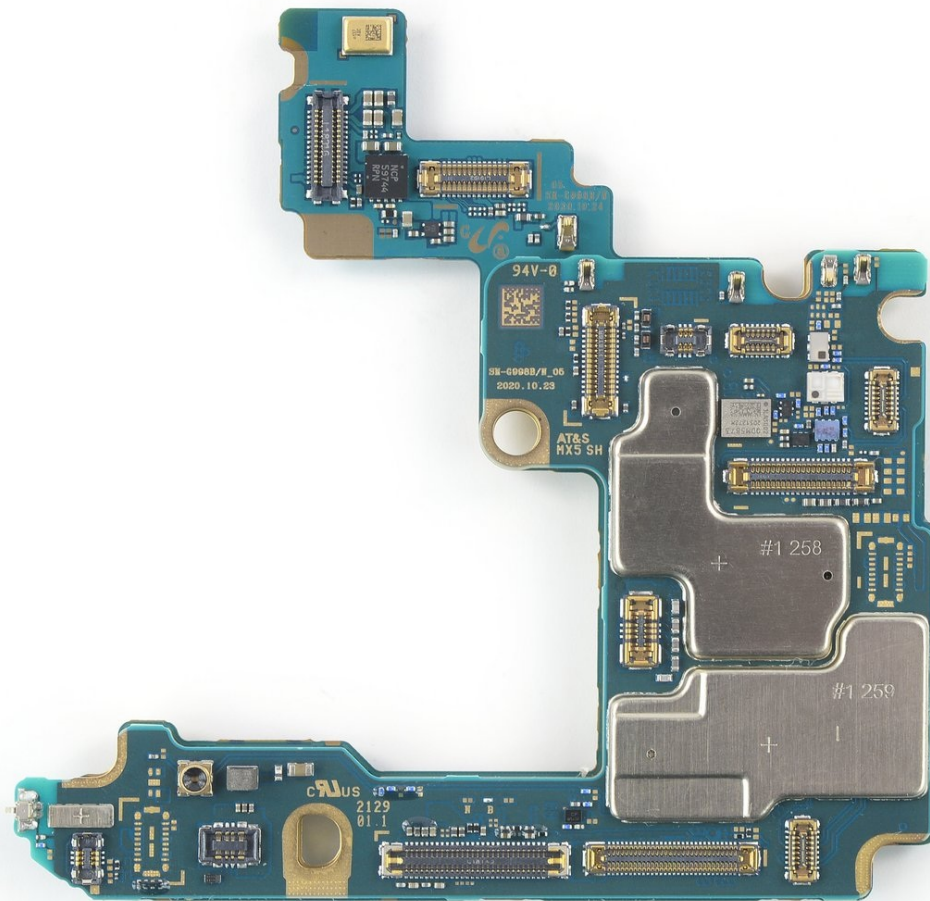




Samsung Galaxy S21 Ultra Motherboard Replacement

Use this guide to replace the motherboard on...

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INTRODUCTION

Use this guide to replace the motherboard on your Samsung Galaxy S21 Ultra.

This guide was performed on the **SM-G998B/DS** (international) model. Other models have an additional antenna cable sitting in the edge of the midframe.

Although it's not necessary to remove the interconnect cables to replace the screen we advise doing so. It makes the required motherboard removal and the reassembly way easier.

If you do not replace the adhesive seals when reassembling, your device will function normally, but will most likely lose its water protection.

You'll need replacement adhesive to reattach components when reassembling the device.



TOOLS:

- [iOpener](#) (1)
- [Suction Handle](#) (1)
- [iFixit Opening Picks \(Set of 6\)](#) (1)
- [Heat Gun](#) (1)
- [Isopropyl Alcohol \(90% or Greater\)](#) (1)
- [Microfiber Cleaning Cloths](#) (1)
- [ESD Safe Blunt Nose Tweezers](#) (1)
- [Spudger](#) (1)
- [Phillips #00 Screwdriver](#) (1)



PARTS:

- [Tesa 61395 Tape](#) (1)
- [iFixit Adhesive Remover](#) (1)

Step 1 — Heat the back cover



- ⓘ Unplug and power off your phone before you begin.
- [Prepare an iOpener](#) and apply it to the back cover for at least three minutes to loosen the adhesive underneath.
- ⓘ 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 2 — Insert an opening pick



- Secure a suction handle to the bottom edge of the back cover, as close to the edge as possible.
 - ① 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.
- Lift the back cover with the suction handle to create a small gap between the back cover and the frame.
 - ① If you have trouble creating a gap, apply more heat to further soften the adhesive. Follow the [iOpener](#) instructions to avoid overheating.
- Insert an opening pick into the gap you created.
- Slide the opening pick to the bottom left corner to slice the adhesive.
- Leave the opening pick in place to prevent the adhesive from resealing.

Step 3 — Slice the adhesive



- Insert a second opening pick at the bottom edge of your phone.
- Slide the opening pick to the bottom right corner to slice the adhesive.
- Leave the opening picks in place to prevent the adhesive from resealing.

Step 4



❗ If the adhesive becomes hard to cut, it has most likely cooled down. [Use your iOpener](#) for two to three minutes to reheat it.

- Insert a third opening pick at the bottom right corner of your phone.
- Slide the opening pick along the right edge of your phone to slice the adhesive.
- Leave the opening pick in the top right corner to prevent the adhesive from resealing.

Step 5



⚠ When you slice near the camera assembly, insert only the tip of the opening pick (~ 4-5 mm) to avoid damaging or smearing the camera.

- Insert a fourth opening pick underneath the top right corner of your phone.
- Slide the opening pick along the top edge to slice the adhesive.
- Leave the opening pick in the top left corner to prevent the adhesive from resealing.

Step 6



- Insert a fifth opening pick underneath the top left corner.
- Slide the opening pick along the left edge of the back cover to slice the remaining adhesive.

⚠ When you slice near the power button, insert only the tip of the opening pick (~ 3-4 mm) to avoid damaging the power and volume button flex cable.

Step 7 — Remove the back cover



- 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.
- Use some high concentration (over 90%) isopropyl alcohol to wipe away any adhesive residue.
- If you're using Samsung custom-cut adhesives, [follow this guide](#).
- If you're using double-sided tape, [follow this guide](#).

