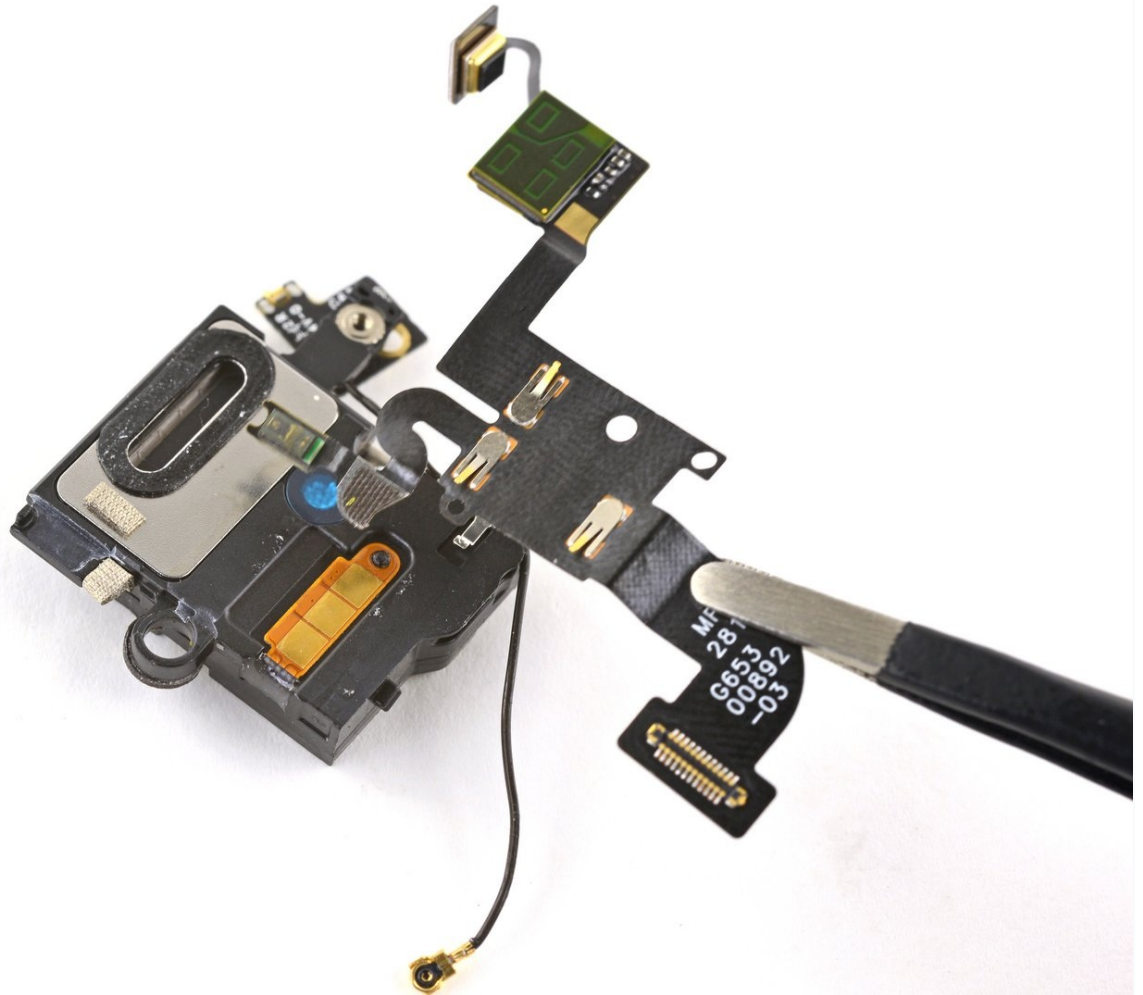




Google Pixel 4 XL Soli Motion Sensor Replacement

This repair guide was authored by the iFixit...

Written By: Carsten Frauenheim



INTRODUCTION

This repair guide was authored by the iFixit staff and hasn't been endorsed by Google. Learn more about our repair guides [here](#).

Use this guide to remove or replace the Soli radar module responsible for Google's "Motion Sense" on your Google Pixel 4 XL.

Caution: Google warns that disassembly of the front laser assembly could result in hazardous exposure to invisible infrared laser emissions. Read their safety warnings [here](#).

TOOLS:

[SIM Card Eject Tool](#) (1)
[iFixit Opening Picks \(Set of 6\)](#) (1)
[iOpener](#) (1)
[Suction Handle](#) (1)
[Tweezers](#) (1)
[Spudger](#) (1)
[T3 Torx Screwdriver](#) (1)

Step 1 — Remove the SIM card tray



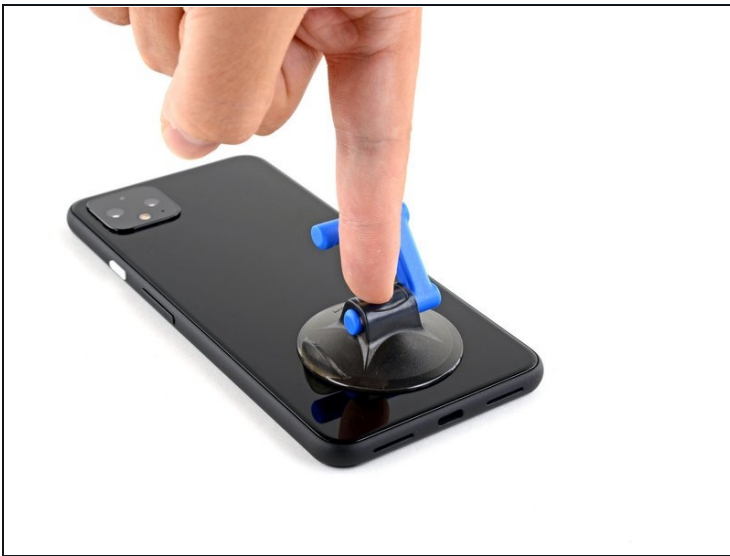
- Insert a SIM eject tool, bit, or a straightened paper clip into the small hole on the SIM card tray on the left edge of the phone.
- Press firmly to eject the tray.
- Remove the SIM card tray.

