How to Fix iPhone 4S Wi-Fi Grayed Out

Use this guide to permanently fix an "unclickable" grayed out Wi-Fi button in the iPhone 4s.

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INTRODUCTION

A common problem in the iPhone 4S, sometimes the Wi-Fi button will be grayed out and unclickable This problem seems to be related to thermal shock — the problem may be temporarily fixed by simply putting the phone in the refrigerator for 15 minutes, or under a lamp for 30 minutes.

If this is the case, then the necessary permanent solution is to reflow the *Murata SW SS1830010* Wi-Fi chip on the logic board.

TOOLS:

- P2 Pentalobe Screwdriver iPhone (1)
- Phillips #000 Screwdriver (1)
- iFixit Opening Tools (1)
- SIM Card Eject Tool (1)
- 2.5 mm Flathead Screwdriver (1)
- Spudger (1)
- Small Vise (1)
- Hot Air Rework Station Hakko FR-810 (1)

Step 1 — Rear Panel

⚠ Before you begin, discharge your iPhone battery below 25%. A charged lithium-ion battery can catch fire and/or explode if accidentally punctured.

- Power off your iPhone before beginning disassembly.
- Remove the two 3.6 mm Pentalobe P2 screws next to the dock connector.

ⓘ Be sure the driver is well-seated when removing Pentalobe screws —they are easy to strip.

Step 2

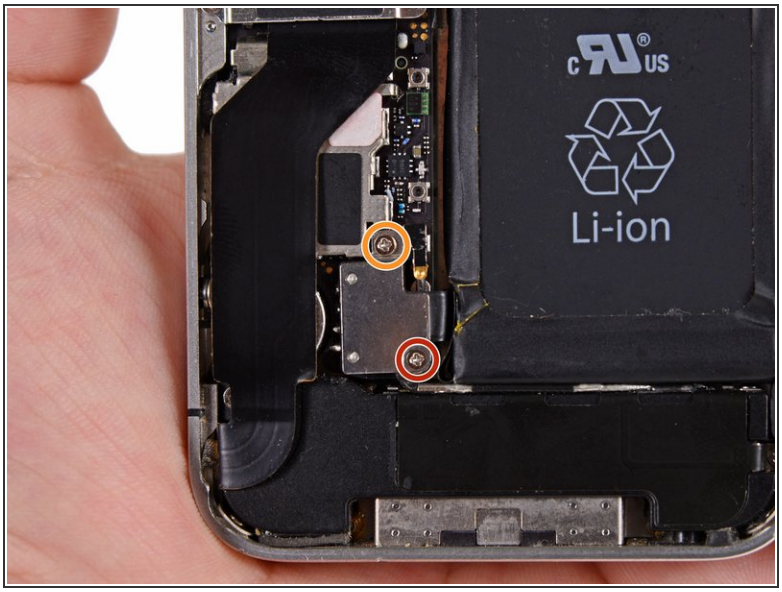
- Push the rear panel toward the top edge of the iPhone.

ⓘ The panel will move about 2 mm.

Step 3

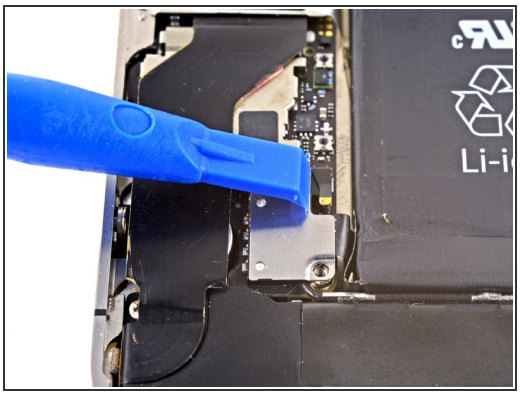
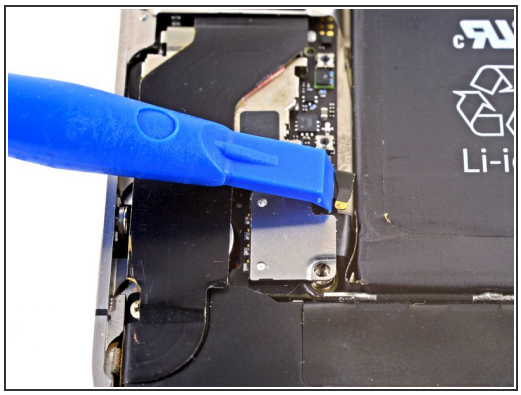
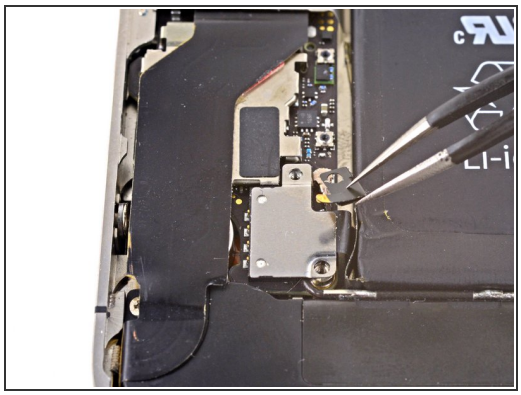
- Pull the rear panel away from the back of the iPhone, being careful not to damage the plastic clips attached to the rear panel.
- Remove the rear panel from the iPhone.

Step 4 — Battery



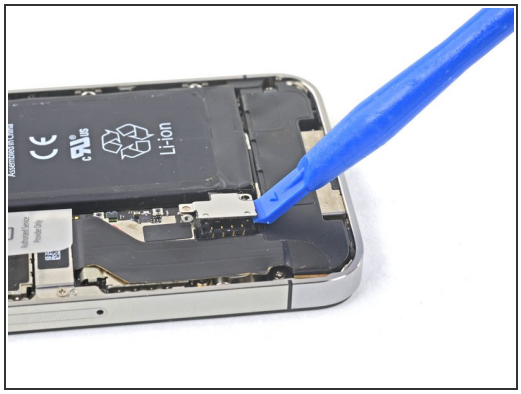
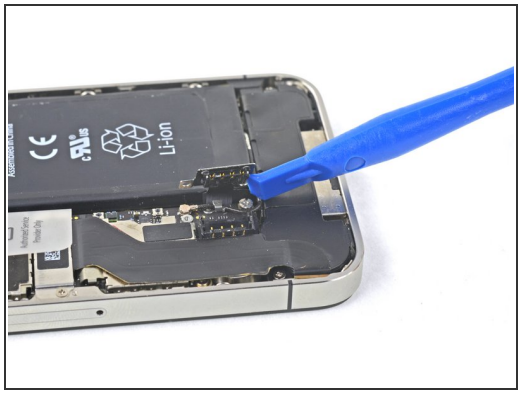
- Remove the following screws securing the battery connector to the logic board:
  - One 1.7 mm Phillips screw
  - One 1.5 mm Phillips screw

Step 5

- Carefully push the pressure contact away from the battery connector until it slides free from its position.
- Remove the pressure contact.

