Samsung Galaxy S20 Ultra Motherboard Replacement

Follow this guide to remove and replace the...

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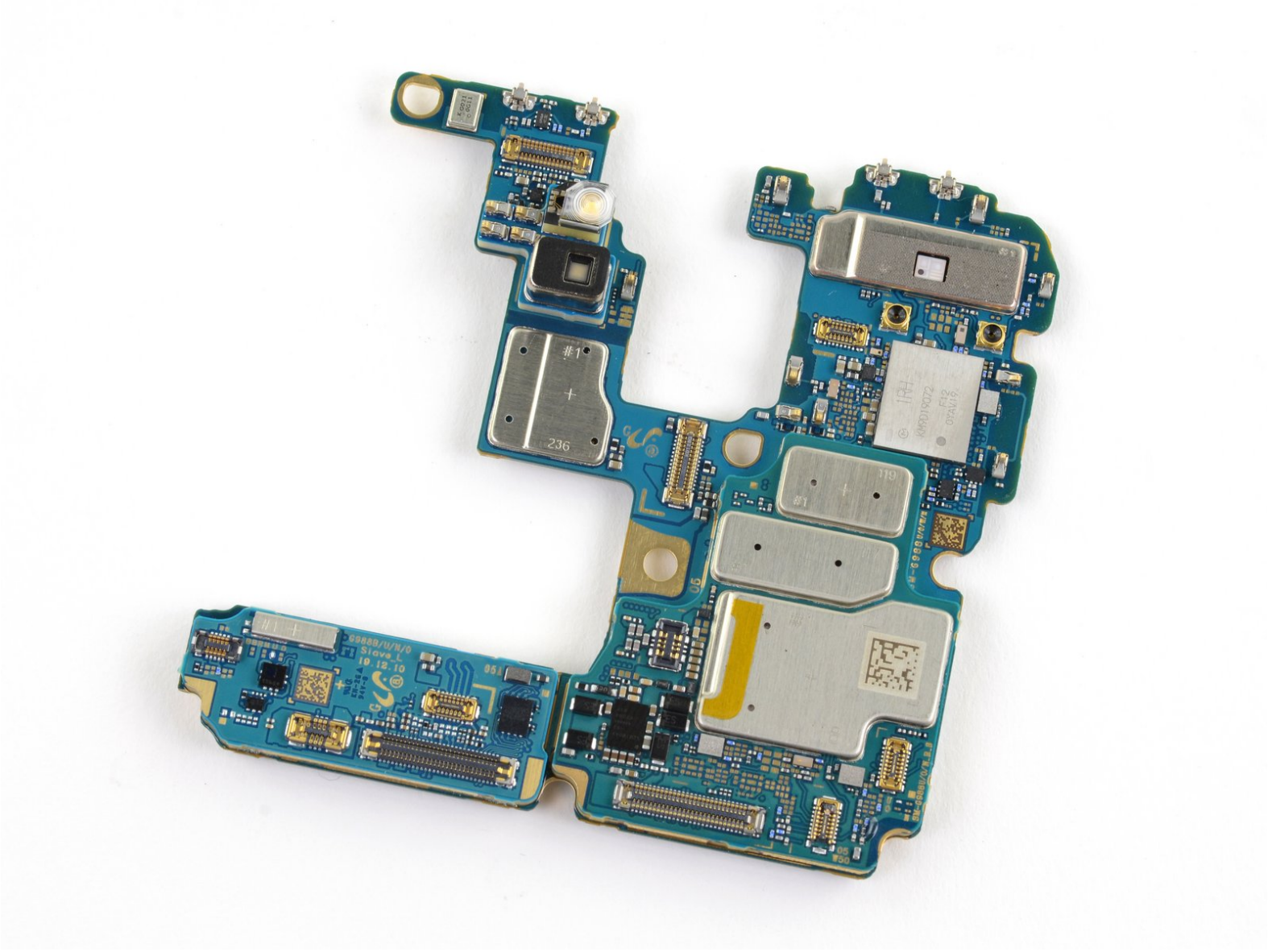


INTRODUCTION

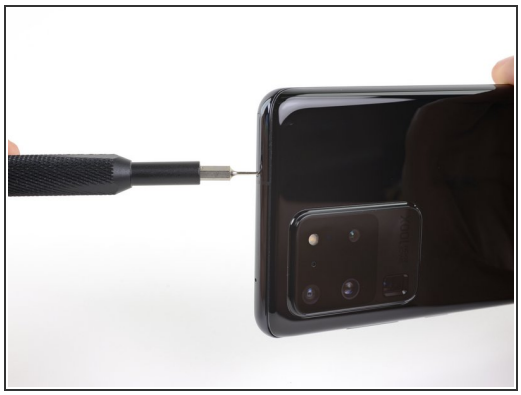
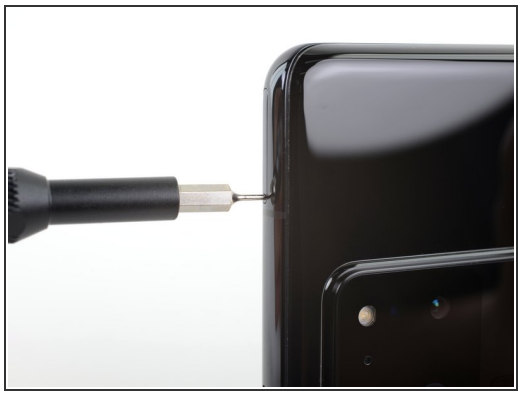
Follow this guide to remove and replace the motherboard in the Galaxy S20 Ultra.