Step 2 — Heat the back panel glass



- [Prepare an iOpener](#) and apply it to the bottom edge of the back panel for one minute.
- ⓘ A hair dryer, heat gun, or hot plate may also be used, but be careful not to overheat the phone—the display and internal battery are both susceptible to heat damage.

Step 3 — Apply a suction cup



- Apply a suction cup to the heated edge of the back panel by pressing down on it to create suction, as close to the edge as possible.
- ⓘ If your back glass is badly cracked, covering it with a layer of clear packing tape may allow the suction cup to adhere. Alternatively, very strong tape may be used instead of the suction cup. If all else fails, you can superglue the suction cup to the broken panel.

Step 4 — Insert an opening pick



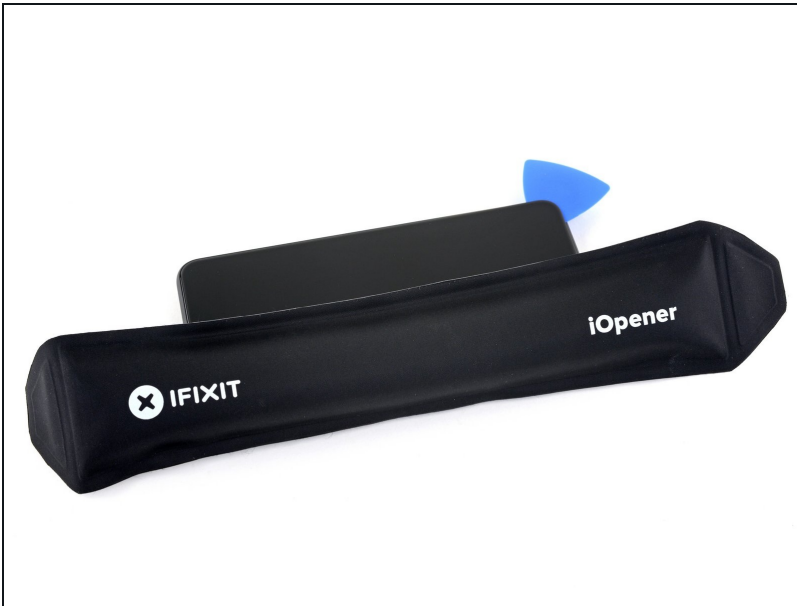
- Pull up on the suction cup with strong, steady force to create a gap between the back panel and the frame.
 - ① Depending on the age of your phone, this may be difficult. If you are having trouble, apply more heat to the edge and try again.
- Insert the point of an opening pick into the gap.

Step 5 — Begin to slice the adhesive



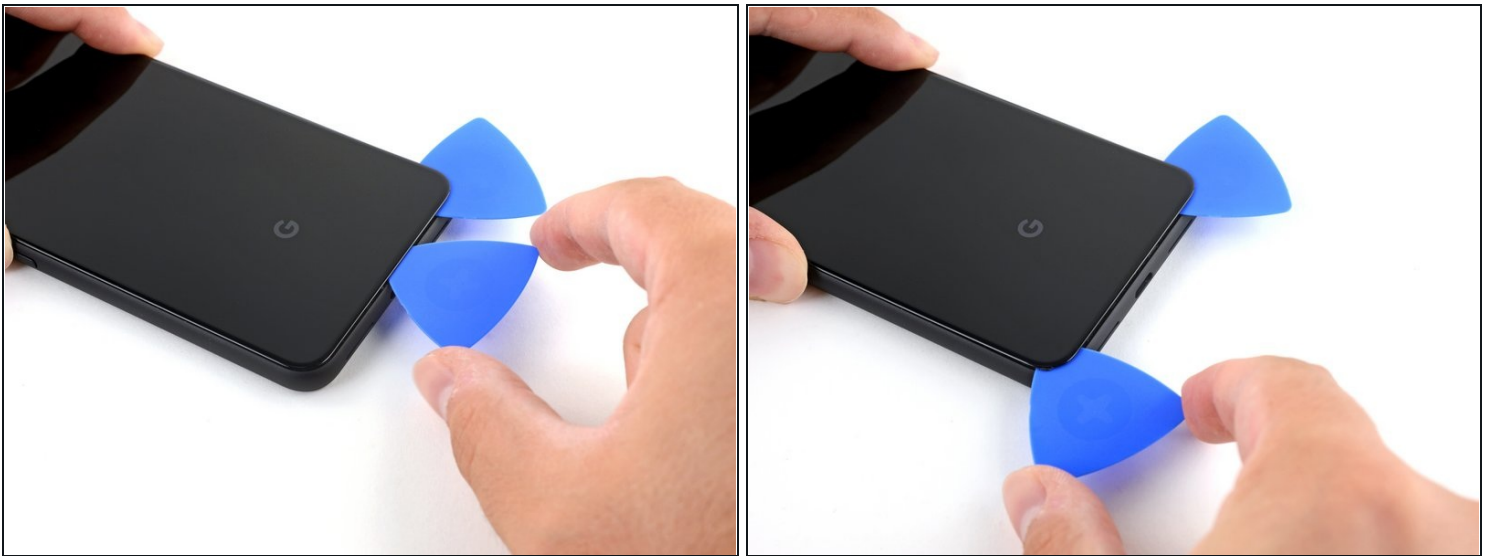
- Slide the opening pick across the bottom towards the left corner to slice the adhesive.
- With the pick still inserted, slide it from the bottom left corner over to the bottom right corner to completely slice the bottom side adhesive.
- Leave the pick inserted in the bottom right corner to prevent the adhesive from re-sealing.

