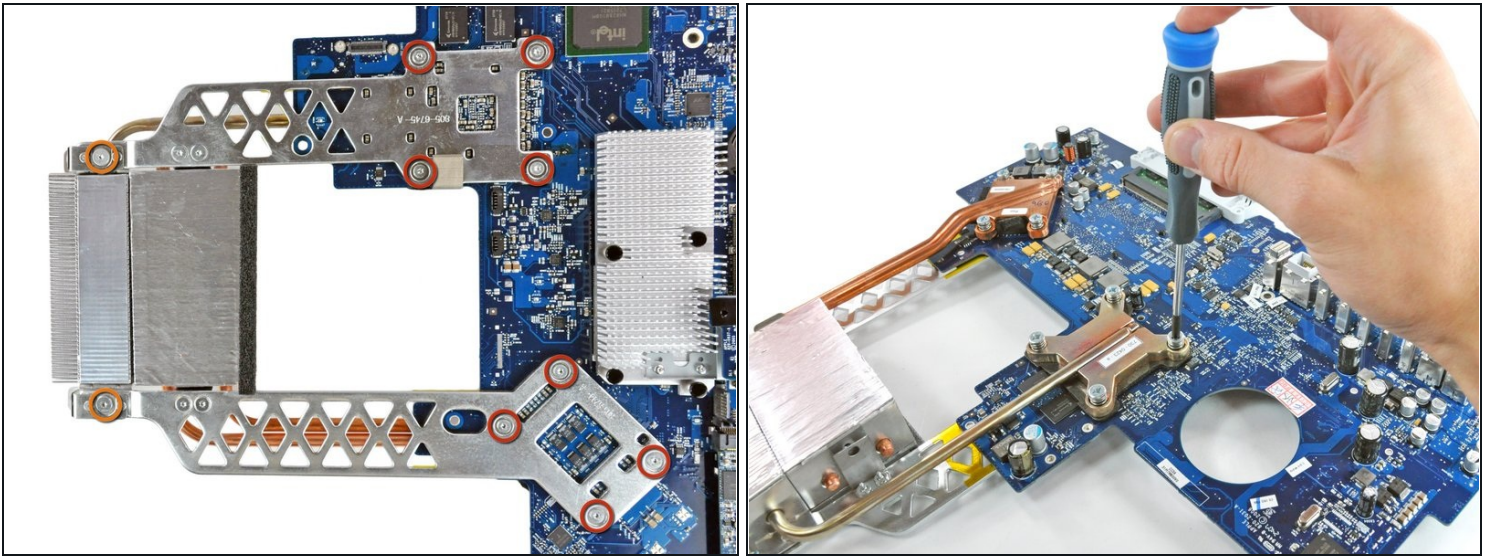
- Remove the following ten screws:
  - Eight 7.8 mm T8 Torx.

  - Two 6.1 mm T8 Torx.

- If the eight screws around the processors refuse to unscrew, use a Phillips screwdriver to hold the lug from the one side of the board while you remove the Torx screw from the other side.

Step 40

- Carefully lift both metal heat sink brackets off the logic board.

Step 41

- Lift the logic board off the heat sinks.

- ⓘ If a heat sink seems to be stuck, carefully pry it away from the logic board to separate the solidified thermal paste.

- ⓘ If you need to mount the heat sink back into the iMac, we have a [thermal paste guide](#) that makes replacing the thermal compound easy.

- 🔲 During reinstallation it is helpful to install the heat sinks one at a time, starting with the one closest to the logic board.

Step 42 — Remove Old CPU
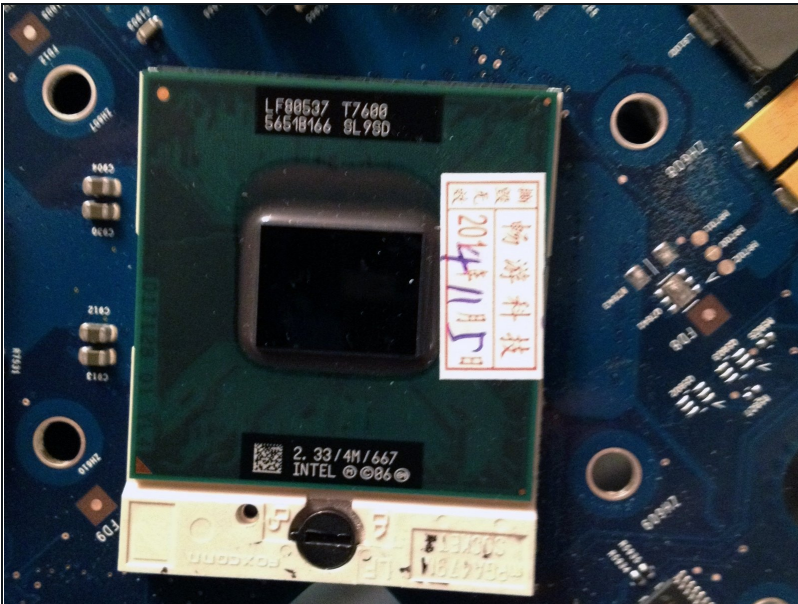
- The CPU is mounted in a Zero Insertion Force (ZIF) socket. If you (gently!) try to pull the CPU out of its socket, you will find that it does not budge. You first need to release the chip from the socket. Turn the screw on the CPU socket 180 degrees counter-clockwise to release the old CPU. Then pull up on the CPU chip to remove it.