Step 6

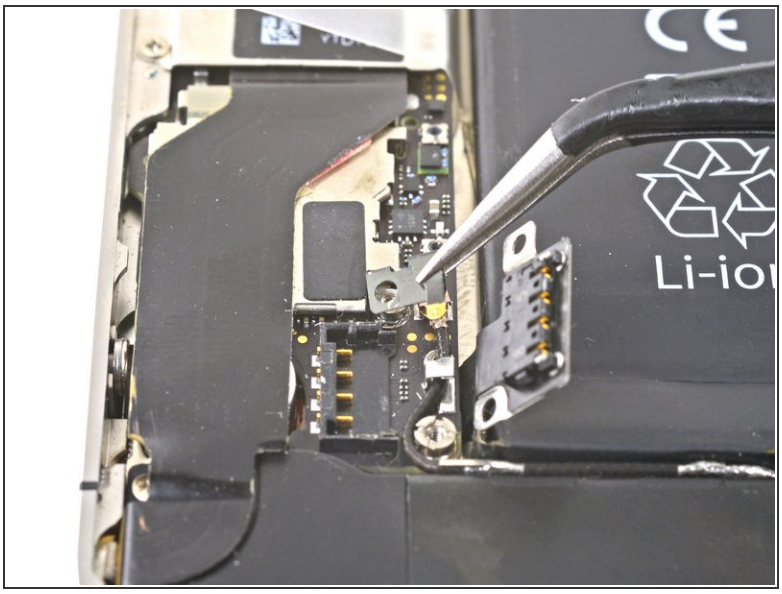




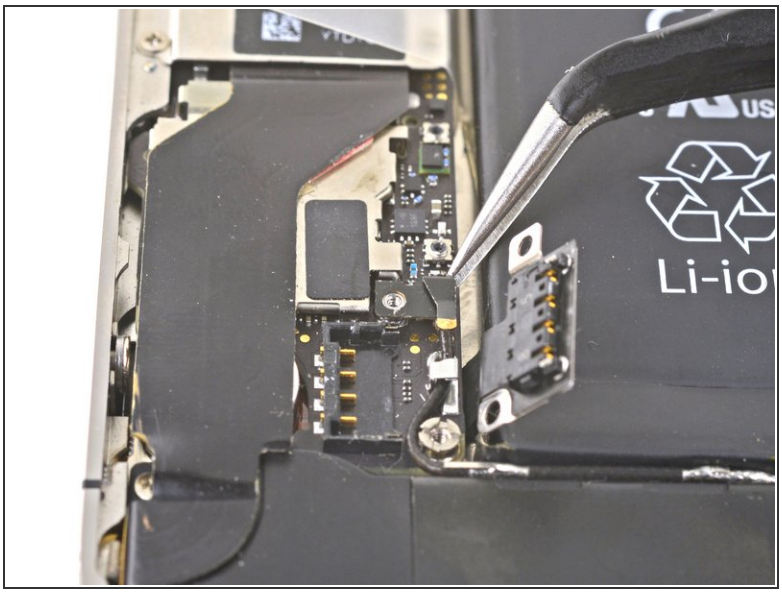
- Use a plastic opening tool to gently pry up the battery connector from its socket on the logic board.
  - Place the tip of the tool between the loudspeaker enclosure and the metal cover of the connector, and lift the bottom edge of the connector first.

The battery connector comes off vertically from the logic board. Do not apply force sideways.

Be careful not to pry at the battery connector socket itself, or it may detach from the logic board. There are four very small solder points awaiting this mistake!

Step 7





Before you reattach the battery connector during reinstallation, carefully position the pressure contact back in place. It should rest on top of the Philips screw post shown, and the gold contact should point towards the battery connector.

Be sure to clean the pressure contact with a degreaser such as windex or isopropyl alcohol. The oils on your fingers have the potential to create wireless interference.

Step 8

- Insert the edge of a plastic opening tool between the battery and the outer case near the bottom of the iPhone.
- Run the plastic opening tool along the right edge of the battery and pry up at several points to completely separate it from the adhesive securing it to the outer case.

Step 9

- Use the exposed clear plastic pull tab to peel the battery off the adhesive securing it to the iPhone.

⚠ Be careful not to pull the plastic pull tab too hard as it can be ripped off very easily.

- Remove the battery.

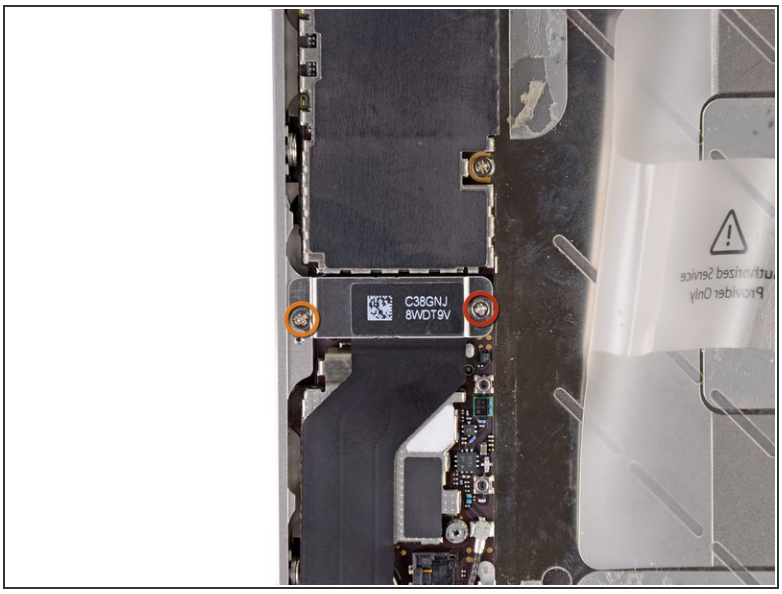
ⓘ If your replacement battery came in a plastic sleeve, remove it before installation by pulling it away from the ribbon cable.