Step 6 — Slice the lefthand-side adhesive



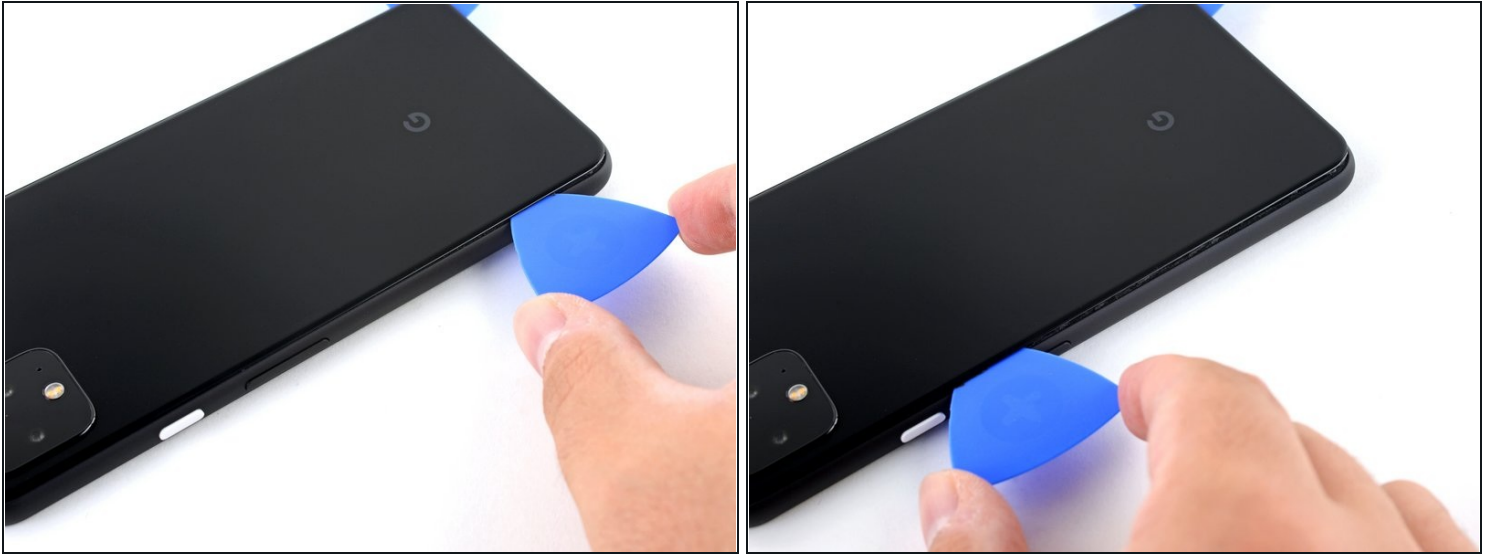
- Prepare an iOpener and apply it on the left edge of the phone for one minute.

Step 7



- Insert a second opening pick underneath the back panel directly over the charge port.
- Slide the opening pick to the bottom left corner of the phone.

Step 8



- Slide the opening pick around the bottom left corner and across the left side of the phone to slice the adhesive.
 - ⓘ The adhesive can be very gummy. Push the pick in and out in a sawing motion to help with slicing.
- Stop when you reach the top left corner, near the camera, and leave the pick inserted.

Step 9 — Slice righthand-side adhesive



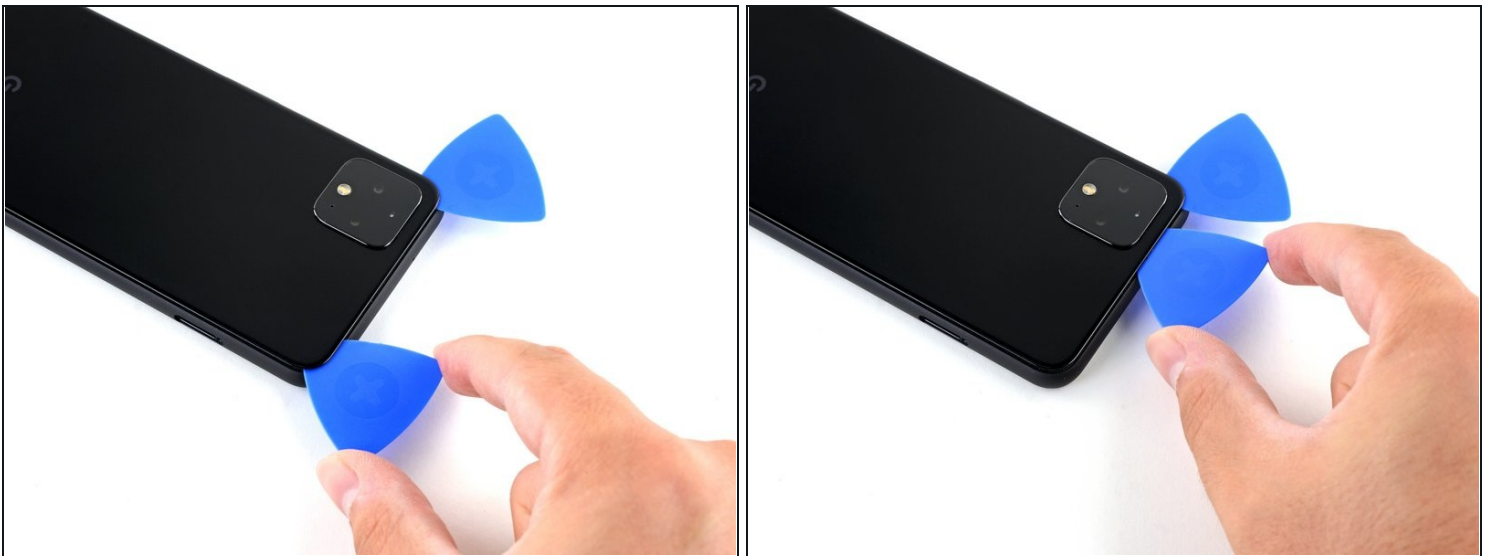
- Prepare an iOpener and apply it on the right edge of the phone for one minute.

Step 10



- With the first two opening picks still in place, insert a third pick on the lower part of the righthand side.
- Slide the opening pick up towards the top of the phone, slicing the right side's adhesive.
 - Stop when you reach the top right corner, and leave the pick inserted.