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)
- Spudger (1)
- Tweezers (1)
- Phillips #00 Screwdriver (1)

Step 1 — Eject the SIM Tray

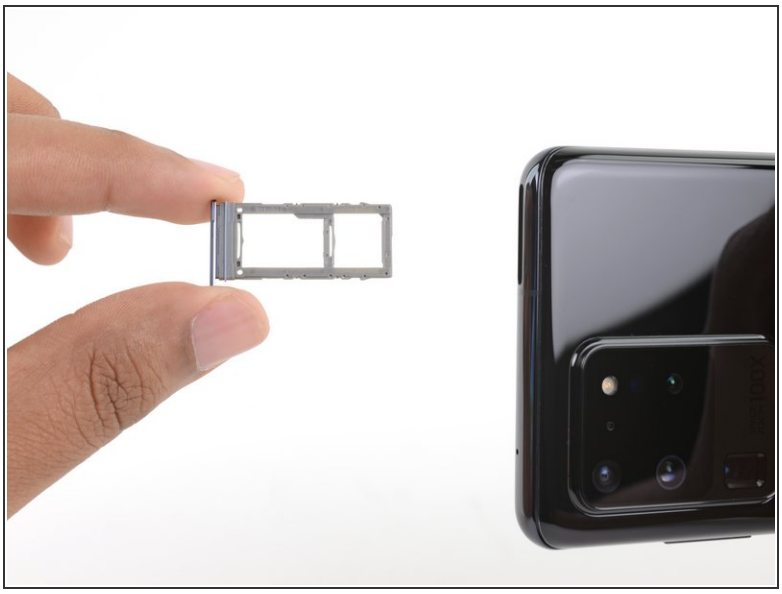



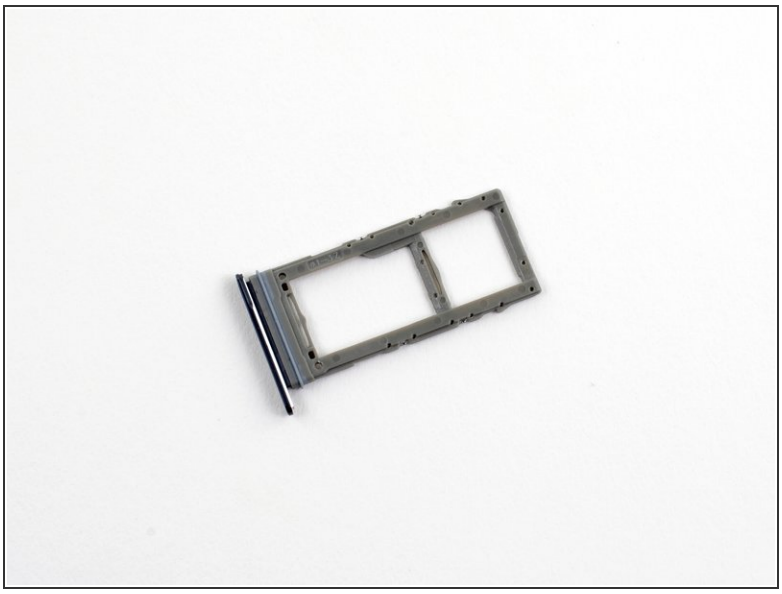

- Insert a SIM card eject tool, bit, or a straightened paperclip into the hole on the SIM tray, located at the top edge of the phone next to the plastic antenna band.

  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.

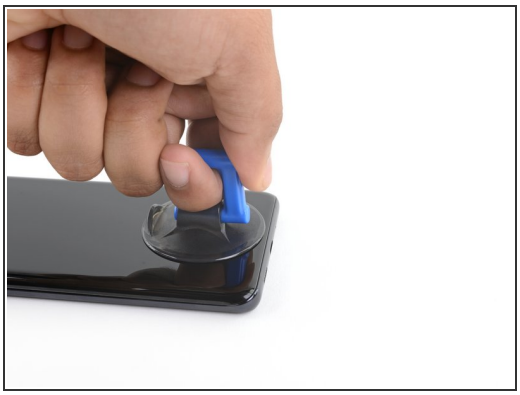
Step 3 — Heat the bottom edge

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 the back cover 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 cover.

- Pull on the suction cup with strong, steady force to create a gap between the back cover and the frame.

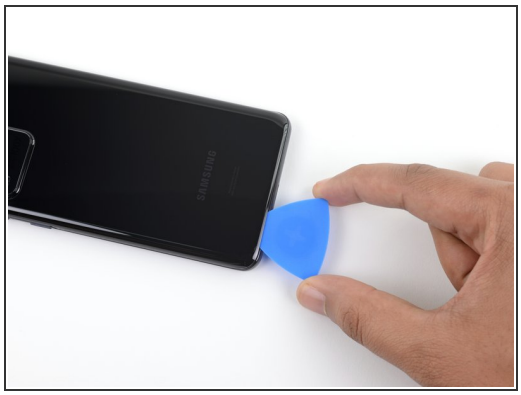
- Insert the point of an opening pick into the gap.

  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 — Slice the adhesive


- 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.

(i) 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.

(i) Due to tight tolerances, this may take multiple attempts.

(i) 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.

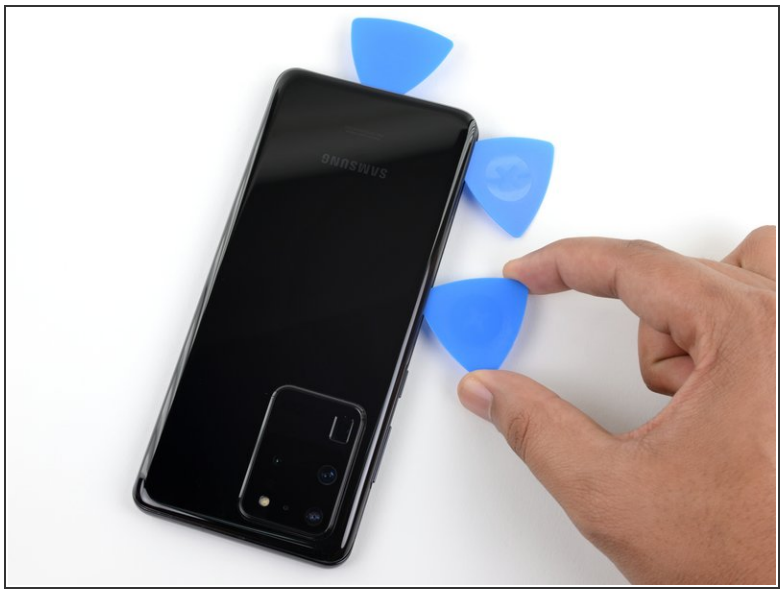
Step 8

- 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 towards the bottom edge of the phone to separate the back cover's adhesive.
- Leave your pick under the left edge of the glass near the bottom of the device to prevent the adhesive from resealing.

Step 10



- Insert another pick under the center of the left edge of the back cover.
- Gradually slide the pick towards the top of the device 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.

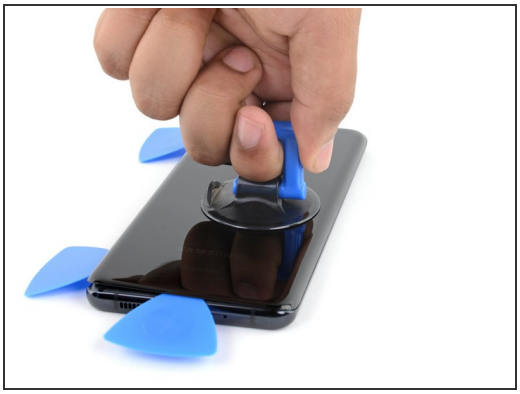
- Leave your pick under the left edge of the glass near the top of the device to prevent the adhesive from resealing.

