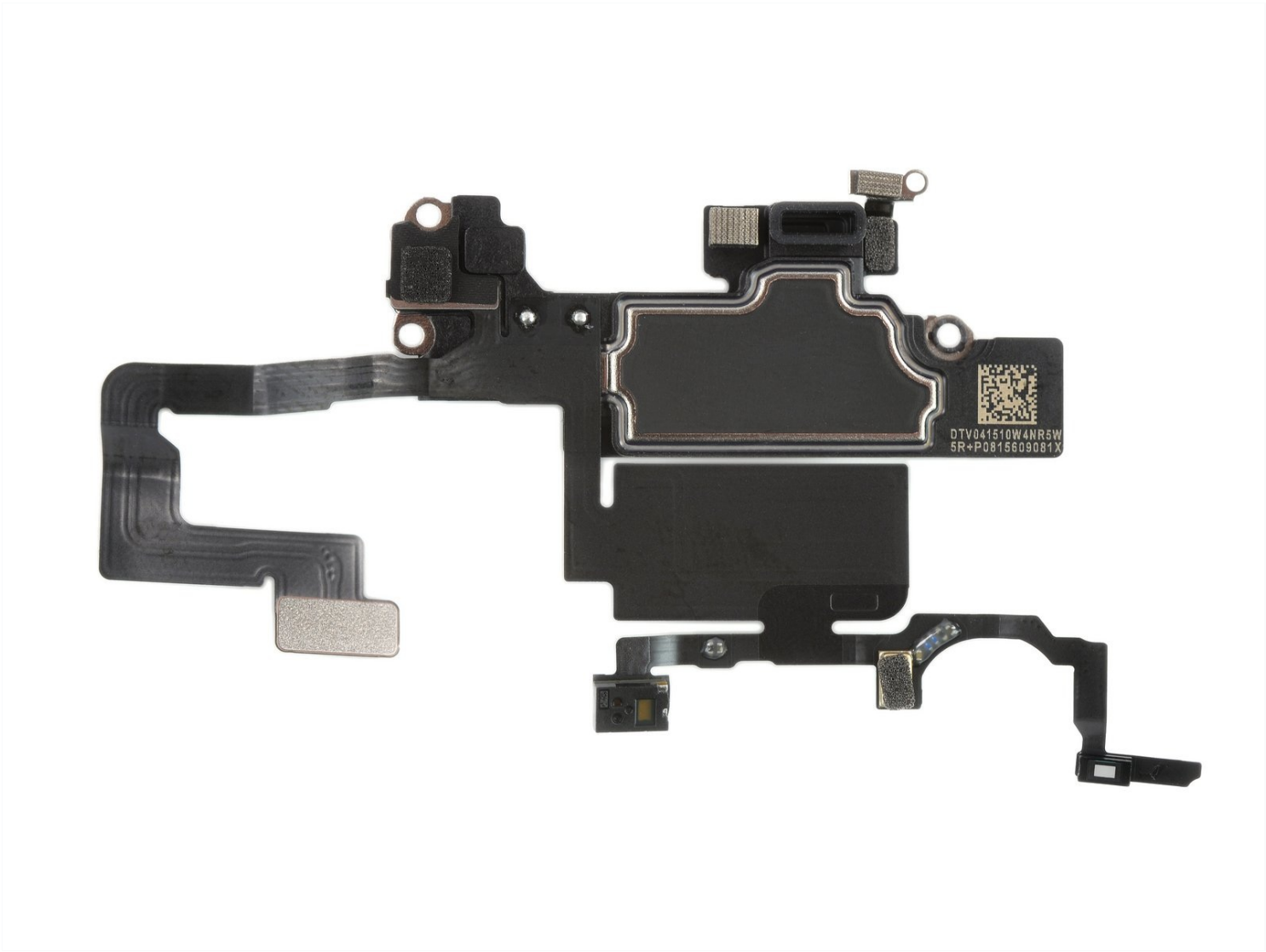
iPhone 12 mini Earpiece Speaker and Front Sensor Assembly Replacement

This guide shows how to remove or transfer the...

Written By: Dominik Schnabelrauch



INTRODUCTION

This guide shows how to remove or transfer the earpiece speaker and front sensor assembly in your iPhone 12 mini. This assembly is affixed to the back of the display and also includes a microphone, ambient light sensor, flood illuminator, and proximity sensor.

This assembly is paired to your individual iPhone from the factory, so you must transfer it from your old display to your new one during any display replacement.

The flood illuminator forms part of the biometric Face ID security feature, and Face ID functions will fail if the original component is damaged or incorrectly installed. Replacing it with a new part will also cause Face ID to fail, so take extra care not to damage any of these components during this procedure. If damaged, only Apple or an “Apple authorized” technician can restore Face ID function.