Step 8 — Slice the adhesive



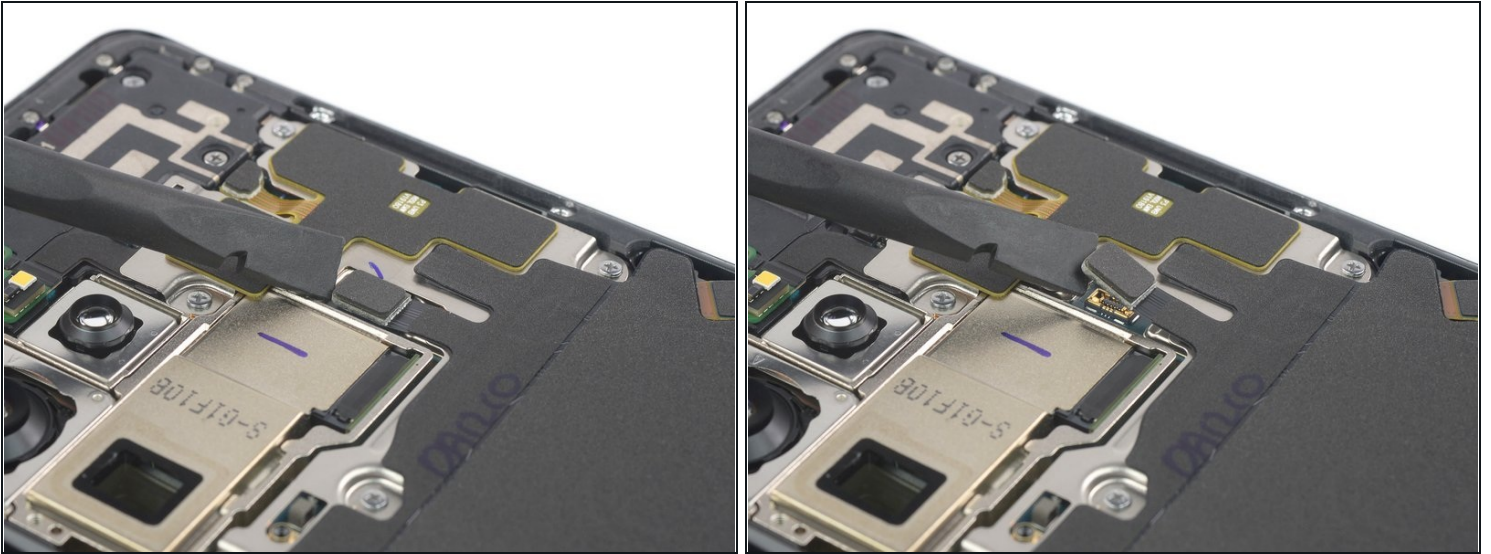
- Insert an opening pick underneath the left bottom end of the NFC antenna and charging coil assembly.
- Carefully slide the opening pick along the bottom left edge of the assembly to separate it from the battery.

Step 9



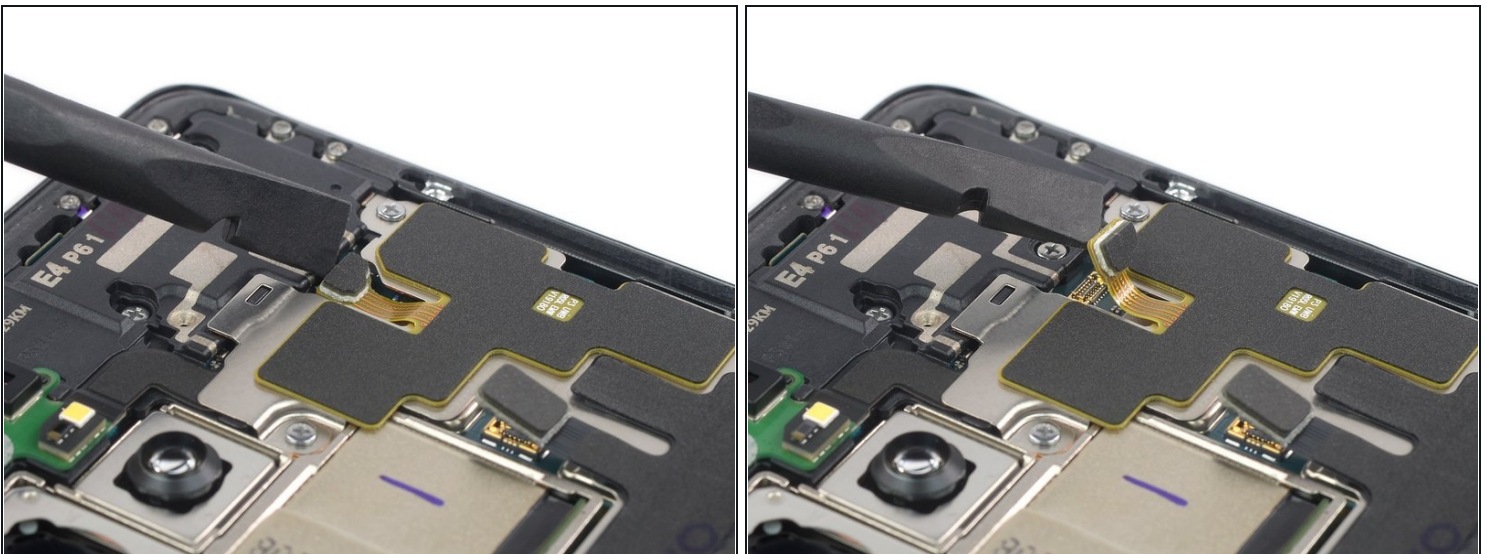
- Insert an opening pick underneath the bottom end of the NFC antenna and charging coil assembly.
- Carefully slide the opening pick along the bottom of the assembly to separate it from the loudspeaker.

Step 10 — Disconnect the charging coil



- Use a spudger to disconnect the charging coil by prying the connector straight up from its socket.