Step 11 — 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 12 — 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 13

- Slide the pick towards the bottom edge of the phone to separate the back cover's adhesive.
- Leave your pick under the right edge of the glass near the bottom of the device to prevent the adhesive from resealing.

Step 14

- Insert another pick underneath the center of the right edge of the back cover.
- Gradually slide the pick towards the top of the device to separate the back cover's adhesive.

As you do this, the bottom edge of the back cover may release the three picks located there. If this occurs, set these picks aside as the bottom edge shouldn't reseal from this point onward.

Step 15 — Heat the top edge

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

Step 16 — 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 to fully separate the back cover adhesive.

ⓘ If the slicing becomes difficult at any point, stop and reapply heat before continuing.

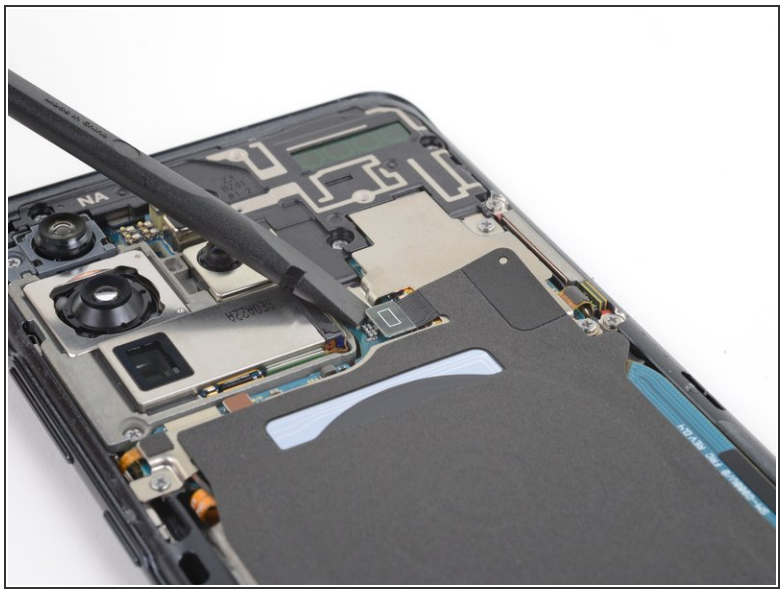
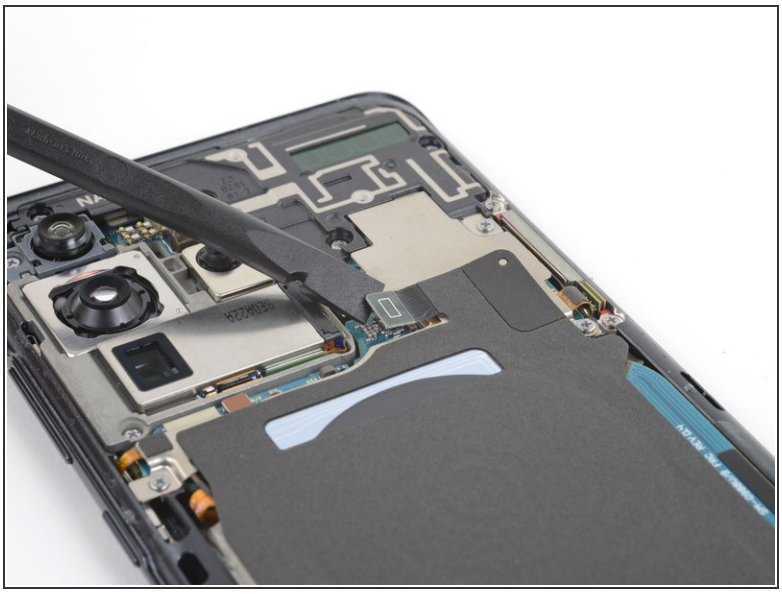
Step 17 — Remove the back cover

- 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.
- 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 18 — Disconnect the wireless charging coil

- Use a spudger to pry up and disconnect the wireless charging coil connector.

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

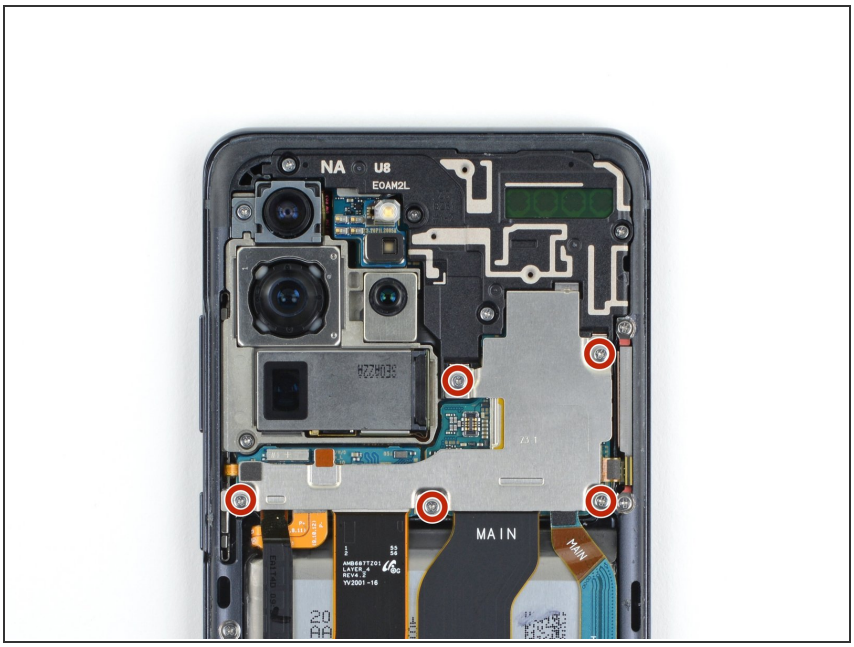
Step 19 — Remove the wireless charging coil



- Use a pair of tweezers to gently peel the wireless charging coil away from the device.
- Remove the wireless charging coil.

During reassembly, reconnect the wireless charging coil connector first to properly align it into place, then firmly press the rest of the coil down to adhere it.

