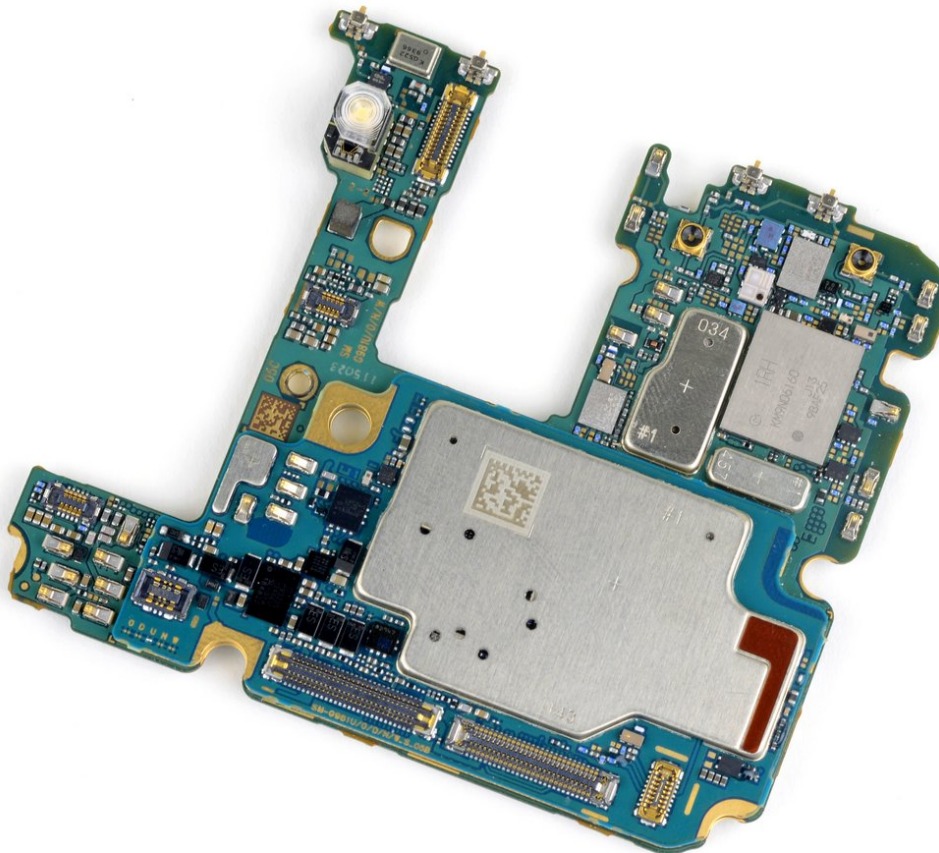




Samsung Galaxy S20 Motherboard Replacement

Follow this guide to remove and replace the...

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INTRODUCTION

Follow this guide to remove and replace the motherboard in the Galaxy S20.

You'll need replacement adhesive in order to complete this repair.



TOOLS:

- [SIM Card Eject Tool](#) (1)
 - [iOpener](#) (1)
 - [Suction Handle](#) (1)
 - [iFixit Opening Picks \(Set of 6\)](#) (1)
 - [Tweezers](#) (1)
 - [Phillips #00 Screwdriver](#) (1)
 - [Spudger](#) (1)
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Step 1 — Eject the SIM tray



- Insert a SIM card eject tool, bit, or a straightened paperclip into the hole on the SIM tray, located at the top edge of the phone next to the plastic antenna band.
- ① If you inserted the tool [into the other hole](#), don't worry—the microphone and the ingress gasket are mounted out of harm's way.
- Press in firmly to eject the tray.

Step 2 — Remove the SIM tray



- Remove the SIM card tray.
 - ⓘ The SIM card will fall out of the tray easily.
- ✦ When you reinsert the SIM card, ensure that it is in the proper orientation relative to the tray.
- ✦ A thin rubber gasket around the SIM tray provides water and dust protection. If this gasket is damaged or missing, replace the gasket or the entire SIM tray to protect your phone's internal components.

Step 3 — Heat the bottom edge



⚠ Unplug and power off your phone before you begin.

- [Heat an iOpener](#) and apply it to the **back cover's bottom edge** for two minutes.
- ⓘ 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 4 — Separate the bottom edge adhesive



- Apply a suction cup to the back of the phone, as close to the center of the bottom edge as possible.
 - ⓘ If your display 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 screen.
 - Pull on the suction cup with strong, steady force to create a gap between the back cover and the frame.
 - Insert the point of an opening pick into the gap.
 - ⓘ Due to tight tolerances, this may take multiple attempts of reheating with the iOpener and separating with the suction cup before you get it right.
 - ⓘ If you are having trouble creating a gap, apply more heat to the edge and try again.
- ⚠ Do not apply excessive force with the pick, or you risk cracking the back cover glass.**

Step 5



- Slide the pick back and forth along the bottom edge to slice through the adhesive.

⚠ Do not attempt to cut the adhesive near the corners of the phone where the glass is curved or you risk cracking the glass panel.

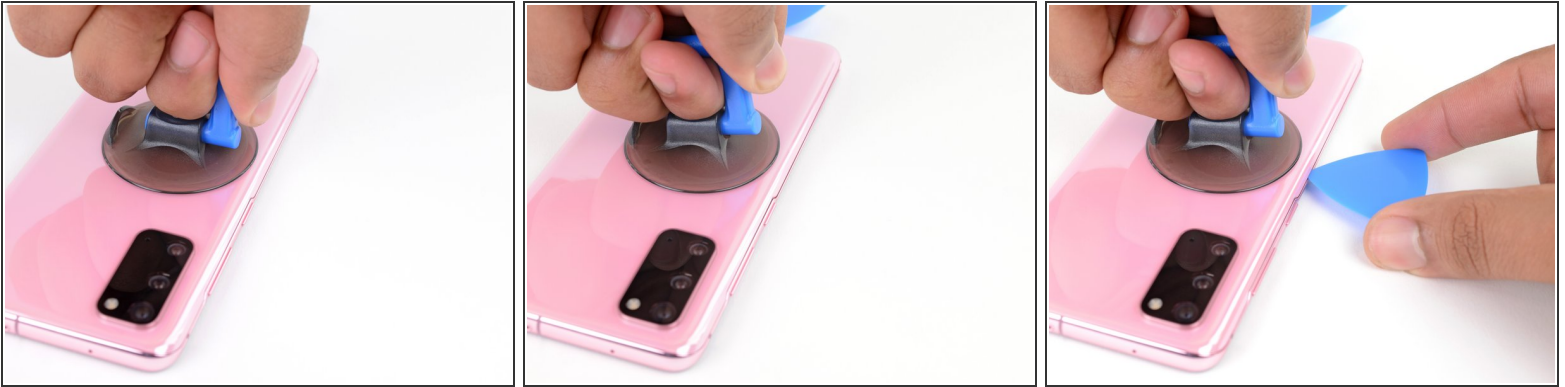
- Leave your opening pick in the seam to prevent the adhesive from resealing.