Step 11 — Slice the top-side adhesive



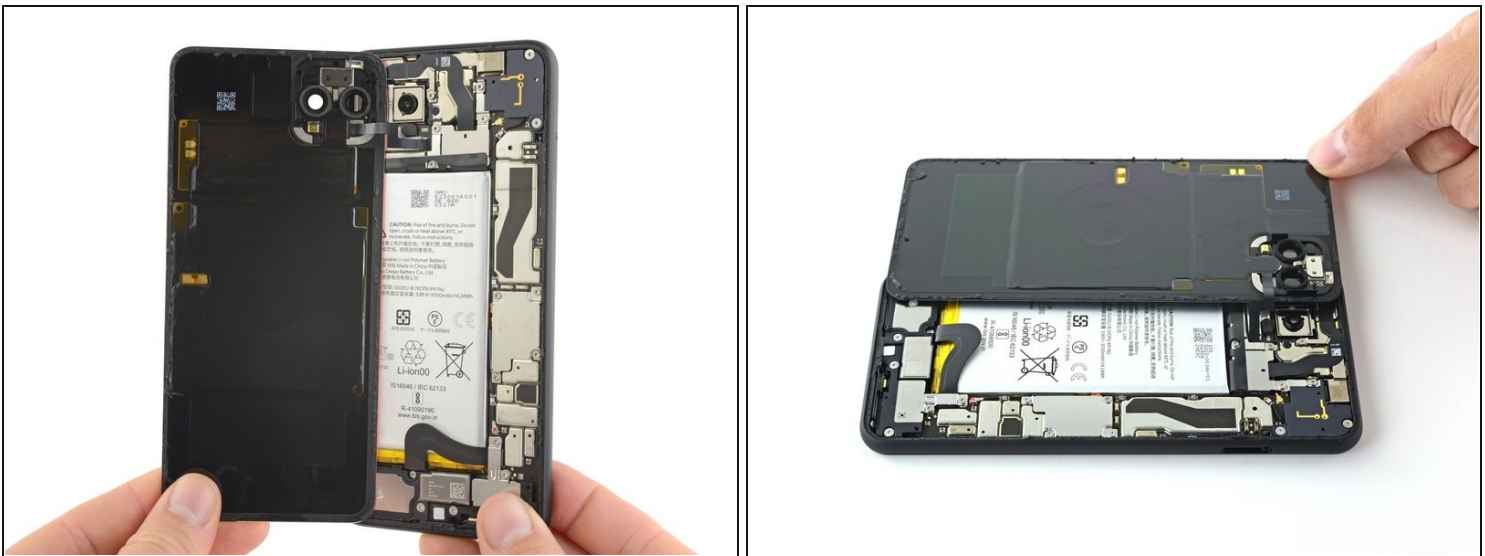
- Slide the third opening pick around the top right corner and across the top side of the phone, slicing the final strip of adhesive.

Step 12 — Lift up the back panel



- Once you have sliced around the perimeter of the phone, carefully lift the **right edge** of the back cover, opening it like a book.
 - Do not try to pull the panel all the way off yet, as it is still connected to the phone.

Step 13



- Continue swinging open the back panel until you can rest it on the left edge the phone, being careful not to put any stress on the attached ribbon cable.
 - ☒ During reassembly, this is a good point to power on your phone and test all functions before sealing it up. Be sure to power your phone back down completely before you continue working.

Step 14 — Disconnect the battery



- Remove the four T3 Torx screws securing the battery connector shield:

- One 1.8 mm screw
- One 4.1 mm screw
- One 4.4 mm shouldered screw
- One 4.0 mm shouldered screw

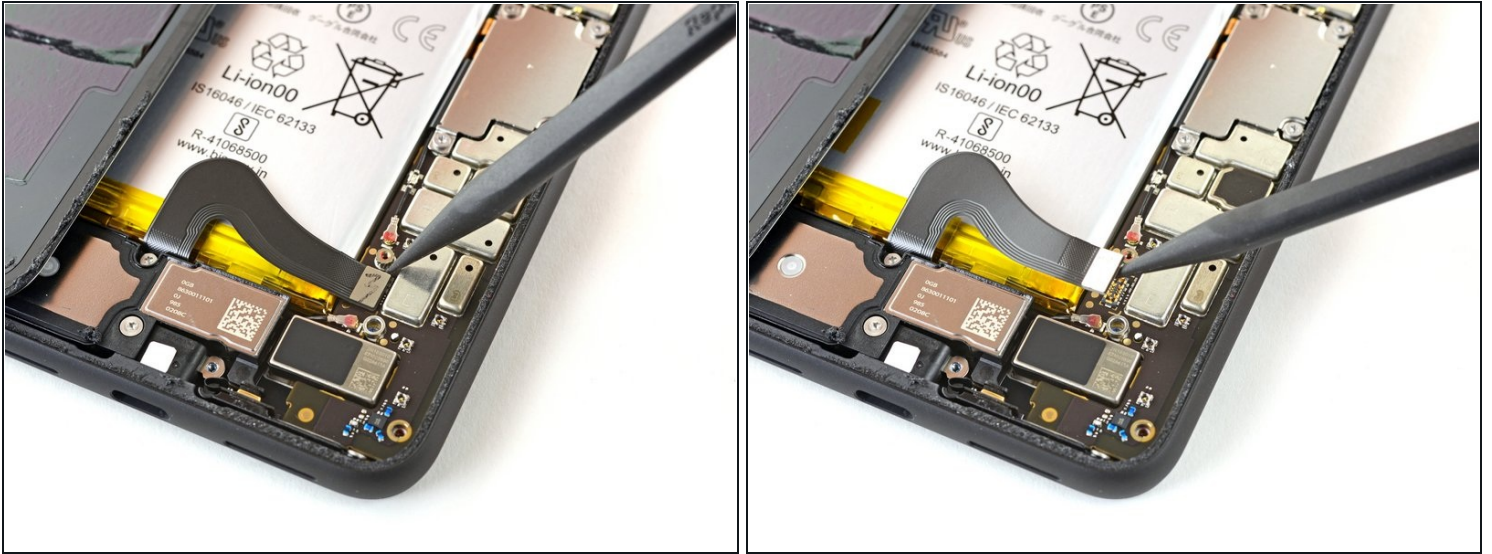
ⓘ Throughout this repair, [keep track of each screw](#) and make sure it goes back exactly where it came from.