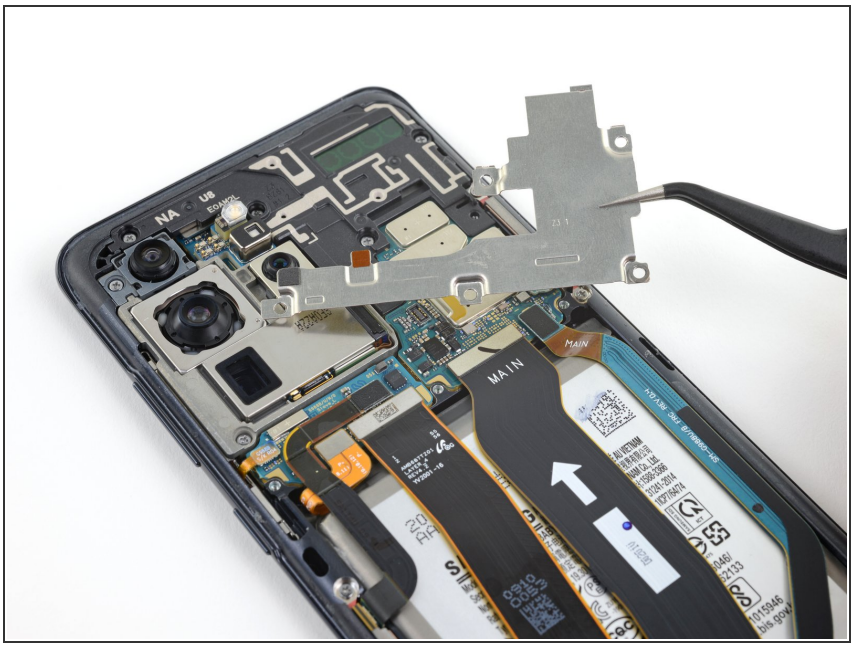
Step 20 — Unfasten the motherboard bracket



- Use a Phillips #00 screwdriver to remove the five 3.9 mm-long screws securing the motherboard bracket.

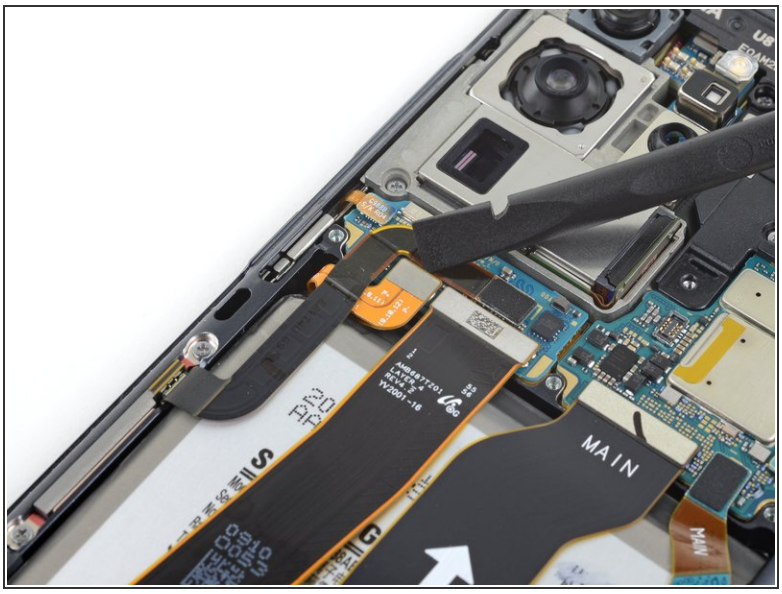
  Throughout this repair, keep track of each screw and make sure it goes back exactly where it came from.

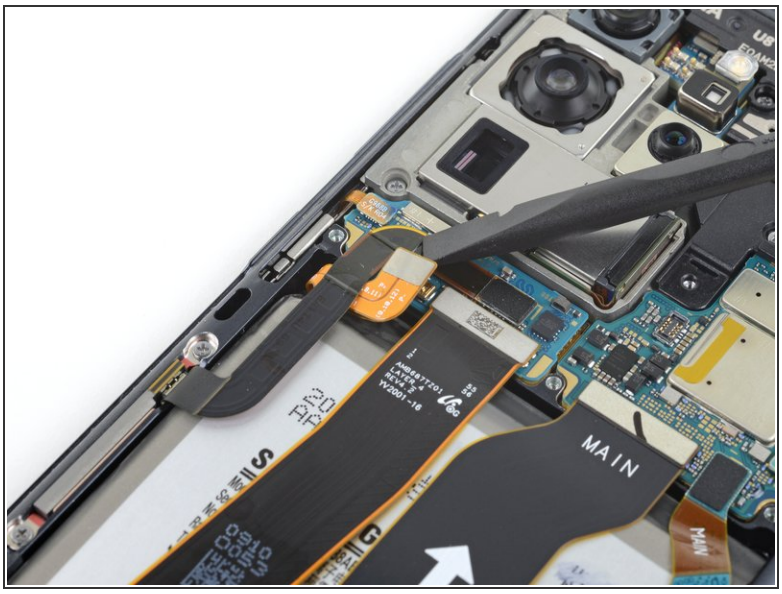
Step 21 — Remove the motherboard bracket



- Use a pair of tweezers to unclip and remove the motherboard bracket.