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

TOOLS:

- P2 Pentalobe Screwdriver iPhone (1)
- Anti-Clamp (1)
- Heat Gun (1)
- iOpener (1)
- Suction Handle (1)
- iFixit Opening Picks (Set of 6) (1)
- Tri-point Y000 Screwdriver (1)
- Tweezers (1)
- Spudger (1)
- Phillips #00 Screwdriver (1)

PARTS:

- iPhone 12 mini Earpiece Speaker and Sensor Assembly (1)
- Tesa 61395 Tape (1)

Step 1 — Remove the pentalobe screws

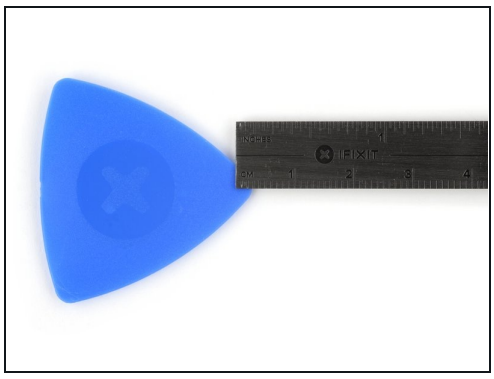


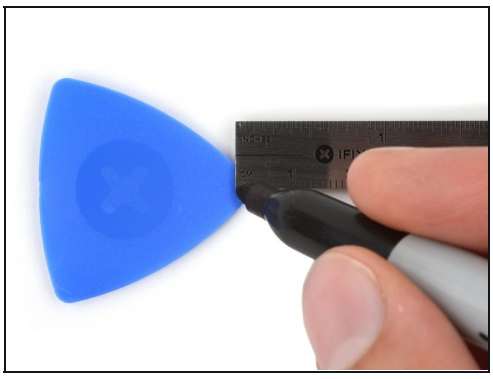


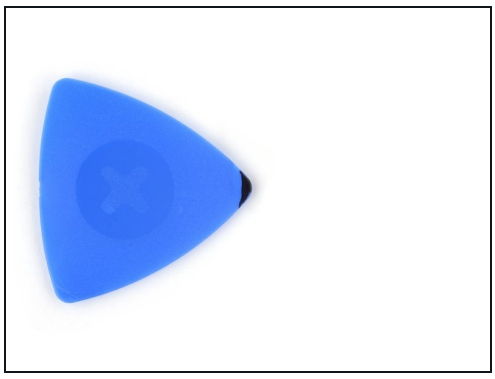
⚠ Before you begin, discharge your iPhone battery below 25%. A charged lithium-ion battery can catch fire and/or explode if accidentally punctured.

- Power off your iPhone before beginning disassembly.
- Remove the two 6.7 mm-long pentalobe screws at the bottom edge of the iPhone.

Step 2 — Mark your opening picks







ⓘ If inserted too far, an opening pick can damage your device. Follow this step to mark your pick and prevent damage.

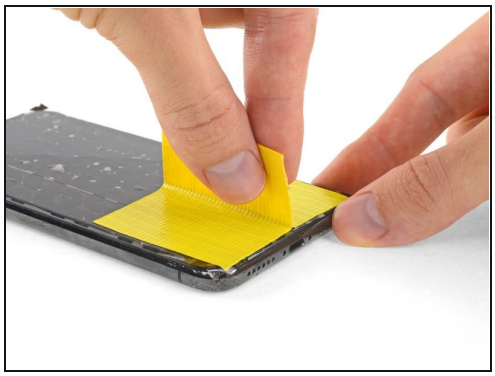
- Measure 3 mm from the tip and mark the opening pick with a permanent marker.

ⓘ You can also mark the other corners of the pick with different measurements.

ⓘ Alternatively, tape a coin to a pick 3 mm from the tip.

Step 3 — Tape over any cracks





ⓘ If your iPhone has a cracked screen, keep further breakage contained and prevent bodily harm during your repair by taping over the glass.

- Lay overlapping strips of clear packing tape over the iPhone's screen until the whole face is covered.

⚠ Wear safety glasses to protect your eyes from any glass shaken free during the repair.

- If you can't get the suction cup to stick in the next few steps, fold a strong piece of tape (such as duct tape) into a handle and lift the screen with that instead.

ⓘ If all else fails, you can superglue the suction cup to the screen.

Step 4 — Anti-Clamp instructions







The next three steps demonstrate the Anti-Clamp, a tool we designed to make the opening procedure easier. **If you aren't using the Anti-Clamp, skip down three steps for an alternate method.**

For complete instructions on how to use the Anti-Clamp, check out this guide.

- Pull the blue handle backwards to unlock the Anti-Clamp's arms.
- Slide the arms over either the left or right edge of your iPhone.
- Position the suction cups near the bottom edge of the iPhone—one on the front, and one on the back.
- Squeeze the cups together to apply suction to the desired area.

If you find that the surface of your iPhone is too slippery for the Anti-Clamp to hold onto, you can use tape to create a grippier surface.

Step 5







- Pull the blue handle forwards to lock the arms.
- Turn the handle clockwise 360 degrees or until the cups start to stretch.
- Make sure the suction cups remain aligned with each other. If they begin to slip out of alignment, loosen the suction cups slightly and realign the arms.

Step 6







- Support your iPhone on something sturdy such as a hardcover book so it rests hands-free and parallel to the ground; this makes it easier to work with in the following steps.

- Use a hair dryer to heat along the bottom edge of the iPhone. The screen should feel slightly too hot to touch.

  ⓘ For complete instructions on how to use a hair dryer, check out this guide.

- Wait one minute to give the adhesive a chance to release and present an opening gap.