Step 15



- Use a pair of [tweezers](#) to remove the battery connector shield.

Step 16



⚠ Whenever you use the spudger near the battery, be very careful not to puncture the battery.

- Using the pointed end of a spudger, pry the battery connector straight up from the motherboard to disconnect the battery.
- ☑ To re-attach [press connectors](#) like this one, carefully align and press down on one side until it clicks into place, then repeat on the other side. Do not press down on the middle. If the connector is misaligned, the pins can bend, causing permanent damage.

Step 17



- Using the flat end of a spudger, gently fold the battery cable over so it doesn't accidentally make contact during the rest of your repairs.

Step 18 — Disconnect the back panel connector



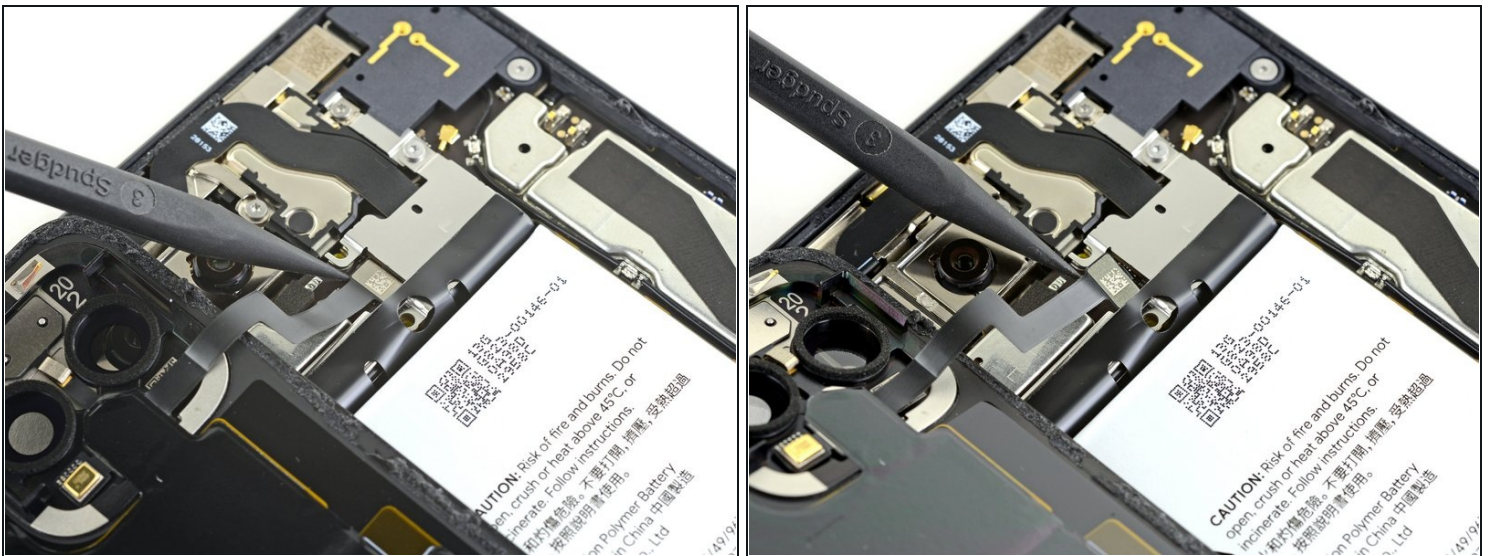
- Use a T3 Torx driver to remove the two 4.1 mm screws securing the back panel connector cover.

Step 19



- Use a pair of tweezers to remove the back panel connector cover.

Step 20



- Using the pointed end of a spudger, pry up and disconnect the back panel connector.

Step 21 — Remove the back panel



- Remove the back panel.
- ✦ During reassembly, [follow this guide](#) to install custom-cut adhesives for your device.
- ✦ [Follow this guide](#) if you are using a pre-cut adhesive card.

Step 22 — Remove the camera connector covers



- Gently pry back the battery adhesive pull tab to allow easier access to the screws underneath it.

Step 23



- Remove the three T3 Torx screws securing the rear-facing camera connector cover:
 - One 2.7 mm screw
 - One 4.1 mm screw
 - One 4.2 mm screw

Step 24



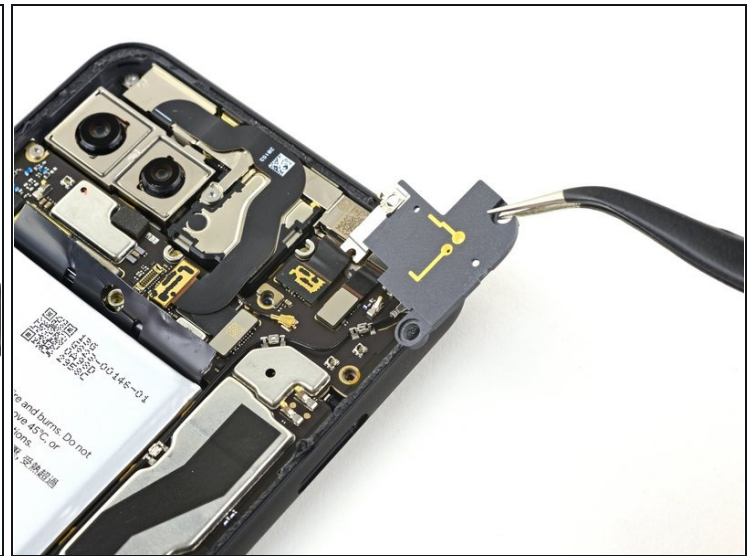
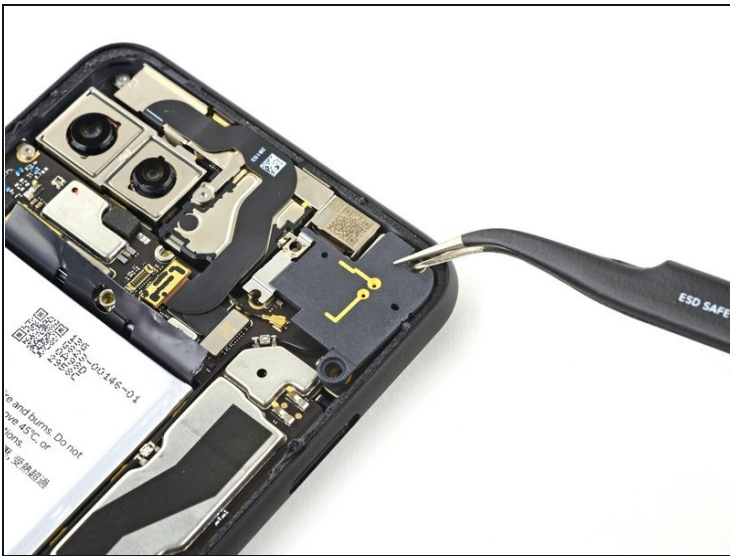
- Use a pair of [tweezers](#) to remove the rear-facing camera connector cover.