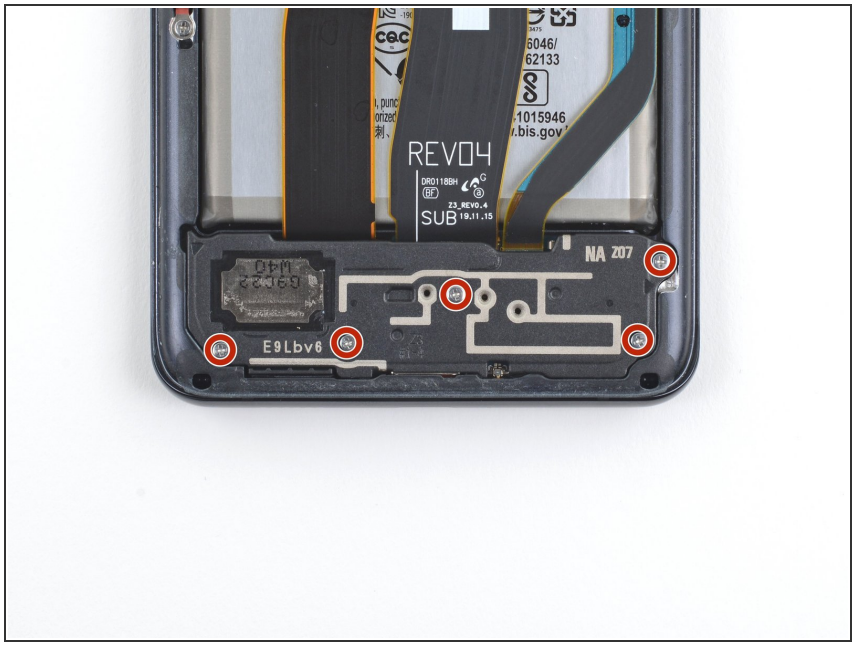
Step 22 — Disconnect the battery





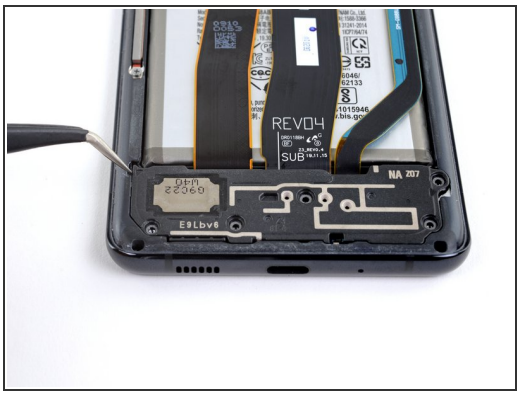
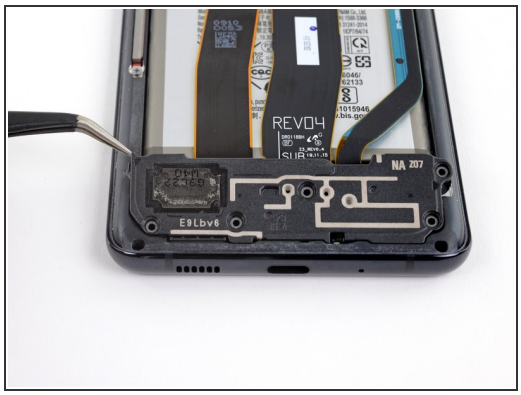
- Use a spudger to pry up and disconnect the battery connector.

Step 23 — Unfasten the lower midframe



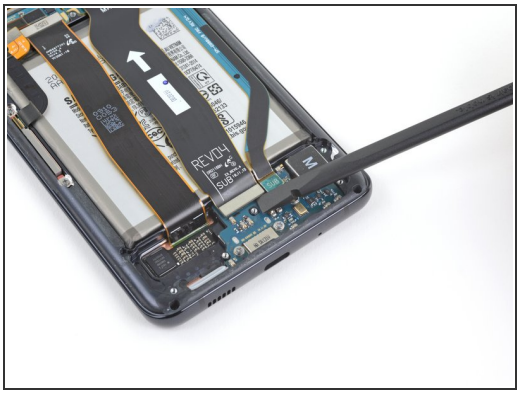
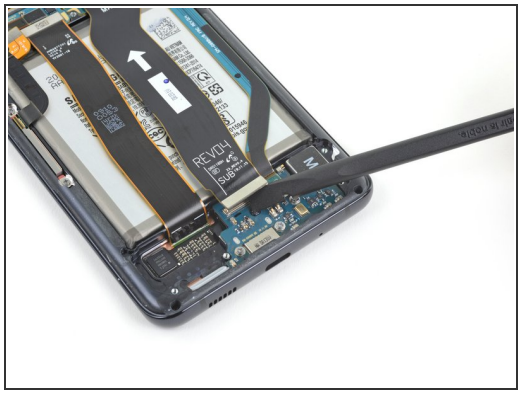
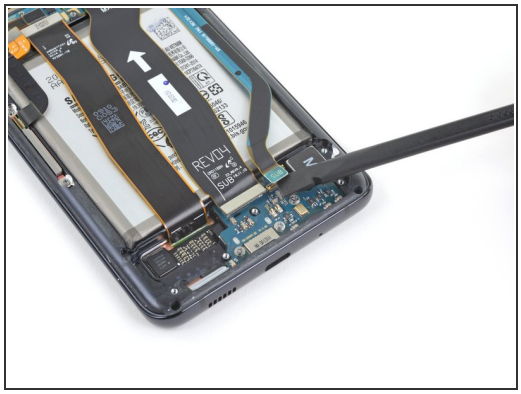
- Use a Phillips #00 screwdriver to remove the five 3.9 mm-long screws securing the loudspeaker and lower midframe.

Step 24 — 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.

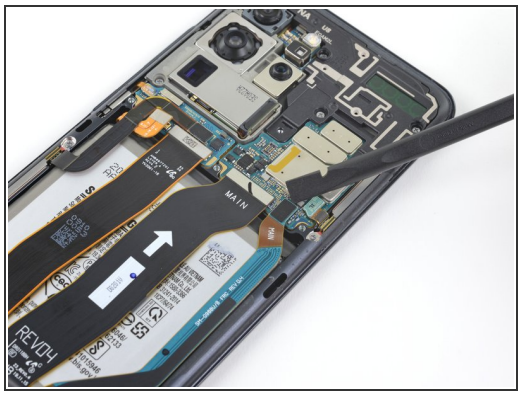
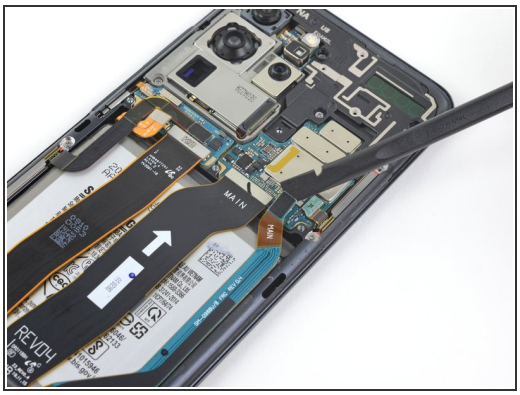
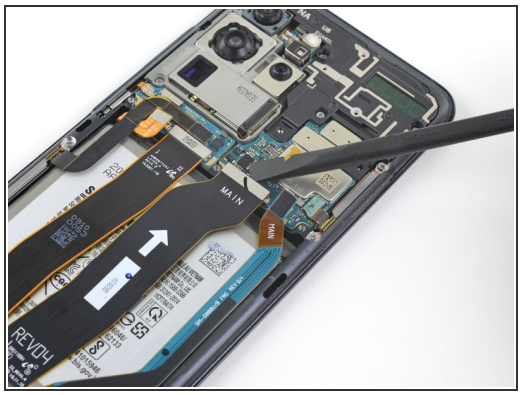
Step 25 — Disconnect the daughterboard

- 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 26 — Disconnect the main flex cables

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

Step 27 — Remove the main flex cables



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

Step 28 — Disconnect the left 5G antenna

- Pry up and disconnect the left 5G antenna cable from the motherboard.