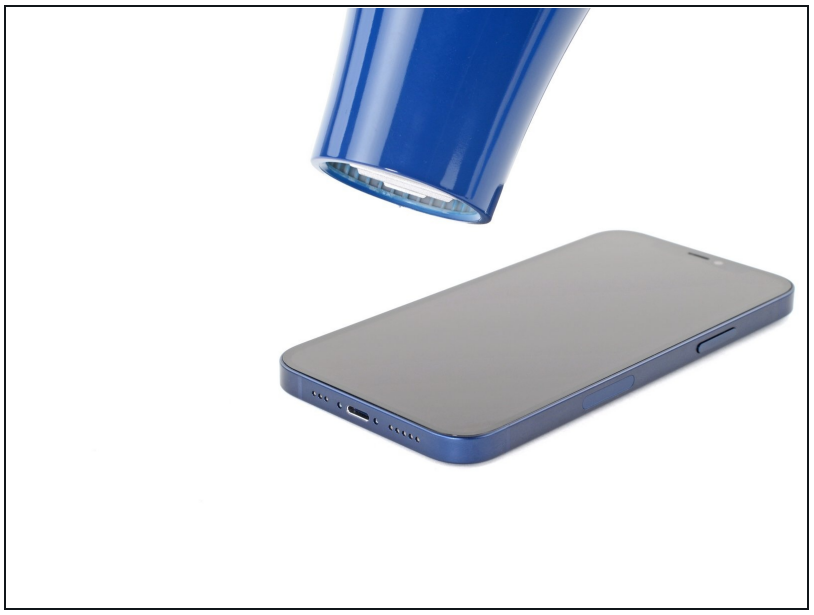
- Insert an opening pick under the screen's plastic bezel when the Anti-Clamp creates a large enough gap.

  ⓘ If the Anti-Clamp doesn't create a sufficient gap, apply more heat to the area and rotate the handle a quarter turn.

  ⚠ Don't crank more than a quarter turn at a time, and wait one minute between turns. Let the Anti-Clamp and time do the work for you.

- **Skip the next three steps.**

Step 7 — Heat the bottom edge of the phone



Opening the iPhone's display will compromise its waterproof seals. Have replacement seals ready before you proceed past this step, or take care to avoid liquid exposure if you reassemble your iPhone without replacing the seals.

Heating the bottom edge of the iPhone helps soften the adhesive securing the display, making it easier to open.

- Use a hair dryer or a heat gun to heat the bottom edge of the iPhone for 90 seconds or until the screen is slightly too hot to touch.

  Never leave your hair dryer in one spot for an extended period of time.

If you have trouble during the opening procedure, the adhesive most likely cooled down. Apply more heat to further soften the adhesive.

Step 8 — Apply a suction handle





- If you're using a single suction handle, apply it to the bottom edge of the phone, as close to the 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.

Step 9 — Lift the screen slightly





- Pull up on the suction cup with firm, constant pressure to create a slight gap between the screen and the frame.
- Insert an opening pick into the gap under the screen's plastic bezel.

ⓘ The watertight adhesive holding the screen in place is very strong; creating this initial gap takes a significant amount of force. If you're having a hard time opening a gap, apply more heat, and gently rock the screen up and down to weaken the adhesive until you create enough of a gap to insert your tool.

Step 10 — Heat the right edge




- Use a hair dryer to heat the right edge of the iPhone (the edge with the power button) for 90 seconds or until the screen is slightly too hot to touch.

Step 11 — Separate the screen adhesive

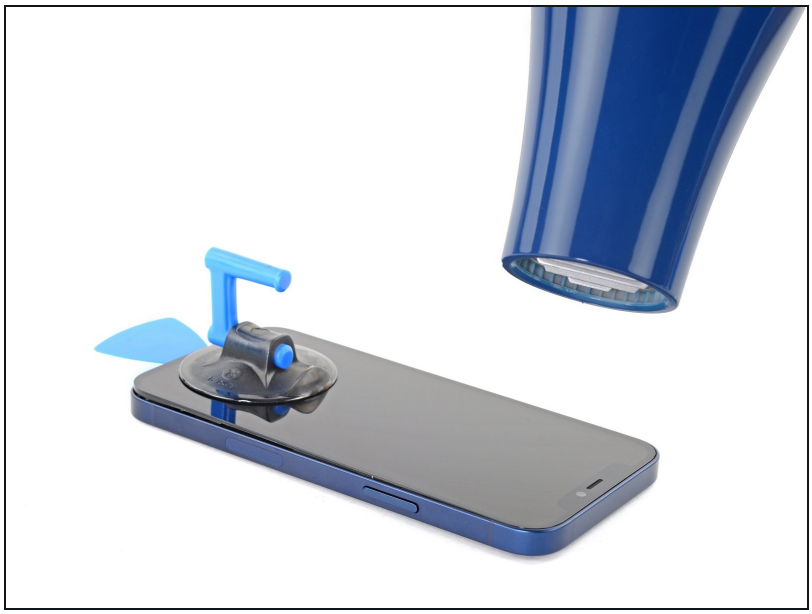




- Slide the opening pick around the bottom right corner and along the right edge of the iPhone, slicing through the adhesive holding the display in place.

⚠ Don't insert your pick more than 3 mm, as you may damage internal components.

Step 12 — Heat the top edge



- Use a hair dryer to heat the top edge of the iPhone for 90 seconds or until the screen is slightly too hot to touch.

Step 13





ⓘ The top edge of the display is secured with both glue and clips.

- Insert your pick underneath the top-right corner of the display panel.
- Slide the pick around the top right corner. Because of the clips you might encounter some resistance.

⚠ Don't insert your pick more than 3 mm, as you may damage the front panel sensor array.