Step 6 — Heat the left edge



- Apply a heated iOpener to the left edge of the back cover for two minutes.

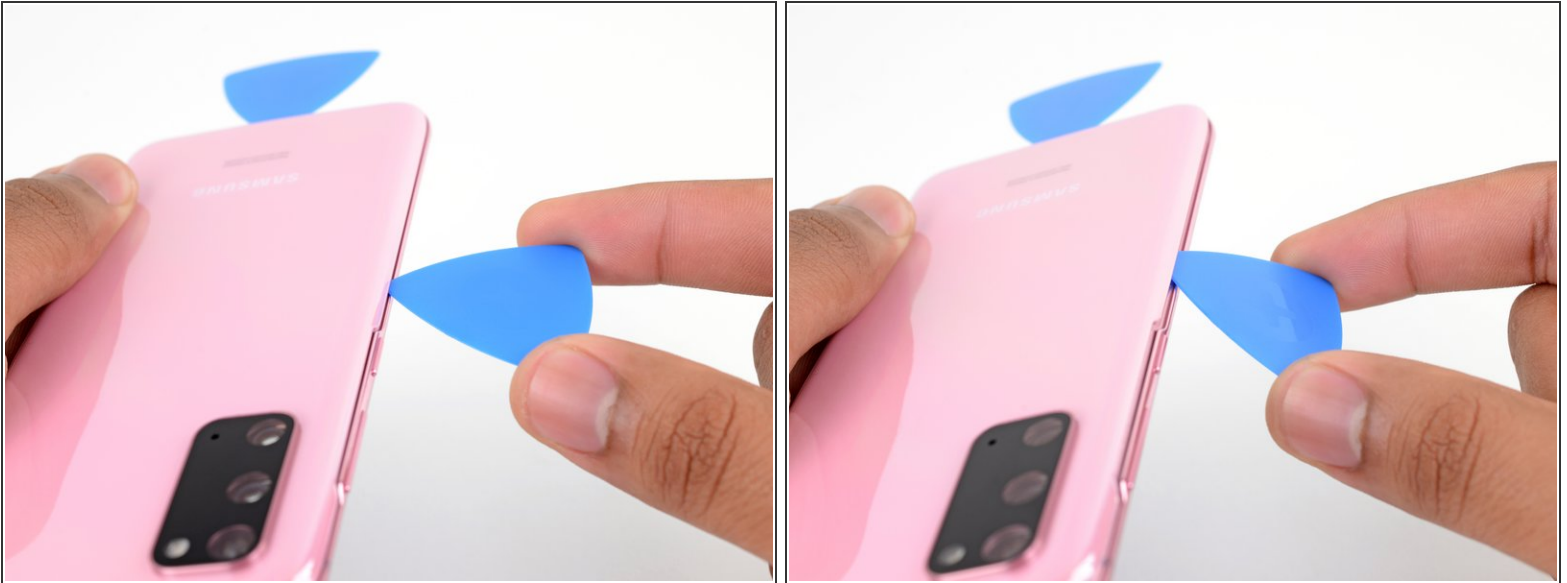
Step 7 — Separate the left edge adhesive



- Apply a suction cup to the back of the phone, as close to the center of the left edge as possible.
- Pull on the suction cup with strong, steady force to create a gap between the back cover and the frame.
- Insert the point of an opening pick into the gap.
 - ⓘ As the glass on this edge is curved, you won't be able to insert this pick very far. As long as the very tip of the pick is underneath the glass's edge, you will be able to proceed.
 - ⓘ Due to tight tolerances, this may take multiple attempts.
 - ⓘ If you are having trouble creating a gap, apply more heat to the edge and try again.
- You can try also applying a few drops of high concentration (over 90%) isopropyl alcohol into the seam to help loosen the adhesive.

⚠ Do not apply excessive force with the pick, or you risk cracking the back cover glass.

Step 8



- Once the pick is underneath the glass's edge, tilt it downward and insert it further to fully separate the back cover's adhesive.

Step 9



- Slide the pick all along the left edge of the phone to separate the back cover's adhesive.
⚠ Take care when sliding across the ridge in the frame surrounding the volume and power buttons—the cutout in the glass may make it more prone to cracking.
- Leave your pick under the left edge of the glass near the top left corner to prevent the adhesive from resealing.

Step 10 — Heat the right edge



- Apply a heated iOpener to the right edge of the back cover for two minutes.
- ⓘ 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 11 — Separate the right edge adhesive



- Apply a suction cup to the back of the phone, as close to the center of the right edge as possible.
- Pull on the suction cup with strong, steady force to create a gap between the back cover and the frame.
- Insert the point of an opening pick into the gap.
- ⓘ Like with the previous edge, you will need to tilt the opening pick downward to fully insert it underneath the back cover.

Step 12



- Slide the pick all along the right edge of the phone to separate the back cover's adhesive.
- Leave your pick under the right edge of the glass near the top of the device to prevent the adhesive from resealing.
- ❗ As you do this, the back cover may release one or both of the other picks and allow them to fall free. If this occurs, set the pick(s) aside as the bottom edge shouldn't reseal from this point onward.

Step 13 — Heat the top edge



- Apply a heated iOpener to the top edge of the back cover for two minutes.

Step 14 — Separate the top edge adhesive



⚠ The glass near the corners of the back cover is curved and very susceptible to cracking. Be gentle during this step to prevent damaging your back cover.

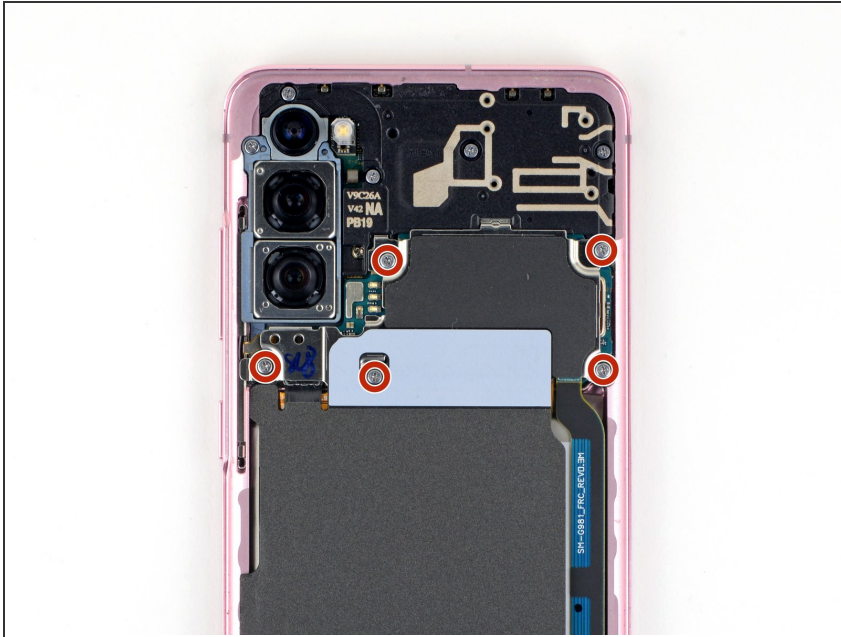
- Gradually slide the pick from the right edge of the device around the top right corner.
 - Continue slicing along the top edge all the way to the top left corner to fully separate the back cover adhesive.
- i** If the slicing becomes difficult at any point, stop and reapply heat before continuing.