Step 29 — Disconnect the main display cable

- Pry up and disconnect the main display flex cable from the motherboard.

Step 30 — Reposition the display and 5G cables

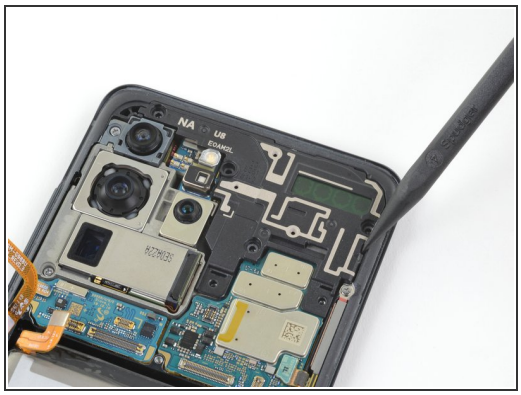
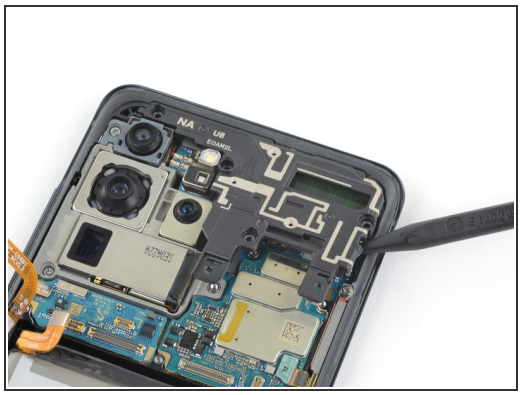


- Gently peel up and bend the display and left 5G antenna flex cables out of the way of the motherboard and battery.

Step 31 — Unfasten the upper midframe

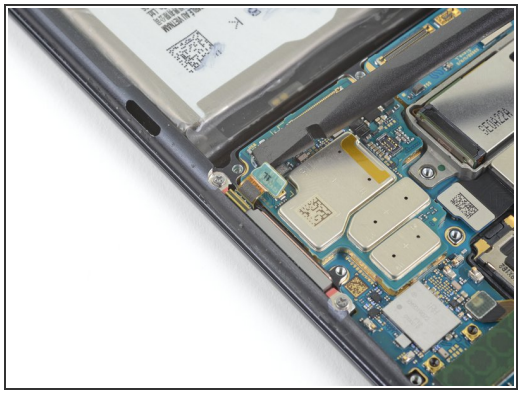
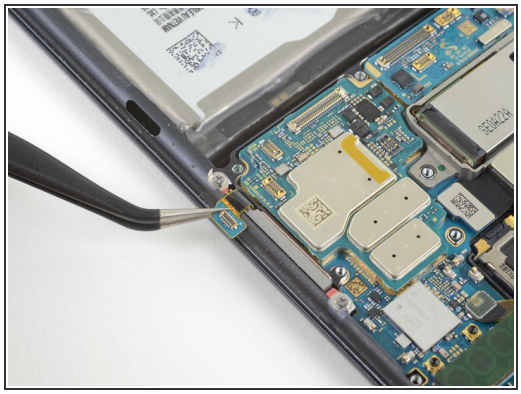
- Use a Phillips #00 screwdriver to remove the four 3.9 mm-long screws securing the upper midframe.

Step 32 — Remove the upper midframe

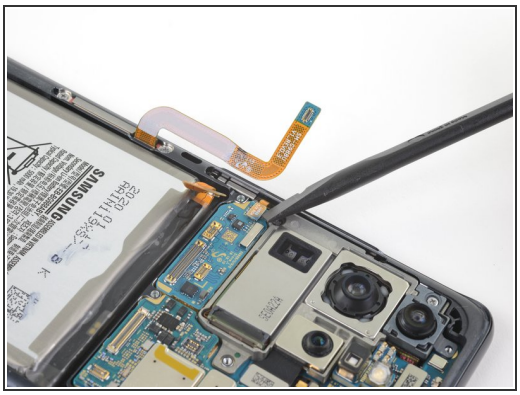
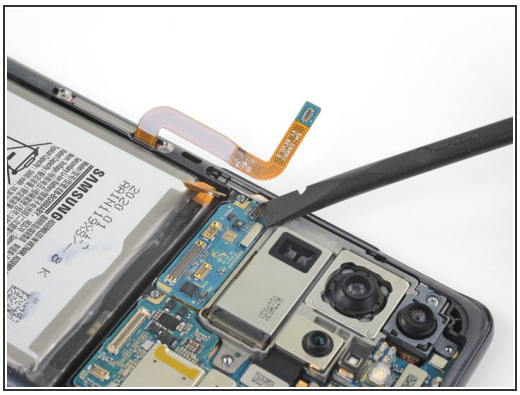
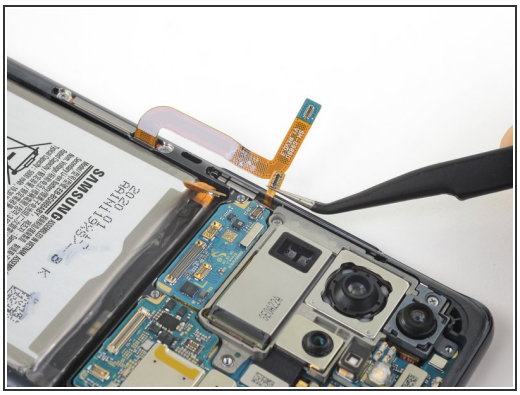

- Insert the point of a spudger into the notch on the right side of the upper midframe and pry up to release the clips holding it into place.
- Remove the upper midframe.

Step 33 — Disconnect the right 5G antenna

- Pry up and disconnect the right 5G antenna flex cable from the motherboard.
- Use a pair of tweezers to bend the cable out of the way of the motherboard.

Step 34 — Disconnect the side button cable

- Pry up and disconnect the side button flex cable from the motherboard.
- Bend the cable out of the way of the motherboard.

Step 35 — 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 36 — Disconnect the upper 5G antenna


- Pry up and disconnect the upper 5G antenna cable from the motherboard.

Step 37 — Remove the upper 5G antenna



- Use the flat end of a spudger to pry up the corner of the 5G millimeter wave antenna module.