Step 11 — Disconnect the NFC antenna



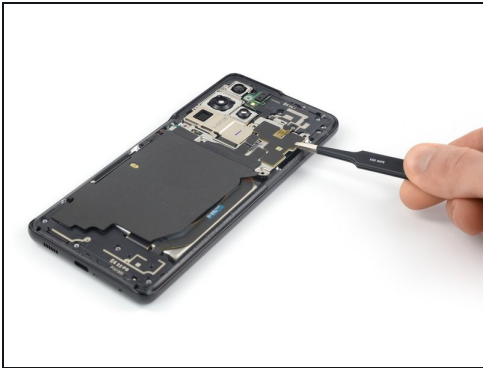
- Use a spudger to disconnect the NFC antenna by prying the connector straight up from its socket.

Step 12 — Unfasten the NFC antenna & charging coil assembly screws



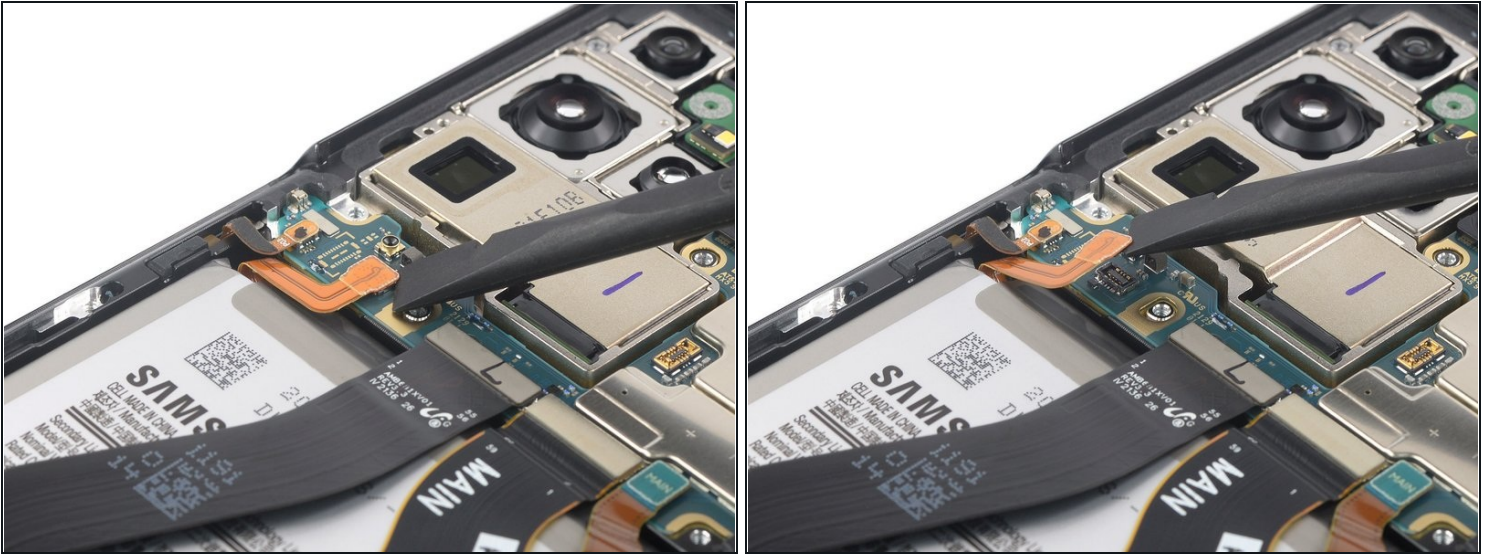
- Use a Phillips screwdriver to remove the five 3.9 mm-long screws securing the NFC antenna and charging coil assembly.

Step 13 — Remove the NFC antenna & charging coil assembly



- Use a pair of [tweezers](#) or your fingers to carefully remove the NFC antenna and charging coil assembly.

Step 14 — Disconnect the battery cable



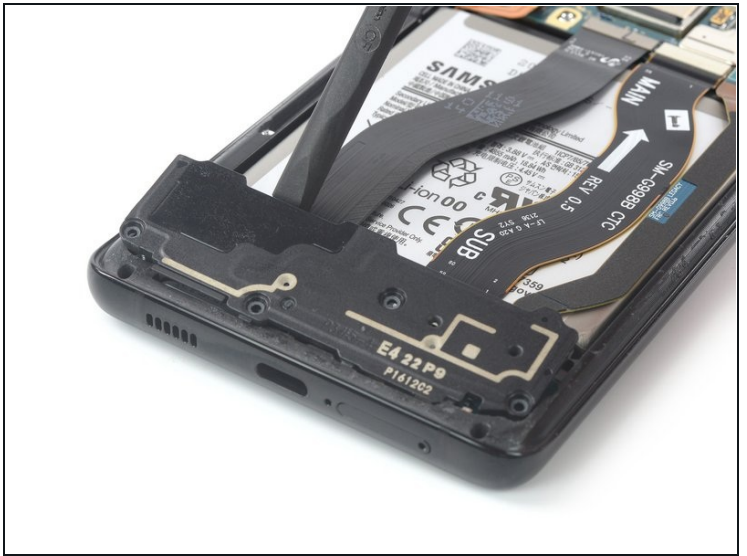
- Use a spudger to disconnect the battery cable by prying the connector straight up from its socket.

Step 15 — Unfasten the loudspeaker assembly screws



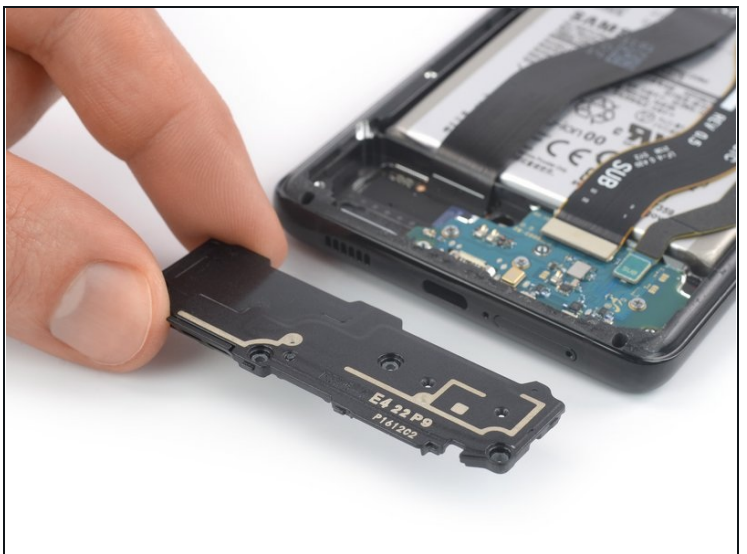
- Use a Phillips screwdriver to remove the four 3.9 mm-long screws securing the loudspeaker assembly.