ⓘ Gently pulling the front panel assembly towards the bottom edge of the phone simplifies this step a little.

- Slide the pick along the top edge and cut any remaining adhesive securing the display.

Step 14 — Heat the left edge





- Use a hair dryer to heat the left edge of the iPhone for 90 seconds or until the screen is slightly too hot to touch.

Step 15 — Screen information



⚠ There's a delicate cable along the left edge of your iPhone. **Don't insert your pick here**, as you may damage the cable.

Step 16 — Separate the left adhesive





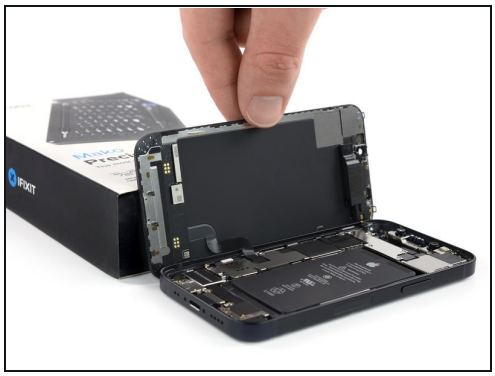
- Insert a second opening pick in the bottom left corner of the iPhone.
- Twist both picks simultaneously until the left edge clips release.

ⓘ Apply the twisting force gradually.

ⓘ If you're having trouble separating the adhesive, reheat the left edge.

Step 17 — Open the iPhone





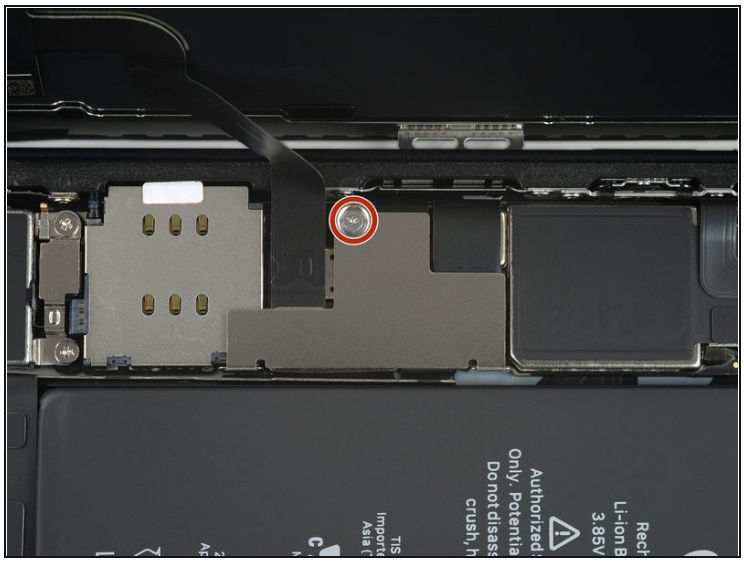
- Rotate your iPhone so the right edge faces you.
- Open the iPhone by swinging the display up from the right side, like the front cover of a book.

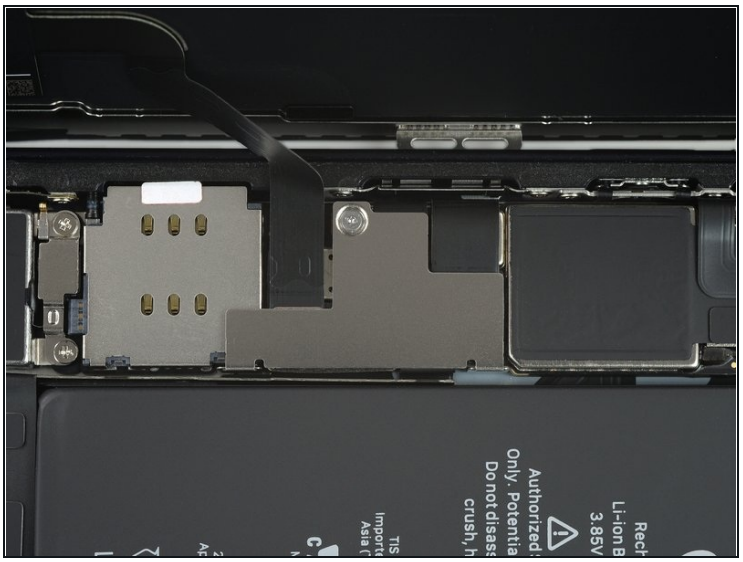
⚠ Don't try to fully separate the display yet, as several fragile ribbon cables still connect it to the iPhone's logic board.

- Lean the display against something to keep it propped up while you're working on the phone.

During reassembly, lay the display in position, align the clips along the top edge, and carefully press the top edge into place before snapping the rest of the display down. If it doesn't click easily into place, check the condition of the clips around the perimeter of the display and make sure they aren't bent.