Step 15 — Remove the back cover



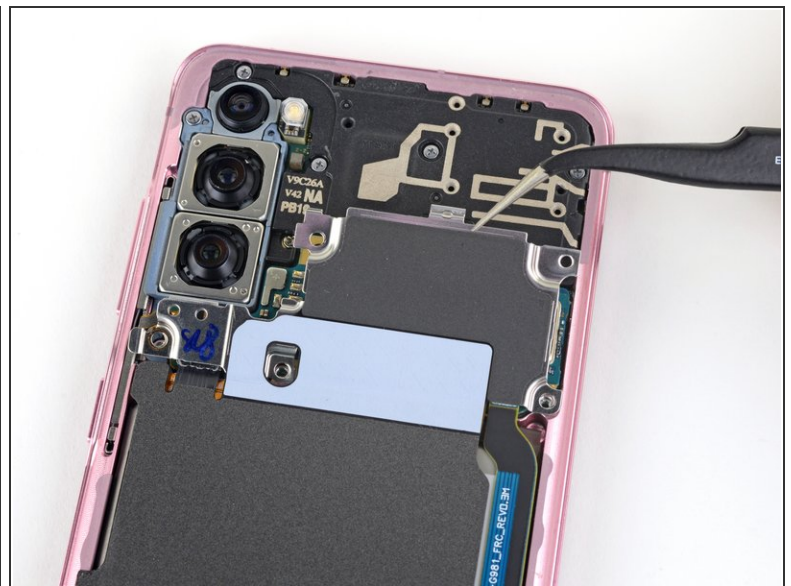
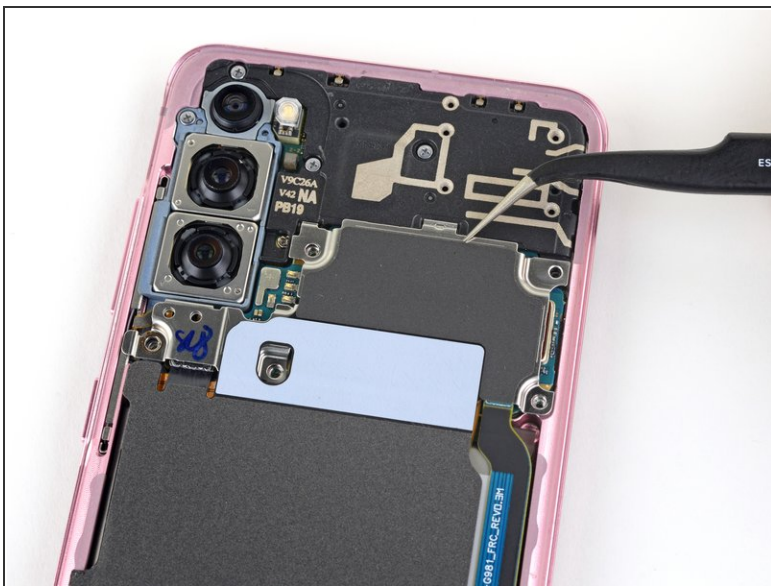
- Lift the back cover slowly. Use opening picks to slice any remaining adhesive.
 - Remove the back cover.
- ✦ During reassembly:
- This is a good point to power on your phone and test all functions before sealing it up. Be sure to power your phone back down completely before you continue working.
 - Remove any adhesive chunks with a pair of tweezers or your fingers. Apply heat if you're having trouble separating the adhesive.
 - If you're using Samsung custom-cut adhesives, [follow this guide](#).
 - If you're using double-sided tape, [follow this guide](#).

Step 16 — Unfasten the motherboard bracket



- Use a Phillips #00 screwdriver to remove the five 4 mm-long screws securing the motherboard bracket.
- ⓘ Throughout this repair, [keep track of each screw](#) and make sure it goes back exactly where it came from.

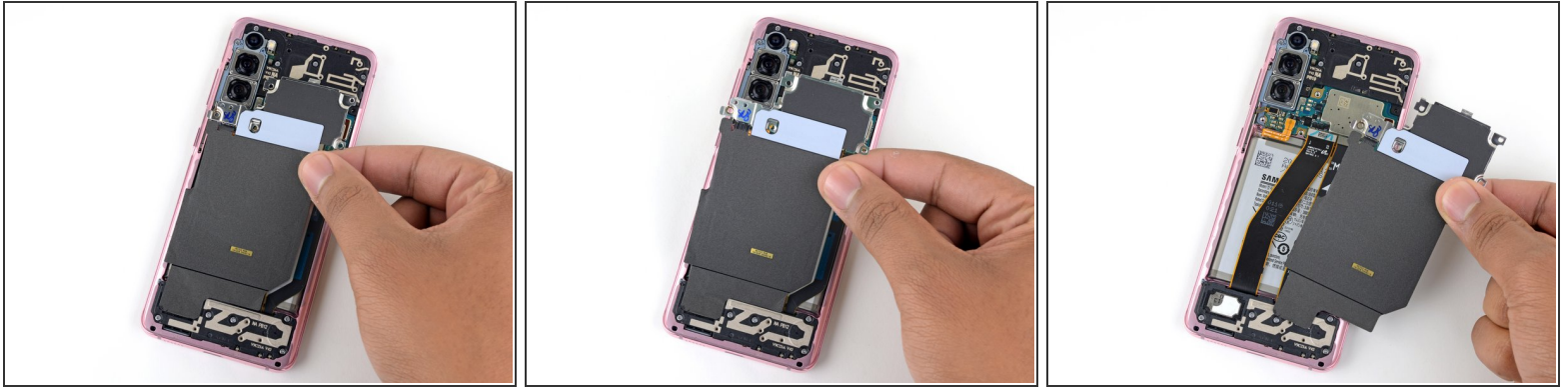
Step 17 — Unclip the motherboard bracket



- Use a pair of tweezers to gently pull up and unclip the motherboard bracket from the plastic midframe.