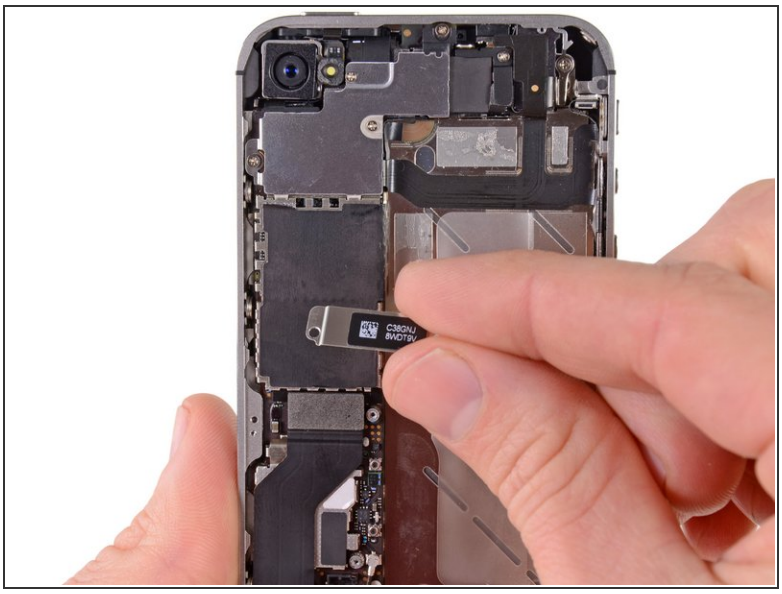
If your replacement battery came with an uncreased cable, carefully crease the cable into the proper shape before installing the battery into the phone.

While installing the replacement battery, temporarily connect the battery connector to the phone to ensure proper alignment. Once the battery is glued in place, disconnect the battery connector.

Perform a hard reset after reassembly. This can prevent several issues and simplify troubleshooting.

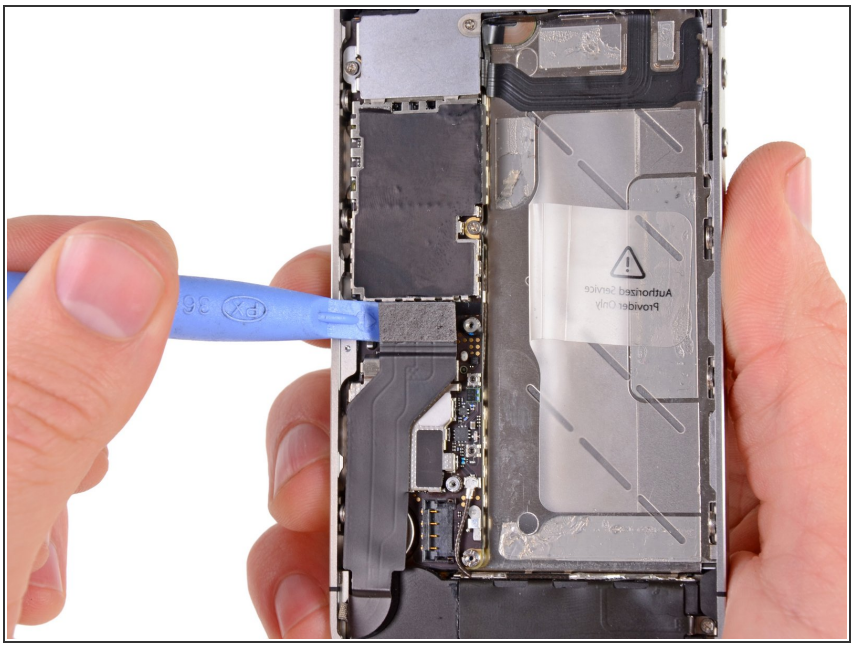
Step 10 — Dock Connector Cable





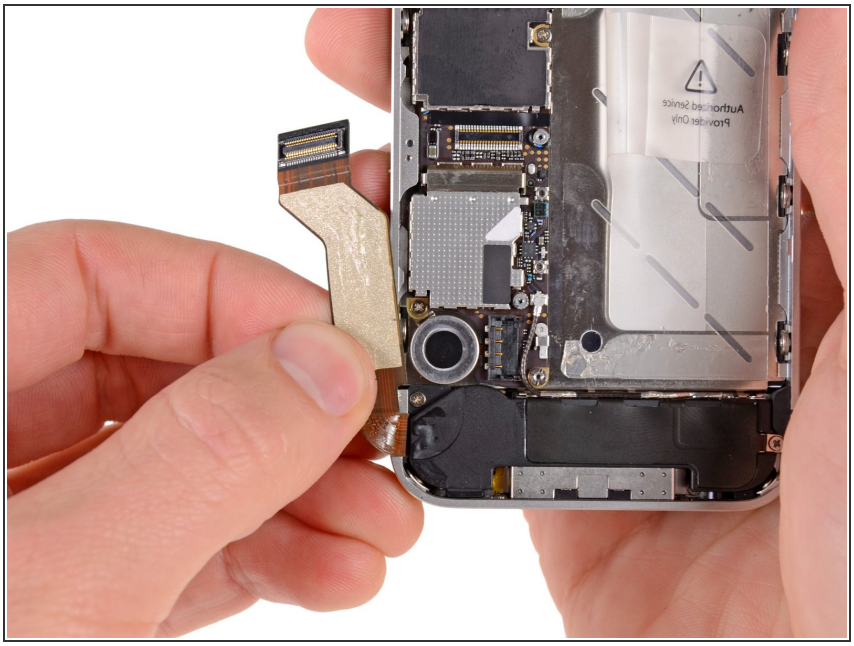
- Remove the following screws securing the dock connector cable cover to the logic board:
  - One 1.5 mm Phillips screw
  - One 1.2 mm Phillips screw
- Remove the metal dock connector cable cover.

Step 11



- Use the edge of a plastic opening tool to pry the dock cable up from its socket on the logic board.