Step 25



- Remove the three T3 Torx screws securing the front-facing camera connector cover:
 - One 4.1 mm screw
 - One 4.0 mm shouldered screw
 - One 4.1 mm shouldered screw

Step 26



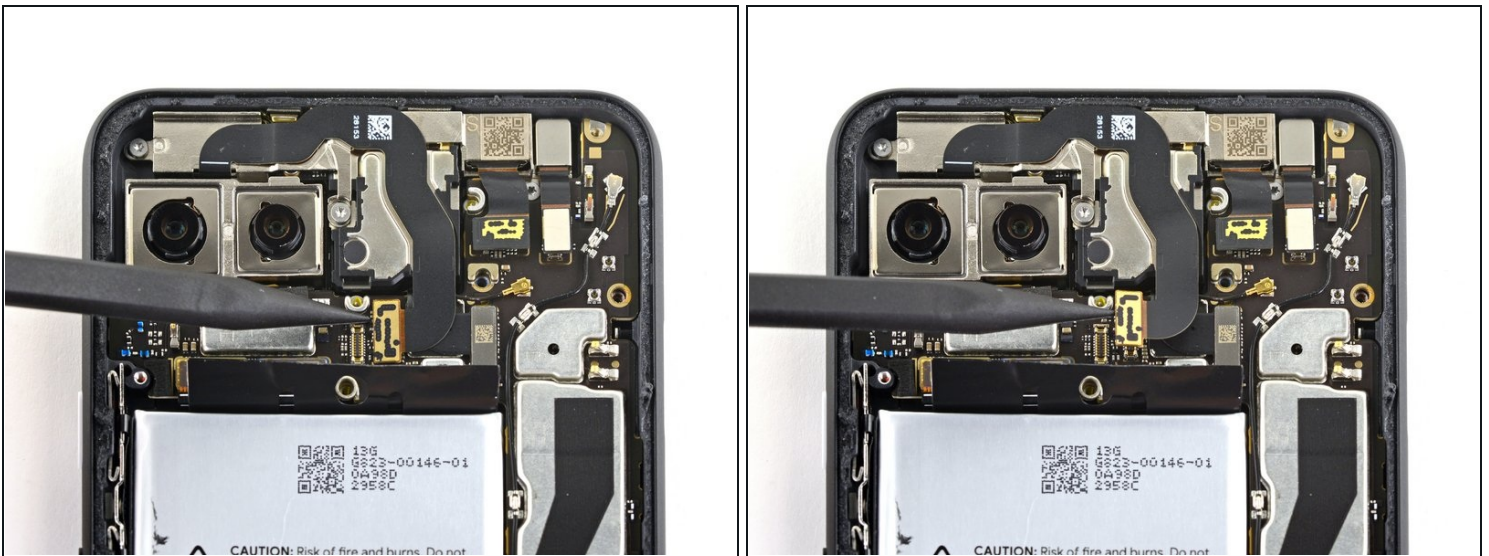
- Use a pair of tweezers to remove the front-facing camera connector cover.

Step 27 — Disconnect the camera and sensor connectors



- Using the pointed end of a spudger, pry the camera and sensor connectors straight up from the motherboard.

Step 28



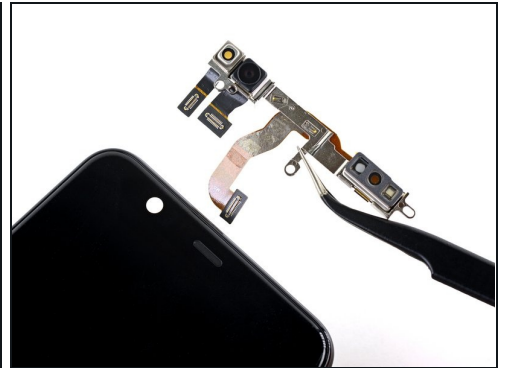
- Disconnect the additional sensor connector.
 - ① This cable is secured to the phone with some light adhesive.

Step 29 — Remove the front camera and sensor assembly



- Remove the three T3 Torx screws securing the front camera and sensor assembly:
 - Two 2.7 mm screws
 - One 3.1 mm screw

Step 30



- Use a pair of tweezers to remove the front camera and sensor assembly.

Step 31 — Remove the screws securing the display connector cover



- Use a T3 Torx driver to remove the four 3.5 mm screws securing the display connector cover.