Step 16 — Pry up the loudspeaker assembly



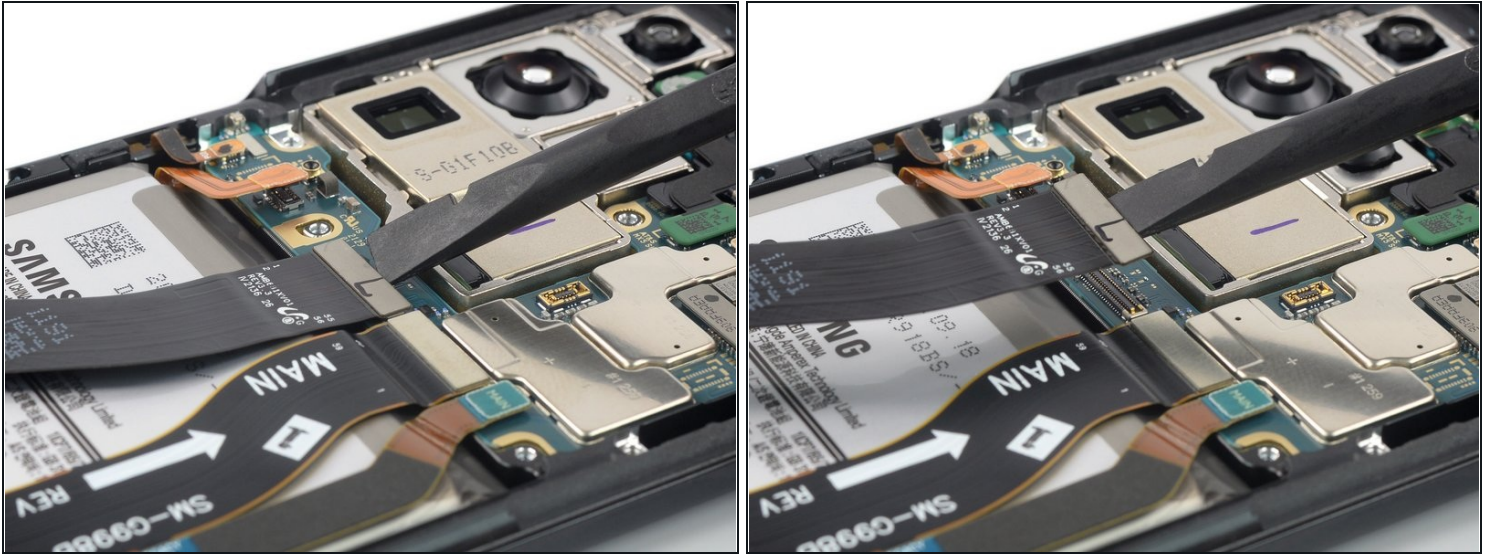
- Insert a spudger into the gap between the top edge of the loudspeaker assembly and the midframe.
- Use your spudger to pry up the loudspeaker assembly by tilting it downwards.

Step 17 — Remove the loudspeaker assembly



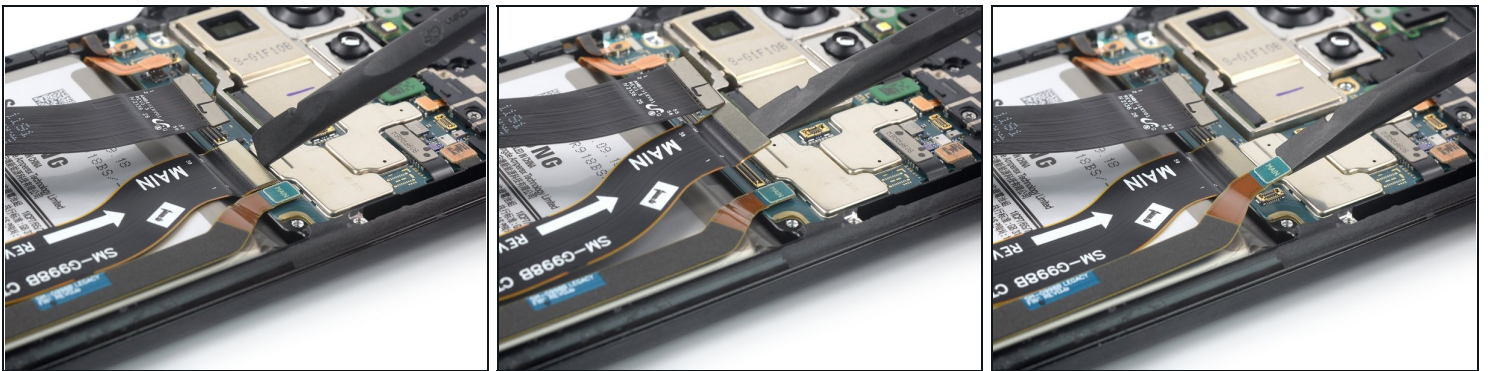
- Remove the loudspeaker assembly.
- ☑ During reassembly apply new adhesive where it's necessary after cleaning the relevant areas with isopropyl alcohol (>90%).

Step 18 — Disconnect the display flex cable



- ❶ If you're not planning to remove the motherboard or to replace the battery, you can skip this step and continue with the next one.
- Use a spudger to disconnect the display flex cable by prying the connector straight up from its socket.

Step 19 — Disconnect the main & interconnect flex cables



- Use a spudger to disconnect the main and interconnect flex cables from the motherboard by prying their upper connectors straight up from their sockets.

Step 20 — Remove the interconnect flex cable



- Use a spudger to disconnect the interconnect flex cable from the daughterboard by prying its bottom connector straight up from its socket.
- Use your fingers or a pair of [tweezers](#) to carefully remove the interconnect flex cable.