Step 12

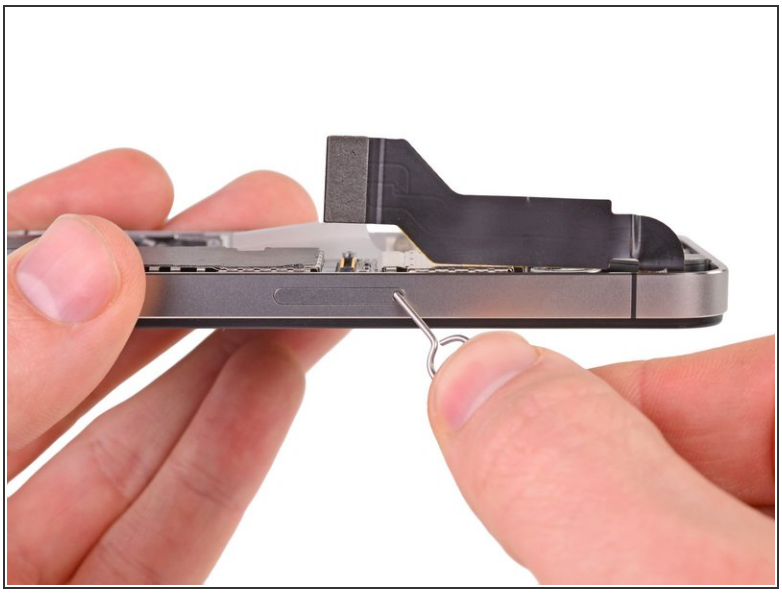


- Peel the dock connector cable off the adhesive securing it to the logic board and the side of the speaker enclosure.

Step 13

- Use the edge of a plastic opening tool to pry the cellular antenna cable up from its socket on the logic board.
- De-route the cellular antenna cable out from under the metal fingers attached to the logic board.

Step 14 — SIM Card

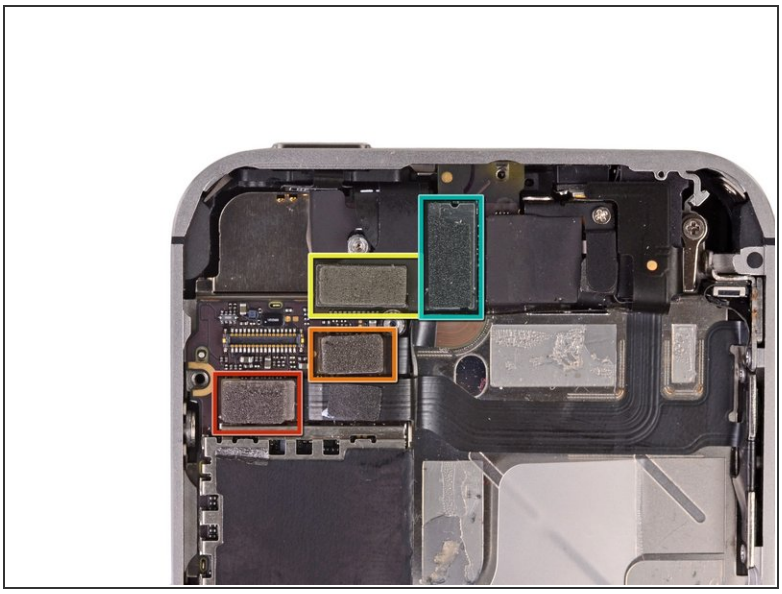


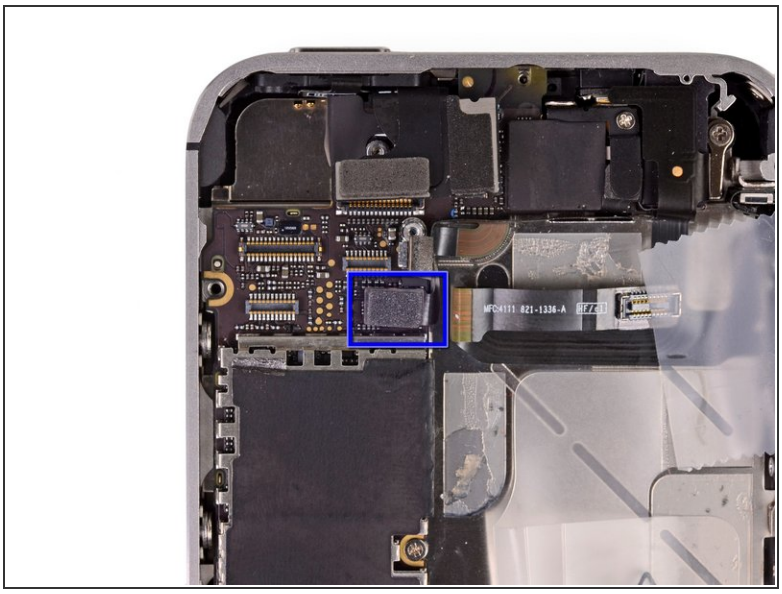
- Use a SIM eject tool or a paperclip to eject the SIM and its tray.

⚠ This may require a significant amount of force.

- Remove the SIM and its tray.

Step 15 — Logic Board



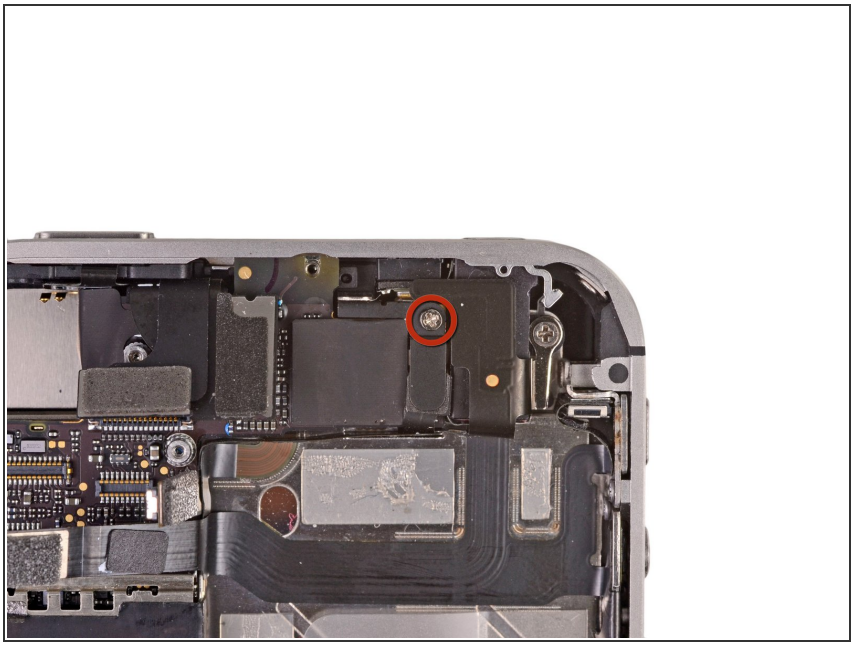


- Remove the five cables near the top of the logic board in the following order:
  - Headphone jack/volume button cable
  - Front facing camera cable
  - Digitizer cable
  - Display data cable
  - Power button cable (located underneath the headphone jack/volume button cable as shown in the second picture.)