  The module is secured with a bit of adhesive, but should release easily.

- Remove the 5G antenna module.

During reassembly, reconnect the 5G antenna connector first to properly align it into place, then firmly press the rest of the antenna module down to adhere it.

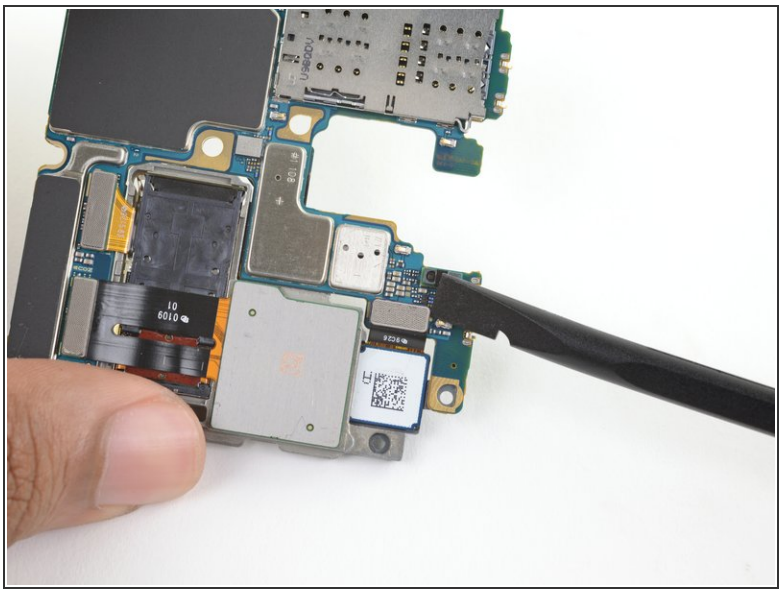
Step 38 — Unfasten the motherboard assembly

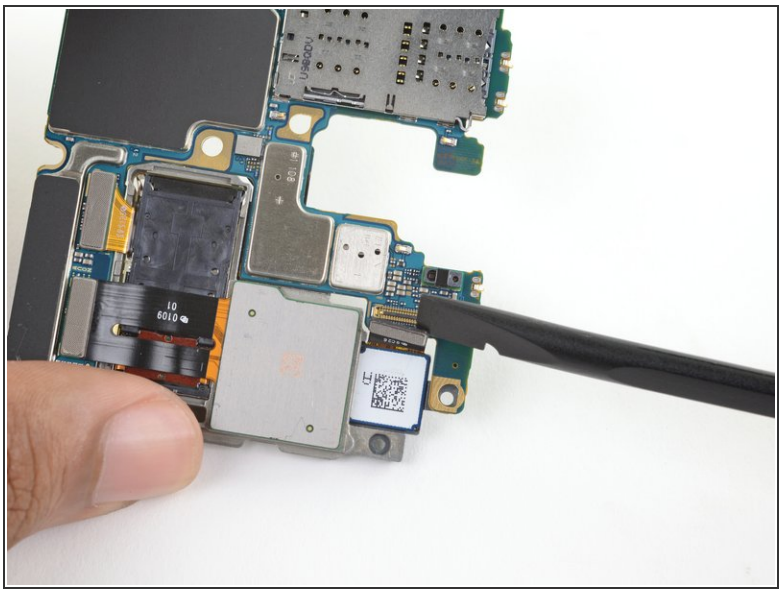
- Use a Phillips #00 screwdriver to remove the two 3.9 mm-long screws securing the motherboard and camera assembly.

Step 39 — Remove the motherboard assembly

- Insert the point 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.

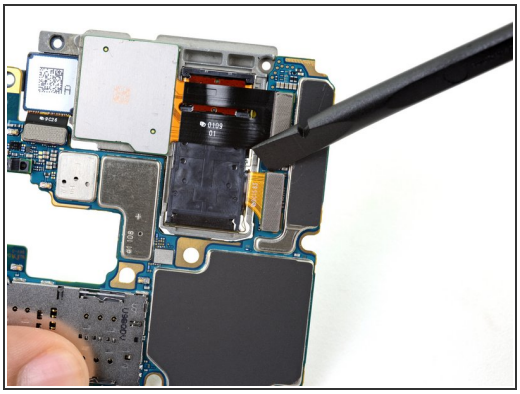
Step 40 — Disconnect the camera module

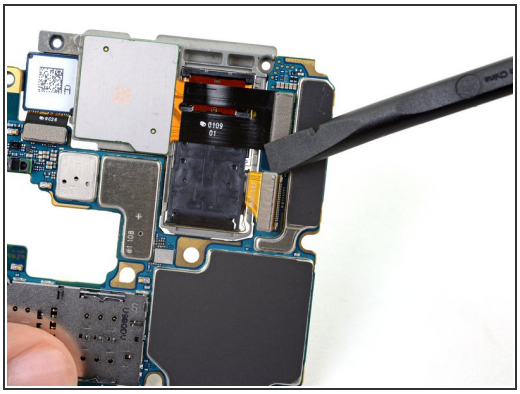


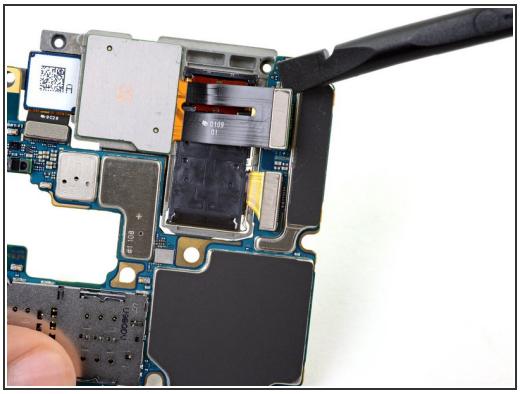


- Pry up and disconnect the ultrawide camera connector from the motherboard.