Step 21 — Remove the main flex cable



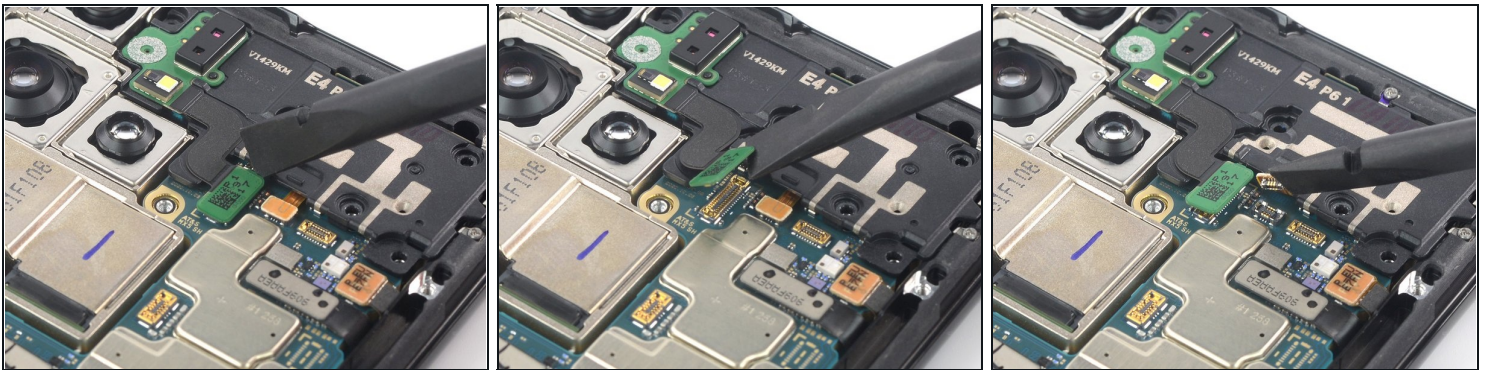
- Use a spudger to disconnect the main flex cable from the daughterboard by prying its bottom connector straight up from its socket.
- Use your fingers or a pair of tweezers to carefully remove the main flex cable.

Step 22 — Unfasten the earpiece and laser AF module assembly screws



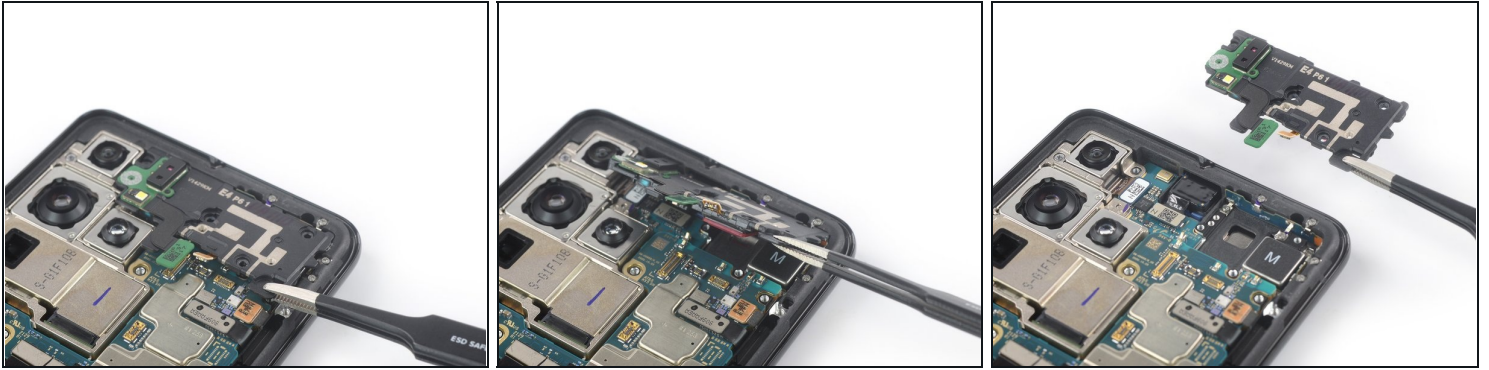
- Use a Phillips screwdriver to remove the four 3.9 mm-long screws securing the earpiece speaker and laser AF module assembly.

Step 23 — Disconnect the laser AF module and earpiece speaker flex cable



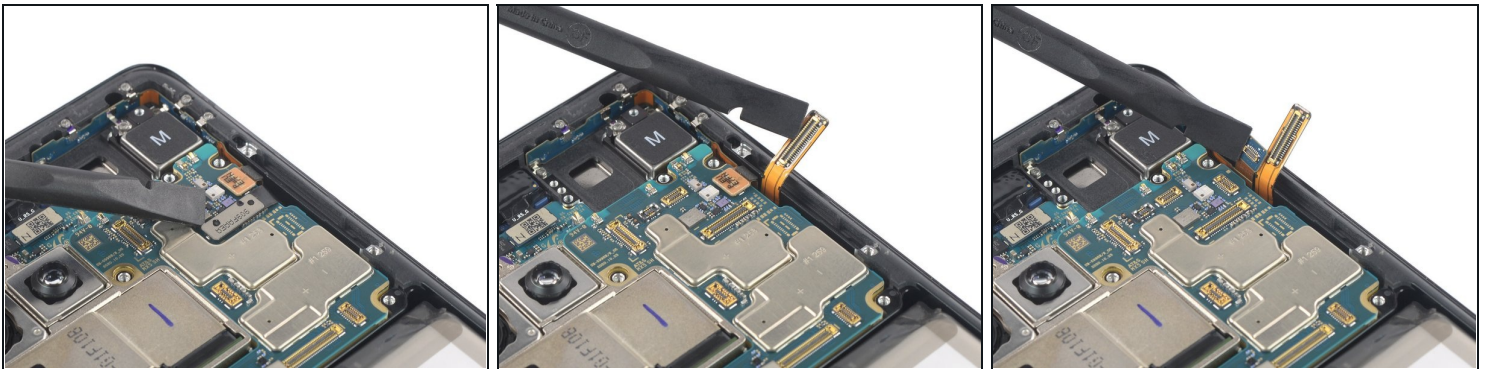
- Use a spudger to disconnect the laser AF module and earpiece speaker flex cables by prying the connectors straight up from their socket.

Step 24 — Remove the earpiece speaker and laser AF module assembly



- Grab the bottom right corner of the earpiece speaker and laser AF module assembly with a pair of blunt nose [tweezers](#) and carefully lift it upwards.
- Remove the earpiece speaker and laser AF module assembly.