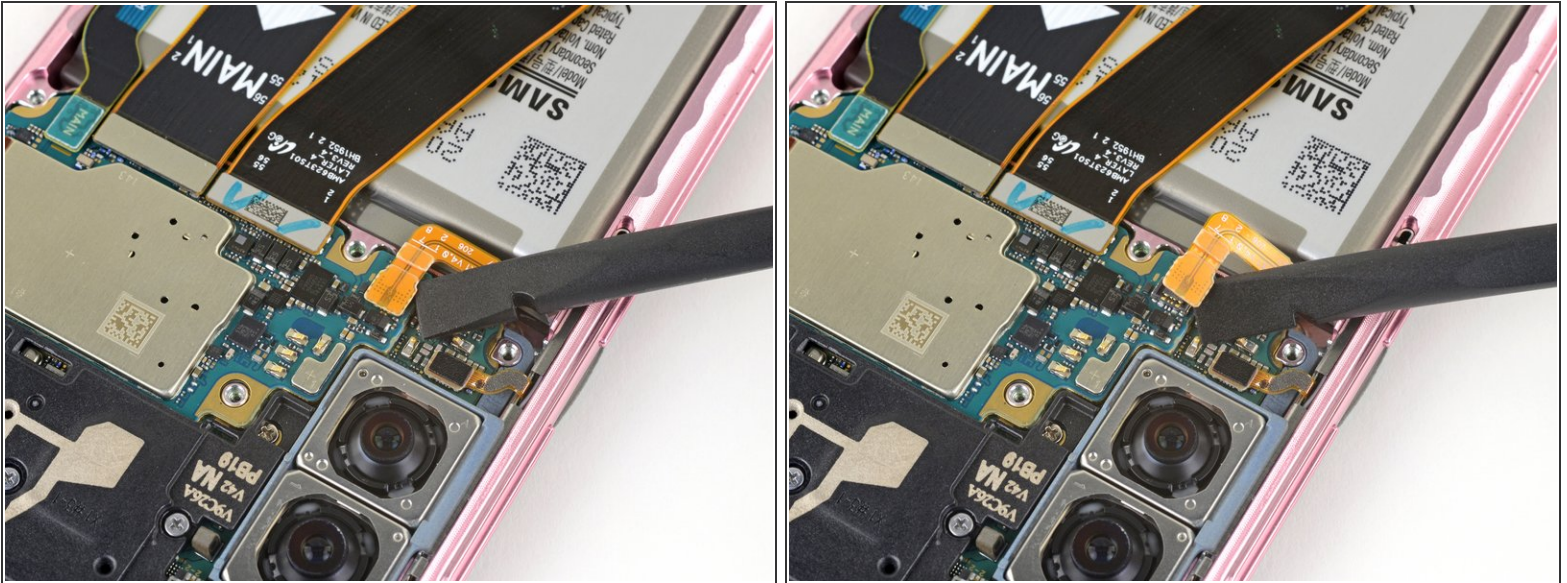
⚠ Do not completely remove the bracket yet, as its still attached to the wireless charging coil.

Step 18 — Remove the wireless charging coil



- Gently peel the wireless charging coil away from the device.
- Remove the wireless charging coil.
 - ⓘ The coil is connected to the rest of the device via spring contacts, so there is no need to disconnect any connectors.
- ✦ During reassembly, refasten the motherboard bracket screws first to properly align the charging coil into place, then firmly press the rest of the coil down to adhere it.

Step 19 — Disconnect the battery



- Use a spudger to pry up and disconnect the battery connector.

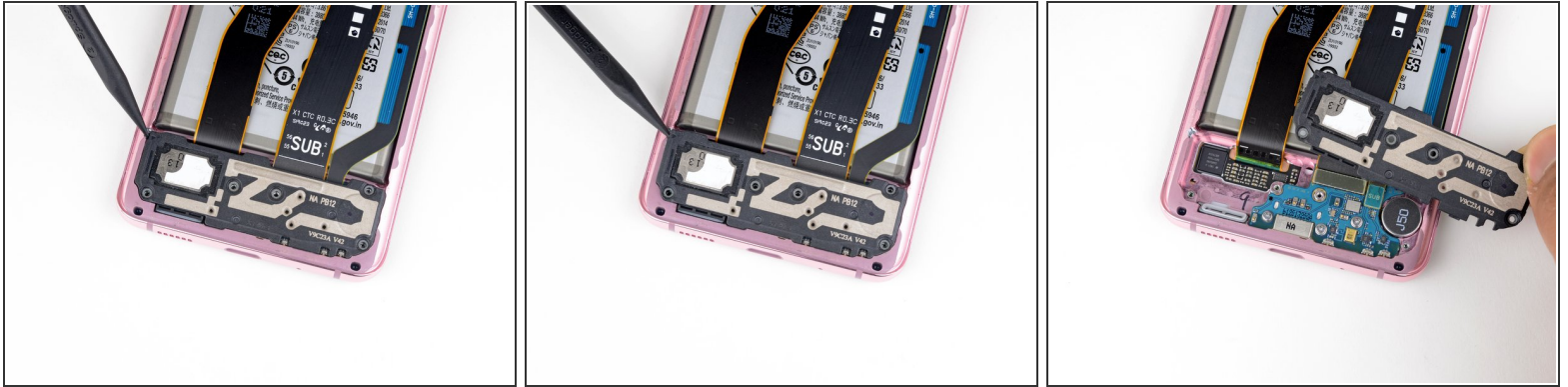
⚠ When you disconnect connectors like these, be careful not to dislodge the small surface-mounted components surrounding the socket.

Step 20 — Unfasten the lower midframe



- Use a Phillips #00 screwdriver to remove the five 4 mm-long screws securing the loudspeaker and lower midframe.

Step 21 — Remove the loudspeaker



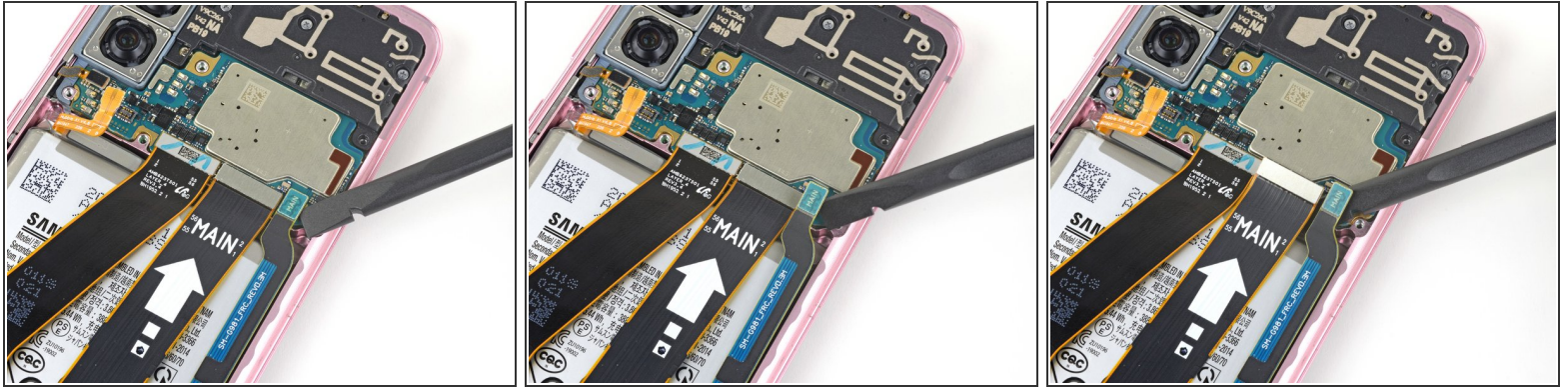
- Insert the point of a spudger or a pair of tweezers into the notch in the top left corner of the midframe and pry up to release the clips holding it in place.
- Remove the loudspeaker and lower midframe.