Step 18 — Unscrew the battery and display connector cover





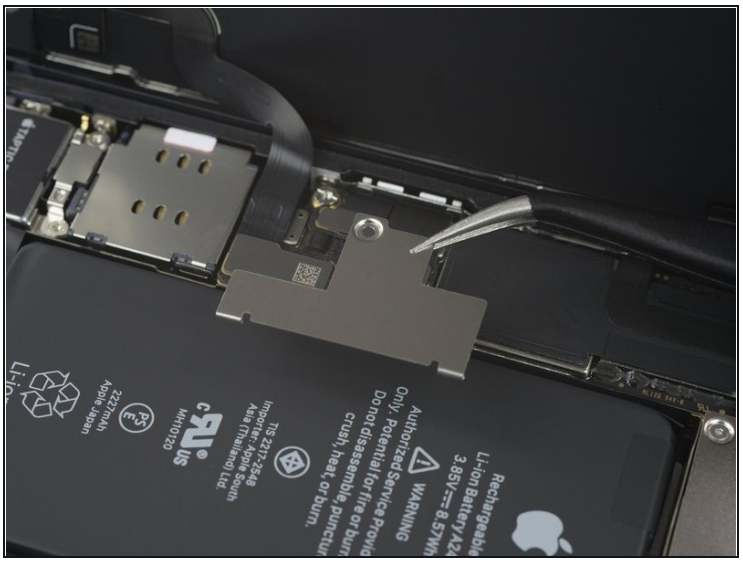
- Remove the 1.25 mm-long Y000 screw securing the battery & display connector cover bracket.

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

During reassembly, this is a good point to power on your iPhone and test all functions before you seal the display in place. Be sure to power your iPhone back down completely before you continue working.

Step 19 — Remove the battery and display connector cover





- Use a pair of tweezers to remove the battery & display connector bracket.

  There are two little hinges on the right edge of the connector bracket. Make sure to align them with their counterparts during reassembly.

Step 20 — Disconnect the battery





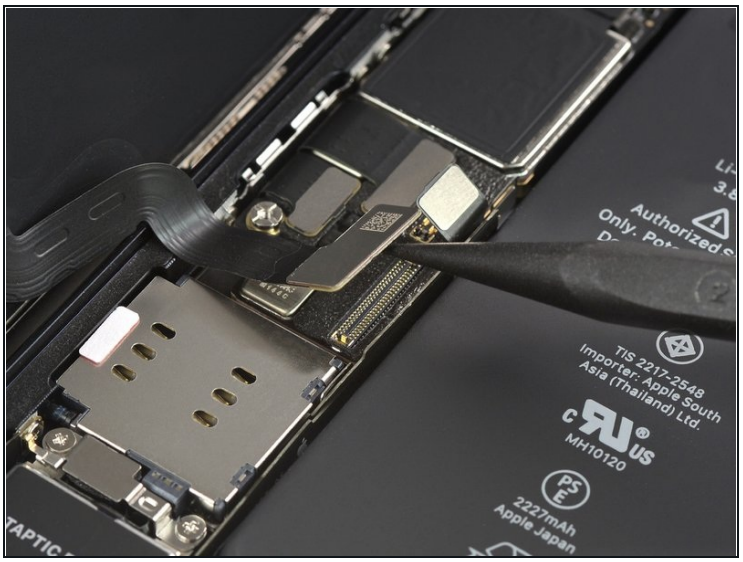
- Use a spudger or a clean fingernail to pry the battery connector up from its socket on the logic board.

  ⓘ Try not to damage the black silicone seal surrounding this and other board connections. These seals provide extra protection against water and dust intrusion.

- Bend the connector slightly away from the logic board to prevent it from accidentally making contact with the socket and providing power to the phone during your repair.

Step 21 — Disconnect the OLED display cable

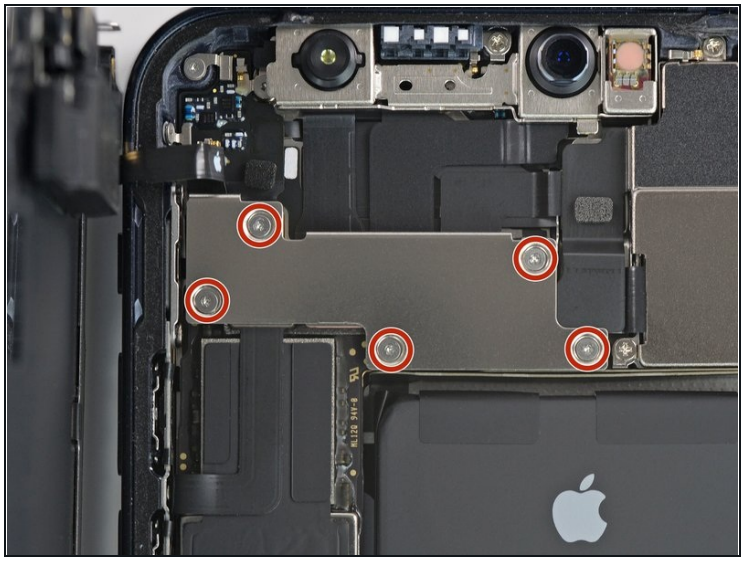


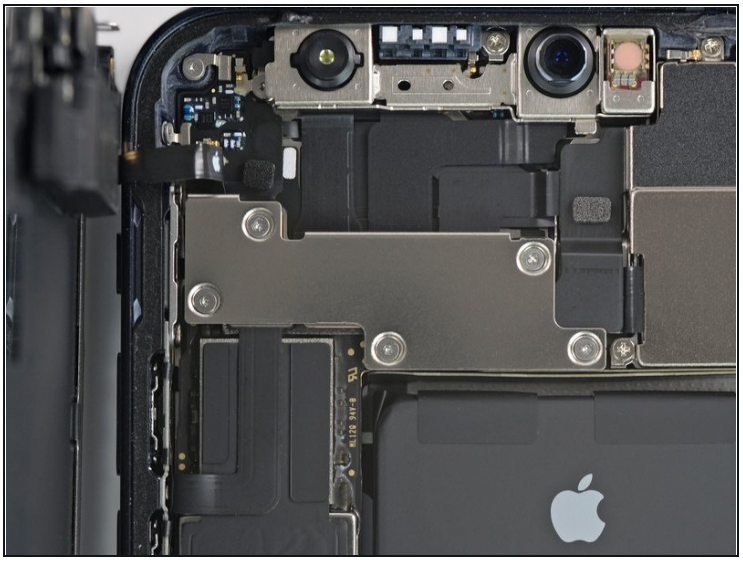


- Use a spudger or a clean fingernail to pry the OLED panel cable connector up from its socket on the logic board.