To disconnect the cables, use the edge of a plastic opening tool to gently lift their connectors up and out of the sockets on the logic board.

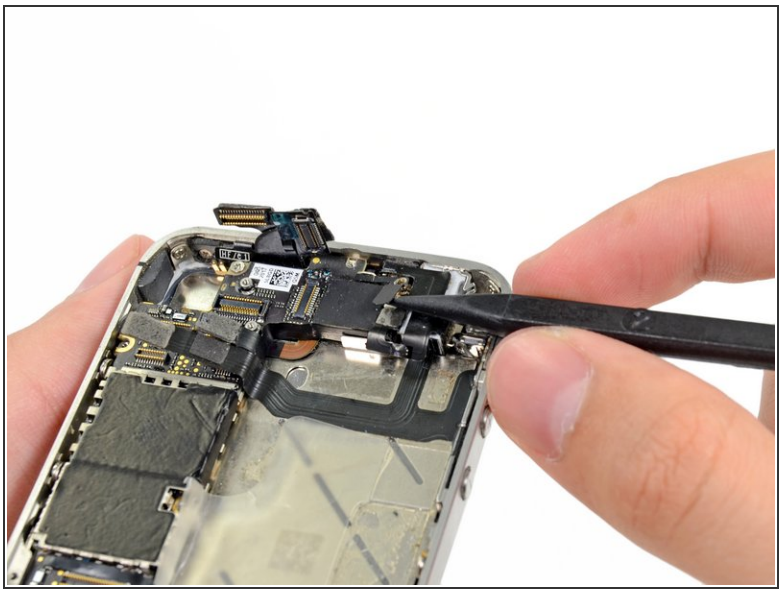
Be careful not to break any of the small and delicate surface mount components as you disconnect the cables.

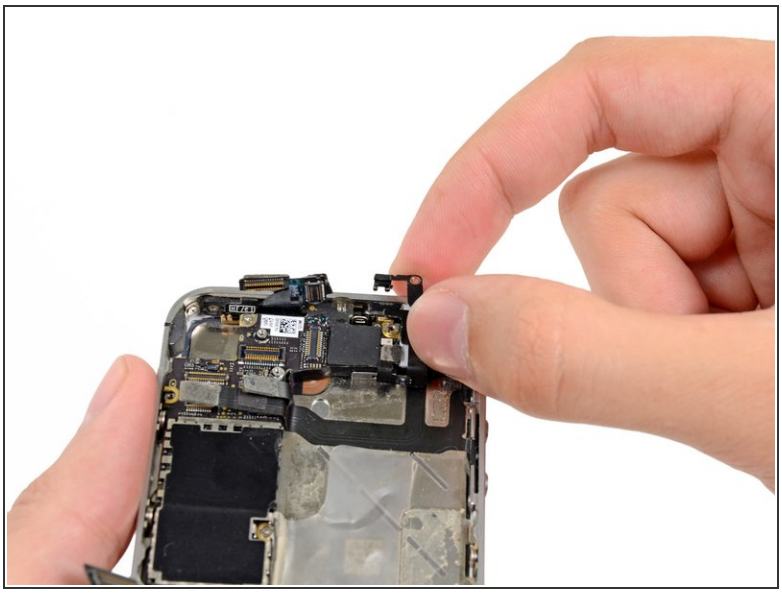
Step 16



- Remove the 1.5 mm Phillips screw securing the grounding clip to the logic board near the headphone jack.

Step 17





- Use the tip of a spudger to pry the small grounding clip up off the logic board.
- Carefully grasp the grounding clip and remove it from the iPhone.

⚠ Before reassembly, be sure to clean all metal-to-metal contact points on the grounding clip (**not** the mating halves of connectors) with a de-greaser such as windex or isopropyl alcohol. The oils on your fingers have the potential to cause grounding issues.

Step 18

- Remove the 4.8 mm standoff screw near the headphone jack.

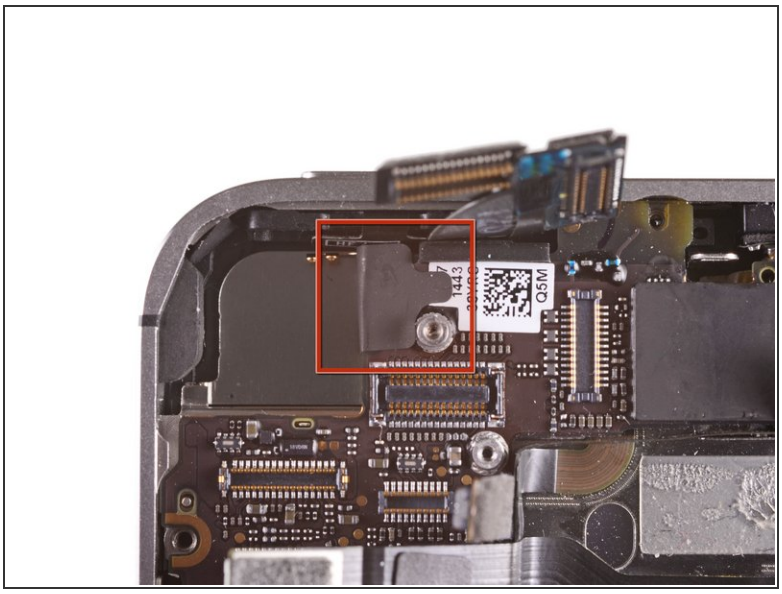
Standoff screws are best removed using an iPhone Standoff Screwdriver Bit and driver handle.