Step 22 — Disconnect the daughterboard



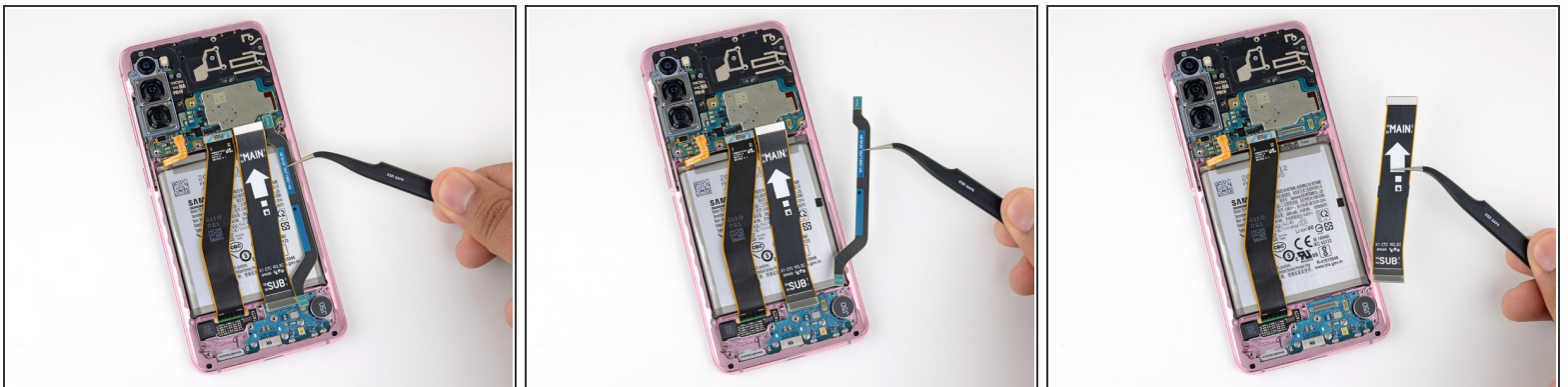
- Use a spudger to pry up and disconnect the main and auxiliary flex cables from the daughterboard near the bottom of the device.
- ☑ To re-attach [press connectors](#) like this one, carefully align and press down on one side until it clicks into place, then repeat on the other side. Do not press down on the middle. If the connector is misaligned, the pins can bend, causing permanent damage.

Step 23 — Disconnect the main flex cables



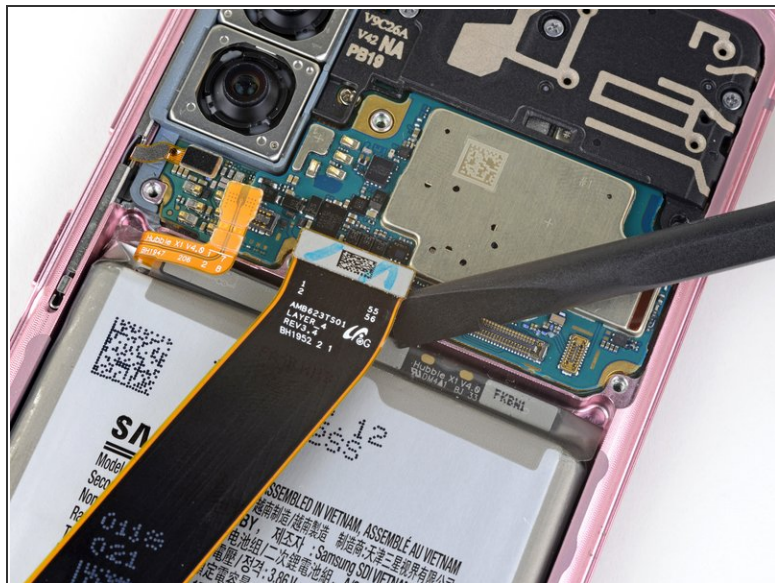
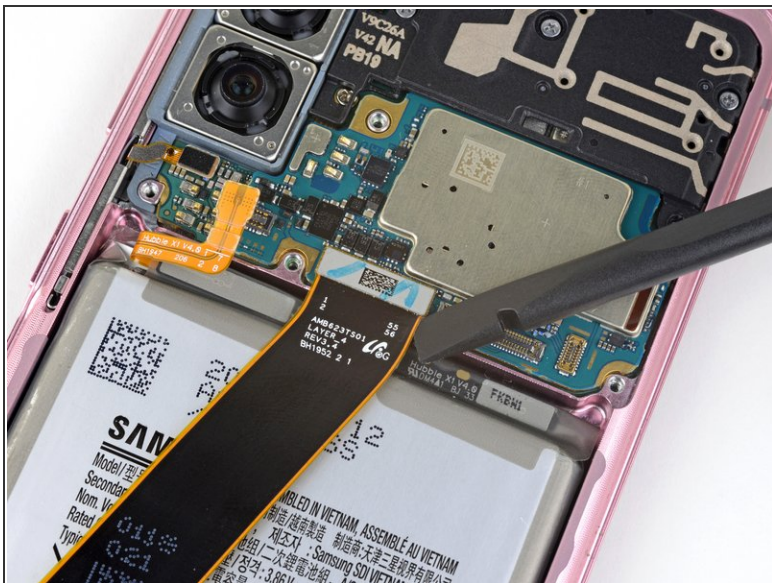
- Use a spudger to pry up and disconnect the main and auxiliary flex cables from the motherboard.