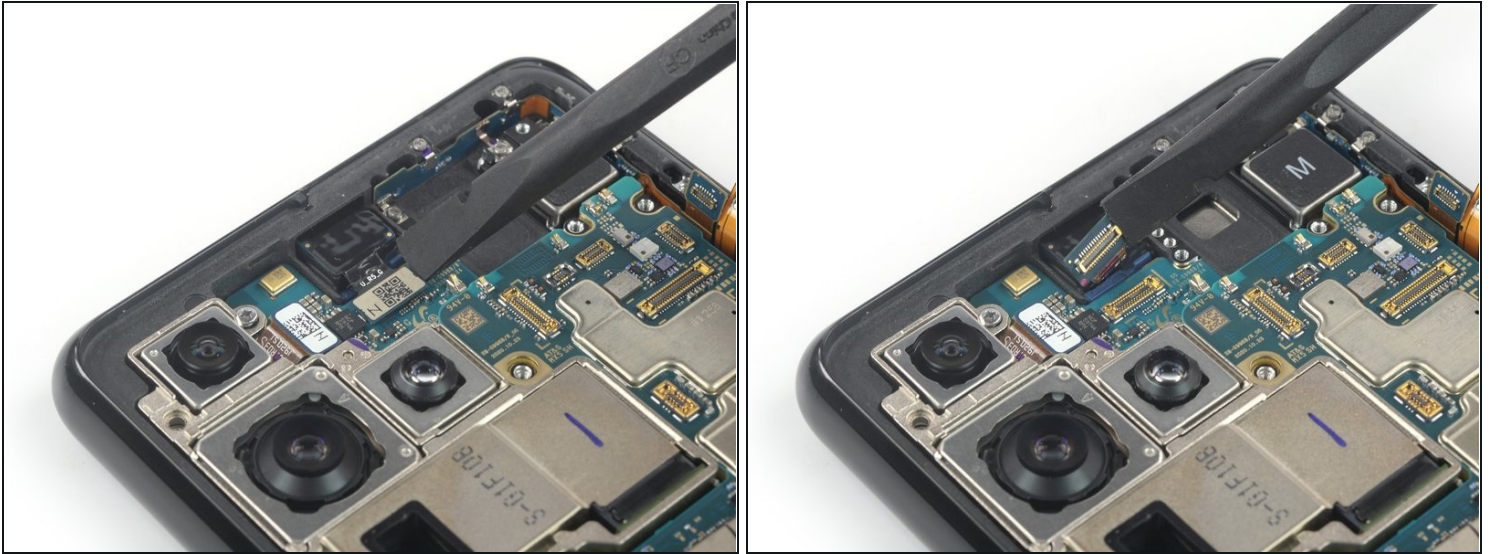
Step 25 — Disconnect the in-display fingerprint and antenna flex cables



- Use a spudger to disconnect the in-display fingerprint and antenna flex cables by prying the connectors straight up from their socket.
- Carefully bend both connectors to the side to free the motherboard.

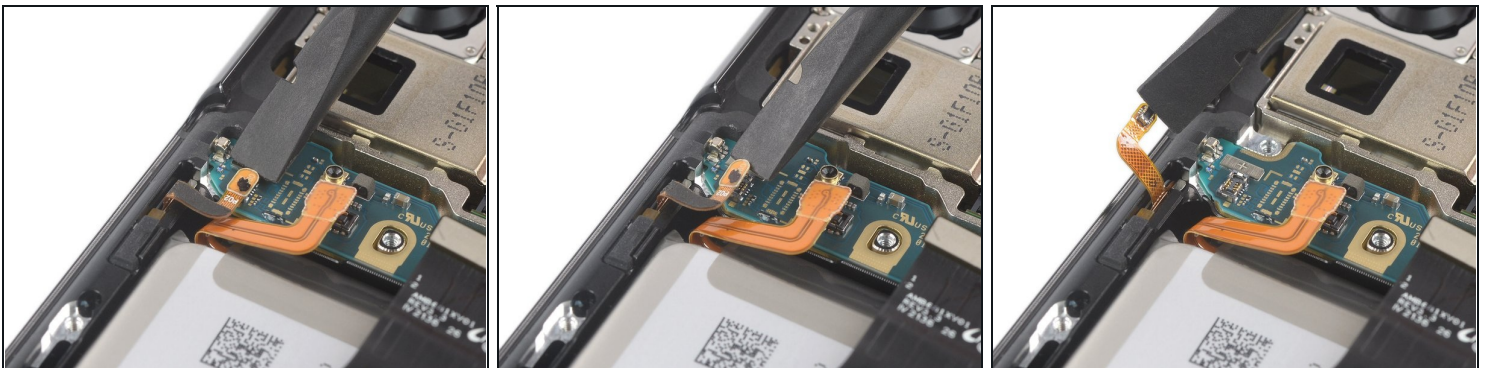
⚠ Do not fold the cables sharply and only bend them to avoid cable damage.

Step 26 — Disconnect the front facing camera



- Use a spudger to disconnect the front facing camera cable by prying the connector straight up from its socket.

Step 27 — Disconnect the power button flex cable



- Use a spudger to disconnect the power button flex cable by prying the connector straight up from its socket.
- Carefully bend the connector to the side to free the motherboard.

Step 28 — Unfasten the camera module screw



- Use a Phillips screwdriver to remove the 3.9 mm-long screw securing the camera module.