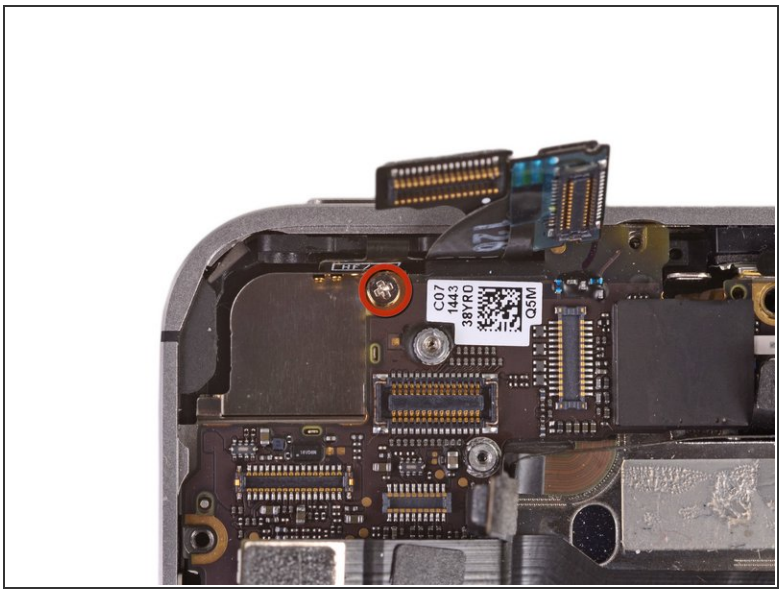
In a pinch, a small flathead screwdriver will do the job—but use extra caution to ensure it doesn't slip and damage surrounding components.

Step 19

- Use the edge of a plastic opening tool to disconnect the Wi-Fi antenna from the logic board.

Step 20



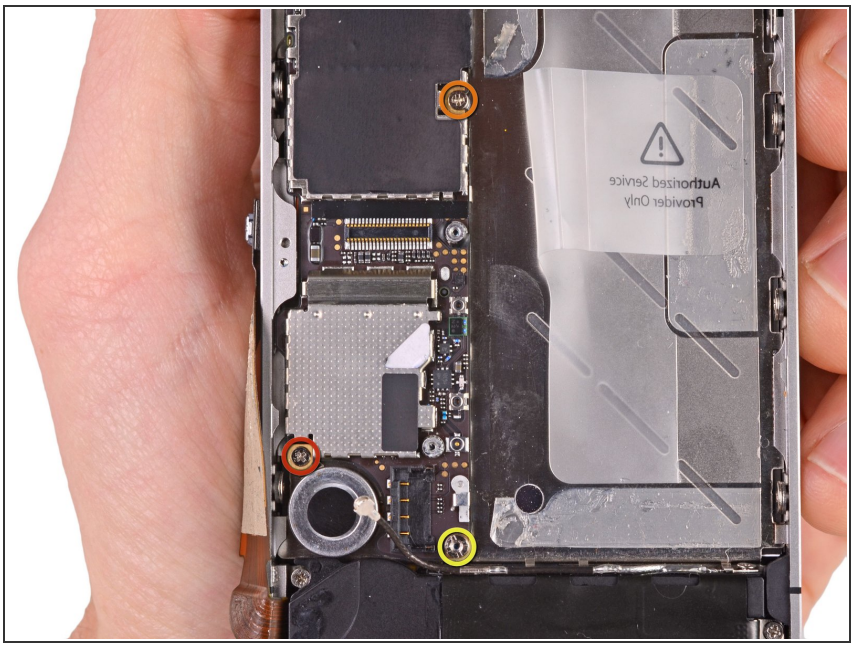


- If present, peel the piece of black tape covering the hidden screw near the power button.
- Remove the 2.6 mm Phillips screw securing the logic board near the power button.

⚠ (Use caution when removing this screw and removing the power contact held by it; the contact tab will come loose with the screw)

ⓘ Notice the small rubber bumper under the screen & digitizer cables (which are detached at top above the Q-code). This bumper can fall off of the logic board when removed or get stuck to the cables and fall off later.

Step 21



- Remove the following screws securing the logic board to the case:
  - One 2.5 mm Phillips screw near the vibrator motor
  - One 2.4 mm Phillips screw
  - One 3.6 mm standoff along the side of the logic board nearest the battery opening.

Use a standoff driver bit and driver handle to remove the single 3.6 mm standoff screw.

In a pinch, a small flathead screwdriver will do the job—but use extra caution to ensure it doesn't slip and damage surrounding components.

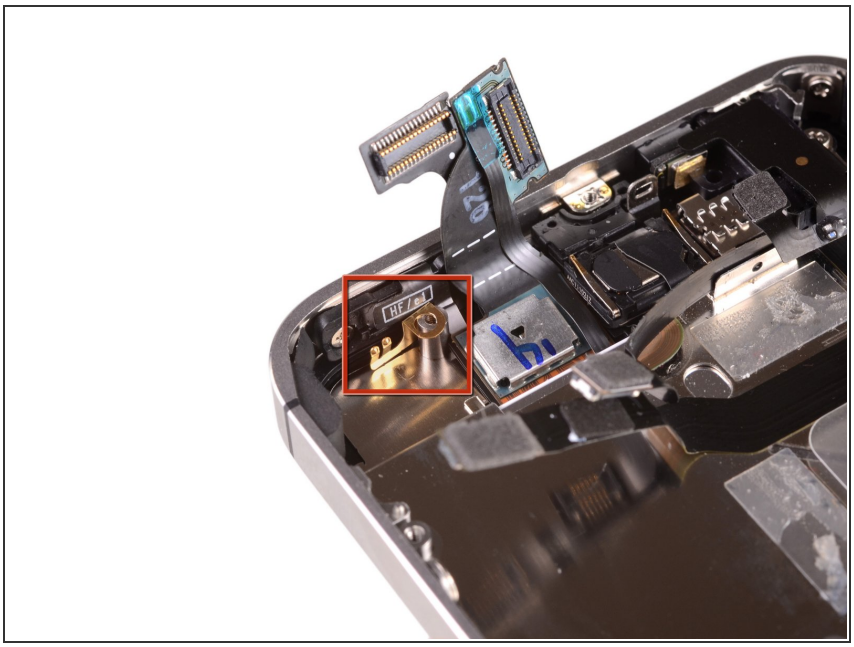
Step 22

- Carefully lift the logic board from the end closest to the speaker enclosure and slide it away from the top edge of the iPhone.
- Remove the logic board.