Step 43 — Insert New CPU
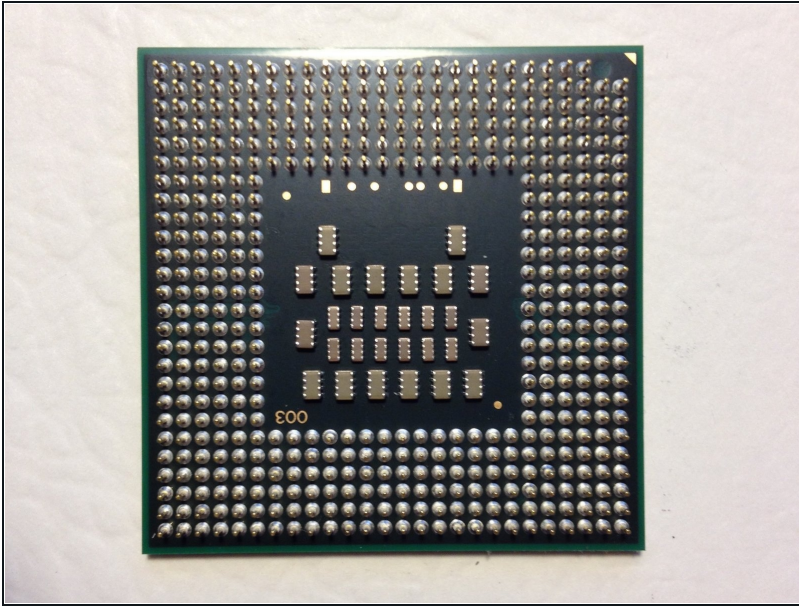
- Insert your new CPU into the ZIF socket. Note that two pins are missing from one corner of the grid. Match that corner with the corner of the socket that is missing the corresponding holes. Drop the chip in; it should go in without effort. Rotate the screw on the socket 180 degrees clockwise to lock the new CPU in place.

Step 44 — Put Everything Back Together
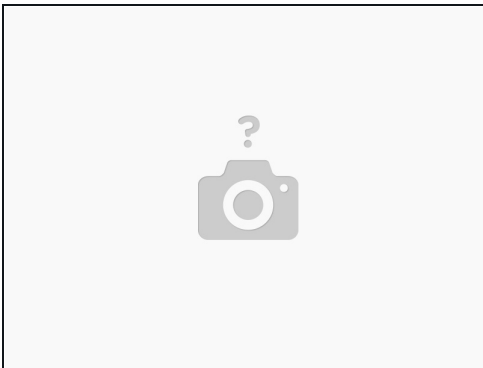
- When reassembling don't forget to scrape off the old thermal paste and apply a new dose. The iFixit guide is good, but I was too cheap/impatient to follow those instructions. Instead I used a q-tip to swab rubbing alcohol on the heat sink and chip tops. Then I put on a dab of leftover heat sink paste that came with a CPU cooler for my PC.

Step 45 — Update Firmware
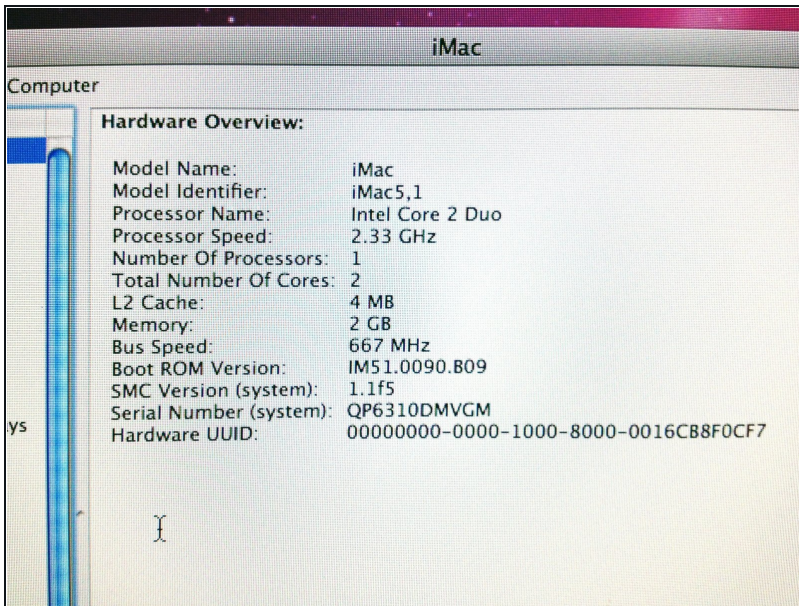
- Download the iMac41-iMac51 firmware updater from netkas.org. You have to register (free) before you can see the download. Follow the instructions there to update your firmware. After rebooting, your iMac4,1 now reports that it is an iMac5,1!

Step 46 — Download MacOSX 10.7
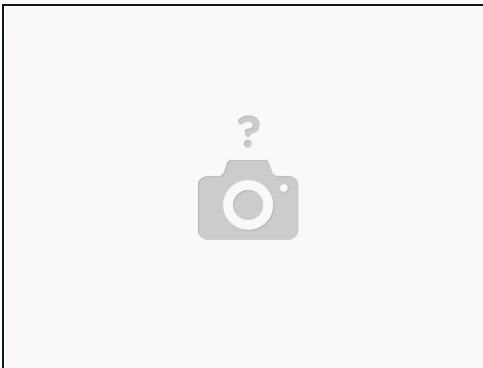
- Here is a link for purchasing MacOSX 10.7 from the App Store. Wait a few days to receive the download key. The App Store will not let you download the Lion installer on your modified Mac. Download it instead from a newer Macintosh, by clicking the Download button under Purchases. Ignore any warnings. Find the download in /Applications.

Step 47 — Install Lion

- Installing Lion on your modified Mac is surprisingly tricky. I used the instructions in [posting #8 on this page](#)

Step 48 — Do a Software Update

- After booting into Lion, do a Software Update to bring your Mac up to date.

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