Step 24 — Remove the main flex cables



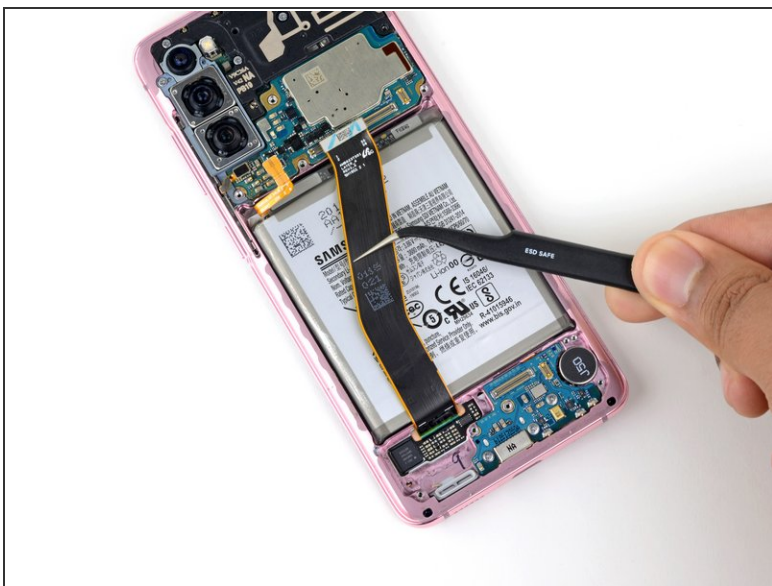
- Gently peel up and remove the main and auxiliary flex cables.

Step 25 — Disconnect the main display cable



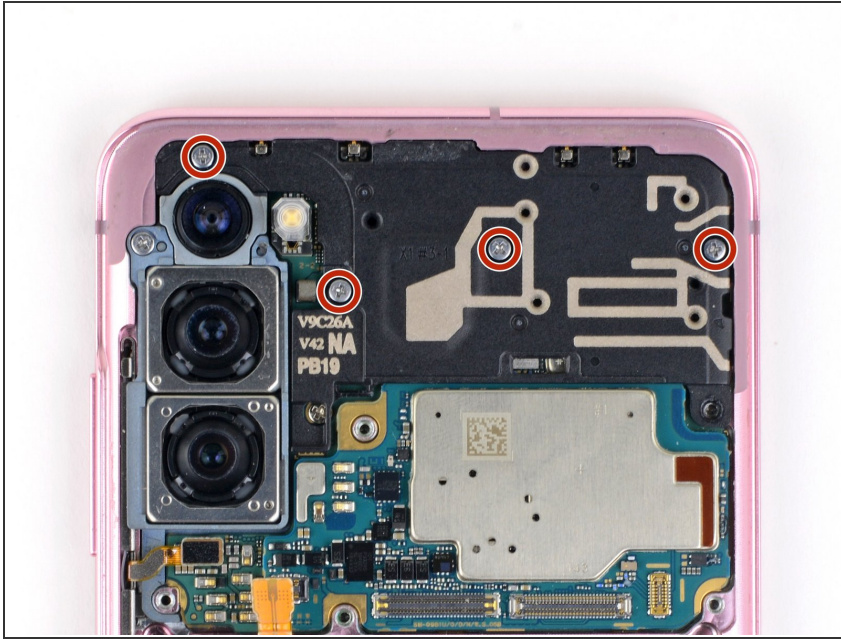
- Use a spudger to pry up and disconnect the main display flex cable from the motherboard.

Step 26 — Reposition the display cable



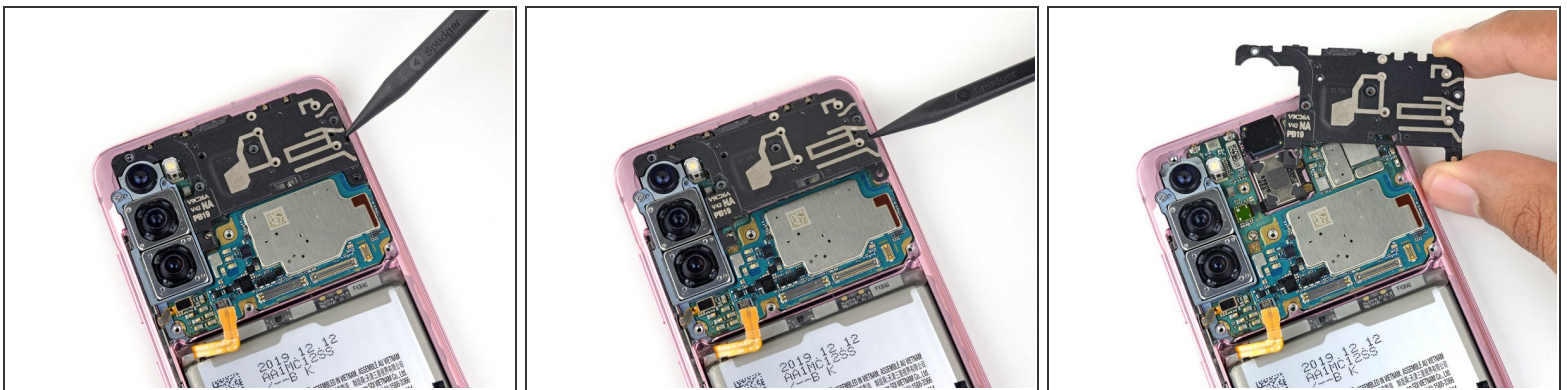
- Gently peel up and bend the display flex cable out of the way of the motherboard and battery.

Step 27 — Unfasten the upper midframe



- Use a Phillips #00 screwdriver to remove the four 4 mm-long screws securing the upper midframe.

Step 28 — Remove the upper midframe



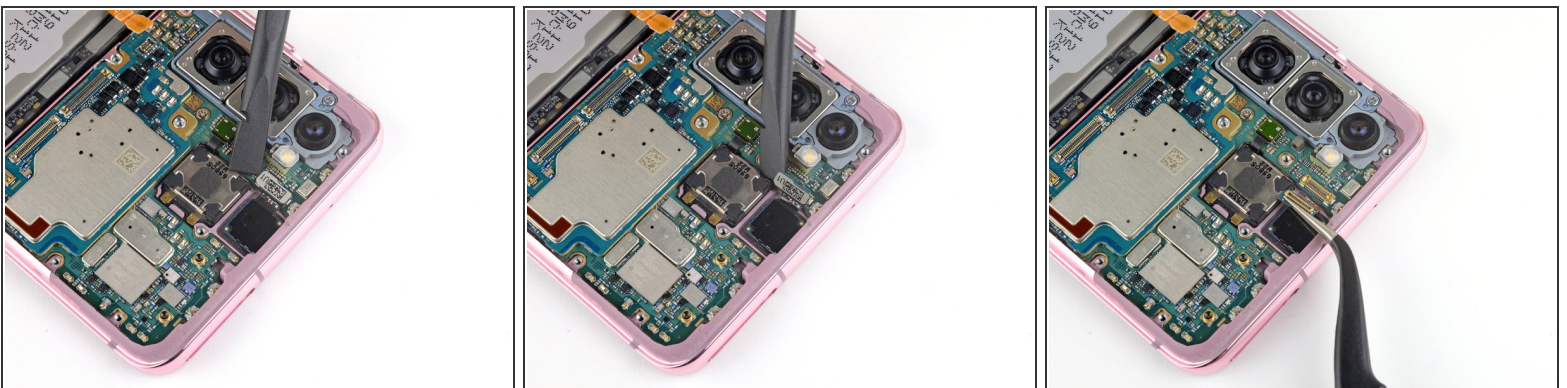
- Insert the point of a spudger into the notch on the right side of the upper midframe and pry up to release the clips holding it into place.
- Remove the upper midframe.