Before reassembly, be sure to clean all metal-to-metal contact points on the logic board (**not** the mating halves of connectors) with a de-greaser such as windex or isopropyl alcohol. The oils on your fingers have the potential to cause grounding issues.

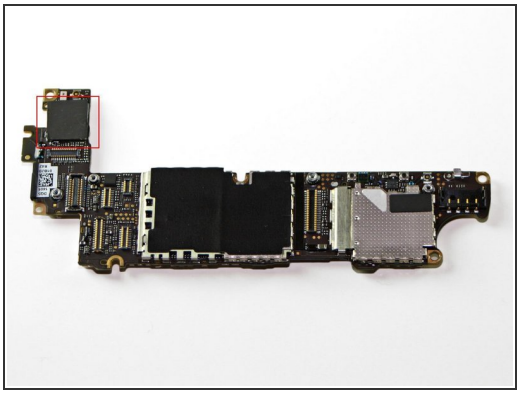
There is a small rubber bumper that sits on the top edge of the logic board where the digitizer and screen cables come through the case. It protects the cables as they bend over the top of the logic board. This can either get stuck to the cables or fall off the logic board when it comes out. Look back over step 22 for more details.

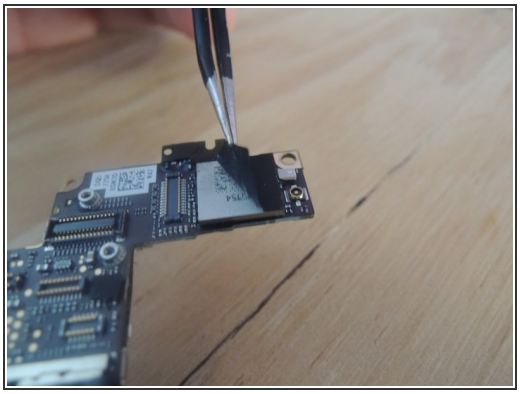
Step 23

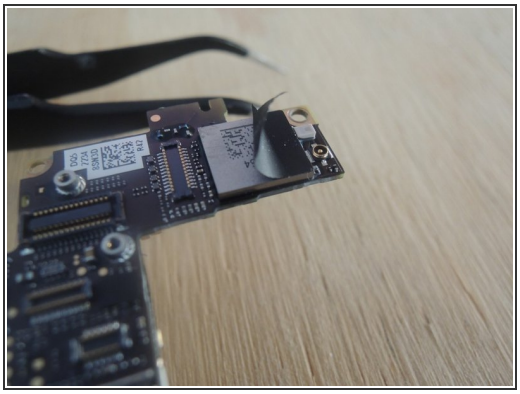


⚠ Be sure not to lose the small grounding finger for the rear facing camera near the power button. This finger rests on top of the PCB, screwed down, and covered with the adhesive black plastic tape.

Step 24 — How to Fix iPhone 4S Wi-Fi Grayed Out

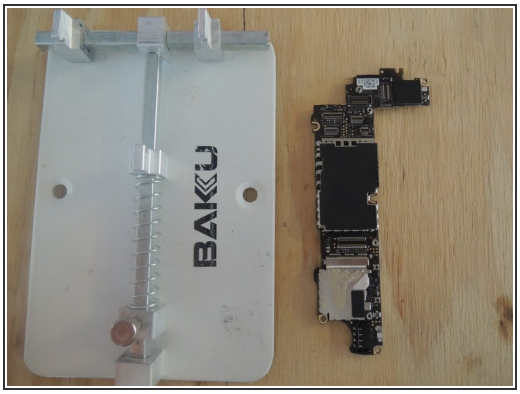


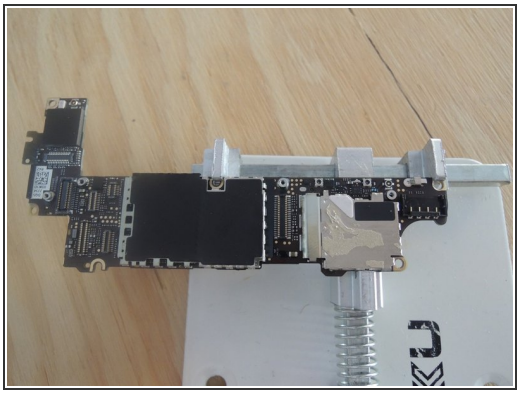


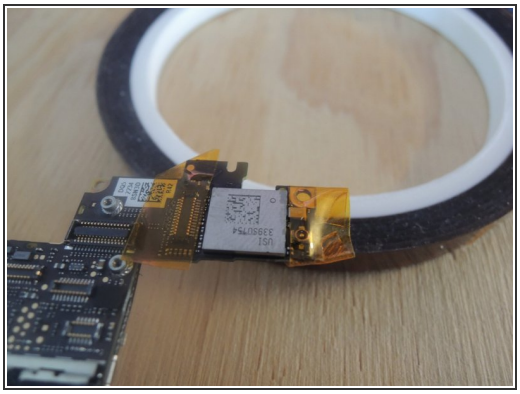


- Remove the adhesive protection on the Wi-Fi/bluetooth chip.
- Now we can see the Murata SS1830010 chip.

Step 25





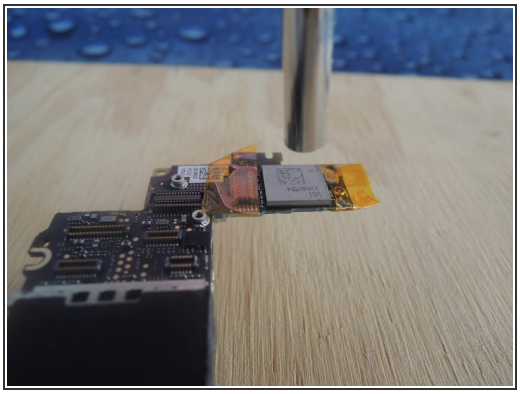


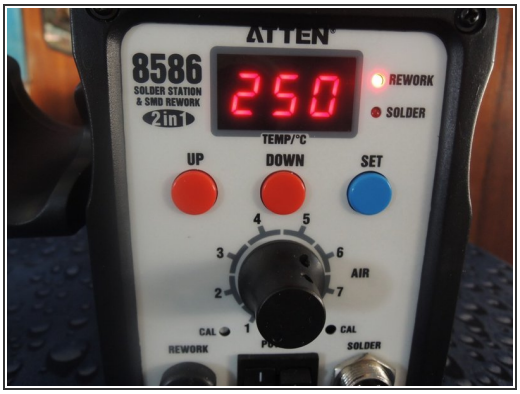
- Put the logic board in a PCB holder or small vise, to safely hold it while reflowing (it's going to get hot!).
- Protect the logic board with *Kapton tape* that has good insulating and temperature characteristics (temperature range: –269 to +400 °C).