Step 32 — Remove the display connector cover



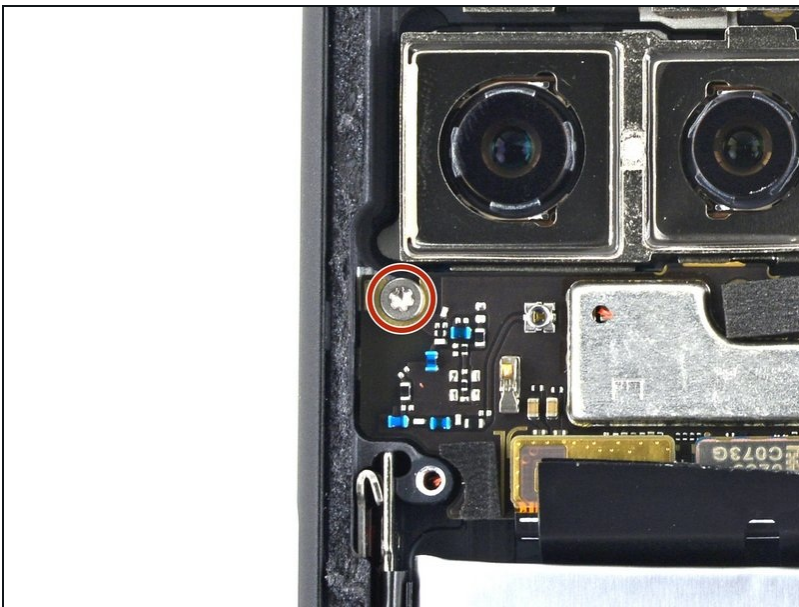
- Use a pair of [tweezers](#) to remove the display connector cover.

Step 33 — Disconnect the display connector



- Use the flat end of a spudger to disconnect the display connector from the motherboard.

Step 34 — Remove the motherboard screw



- Use a T3 Torx driver to remove the 2.7 mm screw securing the motherboard to the frame.

Step 35 — Disconnect the motherboard press connectors



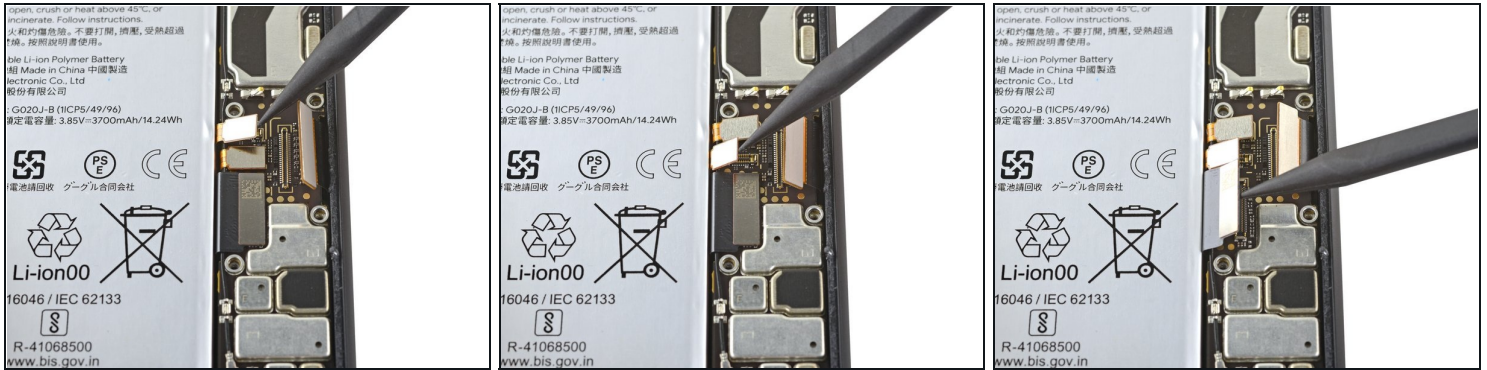
- Use the pointed end of a spudger to disconnect the side buttons connector from the motherboard.
- Disconnect the two rear-facing camera connectors from the motherboard.

Step 36



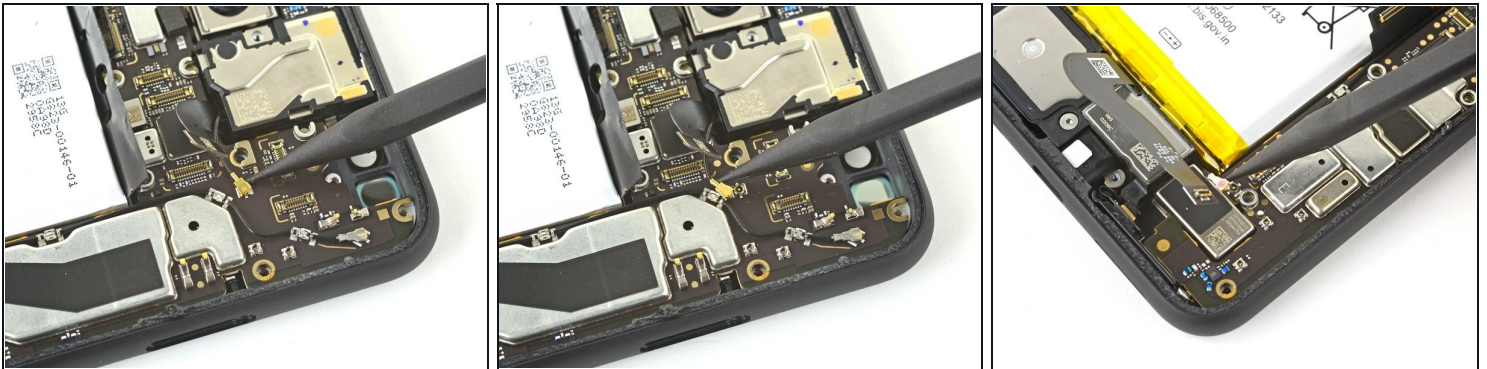
- Disconnect the earpiece speaker connector from the motherboard.

Step 37



- Disconnect the two grip sensor connectors from the motherboard.
- Disconnect the charge port connector from the motherboard.

Step 38 — Disconnect the antennas



- Use the pointed end of a spudger and pry up gently to unclip the top antenna connector from the motherboard.
- Disconnect the bottom antenna connector.