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 22 — Unscrew the front sensor assembly cover





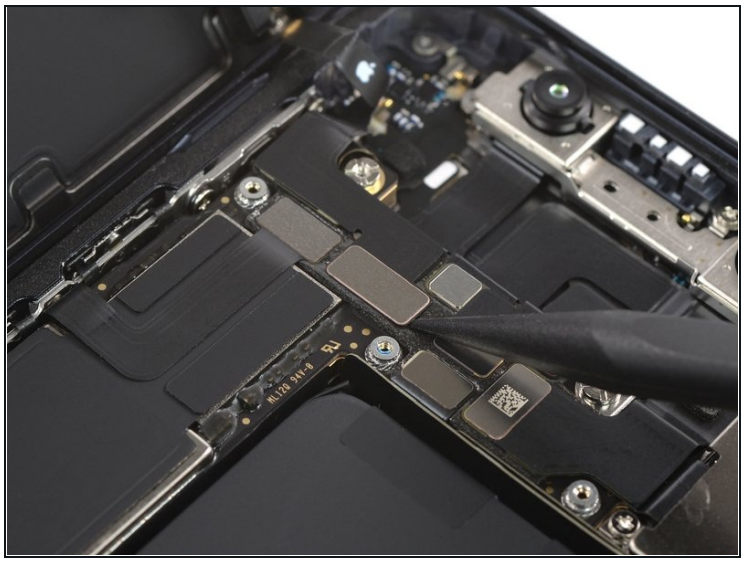
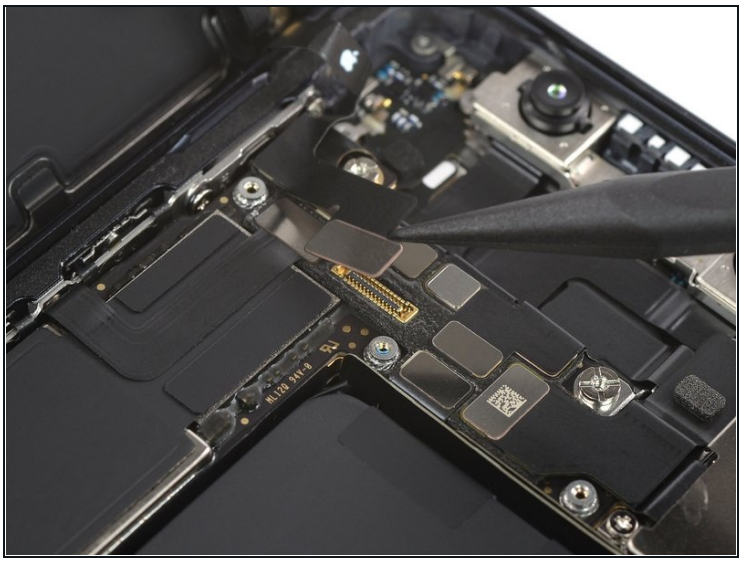
- Remove the five 1 mm-long Y000 screws securing the front sensor assembly cover bracket.

Step 23




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

Step 24 — Disconnect the front sensors

- Use a spudger or a clean fingernail to disconnect the front sensor assembly cable connector.

Step 25 — Remove the display assembly



- Remove the display assembly.

During reassembly, pause here if you wish to replace the waterproof adhesive around the edges of the display.