Step 29 — Disconnect the side button cable



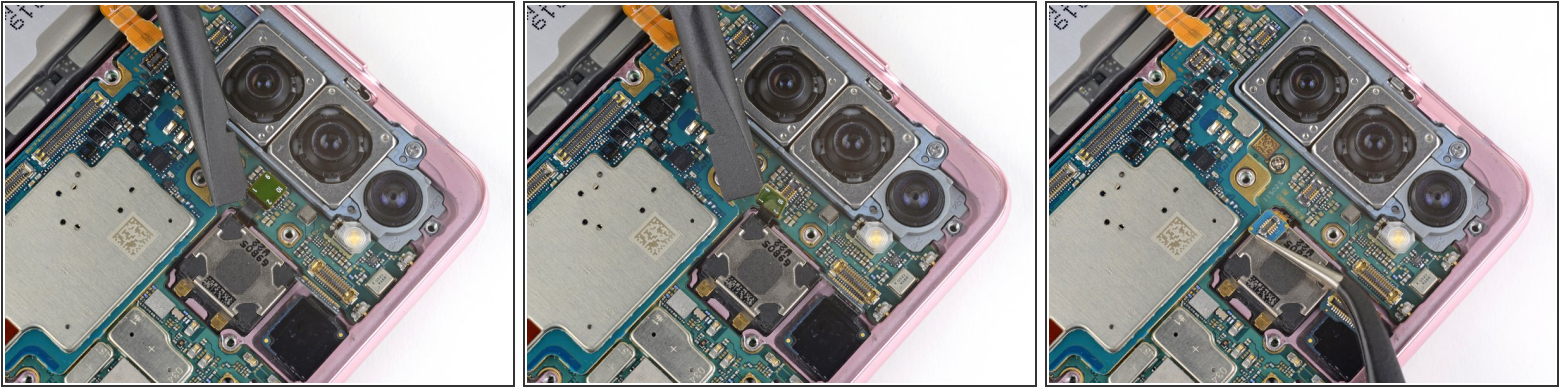
- Use a spudger to pry up and disconnect the side button flex cable from the motherboard.
- Use a pair of tweezers to bend the cable out of the way of the motherboard.

Step 30 — Disconnect the front facing camera



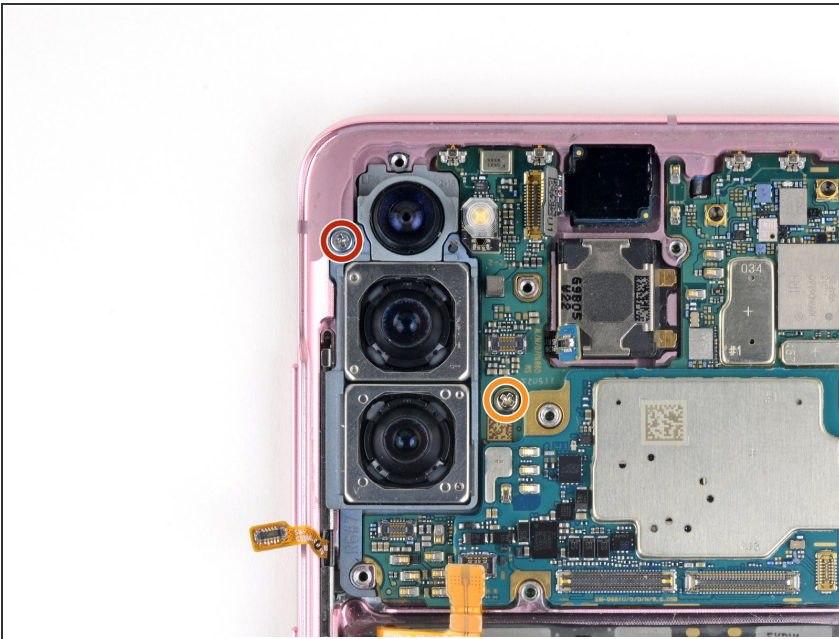
- Pry up and disconnect the front facing camera flex cable from the motherboard.
- Bend the cable out of the way of the motherboard.

Step 31 — Disconnect the front-facing sensor array



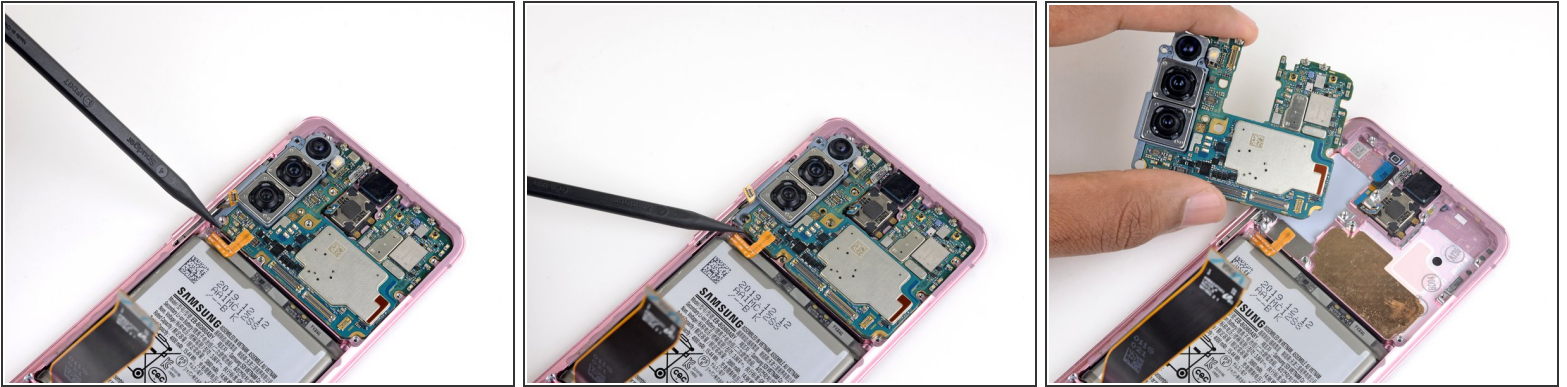
- Pry up and disconnect the front-facing sensor array cable from the motherboard.
- Bend the cable out of the way of the motherboard.