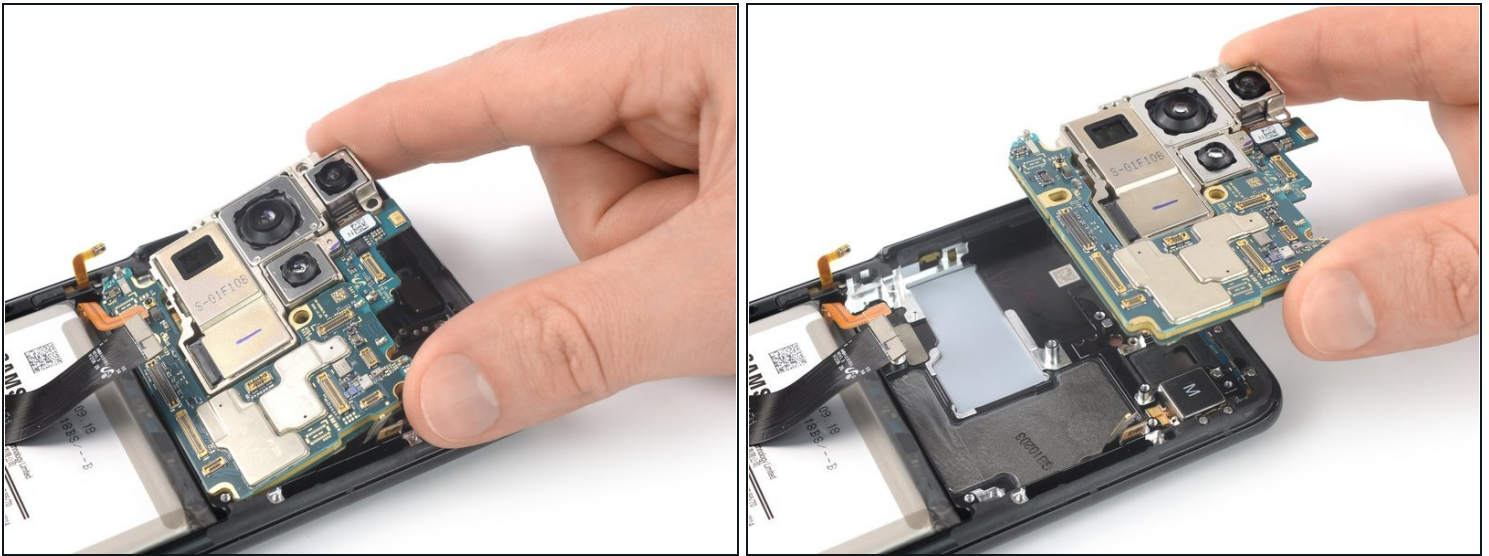
Step 29 — Pry up the motherboard



⚠ Avoid damaging the flex cables surrounding the motherboard during the following procedure.

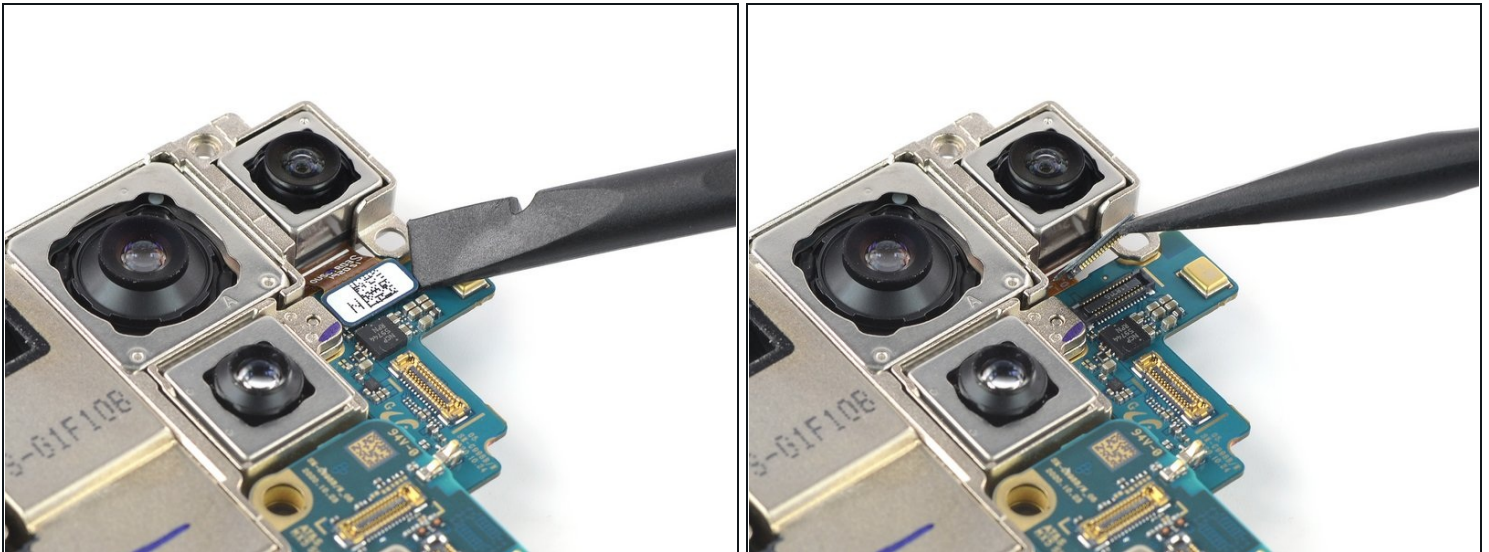
- Insert an spudger underneath the top edge of the motherboard next to the vibration motor.
- Use your spudger to pry up the motherboard by tilting it downwards and twisting it to the side at the same time.