Step 26 — Unscrew the front sensor and speaker assembly

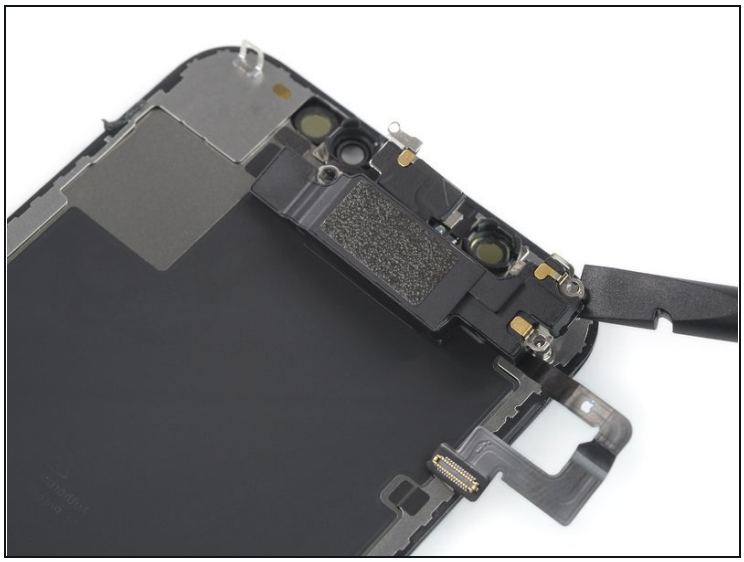


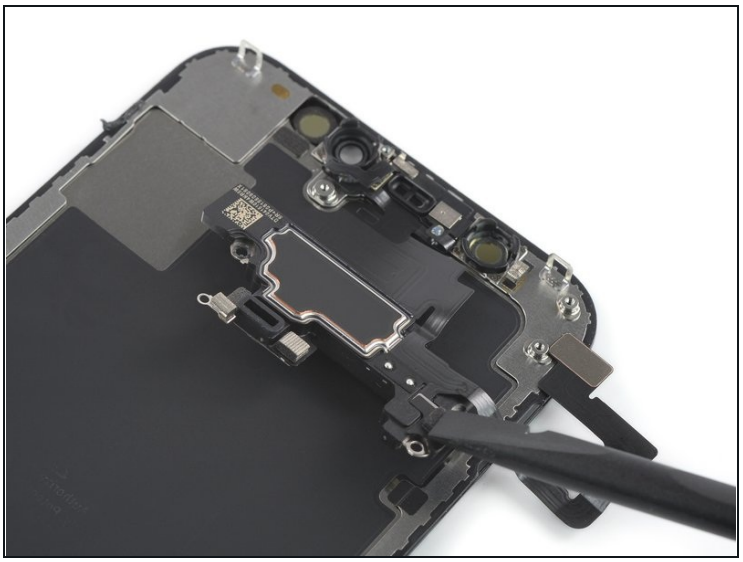


- Remove the 1.1 mm-long tri-point Y000 screw.
- Remove the 1.8 mm-long tri-point Y000 screw.
- Remove the two 1.6 mm-long Phillips #00 screws.

⚠ Don't try to remove the front sensor and speaker assembly yet. It's still glued to the rear side of the display panel.

Step 27





- Slide the flat end of a spudger underneath the top right corner of the earpiece speaker and fold it to the back.

Step 28 — Heat up the top edge of the display



- Use a hairdryer or heat gun or prepare an iOpener and apply it to the top front of the display for 1-2 minutes, in order to soften the adhesive securing the sensors.

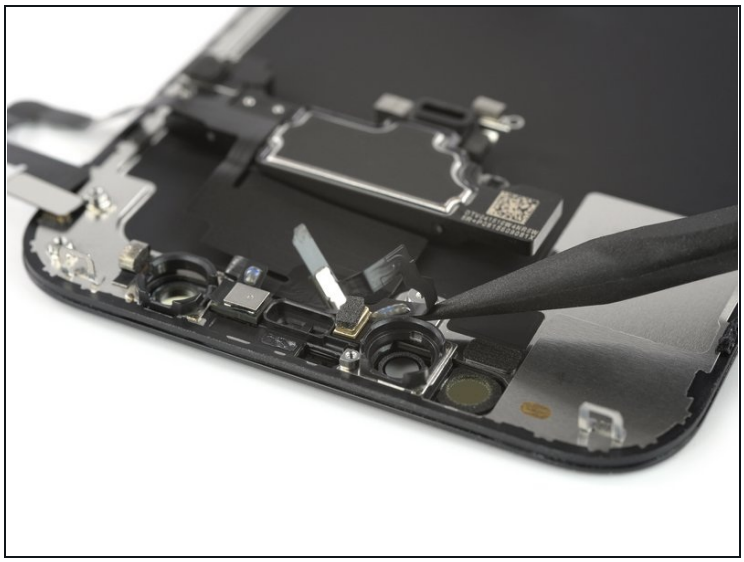
Step 29 — Pry up the proximity sensor

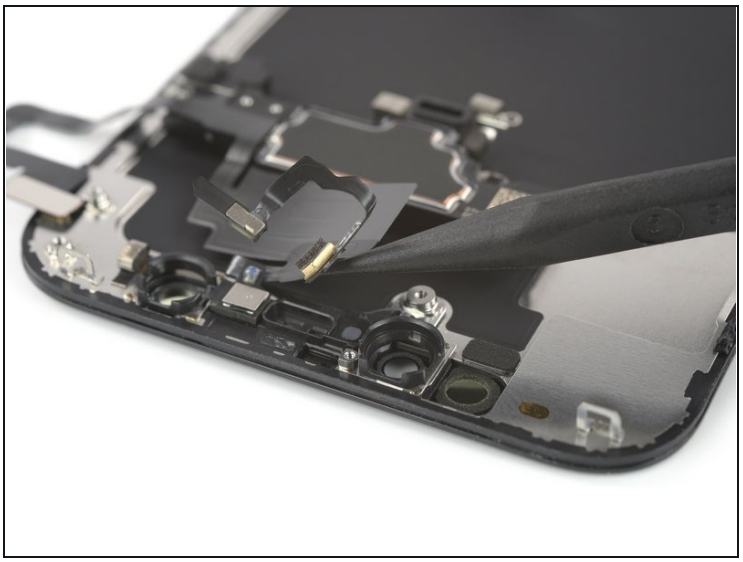




- Use the pointed end of a spudger to carefully pry the proximity sensor out of its recess.