Step 32 — Unfasten the motherboard assembly



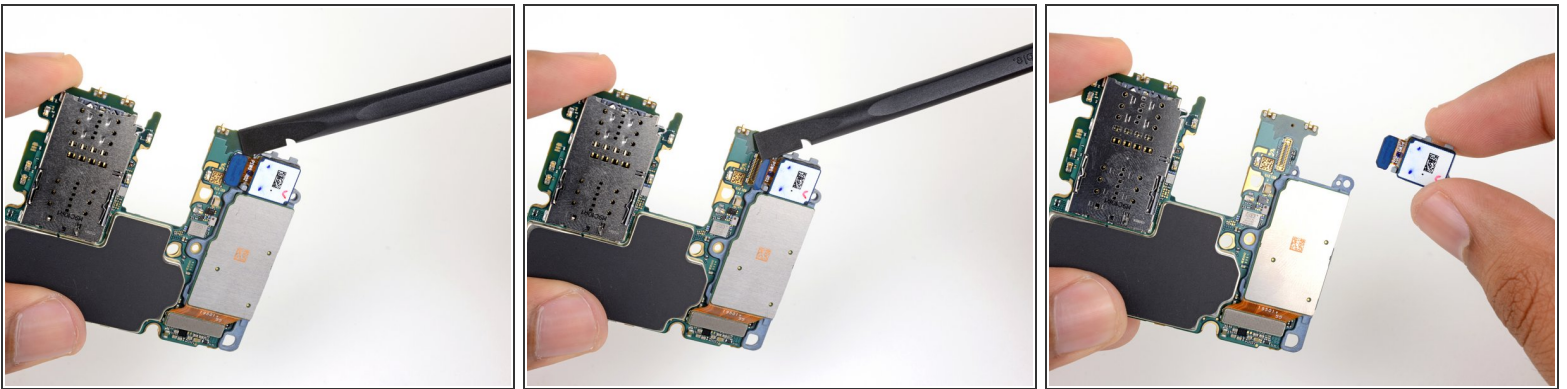
- Use a Phillips #00 screwdriver to remove the two screws securing the motherboard and camera assembly.
 - One 4 mm-long screw
 - One 3 mm-long screw

Step 33 — Remove the motherboard assembly



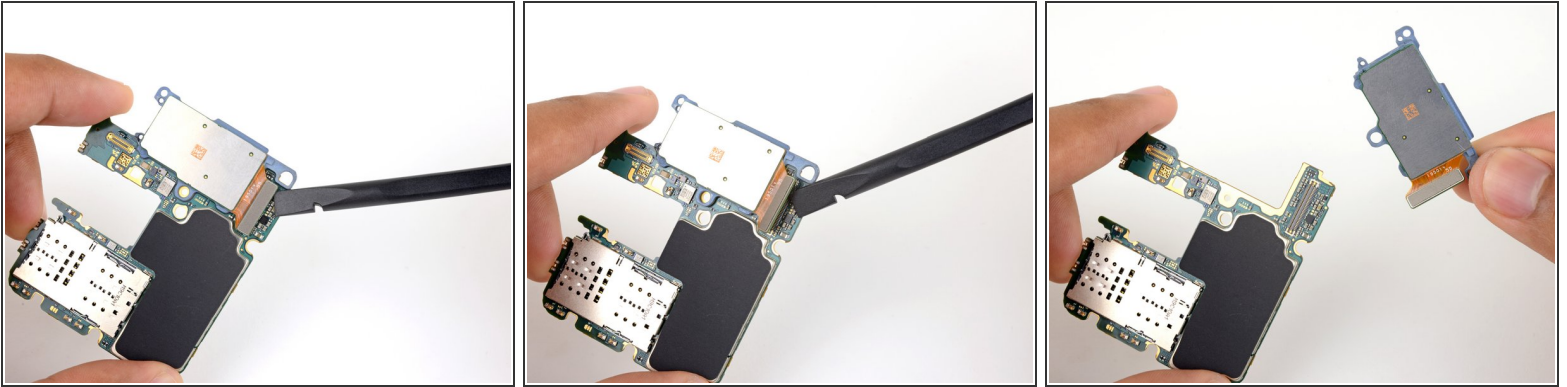
- Insert the flat end of a spudger into the bottom left corner of the motherboard assembly and pry up to release it from the phone body.
- Remove the motherboard assembly.

Step 34 — Remove the ultra wide camera module



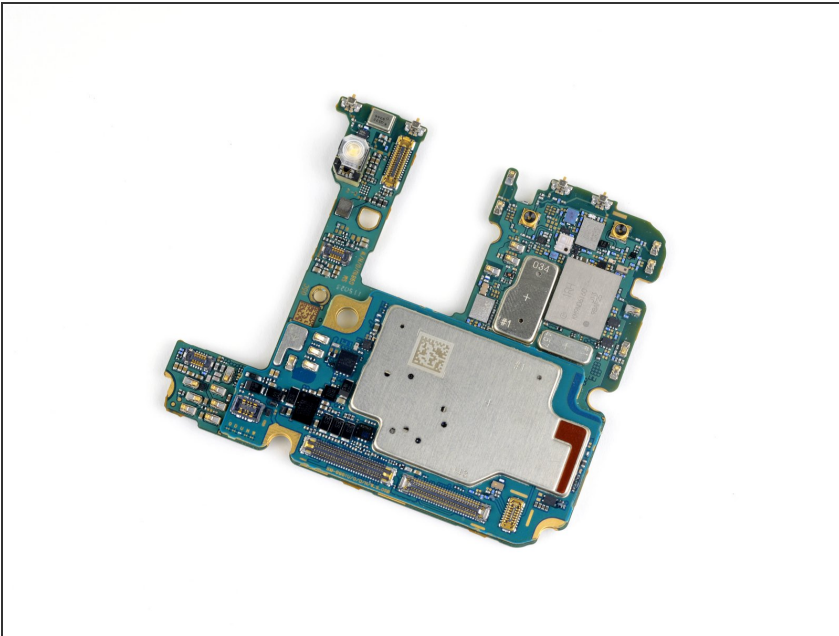
- Use the flat end of a spudger to pry up and disconnect the ultrawide camera connector from the motherboard.
 - Remove the ultrawide camera module.
- i** The module is lightly secured to the other cameras' frame via a small post, but you should be able to wiggle it free easily.

Step 35 — Remove the remaining cameras



- Use a spudger to pry up and disconnect the telephoto and wide-angle camera connector from the motherboard.
- Remove the remaining rear facing camera module.

Step 36 — Replace the motherboard



- Only the motherboard remains.

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.

After you've completed the repair, [follow this guide](#) to test your repair.

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

Repair didn't go as planned? Check out our [Answers community](#) for troubleshooting help.