Step 26

- Now we need a hot air rework station with a small nozzle:
  - The nozzle's size must be 1/2 or 1/4 of the chip size.

Step 27



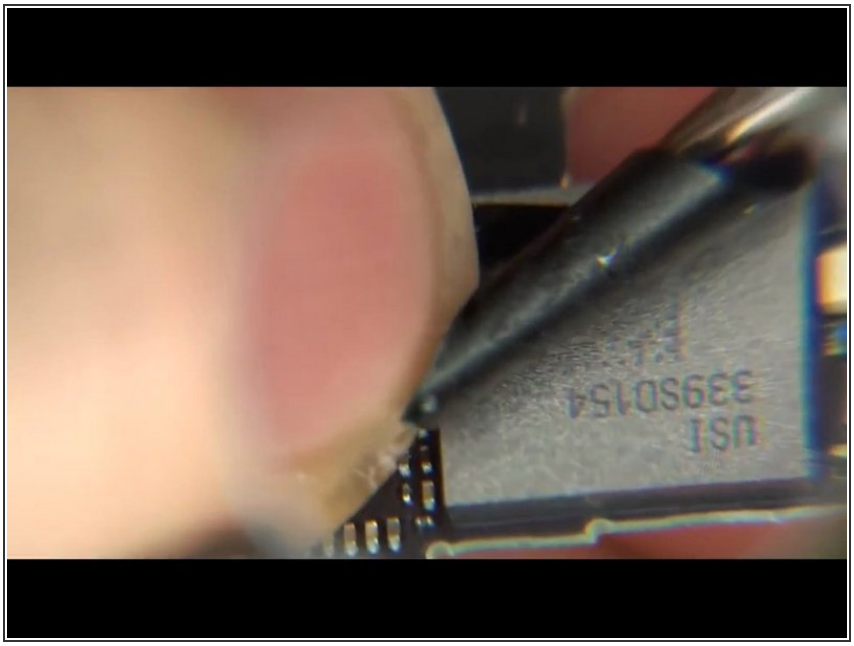


- *Edit*: the correct temperature is almost 180-200 °C because around the chip there is a little black protection that can go under the chip.
- Set a low air flow: 1 or 2 (on a 1 to 7 scale).
- Now, doing circular movement, you have to reflow for 4-5 minutes.

⚠ Be careful to reflow only the Wi-Fi chip and not any of the surrounding ICs or circuits.

- After 5 minutes, gradually decrease the temperature from 200 to 0 °C.

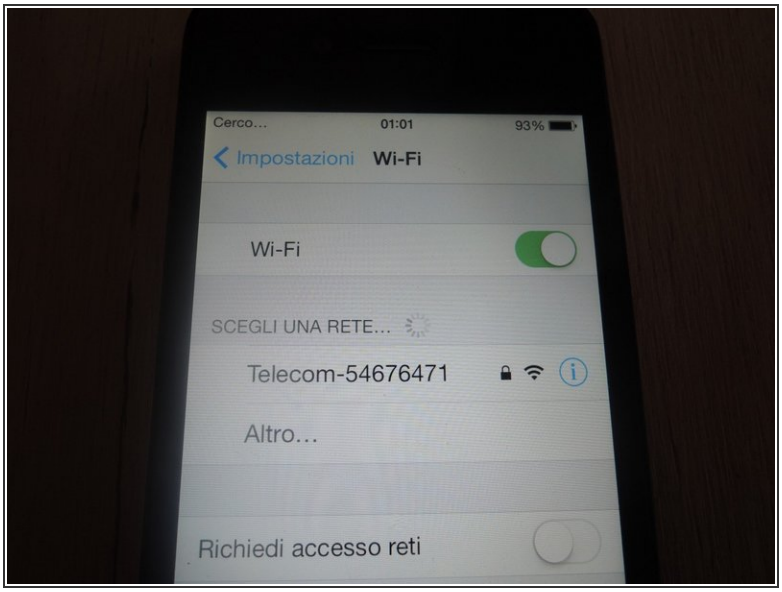
Step 28



- After reflowing, wait ten minutes to allow the logic board to cool before handling it.

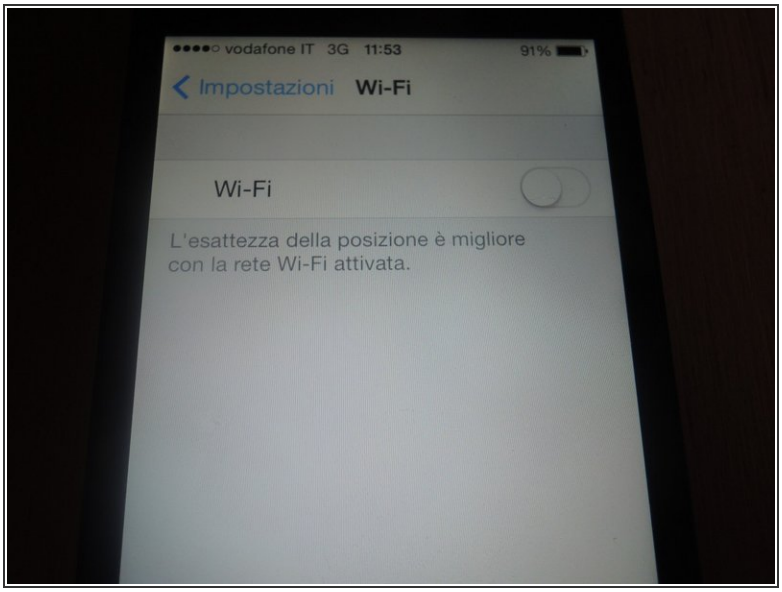
Remember to put on the protective sticker back on the Wi-Fi chip before reassembling the phone.

Step 29



- Here is the final result.

Step 30



- These are the pictures before and after the reflow:
  - In the first image, the Wi-Fi color is light grey (not working).
  - In the second image, the Wi-Fi color is dark grey (working).

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