Step 30 — Remove the motherboard



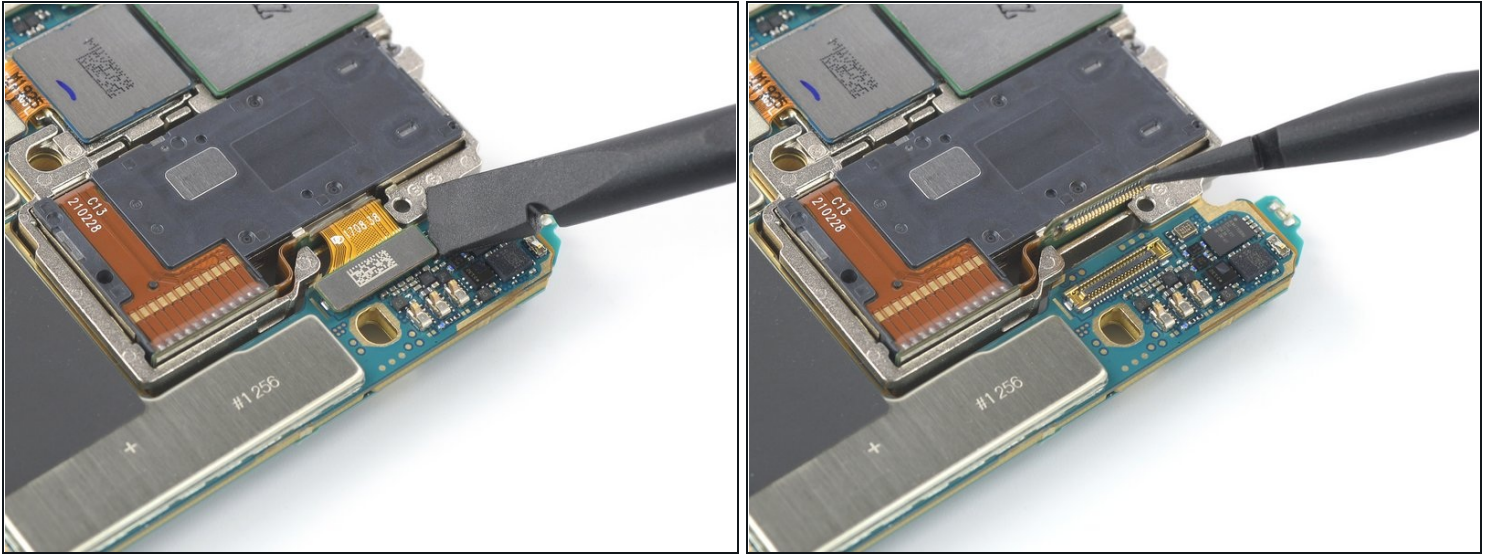
- Carefully remove the motherboard.
 - ⚠ Avoid any abrupt movements during the removal and make sure none of the flex cables are entangled in the motherboard to avoid tearing them.

Step 31 — Disconnect the ultra wide camera



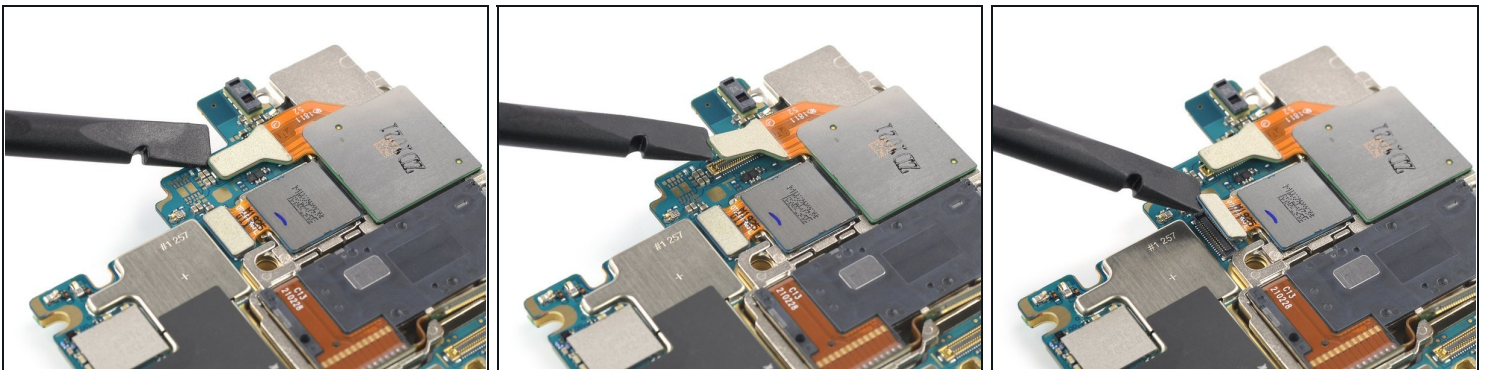
- Use a spudger to disconnect the ultra wide camera flex cable by prying its connector straight up from its socket.

Step 32 — Disconnect the telephoto camera



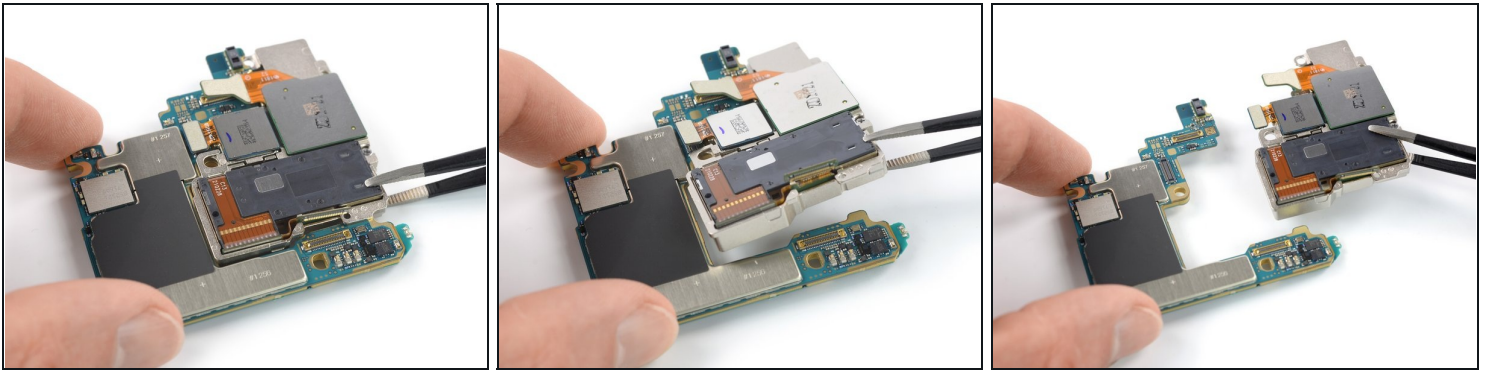
- Use a spudger to disconnect the telephoto camera flex cable on the rear side of the motherboard by prying its connector straight up from its socket.

Step 33 — Disconnect the wide and second telephoto camera



- Use a spudger to disconnect the wide and the second telephoto camera flex cables by prying their connectors straight up from their sockets.

Step 34 — Remove the rear camera assembly



- Use a pair of [tweezers](#) to separate the motherboard from the rear camera assembly.
- ☑ During reassembly apply new adhesive where it's necessary after cleaning the relevant areas with isopropyl alcohol (>90%).

If possible, turn on your device and test your repair before installing new adhesive and resealing.

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 these instructions 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? Try some [basic troubleshooting](#), or ask our [Answers community](#) for help.