Step 41

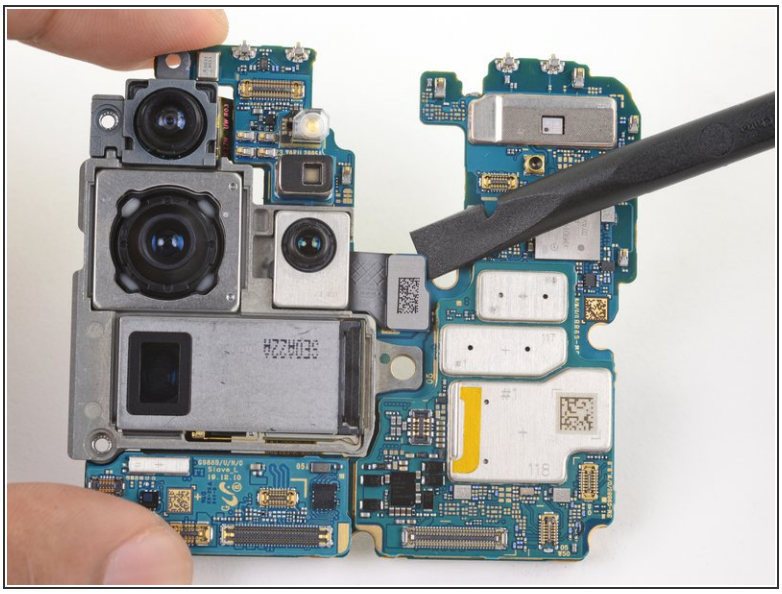


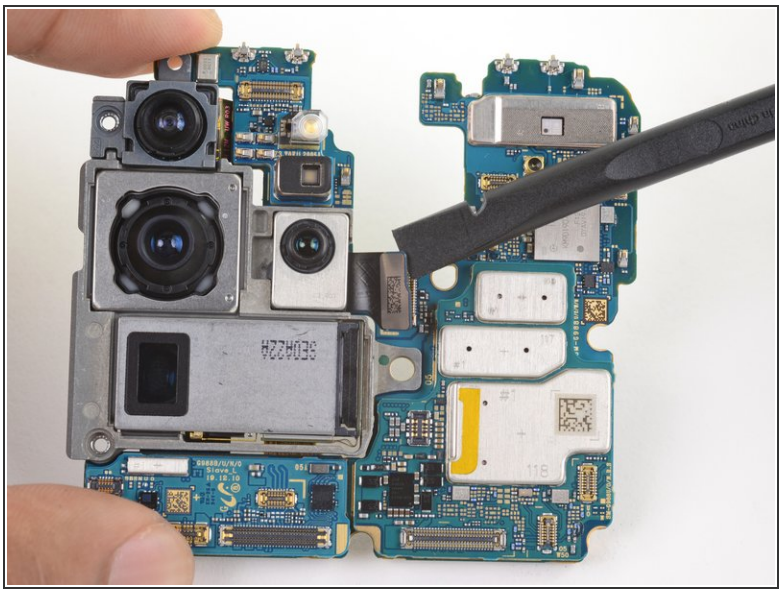




- Pry up and disconnect the telephoto and wide-angle camera connectors from the motherboard.

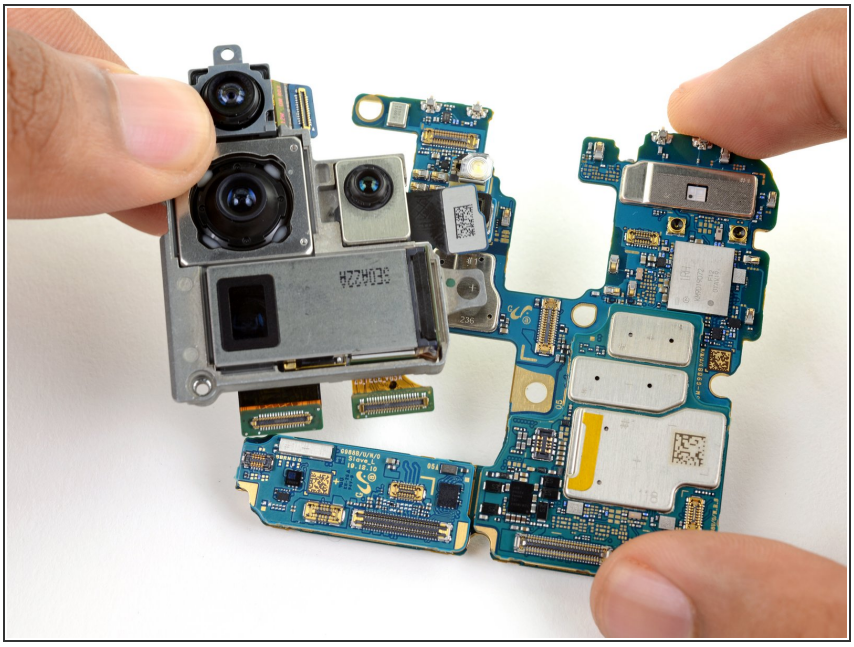
Step 42





- Flip the motherboard assembly over. Then pry up and disconnect the depth sensor connector from the motherboard.

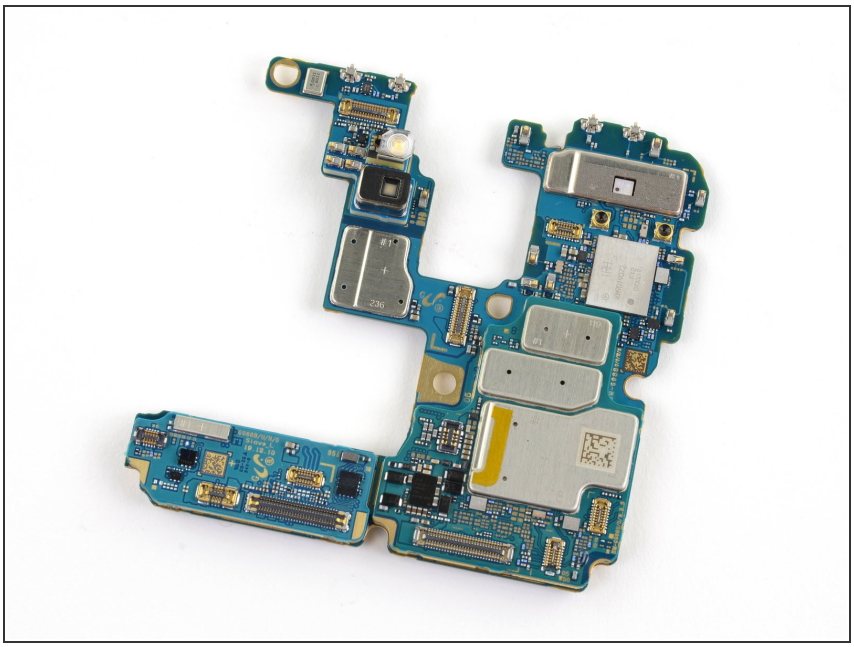
Step 43 — Remove the rear facing camera module



- Remove the rear facing camera module.

If you're replacing individual cameras, you may need to separate and transfer some of the existing cameras onto your new module.

Step 44 — 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.