Step 39 — Remove the motherboard



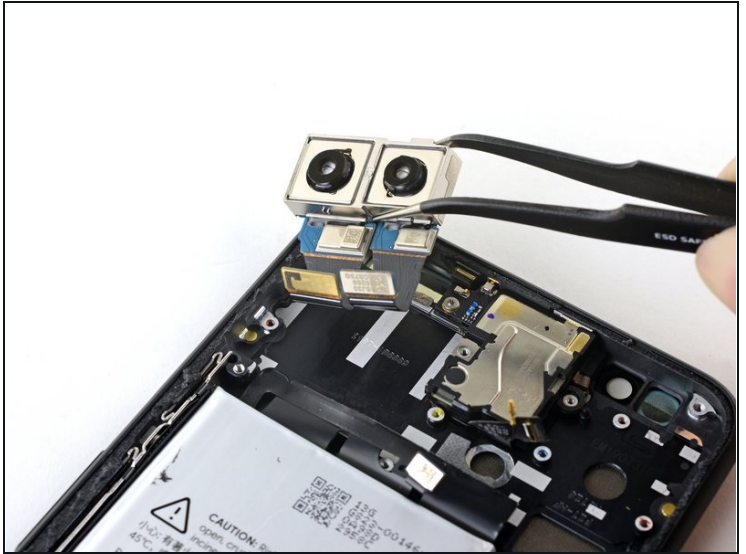
- Using a spudger, pivot the top end of the motherboard up and out of the phone's frame.

Step 40



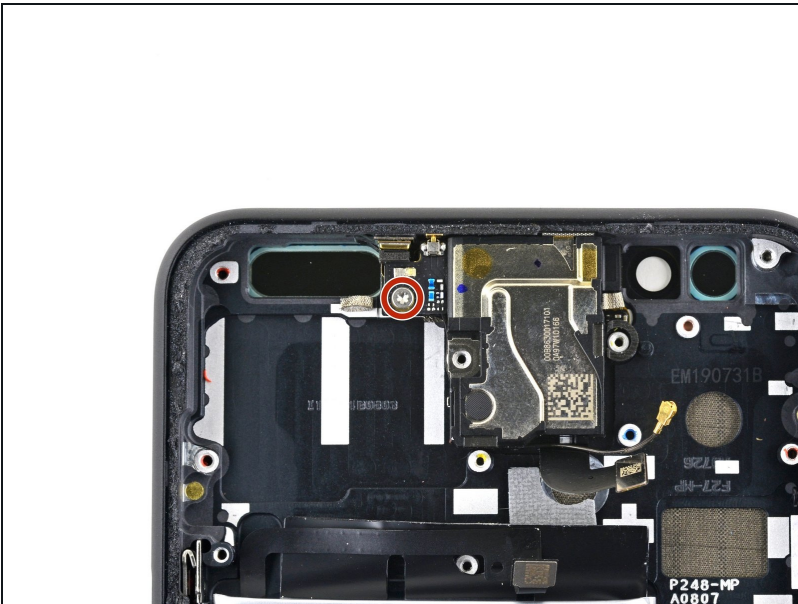
- Slowly lift out the motherboard, being careful not to snag any ribbon cable connectors.
 - ❗ The rear-facing camera module connectors loop around the motherboard, and the camera module is not secured to the phone, so it may lift out with the motherboard during this step.
- Completely remove the motherboard.
- ☑ When reinstalling the motherboard, check that no ribbon cable connectors are caught underneath.

Step 41 — Remove the rear cameras



- Use a pair of [tweezers](#) to remove the rear-facing camera module.

Step 42 — Remove the earpiece module



- Use a T3 Torx driver to remove the 2 mm screw securing the small earpiece module board to the phone.

Step 43



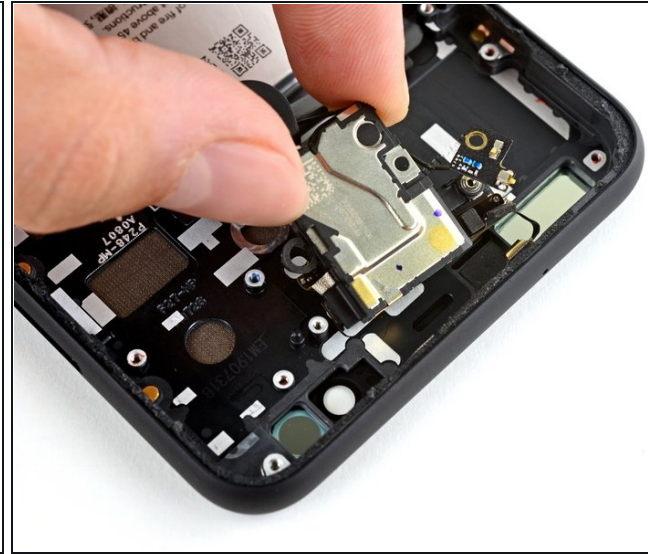
- Using the pointed end of a spudger, slide the board slightly to the side, away from the top of the phone.
 - ① Do not attempt to entirely remove this board; it's still connected to the earpiece speaker.

Step 44



- Using the flat end of a spudger, pry the earpiece module away from the phone's midframe.
 - ① The earpiece module is attached with some light adhesive, and should come up without too much force.

Step 45



- Pull the earpiece speaker away from the light adhesive holding it to the phone's top frame.
 - ① Do not completely remove the earpiece speaker yet, as the microphone is still adhered to the phone's frame.

Step 46



- Using the pointed end of a spudger, peel the microphone away from the light adhesive holding it to the phone's top frame.
- Ensure the microphone is [completely detached](#) from the top frame before continuing to the next step.

Step 47



- Use a pair of [tweezers](#) to remove the earpiece speaker and Soli motion sensor assembly.

Step 48 — Remove the Soli motion sensor cable



- Use a pair of [tweezers](#) to peel away and remove the Soli motion sensor cable, which is held in place with some light adhesive.

Compare your new replacement part to the original part—you may need to transfer remaining components or remove adhesive backings from the new part before installing.

To reassemble your device, follow the above steps in reverse order.

Take your e-waste to an [R2 or e-Stewards certified recycler](#).

Repair didn't go as planned? Try some [basic troubleshooting](#), or ask our [Answers community](#) for help.