Step 30

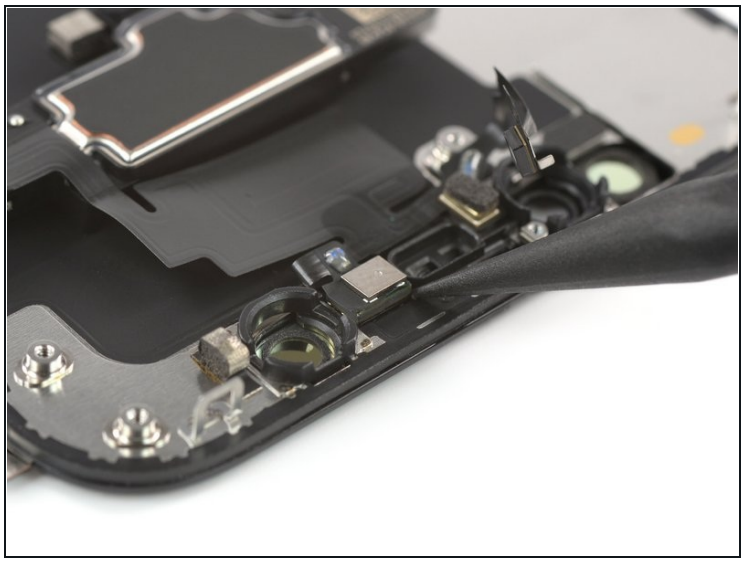


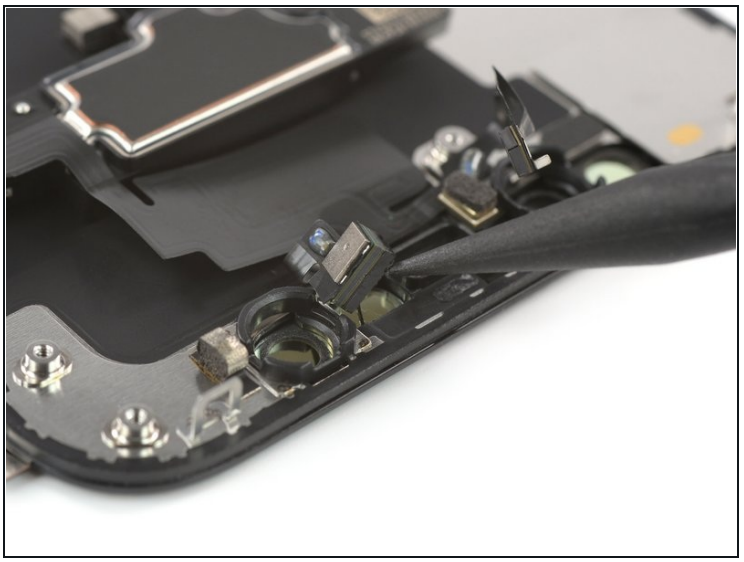


- Slide a spudger underneath the wide sensor assembly flex cable to separate it from the screen.

⚠ Avoid tensioning any of the sensor flex cables during this procedure.

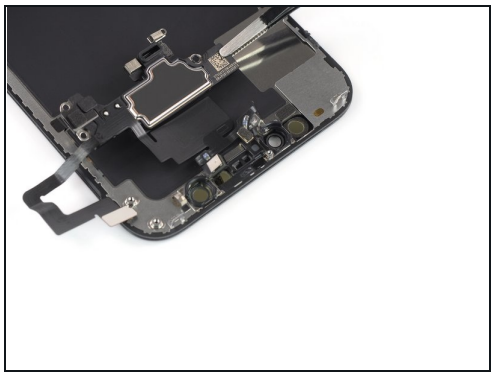
Step 31 — Pry up the flood illuminator

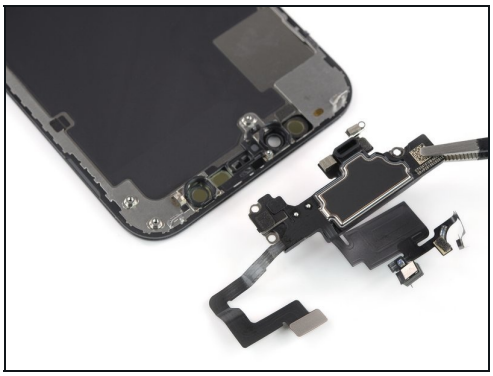


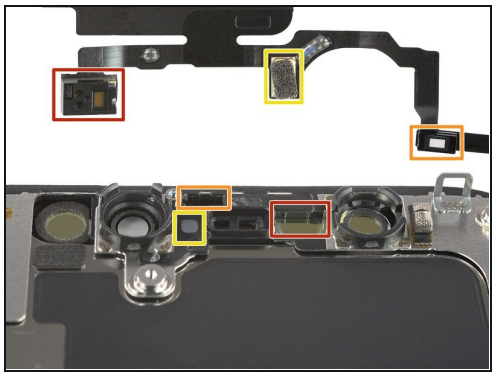


- Use a spudger or a pair of tweezers to pry the flood illuminator out of its recess.

Step 32 — Remove the earpiece speaker and front sensor assembly







- Remove the earpiece speaker and front sensor assembly.

- During reassembly, check the position of the sensors and the microphone. Avoid obstructing them with any adhesive.

- Flood illuminiator

- Proximity sensor

- Microphone

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. Apply new adhesive where necessary after cleaning the relevant areas with isopropyl alcohol (>90%).

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 iPhone 12 mini Answers community for help.